The Woman Engineer
WOMEN'S ENGINEERING SOCIETY
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Powering the past, inspiring the future

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Caroline Haslett Lecture

BOOK YOUR PLACE

DATE
16 December 2025

TIME
18:30 - 21:00

LOCATION
The Geological Society, London

Book now:

wes

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Welcome to the Autumn issue of The Woman Engineer

This issue covers several astounding and very motivating stories by WES members.

Susan Robson, CEO Women's Engineering Society starts us off on page 7 with a time for reflection and a look at what's ahead. She shares what's been achieved as a team and what aspirations are in place going forward.

We then share a tribute to a computing pioneer and 'brilliant mind' who has been honoured with a blue plaque. Following on from that, Natalie Desty, Founder and Director of STEM Returners delves into the simple fact, that there are not enough women engineers and the future of the STEM workforce.

In this issue, we are extremely fortunate to have received an incredibly well thought out and written contribution from Professor Louise Horsfall on Engineering Biology, and 'what's in a name' – turn to page 12 for the full piece.

Verena Fernades, Senior Engineer for Metis Consultants talks about imposter syndrome to the glory of being a woman in engineering. This then leads us to a piece on delving into how best to nurture your career - Susan Binnersley, Founder and MD of h2h Resources Ltd shares practical tips on how to get the most out of your career in engineering. Zurich Engineering also share the journeys of two of their passionate engineers from page 20.

To finish us off, Sue Bird, a former President of the Women's Engineering Society has provided us with a well thought out review on the book written by Monique (Aubry) Frize, titled A Woman in Engineering. – Memoirs of a Trailblazer.

The Women's Engineering Society has a full agenda of events planned in over the next 12 months – visit pages 8 & 9 for full details. These events provide wonderful networking opportunities with your peers, recognising and celebrating excellence and even training with much more on how to maximise your WES partnerships.

As always, I look forward to welcoming your feedback; **julietl@warnersgroup.co.uk**

Juliet Loiselle FInstR
Managing Editor

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Computing pioneer and 'brilliant mind' honoured with blue plaque

A blue plaque has been unveiled in Trafford Park to a mathematical physicist and computer pioneer.

Research by Trafford Council's Local Studies team showed that Beryl May Dent worked for Metropolitan Vickers in Trafford Park and helped show the importance of electrical computers at the beginning of their existence.

The Ferranti Mark 1 was the world's first commercially available general-purpose electronic computer and Beryl wrote programmes that sped up the calculation process for engineers, cutting down one set of calculations from three months to five hours.

The unveiling, on 9 August by Mayor of Trafford Cllr Jane Brophy, took place at St Antony's Heritage Centre, which is close to Westinghouse Road where Metropolitan-Vickers was located.

Cllr Brophy said: "We are paying tribute to another pioneer, a brilliant mind and someone who left an indelible mark on mathematics, engineering and computing.

"Beryl Dent showed that women deserved to be given equal rights when it came to education – and that their place could be in the laboratory, university or wherever their capabilities took them. They weren't just the intellectual equal of men – they often surpassed them."

Beryl, who was born 125 years ago in 1900, lived in Stretford after taking up her position in the research department. She was put in charge of the women working in the research department laboratory in 1944 and, in 1946, she was promoted to section leader of the new computation section.

Away from work, Beryl was school manager at St Matthew's Church of England Primary School on Poplar Road, Stretford, between 1956 and 1962.

After retiring, Beryl moved with her mother and sister to Sussex in 1962. She was an active member of the Christian community, being elected as treasurer and electoral officer of the local parish organisation. Beryl died on 9 August 1977.

"We are paying tribute to another pioneer, a brilliant mind and someone who left an indelible mark on mathematics, engineering and computing."

Although WES representatives were unable to attend in person, the Women's Engineering Society is proud to have been included in marking the unveiling of a blue plaque in honour of Beryl May Dent, a pioneering physicist and mathematician whose legacy continues to resonate across generations. Beryl pursued a career in science at a time when women's contributions were often overlooked. Her work demanded intellectual rigour and resilience, and she brought both to every role she held.

As a member of WES, Beryl embodied the values we continue to uphold today: inclusion, opportunity and the advancement of women in engineering. She was not only a trailblazer in her field, but also a voice for change, advocating for greater access to STEM education and careers for women and girls. Her commitment to equity and excellence helped pave the way for future generations.

At WES, we believe that every member and volunteer is a custodian of our past and a contributor to our future. Beryl's story is part of that living legacy and one that continues to inspire and guide our work. Her life reminds us that engineering history is not just built on inventions and discoveries, but on the courage and conviction of those who made them possible.

Trafford now joins a growing number of communities recognising the achievements of pioneering women in STEM. This borough not only nurtured Beryl's journey but now plays a vital role in preserving and celebrating the stories of women who helped shape our scientific and engineering heritage and we are grateful to the Council for leading the way on this. The plaque for Beryl is more than a tribute to her accomplishments; it's a symbol of progress, a tribute to courage and a call to action.

We are delighted to celebrate her achievements, her values and the example she set. And we hope this plaque will stand not only as a marker of history, but as an invitation to others to follow in her footsteps.

A time for reflection and a look at what's ahead

BY **SUSAN ROBSON MBE**, CEO WOMEN'S ENGINEERING SOCIETY

For many, the anniversary of being in post is a time for reflection. I'd like to take this opportunity to share some thoughts on what we've achieved as a team and what we aspire to as we look ahead. It has undoubtedly been a period of rapid change and I hope our members and partners see it as a change for the better.

