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Our mission is to inspire the next generation of engineers

As a society, we are failing to help young people by not connecting the science, design, technology and maths they learn in the classroom with the exciting and important engineering problems and solutions in the outside world.



Sir James Dyson
Founder and Chief Engineer



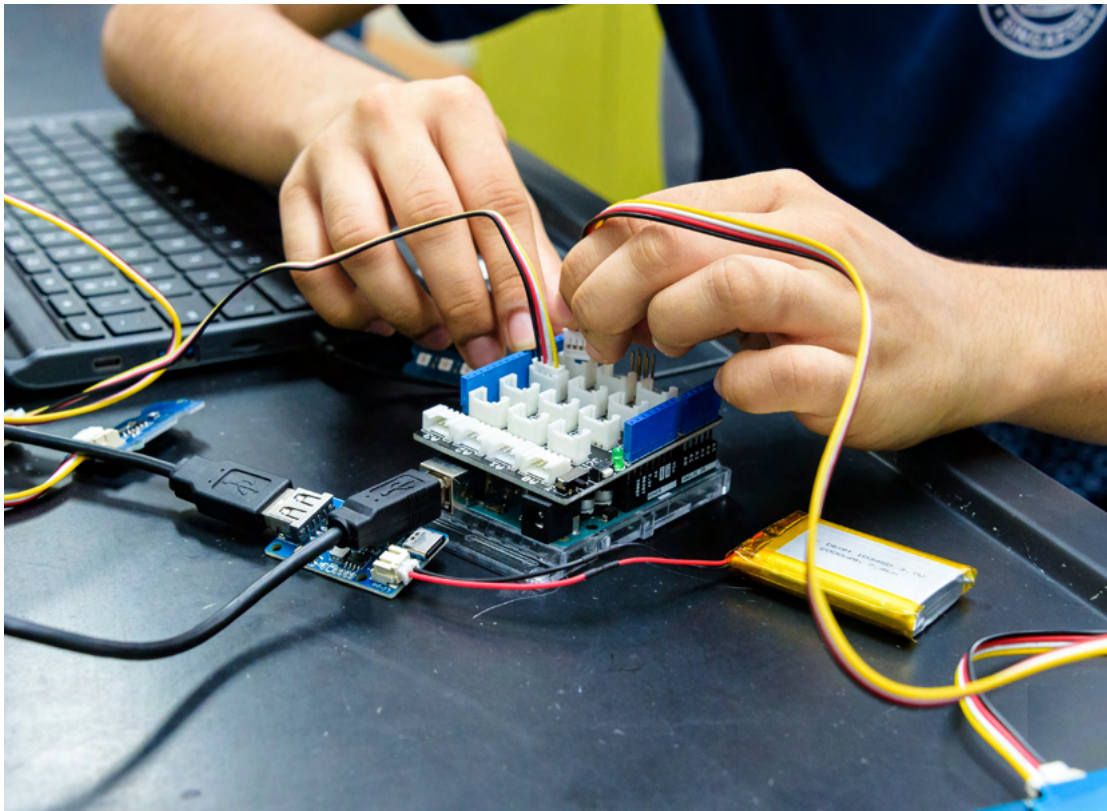
INSPIRING THE NEXT GENERATION

The James Dyson Foundation works on a global scale to inspire young people about the exciting world of engineering. We work with primary school children through to university students and graduates, to ensure they have the knowledge and support needed to pursue their engineering ambitions. We also support medical and scientific research projects, and charitable causes that are local to Dyson.

We work across 30 countries and regions, with a focus on the UK, US, Japan, Singapore, Malaysia and Philippines. We're a registered charity, supported by Dyson and, to date, James and the James Dyson Foundation have donated more than £145 million to charitable causes.

In 2023, the Foundation conducted 1000 events and workshops across the world reaching 3.5 million young people. This includes rapid prototyping workshops that challenged students to design and build solutions to air pollution; robotics workshops which saw students coding robots; and large scale events engaging young people with our Challenge Cards. Our physical resources and downloadable reached nearly half a million young people. This includes our updated Engineering Box featuring the latest Dyson cordless vacuum technology in the UK, donations of 250 air quality monitoring devices to schools around the world as part of our air pollution educational resource and the Foundation's new educational resource about farming and engineering.

We received 2000 entries to the James Dyson Award, an international design and engineering competition for university students and graduates. We also pledged £6 million to Malmesbury C of E Primary School in the UK to build a world-leading STEAM (Science, Technology, Engineering, Art and Mathematics) centre, and announced a £35 million donation to Gresham's School in Norfolk UK, where James studied, to build a Preparatory School. Our total spend for 2023 was just over £8m.





The James Dyson Foundation provides the mentorship, materials and money that budding inventors need so they can get hands-on with problems, think laterally and find solutions.

To date, James and the James Dyson Foundation have donated more than £145 million to charitable causes.

Engineering plays a central role in driving innovation, technological progress and economic growth throughout the world. Yet the gap between the demand and supply of engineers is widening in many countries.

We believe that addressing this global shortage of engineers starts in the classroom.

Working with the James Dyson Foundation has introduced me to lots of interesting, inquisitive young people. It's really exciting being able to talk about the variety of activities I get involved in at Dyson. There are always one or two pupils whose faces light up, realising this is exactly what they want to do for their career. They just didn't know it was an option before.

