

Our journey towards  
sustainability



## Foreword

The problems of the future – large and small – will be solved by engineers and scientists. Dyson is an organisation of problem-solvers and we are led by engineers. We take a long term view and are optimistic that engineering, science and technology will improve the world.

Part of this means investing in young people who are the next generation of doers. They can see the problems we face and are passionate about solving them to improve people's lives. The problem is that we need more engineers and scientists. More focus is needed, around the world, on encouraging young people into these kinds of careers. This starts in school, continues in university and culminates in the careers that young people choose.

The Dyson Institute of Engineering and Technology is Dyson's way of combatting the problems posed by the shortage of highly capable engineers. Dyson Undergraduates study for an engineering degree while working on real Dyson projects from day one, with a competitive salary, no tuition fees and no crippling student debt at the end of it. They are leaders of tomorrow, and this education is the first step in what we hope will be a long-term, even lifelong, career with Dyson.

But our vision for the future doesn't end with the Dyson Institute. We also support bright minds and brilliant ideas through the James Dyson Foundation, a registered charity funded by Dyson's profits. It exists to inspire the next generation of engineers and encourages more young people into careers in science, technology, engineering and mathematics. In 2023, the Foundation delivered nearly 800 workshops and provided free educational resources reaching 2.5 million school children around the world, with support from hundreds of Dyson engineers. These workshops and resources introduce young people to real-world problem-solving and the diversity of engineering careers.

In 2021, four years after the Dyson Institute was established, the graduation of its first cohort of Undergraduate Engineers took place.



The Foundation also supports young people through the James Dyson Award, which encourages students to solve problems in new and ingenious ways. We deliberately set a broad entry criteria, but we find that almost all entries address a medical or environmental issue – proof that young people are passionate about problem-solving and improving lives. More than 70% of the international winners are now commercialising their ideas, propelled by the awareness the Award creates.

Pioneering medical research is another part of our efforts to engineer a better future. For instance, the James Dyson Foundation funds Dr Claire Durrant's dementia research to understand how Alzheimer's disease affects the brain, in partnership with Race Against Dementia. The Foundation has donated nearly £5m to the Royal United Hospitals in Bath in the UK, supporting the Dyson Centre for Neonatal Care and the new Dyson Cancer Centre, which opened this year. Deirdre and I are also long-standing supporters of Cure EB, an organisation dedicated to researching treatment for the debilitating skin condition Epidermolysis Bullosa.

At the heart of all the work we do – and all that we support – is a commitment to scientists and engineers who will solve the problems of our age.

*James Dyson*

The James Dyson Foundation supports a range of education and medical initiatives worldwide. Race Against Dementia's new Edinburgh lab opened in 2023 (above), while the Dyson School at Imperial College (below) has offered a Master's in Design Engineering since 2015.

# Reshape


Education and medical research

# Shaping tomorrow's engineers

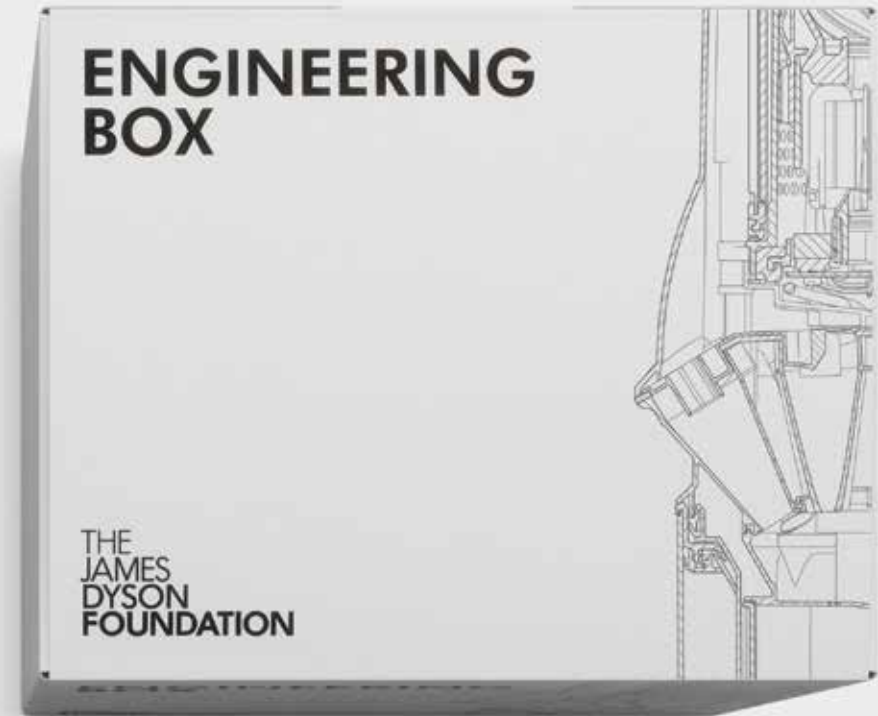
The gap between the supply and demand of engineers is widening around the world, including in the UK. The James Dyson Foundation aims to address this global shortage of engineers to inspire future problem solvers, and its work starts in the classroom.