Increased engagement

As many of you know, I've kept a clear focus on improving the experience of being a member and partner of WES. This has led to some bold changes in how we engage: more frequently, more consistently, and with greater clarity around opportunities and value. We continue to ask for your feedback to help us refine our approach, our services and our products to ensure you get the outcomes you need for your careers in engineering.

Communication

Our use of LinkedIn as a communication tool has delivered fantastic results, with strong engagement and reach. We'll keep building on this to ensure we share the right information with as many women in engineering and organisations as possible. This helps us drive meaningful change and strengthen our collective impact.

Key relationships

We've also invested significant time in strengthening key relationships with the PEIs, the Royal Academy, and other institutions we must collaborate with to bring the best to our members. I'd like to thank everyone who has engaged with us and supported this work.

"Our goal is to ensure that women in engineering receive the support they need."

Cluster events

Reestablishing our presence across the UK through regional Clusters has been deeply rewarding. We've had excellent events in Aberdeen and on the South Coast, and we're working hard to expand this further. Our goal is to ensure that women in engineering, wherever they live and work, receive the support they need. I'm especially grateful to the volunteers who continue to work with us so patiently to make this happen.

Awards

This year, we're aiming to make the Caroline Haslett Lecture our best yet. Alongside our awards (which notably remain free to enter and attend, unlike many industry events) we'll be launching the Karen Burt Impact Report to mark Cyril Hilsum's centenary. For those who've attended before, you'll know what a special occasion it is. Whether you're returning or joining us for the first time, we're excited to welcome you.

Positive partnerships

It's been a busy time, filled with energy and possibility for the year ahead. Our partnership with Ellie Driver Racing has been a personal highlight. Following Ellie's journey has been a joy, and her spirit, alongside the WES boat, has become a symbol of what we can achieve together.

There's far too much to highlight here, so please do keep an eye out for what's coming next. I'm always uplifted by this network and I hope you are too.

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Designing engineering solutions. Earthquake-proofing embassies. Managing construction contracts in challenging locations. Just a few examples of the incredible work our Engineering team does. They're the people who plan, design, and deliver innovation across all corners of the globe. Now, you've got the opportunity to join them.

It all matters

Register your interest today

women's engineering society

ANNUAL PLANNER 25 | 26

DECEMBER		
	WES Event: Caroline Haslett Lecture	16th
	Awards: Professional Registration, Volunteer & Supporter Results	16th
	Partner Webinar: Attracting talent - recruiting underrepresented groups	17th
	Member Webinar: Members' Choice	3rd

JANUARY		
	Partner Webinar: Attracting talent - Leveraging INWED for impact	21st
	Member Webinar: Creating your development plan	7th

FEBRUARY		
	WES Event: Apprentices (Eng & Wales)	
	Partner Webinar: Partners' Choice	18th
	Member Webinar: Raising your profile with WES	4th

MARCH		
	Awards: WE50 nominations open	8th
	Partner Webinar: Retaining talent - Women in engineering leadership	18th
	Member Webinar: Networking for impact	4th

APRIL		
	WES Event: Annual Conference	TBC
	Partner Webinar: Partners' Choice	15th
	Member Webinar: Well-being and resilience	1st

MAY		
	Awards: INWED poster campaign opens	4th
	Partner Webinar: Partners' Choice	13th
	Member Webinar: Members' Choice	6th

JUNE		
	WES Event: INWED & WE50 Tea	23rd
	Awards: WE50 and INWED poster campaign results	23rd
	Partner Webinar: Partners' Choice	17th
	Member Webinar: Returning to engineering	3rd
	Materials, Minerals & Mining	TBC

virtual	in person

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A CAREER BREAK DOESN'T MEAN A CAREER END

BY **NATALIE DESTY,** FOUNDER AND DIRECTOR OF STEM RETURNERS

Everyone who works in STEM knows one simple fact – there are not enough of us.

The UK needs 124,000 new engineers and technicians annually to meet demand. We also know that there is a distinct lack of diversity and inclusion across STEM. Just 16.9% of engineers in the UK are women and UK minority ethnic groups are also underrepresented, making up 14% of the workforce. To recruit thousands of new engineers every year, while improving diversity, seems like an uphill task - but there is a hidden workforce with thousands of talented professionals who could help solve these issues, but they are being overlooked every day.

Career break curse

The Government Equality Hub estimates there are 75,000 STEM professionals who are ready to re-enter the workforce. The majority of whom are women. This demonstrates a significant underutilisation of highly qualified people in the UK engineering sector and significant barriers that prevent them from pursuing a career in science and engineering. Chief among them is the 'career break curse': a bias within the recruitment system against a recent lack of experience, as well as gender, age and race.

Our annual survey of more than 1,000 STEM professionals on a career break demonstrates the scale of the problem. In the 2024 STEM Returners Index, more people said they felt they had experienced personal bias in the recruitment system compared to the previous year, (40% in 2024 vs 33% in 2023) and said they found returning to work difficult or very difficult (65% in 2024 vs 51% in 2023).

Half (51%) of respondents said a perceived lack of recent experience was a barrier to entry and more than a quarter (26%) of women said they felt they had personally experienced bias in the recruitment process due to their gender, compared to 8% of men. One in five women said they experienced bias due to their childcare responsibilities and more than half (58%) of women said they experienced bias because of a lack of experience, a stark increase from the 2023 survey, when just 10% of women reported this.

Both men (38%) and women (33%) said they felt they had personally experienced bias in recruitment processes due to their age. Professionals from minority ethnic backgrounds were twice as likely as all other ethnic groups (38% vs an average of 18%) to feel they had experienced bias in a recruitment process related to race or ethnicity.