Dominic
Dyson Mechanical Engineer

In 2023 we delivered 1000 workshops and events, reaching 3.5 million students. This includes rapid prototyping workshops that challenge students to design and build solutions to air pollution as well as everyday problems in a home or school environment; robotics workshops that challenge students to code robots to navigate a space; and workshops at universities across 30 countries and regions to inspire students to enter the James Dyson Award.

We also participate in large scale STEAM events challenging young people to get hands-on with engineering challenges. All our workshops and events were supported by over 1000 Dyson engineers.



Challenge Card workshop
Malaysia



Robotics workshop
UK

A man with short dark hair, seen from behind, stands in a large lecture hall. He is wearing a black t-shirt with the text "INSPIRES THE NEXT GENERATION OF ENGINEERS" printed in orange on the back. He is facing a large audience of people seated in blue and green bleachers. The setting appears to be a university or conference hall with a high ceiling and recessed lighting.

**INSPIRES THE
NEXT GENERATION
OF ENGINEERS**

In 2023 we helped inspire half a million students across the world through our free educational resources based on Dyson's approach to engineering.

These resources give an insight into the life of a working engineer. Our resources are free to order and download from our website.

Challenge cards

The Foundation worked with Dyson engineers to develop challenges designed for children to try at home or in the classroom. The cards come in a pack of 40 and are distributed at events and workshops. They can also be downloaded from our website.





Our physical resources

We sent out 1500 physical resources in 2023 – getting students hands-on with Dyson technology. These resources reached 8,000 students.

Design Process box

Our primary school resource introduces students to the design process, nurturing problem-solving skills engineers use every day.

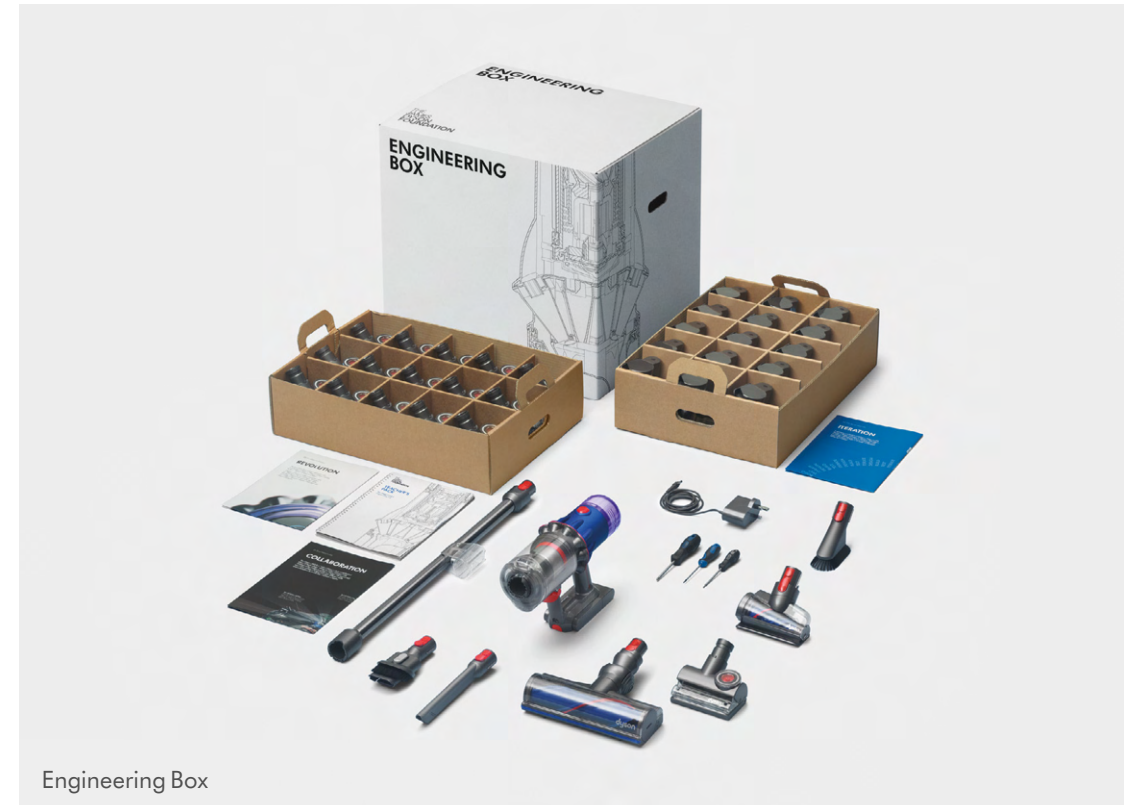
The Design Process Box is a free resource to help teachers (non-specialists included) bring engineering into the classroom. Using the Dyson Air Multiplier™ fan as an example, the Design Process Box contains a comprehensive teacher's pack, lesson plans, videos and posters to guide students through the design process. Schools loan the box for six weeks, free of charge – with delivery and collection included.

Engineering Box

Our secondary school resource introduces students to the engineering behind Dyson technology. Students get to think and act like real engineers, taking on real-world problems and building their own solutions. The Engineering Box includes a Dyson V12 Detect Slim Animal™ Vacuum, Tangle-free turbine heads, and Anti-tangle screw heads. Students take these apart, using the screwdrivers provided, to better understand how the technology works. The box also contains a comprehensive teacher's pack, lesson plans, videos and posters. Schools loan the box for four weeks, free of charge – with delivery and collection included.