The Foundation creates free educational resources for primary and secondary schools, based on Dyson's approach to engineering. These resources, such as workbooks and lesson plans for teachers, give an insight into the life of a working engineer, and are free to order and download from the Foundation's website.

The Foundation also runs Dyson engineer-led workshops in schools including rapid prototyping workshops that task students to design and build solutions to real-world problems, and robotics workshops that challenge students to code robots to navigate a space.



Dyson engineer (left) helping students in a James Dyson Foundation workshop.



Aimed at secondary schools, the Foundation's Engineering Box resource (pictured) challenges students to take apart a Dyson machine, identifying design clues to understand the engineering thinking behind how – and why – it works.

Additionally, the Design Process Box introduces primary school students to the design process, nurturing the analysis and problem-solving skills engineers use every day.

Another resource that can be used at home or in the classroom is the Foundation's Challenge Cards – designed by Dyson engineers. They come in a pack of 40 and encourage inquisitive young minds to get excited about engineering, using everyday objects.



# Rethinking Design and Technology in schools

The James Dyson Foundation tested its hypothesis that improving the teaching of Design and Technology would encourage more students to pursue engineering with five secondary schools in Bath in the UK.

The Foundation worked with teachers over six years to build a problem-led curriculum, one that encourages students to work in teams on a design brief, to prototype, iteratively test and redesign their inventions.

Due to the success of the programme, the lesson plans and schemes of work are free for all schools to download from the Foundation's website.



33%

more students at the schools chose to study Design and Technology at GCSE

1.5x

more students were interested in pursuing an engineering career



300%

more female students expressed an interest in pursuing an engineering career after the project



# Full STEAM ahead for Gresham's School

In 2019, James Dyson donated £18.75m to Gresham's School in Norfolk, where he was a student himself, to build a new centre for Science, Technology, Engineering, Arts and Maths (STEAM) education. The centre is the first of its kind in the UK and encourages new approaches to teaching STEAM subjects in a more collaborative, hands-on way.

In November 2023, he donated a further £35m to Gresham's to create a state-of-the-art Prep School, restore the historic Holt Hall and revitalise the surrounding 85 acres of woodland. The donation will enable the school to create high tech STEAM facilities for pupils aged seven to 13, as well as a Field Studies Centre and outreach programmes for local schools.

Bringing science, engineering and arts subjects together allows pupils to experience the way that the knowledge gained from one discipline can be used in a creative way in another – an approach James Dyson strongly believes will lead to more children choosing to pursue engineering and science.

