ENGINEERS IRELAND

AN ENGINEER LIKE ME

Engineers making a difference

"NO BETTER FEELING"

FULL THROTTLE
Meet the Irish engineer with millions of YouTube subscribers

EXPLORE ENGINEERING
A gateway to an exciting and impactful career

LIMITLESS HORIZONS
Irish engineers are redefining the Hong Kong landscape

Building a brighter tomorrow.

At Jacobs, we're pushing the limits of what's possible. From streamlining processes to optimizing project outcomes, we're committed to delivering results that exceed expectations.

We're driven to overcome obstacles and to create new opportunities that build a better world — taking your complex planning, design and delivery challenges and solving them through innovation and collaborative solutions.

We tackle the world's toughest challenges.

Follow us @JacobsConnects | jacobs.com

Jacobs

Challenging today.
Reinventing tomorrow.

ENGINEERS IRELAND

WELCOME TO AN ENGINEER LIKE ME

An Engineer Like Me is a magazine dedicated to exploring engineering as a dynamic and rewarding career path for students across Ireland.

Engineering is all around us: it's where ideas become innovations that help to shape and change our world. From biomedical engineers designing life-saving devices to civil engineers constructing the infrastructure we rely on, engineering is everywhere.

Today, engineering is a gateway to some of the most exciting and diverse careers in the world across sectors such as energy, technology, healthcare, housing, and transport. The skills gained through an education in engineering – problem-solving, critical thinking, and innovation – are not only vital within the profession but are highly valued in fields such as finance, data analytics, science, strategic management, and entrepreneurship. With internationally recognised qualifications, Irish engineers are equipped to thrive on a global stage.

For students with a passion for creativity and making a difference, engineering offers a world of opportunity. Whether through university degrees, QQI FET (PLC) courses, apprenticeships, or a combination of these routes, there is a path into engineering for everyone.

Yet, despite its importance, engineering courses remain underrepresented in our universities, with engineering graduates making up less than 10 per cent of all graduates – a figure that falls short of many other countries. Girls, in particular, face barriers to accessing STEM subjects, limiting their opportunities to pursue engineering careers.

Ireland's future depends on engineering. To meet the challenges of sustainability, energy, and housing, we will need over 22,300 additional engineers in the next decade. That is why it is more important than ever to encourage young people from all backgrounds to consider engineering – not just as a career, but as a calling.

An engineering qualification is a passport to a global career, working on life-changing innovations that can help to build a better future. For today's students, it is one of the smartest choices they can make.

An Engineer Like Me showcases the depth and breadth of engineering and gives an insight into the real-life experience of engineers at home and abroad. We hope that it inspires you to explore the possibilities and discover the power of engineering to shape a better future – for Ireland and the world.

John Jordan BEng CEng FIEI MIQ Dip IoD
President, Engineers Ireland

Contents

ABOUT ENGINEERS IRELAND

With over 30,000 members, Engineers Ireland is the home of the engineering profession in Ireland. Engineers Ireland was established in 1835, making it one of the oldest and largest professional bodies in Ireland. Members come from every discipline of engineering, and they range from engineering students to fellows of the profession. For more information, see **www.engineersireland.ie**

Published on behalf of Engineers Ireland by IFP Media www.ifpmedia.com

Engineers-Ireland
EngineerIreland
EngineersIreland
EngineersIreland
EngineersIreland

A World View

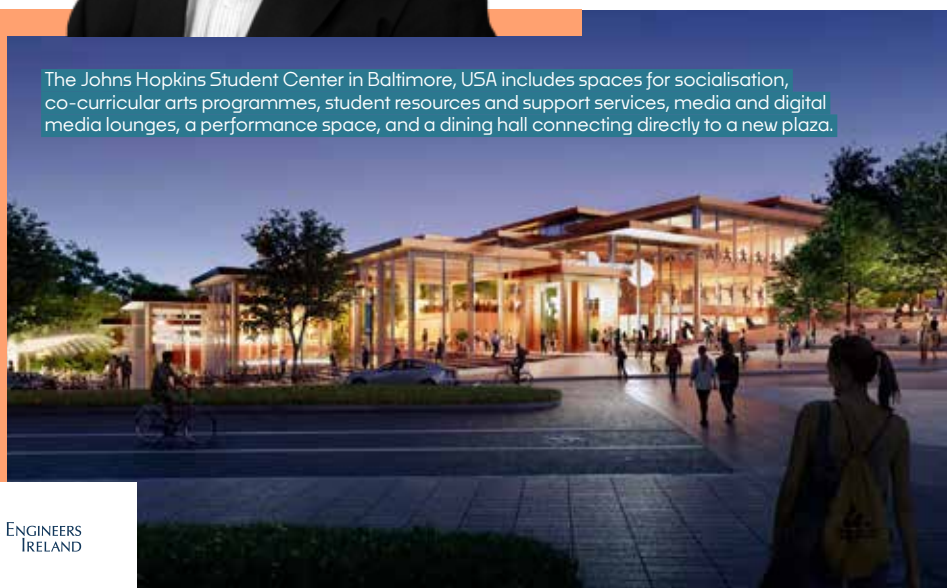
EOIN CASSERLY IS AN AWARD-WINNING CHARTERED ENGINEER AND FOUNDER OF SPECIALIST STRUCTURAL ENGINEERING CONSULTANCY, VOLUTA

The Oman Botanic Garden in Muscat. Eoin comments: "There is real tranquility to the desert, it's nice to spend a few minutes there after long meetings or site visits. In designing for a desert location, one of the tricks is to make things multifunctional. The walkway system for maintenance access on the roof also acts as a shading system. Special coatings are used on the glass to allow enough light for photosynthesis while also not allowing so much that the heat generated from the light would be uncomfortable for humans."

Commenting on achieving Chartered Engineer status, Eoin explains that the title has offered him increased opportunity to tender for projects in Ireland. Eoin was also awarded Chartered Engineer of the Year in 2023: "Engineering is quite an anonymous profession, where awards are directed at your projects rather than you, so receiving praise for my work in a public way was a novel experience but a nice one!"

Eoin was drawn to engineering by the variety of topics to master – the technical subjects of advanced maths, physics, and material science – and the creativity to use this knowledge to find beautiful solutions. It has also provided him with the opportunity to travel. "Growing up, I wanted to see the world and engineering has allowed me to work in more than 20 countries during my career. Learning how to work in different places and understand different cultures was something I was always interested in."

Throughout his career, he has designed advanced structures internationally such as gridshells, cable nets, facades, stadia, and artworks. Project highlights include: Edge, the highest outdoor observation deck in the western hemisphere, the world's first cable net with curved glass, the largest-spanning glazed roof in South America, and gridshells for the largest botanic garden in the world. "I work on something new every day; engineering brings lots of different skills together."



The Johns Hopkins Student Center in Baltimore, USA includes spaces for socialisation, co-curricular arts programmes, student resources and support services, media and digital media lounges, a performance space, and a dining hall connecting directly to a new plaza.

GOING INTERNATIONAL

Eoin completed a BSc and ME in structural engineering and architecture in UCD. He was drawn to this course because he felt it would allow him to work on large construction projects across many different disciplines. "When I graduated in 2010, however, it wasn't a great time for the economy in Ireland, so I decided to

Edge, 30 Hudson Yards office tower, New York, USA.

move abroad. I was fortunate to work on the Fondation Louis Vuitton in Paris, followed by opportunities in New York, Stuttgart, and Palermo, and continued to travel with work until finally coming back to Sligo to base Voluta here. I have had great experiences over the years and worked with incredible people. For example, I worked on the highest outdoor sky deck in the western hemisphere – Edge in New York. Years later, I was asked to help with the stage design for a virtual performance there by the singer The Weeknd for the 2020 MTV Video Music Awards."

Eoin worked with The Weeknd's management team: "It was surreal to think that one of the most famous people in the world could possibly be a fan of my work. Similarly, it's funny thinking about details that began with my thoughts, sketches, and calculations ending up in thousands of photographs every day."

COMMUNICATION IS KEY

Being a good communicator is vital to a successful career in engineering, Eoin believes: "In every large project there will be challenges and you need to know how to resolve differences between the team. The best way to do this is to listen and communicate with each other. This is something people don't necessarily think about when choosing a career in engineering, but people skills and being able to listen to people, and to find a solution that works for everyone is a huge part of the job."

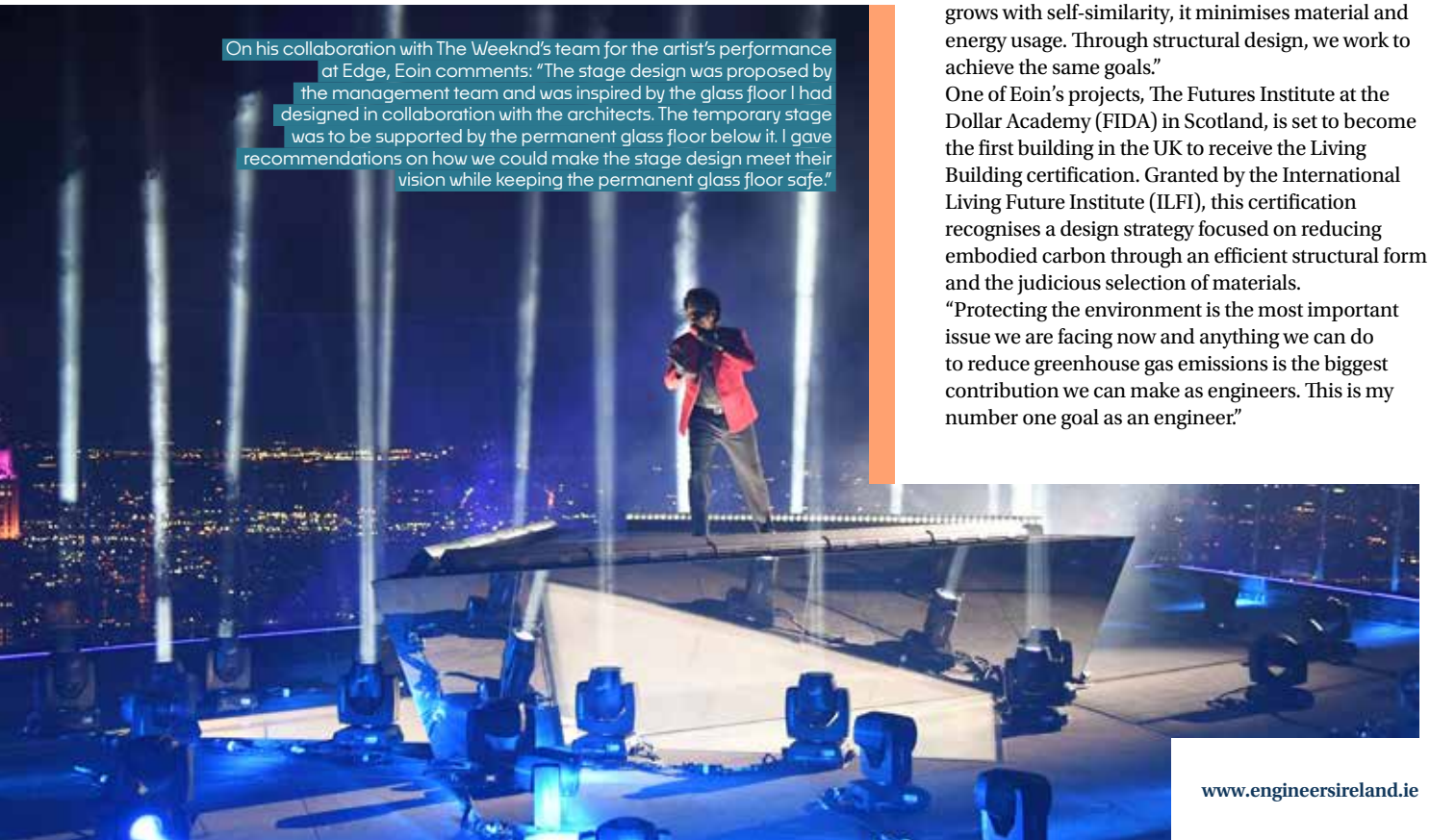
One of Eoin's major inspirations is the work of the late engineer Peter Rice: "He was an Irish structural engineer who worked internationally and famous projects by Peter include the Sydney Opera House and the Louvre Pyramid. One thing that he said that has always stuck with me is that 'people come to you to be surprised; I have no idea what I am going to give them either.' This curiosity, inventiveness, and ability to go into a project without predefined solutions can lead to real innovation."

