



ENGINEERING HEROES

The Top 50 Women in
Engineering 2021



FOREWORD



Professor Catherine Noakes **OBE CEng FIMechE FIHEEM**

2020 was a year unlike any other and remarkable times call for remarkable people. That is why, in 2021, the Top 50 Women in Engineering Awards celebrate the engineering heroes who have responded to the challenges of an ever-changing world, from healthcare and climate change to infrastructure and championing diversity, with inspirational innovation and leadership. With over 230 nominations, only the exceptional made it to the top 50.

The standard of nominations received was outstanding. It was wonderful to read about the achievements of these extraordinary women and the impact that they are making on society with their talent, hard work and dedication.

The Covid-19 pandemic has highlighted how truly important science, technology and engineering are to the health of our planet. The 2021 WE50 personify the inventive and inclusive thinking needed to build a sustainable future. If there was ever a time that we needed these heroes in engineering, it is now.



Elizabeth Donnelly **MSc FRSA MRAeS MINCOSE**

The literal definition of hero, meaning “protector” or “defender” could not be more apt in the current climate. Often the unsung heroes, the past year has seen the world faced with challenges which have highlighted the immeasurably important role that those working in engineering, technology and the applied sciences play in safeguarding our way of life.

Engineers have provided PPE which has enabled medical professionals dealing with the coronavirus pandemic to do their jobs safely and have built lifesaving ventilation equipment used to treat critically ill patients. They have continued to tackle the climate crisis, developing solutions which minimise impact and reduce carbon emissions, paving the way for a brighter and more sustainable future.

The impact of engineering is as diverse as the people it benefits, which is why inclusivity is so important. The women represented in this year’s WE50 are a testament to the fact that the more diverse the minds and voices of engineers are, the greater their influence will be.

We are delighted to celebrate the trailblazing women whose work and advocacy are changing the shape of engineering in the UK.

JUDGES



Professor Catherine Noakes OBE CEng FIMechE FIHEEM

Deputy Director of Leeds Institute for Fluid Dynamics and Co-Director for the EPSRC Centre for Doctoral Training in Fluid Dynamics

Professor Cath Noakes is a chartered mechanical engineer, with a background in fluid dynamics. She leads research into ventilation, indoor air quality and infection control in the built environment. Her research group carry out experimental and modelling based studies, to explore the transport of airborne pathogens, the influence of indoor airflows and effectiveness of engineering approaches to controlling airborne disease transmission.

Cath was the Director of Research and Innovation in the School of Civil Engineering at the university of Leeds for the past 6 years, and she also led the Faculty of Engineering Athena Swan committee from 2014-2017, successfully gaining a Silver award for the whole of the engineering faculty in recognition of their efforts to support gender equality.

Cath is currently Deputy Director of Leeds Institute for Fluid Dynamics and Co-Director for the EPSRC Centre for Doctoral Training in Fluid Dynamics. Since April 2020 she has been involved in the COVID-19 response, leading the Environment and Modelling sub-group of the UK Scientific Advisory Group for Emergencies (SAGE) focusing on the science underpinning environmental transmission of COVID-19.



Dawn Childs FREng

President, Women's Engineering Society

Dawn Childs is the UK Change Director for National Grid and is leading the transformation required to meet efficiency expectations whilst still delivering to net zero. Prior to this she was the Group Engineering Director for Merlin Entertainments Group with responsibility for engineering delivery, standards, practices and processes across the worldwide portfolio of more than 130 theme parks, resorts and attractions. This followed a tenure at Gatwick Airport as the Head of Engineering, responsible for all of the infrastructure and technical services at the airport. She joined Gatwick in 2012 after 23 years as an Engineering Officer in the RAF. Throughout her career she has been a strong advocate for women in engineering. To pursue this passion, she actively engages in many outreach activities and in October 2018 she became the President of the Women's Engineering Society and is also a Trustee for World Skills UK. She is also the Executive sponsor for WING (Women In National Grid) employee resource group.



