



Royal Academy
of Engineering

Impact of Giving

August 2024

How together we're harnessing the power
of engineering to build a sustainable
society and inclusive economy

Thanks to you, we are making great strides in tackling shared challenges

In 2023/24, Academy supporters contributed **£4,689,258** to our work.



Every gift helps us bring together the most talented engineers, promote excellence in engineering and deliver tangible, meaningful benefits for the whole of society. Thank you to everyone who supported our work last year.

Time has flown, but your impact is clear

In my final year as Royal Academy of Engineering President, it gives me great pleasure to introduce the Academy's latest *Impact of Giving* report.

It doesn't seem possible that five years have passed since I was given the honour of becoming President. This year's report is a wonderful reminder of how much we have achieved together in that time.

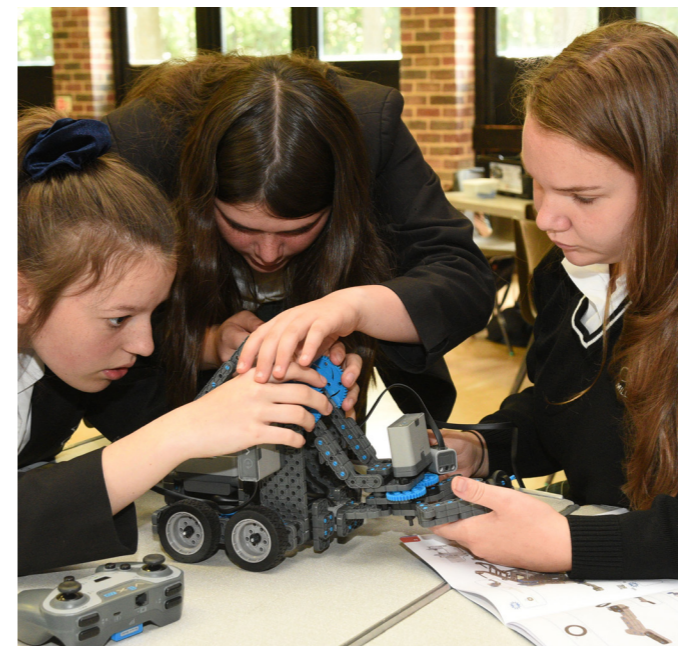
When I began my term as President, few of us were aware of the phrase 'COVID-19'. Very rapidly, the pandemic would shape much of the Academy's work, but your commitment meant we could stay laser-focused on tackling society's greatest challenges – from the climate crisis to energy security to pandemics themselves. This year's report shows how richly that focus continues to bear fruit.

There are so many stories here of profound growth and ambition. Our Enterprise Hub has been ranked as one of Europe's most fertile environments for startups. Our Green Future Fellowships endowment represents an unprecedented investment in developing engineering-led technologies to deliver on net zero. At the heart of every story here is a collaboration we should all be proud of – between Academy supporters like you and engineers in the UK and worldwide who are determined to build a better future.



We all know, of course, that there remains a huge amount still to do – both to harness the full potential of engineering and to ensure the engineering community truly represents the society we serve. However, I will look back on my presidency as a time when together we delivered vital progress. I can only thank you for your support, and I look forward to seeing the Academy continue to thrive, long into the future.

Professor Sir Jim McDonald GBE FREng FRSE
President, Royal Academy of Engineering



"We are honoured that His Majesty King Charles III is to become Patron of our Academy. We warmly welcome His Majesty's longstanding interest in the role of engineering in society, particularly in building a more environmentally sustainable world, and we look forward to working with him to enhance the UK's capacity to tackle national and global challenges.

His Majesty's late father, HRH The Prince Philip, Duke of Edinburgh, was Senior Fellow of the Academy and was pivotal in its development from its inception in 1976 as the Fellowship of Engineering."

Professor Sir Jim McDonald GBE FREng FRSE
President, Royal Academy of Engineering

The progress you make possible



970,000

PUPILS IN 7,500 SCHOOLS REACHED THROUGH OUR CONNECTING STEM TEACHERS PROGRAMME SINCE ITS LAUNCH IN 2011



\$39m

RAISED BY AFRICA PRIZE FOR ENGINEERING INNOVATION ALUMNI SINCE 2014



75

AMAZON FUTURE ENGINEER BURSARY RECIPIENTS BENEFITED SO FAR AS THE SCHEME PASSES A MAJOR LANDMARK OF £1M AWARDED



333

SPINOUTS AND STARTUPS SUPPORTED THROUGH OUR 12-MONTH ENTERPRISE FELLOWSHIPS PROGRAMME



30%

OF YOUNG PEOPLE SAID THEY WOULD 'DEFINITELY' CONSIDER A CAREER IN ENGINEERING AFTER SEEING SEASON 12 OF OUR *THIS IS ENGINEERING* CAMPAIGN, COMPARED TO JUST 18% IN 2018

The Prince Philip Fund: inspiring impact every day



The generosity of our late founding Senior Fellow, HRH The Prince Philip, Duke of Edinburgh, continues to drive engineering forward – and will continue to do so for decades to come.

HRH The Prince Philip, Duke of Edinburgh made an immeasurable contribution to the Academy and the engineering profession for over four decades. He worked tirelessly to support the Academy from its inception in 1976. We will remember Prince Philip for his passion, support and advocacy, which have enabled us to grow and thrive as a leading National Academy delivering societal impact and inspiring people from all backgrounds into the profession.

“We will always be indebted to Prince Philip for his active interest in engineering and technology. No organisation could possibly have wished for a better informed or more enthusiastic patron.”