REGENERATIVE DESIGN

Beyond an innate curiosity for invention, Eoin's real passion lies in his commitment to sustainability and his company, Voluta, established in 2021, is centred around a respect for nature. "What we need to focus on is regenerative design. The word 'voluta' is both the name of a type of seashell and a facade detail. The name of the company reflects that fact that we are guided by the beauty and efficiency of nature. As a seashell creates stiffness through form and grows with self-similarity, it minimises material and energy usage. Through structural design, we work to achieve the same goals."

One of Eoin's projects, The Futures Institute at the Dollar Academy (FIDA) in Scotland, is set to become the first building in the UK to receive the Living Building certification. Granted by the International Living Future Institute (ILFI), this certification recognises a design strategy focused on reducing embodied carbon through an efficient structural form and the judicious selection of materials.

"Protecting the environment is the most important issue we are facing now and anything we can do to reduce greenhouse gas emissions is the biggest contribution we can make as engineers. This is my number one goal as an engineer."



On his collaboration with The Weeknd's team for the artist's performance at Edge, Eoin comments: "The stage design was proposed by the management team and was inspired by the glass floor I had designed in collaboration with the architects. The temporary stage was to be supported by the permanent glass floor below it. I gave recommendations on how we could make the stage design meet their vision while keeping the permanent glass floor safe."

An example of the multi-award-winning conservation and heritage work carried out at Swords Castle.

Aoife on a visit to a church in Norwich as part of her SPAB scholarship.

Embracing change, preserving the past

Aoife Howard never set out to be a structural engineer. In her Leaving Certificate year, she made the connection between her love of maths and a potential career path

"I was always good at maths, but it wasn't until the final year of school that I realised engineering could be the perfect outlet for that – it was the moment everything clicked."

Eighteen years later, Aoife is a Conservation Accredited Engineer, and her career has taken her across the globe—from working on historic churches in Ireland to earthquake-damaged homes in New Zealand. Through it all, her passion has remained the same: protecting structures that tell the story of our past.

FINDING PURPOSE IN PRESERVATION

With over fifteen years of experience in the design, assessment, and repair of building structures, Aoife has specialised in the conservation of historic buildings. "Graveyards, churches, castles. Every building is different. Much of what we're taught in university is focused on new builds, but with old structures, you're constantly figuring things out from scratch. It's like solving a puzzle—understanding how they were built, and how best to preserve them."

That passion for conservation led Aoife to be selected for a prestigious nine-month scholarship with the Society for the Protection of Ancient Buildings (SPAB), giving her hands-on training in heritage conservation across Ireland and the UK. Since then, she has contributed to an impressive list of restoration projects, including Kilkenny Town Wall, Roscomroe Church ruins, Drumcullen Church, Youghal Town Wall, and the award-winning Swords Castle East Tower. "New technologies have improved how we work, but with conservation, you still need to pay close attention and tailor the approach to each structure. There are no shortcuts."

SWORDS CASTLE PROJECT

In 2019, Swords Castle was recognised with multiple awards for its conservation and heritage efforts. Aoife was part of the team, working specifically on the East Tower, which received a Heritage and Conservation Award from Engineers Ireland.

"I was responsible for the detailed design. The focus was the East Tower but we also worked on other areas like the old church that was re-roofed in the 1970s and which has appeared in TV shows like *Vikings*. I worked closely with the contractors, made decisions about stonework, dismantling supports, and applying a shelter coat."

Winning the Heritage and Conservation Award came as a welcome surprise. "We were up against huge projects, and ours was relatively small, but it was complex. We retained all the old masonry, added modern interventions like the concrete deck, and used traditional methods like the lime shelter coat. We showed that conservation and innovation can go together."

MAKING A DIFFERENCE

For Aoife, the impact of her work as a conservation engineer goes beyond the preservation of buildings. "My job is really satisfying. I can travel around Ireland and point to graveyards, towers, churches, and houses I've helped to secure. Unlike big consultants working on one massive job for years, I might have 40 small projects on the go at once. Each one makes a real difference. It's fulfilling to know I've helped protect part of our built heritage.

"Engineering is such a broad field. It's a great foundation. There are so many pathways – design, conservation, sustainability – and the opportunity to travel. It's a global community and it can open many doors to so many other fields."

Aoife spent six years in Christchurch, New Zealand assessing and repairing earthquake-damaged homes. The experience left a lasting impression professionally and personally. "I think a lot of people see engineering as a very black-and-white field. But after the 2011 earthquake, I realised the human side of what we do. It felt meaningful to be part of something that helped them rebuild. We were doing something for the good of others."

She concludes by offering advice to others hoping to pursue a similar path. "Coming into the field wasn't easy for me. After college, most job offers were in large-scale design like pharma or residential work. Conservation wasn't well-publicised. I would've jumped at an opportunity if I'd known more. I recommend checking out the Engineers Ireland Conservation Group."

AOIFE SHARES THE BENEFITS OF HAVING A PROFESSIONAL MENTOR

Engineers Ireland: Have you had any mentors who supported you along the way?

"John Kelly in the David Kelly Partnership has been an incredible support, especially with my interest in conservation. He backed me through my master's degree and through other training courses."

Engineers Ireland: And now you're a mentor yourself?

"I've volunteered with Trinity College Dublin, spoken at events, and been part of Engineers Ireland's Conservation Group and Cork Regional Committee. It's really rewarding. Conservation is fascinating, but there aren't enough of us in the field."

ETHOS

Engineering Wow

In A World Where You Can Be Anything, BE AN ETHOS ENGINEER!

We believe engineering is more than a career, it's a chance to shape a better future. Ethos is where ambition becomes opportunity.

WHO WE ARE

Ireland's largest Mechanical and Electrical Engineering consultancy and a European leader in data centre design. Our expert teams design the systems that keep buildings alive – power, air, water, and technology – for projects in 19 countries across EMEA.

From innovative data centres to sustainable buildings and smart technologies, our work connects people, powers communities, and supports a greener future.

LIFE AT ETHOS

From day one, you'll work on real projects, learn from experienced mentors, and develop skills that can take you anywhere. With wellbeing and social activities, and every-second-Friday off, we offer a collaborative and inclusive culture where people thrive.

From your first project to your biggest achievement, start it with Ethos!

From Intern to Industry Leader,
Your Future Starts Here...

ethoseng.ie
recruitment@ethoseng.ie

Future proof your career

THE JOB MARKET IS CONSTANTLY EVOLVING AND, EVERY YEAR, ROLES, AND EVEN PROFESSIONS, ARE BECOMING OBSOLETE. HOW DO YOU ENSURE YOUR CAREER WILL LAST A LIFETIME? CHOOSE ENGINEERING!

When deciding upon a career path, a new challenge has emerged: will this job exist in five- or ten-years' time? Given the rapid advances in technology and automation, it should be a serious consideration for students. An engineering qualification is one way to secure your career prospects, offering a stable, well-paid, and meaningful future.

IN DEMAND

Ireland is facing a critical shortage of engineers: according to Engineers Ireland research, over 22,300 additional engineers will be needed here over the next decade, and several engineering roles are on the national Critical Skills Occupations List. The shortages are mirrored worldwide with Japan predicting a deficit of over 700,000 engineers by 2030. The UK needs 124,000 new engineers and technicians each year but has an annual shortfall of 37,000-59,000 and, in the US, one-third of engineering jobs are not being filled. It's no surprise, then, that the Future of Jobs report listed engineering roles as four of the top 15 fastest-growing jobs. Engineering graduates aren't just employable, they're essential.

GET PAID!

Engineering offers excellent financial rewards at every career stage. The 2025 Engineers Ireland Salary Survey reveals that:

- Graduate engineers can expect to earn €39,000, on average.
- Engineers with 6-10 years of experience earn €58,000, on average, with Chartered Engineers in this range earning €62,000.
- Engineering managers and directors can earn between €90,000 and €130,000+.
- Additionally, achieving an Engineers Ireland Registered Professional Title like Chartered Engineer (CEng) and Fellow (FIEI) can boost salaries by between €5,000 to €30,000 annually, depending on the sector and seniority.

Engineering roles on the national Critical Skills Occupations List

- Civil engineers
- Structural engineers and site engineers
- Mechanical engineers
- Electrical engineers
- Electronic engineers
- Design and development engineers
- Production and process engineers
- Chemical engineers

GO GLOBAL

An Irish engineering qualification is a passport to a global career. Various international accords and agreements are in place that ensure the global relevance of your engineering education, as well as ensuring that your qualifications will be recognised around the world.

LASTING LEGACY

Engineering is more than a career; it's a calling to build a better world. From energy and food security to climate change and housing shortages, engineering solutions are vital to address these critical issues. In 2020, Engineers Ireland declared a Climate and Biodiversity Emergency, recognising that climate breakdown and biodiversity collapse are the most serious issues of our time. In 2025, the organisation was the first outside the UK licensed to award the Chartered Environmentalist Title, a qualification awarded to those who demonstrate outstanding environmental expertise, helping to protect and enhance the environment in a sustainable manner. Engineering offers career stability, financial security, a meaningful purpose, and the chance to grow in any direction. For young people today, it's one of the smartest choices they can make.

Engineering offers:

- Job security in a high-demand field encompassing many disciplines
- Opportunities to work in other career areas such as financial services, data analytics, or project management
- An internationally recognised qualification and global opportunities
- Ongoing professional development through CPD and accreditation
- Excellent benefits, including bonuses, pensions, and paid leave

Arup believes if you're curious about how things are built, how cities work or how we can protect the planet, engineering might be the right career choice for you.

Arup aims for safer, smarter, greener design

Arup is a global, built environment consultancy, helping to create safer, greener and smarter places where communities, today and tomorrow, can thrive. In Ireland, Arup has offices in Dublin, Cork, Belfast, Galway and Limerick, with over 850 people working on exciting projects that make a real difference.

Internationally, Arup has played a key role in designing some of the world's most iconic landmarks, including the Sydney Opera House, Marina Bay Sands in Singapore, the Bird's Nest Stadium for the Beijing Olympics, and London's Elizabeth Line. In Ireland, Arup is recognised for its work on Busáras, the Bord Gáis Energy Theatre, Cork County Hall, and the Rose Fitzgerald Kennedy Bridge – the longest bridge in the country. Arup suggests that, if you're curious about how things are built, how cities work or how we can protect the planet, engineering might be the path for you.

Intern Appreciation Day 2025, which was hosted recently by Ethos.

ETHOS CELEBRATES 20 YEARS

This year, Ethos Engineering celebrates 20 years in business. What began in Dublin, has grown into Ireland's largest mechanical and electrical engineering consultancy and one of Europe's leading data centre specialists, Ethos reports.