Emma Crichton **CEng MICE**

Head of Engineering, Engineers Without Borders UK

Emma is a chartered civil engineer with six years experience in the Water industry in Scotland. Emma has worked on a variety of projects and has consistently believed in the importance of collaboration, impactful partnerships and the role engineering has to play in bettering our society. As Head of Engineering at Engineers Without Borders UK she is responsible for driving forward their mission; leading their work to embed globally responsible engineering into curriculum and throughout day to day practice.



Emma Nicholson

Development Project Manager for SLC Rail

Emma was nominated Associate Fellow and Board Trustee of the Women's Engineering Society in 2020, and supports WES's Climate Emergency Specialist Interest Committee and WES's Members Directors' Committee. She is Chair of a new Equality, Diversity and Inclusion Specialist Interest Committee for WES, established January 2021. Emma has founded two LinkedIn groups, Women in Sustainable Rail and Women in Sustainable Construction and Property, and has 22 years project management experience in the built environment and rail industry. She also sits on the CIOB's Equality, Diversity and Inclusion Advisory Panel.



Elizabeth Donnelly **MSc FRSA MRAeS MINCOSE**

CEO, Women's Engineering Society

After an early career in IT, Elizabeth graduated from the Open University, specialising in systems thinking. She was awarded Membership of the Royal Aeronautical Society because of her work with Rolls-Royce and went on to lead skills policy in the aerospace industry. Elizabeth was a founder member of the RAeS Women in Aviation and Aerospace Committee and founded the RAeS Amy Johnson Named Lecture. Later, Elizabeth established her own consulting company, graduated with an MSc in Systems Thinking in 2017 and in 2018 was appointed CEO of the Women's Engineering Society. In 2020 she was invited to become a Fellow of the Royal Society of Arts.



Francesca Laugier-Davies **MSc CIWFM**

Senior Account Manager, Pareto Facilities Management Ltd.

After attaining my degree in English and Russian literature, I took a huge leap and decided to obtain an MSc in Facility and Environment Management. Via the apprenticeship route, I worked my way up to the level of Regional Facilities Manager. I've been fortunate enough to receive tremendous help from people who saw my potential and believed in me.

I'm now in a Senior Management role with Pareto FM and I have the exciting opportunity to give back. It's so rewarding to be able to effect positive change by helping to identify and encourage aspirational women, within our Company and in the wider FM industry. Pareto's relationship with WES will further enhance our capacity to inspire and support women wanting to progress in the engineering sector.



Mara Tafadzwa Makoni

Consultant, PA Consulting

Mara is currently a Consultant at PA Consulting working within their Complex Systems group. She has international experience (USA, Kenya, Zambia, Zimbabwe, SA) and over 10 years of professional experience in operational monitoring and due diligence advisory across sustainable development, renewable energy and transport. She is a qualified Systems Engineer who has managed and implemented complex projects in energy and transport, from feasibility to completion. Mara serves on the AFBE-UK executive board and is the Corporate Partnerships Lead for the organization.



Dr Mark McBride-Wright CEng MIChemE

Founder & Managing Director, EqualEngineers

Mark is a chartered chemical engineer specialising in health and safety. He holds a PhD and Masters in Chemical Engineering from Imperial College London and is a recognised leader for diversity and inclusion within the engineering industry. Mark set up EqualEngineers in 2017 to deliver events, recruitment, training, and consulting services to support the engineering industry in creating inclusive cultures. Mark has established a successful events portfolio comprising careers fairs, the Equality in Engineering Conference and the Engineering Talent Awards. Mark is also the chair and co-founder of InterEngineering, an organisation which connects, informs, and empowers LGBT+ engineers and supporters. Under Mark's leadership, the organisation has become the leading organisation addressing LGBTQ+ inclusion in the engineering sector engaging prominent engineering institutes and employers.