Professor Sir Jim McDonald CBE FREng FRSE
President, Royal Academy of Engineering

Our ambition for the Prince Philip Fund is for the vision of our founder to drive improvements for future generations. We seek to build the capacity, and the capital, to enable us to make a substantive and distinctive impact on the most important shared challenges we face. From public health threats to climate change, technological disruption and barriers to social mobility, the scale and complexity of these challenges demand a systems response – a response to which engineers can make a unique contribution.

Achieving societal impact and system change takes time and is rarely linear – there are no easy solutions to problems of this complexity. Effective responses require experience and expertise, long-term commitment, and flexibility.

The Academy recognises this, which is why the Prince Philip Fund is designed as an unrestricted fund in perpetuity. This will enable us to prioritise our investment and work to ensure that we are addressing interconnected issues, with the right partners, to effect positive and meaningful change.

We invite you to help us honour the unwavering and ambitious vision of our founder by supporting the Prince Philip Fund, ensuring his legacy and impact will be realised for many generations to come.

We would like to thank everyone who has inspired progress by supporting the Prince Philip Fund. It is thanks to Fellows and friends like you that the Academy will continue to thrive well into the future.

If you would like to find out more about the fund or to make a donation, please contact: Jamila Khalil, Senior Fundraiser, Major Donors, via jamila.khalil@raeng.org.uk. Alternatively, visit: raeng.org.uk/about-us/support-us/impact-of-support/prince-philip-fund

“To be part of the Academy’s work in inspiring and supporting engineering innovation and impact is a real privilege. I am particularly enthusiastic about our initiatives to build a truly inclusive workforce, especially through the *This is Engineering* campaign, and helping young entrepreneurs make the transition to net zero just and sustainable. For this, the Academy needs more unrestricted, flexible funding and that is why I contribute to the Prince Philip Fund, to support the future of a profession that has given me such a fulfilling career.”

Professor Geoffrey Maitland CBE FREng

Your impact on... talent and diversity

Thanks to your support, the Academy works every day to increase the diversity, quality and quantity of engineers in the UK and internationally, and to foster a truly inclusive engineering workforce.

£150m for Green Future Fellowships

In April we received a landmark £150 million endowment from the UK government to launch the Green Future Fellowships programme. This major new funding stream will be available for researchers and innovators developing practical, scalable technologies to help the UK and the world reach net zero and adapt to climate change.

The endowment is one of the most significant of its kind to be given by the UK government – in terms of its scale, ambition and approach – and recognises the central role engineers must play in responding to our greatest challenges. Over the next five years, around 10 researchers will each receive approximately £3 million annually – meaning we will support more than 50 engineers in total. The programme is open to universities and eligible businesses worldwide, and successful applicants will also be given ongoing research support.

Baroness Brown of Cambridge DBE FREng FRS FMedSci has been appointed as Chair of the programme's Steering Group. Speaking on Earth Day, Baroness Brown summed up the potential impact of the Green Future Fellowships:

“The UK’s decarbonisation targets in 2030 and 2035 are fast approaching and the next five years will be critical to achieving net zero. The Green Future Fellowships represent a significant opportunity during this critical period to develop and scale technologies at the cutting edge of climate research.”

Building skills with support from Boeing

Boeing generously supported the Academy's Connecting STEM Teachers programme from 2016 until the initiative ended in 2023. Over those seven years, Connecting STEM Teachers played a critical role in increasing teachers' confidence, enriching STEM learning and creating a STEM culture in schools. In total, since its launch in 2011, we trained over 10,500 STEM teachers and reached 970,000 pupils in 7,500 schools through the programme.

In 2024, we will launch a successor programme – *This is Engineering: Schools Engagement Programme* (TiE) – and once again Boeing has offered generous funding.



Maria Laine, President of Boeing in the UK, Ireland and Nordic region, said:

“Boeing is incredibly proud to celebrate our longstanding, now 10-year partnership with the Royal Academy of Engineering. The Academy’s educational programmes seek to bring positive change to

the teaching of STEM subjects, often in some of the UK’s most deprived areas – and the impact is lasting and meaningful as we have seen through the Connecting STEM Teachers programme. The shift to *This is Engineering Schools* is an exciting one, including the autumn roll out of this programme in Glasgow and Aberdeen.”

The aim of TiE is to help schools make links between STEM and non-STEM subjects, with a focus on disadvantaged areas of the UK where STEM attainment is low but there is a strong need for engineering skills locally. In particular, we aim to develop skills linked to the emerging green economy. We would like to thank Boeing for its commitment and for its determination to create a high-performing engineering workforce that mirrors our society.

Sir Ralph Robins Scholarship continues to support exceptional engineering potential

Friends and former colleagues set up the Sir Ralph Robins Scholarship in 2018 to recognise an exceptional Academy Fellow, Sir Ralph Robins DL FREng, and support talented young engineers from underrepresented and disadvantaged backgrounds. Three more students who have shown exceptional engineering potential were chosen in 2023 to receive the scholarship, and the breadth of their studies underlines the scheme's wide-ranging impact:

- **Grant Murray, University of Strathclyde**, is working towards an MEng in chemical engineering.
- **Molly Fraser, University of Hertfordshire**, is completing a BSc in digital and technology solutions software (Apprenticeship).
- **Sonali Patel, University of Warwick**, is following an MEng in civil engineering.