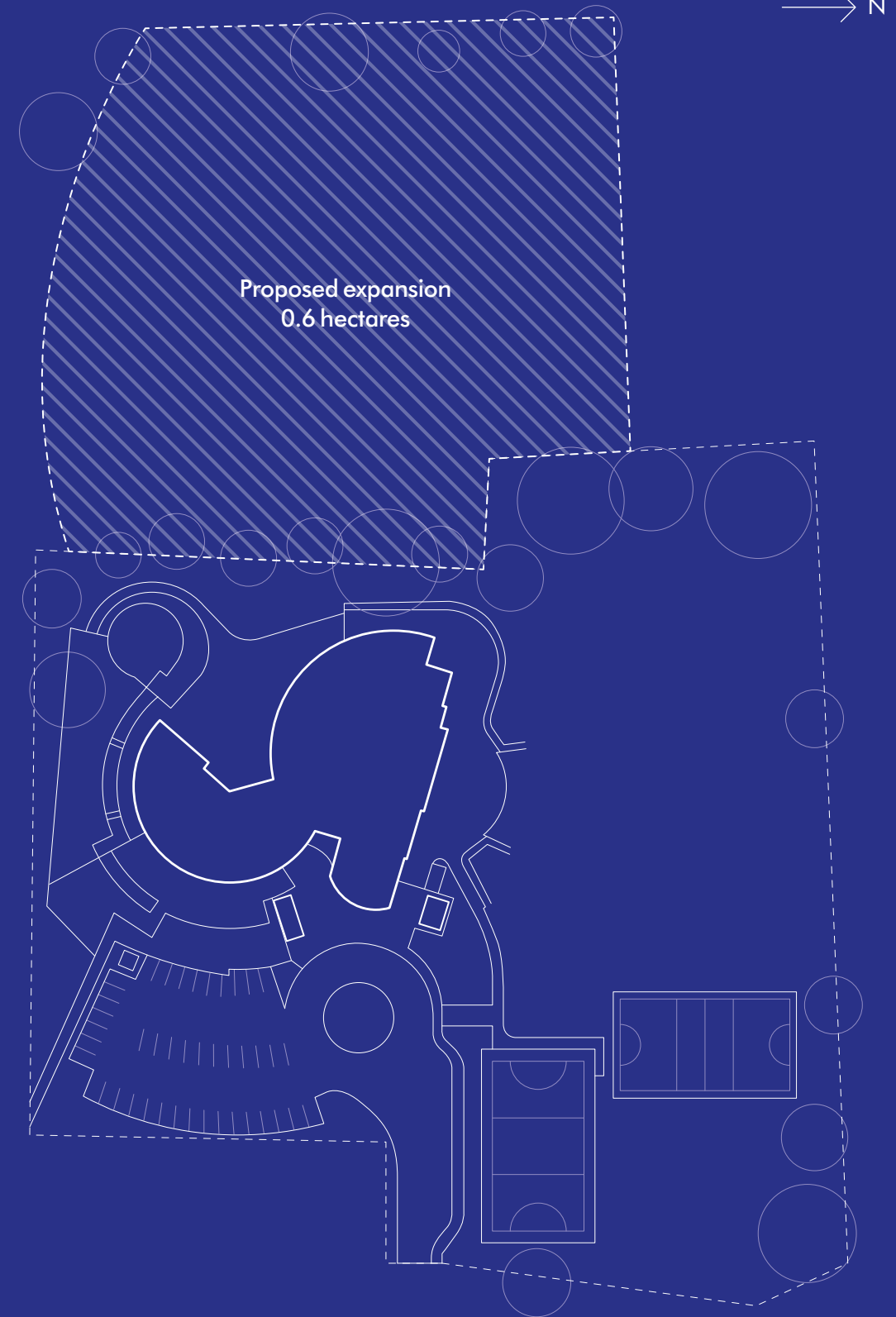
The Dyson Building allowed Gresham's to build its own outreach scheme – hosting over 1,000 students from 25 local schools and introducing them to the STEAM approach, using the James Dyson Foundation's resources.



# A £6m donation for Malmesbury Primary School

In June 2022, the James Dyson Foundation pledged £6m to Malmesbury C of E Primary School. The donation was offered to support the school's expansion from 420 to 630 pupils and to build a new world-class STEAM centre, opening up a world of opportunity for young people. A state school located on the doorstep of Dyson's R&D campus, a quarter of Malmesbury Primary's pupils have a parent or guardian working at Dyson, and 94% of Malmesbury residents, as well as the Mayor and the Town Council, supported the proposal.

After much delay and some local opposition, in February 2024 the expansion was approved by the Education Secretary. Backers such as Michael Gove and Lord Baker (two former education secretaries) lent their voice to the cause alongside a campaign by The Times. Headmaster Steve Heal said: "Now the real work begins: to design a groundbreaking STEAM facility and curriculum which will inspire the designers, scientists and engineers of the future." The school will be seeking planning permission without delay.





## Supporting engineering education in Singapore

In 2022, the James Dyson Foundation announced a S\$3m commitment to supercharge Singapore's engineering education. This charitable donation, over five years, will support a range of educational activities led by the Foundation and in collaboration with the Ministry of Education, the Singapore Science Centre, and institutions such as Nanyang Technological University and Singapore University of Technology & Design (SUTD). These activities are expected to benefit over 100,000 students aged six to 25 years old.

Led by Dyson engineers, the Dyson-SUTD Innovation Studios facilitate STEM educational activities for students in general education – such as a 3D printing challenge.

# Mentorship and a makerspace for Singapore's bright minds

As part of its support for Singapore's engineers, in partnership with SUTD the Foundation opened the Dyson-SUTD Innovation Studios in 2022. The Studios are a multi-disciplinary educational environment for engineering students, as well as a space for community engagement in STEAM education.

Under the mentorship of Dyson engineers, SUTD undergraduates will develop hardware and software-driven solutions to global problems. The space is expected to benefit over 13,000 students across secondary and tertiary school levels in the next five years.





# Challenging young people with the James Dyson Award

The James Dyson Award is the James Dyson Foundation's international engineering and sustainability competition. Founded in 2005, it celebrates, encourages and inspires the next generation of problem solvers. It's open to current and recent design and engineering students and challenges them to solve a problem. Nearly all entries are focused on solving medical and environmental issues around the world.

A team of medical and bioengineering undergraduates, including Rotimi Fadiya (pictured) from McMaster University, Canada were chosen as the international James Dyson Award 2017 winners. Their design solution, the sKan, is a low cost and non-invasive device that aims to detect melanoma.

# Previous James Dyson Award winners

The Award has financially supported over 400 promising inventions from young engineers and scientists worldwide. More than 70% of past global winners are commercialising their winning inventions.