Design Process Box



Engineering Box

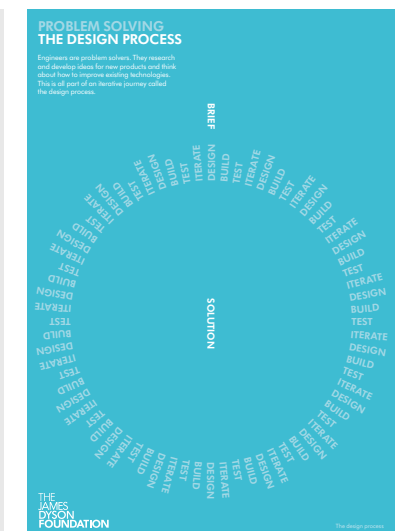
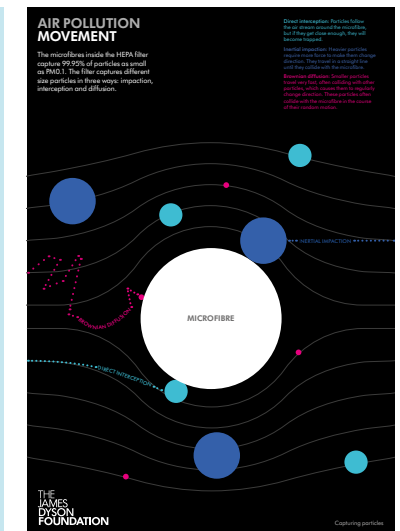
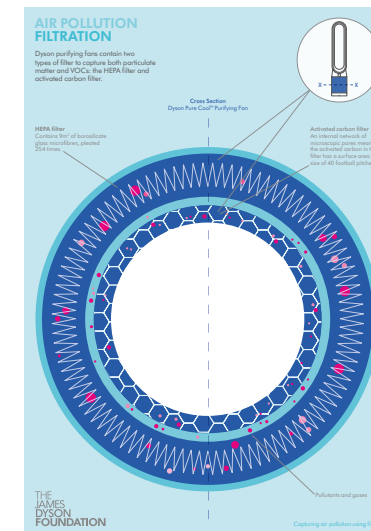
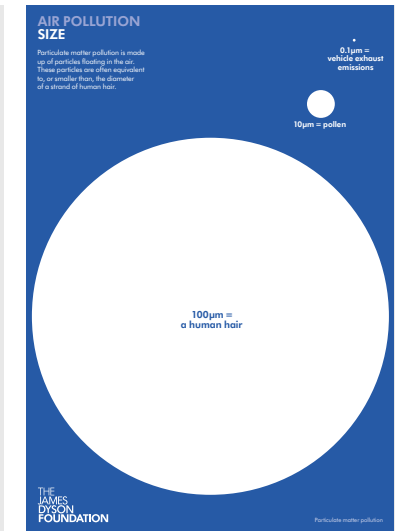
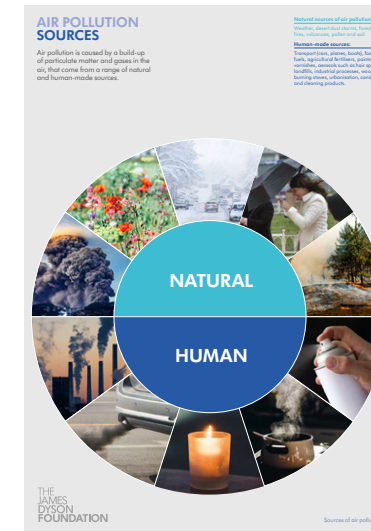
Engineering solutions: Air pollution

This resource introduces students to air science, the engineering behind the Dyson Pure Cool™ purifying fan and challenges them to design and build their own solution to air pollution.

In 2023, Engineering solutions: Air pollution reached classrooms in the UK, US, Singapore, Malaysia, Philippines as well as China, Japan, Korea, Australia and Italy

Since the resource launched in 2020 we have donated nearly 1000 air quality monitoring devices to schools across the world empowering young people to investigate the problem of air pollution in their school and on their journey to school.

To further support this we have run rapid prototyping workshops in schools challenging students to design and build a solution to air pollution.



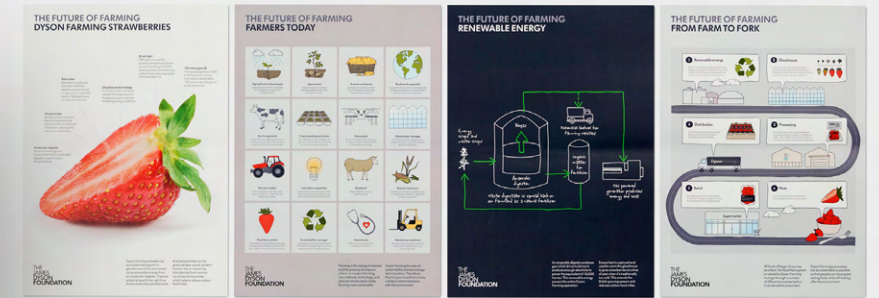
Posters included in Engineering solutions: Air pollution

Engineering solutions: The future of farming

Designed to complement the Science, Design and Technology and Geography curriculums at Key Stage 1 and 2, this resource enables students to explore how design and engineering can be applied to farming. Students learn about the farming industry, how food is grown, harvested and produced, as well as the environmental impact of farming.