Thanks to generous backing of the scholarship by charitable trusts and Rolls Royce PLC – where Sir Ralph spent 10 years as Chair – Grant, Molly and

Sonali are now receiving financial support and working with mentors to create career development plans. 18 students have now benefited from additional support from the Sir Ralph Robins Scholarship. We would like to thank everyone who enables talent to thrive by supporting the Academy's scholarships.

Celebrating £1m of Amazon Future Engineer Bursaries

The Amazon Future Engineer bursary scheme passed a major landmark in late 2023 when another 30 women students received bursaries of up to £20,000 to pursue degrees in computer science or related engineering courses. The total funding awarded since the initiative began in 2021 has reached £1.35 million.



Lauren Kisser, Director, Living Room Technology at Amazon, said:

“Amazon Future Engineer is proud to work with the Royal Academy of Engineering to break down barriers for young women and foster careers of the future. In addition to the financial benefits of this bursary, it also

provides the young women with a network of peers and mentors to support them as they study and then enter the world of work.”

The impact of these latest bursaries – and of all the bursaries awarded in that time – will be felt long into the futures of these aspiring engineers. Every successful applicant has demonstrated a passion for innovation and for driving change through technology. We know women are underrepresented in computer science and engineering at UK universities, with persistent access gaps for students from the least well-off families. The Amazon Future Engineer bursary scheme is helping to change that, by supporting the most talented young women and building a more inclusive engineering community that truly mirrors our society.

“This bursary is life-changing for me. It will help cover my university costs and provide invaluable networking opportunities, connecting me with potential mentors and like-minded students who share my passions. Despite the challenges of growing up in adverse living conditions, I take immense pride in being the first woman in my family to pursue a degree.”

Basira Rishad

Computer science student at Queen Mary University of London and Amazon Future Engineer bursary recipient

Reaching millions through *This is Engineering*

Our *This is Engineering* campaign helps young people understand the variety and reality of careers in engineering – and in 2023 we reached millions more people by producing a series of carefully targeted new videos and launching our new website.

The site is a one-stop shop full of stories from engineers and guidance on routes into engineering. It shows how engineers are at the heart of industries from fitness to fashion and medicine to music – and we launched five new films on the site in 2023 alone. This included robotics pioneer Eneni Bambara-Abban showcasing her role as founder of The Techover Foundation, and engineering apprentice Harvey Hudson explaining how he helps companies use renewable technologies to meet their net zero targets.

The films were closely informed by our latest market research. With the research showing the high level of influence that teachers have on young people's career choices, we also carefully targeted the films at educators – as well as young people and parents – on social media.

After seeing the Season 12 campaign, 30% of young people said they would 'definitely' consider a career in engineering compared to just 18% in 2018.



Eneni Bambara-Abban recording a TikTok
©This is Engineering

In total,
This is Engineering
films were viewed
4.2 million times in 2023,
raising the total views
since launch to
65 million.

Your impact on... innovation

With your support, the Academy works in a wide range of ways to support a more resilient and more diverse network of engineering innovators, and to help entrepreneurs develop the connections, insights, commercial awareness, and leadership skills to turn ideas into groundbreaking success.



Celebrating the Enterprise Hub's first decade

Back in 2013, we launched our Enterprise Hub to help the brightest engineering and technology entrepreneurs turn breakthrough innovations into disruptive spinouts, startups and scaleups. Last year, we marked the Hub community's first decade of transformative impact targeted at many of the world's most complex environmental, economic and societal challenges.

The Enterprise Hub works by connecting talent with expertise and investment. Since the launch, it has developed into a rich community of entrepreneurs and business leaders, all working alongside our network of Academy Fellows and experts. Over the years, we have set up multiple regional centres outside London – most recently in Scotland, in May 2024 – helping to strengthen local innovation ecosystems. The Hub supports many of the UK's boldest entrepreneurs through our programmes and fellowships.



In March 2024, the Royal Academy of Engineering's Enterprise Hub was ranked 9th out of 125 startup hubs across Europe by the *Financial Times* and Statista.

As of July 2024, nearly 500 researchers, graduates and SME leaders have been supported by the Enterprise Hub – with ideas ranging from portable and compact infant incubators to AI governance platforms. Our Regional Talent Engines programme in Northern England, Northern Ireland and Wales helps entrepreneurs transform their ideas into a startup pitch, strengthening local ecosystems. Already 21% of the early-stage founders have introduced a new innovation to market.

Across all Hub programmes, Hub businesses have created over 2,600 jobs, with £3.1 billion raised in additional funding. The 12-month Enterprise Fellowships programme alone has led to the launch of 333 spinouts and startups, while the Shott Scale Up Accelerator has enabled senior leaders of over 150 high-growth SMEs to access leadership training across the globe. Further international impact has been made by our EXPLORE programme which has so far given 15 deep-tech entrepreneurs the chance to build connections and access investment overseas.

With such a strong foundation in place, our attention is now focused on the future of the Enterprise Hub – and on ensuring talented entrepreneurs from every background have the best possible support to excel.

“The Enterprise Hub has not only driven meaningful innovation in the UK, it has grown talent within both regional and national ecosystems. And – crucially – it has led the conversation on progressive values in the engineering profession by championing entrepreneurs from all walks of life.”

Ana Avaliani
Director of Enterprise, Royal Academy of Engineering

A decade of supporting engineering spinouts, startups and scaleups



awarded over
£16 MILLION
in grant funding



3rd MOST
active UK accelerator



£3.1 BILLION
follow on funding raised



333
spinouts and startups supported



£410 MILLION
in grants received



£4.6 BILLION
increase in business valuations



£2.7 BILLION
equity investment raised



OVER 150
leaders of high-growth SMEs

Visit enterprisehub.raeng.org.uk/hub-10 to watch a 10th anniversary celebration video.