**E-COATING, Hong Kong SAR.**  
A sustainable, light-reflective paint that reduces the need for air conditioning.



**REACT, UK.** A technology to stem bleeding to help save the lives of stabbing victims.



**Plastic Scanner, Netherlands.**  
A low-cost, handheld device to identify plastic for recycling.



**SmartHeal, Poland.** A smart sensor for dressings which indicates how well a wound is healing by measuring its pH level.



**SafetyNet, UK.** A light for fishing gear to combat unwanted fish and marine creatures trapped in commercial fishing nets.



**Blue Box, Spain.** A new biomedical device for at-home breast cancer screening.



**mOm incubators, UK.** A cost-effective and compact incubator offering a safe, medical-grade environment for newborns.



**HOPES, Singapore.** A biomedical device for pain-free, at-home glaucoma testing and treatment.



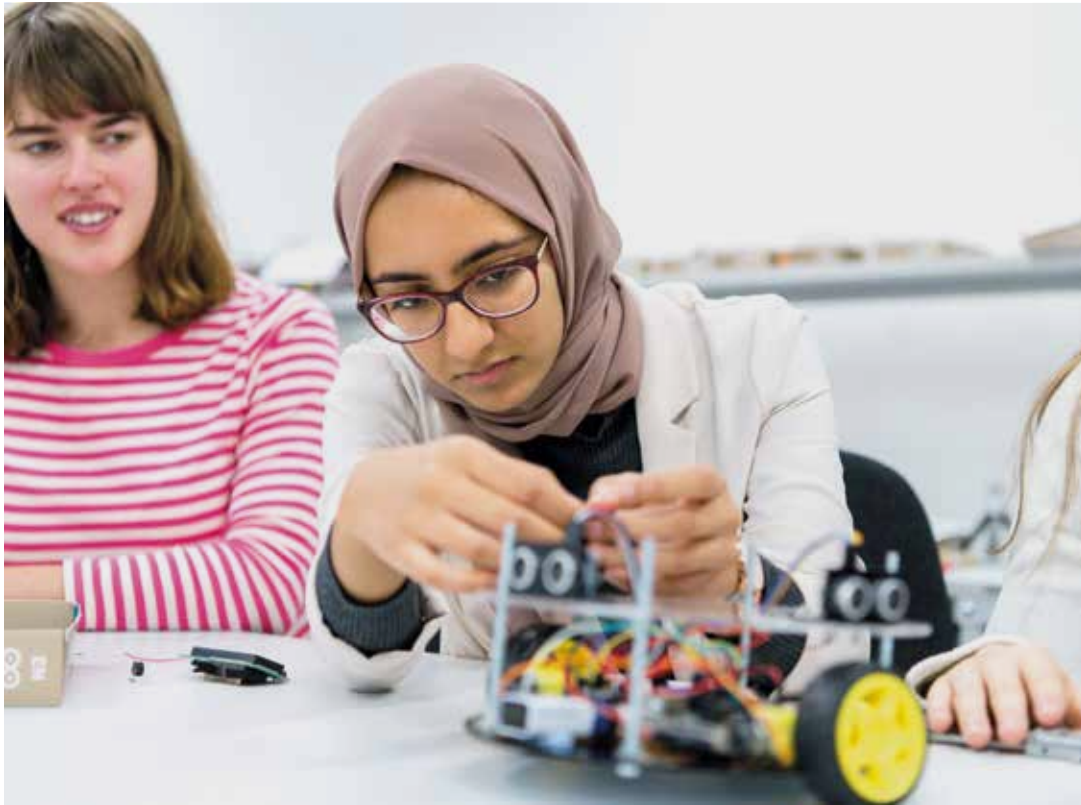
**MarinaTex, UK.** A home compostable alternative to plastic film, made from fish waste and red algae.



**AuREUS, Philippines.** A new material made from waste crop which converts UV light into renewable energy.



**ivvy, Belgium.** A wearable replacement for the existing intravenous drip pole, improving comfort and mobility for patients.



## Re-engineering education at the Dyson Institute

For more than a decade, James Dyson pushed to improve the education system to meet the UK shortfall of engineers. In March 2016, he was invited by the then Universities Minister to take advantage of legislation which allowed new providers to award degrees.

James Dyson wanted to create a programme to produce engineers who are work-ready – to inspire inquisitive people to get hands on with real engineering challenges.

The Dyson Institute was the first higher education institution in the UK to be given the right to award its own degrees under the New Degree Awarding Powers route established by the Higher Education and Research Act. It first welcomed Undergraduate Engineers in September 2017. There are now nearly 160 undergraduates across four years, 31% of whom are female – almost double the national average of women working in engineering.

From September 2024, the Dyson Institute will offer an MEng degree course to all of its incoming students, to reflect the academic rigour and unrivalled hands-on engineering experience its undergraduates experience over the four-year programme.