In combination with the lesson plans, posters and videos, there is also an additional resource box to complement Lesson 5: Grow your own strawberry crop.

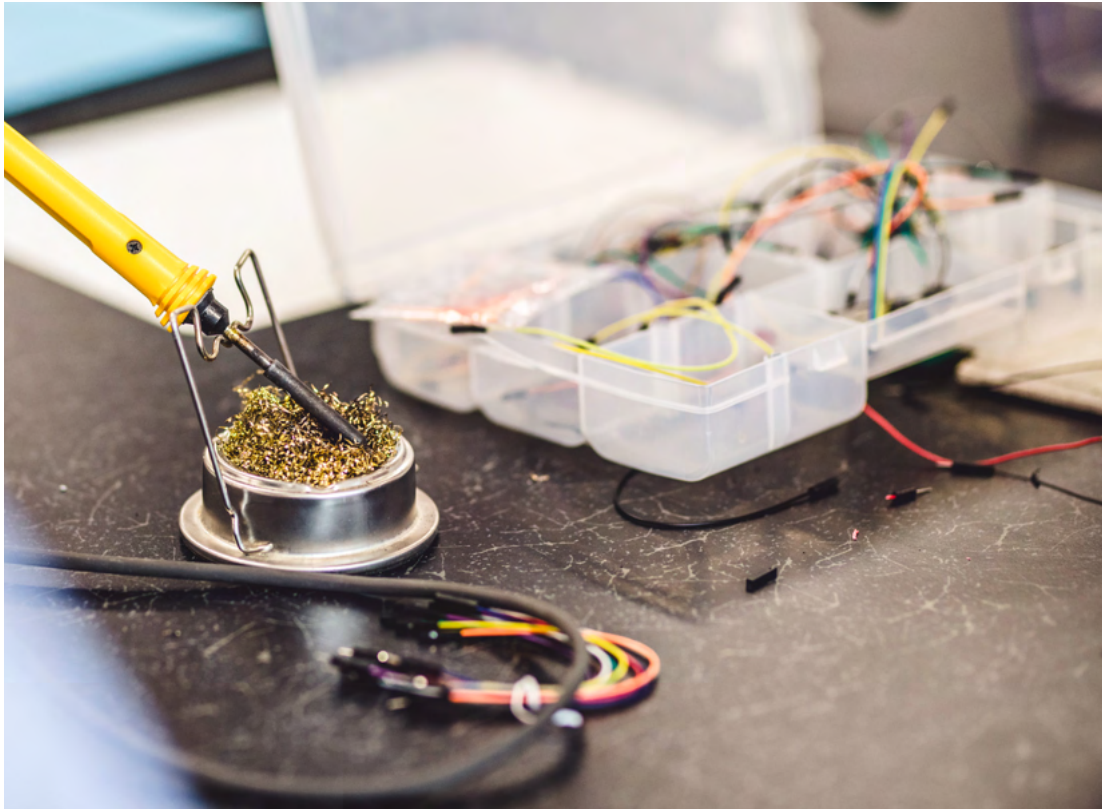
This box gives students access to equipment to grow their own crops, allowing them to understand how food is grown, harvested, monitored and improved through engineering principles.



Rethinking Design and Technology – Schemes of work

Design and Technology (D&T) is the subject in the UK education system that most correlates to engineering careers. The Foundation believes that a D&T curriculum based on iterative design and problem-led, project-based learning is more relevant and engaging to students. As a result, students enjoy D&T more and their perception of engineering improves – so more students opt to study D&T at GCSE and A Level. And, in time, more young people choose to become engineers.





The Foundation tested its hypothesis with five schools in Bath, UK, from 2012 to 2018 by working to improve their provision of D&T with industry-standard equipment and schemes of work designed to challenge students to solve real world problems. As a result of the project:

44% more students chose to study D&T at GCSE

Nearly double stated they enjoyed D&T lessons more

Two and half times more students were interested in pursuing an engineering career

Due to the success of this project we have made the lesson plans and schemes of work free to download from the James Dyson Foundation website. You can find out more about the project in our Bath Schools Project report available on our website.

The James Dyson Foundation has representatives in North America and Asia Pacific who work to inspire the next generation of engineers in these regions through workshops, educational resources and the James Dyson Award.

North America

The Foundation reached nearly 120,000 school students through hands-on engineering workshops and our resource downloads in the US, giving them a glimpse into the exciting world of engineering.

The Foundation also reached 52,000 students through the air pollution resource in US and Mexico through the donation of 50 air quality monitoring device kits and digital resource downloads.

A total of \$140,000 was raised and donated to charities local to the Dyson offices in Chicago and Toronto to provide students with engineering and science enrichment opportunities along with medical and science research advancements.

The Foundation donated \$142,000 worth of Dyson machines to charitable organisations funding engineering education or medical scientific research.

The James Dyson Award had 167 entries across US, Canada and Mexico. The US National Winner, Charlotte Böhning, a design student from Pratt Institute, invented The Gutsy Port, a secure medical port that enables bag-free moments for ostomates. The Canadian National Winner, Kaleb Aman, an industrial design student from Carleton University, invented DewPointe, a sustainable irrigation system that uses collected atmospheric moisture and bottom-up watering techniques. The Mexican National winner, Ximena García Ortega, a student from Tecnológico de Monterrey, invented LEKA, an effective, biodegradable and non-invasive test to detect cysticercosis parasite. All three countries celebrated finalists on the 2023 International Top 20 Shortlist.