Neil Gibbs

Group HR Director, AB Dynamics

Neil Gibbs is Group HR Director of AB Dynamics, headquartered just outside Bath. With operations around the globe, AB Dynamics is one of the world's leading specialists in automotive test systems and is a key supplier to all major names in the automotive sector. Prior to joining AB Dynamics Neil progressed his career within engineering organisations including Racal Electronics, Emerson Electric and SPX. He holds a BA in Economics and is a Fellow of the Chartered Institute of Personnel and Development.



Sarah Mogford

Director RSK Group

An experienced environmental professional having worked in the consultancy sector for over 20 years. A significant portion of her work has been international auditing and due diligence having worked in this capacity throughout Europe as well as Asia and the former Soviet Union. Following her role as MD of RSK's EHS business Sarah took over leading the Environment and Planning Division of the Group. A division comprising 10 businesses offering a range of environmental and health and safety consultancy services. She also sits on the RSK Group Business Leadership Team and main Group board.



Scott Dalrymple BA Hons, FCIPD

Vice President, Human Resources, Crane Building Services and Utilities

Scott has been the Vice President of HR for Crane BSU since January 2016.

Scott graduated in 1998, attaining a Bachelor of Arts Degree in Business Studies, focusing on HR. Following a 22 year career, Scott is now a fellow of the Chartered Institute of Personnel and Development.

Crane BSU design and manufacture engineered flow control products and solutions for the HVAC and Utility sectors. The company is part of Crane Co, a US company with sales of c.\$3bn, established in 1855. Crane are committed to driving diversity across their own organisation and across the wider Engineering and Manufacturing sectors.



Simon Barber CEng MICE

UK Managing Director, Assystem

Simon Barber is Assystem's UK Managing Director, joining in September 2020 to drive our portfolio of energy transition projects following a nine-year tenure as the head of Arup's nuclear business.

At Assystem, Simon has used his experience and passion for nuclear and renewable technologies to align Assystem with the global energy transition to support the UK government's green industrial revolution.

Under Simon's leadership, Assystem is embarking upon ambitious projects as a Tier-1 supplier to Hinkley Point C, the UK's first new nuclear power plant since 1995. We're also supporting innovative, emerging technologies as a Tier-1 supplier to the Small Modular Reactor consortium or providing design, safety and project management services to nuclear fusion programmes in the UK and France.

With his open-door, accessible approach to management, Simon is a strong advocate for diversity and inclusion in the sector as the head of Assystem's #INCREDIBLEWOMEN gender diversity programme in the UK. With women only accounting for 22% of those employed within UK engineering, Simon's working to create more opportunities for women to thrive, empowering others to play their part in levelling the playing field.



Steff Smith BaHons, MSc, MWES

Chief Executive, Institute of Measurement and Control

Steff attended the University of Liverpool, where she studied undergraduate Archaeology, followed by a master's degree, focusing on laboratory-based analysis of archaeological artefacts. She then worked for the British Measurement and Testing Association, a trade association representing the measurement and testing community, and Evaluation International, which provides independent testing of instrumentation.

Steff joined the Institute of Measurement and Control in 2017, the professional institute for engineers working in measurement, instrumentation, and control. Initially joining as a Project Manager, she became the Head of Communications and Marketing the following year, and in 2019 was appointed as the Institute's Chief Executive.

The Top 50 Women in Engineering 2021: ENGINEERING HEROES

Founded by the Women's Engineering Society in 2016, the WE50 awards are a UK event linked to International Women in Engineering Day (INWED) – the celebration of women in engineering that takes place on 23 June each year.

Choosing a different theme each year to celebrate the diversity of women engineers, the 2021 Top 50 Women in Engineering celebrates the Engineering Heroes: the best, brightest and bravest women in engineering, who recognise a problem, then dare to be part of the solution; who undertake everyday 'heroics' as much as emergency ones. This year's awards are held in association with The Guardian newspaper and Assystem.



Dr Tayebah Ameri

Senior Lecturer, University of Edinburgh

Ameri has carried out world-leading research in materials for solar power and pharmaceutical applications. She is a pioneer in the development of ternary organic solar cells, addressing the challenges of global energy demand and the climate emergency. She was also the first female in her village in Iran to go to university.