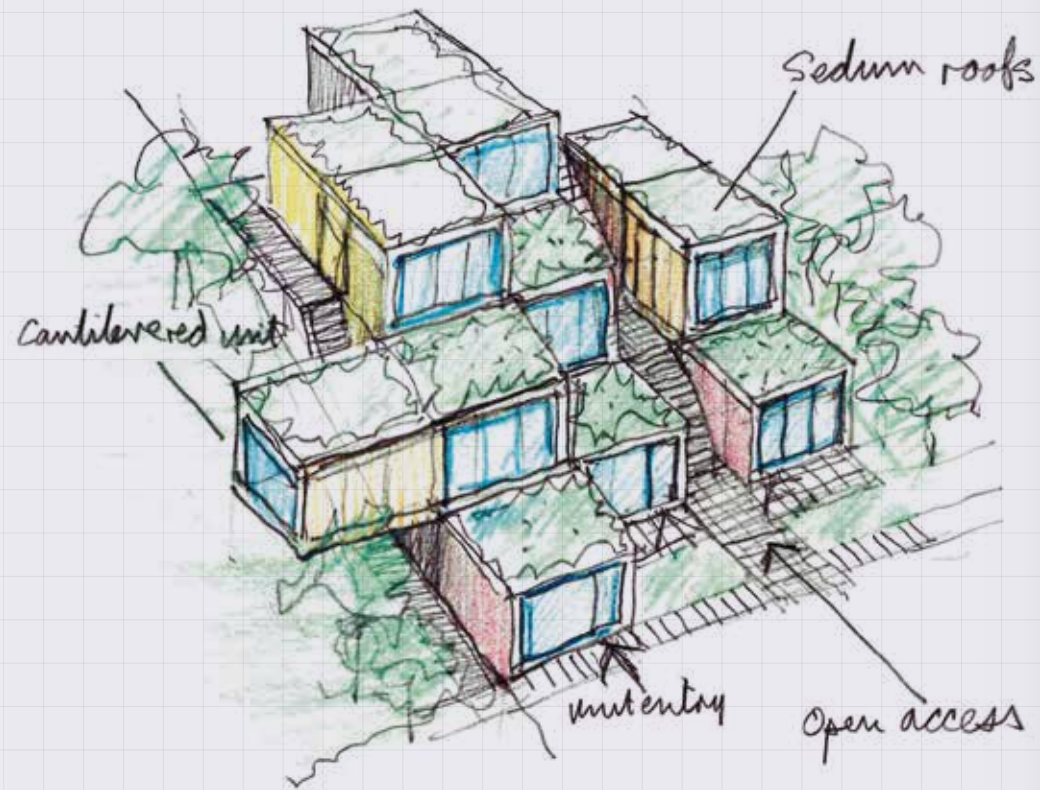


The Dyson Institute of Engineering and Technology is unlike any other higher education institution. Its Undergraduate Engineers work alongside Dyson's global engineering and technology team from day one. They contribute to live projects, while studying for their BEng (Hons) Engineering degree apprenticeship – which from September 2024 will become an MEng – awarded by the Dyson Institute.

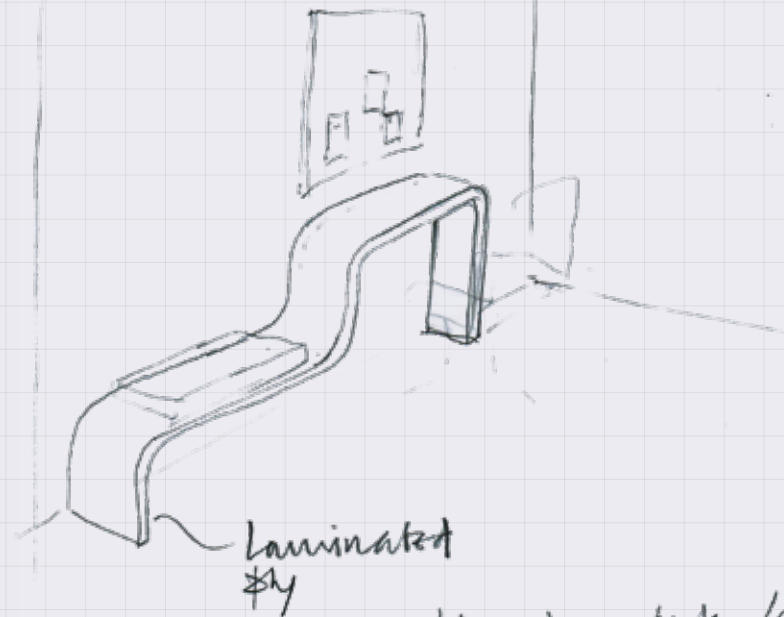
Like all Dyson engineers, they challenge the status quo, approaching problems in different ways. They see the real-world application of the things they are studying and are given real responsibilities. With a competitive salary and no tuition fees to pay, they can graduate debt-free and ready to embark on an accelerated career within Dyson.