In total, we reached 1,170 Dyson people across the Americas engaging them with the Foundation's educational programs and fundraising initiatives supporting local communities around Dyson offices. This includes participating in two Americas Day of Service where Dyson people volunteered at six local charities across US, Canada and Mexico, Jr Engineer Day for Dyson people's children, volunteering at school workshops and other Foundation-led initiatives.



Rapid prototyping workshop
Chicago



Rapid prototyping workshop
Los Angeles

Asia Pacific

Through over 300 engagements across Australia, China, Japan, Malaysia, Singapore, South Korea, Thailand and the Philippines, the Foundation reached over 3.3 million students through primary to tertiary levels. These engagements included prototyping workshops, Challenge Card activities, industry talks, mentorship programmes and James Dyson Award workshops.

The Foundation launched its Engineering Box for the first time outside the UK. The Engineering Box is part of the Foundation's ongoing S\$3 million investment to bolster Singapore's STEM education landscape and will help Singaporean students discover engineering thinking, learn about the Dyson design process, and expose them to diverse fields of engineering through the experience of unpacking Dyson technologies.

We continued collaborations with the Ministry of Education in Singapore and Malaysia, and organised large-scale STEM campaigns encouraging educators and students to get excited about engineering. Selected participants of these campaigns had the opportunity to attend a workshop led by Dyson engineers in Singapore at Dyson's global headquarters.

Finally, as part of regional expansion plans, the Engineering Solutions: Air Pollution resource was introduced to educators, parents and students in Australia and South Korea.

The Foundation identified new charity partners in Singapore, Malaysia and the Philippines, and will be supporting the National Neuroscience Institute, Teach for Malaysia and ChildHope Philippines respectively. In 2023, Dyson people raised over £20,000 for these charities in support of their works in advancing medical research and increase quality of education.



Educators from 100 Johor-based Schools in a training workshop using the Challenge Cards



Engineering Solution: Air Pollution workshop Seoul, South Korea

A platform for great minds with great ideas

The James Dyson Award is the James Dyson Foundation's international design competition. It celebrates, encourages and inspires the next generation of design engineers. It's open to current and recent design and engineering students.

Since 2005 the competition has awarded over £1 million in prize money, with £30,000 going to the global winners every year.

In 2023, the James Dyson Award ran in 30 countries and regions, receiving 2000 entries.

Golden Capsule International winner



The Golden Capsule, a non-powered and hands-free IV device for use by medics in disaster zones, invented by students from Hongik University in South Korea.

“We saw the difficulties medics and first responders faced at natural disaster sites when transporting patients with IVs, and feedback for our solution has been positive so far. Ultimately, we hope to establish this as the new standard for IV packs, not only in emergency situations, but in hospitals too.”

The Golden Capsule, James Dyson Award International winner 2023

The problem – The Turkish-Syrian earthquakes in February 2023 resulted in over 55,000 casualties, with a further 100,000 injured. Throughout the evacuation process, medics had to move through harsh environments while carrying several IV packs in their hands for their patients.

The solution – The Golden Capsule, a non-powered and hands-free IV device which uses elastic forces and air pressure differences rather than gravity. This means that medics in disaster zones do not have to hold up IV packs while transporting patients, and electricity is not required to control the infusion rate.



E-COATING

Sustainability
winner



E-COATING is an eco-friendly solution that reduces the amount of electricity consumed on cooling solutions like air-conditioning, invented by a team from The Chinese University of Hong Kong.

“We invented E-COATING with a desire to help tackle the serious environmental problems our planet is facing. The prize money will allow us to further our research and development goals and start a company to take our invention to the next level.”

Hoi Fung Ronaldo Chan and
Can Jovial Xiao, James Dyson Award
Sustainability winner 2023

The problem – In Hong Kong SAR, air-conditioning accounts for 31% of total electricity consumption. In addition, over 470,000 glass bottles end up in landfills every day.

The solution – E-COATING is created from recycled waste glass and can be applied to exterior roofs and walls to reflect the sun's rays thereby reducing the heat absorption of buildings. This reduces the amount of electricity consumed on cooling solutions like air-conditioning and mitigates the associated greenhouse gas emissions.



The Life Chariot Humanitarian winner



The Life Chariot is MEDEVAC off-road ambulance that can attach to any hook-equipped vehicle, invented by Piotr Tłuszcz from Poland.

“I hope that The Life Chariot, with the support from the James Dyson Award, will continue to save lives, whether in frontline evacuations or rescues from accidents in inaccessible places.”

Piotr Tłuszcz, James Dyson Award International winner 2023

The problem – As he watched the conflict unfold in Ukraine, young inventor Piotr observed the challenges of medical evacuations across challenging terrain.

The solution – The Life Chariot, a MEDEVAC off-road ambulance that can attach to any hook-equipped vehicle. The vehicle’s low weight and suspension makes it safer for a casualty to travel in than the boot of a car.





The competition gathered global interest from the press, with coverage in major media outlets such as Reuters, Evening Standard, Design Week and Poland's Polsat television channel. In total, we saw more than 2,000 pieces of coverage reaching over 300 billion people – a powerful way to expand the positive message of engineering.

Past winner success stories

Winning the James Dyson Award can help propel past winner's ideas. Over 70% of International winners are commercialising their invention.