Paying it forward with the Exceptional Pledge



More and more Enterprise Hub members are choosing to support the Academy once their ideas and businesses thrive. Here, Tom Birbeck, CEO and Founder of ARC Marine, who was supported by our Shott Scale Up Accelerator, explains why he has made an Exceptional Pledge to support our work when he is in a position to do so.

“The Academy has helped me gain essential skills for growing ARC Marine, in particular helping me to become a Chartered Director. I want to give back so others can have the same opportunities as I did. That is why I have agreed to commit to an Exceptional Pledge.

“I believe supporting the Academy is important so future entrepreneurs and innovators can gain the support they need in their early development, ensuring they have the best chance of making their dreams a reality. Starting a business is hard, and support like the Enterprise Hub is invaluable to cash-strapped and inexperienced founders and CEOs.

“The Academy finds and vets some of the most promising startups in the country, working on some of the most important technological and environmental challenges we face. Supporting the Academy ensures your contribution gets to the right place at the right time and gives you peace of mind someone has done the due diligence.”

Recognising 10 years of African innovation

Over the last year, the Academy has been celebrating the 10th anniversary of the Africa Prize for Engineering Innovation. As Africa's biggest award dedicated to engineering innovation, the prize supports African entrepreneurs who are seeking to develop scalable solutions to local challenges.

In autumn 2023, the Africa Prize Judging Panel shortlisted the tenth cohort of the prize. The talent exhibited through the shortlist was as diverse and exciting as ever. 16 innovators from Botswana, Côte d'Ivoire, Ghana, Kenya, Nigeria, Rwanda, Tanzania and Uganda were selected, with innovations ranging from recycled plastic roof tiles to fabrics made from fungi grown on human waste. The entrepreneurs participated in eight months of tailored training, mentoring and support, before pitching at a showcase final in June in Nairobi, Kenya.

Our 2024 winner, **Esther Kimani** from Kenya was awarded the prize, receiving £50,000, a prize figure doubled in recognition of the anniversary. Her innovation detects and identifies agricultural pests and diseases, reducing crop losses for smallholder farmers by up to 30% while increasing yields by as much as 40%. The three runners up were each awarded £15,000:

- **Eco Tiles, Kevin Maina, Kenya** – Eco Tiles is an environmentally friendly roofing material made from recycled plastic. The innovation is a dual solution to plastic pollution and high building costs.
- **La Ruche Health, Rory Assandey, Côte d'Ivoire** – La Ruche Health connects communities to vital health information, advice, and services through 'Kiko', an AI chatbot tool available on WhatsApp and mobile apps, and a digital backend solution to streamline documentation, billing, and data sharing for practitioners.
- **Yo-Waste, Martin Tumusiime, Uganda** – Addressing Uganda's mounting waste crisis, Yo-Waste is a location-based mobile application that connects homes and businesses to independent agents for efficient on-demand rubbish collection and disposal.

As part of the celebration event, 80 Africa Prize alumni from 19 countries also came together for a three-day reunion in Nairobi. Alumni took part in a range of training and networking opportunities and had the opportunity to meet with potential investors.

In addition to the events related to the tenth cohort, the Academy held a prestigious event in January 2024 to mark the tenth anniversary where alumni had the opportunity to compete for the Africa



Africa Prize Alumni Medal winner, Neo Hutiri (credit Rob Lacey)

Prize Alumni Medal. Neo Hutiri from South Africa was selected as the winner and was awarded the medal by HRH The Princess Royal. Neo also received £50,000 to further support his business, Pelebox Smart Lockers, which is designed to improve access to medication used to treat chronic conditions.

Alumni have raised US\$39 million in finance since 2014, with many dedicating their lives to tackling Africa's most pressing challenges. Products and services developed by alumni are now available in more than 40 countries, benefitting over 10 million people.

We look forward to continuing to support African innovators to achieve their full potential and impact.

“The Africa Prize started a decade ago to actively enhance engineering capacity within Africa. In this time, the continent's engineering ecosystem has continued to grow and thrive and we're proud to have supported its vibrant landscape of innovation and collaboration.”

Rebecca Enonchong FEng
Africa Prize judge

Since 2014, **149** innovators across **21** countries have become Africa Prize alumni. Collectively, they have created over **28,000** jobs.



Esther Kimani, Kenya, Early Crop Pest and Disease Detection Device - 2024 winner



The solar-powered tool uses computer vision algorithms and advanced machine learning to detect and identify crop pests, pathogens or diseases, as well as the nature of the infection or infestation. The device then notifies the farmer via SMS. This affordable alternative to traditional detection methods leases for just \$3 per month, significantly cheaper than hiring drones or agricultural inspectors.

Esther said: **“My parents would lose up to 40% of their crops each farming season, which affected our standard of living. We are empowering smallholder farmers, many of whom are women, to increase their income. We aim to scale to one million farmers in the next five years.”**

In Kenya, five million smallholder farmers lose on average 33% of their crops to pests and diseases. With the aid of Esther Kimani's innovation, farmers will be provided with real-time alerts within five seconds of an infestation, offering tailored intervention suggestions. Government agricultural officers will also be alerted to the presence of diseases or pests, contributing to broader agricultural management efforts.

Visit our website to find out more about the 10th anniversary and watch a short celebration video: africaprize.raeng.org.uk/about-the-prize/africa-prize-10th-anniversary

Your impact on... influencing policy change and engaging the public

Your support makes sure engineering expertise is at the heart of decision-making in government, communities and internationally, building awareness of the relevance and impact of engineering right across society.