Samidha Anand

Engineering Manager, Caterpillar UK (Perkins Engines Company)

Anand is an aftertreatment validation expert and has immersed herself in helping others take an interest in Stem. She works in a highly male-dominated environment but has not seen this as a barrier. She is the Caterpillar UK ambassador for the Society of Women Engineers and a member in the employee resource group of their internal women's initiative network.



Phoebe Baker

Senior Construction Manager, Mace

As principal contractor, Baker worked with the Nightingale hospital construction team to build 4,000 hospital beds during the Covid-19 pandemic and design the mass vaccine centre. Since the completion of the Nightingale hospital, she has focused on mental health in the workplace, ensuring engineers are recognised for the contributions they made during the pandemic.



Dr Claire Bennett

Senior Geotechnical Engineer, Arup

Bennett has developed her skills as a geotechnical engineer to help overcome the devastating effects of flooding caused by the climate emergency. A specialist in both the rail and flood and coastal erosion risk management sectors, Bennett is leading flood protection schemes in Wales, south-west England and West Midlands. She is also chair of the ICE Wales Cymru Ground Engineering Group.



Susana Neves e Brooks

Lead Project Manager, National Grid

Brooks leads project managers and support staff on a portfolio of projects, ranging from the replacement of ageing assets to substation new-builds. A key element of her role is championing new technology, leading the drive of net-zero targets and sustainable electricity transmission. On her Littlebrook project, she has a budget of £120m, and is working on a new substation that will be the first in England and Wales to have 400kV g3 gas-insulated bars.



Dr Grace Campbell

Senior Natural Hazard and Risk Specialist, Arup

Campbell's career - which is focused on developing innovative methods to respond to climate and biodiversity emergencies - has led her to Sierra Leone, Central Asia and Japan. She has also assessed landslides in Sierra Leone and climate hazards in Uzbekistan. She is, she says, all too often the only woman on site but she hasn't let that deter her throughout her remarkable career.



Jackie Carpenter

Director, Friendship Cohousing

Carpenter has worked tirelessly to support sustainability throughout her career. She set up and ran national charity Energy21 and has spoken on national and international platforms about the need for clean energy. She has also been running online courses on sustainable communities and plans more courses on the ecological and environmental crises.



Dame Jo da Silva

Global Sustainable Development Leader, Arup

After the Indian Ocean tsunami in 2004, da Silva spent a year working for the United Nations (UN), coordinating 100 organisations to build 60,000 shelters in six months. da Silva realised that engineers had a crucial role to play and helped found Arup International Development, which focuses on social impact rather than profit. In 2021, da Silva received a damehood. "What we do over the next 10 years matters for future humanity. We can't wait, we have got to act," she says.



Georgia Davey

Senior Buyer, Babcock International Group

In March 2020, Babcock International Group was asked by Boris Johnson to help design, procure and assemble critical care ventilators to support the UK's fight against Covid-19. Davey stepped up and volunteered her supply chain expertise and played a key role in designing a new supply chain outside of the standard medical suppliers.



Claire Dewhirst

Aircraft Engineer, Ministry of Defence

Dewhirst has played a key role in delivering and managing critical defence operations, including aviation logistics, Wildcat helicopters, survival equipment and engineering control. Dewhirst has completed multiple air safety investigations and audits. Outside of her core role, she has assisted in the formation of the Defence Breastfeeding Network.



Dr Karen Donaldson

Research Associate, University of Edinburgh

Over the past year, Donaldson worked alongside a colleague to develop personalised protective face masks (to World Health Organization standard) for medical workers treating Covid-19 patients. She also worked on a UK Space Agency project, developing a multifunctional mobile platform for agriculture applications. The prototype was the first of its kind in robotic technologies in farming.