"It was disheartening. I was struggling to find jobs where I fulfilled enough of the employer's job criteria. STEM Returners clearly understood the value that years of work, whether directly related or not, and life experience, can bring to a career. They gave me the confidence that I could change my career."

A tangible solution

We are awaiting the results of our 2025 survey to establish whether any improvements have been made, but if they have, I suspect they will be small in scale.

I believe we need to do more to provide a practical and tangible solution to break the career break curse and help more people back into employment, especially in a world where AI filters within recruitment are making it harder for people with a career break to be seen by potential employers.

Returner programmes that place people into real roles are desperately needed to ensure people return to work and are retained. There are many mentoring and career coaching programmes available, but few that result in a job for the individual. Instead, they rely on that individual to take the learnings and keep applying for positions on their own and after you've done that a hundred times, it's safe to say the enthusiasm understandably wanes.

But a programme that allows a candidate to reintegrate into the industry while being paid and with an option to become permanent, provides a secure route to return to work for the candidate and allows the organisation to gain a skilled employee looking to prove themselves. These programmes are proving popular with returners themselves. In the 2024 Index, 54% of successful returners expressed a preference for these programmes, a significant increase from 40% in 2023. This shift indicates that more professionals are benefiting from structured support in easing their return.

600 returners

Since we launched in 2017, we have helped return more than 600 individuals to the industry. Our programmes provide structured support, coaching, and practical experience to help returners rebuild confidence and reconnect with their skills. The impact is clear: 96% secure permanent roles with their host employer.

Beyond supporting individuals, we partner with organisations to modernise hiring practices, review recruitment processes, tackle unconscious bias and help teams recognise the value that returners bring.

This year, we have launched programmes with a range of leading organisations such as BAE Systems, E.ON, Thames Water and Mott MacDonald, and many of our programmes are second, third and even fourth partnerships.

This year, we launched our latest programme with Leonardo. For the past five years, our collaboration has helped 45 people pursue successful careers with the company, one of whom was Heidi, who, after a series of disappointing job interviews, found herself at a career crossroads.

▲ *Heidi is now a Senior Systems Engineer on the Typhoon programme*

She didn't have a traditional career path to engineering but had built up 20 years' worth of valuable experience in business before completing a MSc in Space Science and Technology. She had almost secured a job, but the company pulled it before she started, leaving her at a loss for what to do next. But the role with Leonardo acknowledged the value of her experience and skill. She told us: "It was disheartening. I was struggling to find jobs where I fulfilled enough of the employer's job criteria. STEM Returners clearly understood the value that years of work, whether directly related or not, and life experience, can bring to a career. They gave me the confidence that I could change my career.

"I've had such a positive experience with Leonardo. They've given me the time and support to learn, as well as the opportunity to contribute to the work of the team from the start of the placement. I'm now in a permanent position as a Senior Systems Engineer on the Typhoon programme. I'm where I'm meant to be."

It's stories like Heidi's that show us the true worth of a programme, which ends in a role for an individual.

In conclusion

There is still a long way to go, and more of our biggest and best engineering organisations and government departments should be doing more to be open to returners. By actively supporting returners through structured employment pathways, we can help break down the barriers that keep skilled professionals, particularly women and minority ethnic individuals, from re-entering the workforce. Returners aren't asking for special treatment, they're asking for a fair chance.

The future of the STEM workforce and the drive to recruit thousands of engineers every year just to keep up with demand, won't be successful by only targeting new talent. To have any chance of filling the gaps, we must engage with experienced professionals who are ready to return. A career break does not mean a career has ended; in fact, it is the opposite – it is the start of a journey that returns to STEM.

What's in a name? That which we call a rose by any other word would smell as sweet.

BY **PROFESSOR LOUISE HORSFALL**, CHAIR OF SUSTAINABLE BIOTECHNOLOGY, HEAD OF THE INSTITUTE OF QUANTITATIVE BIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY (IQB3)

This classic sentiment might hold true in poetry, but in research names carry weight, shaping perceptions and guiding direction. Engineering biology is one of the UK's five critical technologies, chosen because it leverages existing UK strengths and possesses high disruptive potential. However, even the most tech-savvy would be forgiven for not having heard of it before. Engineering biology is something of a rebrand of synthetic biology – a field that has, in turn, argued over its definition for a couple of decades. If synthetic biology is the design, engineering and re-engineering of biologically-based parts, devices and systems, then engineering biology encompasses this with the addition of design for application, scaling and commercialisation to create the next wave of innovation in the bioeconomy. Indeed, there is far more engineering in the field of engineering biology than is generally practised within synthetic biology.

Such discussions of name could be considered merely academic nonsense but precise language is crucial, especially in interdisciplinary fields. Communication often becomes tangled in misinterpretations, particularly when common terms are repurposed. For example, in a synthetic biology context when I use the word 'cell' – it refers to a single whole bacterium; in the engineering biology context of my work, i.e. the application to which I direct my research, 'cell' would refer to the smallest building block of a battery. While this is far from a definition, it serves to highlight the differences well.

Another challenge with the new term was made clear during a recent visit to Canada, when Innovate UK organised an engineering biology Global Expert Mission to Quebec, Ontario and Saskatchewan. The UK may be enthusiastically cheerleading on engineering biology but it quickly became clear that it's still synthetic biology elsewhere. Despite this initial mismatch, Canada's advances in agritech, novel foods and scale up, present robust opportunities for partnership. And globally, there is keen interest in partnering with the UK in engineering biology due to its potential to revolutionise industries and address pressing challenges. The sheer breadth of applications in health, agriculture and environmental sustainability make it a critical field for countries aiming to forge their way in the rapidly expanding bioeconomy.