Decarbonising the UK electricity system

Funded by a grant from the Gatsby Charitable Foundation, the National Engineering Policy Centre recently published a major new report, *Rapid Decarbonisation of the GB Electricity System*, identifying steps needed for the UK government to decarbonise our electricity system within the next decade.

The project's working group was co-chaired by two Academy Fellows - Dr Simon Harrison FEng, Group Head of Strategy at Mott MacDonald, and, until his appointment as Minister of Science, Research and Innovation, Lord Patrick Vallance of Balham KCB HonFEng FRS FMedSci.

Targeted at policymakers and the wider energy industry, the report highlights the need for government to clearly set out the value of the target of delivering a clean power system by 2030 as a national mission. It includes recommendations for delivering the required grid, generation and system flexibility under an accelerated timescale and sets out six key elements required in the government's delivery plan to achieve its clean power mission.

To read the full report, please visit: nepc.raeng.org.uk/policy-work/net-zero/enabling-a-decarbonised-electricity-system/rapid-delivery

We would like to thank the Gatsby Charitable Foundation for its longstanding and generous support of the Academy. As well as backing this much-needed policy project, the Foundation has played a central role in our efforts to support the growth of T-level qualifications.

Partnership with the Gatsby Charitable Foundation

"Gatsby and the Royal Academy of Engineering have worked together over the years on a number of projects to promote engineering, and currently are working on two very different but exciting projects.

Gatsby and the Royal Academy of Engineering have joined forces with other key stakeholders in the engineering community to support the introduction of Engineering and Manufacturing T-levels. We are working together to raise employers' awareness of how T-levels are helping young people develop the skills that industry needs. The project also aims to demonstrate the benefits that hosting T-level students for industry placements can bring to engineering and manufacturing companies. This activity includes events for SMEs hosted by the Academy, and collaboration with Gatsby to share with large employers, such as the NHS Estates and Facilities teams, the contribution that T-levels can make to addressing their workforce needs.

Alongside activity to support employers, Gatsby and the Academy are working together to create a suite of high-quality teaching resources for teachers of Engineering and Manufacturing T-levels. The Academy's insight is informing development of resources that help teachers to bring industry and the classroom closer together. The production of these teaching resources is supported by Gatsby's Technical Education Networks programme.

Secondly, Gatsby has supported the Academy and its partners in the National Engineering Policy Centre to advise on the constraints and radical steps necessary to decarbonise the UK's electricity grid. This important work will inform how we can decarbonise the electricity system in order to accelerate UK plans to meet its NetZero commitments by 2050, and also how to prepare the grid to accommodate up to three times growth in demand for electricity in the same period. The Academy and collaborators will look at the necessary components of a credible, engineering-led plan, that commands the confidence of industry as well as how it could be delivered from within government. Alongside this, the Academy will also use Gatsby funding to develop a Policy Fellowship programme with access to cross-sector and cross-disciplinary expertise as a bespoke professional development offer for civil servants faced with the challenge of delivering rapid energy decarbonization."

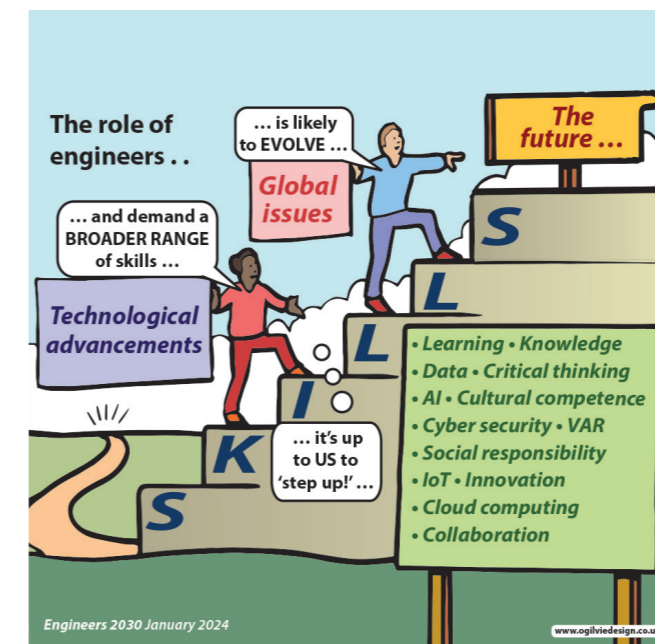
Lord David Sainsbury of Turville
HonFRS HonFEng
Chair, The Gatsby Charitable Foundation

Examining the future of engineering

On behalf of the National Engineering Policy Centre, we recently launched Engineers 2030. It's a pioneering policy project to identify how engineering knowledge, skills and behaviours are changing, and to understand how to attract, educate and recruit the engineers and technicians who will lead responses to challenges from climate change to the rise of artificial intelligence. Engineers 2030 is an ambitious – and essential – project, that aims to understand whether current systems, cultures and policies are ready to support our engineering and technology workforce to deliver over the next 25 years.

Engineers 2030 will be built on collaboration and at the launch event in March, we opened a public consultation and invited people from across the engineering community to share their views. The most urgent questions are in our sights. What new skills will engineers need in 2030? Is our engineering community ready to equip people with these skills? What changes are needed to attract and support new talent?