The company explains: "Today, we deliver projects in 19 countries across EMEA. Our achievements have been widely recognised, with 44 industry awards and the honour of being named Deloitte's Best Managed Company in 2024.

"We design the critical systems that keep buildings working: the power, the air, the water, and the technology that allow data centres, industrial facilities, and commercial spaces to operate every day. This year also marked an exciting new chapter, as we expanded internationally with the acquisition of Netherlands-based SimStudio."

Ethos says its story is about people: "Our engineers, designers, and support teams work together to create solutions that connect communities and support a more sustainable future. We recently hosted our yearly Intern Appreciation Day, recognising our fantastic interns who contributed directly to real client projects and global partnerships. Their creativity and problem-solving skills showed what the next generation of engineers can achieve."

Finding my path in engineering at Trinity

Hanna Roch Perks is a fifth year MAI student at Trinity College Dublin School of Engineering. For Hanna, the appeal of Trinity's School of Engineering lay in its flexibility. The two-year common entry programme allowed her to explore different areas of engineering before deciding on her discipline. "It gave me time to think and try out modules across civil, mechanical, and electronic engineering before committing," she explains.

Hanna's interest in maths and problem-solving made engineering a natural choice, but what she has enjoyed most is the chance to put knowledge into practice. "Working in the lab and doing hands-on projects has been the highlight of my studies," she says.

She encourages future students to make the most of the first two years by keeping an open mind. "Take the time to understand the basics of each stream – it makes choosing your path much easier," she advises. And for those who might struggle, Hanna highlights the support available: "Don't be afraid to ask lecturers for help – they're always willing to guide you."

Reflecting on her experience, Hanna sums up Trinity in three words: diverse, community-orientated and inspirational. For her, the School of Engineering has provided not just an education, but a place to grow and be inspired.

Hanna Roch Perks says the opportunity to put knowledge into practice has been one of the aspects of her studies she's most enjoyed.

BusConnects Dublin aims to transform travel in Ireland's capital.

JACOBS HELPS DELIVER SUSTAINABLE TRANSPORT

The National Transport Authority (NTA) is delivering BusConnects Dublin — a once-in-a-generation programme to reshape how people live, work, and travel in Ireland's capital. Jacobs says it is proud to serve as client partner for the Core Bus Corridors Infrastructure Works, a ten-year programme upgrading 12 key routes across Dublin and the Greater Dublin Area.

The works will deliver new bus lanes, cycleways, and walking infrastructure — making public transport and active travel the natural first choice for commuters and visitors. According to Jacobs, the goal is to enhance travel experience, support climate action, improve air quality, and make Dublin a more connected, accessible, and sustainable city for all.

Jacobs commented: "Our engineers, planners, and specialists are shaping the future of Dublin's transport network. For those who want their work to make a difference — to communities, the environment, and Ireland's future — Jacobs offers the opportunity to be part of something truly transformative."

Full engineering solutions from Fingleton White

A 275MW peaking power plant, supporting the Irish electricity grid during periods of high demand.

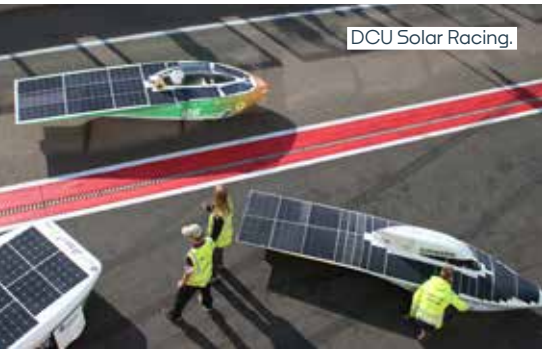
Fingleton White is an Irish engineering consultancy, delivering comprehensive engineering solutions from concept to detailed design. Established in 1981, the consultancy says it has built its reputation through innovative projects across gas networks, renewable energy, combined heat and power, and water.

Fingleton White states: "Our team of over 200 professionals work across seven strategic locations in Ireland, Northern Ireland, and the UK. The team includes 48 graduate engineers and 94+ experienced professionals. Our multidisciplinary teams include BIM/CAD specialists, GIS experts, and comprehensive project support staff. We actively promote engineering careers to the next generation through a school's programme, student placements, and 'women in engineering' initiatives and events. We offer flexible hybrid working, combining office-based design with hands-on site experience. Our structured graduate programme provides comprehensive training through workshops, site visits, and mentorship, while student placement opportunities support the next generation of engineers. Our commitment to safety extends company-wide, with dedicated safety representatives and a biodiversity team, ensuring we protect users, employees, and the environment, while maintaining the highest industry standards."

Innovation Nation


Artemis EF-24 Passenger.

IRELAND IS HOME TO GROUND-BREAKING ENGINEERING INITIATIVES: HERE IS A SELECTION OF PROJECTS THAT ARE SET TO IMPROVE HEALTHCARE, REVOLUTIONISE TRAVEL, AND CREATE A MORE SUSTAINABLE FUTURE


DCU Solar Racing.

RACING TOWARDS SUSTAINABLE SOLUTIONS

DCU Solar Racing is designing and building Ireland's first solar-powered racing car to compete across the world. Led by DCU students, the project aims to use the potential of solar and energy management technologies to develop sustainable solutions and to innovate automotive and energy systems, helping put more efficient cars on the road. It also offers students exposure to technologies, industry, and mentors at an early age. According to team manager and mechatronic engineering student, Rian Gill, the project highlights and supports young people in Ireland with a passion for STEM. "We give students the ability to innovate and unleash their creativity, in a supportive environment. DCU SR implements a mentorship structure where older members train the younger members, encouraging them to learn real world skills by interacting with companies, professors, the team, and all the other factors that occur in a full-scope ambitious project. As engineers we find creative solutions to life's problems, and we believe that it is our duty to use our collective abilities to develop sustainable systems for a better future. We are on the cusp of bringing about a more sustainable future for all, so when the light turns green, we are charging ahead for a brighter tomorrow."

INNOVATING PATIENT CARE

Professors Alan Smeaton and Tomás Ward have developed a sensor collar for dogs that can assist in detecting the onset of epileptic seizures in humans. Assistance dogs can be trained to recognise the odour that people secrete through their skin prior to a seizure and to perform signalling behaviour such as spinning. This behaviour is then picked up by the collar and alerts the person who can move into a safe environment or position so that self-injury as a result of the seizure can be minimised. This project is a collaboration between the Insight Research Ireland Centre for Data Analytics at DCU, Irish Dogs for the Disabled, a charity based in Cork which breeds and trains assistance dogs, Beaumont Hospital, and Epilepsy Ireland. The work is at prototype stage and very multidisciplinary, involving computer, electronic and mechanical engineering disciplines.

POWERING A CLEAN ENERGY FUTURE

The ESB Lighthouse Hydrogen Project is a pioneering initiative that showcases how hydrogen can play a vital role in Ireland's transition to a low-carbon energy system. As we move towards a future dominated by renewable energy sources like wind and solar, one major challenge is their intermittency—they don't always produce power when it's needed. That's where hydrogen comes in.

Hydrogen acts as an energy vector, meaning it can store excess renewable electricity and release it later when demand is high, or renewables aren't generating. This makes it a powerful tool for balancing the grid and ensuring a reliable energy supply.


ESB's Hydrogen Power Units at their base in Aghada Power Station in Co. Cork.

In this project, ESB demonstrated hydrogen's potential by powering the entire film set for an Irish film, *Kung Fu Deadly,* using hydrogen fuel cells instead of diesel generators. These fuel cells produce electricity with zero emissions, emitting only water vapor. It's a clean, quiet and sustainable alternative that shows how hydrogen can be used in real-world applications.

The project also involves collaboration with universities and industry partners to explore advanced hydrogen usage and measured environmental benefits to demonstrate how hydrogen can provide new ways of producing zero-emissions power. This helps build knowledge and confidence in hydrogen as part of Ireland's future energy mix. For students and teachers, the Lighthouse Project is a great example of how science, engineering, and creativity come together to solve climate challenges. It highlights the importance of innovation and teamwork in building a cleaner, more resilient energy system—one where hydrogen helps unlock the full potential of renewables.

ENGINEERING CLEANER TRANSPORT

The Artemis EF-24 Passenger is a 100 per cent electric hydrofoiling ferry, designed to carry up to 150 passengers and is set to launch later this year. A hydrofoil is an underwater wing that lifts a moving vessel from the water. Developed by Belfast-based Artemis Technologies, it represents a step-change in maritime engineering and the drive toward zero-emission transport.

At the core of the Artemis EF-24 Passenger is the Artemis eFoiler® system, that integrates electric drivetrains with hydrofoil technology. As the vessel gains speed, submerged hydrofoils lift the hull from the water, significantly reducing drag and enabling up to 85 per cent energy savings compared to conventional ferries. This innovative configuration extends the vessel's range and makes full-electric operation viable for busy commuter routes.

The Artemis EF-24 Passenger combines advanced naval architecture, lightweight composite materials, and an autonomous flight control system to deliver a smooth and quiet journey – even in rougher conditions. The Artemis eFoiler® system and vessel have been developed using digital twin technology on Artemis Technologies' state-of-the-art simulator.

The Artemis EF-24 Passenger offers fast charging, lower maintenance, and reduced operating costs – making it a commercially viable and more sustainable option for urban transport networks.

Following completion of sea trials, the first Artemis EF-24 Passenger will begin operating on a technology demonstration route between Belfast and Bangor in Northern Ireland in 2026. This world-first deployment of a commercial-scale, electric hydrofoiling ferry will showcase how cutting-edge engineering can deliver cleaner, faster, and more efficient passenger transport.

Fingleton White

MECHANICAL | CIVIL | ELECTRICAL | GIS | BIM

Engineering

starts with a question, not an answer!

The world's biggest challenges—climate change, clean water, sustainable energy—need your kind of problem-solving.

www.fingleton.ie

Design cutting-edge projects to help shape a sustainable future in Energy, Water and Industry.

careers@fingleton.ie

Pathways to Engineering

EXPLORING THE ROUTES TO AN ENGINEERING QUALIFICATION

There are many ways to pursue a career in engineering, whether it's an apprenticeship, training, or a university course. Here, we present the options

THE UNIVERSITY ROUTE

Higher level institutes offering engineering courses include the newly established technological universities (Technological University Dublin, Technological University Shannon, Atlantic Technological University, Munster Technological University, and South East Technological University) and the traditional universities (Trinity College Dublin, University College Cork, University College Dublin, University of Galway, University of Limerick, Dublin City University and Maynooth University).

Technological universities offer a variety of specialist engineering courses that award a Bachelor of Engineering Technology degree (NFQ Level 7; BEng (Ord)) and a Bachelor of Engineering degree (NFQ Level 8; BE or BEng).

Most of the universities offer programmes with a common first year, as well as specialist engineering courses. Students are awarded a Bachelor of Engineering degree (NFQ Level 8; BE, BE (Hons) or BEng) and may progress on to specialise further with a Master's degree (NFQ Level 9; ME or MEng), and as engineering graduates, can often gain access to non-engineering disciplines including business and science programmes.