Dan Watson, inventor of SafetyNet Technologies, was the James Dyson Award 2012 International winner. SafetyNet is a light that fits onto fishing gear to combat unwanted fish and marine creatures trapped in commercial fishing nets. Casting the net wider, he's founded his company SafetyNet Technologies, delivering pioneering technology and support to build a better, sustainable fishing industry.

"SafetyNet is global now, we work all over the world. We're starting to lead in the fishing industry"

Dan Watson, Co-Founder and CEO of SafetyNet Technologies



The brightest minds and best ideas don't always have the support they need to flourish. And studying at university is an expensive venture – especially for a practical engineering course, where students need access to materials and equipment.

The James Dyson Foundation provides engineering students with bursaries, scholarships and project funding. It's just one way to make their path to a future in engineering easier.

Dyson Scholarships

In 2023, we awarded Annabel, Arzina and Lily, from Murray Edwards College at the University of Cambridge, with a £2,500 Mary Dyson Scholarship. These scholarships, named after James' mother who studied at the college, provide financial support to female engineering students.

We also provide scholarships to support of PhD students at Corpus Christi College at the University of Cambridge who are researching Agri-Robotics – the Alec Dyson Scholarship, in honour of Alec Dyson who studied at the college. The scholars are researching how robotics can advance agricultural practices and secure the future of food. Currently, this scholarship supports three PhD students.



Annabel is in her second year of studies at Murray Edwards college, with a keen interest in Mechanical and Manufacturing Engineering. Annabel is also interested in aerospace engineering which has stemmed from becoming an Officer Cadet in the Cambridge University Air Squadron RAF Reserves. She plans to use the Mary Dyson Scholarship to further her knowledge through extra qualifications and courses, including Artificial Intelligence Coding and Vehicle Dynamics Modelling and Simulation, following her summer internship with McLaren Racing.



Arzina is in her third year of studying Mechanical Engineering, with a keen interest in circuitry, specifically Electromagnetic Interference Issues (EMI). She plans to use the Mary Dyson Scholarship to support with projects in this area, including purchasing an oscilloscope to test for Electromagnetic Compatibility (EMC), enabling her to test circuits independently from her lab work.



Lily is currently in her second year of studies at Murray Edwards College, with a keen interest in Electrical Engineering. Lily plans to use the Mary Dyson Scholarship on equipment, components and software to support with her studies in Electrical Engineering. This will enable her to be more innovative in projects, more efficient in designing and building prototypes, conduct proficient experiments and support with further research initiatives.



Having commenced her PhD in 2020, Haihui is researching robotic soft fruit harvesting and how you can use machine learning to teach a robot to only pick the perfect berries without damaging the fruit.



Having started his research in 2020, Jack is researching the digitalisation of environmental and crop-specific data to identify crops at different stages of growth, to allow farmers to obtain the highest yield and greatest quality produce.



Starting his research in 2022, Garry is researching the application of robotics to identify links between supply chain design and nutrition losses with the aim to create a nutrition management tool.



Starting his research in 2023, Jack is investigating how to stabilise and maximise the production of genetically modified algae and bacteria for food production.

Building inspiring spaces

The James Dyson Foundation has made a number of major donations to universities, resulting in new engineering departments and teaching spaces. These partnerships with academic institutions allow us to impact engineering education for even more young people.



Imperial College London

We are grateful to the James Dyson Foundation for supporting our vision for Design Engineering at Imperial. It allows us to provide students with the skills and knowledge to become design engineering pioneers of the future. It has also helped us to continue inspiring and teaching our students through the pandemic.

Professor Peter Cheung
Head of the Dyson School of Design Engineering

In 2014, a £12 million donation was made 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.

The school has 47 staff and nearly 600 students, and has a 43% female cohort (compared with a national average of 21% according to Engineering UK 2020).