Professor Hua Dong

Professor in Design and Dean of Brunel Design School, Brunel University London

Dong champions inclusive design and utilised her research, skills and network to help tackle the shortage of personal protective equipment in the UK during the pandemic. Dong initiated a UK collaboration to raise awareness, attracting an audience from more than 20 countries. The project led to the launch of a new platform and book, Inclusive Design + Social innovation: a Methodology and Case Studies.



Dr Katherine Dunn

Lecturer, University of Edinburgh

Within a year of joining the university, Dunn proposed a new course in bio-inspired engineering. When the course first ran, she received two teaching award nominations and one student suggested her course should be used as a model of best practice". In March 2020, Dunn also initiated a programme to help engineer solutions to Covid-19 challenges. She led a team of 30 volunteers who manufactured 12,000 face shields.



Dr Natalia Falagán

Lecturer in Food Science and Technology, Cranfield University

Falagán works towards reducing food loss and waste by developing innovative technologies and packaging to extend the shelf life of fresh produce. She seeks to reduce the impact of food systems on climate change. She has been instrumental in establishing the first African Centre of Excellence for Sustainable Cooling and Cold Chain. The centre will bring training to local farmers to reduce food loss, empower women in agriculture and boost the African economy by improving health and livelihoods.



Professor Elena Gaura

Professor of Pervasive Computing, Coventry University

Growing up in Romania, Gaura found the only branch of engineering accessible to women was electronics. Since then, she has worked tirelessly to ensure no one is limited by their gender when considering which area of engineering to pursue. Gaura has gone on to train more than 300 female scientists in south-east Asia to access Stem jobs.



Kate Grant

Director of West Midlands Network, Cadent Gas

While studying for a master's degree in engineering for sustainable development at the University of Cambridge, Grant realised the energy dilemma was one of the biggest challenges facing our generation, so she joined E.ON as an electrical research engineer. She designed and delivered the first customer-led electric vehicle charging trial in the UK and oversaw the backup power supply for the London 2012 Olympics.



Katherine Grigg

HS2 Main Works Agent, SCS Railways

As delivery lead for an HS2 bridge in central London, Grigg is passionate about sustainable, interdisciplinary design and approaches and tries to embed this into everything she does. She also volunteered at an intensive care unit (ICU) at the London Nightingale hospital last year.



Jo Hartnell

Assistant Tunnelling Engineer, Atkins

Despite the fact that Hartnell had just 18 months' postgraduate experience, she was chosen to work on the South Tees Redevelopment Corporation project to help develop a construction logistics strategy for the 1,800-hectare site. Hartnell worked on developing local employment for the area, as well as presenting virtual Stem sessions alongside the TeenTech charity throughout lockdown, reaching more than 650 UK students.



Milly Hennayake

Civil Water Engineer, Arup

Hennayake's decision to opt for a career in engineering was cemented during a school trip. Her current role focuses on keeping people safe from flooding, working alongside flood authorities, including the Leeds Flood Alleviation Scheme, which protects 3,000 homes. She hopes to show people, especially young women, that engineering isn't just about building tall buildings - it's about making people's lives better.



Jean Hewitt

Senior Inclusive Design Consultant, Buro Happold

Hewitt has worked in inclusive environments for 20 years and recently authored a trailblazing new publicly available specification, Design for the Mind, supporting neurodiverse people in the workplace. Hewitt also focuses on designing for women, including mothering and menopause spaces, and was a panellist at the Women in Construction Summit.



Debbie Janson

Senior Lecturer, University of Bath

Following nearly 20 years in industry, Janson returned to the University of Bath in 2018, frustrated by the ill-fitting safety footwear she had been made to wear during her time as an engineer. She started a PhD on improving safety footwear for women. Her research soon expanded to incorporate gender differences in personal protective equipment (PPE) and, more recently, design inadequacies across the PPE industry.



Dr Sohini Kar-Narayan

Reader (Associate Professor) in Device and Energy Materials, University of Cambridge

Some of Kar-Narayan's happiest childhood memories involved taking apart cassette players and VCR recorders, and that curiosity is what drew her to her current role. Her research has involved developing novel polymeric materials for harvesting energy to power health monitoring devices and integrating materials into versatile sensors. She has been working on developing "self-powered" devices for patients to help improve their healthcare.