James Dyson didn't want 'normal' university accommodation and worked with the late Chris Wilkinson to develop unique pods which provide each undergraduate with their own living space, study area and bathroom, as well as communal kitchen and laundry pods. Below is the initial sketch which James drew. They were pre-fabricated in cross-laminated timber and then transported by road, before being craned into position and plugged in.



Each pod has large, triple-glazed windows giving expansive views over the campus. They're equipped with Dyson technology as well as bespoke furniture and fittings, with a desk designed by James Dyson.



Idea for a desk/sitting piece of furniture to go on the left hand wall. 12.09.2017

# Investing in PhD researchers at Cambridge

The James Dyson Building at the University of Cambridge opened for use by PhD research students in May 2016, following a £6m donation from the James Dyson Foundation.

Now used by over 1,000 postgraduate engineers, there have been exciting discoveries and world-leading research conducted in the space. The Mary Dyson and Alec Dyson scholarships, named after James Dyson's parents, offer support to undergraduate female engineers, as well as PhD students researching future farming technologies.

The Foundation also gave £2m to set up the Dyson Centre for Engineering Design – a prototyping lab that's open to all undergraduate engineering students at the university.





## Boosting design engineering at Imperial College

In 2014, the James Dyson Foundation made a £12m donation to Imperial College London to open the Dyson School of Design Engineering. This helped to purchase and transform the old Post Office building on Exhibition Road into a fitting home for the new design focused engineering department. It has state-of-the-art design studios, research labs and collaborative working spaces.

Since 2015, the Dyson School at Imperial has offered a four-year Master's degree in Design Engineering. Today, the school has nearly 600 students, 43% of which are female, compared with a national first degree average of 18% according to the most recent figures from Engineering UK.

# A creative space at the RCA for budding inventors

The James Dyson Foundation donated £5m to the Royal College of Art (RCA) to fund the Dyson building in Battersea, London. The building is a central part of the RCA's Battersea Campus and is home to 250 students every year. It contains space for fledgling creative ventures, with access to industry mentors and angel investors to help commercialise their ideas. Entrepreneurs work closely together, sharing experience and solving problems to grow their new businesses.

Since opening in 2013, 81 start-ups have launched at the site, with 51% founded by female designers over the past five years. These start-ups have generated £218m in turnover and created more than 800 jobs in the UK.



Founded by aeronautical engineer and Royal College of Art graduate, Ryan Mario Yasin, Petit Pli strives to create the most advanced technical children's clothing in the world. Incubated at the RCA space, it was also a James Dyson Award National Winner in 2017.

# Advancing cancer care in the UK's South-West

For more than 10 years, the James Dyson Foundation has supported advancing medical care at the Royal United Hospitals in Bath (RUH). The Foundation has donated nearly £5m to the hospital since 2010 to develop a cutting-edge neonatal centre and new cancer centre.