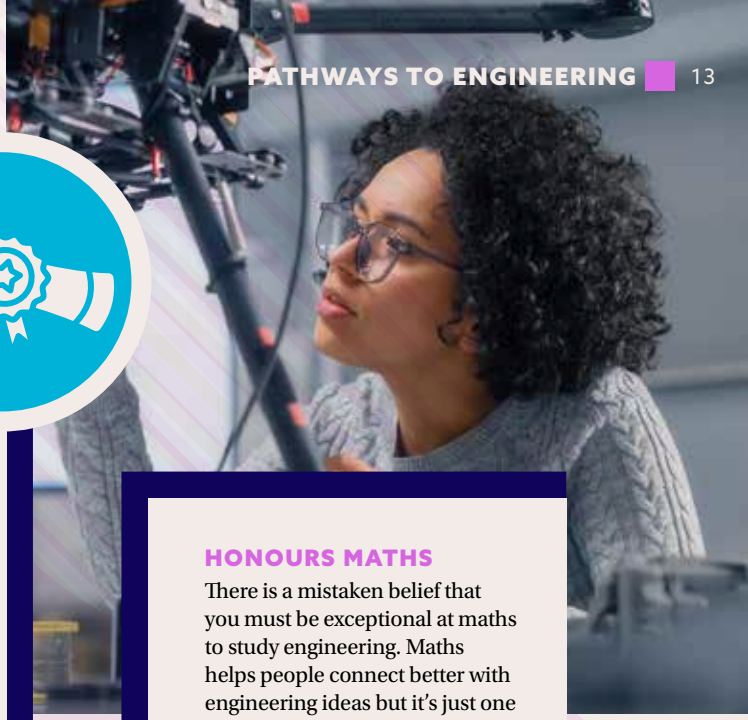
THE APPRENTICESHIP ROUTE

An apprenticeship is a programme that combines and alternates learning in the workplace with learning in an education institute or training centre and participants can earn a NFQ Level 5-10 qualification.

The 'Craft' apprenticeship programme offers training to become a fully qualified craftsperson (e.g. electrician, mechanic etc.) and usually comprises seven phases: three off-the-job and four on-the-job. A QQI Level 6 Advanced Certificate Craft is awarded upon completion of the craft apprenticeship.

The national 'Consortia-led' apprenticeship programmes are developed by Higher Education Institutions (HEIs), such as universities, technological universities, colleges, and private institutions, in collaboration with, and for, industry.

Apprenticeship programmes vary between two and four years in duration and awards range from NFQ Levels 5-10. To learn more, visit **apprenticeship.ie**



THE QQI FET ROUTE

Quality and Qualifications Ireland (QQI) Further Education and Training (FET) is a pathway for students to enter engineering degree programmes. Students with the relevant and appropriate QQI FET Level 5/6 major awards and components, with a minimum achievement in the different programme components, may be admitted on a competitive basis to Higher Education Institutions (HEIs). To apply to a HEI via the QQI FET entry pathway, you must apply to the Central Applications Office (CAO). See **CAO.ie** for more information.

HONOURS MATHS

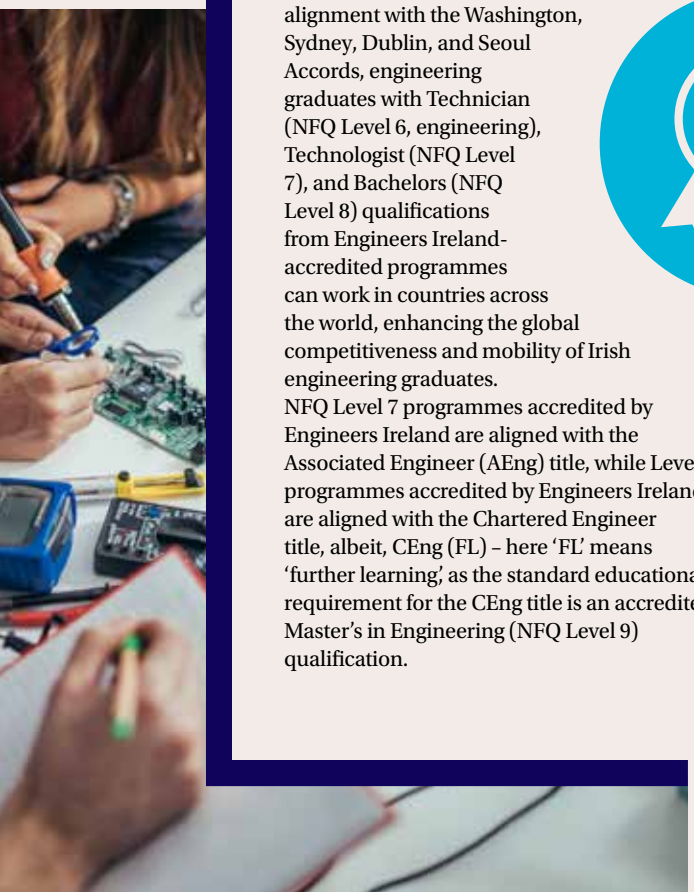
There is a mistaken belief that you must be exceptional at maths to study engineering. Maths helps people connect better with engineering ideas but it's just one of the tools in your engineering arsenal. Many universities offer a Maths Competency Test (MCT), akin to a maths entrance examination, and this is a further opportunity to achieve the minimum mathematics entry requirement normally required for accredited engineering level 8 programmes. The MCT is not compulsory and is set at a similar standard to the Leaving Certificate higher level maths examination.

ENGINEERS IRELAND ACCREDITED PROGRAMMES

If you intend to study engineering, prioritise a route into an Engineers Ireland-accredited programme. Engineers Ireland accreditation is an independent brand of quality and involves detailed reviews of engineering programmes by educational and industry peers. In other words, the role of the accrediting panel is to ensure that the programmes are of the highest quality so that graduates are afforded the best education possible, to achieve internationally recognised and valued engineering competences.

Thanks to Engineers Ireland's alignment with the Washington, Sydney, Dublin, and Seoul Accords, engineering graduates with Technician (NFQ Level 6, engineering), Technologist (NFQ Level 7), and Bachelors (NFQ Level 8) qualifications from Engineers Ireland-accredited programmes can work in countries across the world, enhancing the global competitiveness and mobility of Irish engineering graduates.

NFQ Level 7 programmes accredited by Engineers Ireland are aligned with the Associated Engineer (AEng) title, while Level 8 programmes accredited by Engineers Ireland are aligned with the Chartered Engineer title, albeit, CEng (FL) – here 'FL' means 'further learning,' as the standard educational requirement for the CEng title is an accredited Master's in Engineering (NFQ Level 9) qualification.



Engineering Your Future

From artificial intelligence and aviation to infrastructure and the environment, an engineering qualification can open up a world of opportunity. As the world is evolving so do the breadth of disciplines within engineering:

- Aeronautical Engineering
- Agricultural Engineering
- Biomedical Engineering
- Building Services Engineering
- Chemical Engineering
- Civil Engineering
- Electrical & Electronic Engineering
- Energy Engineering
- Fire Engineering
- Informatics & Communications
- Engineering
- Manufacturing Engineering
- Mechanical Engineering
- Mechatronic Engineering
- Structural Engineering
- Transport Engineering

Engineering success

A MENTOR CAN HAVE A TRANSFORMATIVE IMPACT ON YOUR PROFESSIONAL DEVELOPMENT, FROM BUILDING CONFIDENCE TO LEADERSHIP ACUMEN. ENGINEERS IRELAND MEMBERS HIGHLIGHT THE MENTORS WHO HAVE HELPED TO GUIDE THEIR CAREER PATH

MARYELLEN KELLEDY, CHIEF OF STAFF, OVERHAUL (PICTURED BELOW), ON MENTOR DAVID BROE, COO AND CO-FOUNDER OF OVERHAUL

"I met David in my hometown of Dundalk when I was established in my career, with over 10 years' experience working internationally. With a degree in economics from Trinity College Dublin and a master's in technology and innovation from UCD, David is extremely logical and empathetic. He pushes me to look at challenges and solutions from every angle. David is one of my biggest advocates, he is the person that champions you when you aren't in the room. I've found that having different mentors at different stages of my career has given me diverse perspectives, helped with career transitions and with my own growth. A good mentor can be a powerful support throughout your career, offering guidance and challenging your thinking as they share their own valuable experiences and help you grow with confidence. Mentors also provide a safe space to discuss decisions, goals, and challenges — something that's especially important when navigating new roles or industries."

DANNY PIO MURPHY, CHARTERED ENGINEER, ASSOCIATE DIRECTOR - TRANSPORTATION, DBFL CONSULTING ENGINEERS (BELOW), ON PEER MENTOR TRACY KEARNEY, DIRECTOR - STRUCTURES AT DBFL CONSULTING ENGINEERS

"Tracy's guidance has had a lasting impact on my professional development and confidence as an engineer. She created a space where questions were welcomed, perspectives were valued, and growth was always encouraged. Her leadership style showed me the importance of authenticity, inclusion, and clarity, qualities I strive to emulate in my own role today. Tracy's peer mentorship helped me navigate challenges with a sense of purpose, and it inspired me, especially through the lens of EDI and building a more diverse profession. Mentorship has the power to change the course of a career — I know this because it changed mine. Early on, a mentor gave me the confidence to speak up and be seen in a profession where I didn't always feel represented. Now, as a mentor in my company, as well as in several college and EDI outreach mentorship programmes, I'm passionate about creating that same space for others, especially those who might not see themselves in the engineering world yet."

DAVE LUDGATE, CHARTERED ENGINEER, ASSOCIATE DIRECTOR - SUSTAINABILITY LEAD (WATER), AECOM (BELOW), ON MENTOR BILL CASHMAN, TECHNICAL SERVICE MANAGER, IIE/KEMEK

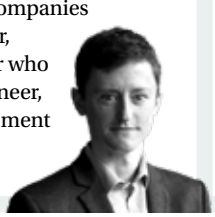
"I met Bill as a graduate and his guidance helped to bridge the gap between academic knowledge and professional knowledge, a gap that can be very intimidating to a graduate. He taught me patience, the ability to slow down and critically analyse situations, and to enjoy work! I would highly recommend finding a mentor. It may not be for everyone but, I have no doubt that I would not be where I am now in my career without being mentored."

EAMON MORRISSEY, CHARTERED ENGINEER, SENIOR STRUCTURAL ENGINEER, JENNINGS O'DONOVAN & PARTNERS (BELOW), ON MENTOR BARRY WILLIAMS, MANAGING DIRECTOR, MOTT MACDONALD IRELAND

"Barry encouraged me to undertake the additional education I needed to become an engineer. Whilst I was a competent technician, he gave me the confidence to take the next step. He always explained the reasoning behind the details I was drawing and encouraged me to develop my understanding and competence. From him, I learned not to tie myself into a particular role just because I can do a competent job. I have had a very interesting career as an engineer due to his guidance."

KEVIN FLYNN, CHARTERED ENGINEER AND RESEARCH FELLOW, TCD (BELOW), ON MENTOR DR ERIC FARRELL, FORMER SENIOR CONSULTANT, AGL CONSULTING

"I met Eric when I joined AGL Consulting, a specialist geotechnical engineering consultancy that he co-founded. Eric has significant experience in expert witness cases, and he taught me to question everything that we do in design and analysis, and to challenge assumptions and opinions. It provided perspective for me as an engineer and has made me more well-rounded in my approach to problems, particularly given the litigation that accompanies our profession. I would recommend finding a mentor, preferably someone in the latter stages of their career who has experienced the ups and downs of being an engineer, has seen things go wrong and has the ability to implement appropriate techniques to mitigate these scenarios."



DAMIEN OWENS, CHARTERED ENGINEER AND DIRECTOR GENERAL, ENGINEERS IRELAND (BELOW), ON MENTOR TOM CALLENDER, CHARTERED ENGINEER, FORMER HEAD OF NEW SERVICE DEVELOPMENT, EIRCOM

"I met Tom in the early stages of my career. He took great care in the quality of his work and its impact on society and demonstrated these principles to his engineering colleagues. I learned from Tom that any work that an engineer does is for someone else – ultimately large volumes of users – and that engineers should make sure that the fruits of their work are safe, reliable, and valued by users. I would recommend finding a mentor as it provides an external set of perspectives on your situation and triggers reflection which allows for personal growth."