Emma Kent

Construction Director, Metropolitan Police

Kent leads a team of construction professionals to design, construct and refurbish the Metropolitan Police estate across London, including police stations, dog kennels and boat wharfs. She also represents the property services department in the Metropolitan Police's diversity and inclusion group and is an advocate for inclusion in all forms.



Dr Suk Kinch

Senior Design and Development Engineer, Renishaw Neuro Solutions

Kinch is involved in making pioneering implants and equipment for brain surgery. The products are used to treat life-limiting neurological conditions in adults and children, such as brain tumours. She is also a diversity and inclusion champion for the Renishaw group and a Stem ambassador.



Hanna Leeson

Senior Environmental Engineer, BAE Systems

Leeson started her career in aircraft maintenance, implementing new software, but soon found herself drawn to sustainability. She has made great progress, producing a global webinar on circular economy and sustainable procurement, launching the annual sustainability forum and is now working towards a net-zero goal.



Dr Kristen MacAskill

Lecturer, University of Cambridge

MacAskill, director of the construction engineering master's course for senior professionals at the University of Cambridge, has transformed the course to a world leading programme in an industry in urgent need of radical change. She is now a leading figure in disaster risk governance and decision-making and recently gave evidence to the House of Lords committee on the national risk assessment.



Caitlin McCall

Engineering Doctorate Student, Swansea University and IcmPrint

As the pandemic unfolded, McCall kept wondering how she could help. She applied her expertise in 3D printing to work with colleagues to design, manufacture and distribute face visors to help address the shortfall in PPE. After three months, the visor had been CE marked and NHS approved - and featured on BBC News - resulting in hundreds being manufactured for key workers in South Wales.



Linda McVittie

Sales Manager, J & E Hall International

McVittie is a well-known expert in the field of refrigeration engineering. She started in the industry in a non-technical support role without any engineering qualifications. McVittie worked her way up to become a chartered engineer and is now the first female chair of the Institute of Refrigeration's Scotland branch.



Dr Helen Meese

Founder and CEO, The Care Machine

Meese was approached by NHS England at the start of the Covid-19 pandemic to help find ways to support the London Nightingale clinical engineering team. She helped develop a voluntary recruitment process and social media campaign, which attracted more than 600 volunteers within the first 48 hours. She went on to coordinate a UK wide programme, recruiting more than 1,000 engineers, where volunteers were trained to deliver ventilator support.



Mimi Nwosu

Assistant Materials Engineer, Sir Robert Mcalpine

Nwosu is currently working on the HS2 infrastructure project to ensure all the materials meet sustainability goals. This includes using cement replacements that have a lower embodied carbon value. She has also helped produce YouTube videos, articles and images to promote engineering to young people. In 2020, Nwosu won the Institution of Civil Engineers London Rising Star award.



Jennifer Olsen

PhD Researcher, Newcastle University

After leaving school at the age of 10, due to bullying and poor schooling, Olsen did her GCSEs independently and applied for the Talent 2030 National Engineering competition. She designed a new prosthetic elbow and began a career in mechanical engineering. Her current project focuses on improving the design of upper-limb prosthetics - to make them cheaper, more reliable, and comfortable. She is also a founding member of Newcastle University's new FemEng society.



Polly Osborne

Assistant Electrical Engineer, Burns & McDonnell

Osborne has led a number of projects that support net-zero emissions in her current role. She also founded and chairs the company's UK Women's Professional Network and is its UK sustainability champion. Later this year, she will be taking part in a month-long event of web chats with school children across the country on all things related to Earth.



Dr Cristiana Pace

Founder, Enovation Consulting

Pace designed the Oxford Box, an airway management aerosol device that helps safely intubate Covid-19 patients. Having created the initial design with a doctor at the University of Oxford, Pace then led the development and build of the product, which has a net-zero carbon footprint. She has also helped deliver a coding and engineering programme for girls from local schools.