Sustainable solutions

One of the most promising applications of engineering biology lies in microbial metal recycling, offering sustainable solutions for an increasingly resource-limited world. Traditional mining methods are not only environmentally damaging but also increasingly inefficient as high-grade ores deplete. Microbes can bioleach metals such as copper and gold from low-grade ores in sustainable mining activities and with engineering biology they are being repurposed to target metal-containing wastes to offer new recycling routes. Moreover, these dissolution processes can also be paired with a biological recovery process whereby microbes transform the metal ions into high-value nanoparticles tailored for use. A powerful combination that further reduces the need for harmful chemicals and significantly lowers energy consumption, presenting a greener alternative to traditional metal processing methods.

This microbial approach opens avenues for recovering metals from mine tailings and electronic wastes, both of which are typically neglected due to economic constraints. It enables a more circular economy and provides a strategic advantage in accessing technology-critical metals, which are essential for modern electronics, batteries and renewable energy technologies. As the demand for these metals surges, a sustainable supply through engineered biological processes could ensure long-term availability and resilience to volatile global markets. Considering these metals are often sourced from low-income countries subject to political instability and poor working conditions, this should be a UK priority in its green transition.

Nevertheless, engineering biology's significance extends beyond national borders. It represents a global shift towards sustainable, bio-based economies that prioritise environmental health alongside technology advancement.

International collaborations

Countries around the world are increasingly recognising the potential of harnessing biological systems for industrial processes. As such, international collaborations are key to accelerating innovation in engineering biology. The recent mission to Canada highlighted the greater ambition and mutual benefits enabled by sharing research, resources and expertise. As countries align on these objectives, they pave the way for advancements that bolster both economic growth and ecological sustainability.

Engineering biology offers remarkable opportunities for addressing some of the most pressing challenges of our time. From redefining metal recycling to catalysing a circular bioeconomy, its potential impacts are far-reaching. As global interest and collaboration grow, the field promises to transform industries and promote a sustainable future. In understanding its nuances and potential, we can provide solutions that transcend traditional boundaries. Perhaps engineering biology isn't just a rebranding after all. It might be better described as a reinvention of how we perceive and interact with biological systems. The name encapsulates its essence: an engineering discipline with biology at its core, ready to meet the demands of tomorrow.

About our author

Louise Horsfall is Professor of Sustainable Biotechnology at The University of Edinburgh. Her research uses engineering biology to make manufacturing more resource efficient and help move us towards a more sustainable, circular economy. She has published the most advanced bio-based process for lithium-ion battery recycling to date and authored, alongside leading battery experts, the roadmap for a sustainable circular economy in lithium-ion and future battery technologies. Her research has also combined the use of biosynthesised nanoparticles with cutting edge green chemistry techniques to demonstrate routes to improved catalysis.

Louise holds a MChem from the University of Oxford and a PhD in Biochemistry from the Université de Liège. She held postdoc positions at the Universities of Leeds and Glasgow before taking up an academic post at The University of Edinburgh and obtaining an EPSRC fellowship in engineering for sustainability and resilience. Louise is currently a Co-Investigator of the UKRI-funded Engineering Biology Mission Hub EBIC, the EPSRC-funded Circular Economy Centre RECREATE, and the Faraday Institution's Circular Economy project for lithium ion batteries, ReLiB. She was a founding member of the European Federation of Biotechnology (EFB) Bioengineering and Bioprocessing Division and now serves as an elected academic representative of the EFB's Executive Board. Louise also represents the Microbiology Society on the Scottish Parliamentary Cross-Party Group on Science and Technology. She is a member of the European Synthetic Biology Society and SynBioUK Advisory Boards, EPSRC's Strategic Advisory Team for sustainable manufacturing and mobility, BBSRC Strategy Advisory Panel for advanced manufacturing and clean growth, the Carbon Technology Research Foundation Advisory Council and the Scottish Science Advisory Council – providing independent advice and recommendations on science strategy, policy and priorities to the Scottish Government.

From imposter syndrome to the glory of being a woman in engineering

BY **VERENA FERNANDES**, SENIOR ENGINEER, METIS CONSULTANTS

I'm an engineer, and I'm a woman. Writing this journal entry for the Women's Engineering Society is both a great challenge and an honour – and I wanted to focus on the feeling of belonging as a woman in engineering. I don't necessarily want to focus on lists of reasons why this field is still dominated by men, nor do I presume that my feelings represent how all women in our field feel. Moreover, I needed to overcome the fear of writing about this in the first place! For all those reasons, I sat down with my senior female colleagues at Metis to discuss their career experiences before writing – and here I share some of our collective ideas.

The imposter syndrome of being a woman in engineering

One might say that there are no concrete obstacles for women being engineers nowadays. In my own societal background, no one is expressly saying that women are not suitable for this career path. Yet I believe there are frequent subtle reminders that affect our confidence and self-esteem when pursuing this career. I do wonder how many women have felt that engineering was not meant for them, simply because of outward appearances. If only we could quantify that lost potential…engineers love numbers, right?

A question I almost always ask at job interviews is about I&D (inclusion and diversity) strategies. Yes, recruiting more women and promoting women to leadership positions are important – but even at Metis, where four of our five directors are women, we know this in itself is not sufficient. Without appropriate support and strategy, retaining female engineers is still likely to be difficult. Positive discrimination can be its own risk and injustice – defined here as hiring and promoting women not simply on merit, but to address a gender gap in an organisation.