Maynooth University
National University of Ireland Maynooth

ENGINEERING AT MAYNOOTH UNIVERSITY

Shaping the Future in Innovation, Robotics & Technology

Undergraduate Programmes

Electronic Engineering (MH304)

- Integrated Circuit Design
- Wireless Communications
- Control Engineering

Robotics and Intelligent Devices (MH306)

- Adding intelligence to everyday systems
- Autonomous and Collaborative Robotics
- Blend of Engineering and Computer Science

Taught Masters Programmes

MSc in Integrated Circuit Design (18 months)

- 6-month industry internship
- Industry Tools and Mentors
- Primer for career in IC Design

MSc in Robotics and Embedded AI (12 months)

- Cutting Edge Skills in Robotics and AI
- Industry problems and internships
- Broad Research Focus

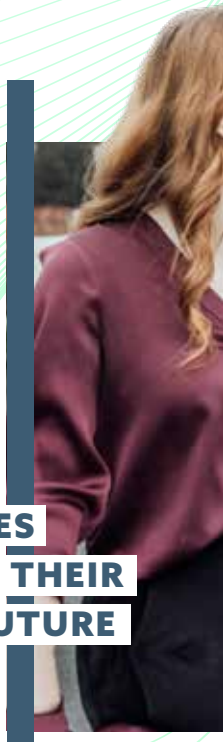
Why do Engineering at Maynooth University?

- Accredited programmes
- Flexible Pathways:
  - 4-Year Bachelors
  - 5-Year ME
- Smaller classes
- Hands-on Problem Based Learning throughout
- Build a compelling portfolio of real world projects
- Industry Engagement
- Opportunity to participate in International Robotics Competitions

Find out more at www.maynoothuniversity.ie/electronic-engineering

The Future of Engineering

Afua Adu signing up students for Engineers Ireland membership during World Engineering Day.



ENGINEERING STUDENTS AND RECENT GRADUATES SHARE THE SKILLS THEY HAVE GAINED THROUGH THEIR EDUCATION AND THEIR ASPIRATIONS FOR THE FUTURE

A RECENT GRADUATE OF ELECTRONIC AND COMPUTER ENGINEERING AT DCU, AFUA ADU REFLECTS ON HER DYNAMIC AND EXCITING COLLEGE EXPERIENCE.

"As a child, I was always asking about how things worked," says Afua. "My father was my first role model. As an engineer, he introduced me to the world of building and problem-solving."

The prospect of university was daunting, but she soon settled in.

"I was nervous at first but that quickly shifted once I became immersed in the course. What I loved most was how hands-on it was."

In her first year, Afua joined a team project to build a car bot: an autonomous vehicle programmed to drive in a straight line, detect obstacles, and navigate a set course. "We were writing code one moment and physically assembling the robot the next. It was thrilling to bring ideas to life."

Afua won the overall best engineering project award at the DCU Final Year Expo. "My objective was to make complex data accessible to everyone. Using data analysis, AI, and Google Cloud Platform, I built a system that turns raw sensor data into clear, easy-to-use information. I focused on air quality data in Irish cities, but the system could have applications in a wide range of areas."

In 2024, Afua completed a six-month internship at Dell Technologies and will start work at the company this autumn: "I'm looking forward to working in the areas of machine learning and AI. My objectives are to use my engineering skills to empower people and encourage children to participate in engineering."

DENIS HARDI'S ROLE IN DESIGN AND CONSTRUCTION ENGINEERING GROUP, H&MV ENGINEERING, HAS GIVEN HIM THE OPPORTUNITY TO WORK ACROSS EUROPE.

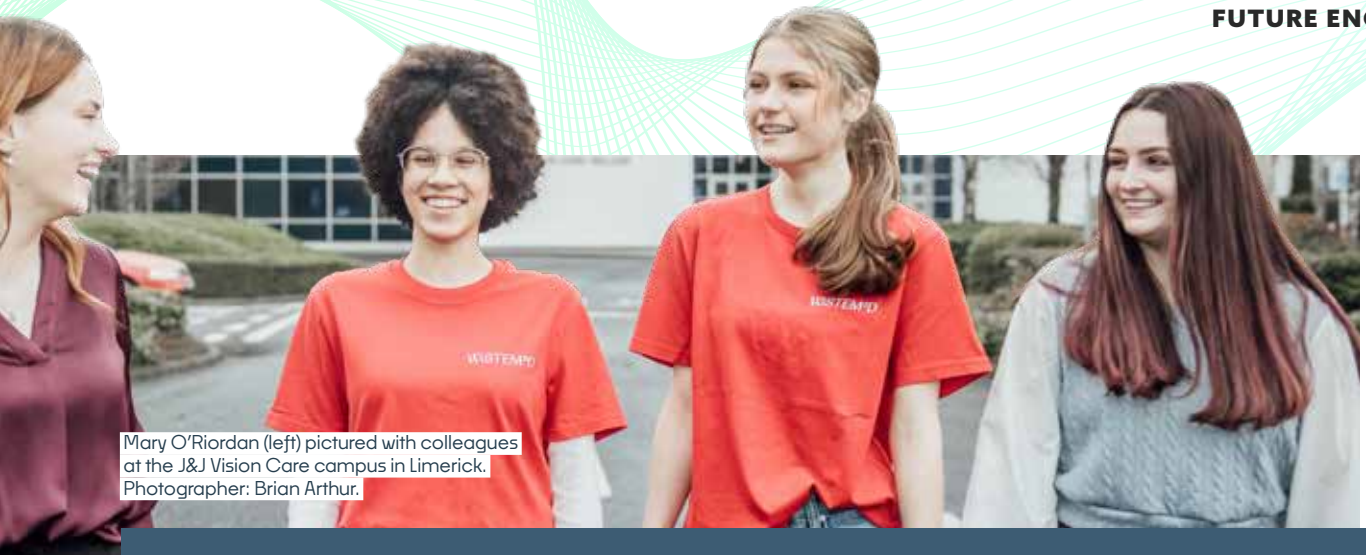
Denis attended a technical high school in Croatia, and initially completed a QQI Level 5 qualification in Security Systems Technology at Waterford College of Further Education, before pursuing further study. "Engineering has opened countless doors for me. Studying renewable energy and electrical engineering laid a strong technical foundation, and my postgraduate studies in leadership and digitalisation gave me the tools to grow into more strategic roles."

He has taken part in six international Short Advanced Programmes (SAP) across Austria, Portugal, Finland, and the Netherlands: "I worked with interdisciplinary teams, on technical projects and softer skills, like team dynamics and intercultural communication. One of the most important lessons was understanding that explaining complex problems in plain language is as essential as solving them."

Denis's role in H&MV Engineering has seen him work in France, Germany, Croatia, the UK and Norway. "Currently, I'm based at a Google data centre site, contributing as a Turnover Engineer – taking projects from the construction phase to the commissioning, operations, or maintenance phase – a role that demands strong communication, attention to detail, and alignment across global teams."

Working internationally has been one of the most enriching parts of his journey. "Each place has taught me something new—whether it's adapting to different workplace standards or navigating cultural nuances on site. I've had the opportunity to work with people at all levels of seniority, from field technicians to project leaders, and what stood out most is the importance of open-mindedness and collaboration."

Denis Hardi next to the Substation Transformer.



Mary O'Riordan (left) pictured with colleagues at the J&J Vision Care campus in Limerick. Photographer: Brian Arthur.

BIOMEDICAL ENGINEERING GRADUATE MARY O'RIORDAN EXPLAINS HOW ENGINEERING HAS HELPED HER 'FIND HER WHY.'

After completing her Leaving Cert, Mary wasn't certain what career direction to follow. She had accepted a place to study radiography but decided to enter the workplace while she thought about her next step. As a teenager, Mary received implants in her spine as part of successful treatment for a small bone tumour and this helped to guide her decision. "I understand the value of safe, effective medicine and medical devices in healthcare. I wanted to find a way to improve people's health without being on the frontline and that led me to consider biomedical engineering."

Mary started a four-year honours degree course in Munster Technological University in 2019, however, in fourth year, she almost dropped out. "I was unsure what to do next. My manager from my first job, Colm O'Sullivan, who has always been a trusted source of advice, convinced me to stick with the degree."

Having graduated from MTU in 2023, today Mary works as a manufacturing process specialist at Johnson & Johnson as part of its Global Operations Leadership Development (GOLD) programme. She spent nine months at the company's Vision Care facility in Limerick and is currently completing a nine-month stint with Innovative Medicine Bio site in Ringaskiddy, Cork. "The programme is exciting. In each rotation, I'm entering new areas where I'm learning a lot, and I try to offer a fresh perspective on the engineering challenges that each team is facing." Armed with the adaptable, problem-solving skills that engineering has given her, Mary says: "I'm enjoying the adventure. I wake up every day and I know my 'why'."

AN AUTOMATION ENGINEERING STUDENT AT SOUTH EAST TECHNOLOGICAL UNIVERSITY, SEAN RYAN BALANCES STUDY WITH WORK PLACEMENT.

Life on the family farm sparked Sean's early interest in engineering. "Whether it was machinery or the control systems behind modern manufacturing lines, engineering felt like a natural fit because it combines that curiosity with practical problem-solving and constant innovation. I started with a common entry engineering course to build a broad foundation across disciplines, which led me to specialise in automation engineering. I was drawn to automation because it's at the intersection of hardware and software, and it's evolving rapidly, especially with AI now playing a role in smart systems. I thought it would be heavily theory-based, but it has been hands-on and dynamic. Through projects and placements, I've had the chance to build, test, and implement real solutions, some of which are in use on production lines today. That has been incredibly rewarding."

Sean balances study with placements at medical equipment manufacturing companies, in 2023 with Integer and this year with Jabil Healthcare. "It has taught me how to manage my time, set priorities, and stay organised. What I learn in college often feeds directly into the work I do on placement, and vice versa. I've been able to take my theory of robotics and training on robots, and programme complex multi-robot mounted systems, something I could only have dreamed of. All while working on projects to make work on the farm easier. The engineering applications are endless and when they benefit those closest to me it gives an even bigger boost." This combined approach to learning has also helped Sean to build a professional network, which will be a major asset after graduation, he says.

Sean has been fortunate to have the support of mentors at Integer and Jabil. "They've shared their knowledge of controls and integration work and helped me grow both technically and professionally. Being a Student Ambassador with Engineers Ireland has also introduced me to professionals who are passionate about the field and generous with their time. That's the kind of engineer I want to become."

Balancing study with work placements has been a valuable learning experience for Sean Ryan.

Full throttle

With a background in biomedical and aeronautical engineering, Brian McManus has established an animation studio that's a talent hub of engineering creativity, and shares aviation, aerospace, and energy updates with millions of YouTube subscribers

Growing up, Brian had very little exposure to science or engineering. "I would have been one of the kids labelled with 'learning disabilities' in school, what we would now refer to as neurodivergence. I struggled with language, memory, and hyperactivity. Some things just consumed my thoughts – studying birds and drawing mostly. I loved playing with Lego and building scaled model planes. I was, and continue to be, a very visual learner. At the time, neurodivergence wasn't something that was openly discussed or acknowledged in schools, so no-one ever connected the dots and channelled those talents."

In his first year of secondary school, Brian was introduced to biology, and observing and drawing became a strength. "My linguistic memory is awful, but my visual memory is very strong. Being able to draw anatomy and experiments helped me immensely and I was suddenly doing well in tests. My individual learning style was helping me succeed. Biology was my strongest subject, so biomedical engineering was a natural choice in university in Galway. I followed that path and loved it. However, I graduated into the recession (2011) and struggled to get a job."