Dr Tannaz Pak

Senior Lecturer in Engineering, Teesside University

Pak's research has provided new insights within energy and water engineering and contributed to several sustainable development goals set out by the UN. As the principal investigator, she leads three international engineering research projects funded by the Global Challenges Research Fund (GCRF), British Council, and British Academy.



Sergeant Sarah Partington

Senior Medical and Dental Technician, Army Medical Services Training Centre

Partington's principal role is to ensure availability of Electro-Medical Equipment (EME) for the training and validation of hospital care. Partington oversaw the deployment of 700 items of EME during the pandemic for military and civilian hospitals and the London Ambulance Service.



Kelly Paul

Core Projects Team Lead, Air Products

As news of Covid-19 spread in early 2020, it became clear that oxygen supply was critical to patient treatment. As core projects team lead at Air Products, Paul led her team in meeting the needs of hospitals across the UK. She maximises oxygen availability and her creative thinking and collaborative attitude helped support the NHS throughout the pandemic.



Kayisha Payne

Founder and Programme Director BBSTEM (Black British Professionals in STEM)

Payne has been working to address one of the most pressing problems currently blighting the engineering industry: systemic racism. Payne has demonstrated excellent leadership in setting up BBSTEM, a not-for-profit organisation that aims to support and champion Black individuals across science, technology, engineering and maths. BBSTEM is working to educate allies in the wider Stem community.



Andrea Pearson

Senior Engineer, Fujifilm Diosynth Biotechnologies

In May, Pearson became a technical operations manager at Fujifilm Diosynth Biotechnologies, which manufactures the Novavax Covid-19 vaccine, among other biologics. During her maternity leave, Pearson also started running Teesside Cloth Nappy Library, helping about 100 local families convert to reusable nappies.



Dr Maria Sunyer Pinya

Senior Climate Change Consultant, Arup

Growing up in Mallorca, Pinya experienced the challenges unsustainable growth can have on communities and the environment first hand. In her current role, Pinya is in charge of large infrastructure projects such as HS2 and Peru's Authority for Reconstruction with Changes (ARCC) programme to develop integrated management plans to mitigate and reduce climate and geohazard risks sustained during the El Niño drought, where they delivered flood mitigation infrastructure for 17 rivers, 74 schools and 15 healthcare facilities



Professor Alison Raby

Professor in Environmental Fluid Mechanics, University of Plymouth

Raby leads the Coast Engineering Research Group, helps manage the Coast laboratory facilities, and was instrumental in establishing the £19m Marine Building at the university. She is renowned worldwide for her work on the protection of coastal and maritime structures and participated in a number of post-tsunami surveys in Japan, Indonesia and Samoa. She has also been involved in two documentaries for National Geographic.



Catherine Rennie

Consultant ENT Surgeon, Charing Cross Hospital

Rennie has successfully combined aeronautical engineering and surgery in her career. After receiving her PhD in aeronautics in 2014, Rennie was appointed as a consultant ear, nose and throat surgeon. During the Covid-19 pandemic, Rennie has worked as an engineer and frontline surgeon, performing high-risk airway surgery while working to find ways to reduce aerosol spread in the hospital environment.



Professor Jane Rickson

Professor of Soil Erosion and Conservation, Cranfield University

Rickson has more than 30 years' experience of research, consultancy and teaching in soil and water engineering. She specialises in soil degradation processes and sustainable land management, working closely with industry to address both climate and biodiversity emergencies. Rickson was also the first female president of the Institution of Agricultural Engineers in its 80-year history and acts as a mentor for other women.



Dr Dipa Roy

Senior Lecturer, University of Edinburgh

Roy has pioneered the development of sustainable materials, not only for the university's composites research group but for the School of Engineering as a whole. Roy has helped to tackle the climate crisis by focusing on the development of sustainable biocomposites and recyclable thermoplastic composites. She has also become a supervisor for female PhD students.