The subtle, almost invisible barriers

Most women engineers have anecdotes about challenging experiences that reinforce the notion that they don't belong.

I remember hearing university professors and peers making 'jokes' about how women are too soft, too feminine, too emotional, not practical enough. In a role I held soon after graduating, I was the only woman in the engineering team. This led to me frequently being excluded from team social gatherings because my male colleagues assumed I would not feel comfortable with their chosen activities (usually football) or in a competitive, more male-oriented atmosphere. Well, were they doing anything to make me feel more comfortable?

"The average person is a man"

The old adage: *the average person is a man* still rings true in our industry. I think Metis's technical director Ainhoa spoke for us all when she recalled the all-too-recent lack of appropriate women's sizes for PPE, the absence of female toilets on construction sites, signs that still said 'men at work.' These 'small' things add up to send women a clear message: we don't naturally belong here.

I appreciate that this might seem like the chicken and the egg story: what should come first, the welcoming environment that allows women to develop themselves and become role models, or the role models who influence the environment and promote a positive culture?

What makes us thrive?

Reflecting on my own current experience, I work in a culturally diverse workplace at Metis. Our people are highly educated, open-minded and collaborative – all of which helps to give me a stronger sense of purpose and belonging.

Ultimately, it's a workplace that cares about people's general wellbeing, with reduced stress, team-building initiatives and an openness to new ideas. Yes, these things are important to both men and women. Yet I think women are particularly attuned to these factors because we are socialised to care. Women are expected to be more aware of their surroundings and pick up on feelings more acutely.

Furthermore, supportive work policies are of paramount importance. Women can give birth, experience periods, go through menopause, and traditionally carry more of the burden of caring for homes, children, relationships and elderly people. As such, enhanced policies on maternity leave, compassionate leave and flexible return to work can empower women in a male-dominated sector. Close attention to these benefits may be a key factor in creating an environment in which female engineers may thrive.

Nonetheless, it's also important to address the factors in day-to-day working life that may be harder to quantify. Building a supportive culture is not just about identifying the right personalities in recruits; it is about being able to have authentic, human conversation.

How do we change things?

I think most of us can agree that, in order to cultivate the next generation of women engineers, it's vital that we make engineering more interesting and appealing to young women. After all, there are enough TV shows and fictional stories that showcase medics and lawyers, so where are the engineers?

Metis operations director, Dani, says that the best next step would be to broaden and optimise STEM activities in schools, a view echoed wholeheartedly by all our senior leaders. STEM activities geared towards inspiring young women can make a huge difference, so it's incumbent on all of us to think more deeply about how to make engineering fun, cool, interesting and attractive. I would love to see girls thinking about engineering principally as an avenue for their own enthusiasms – rather than feeling, as I often have, that they are challenging the status quo by entering that field.

As WES often opines, allies are extremely important. I would not be writing this article, or be where I am professionally, were it not for the peer support that I have received and continue to receive. Being an ally can be a significant commitment, i.e. mentoring someone and playing an active role in their development, but it can also be simple as taking the time to listen and consider our views.

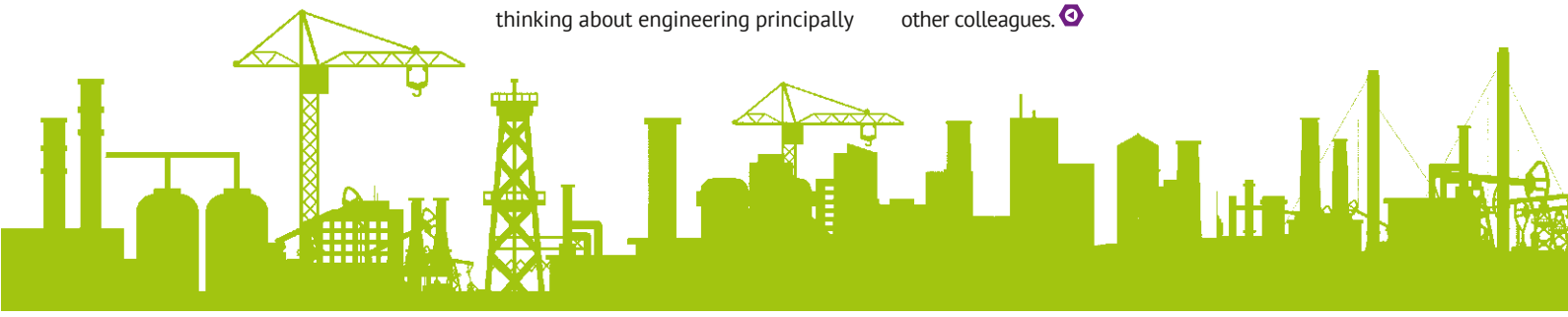
The glory of being a woman in engineering

Enough about hurdles. Let's talk about the glories of being a woman in engineering!

What elements can make women great engineers? I have said, I believe women are socialised to be more attuned to their environments. Could we say, for instance, that this equips us to complete risk assessments, or to understand public objection to a project? Women are also raised to be empathetic and emotionally aware. Might this improve our capacity to develop good interpersonal relationships and become stronger leaders?

Since I started my current role as Senior Engineer at Metis a few months ago, I've felt more comfortable in actively piecing together parts of my identity that had felt conflicting. The question about I&D didn't come to my mind when I interviewed for this role, I could just feel something was different. I have a sense of purpose at work that incorporates both my love of engineering and facets of my authentic personality.

This journal entry was made possible because of the encouragement I received from Metis's leadership, most notably our senior leaders Ainhoa and Dani, who inspired me to write it. I'm also sincerely grateful for the support of all my other colleagues.