With a view to broadening his career options, Brian decided to study for a master's degree in another subject he was obsessed with – flight. Armed with his biomedical and aeronautical engineering qualifications, Brian ended up working in the oil and gas sector. However, he soon realised he wanted to take his life in another direction.

Brian is pictured undertaking a six g-force take-off in a Lockheed Martin F-16 with US Air Force demonstration team the Thunderbirds.

An animation still from a Real Engineering documentary on NASA's mission to Jupiter's icy moon, Europa.

ENGINEERS BUILT THAT!

Brian McManus is the creator and producer of the Real Engineering YouTube channel with nearly five million subscribers. "My objective with Real Engineering is to make engineering accessible and fun for as many people as possible, while respecting the audience's intelligence and ability to understand complex topics.

"We mostly cover aviation, aerospace, and energy, but occasionally veer into other subjects that catch my interest, like how airport security scanners work and why water isn't allowed through them."

Brian sees MRI technology as a superb example of the creative spark that drives engineering: "MRIs use the most powerful magnets possible to align the atomic spin of all the hydrogen atoms in our body, and then measure how that spin decays to give us information about their position and what tissue they reside in. "The way in which humans figured out how to combine superconducting magnets, signal processors, and quantum mechanics to build a machine like that is a truly under-appreciated marvel of the modern world that saves millions of lives. Doctors get all the credit. Engineers built that."

Producing regular content for a YouTube channel makes for a relentless schedule but Brian believes engineering prepared him to put his head down and work. "It feels like I am perpetually in my fourth year of college these days. Just reading as much as possible, teaching myself as quickly as possible, to get a report in the form of a YouTube video out every two to three weeks. It's hard work and the internet is the hardest grader I have ever encountered. Loving what I do definitely helps."

Brian recently visited the East Greenland Ice-Core Project (EGRIP) research base in the Arctic. EGRIP plans to retrieve an ice core from the Northeast Greenland ice stream to learn more about ice stream dynamics and past climate.

YOUTUBE SUCCESS

"I booked a trip to Labuan, Malaysia during Chinese New Year (my job at the time was in Kuala Lumpur, Malaysia). I locked myself in a hotel room for four days and taught myself the basics of animation. I went home and made my first YouTube video: 'Why are Plane Windows Round?' That video went viral and gave me the kickstart I needed, which was great because I had already quit my job before I uploaded it."

That first video led to the development of the Real Engineering YouTube channel (see panel left) and Throttle Media, Brian's animation studio. Throttle is a design studio that provides modelling, animation, sound design, and science communication services to help businesses, particularly start-ups, to communicate the value of their products to potential investors and customers.

"I had built a team of engineers that also knew how to animate, and I recognised the value that had for engineering start-ups trying to communicate their mission to the world."

Last year, Throttle produced animations of Firefly Aerospace's lunar landers and their moon mission. The landers are designed to deliver small payloads to the moon's surface.

"These animations were used on the NASA livestream during the first successful commercial moon landing in history. Playing a tiny part in space exploration history was very special to my team and I."

CREATIVE LEANINGS

Brian believes engineers are mathematically inclined artists.

"I think every engineer is inherently creative. When the wheel was invented, that was a person presented with a problem they wanted to fix, and finding a solution for it. That is creation, art. You can't dream an SR-71 Blackbird aircraft or the Golden Gate Bridge into existence without being creative.

"The little dopamine rush of solving a small problem, that's what gets most of us into engineering, and it's the exact feeling artists get when they deliver on the vision in their heads. It's no coincidence that many of the most talented engineers I know got their start in music and the arts, only to later discover they also had a talent for engineering."

SOLUTIONS FOR SOCIETY

Brian hopes that Throttle Media and his YouTube channel support and encourage young people with the ideas and determination to respond to the many challenges facing our society today: "Climate change is forcing us to solve so many problems. How do we make concrete without releasing millions of tonnes of carbon dioxide into the atmosphere? How do we replace fossil fuels in planes? Do we turn to hydrogen, biofuels or carbon capture and hydrocarbon synthesis? Our way of life, the entire planet's way of life, is at stake. We need all the smartest people in the world working on that problem. If I introduce one of those people to a problem we need to solve and they solve it, I have achieved my mission."

Konrad was an electrician before he pivoted to a career in engineering.

Konrad writes about a mentor who helped to guide his career path.

"Marion McAfee lectured me during my undergraduate degree and introduced me to the concept of academic research. I had never made the connection before and had always assumed research was an industry-based endeavour. Marion discussed the freedom she had to pursue her own interests within academia, and that inspired me to pursue it as a career path. I've also been lucky enough to have her as my PhD supervisor, so she's made a lasting impression on me."

Smarter choices, wider options

Konrad Mulrennan, university lecturer, PhD research supervisor, and mentor of student innovation and entrepreneurship, enjoys the variety of roles and career choices his mechatronics engineering background offers

Konrad's route into engineering is an example of the variety of pathways available: "I was an electrician by trade and had just finished my apprenticeship in 2008 when the economic crash took place. I was looking around to see what my career options were. I got in touch with what was then IT Sligo, now ATU Sligo, and found that my apprenticeship experience could be taken into consideration in studying as a mature student for an engineering degree. In fact, there were 32 students in my year studying mechatronics and 16 had been electricians!" ATU Sligo operates a recognition of prior learning (RPL) programme: "It's a rigorous programme but anyone interested in applying can reach out to our RPL team who will talk them through the process."

WHAT IS MECHATRONICS?

Mechatronics is a multidisciplinary field that brings together mechanical, electronic, and software engineering, and control systems, with applications in the design, development, and maintenance of intelligent machines and systems, including fields such as robotics and automation. "Mechatronic engineers create smarter, more efficient systems. They work in a variety of industries such as autonomous vehicles, robotics, aerospace, manufacturing, healthcare technology, and research and development, to name a few. The role of a mechatronics engineer typically involves developing and maintaining automated systems. "One of the most satisfying aspects of engineering is the flexibility it offers: I work as a lecturer, I oversee innovation and entrepreneurship hackathons, and I get to do research." Konrad's work encompasses lecturing on mechatronics and robotics engineering programmes; programme co-ordination for the mechatronics programme at ATU; and co-ordination of i-Days, a cross-Europe initiative to promote health innovation among university students; as well as holding a leadership role as an associate director at the Health and Biomedical Research Centre (HEAL) in ATU.

RESEARCH LEADER

Konrad also takes a supervisory role across six PhD projects: "My current focus as PhD research supervisor is on areas relating to digital health, artificial intelligence, and robotics. These projects aim to deliver meaningful societal outcomes such as improving quality of life for individuals living with chronic illnesses and enhancing agricultural and industrial sustainability." One such project is working towards improving outcomes for people with Type 1 diabetes, an effort partly driven by Konrad's experience of living with the illness for over 25 years.

"The project aims to design algorithms that can generate more comprehensive and detailed information on patients with Type 1 diabetes in order to enhance the management of the condition and, ultimately, the patient's quality of life."

ATU Sligo has seen more than a thousand mechatronic engineers graduate over the last two decades, offering valuable societal and economic contributions. "Our graduates have gone on to work in Irish-based advanced manufacturing, medical technology, and pharmaceutical companies in areas such as industrial automation and enhanced design of smart manufacturing processes. This has been particularly impactful in the west and northwest of Ireland where our graduate and research students are bringing engineering expertise and innovation to companies across the region."

Konrad notes the individuality and variety of personalities attracted to the profession: "There are no specific characteristics that every engineer has, nor should there be. The biggest challenges we face today require multi-faceted people with multi-disciplinary skills. Yes, engineers tend be innovative problem-solvers, but they're also creative, practical, resourceful, mindful, and have a variety of other characteristics."

Konrad believes more needs to be done to improve gender diversity in engineering disciplines if society is to be adequately equipped to meet the huge challenges ahead.

"I would strongly encourage more young women, and students of all gender identities, to consider engineering as a fulfilling and impactful career. We need a diverse set of voices to tackle the complex societal and environmental challenges we face."

Niamh at NASA Kennedy Space Centre in 2022.

Space Odyssey

ENGINEERING HAS TAKEN NIAMH SHAW ON A VARIETY OF CAREER PATHS, FROM SCIENCE COMMUNICATOR TO ARCTIC EXPLORER

Niamh's love of science and engineering is rooted in her upbringing – her father worked in an engineering company called Ecco in Dundalk, a US firm run by GE, managing the maintenance department. Niamh recalls that he had a great awareness of engineering skills but as one of 15 siblings growing up in rural Ireland during World War Two, he didn't have the opportunity to go to college. "My dad let us play and learn by fixing things in the house, like light bulbs and sound systems. I was a very logical child and had a technical mindset. My parents encouraged this, getting us one of the first personal computers you could buy, the Sinclair ZX Spectrum. It was basically just a printed circuit board connected to a TV screen. I put lines of code in from magazines like *PC World* to download games. I was even more intrigued by this when it didn't work out, as I wanted to solve the problem. We watched lots of nature programmes growing up. I was always fascinated with space and science fiction."

GAINING CONFIDENCE

Niamh was not top of her class when it came to maths and she doubted herself when it came to choosing engineering as a career. "I had a certain lack of confidence; in my head, I believed my ability in maths wasn't good enough to be an engineer." But she stayed true to her interests and was the only girl in her year who applied for engineering through the CAO. "I had some

Niamh on her recent expedition to the Arctic.

great teachers: Mrs Greer, our chemistry teacher, was so encouraging and her husband worked in a lab and let us use it for experiments."
After completing a degree and masters in biosystems engineering in University College Dublin, Niamh moved to London where she got a six-month contract with the London Underground's Victoria tube line. It was here she met another mentor, her engineering services manager, Aneil Shah: "He was brilliant – he brought me to meetings about industrial disputes and allowed me to go down into the tunnels with maintenance at the weekends. He nurtured my curiosity and when I was leaving the job he told me that I was good with people and to make sure I brought that into my career."

CREATIVE TALENTS

Alongside Niamh's interest in engineering, she also developed her creative side at school and college, writing poems, acting in school plays and joining amateur dramatic societies. She decided to apply to the Gaiety School of Drama but wasn't accepted: "I assumed I was just not good enough and so I went back to apply for jobs in the area of engineering." After working as a programmer for a period, Niamh was still trying to find her niche and did a PhD in a research project that focused on developing edible and biodegradable films in food packaging. "This really sparked my interest in environmental issues and solutions to sustainability, which remain a big part of my life to this day."
After completing her PhD, Niamh took a full-time job in University College Cork's food science department, but she didn't enjoy the role. "I realised that this wasn't the career for me, and I needed to work in an environment that involved more socialisation." Feeling somewhat disillusioned, Niamh took a break from the world of science and returned to the stage, deciding to throw her energy into acting full-time. A successful career followed and Niamh enjoyed her creative pursuits on stage, and on screen, from 2002-2012. "I loved acting but I started to miss science. During a stint acting on *Fair City,* someone suggested I screen-test for a slot on an RTÉ programme."
The screen test was for the role of resident scientist on RTÉ's afternoon show *Seoige,* hosted by sisters Síle and Gráinne Seoige. "All of a sudden, I was working in science communication; it offered me the ability to live in that middle ground that tapped into my interests in communication, art and science."
She later presented 'Space Hub' segments on *Home School Hub,* RTÉ's flagship education programme during the COVID pandemic, bringing space science into Irish homes.
Through these experiences – and other projects that followed, including becoming an artist in residence at Blackrock Castle Observatory – Niamh's passion for exploration and space was reignited. "I decided to follow my childhood dreams and I applied to the International Space University. I was terrified! I knew I would be much older than other applicants, but it was an amazing experience."