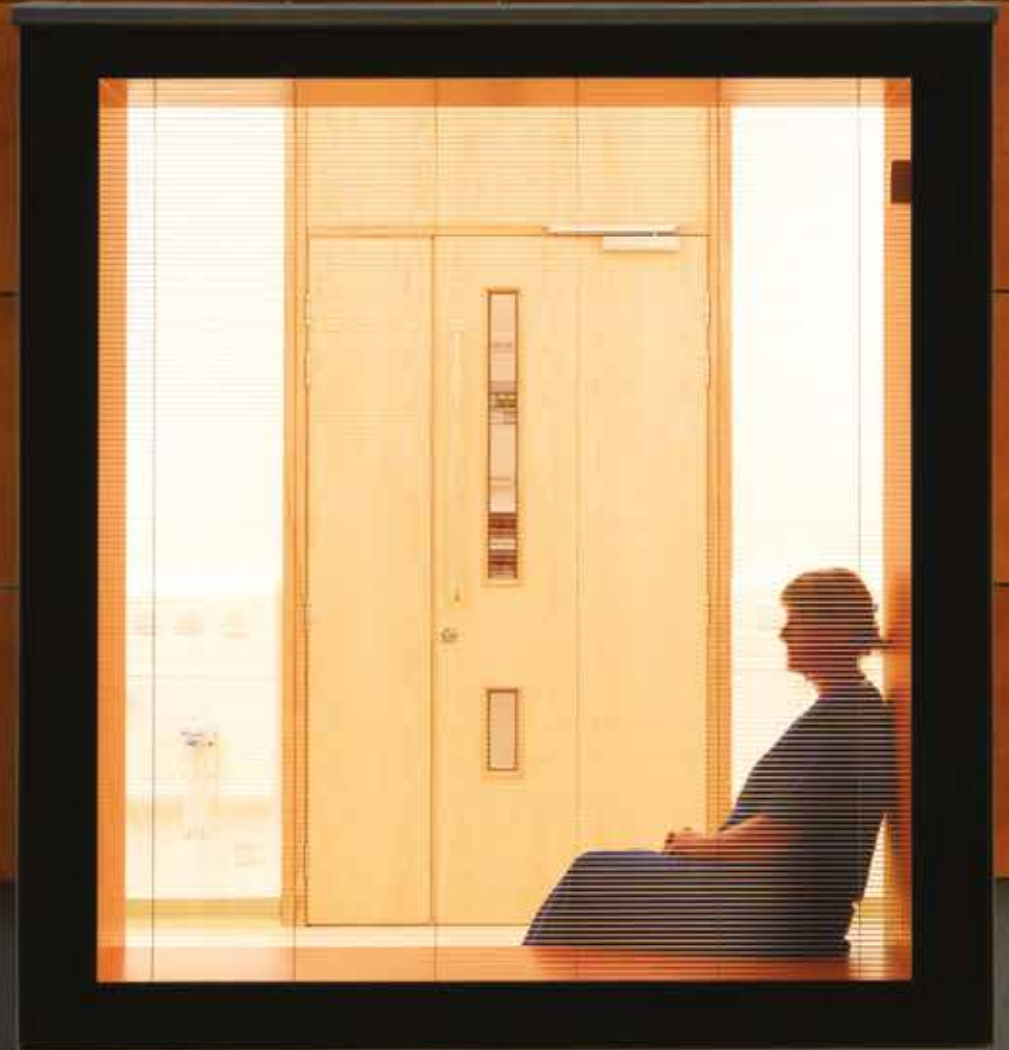
In April 2024, the Dyson Cancer Centre (adjacent) opened. It will be the cancer services hub for half a million people in the South-West of England, with state-of-the-art medical equipment and dedicated research facilities under one roof for the first time, as well as art installations and pastoral gardens.



# Improving neonatal clinical outcomes with design

The Dyson Centre for Neonatal Care leads the way in improving quality of life for sick and premature babies. It was designed to enhance natural light with large windows to help the babies develop, and to be a more efficient space for staff. The new building has a progressive layout. A clockwise circuit of cot rooms, starting with intensive care, leading to special care and finally home, creates a psychological effect of progress. The Centre has since cared for more than 5,000 babies and their parents.

Revolutionary research, funded by the James Dyson Foundation, was carried out when the Centre opened, comparing the old unit with the new. The study showed that babies were better rested – sleeping on average for 20% longer than in the old unit.





## Pioneering dementia research to find a cure

The Foundation also funds a £1.5m dementia research fellowship in partnership with Race Against Dementia (RAD), a charity founded by former Formula One driver Sir Jackie Stewart.