Powering the past, inspiring the future:

Celebrating the success of the 'Watts in a Home – Electric Dreams' project

BY **HELEN CLOSE**, WES HERITAGE MANAGER & PROJECT COORDINATOR

The air is still buzzing with the energy of success following the completion of the *Watts in a Home – Electric Dreams* project! Co-ordinated across multiple locations, this ambitious and vital initiative has been a fantastic way to mark the centenary of the Electrical Association of Women (EAW), celebrating a century of women's profound impact on engineering and domestic electrical power.

Funded by the Royal Academy of Engineering Ingenious Fund, the project successfully brought history to life, transforming complex engineering concepts into engaging, family-friendly experiences. We saw women engineers from across the regions step into the spotlight, honing their public engagement skills to deliver electrifying, immersive public events across the UK.

While the planned event in Belfast sadly could not take place, the project successfully engaged the public in Bristol, Newcastle, Cardiff, Milton Keynes, and Glasgow, culminating in a spectacular finale event at Thinktank, Birmingham.

The core of the project revolved around exploring the story of domestic electricity, from the EAW's formation in 1924, when women were key in advocating for and educating the public on using electricity safely and efficiently in the home, right through to the latest innovations of 2025.

'Watts in a Home 2: Then and Now'

A major highlight at each location, was the performance by Angel Exit Theatre Company of *Watts in a Home 2: Then and Now,* a captivating modern revival of a play originally produced by the EAW in 1930. This theatrical element provided a vibrant, accessible narrative, showing the development of electricity in the home across four generations.

Beyond the stage, the events were packed with hands-on activities led by our trained women engineers. The public was encouraged to dive in and 'spark their imagination' with activities ranging from building simple circuits and learning about renewable energy to walking tours exploring local electrical infrastructure. This direct interaction not only demystified engineering but also provided powerful role models, inspiring the next generation of potential female engineers.

The feedback from participating engineers and the visiting public has been overwhelming, confirming the project's dual success: effectively communicating the historical and ongoing role of women in engineering, and empowering a cohort of female engineers to become confident, skilled communicators of their profession.

As the project draws to a close, we extend a huge thank you to the Royal Academy of Engineering for their support, to all the host venues for their partnership, to Angel Exit Theatre Company for their fabulous performance, and, most importantly, to the incredible team of engineers whose passion and dedication truly made the *Watts in a Home – Electric Dreams* project an unforgettable success. The legacy of the EAW and the future of women in engineering are certainly in powerful hands!

▼ *The **Watts in a Home - Electric Dreams** project was an unforgettable success*

SEASONS OF CHANGE:

Nurturing your career at every stage

BY **SUSAN BINNERSLEY**, FOUNDER AND MD OF h2h RESOURCES LTD

The change in seasons as we approach the final months of the year provides an opportunity to pause and reflect; an activity that can often be overlooked when it comes to career development. For women working in fast-paced industries like engineering, taking time to pause and consider what's next can seem like an unaffordable luxury – yet it is essential. Progression typically happens without a great deal of planning, whether it occurs from accepting an offer of more responsibility or opting for a role with a higher salary without truly questioning whether it is the right move.

In this article, I share practical tips for women working in engineering on how to get the most out of your experience at every stage of your career. At h2h, we are keen to equip employees to make assertive choices about their own careers, enabling confident career choices, stimulating work and a fulfilling life all the way through the employee lifecycle. This includes navigating recruitment, onboarding, learning and development, career growth and separation. The following tips will help you to navigate career challenges and hit the ground running in 2026 and beyond.

Start with assertive choices

It is widely recognised that we will spend one third of our life at work, so making the right career choice could mean the difference between a stimulating, enjoyable and fulfilling work life, or an activity that fills your day and pays the bills but does not offer you purpose, fulfilment and joy.

My professional career began 38 years ago, and I still love what I do. I am deeply thankful to my first boss for setting me up for success by demonstrating great leadership and providing selfless career coaching. With this bedrock, even at times when I didn't have a great boss, I knew what 'good' looked like and, to a certain extent, I could self-manage my career. Thanks to this energising start, I have always been inspired by opportunities to support others who are navigating these changes and hopefully some of this will resonate with those reading this article.

When choosing your career path or when considering a change in role it is important to be assertive and to own the decision, anchoring your choice around your natural strengths and preferences. It is easy to be seduced by a good offer with a high salary that a recruiter may be upselling to us, but this can detract from serving your best interests.

To achieve this, set some time aside for the following actions:

- Thinking and reflection; keep a journal of your thoughts, then look for emerging patterns.
- Reaching out to the sounding boards around you. Talk to people of different ages, listen to their stories. What can you learn from them?
- Enjoy the journey of career exploration and management.

- Think about what sector excites you and why – it might be an industry where you have a personal interest or hobby.
- Consider who you already know in your preferred sector. Sound them out and ask what it's like to work in that industry.

The recruitment phase

Once you have completed these actions, you will be ready to consider applying for roles. Whether this is your first job or you're exploring a change midway through your career, the following tips can help you to approach hiring organisations and recruiters:

- Remember this is a two-way process – you are interviewing them too and a good organisation will expect (and welcome) this.
- Be your authentic self and let your natural qualities shine. If you don't feel you can be you, then it is probably not the place for you.
- Be clear on your transferable skills and demonstrate learning agility. You may not be a perfect fit but if you do this then you can demonstrate how you may be able to learn and grow into the role.
- Don't be seduced by an over-zealous recruiter, you need to own the decision rather than feel obliged to accept.