EXTREME ENVIRONMENTS

Niamh took part in the International Space University's Space Studies Program in 2015. That year, the nine-week intensive graduate course was held in Ohio University in Athens, Ohio. Following that, she participated in a simulated Mars mission in the Utah desert in January 2017. "I love spending time in extreme environments. The analogue-simulated Mars mission really opened my eyes to the importance of our efforts towards protecting the environment – we had to ration our water, food, and power and we

Niamh on board NASA's airborne observatory, SOFIA.

On board an airborne observatory

In September 2022, Niamh was selected as one of a handful of international science communicators to fly on NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA). SOFIA was an airborne observatory – a Boeing 747 carrying a 2.7-metre infrared telescope used to study star formation, black holes, and the chemistry of interstellar space.

The flights, operated by NASA in partnership with the German Aerospace Center (DLR) and the Universities Space Research Association (USRA), gathered live astronomical data during flight.

STEM outreach to schools and families

While Niamh often gives school talks during STEM weeks, her focus is on embedding science in communities by working directly with parents and families.

She runs informal science learning sessions for adults, followed by hands-on family workshops. The workshops range from rocket-building to science centre visits, at venues such as W5, an award-winning science and discovery centre in Belfast.

Upcoming events during Science Week, Space Week, and Climate Action Week will further connect families with scientists and engineers through accessible, fun activities. "If parents can break down their own barriers to STEM, then science becomes a natural topic at home. That confidence is what will fundamentally change children's relationship with STEM," she explains.

She stresses that diversity of perspectives, especially in fields like engineering is essential: "STEM shapes our future. The more comfortable and confident people are with it, the more chance we have of building a society that reflects everyone, not just the few."

Niamh on a simulated Mars Mission in Utah USA.

wore space suits which made you realise how we even take our air for granted!"

At the time of interview, Niamh had just returned from a trip to the Arctic as part of an art-science residency, The Arctic Circle Summer 2025 Expedition. For the expedition, Niamh joined an international group of artists, communicators, and activists aboard a schooner in the High Arctic. She was the only participant with a PhD in science and with combined skills in engineering and science communication. On behalf of Dundalk IT, she collected glacier water and soil samples and ran engineering experiments for undergraduate students in engineering. Niamh's main focus on this mission was to explore new pathways to climate change storytelling, making this complex topic more accessible to non-STEM audiences.

Alongside the research, she documented the experience through video, audio, and writing, connecting it to the legacy of Irish Arctic explorer Leopold McClintock. These materials will form the basis of an interactive Climate Action Walk in Dundalk during Climate Action Week: "We were a group of artists from all over the world who share a passion for climate. We witnessed first-hand climate change in action; I saw glaciers calving (the process by which ice breaks off from the edge of a glacier) and polar bears on the pack ice. It was a stark reminder that we all have to respond to the crisis. It was a privilege to be there."

Concluding, Niamh states: "I wouldn't be where I am today without all the mentors who supported me along the way, so I make sure to set aside time to mentor others now. Straddling both the worlds of science and engineering and media and arts has allowed me to broaden my horizons, literally, and it has strengthened my mission to help take care of this planet. I am constantly searching for a new perspective on the world and, one day, I hope to see Earth from a distance and fulfil my dream of going into space."

> I decided to follow my childhood dreams and I applied to the International Space University. I was terrified! I knew I would be much older than other applicants, but it was an amazing experience

Niamh on the set of children's TV show Home School Hub.

Added Value

A REGISTERED PROFESSIONAL TITLE IS A STAMP OF ACHIEVEMENT THAT CAN FURTHER YOUR CAREER PROSPECTS, INCREASE YOUR SALARY, AND LEAD TO MORE FULFILLING OPPORTUNITIES

Did you know?
A professional title can boost salary by up to €22,000

Adding a Registered Professional Title to your CV can improve your career prospects, increase your earning potential and earn respect and recognition for your hard work. It signals to employers that you have reached an internationally recognised standard of education, professional competence, skills, and experience in your career.

There are five categories of Professional Title that can be pursued once you have attained an accredited third-level engineering qualification, or possess substantial relevant experience and have spent time in the workplace applying those lessons:


Thomond region.


Great Britain region.


National Conferring Ceremony.


Northern region.


West region.


Cork region.

ENGINEERING TECHNICIAN

Engineering Technicians contribute to the design, development and manufacturing of products and services, demonstrating expertise and professionalism.

ASSOCIATE ENGINEER

Associate Engineers are problem-solvers. They apply current technologies and exercise technical judgement in their day-to-day work. They are generally experienced engineers who actively participate in financial considerations.

CHARTERED ENGINEER

Chartered Engineers are leaders in the industry. They are ethical practitioners who maintain the highest level of competence and professional integrity. They develop new technology and use innovative methods to solve complex problems.

CHARTERED ENVIRONMENTALIST

A Chartered Environmentalist demonstrates outstanding environmental expertise, helping to protect and enhance the environment in a sustainable manner. Chartered Environmentalists work across various sectors, applying their knowledge to drive sustainable practices, lead initiatives, provide strategic advice, and influence decision making at all levels.

FELLOW

Engineers Ireland Fellows hold the most prestigious and senior professional title within the engineering profession. Fellows are highly skilled professionals who help to shape, influence, and inspire both engineers and the future of the engineering industry. Being an Engineers Ireland Fellow signifies excellence in your promotion of, and influence on, the engineering profession.

CONFERRING OF PROFESSIONAL TITLES

Achieving a Registered Professional Title is a significant career milestone, and in 2025, 346 members of Engineers Ireland were awarded their titles at formal conferring ceremonies led by the President of the organisation.

LIMITLESS HORIZONS

Engineers from Ireland are delivering critical infrastructure across the globe. In Hong Kong, one of the most densely populated regions in the world, Irish engineers are re-imagining its transport infrastructure and enhancing community connectivity in innovative and unprecedented ways. Across the following pages, two leaders in their fields, Bridget Mullane, Director, Hewson Consulting and Carl Devlin, Capital Works Director, MTR Corporation provide insights into their career paths and their contribution to a re-shaping of infrastructure that will define connectivity in the region into the future.

One of the Hong Kong infrastructure projects that Bridget has worked on is the Cross Bay Link, a major marine crossing in Hong Kong featuring a 200m long 'Eternity Arch' and two 100m long steel side spans.

"I helped build that – there's no better feeling"

WHEN BRIDGET MULLANE BECAME AN ENGINEER, SHE WAS WELCOMED INTO A LIKE-MINDED AND SUPPORTIVE COMMUNITY THAT IS HAVING A MEANINGFUL IMPACT ON THE WORLD

Constructuction and placement of the Cross Bay Link Arch.

"Roads, bridges, construction… I was fascinated by it all," Bridget, a structural engineer and Director at Hewson Consulting, recalls. "Everyone else wanted to be nurses or teachers, I was absolutely sure I wanted to be an engineer from when I was four years old. I don't know exactly where that came from, but looking back, it was probably from my mum – her family is full of engineers, and she should have been one, too. She went into the sciences instead, which I suppose was seen as more acceptable at the time. That didn't happen in our generation though: every single one of my cousins on my mum's side of the family ended up in engineering!"

CAMARADERIE AND SUPPORT

Engineering is, at its core, collaborative, Bridget says. "Whether it's a small community project or a billion-pound infrastructure scheme, everything is about teamwork. You're working side-by-side with people who are all pulling in the same direction to deliver something tangible, and that creates a strong sense of camaraderie and mutual support." She believes the profession is becoming more diverse and inclusive. "At its best,

The Jakarta MRT Indonesia, with erection gantry above, is one of the many critical infrastructure projects Bridget has worked on. The MRT (mass rapid transit) is Jakarta's first underground and elevated rail-based public transportation system.

the industry values people for their abilities, mindset, and enthusiasm. Over the years, I've seen a real shift. There's a growing recognition that to meet the demands of society – from climate change to infrastructure development – we need different perspectives.

"That's made the industry more inclusive, and more welcoming to people who might not have traditionally seen themselves as engineers. For those considering engineering, the message is: if you're passionate, driven, and curious, there is a place for you."

PASSPORT TO A GLOBAL CAREER

An Irish engineering qualification is recognised around the world thanks to international accords and agreements, and engineering skills are in demand globally. Bridget has worked in the UK, Malaysia, Hong Kong, and the Middle East, even studying for part of her degree in Germany. "I had the opportunity to study civil/structural engineering in the Darmstadt with the Erasmus programme. It was one of the best things we did during college (Bridget studied structural engineering in MTU from 2003 to 2008) and I would love to turn back the time to those days again. Especially as the World Cup just happened to be on in Germany as we finished up there! An engineering degree can take you anywhere, quite literally. No matter where I've been, engineering teams have always been welcoming. There's a shared mindset: problem-solving, curiosity, and a passion for the task. It's like finding your tribe. I've also found that both my degree and chartership from Ireland are really well respected internationally.

"That's one of the things I love most about engineering – the skills you develop are so versatile. I've worked on everything from urban rail systems to major highways and international bridges. The problem-solving, project management, technical understanding, and people skills you gain are applicable anywhere – not just across countries, but across industries too.

"It's a career that grows with you. Whether you stay technical, move into leadership, or shift towards sustainability or policy – it's all possible."

Why I became a Chartered Engineer

For Bridget, pursuing a chartership felt like a natural step. "My degree gave me the foundation, but chartership was a way to formally demonstrate the experience and skills I'd gained over time."

Chartered Engineers are leaders in the industry who maintain the highest level of competence and professional integrity. They develop new technologies and use innovative methods to solve complex problems.

"It's a mark of professional competence and credibility, not just in Ireland, but internationally. It helps open doors and shows clients and colleagues that you're working to a recognised standard. But more than anything, it's a personal milestone and a recognition of everything you've learned and achieved as an engineer.

Think big, build big!

Bridget has worked on hugely ambitious infrastructure projects in Hong Kong.

"A few favourite projects will always stand out for me. Liantang Contract 3 was my first in Hong Kong and I had a great time working on it. It was a series of bridges, interchanges and ramps over a really congested site.

"The structures had to cross a six-lane motorway, a river, local roads, a major water pipe into Hong Kong, and the main train line to China – and all had to be kept open during construction! The satisfaction when that one opened was huge."

Klang Valley Mass Rapid Transit was another landmark: "I'd worked on Phase 1 as part of the team for the special long-span structures, and years later I returned as the structural lead for Phase 2. Going back a few years later to sit at the front of one of the driverless trains was great fun.

"One of my current projects is also in Hong Kong – with a nine-year construction programme. It includes building a tunnel under the existing viaduct to the airport (which stays operational throughout), as well as a new twin bridge beside it, squeezed between buildings and bridges. Traffic will be moved to the new structure so the old one can be demolished in phases, and the new bridge will sit on top of the new tunnel. The tunnel runs through reclaimed land and even passes under listed heritage buildings. The logistics, sequencing, and innovation involved are incredible."