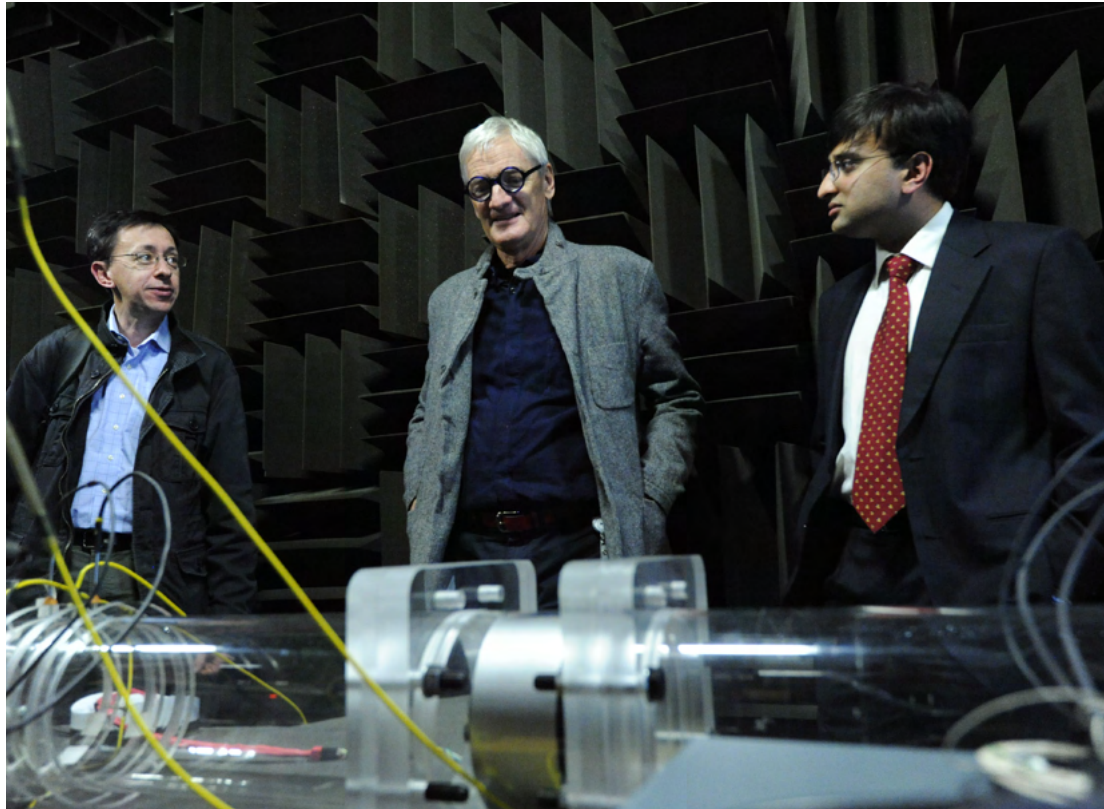
University of Cambridge

The James Dyson Building at the University of Cambridge opened for use by PhD research students in May 2016, following a £6 million donation from the James Dyson Foundation. Now used by over 1000 postgraduate engineers, there have been some exciting discoveries and world-leading research conducted in the new space.

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

The Centre is a space in which students have the freedom to turn their ideas into physical prototypes as well as apply the theory learnt in lectures into practical projects. It also hosts clubs, societies and James Dyson Undergraduate Bursary projects. This practical space helps to equip students with the skills they need to kick start their engineering careers.





The Dyson Centre for Engineering Design is in turn the beating heart of the Department. Students gravitate to it to transform their ideas into realities, exploring concepts learned in lectures through activities and projects that feed their particular engineering passions.

Professor Richard Prager,
Head of Department of Engineering

Providing space for Science, Technology, Engineering, Arts and Mathematics (STEAM)

The Foundation believes that young people are best equipped for a career in engineering through a cross-disciplinary, hands-on approach to learning in school.

Malmesbury C of E Primary School

In March 2023, the James Dyson Foundation pledged £6m to Malmesbury C of E Primary School to drive the school's expansion plans and fund a new STEAM centre. The school is located within one mile of Dyson's Malmesbury campus and one quarter of the school's pupils have parents or guardians working at Dyson.



Gresham's School

James Dyson donated £18.75 million to Gresham's School in Holt, Norfolk, where he studied himself, to build a new centre for Science, Technology, Engineering, Arts and Mathematics (STEAM) education. The Dyson STEAM Building was completed this year and opened for student learning in September.

The building is located at the heart of Gresham's Senior School. It is the first of its kind in the UK and will encourage new approaches to teaching STEAM subjects in a collaborative, hands-on approach.

The teaching spaces contain the latest technology to increase the breadth of STEAM learning at the school – from robotics and programming, to Artificial Intelligence (AI) and machine learning, all with the objective of encouraging the uptake of engineering and science subjects.

The building also provides an opportunity for Gresham's to build its school outreach programme – hosting over 1000 students from 25 local schools in 2023 as part of a STEAM outreach programme which utilised the James Dyson Foundation Challenge Cards.



Holt Hall, Gresham's School

In November 2023, the Foundation announced a new £35 million donation to Gresham's School in Norfolk, UK. It will create a state-of-the-art Prep School with a brand-new building incorporating STEAM facilities for pupils aged seven to thirteen.

James Dyson boarded at Gresham's from the age of nine, attending the school from 1956 to 1965. He has always acknowledged his deep gratitude to the school and its then Headmaster, the late Logie Bruce-Lockhart. The school gave James's family support so that he and his brother could continue their education for free at Gresham's after the untimely death of their father, Alec Dyson, aged 43, who taught Classics there.

The £35 million donation will enable a much-needed restoration of the adjoining Holt Hall and the surrounding 85 acres of grounds which are in an Area of Outstanding Natural Beauty, increasing the area of the school grounds by a third.



Beyond inspiring the next generation of engineers, the James Dyson Foundation supports medical research and charities local to Dyson.

The Malmesbury community

The James Dyson Foundation offers financial and educational support to local projects, schools and charities in Malmesbury, where Dyson's offices are based in the UK. In total, we donated £30,000 to the local community in 2023. This includes funding engineering equipment for local schools, donations to local youth organisations, Malmesbury Foodbank, hospitals, and events such as Malmesbury Carnival and Malmesbury in Bloom.