Optimise the onboarding process

Once you have found your chosen role and secured the job, you will enter the onboarding phase. In fact, a strong onboarding process can start from the first contact you make during the recruitment phase, as you start to learn about the business.

These early stages are a prime time for you to be proactive and optimise the onboarding process to get the most out of your new role. In the first three months of the job, consider doing the following:

- Have conversations with other relatively new starters, use their experience to accelerate your own onboarding.
- Ask for a mentor with relevant experience for your role.
- Establish regular meetings with your direct boss. Ensure you develop a deep understanding of the value add from your role and that you know how to deliver that.
- Ask for specific feedback to ensure your performance is on an upward trajectory.

Learn and grow

The world of work changes fast and you will need to constantly evolve your skills and knowledge throughout your career. The 70/20/10 model can help to plan your development. This states that 70% of your success should involve on-the-job learning. It helps if you are intentional about this by considering taking on a variety of tasks in your field. Then assign 20% to social learning, such as engaging with colleagues, managers and mentors to gain insights. The final 10% should come from formal learning, for example focussed time in a workshop or following a course of study.

Changing roles

At some point in your career, you will be likely to explore other options, whether that's a complete change or slight shift in your role. You'll know when it is time to consider a change as there will be indications such as feeling less excited about your day ahead. Or you might already be stepping into a bigger role, doing some of your manager's work, or feeling curious about other roles inside and outside your current organisation.

In my experience, people often seem to find it easier to leave their current organisation and find a new job, than to get a different job in the same company. This concerns me as I believe you can get more stretch from within an organisation than an external move. Once an employee is known and trusted, it is possible to apply for and be selected for a very different role to broaden skills with minimum risk. Progressive organisations will promote changes within. You may need to reach out to your HR or learning and development organisation, as a busy line manager may be reluctant to promote a move for fear that it could impact on their performance in the short term.

If you do decide to look outside your current organisation, make sure you handle this sensitively so that in the future you might be welcomed back. This is also in the company's interests, as you will learn and grow in a different context and those fresh insights and skills will be of value to your current organisation if you do choose to return.

Following these steps should help you to navigate the seasons of change throughout your career. Reflecting and making space for continued growth at each stage of your working life will empower you to achieve your goals and progress in your chosen direction.

Zurich Engineering share the journeys of two of their passionate engineers

Paula Robinson is a team manager of engineer surveyors for Zurich Engineering

When Paula Robinson joined Zurich Engineering as an engineer surveyor in 2022, she was no stranger to challenging environments. After 14 years as a vehicle mechanic in the army, Paula's passion for all things mechanical was well established. But her drive and expertise quickly set her apart.

Paula leads a team of 17 engineer surveyors who spend their time inspecting anything from lifts through to cranes, plant machinery, boilers, coffee machines and LEV systems in and around London.

"Even as a manager, I think it's crucial to get out on the ground and carry out inspections. I still really enjoy this aspect of my job," Paula explains. "A typical day might be examining workshop equipment like overhead cranes and hoists right through to a 20 storey+ lift or 300-tonne mobile crane. It's not for the faint-hearted, but I love nothing more than being up high in a mobile elevated work platform, rain, hail or shine."

Among the many inspections she carries out, Paula recalls one in particular: "One of my favourite lift projects is a prominent 36-storey building in central London. Inspecting four lifts at that height is no small task—but I absolutely love it."

Paula's role offers the variety she craves. She's just as likely to be found inspecting stairlifts in residential homes as she is scaling giant cranes in industrial yards. "Visiting homes occupied by the elderly is something I really enjoy. Often, I'm the only person they've seen in a while, so after my inspection, I always make time for a chat—and there's usually a brew waiting for me. That connection is a rewarding, unexpected part of my job."

While Paula prefers the heights of London's skyline over deep underground lift shafts, she relishes the diversity her work brings. "People may find this hard to believe but lifts really are my favourite things to inspect. I never get tired of seeing the look on people's faces when I jump on top of a lift and shut the door behind me," she says.

"I have true flexibility in my role. I manage my own diary and rely on myself and my team. That's really empowering."

For Paula, 'inclusion' in the workplace is more than just a buzzword—it's a value she lives by. "I have true flexibility in my role. I manage my own diary and rely on myself and my team. That's really empowering." She's especially proud to see Zurich Engineering taking female-specific PPE seriously, championed by leaders across the business. "It's fantastic to finally have coveralls designed for women, not just smaller men's sizes. We're all different shapes and heights, and now I can do my job comfortably. It's great to see genuine progress for women in engineering."

Paula Robinson's journey is a testament to what's possible when talent, determination and a supportive culture come together. In her own words: "We're making real strides for women in the industry—and I'm proud to be part of it."

Sharon Gibbs is a senior certification engineer for Zurich Engineering

Sharon's passion for engineering was sparked at a young age by her grandfather who was a Merchant Navy electrician. After exploring various roles aboard different types of ships, she realised her true calling lay in engineering and in 2019, she joined Zurich Engineering as a pressure engineer.

"Growing up, I spent my summer holidays with my grandfather while my parents were at work. He would get me involved in his projects, like dismantling and reassembling radios. That hands-on experience lit the spark that's stayed with me ever since," Sharon recalls.

After finishing school, Sharon spent a year at university but soon discovered she was far more inspired by hands-on work than classroom theory. "I quickly realised I thrived when I could see the tangible results of my efforts," she recalls. This insight led her to pursue a cadetship on merchant ships. Her love for life at sea saw her working aboard cruise ships and bulk carriers. She even tried her hand on North Sea fishing trawlers. "The North Sea proved too much for my stomach—I've never wanted my mum more!"