Jyoti Sehdev

Group Equality, Diversion and Inclusion Lead, Costain Group

Sehdev is a founding member of Costain Group's LGBT+ and Allies network, of which she is the chair and has become an LGBT+ role model. She has given presentations on being LGBT+ in construction, developed Costain Group's transitioning at work guidance, participated in the Institution of Civil Engineers (ICE) LGBT+ history month campaigns and supported the ICE to march at the Pride festival for the first time.



Era Shah

Senior Engineer, HS2

As an engineer on the HS2 enabling works contract, Shah implemented cutting edge innovation - the first of its kind on HS2 - which revolutionised the operational works. She reduced each building's demolition programme by a third and contributed towards an overall carbon saving of 360 tonnes. She also co-founded the Female Advocates in Infrastructure and Rail (FAIR) network.



Professor Rebecca Shipley

Professor of Healthcare Engineering, University College London

Shipley co-leads the university's Ventura programme, designing and manufacturing non-invasive breathing aids to help treat Covid-19 patients. The devices are now helping patients in more than 15 countries including India, South Africa, and Mexico. The team has also worked with charities to supply breathing aids to countries such as Palestine and Uganda that were unable to manufacture them locally. Shipley helped raise more than £25,000 to support this.



Dr Larissa Suzuki

Data/AI Practice Lead, Google

One of Suzuki's greatest achievements in her 16-year career has to be the technology she's created to improve mammogram images, which have helped the early diagnosis of breast cancer. Her creation uses an algorithm and enhancement technique based on the X-ray equipment used to generate the images.



Sue Threader

Chief Executive, Rochester Bridge Trust

Threader is the first female engineer to be chief executive in Rochester Bridge Trust's 600-year history. In 2020, she completed a multi-million pound refurbishment of its bridges (including a heritage structure), with minimal disruption, on time and under budget while also home schooling her children during the pandemic. She has also mentored sixth-form girls and new engineers for more than a decade.



Hannah Vickers

Chief Executive, Association for Consultancy and Engineering

Vickers is a leading member of the Construction Leadership Council (CLC) and on the Covid-19 taskforce. In response to prime minister Johnson's 10-point plan for a green industrial revolution, Vickers also established and leads "CO2nstruct Zero", the construction sector's response on behalf of the CLC, with a programme of work leading up to the next annual UN climate change conference COP26 and beyond.



Julie Wood

Major Complex Projects Director, Arup

Wood leads 700 people across 40 disciplines and was awarded the Freedom of the City of London in 2020. Wood is currently directing a rail station from concept to detailed design. Under her leadership, the environmental impact has been reduced by around 50% of the lifetime carbon, saving 350,000t CO₂e over 120 years.

WE5

CONGRATULATIONS
TO ALL
50 WINNERS

Thank You

Thank you to the Trophy Sponsor, Assystem, for their kind donation which made the trophies possible,



and to The Guardian for publishing full details of the WE50 on their website.



Thank You

Thank you to the generous sponsors supporting International Women in Engineering Day 2021.





Join The Fight For Gender Equality

The Women's Engineering Society is a non-profit organisation, dedicated to gender parity, equality and diversity in engineering. We work tirelessly to bring more women into engineering and make it a sector that they can be proud to work in.

We'd love you to join us, either as an individual member, partner company or sponsor of one of our key events during the year. To find out more about how to get involved as a member, partner or sponsor, visit our website or email comms@wes.org.uk.

www.wes.org.uk



Pictured at the launch of Irish Girl Guides' Engineering Badge, which was developed in partnership with Engineers Ireland and launched in 2018, are former Irish Girl Guides' Chief Commissioner Helen Concannon (far left), Director General of Engineers Ireland Caroline Spillane (centre) and Dr Abigail Ruth Freeman, Director of Science for Society, Science Foundation Ireland (far right). Also pictured are youth members of Irish Girl Guides.



CONGRATULATIONS TO ALL 50 WINNERS



The Women's Engineering Society
www.wes.org.uk
Charity number 1008913