To kickstart the conversation, we published three reports at the launch event. These explored our vision and principles for Engineering 2030, the findings of two initial workshops on the future of engineering, and the sustainability of engineering in higher education. In combination with the results of the public consultation – which closes in 2024 – these will inform our future discussions, as we seek to challenge and transform how we think about engineering today and in the years to come.



NEPC urges upgrade in wastewater infrastructure in new report



©This is Engineering

The National Engineering Policy Centre published a seminal report titled *Testing the waters: reducing health risks from water pollution*, which discussed the priorities for mitigating health risks from wastewater pollution. Led by the Academy, the report's findings are from risk-based assessments and consultations with over 100 engineers, wastewater experts, the water industry, campaign organisations, and policymakers. The report focuses on the role of wastewater infrastructure in introducing primarily human faecal organisms into open water and examines a range of actions aimed to either engineer a reduction in the hazard itself or minimise public exposure to it.

"Public waterways are a great resource enjoyed by many children and adults and can have a significant positive impact on our health. Minimising human faecal organisms in fresh water is a public health priority as well as an environmental one. Whilst there will always be challenges with the efficient management of sewers and sewage treatment works, this report provides clear technical options for how this can realistically be achieved."

Professor Chris Whitty KCB FRS
Chief Medical Officer for England

The report was picked up by over 600 media outlets on release, including BBC News, the *Financial Times* and *The Times*, to name a few. The report is available to read on our website: nepc.raeng.org.uk/testing-the-waters.

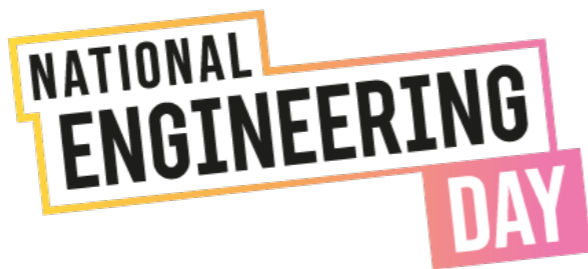
Making the headlines on National Engineering Day

Engineering sparked countless conversations nationwide on 1 November, as our annual National Engineering Day was covered in over 100 news articles and achieved 77 million impressions on social media.

We used the day to launch our Everyday Engineering competition and start the hunt for the UK's top kitchen table engineers. After hundreds of people put their sustainable ideas and innovations forward, the public voted for their favourites. The winners were two young entrepreneurs from Bristol – Kira Goode and Monica Wai – who designed a portable cleaning and sterilising case for menstrual cups. Kira and Monica were given feedback on their innovation by BBC Dragons' Den investor Deborah Meaden, along with mentoring from experts at our Enterprise Hub.

To encourage people to think about how engineering has shaped our society and is imperative for our future, we also designed a special 'Engineering Icons' Tube map. Featuring 274 engineers – including over 100 Academy Fellows – across 11 themes ranging from sports, media and culture to materials and manufacturing, the map gained widespread media coverage and trended on social media.

We also organised a special Innovation Late public event in London, which included a series of short talks from inspiring innovators and an exhibition showcasing British inventions that are tackling complex engineering challenges. Our CEO, Dr Hayaatun Sillem CBE, wrote in New Scientist about the critical need to secure engineering talent to fuel a green transition, while our tireless partners spoke about National Engineering Day on their own channels throughout the day – amplifying our message more widely than we could ever achieve alone. We are hugely grateful to everyone who supported us to keep changing perceptions of engineering and encouraging more people to get involved.