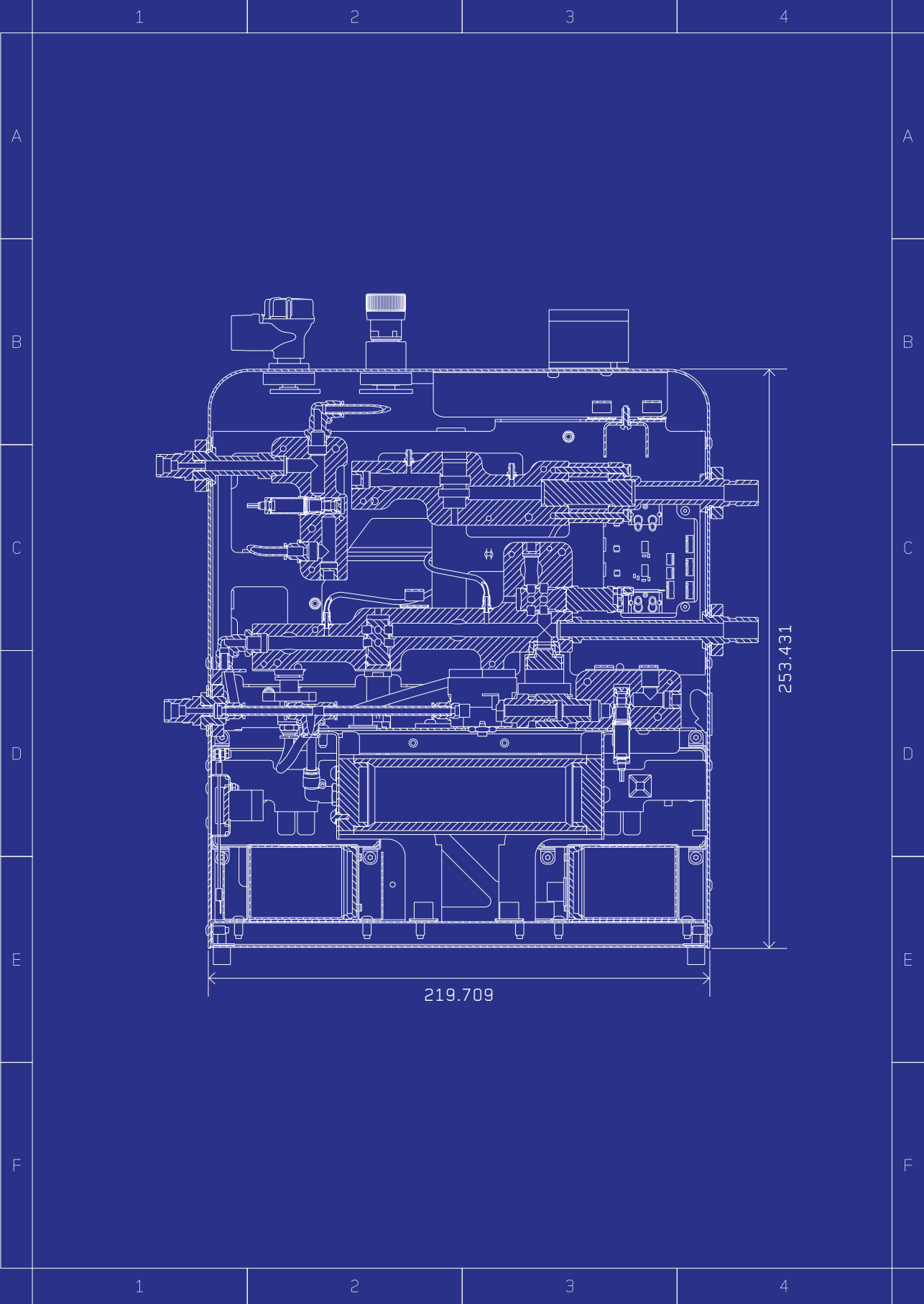
Dr Claire Durrant, the RAD Dyson Fellow, is based at the University of Edinburgh and is researching new human models of Alzheimer's disease and investigating the function of tau – a protein that plays a role in dementia. As part of the Fellowship, Dr Durrant has access to Dyson engineers and other industrial partners, such as Formula One, with the aim to facilitate more rapid progress in Alzheimer's research.

Dr Durrant is investigating the role of tau in keeping synapses – the connections between brain cells – healthy, and looking at how they change. The tau protein is an important target for future dementia treatments and understanding more about its role in Alzheimer's disease will be key for the success of this approach.

# A new ventilator in 30 days

Dyson's research and development expertise was put to the test during the Covid-19 pandemic in a new way. In early 2020, the UK Government requested urgent help to create a ventilator – then thought to be crucial to the treatment of the disease as it swept across the world. Dyson people took on the Government's challenge and, working round the clock in Malmesbury, Hullavington and Singapore, developed an entirely new ventilator in 30 days, named CoVent.

Although ultimately not required in the UK, this was a significant positive contribution to the national effort and demonstrated Dyson's innovative spirit. Dyson spent around £20m on this project, without acceptance of public money.





# Contributing to charities worldwide

The James Dyson Foundation supports Dyson's chosen charities through match-funding. Over the years, this has helped to raise over £700,000 for a number of charities worldwide voted for by Dyson employees. Dyson's relationship with Alzheimer's Research UK began in 2015 and since then £650,000 has been raised and donated to the charity.

The Foundation also offers financial and educational support to local projects, schools and charities in Malmesbury, close to Dyson's main UK technology campuses.

This includes funding engineering equipment for local schools and donations to Malmesbury Foodbank, hospitals, and local events. In Singapore and Malaysia, support includes beach clean ups and fabric recycling schemes.

Following the Turkish earthquake, the Foundation also donated to Turkish NGO Anne Çocuk Eğitim Vakfı (AÇEV). It has since worked with them to support more than 1,000 children in the region with the creation of a mobile education unit.



Sustainability has been at the heart of Dyson from the very start. We are led by engineers, and their approach – to do ‘more with less’ – has been evident in our products and technology, from the first Dyson vacuum cleaner, the DC01, right through to our latest launches.

But it doesn’t end with what we make. We strive towards greater sustainability in everything we do – in how we manufacture those products, to the buildings we restore to use for our research and development. We consider sustainability in our charitable endeavours, including the James Dyson Award which dedicates an entire category to sustainable innovation. And we think about sustainability in how we produce food, using the latest agriculture technology, at Dyson Farming, in harmony with environment.

This is one of four instalments that summarise what we have achieved in sustainability, and where we will go next.

Other instalments:

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**Rethink:** Products and technology

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**Renew:** Buildings and manufacturing

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**Reimagine:** Dyson Farming