Ultimately, Sharon decided it was time for a change of scenery and, in 2019, brought her expertise ashore by joining Zurich Engineering as a pressure engineer.

Sharon was responsible for ensuring the safety and reliability of critical engineering systems, from boilers and pressure vessels to steam systems and other industrial machinery. Her meticulous approach helped maintain the highest standards of safety, compliance and efficiency.

After three successful years, Sharon transitioned to the certification team, where she now specialises in written schemes of inspection for non-PSSR (Pressure Systems Safety Regulations) equipment and refrigeration certification. This move has enabled her to further expand her expertise while continuing to make a meaningful impact on safety and operational excellence across the industry.

"No two days are ever the same, and that's what makes my work so interesting," Sharon explains. "There's always something new to learn—whether I'm evaluating clients' equipment or checking storage vessels for early signs of wear and tear. By staying proactive, we not only enhance the effectiveness of our inspections but also help ensure our customers' operations remain safe and reliable. Ultimately, our goal is to deliver a quality service and do what's best for our customers."

Prevention, she emphasises, is at the heart of her team's philosophy. "We focus on developing robust written schemes of examination for all equipment not covered by the PSSR, ensuring everything is well-maintained and compliant from the outset."

STEM

Despite her early introduction to engineering, Sharon notes the lack of visible pathways into the profession during her school years. "Engineering wasn't presented as an option after university—and for girls, the only apprenticeships mentioned were things like hairdressing. While things have improved, there's still more to do. For me, it's about paying it forward and inspiring the next generation. That's why the focus on women in STEM is so important. Girls need to know, from a young age, that a career in engineering is an option for them."

"Girls need to know, from a young age, that a career in engineering is an option for them."

For Sharon, some reactions from her early days as a female engineer stand out, but not always for the right reasons. "I remember waiting outside a hotel for pickup to a cruise ship when an entertainer asked about my job. When I replied that I was an engineer, another gentleman turned around amused, clearly surprised that a woman could do this job."

Sharon believes there has been progress for women working in engineering, crediting much of this advancement to the presence of strong allies. "At Zurich, I've felt nothing but support. I've never been judged or treated differently because I'm a woman—it's a truly inclusive environment. My hope is that other employers in STEM are moving in the same direction."

She highlights Zurich Engineering's chief engineer, Dominic Dawson, and head of engineering, Iain Brumpton, as exceptional advocates, saying: "I don't think the industry as a whole would have made such rapid progress without strong allies like my colleagues at Zurich, who have always supported and championed women in engineering."

Sharon's journey is a testament to her perseverance and passion. Her experience shows that with the right support and determination; everyone has the chance to succeed in whichever career they choose.

Monique Frize – 'A Woman in Engineering'

Sue Bird reviews *A Woman in Engineering – Memoirs of a Trailblazer,* written by Monique (Aubry) Frize.

Sue Bird (UK) is a retired acoustics engineer who has worked in the aircraft industry, local government and latterly with her own company specialising in acoustics and noise control. She has a BSc in Applied Physics, an MSc in Applied Acoustics, is a Chartered Engineer, a Fellow of the Institute of Acoustics and a former President and now Honorary Fellow of the Association of Noise Consultants.

She is also a former President of the Women's Engineering Society in UK (WES) and former President of the International Network of Women Engineers and Scientists (INWES). In 2016 she was appointed a Member of the British Empire (MBE) for services to engineering and to women in engineering.

Although Monique Frize has written quite a number of books before, as far as I know, this is the first one she has written detailing her own life up to 2019. It starts with her happy childhood in Montréal and Ottawa and ends detailing her (so called) retirement in 2010 and her life afterwards.

Monique achieved a Bachelor of Applied Science degree majoring in electrical engineering, but then began graduate studies in biomedical engineering shortly after – it was here her main interest lay and it was her profession for the rest of her working life. But she had another interest – encouraging women into science and engineering and in this she became an incredibly potent force both in Canada and internationally. The book tells how she developed these interests – in 1989 she was appointed as Professor of Electrical and Biomedical Engineering at the University of New Brunswick and also, significantly, Chair of Women in Engineering at that university. This was especially significant as she took up this position the week before 14 women students (of which 12 were studying engineering) were massacred at the Ecole Polytechnique in Montréal by a protagonist who had separated male and female students and killed the women. Monique's life and position as the Chair of Women in Engineering became much more important and focussed after this.

The book details her career progression and its successes and failures, demonstrating the fact that she had to fight the establishment for much of her success and promotion. It also shows her stubborn determination to promote women into engineering and support them once they were there. This account describes the often uncertain journey she took to develop an international organisation of women in STEM (science, technology engineering and maths), which would be a support to these women and to those still to come. She and her helpers gathered supporters from all over the world (I was one of them) to help. The International Conference of Women Engineers and Scientists had occurred about every three years since 1964, and in 2002 it was held in Ottawa (organised by Monique and her committees) and here the International Network of Women Engineers and Scientists was inaugurated. She led the organisation for six years and was influential for much longer.

This book includes many facets to illustrate Monique's life and work: her difficulty in career progression due to being a woman, the determination to succeed in her chosen career in all aspects of the subject, her interest and then leadership in the subject of women in engineering brought to focus by the massacre in Montréal, and her leadership of the International Network of Women Engineers and Scientists – this book relates it all.

There is an enormous amount of information and you may not want to read it all at once, but it is well organised and reads well. With good page sidenotes and a final chronology it is easy to follow the course of Monique's life and its huge influence on engineering and feminism today.

To find out more on how to order this book, visit: **https://press.uottawa.ca/en/search-results/?contributor=monique-aubry-frize**

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