VOTE FOR YOUR FAVOURITE SUSTAINABLE INNOVATION

PHYTO
A LIGHT MADE FROM 3D PRINTED ALGAE-BASED BIOPLASTIC

ELERIA
MENSTRUAL CUP PORTABLE CLEANING & STERILISING CASE

EDRONICS
GARDEN-SIZED VERTICAL FARMING UNIT

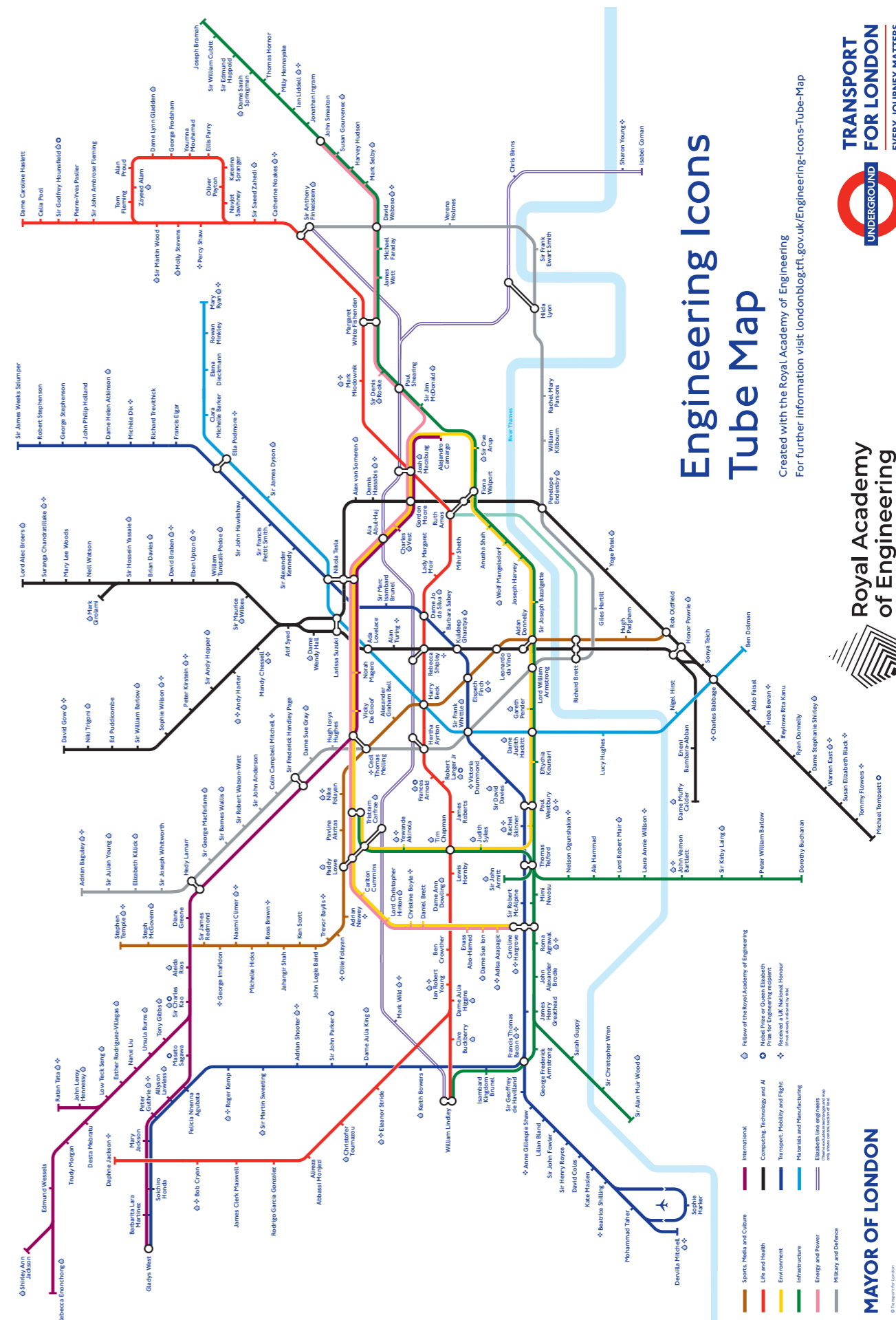
#EVERYDAYENGINEERING

FINALISTS

NATIONAL ENGINEERING DAY

To find out more about the Engineering Tube Map and see a scalable version, please visit: londonblog.tfl.gov.uk/2023/11/01/engineering-icons-tube-map/

A printed version can also be purchased from the London Transport Museum.



A legacy for the future

By leaving a gift in your will, you can support engineers and engineering even beyond your lifetime. Here, Peter Chamberlain FREng, explains why he has chosen to give to the Academy in this way.



“Engineering has provided me with a highly diverse, exciting and psychologically rewarding career. My gifts and bequest to the Academy stem from a desire to support the aims of the Academy, in particular its efforts to make young men and women aware of the

boundless possibilities that engineering offers to improve the world.

“Born in Kingston upon Thames on the eve of World War II, I grew up with a sense of duty to support my country. From the tales told by my paternal grandfather, who had served as an artificer and officer in the Royal Navy between 1896 and 1917, I decided at a very young age that I would follow in his wake.

“I learned of the Royal Corps of Naval Constructors, which researched, designed and built or oversaw the construction of all Royal Navy vessels. I chose an entry route via a first class honours degree in

mechanical engineering at Edinburgh University, followed by three years of practical and theoretical naval architecture at Royal Navy colleges. I served at sea in the Middle East in several ships and submarines, and had the privilege of meeting many Heads of State and Prime Ministers.

“In 1964, I was appointed to the Corps’ design HQ in Bath, where my first real engineering task was to contribute to the concept studies of the next generation of nuclear submarines. It was the beginning of a love affair with submarines, and my development of a deep awareness of the importance of safety in design, construction and testing. At different times I engaged in concept studies and design for new, ever quieter and more capable nuclear submarines. At other times I focused on surface ships, and I well remember the pride I felt when, early one morning, I stood on Plymouth Hoe and saw six of ‘my’ Type 23 frigates, with their signature shearline, proceeding to sea in line ahead.

“After the fall of the Berlin Wall, I took an opportunity to leave the Ministry of Defence. I joined BAE Systems and Services as Engineering Director ‘Rest of the World’ – meaning not the UK. I found myself with responsibility for engineering teams in many countries performing a wide range of tasks, from fatigue-life renewal of advanced fighter jets to supporting the creation of new towns in the desert. I also pioneered major programs of innovation throughout the entire company.

“I was elected to the Academy in 1988, happy to be part of a body that embraced all engineering disciplines. I contributed to the work of the international committee and to the seminars on engineering and risk management in 2000, contributing my experience and knowledge to further the aims of the Academy.”

If you’d like to discuss your legacy, please contact:

Aklema Begum, Individual Giving Manager
Email: aklema.begum@raeng.org.uk
Tel: +44 (0) 20 7766 0645

Alternatively, you can contact the Development Team via:
development.team@raeng.org.uk

We’d love to have a chat.



Peter Chamberlain FREng in his vineyard during the grape harvest.

“Throughout my career I worked for very capable and supportive bosses who allowed me a lot of latitude to pursue ideas. In turn, I encouraged talented young engineers – and by leaving a legacy to the Academy I hope for this process to continue.”

Peter Chamberlain FREng
Fellow and Heritage
Society member

Thank you from our CEO

I believe that every individual, corporate partner, university, charitable trust, and foundation listed on the following pages is united by a very special quality. They share a powerful commitment to taking action to support others, driven by a belief that we can create a safer, more positive future together. This attribute is shared by our outgoing President, Professor Sir Jim McDonald GBE FREng FRSE, who has provided outstanding leadership over the last five years.