Global charities

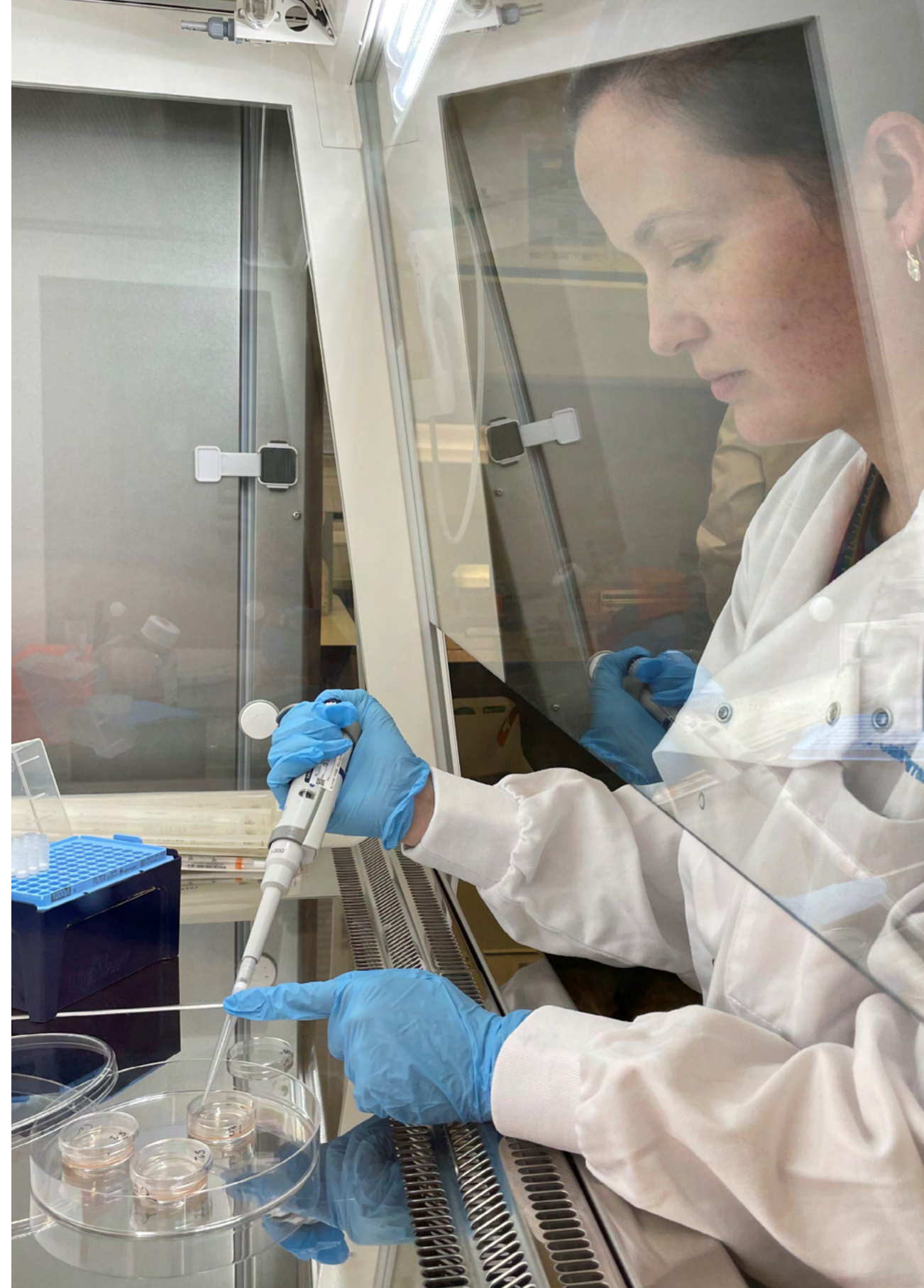
Globally we donated £250,000 worth of Dyson machines to charitable causes. We also supported Dyson's chosen charities through our match-funding programme. In 2023, we helped raise £200,000 for a number of charities including Alzheimer's Research UK, Project Exploration (Chicago), Teach for Malaysia, Save The Children Philippines and SingHealth Fund – NNI.

Race Against Dementia Fellowship

The James Dyson Foundation has committed funding to the charity Race Against Dementia to fund a research fellowship into Alzheimer's disease. Dr Claire Durrant, is investigating the role of Tau, a protein in the brain, in keeping the connections between brain cells healthy, and how these change in Alzheimer's disease. As part of the support she will receive mentoring from Dyson engineers and other industrial partners, such as Formula One, with the aim to facilitate more rapid progress in Alzheimer's research.

In 2022 the Foundation committed a further £1 million donation to accelerate Dr Durrant's pioneering research investigating the effect of drugs and other factors on dementia using waste human brain tissue samples obtained, with the permission of the patient, from brain tumour operations.

This further funding will allow Dr Durrant to hire support staff and advanced equipment to increase her access to human brain tissue samples and maximise her analysis of these samples over a three year period.



The Royal United Hospital, Bath

We are funding the construction of the Dyson Cancer Centre at the Royal United Hospital, with a donation of £4 million. This will support state-of-the-art medical equipment and dedicated research facilities, as well as art and pastoral gardens. It's due to open in 2024.

We helped build the Dyson Centre for Neonatal Care at the Royal United Hospital in Bath. Following a £750,000 gift from the James Dyson Foundation, the hospital was able to construct a new sustainable building for premature and sick babies.

It was designed to enhance natural light to help the babies develop, and to be a more efficient space for staff. The centre opened its doors in 2011, and has since cared for more than 5,000 babies and their parents.



Our vision for 2024 is to continue to inspire the next generation of engineers through our resources, workshops and projects.

We will continue to support medical research charities and communities to local to Dyson offices.

Finally, we will continue to support great minds through the James Dyson Award. We can't wait to see the next ingenious inventions.



You can find out more about James Dyson Foundation educational resources online at www.jamesdysonfoundation.co.uk

The James Dyson Foundation is a charity supported by Dyson Ltd.

dyson