A CAREER WITH IMPACT

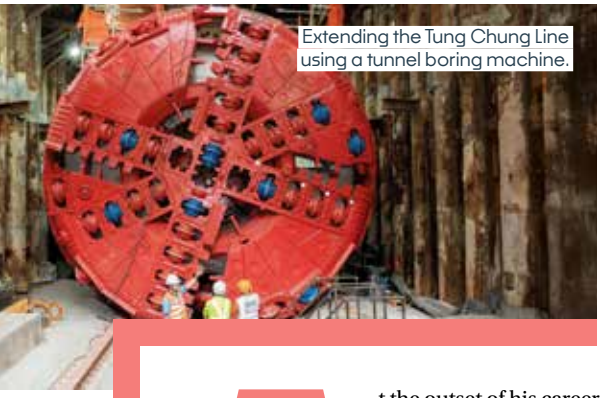
Fundamentally, Bridget says, engineering offers individuals the opportunity to have a meaningful impact on the world: "Engineers shape the world we live in – quite literally. When a project opens and people start using it – whether it's a bridge, road, railway, or even a simple footpath – it's a proud moment. Good engineering helps communities thrive, keeps people connected, and moves society forward. You know it's making life better for others, and you get to enjoy doing it. Win-win."

The most satisfying part of the work is when a project has been completed: "When you see a project come together after all the ups and downs, it's a really fulfilling moment. When the long hours and planning turn into something real that people use and rely on and you can walk past it years later and say, 'I helped build that.' There's no better feeling. Not every career gives you that."

The Klang Valley MRT Elevated Railway in Kuala Lumpur.

Shaping the world

A CAREER IN CIVIL ENGINEERING HAS TAKEN CARL DEVLIN FROM LONDON TO HONG KONG AND FROM AIRPORT MEGA-PROJECTS TO LANDMARK RAIL INFRASTRUCTURE DEVELOPMENTS



Extending the Tung Chung Line using a tunnel boring machine.

Hong Kong's West Kowloon Terminus that connects Hong Kong with China's national high-speed network.

At the outset of his career, Carl resolved to explore different roles: "While I did not have a roadmap, I knew that staying in the same role too long would mean that I would become very good at a similar set of activities but wouldn't get the opportunity to broaden my skills. Instead, I have worked for excellent project leaders on diverse projects and have modelled my leadership styles accordingly."

His appetite for international experience across transport, infrastructure, aviation and energy sectors grew as he embraced roles at executive and senior leadership levels for organisations including the New Zealand Transport Agency, Horizon Nuclear Power, Transport for London, British Airports Authority (BAA), Bechtel and, today, MTR Corporation.

Carl believes his civil engineering degree equipped him with the capabilities and confidence to maximise these opportunities: "A civil engineering degree is the equivalent of a 'Swiss army knife' qualification. It provides you with versatile tools to build, innovate, and adapt across industries."

Civil engineering, he says, is one of the most impactful careers, leaving a lasting legacy: "Civil engineers build the systems that societies cannot survive without: clean water, sanitation, flood defences, roads, railways, bridges and energy grids. When any of these fail, chaos follows.

"Today's skyscrapers, tunnels and renewable energy grids will shape the world for generations. The work of engineers literally becomes part of the Earth's fabric. Designing infrastructure to withstand rising seas, extreme weather, and resource scarcity isn't just technical – it's an ethical act of stewardship for future generations. Designing affordable housing, public transit, or clean water systems tackles inequality. Few professions touch so many lives so directly.

"Turning on a tap and trusting the water won't poison you, or driving over a bridge without a second thought – this invisible reliability is a civil engineer's quiet gift to humanity. A career which gives you the opportunity to deliver infrastructure that society requires to survive, adapt, and prosper is so much more rewarding than other careers that just do not have the same impact on the world."

London St Pancras International during construction, refurbishment, and commissioning.

FUTURE-PROOF CHOICE

There is a saying that a good engineer will always have a job, but amid increasing concerns about the impact of artificial intelligence (AI) on existing job categories, will this be the case in the future?

"I believe it still holds true, but we probably need to redefine what a 'good engineer' is in the 21st century. They are no longer simply professionals with deep technical expertise in a single static domain. They are adaptive learners, AI-literate users, holistic problem solvers, creative system thinkers, and ethically grounded practitioners."

Carl is confident about the future of the profession: "Engineers who embrace AI as a powerful augmenting tool, continuously update their skills, and focus on the uniquely human aspects of engineering (creativity, judgement, responsibility, systems thinking) will not just have a job; they will be the critical drivers of innovation and problem solving in the AI era."

New Heathrow Air Traffic Control Tower.

The evolution of an engineering career

Carl outlines three mega projects that were significant milestones in his career to date.

CHANNEL TUNNEL RAIL LINK

Carl's first experience as a project manager was on the Channel Tunnel Rail Link (CTRL), a 109.9-kilometre (68.3-mile) high-speed railway linking London with the Channel Tunnel. It cost £6.84 billion to build and opened in November 2007: "I was accountable for the delivery of the complex railway junctions north of St Pancras station to provide connectivity with the wider rail network in the UK, as well as the connection to the tunnels that ran under North London connecting St Pancras International with the Channel Tunnel in Kent.

"It was the first time that senior management had placed their confidence in me even if everything for me was new. And it was the project where I started to understand the difference between management and leadership."

HEATHROW TERMINAL 5

After working on the CTRL, Carl moved to BAA where he worked on Heathrow Terminal 5. The terminal complex cost £4 billion and took almost 20 years from conception to completion, including the longest public inquiry in British history.

Initially, Carl oversaw works on rail links from the Central Terminal area at Heathrow to the Terminal 5 site, before taking over delivery of a new air traffic control tower, the landside civil works and, finally, the completion of the main satellite building for the Terminal 5 complex.

"I needed to adapt my style of leadership from being quite directive to being more collegiate. I developed very strong stakeholder engagement skills which have proven very useful as my career has progressed. Many of the leadership qualities that I developed working on Terminal 5 have stood the test of time and are part of who I am today. Many of the ways of working that were used for the first time in the UK construction industry in the delivery of these projects are now being deployed in the projects I lead today in Hong Kong."

MTR NEW RAILWAY EXTENSION PROJECTS

Carl is now Capital Works Director at MTR Corporation in Hong Kong and a member of the company's executive management directorate: "MTR is currently committed to the financing and delivery into operations of seven complex railway extension projects, extending the reach of the rail network across Hong Kong, with an overall investment to date in the order of €15.5 billion, with more to come."

Carl is accountable for the development and delivery of all the railway extension projects, and all significant upgrade projects on the existing network in Hong Kong. "In order to provide high-quality railway services, a robust project management model is being deployed alongside an active use of innovation and technology to enhance project quality and efficiency while taking sustainability into account."

Engineers Ireland STEPS 25 YEARS

Sparking Young Minds

EARLY EXPOSURE TO ENGINEERING BOOSTS CREATIVITY, TEAMWORK, AND PROBLEM-SOLVING

Over the last decade, over **1,000,000** children across Ireland have interacted with STEPS through our high-quality engineering outreach activities.

The Engineers Ireland STEPS Programme opens up the exciting possibilities that engineering offers to school children who want to make a real difference in the world. Launched in 2000, STEPS is Ireland's only national STEM initiative focused exclusively on engineering. Aimed at students aged five to 16, the programme has reached millions, opening their eyes to engineering as a dynamic, exciting, and rewarding career that can truly change the world.

STEPS PROJECTS FOR PRIMARY AND SECONDARY SCHOOL CHILDREN:

YOUNG ENGINEERS AWARD

The STEPS Young Engineers Award encourages schoolchildren, aged eight to 11 years old, to develop engineering projects to help or improve their local community. Children are tasked with identifying a problem and working in teams to come up with a creative engineering solution. They are encouraged to focus on sustainability when creating their solution. Schools can invite an engineer to visit their classroom where children can showcase their projects and learn about the role of engineering in the community.

ENGINEERS WEEK

STEPS Engineers Week is an annual nationwide campaign designed to introduce primary and secondary school children to the diverse world of engineering. STEPS has created resources for teachers, such as hands-on activities and virtual engineering shows, and facilitates engineering organisations to visit local primary and secondary schools. Engineers Week 2026 will take place from Saturday, 28 February – Friday, 6 March 2026.

ENGINEERING YOUR FUTURE

STEPS Engineering Your Future is an opportunity for Transition Year students to enjoy an engineering work experience. This initiative focuses on hands-on challenges across all engineering disciplines and highlights the different routes to engineering, including higher education institutes, engineering companies and apprenticeships. In-person work experiences take place in industry and third level between February and May, and applications open in November 2025.

IRISH GIRL GUIDE ENGINEERING BADGES

In collaboration with the Irish Girl Guides, STEPS offers engineering badges for Ladybirds (aged five to seven), Brownies (aged seven to 10), and Guides (aged 10-14) as part of the Irish Girl Guides' Journey Programme that aims to empower girls to reach their full potential. The badges encourage girls to solve fun engineering challenges using creative thinking, curiosity, and teamwork.

AN ENGINEER LIKE ME

An Engineer Like Me is an Engineers Ireland campaign that champions diverse engineering role models whose innovation and creativity have had a meaningful impact on society. By sharing their stories, the campaign aims to inspire the next generation of engineers, many of whom are motivated by early experiences like science fairs, and role models like family members, teachers, or public figures. Through digital resources, interviews, videos, podcasts, and live events, it aims to spark curiosity and ignite a lifelong passion for engineering. As part of this overall campaign, STEPS will launch a new initiative for engineering organisations during the 2025-2026 academic year called STEPS An Engineer Like Me Impact Day. It will include volunteering resources, training, and bespoke supports from the STEPS team to bring hands-on engineering learning experience to children from underrepresented backgrounds across Ireland. STEPS will partner with organisations and their engineers to facilitate this initiative.

If you would like to inspire future generations and provide insights into the world of engineering, why not join us to support and scale STEPS. Details on sponsorship and activities can be found at engineersireland.ie/Schools/ or click on the QR code to subscribe to our newsletter.

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Lead innovation and change with a Master's in Engineering at Trinity

Applications for 2026 entry open on 3 November 2025

Trinity College Dublin's School of Engineering offers a diverse range of MSc programmes designed to prepare graduates to address the challenges of tomorrow. From climate action and sustainable energy to advanced computation and infrastructure design, our programmes combine world-class teaching, cutting-edge research, and strong links with industry.

Civil Structural & Environmental Engineering

- **MSc in Environmental Engineering**
  Website: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-engineering/environmental-engineering/
- **MSc in Structural and Geotechnical Engineering**
  Website: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-engineering/structural--geotechnical-engineering/
- **MSc in Sustainable Energy**
  Website: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-engineering/sustainable-energy/
- **MSc in Transport Engineering, Policy & Planning**
  Website: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-engineering/transport-engineering-policy--planning/
- **MSc in Climate Adaptation Engineering**
  Website: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-climate-adaptation-engineering-/

Mechanical, Manufacturing & Biomedical Engineering

- **MSc in Mechanical Engineering**
  Website: https://www.tcd.ie/mecheng/teaching/postgraduate/msc-in-mechanical-engineering/
- **MSc in Zero Carbon Technology**
  Website: https://www.tcd.ie/mecheng/teaching/postgraduate/msc-in-zero-carbon-technology/
- **MSc in Biomedical Engineering**
  Website: https://www.tcd.ie/mecheng/teaching/postgraduate/msc-in-biomedical-engineering/

Electronic & Electrical Engineering

- **MSc in Electronic Information Engineering**
  Website: https://www.tcd.ie/eleceng/teaching/postgraduate/electronic-information-engineering/
- **MSc in Computational Engineering**
  Website: https://www.tcd.ie/eleceng/teaching/postgraduate/computational-engineering/

Apply now to shape the future of engineering. Applications for 2026 entry open on 3 November 2025

w **www.tcd.ie/engineering** e **engineering@tcd.ie**

ARUP

A future with purpose starts here

Join Arup and help design the world around you – from future-ready buildings and public spaces to renewable energy projects and transport systems that connect communities.

Your ideas can make a big difference.

We shape a better world

www.arup.com/careers

Curious about a career at Arup?

Scan to hear real stories from our graduates.