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Sir Jim embodies the collaborative spirit of engineering and I particularly admire his willingness to make time to mentor people at all levels. He has been at the forefront of UK engineering, science and technology for four decades, and earlier this year became only the 28th person this century to be awarded the Knight Grand Cross. He has expertly steered the Academy through a period of significant growth, as well as navigating a challenging external environment, with admirable vision, energy, humour and compassion. I would like to take this chance to record, on behalf of the staff team, our thanks to Jim for his outstanding leadership throughout his term as President.

I would also like to thank everyone who features on these pages for their confidence in the Academy and their dedication to our charitable purpose over the past year. More than ever, our focus must be on action, and on helping to deliver the innovations that will move us closer to a sustainable future while building a more inclusive and diverse engineering community. Your generosity and readiness to support others inspires all of the activities outlined in this report.

All I can say is thank you.

Dr Hayaatun Sillem CBE
CEO, Royal Academy of Engineering

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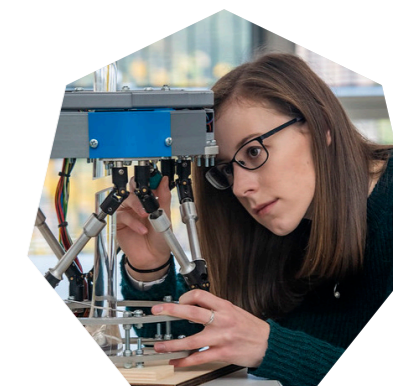
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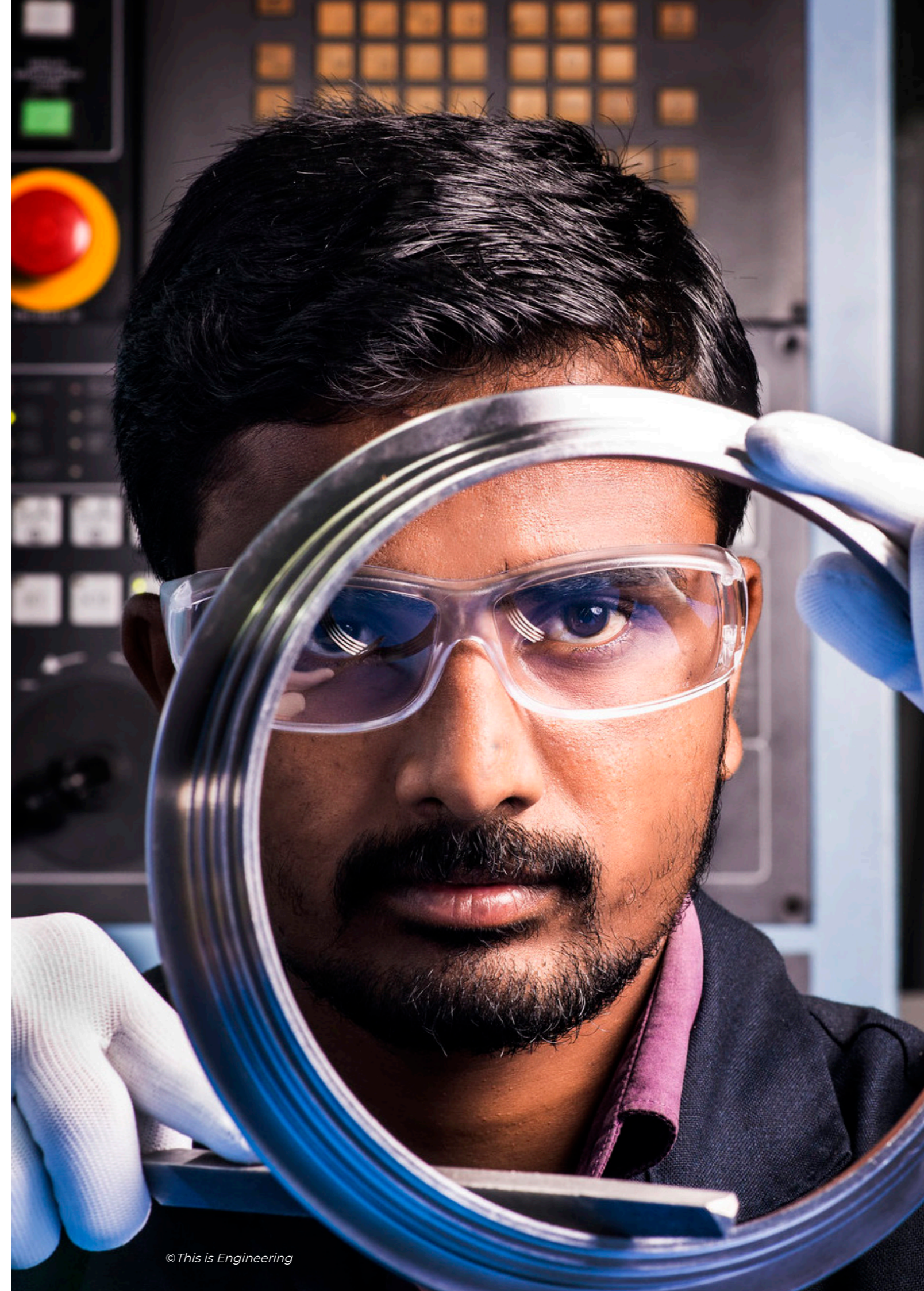
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We'd love to hear from you.



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In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

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