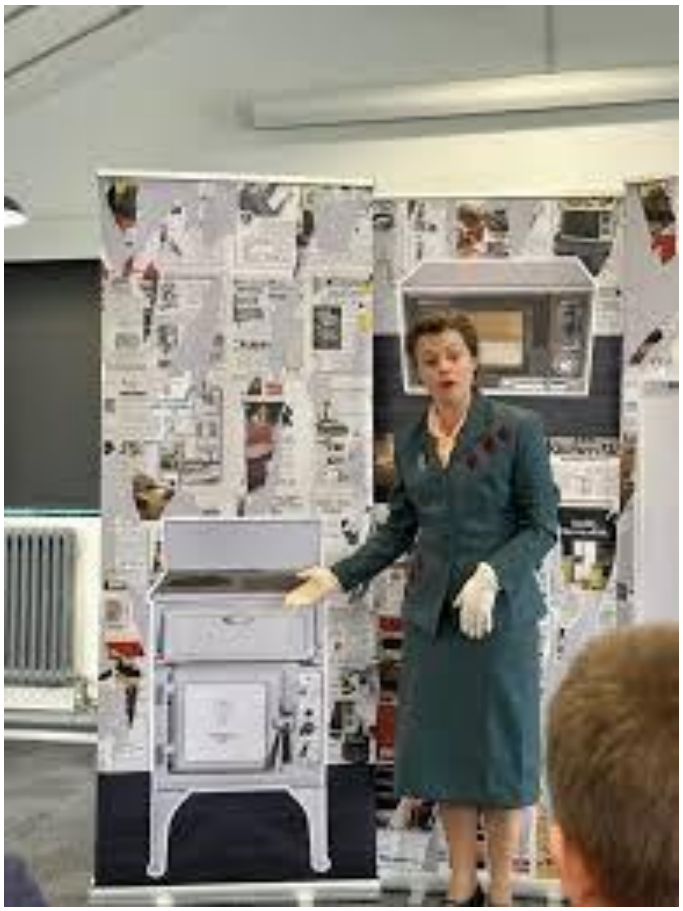
Electric Dreams (2024/25)
Project Report



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Introduction

This report provides an overview of the Electric Dreams (formerly “Watts in a Home”) project supported by the Royal Academy of Engineering Ingenious fund delivered in 2024 and 2025. The project was developed and produced by the Women’s Engineering Society, its members and its partners to celebrate the work of the Electrical Association for Women, founded in 1924, to highlight women’s historical and ongoing involvement in engineering and power in the home, and to share this story with the public.

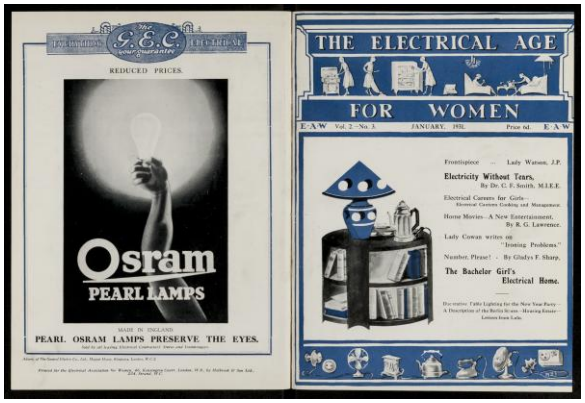
This document summarises the project’s activities, results and outcomes, particularly regarding the funder’s goal to support engineers’ skill development and increase public engagement with engineering. The evaluation covers:

- achievement of participation, activity and outreach targets
- alignment with project objectives and Royal Academy of Engineering Ingenious fund aims
- impacts on (and learning by) engineers and public audiences
- next steps and legacy opportunities.

Background

The **Women’s Engineering Society** (WES) was formed in 1919, in the aftermath of the First World War. Its founders wanted to preserve the training and employment for women who had worked in the engineering sectors during the war.

In 1924, some WES members formed the **Electrical Association for Women** (EAW) to look specifically at the advent of electricity and how it could be beneficial to women's daily lives. The Electric Dreams project coincided with the 100-year anniversary (although the EAW ended in 1986) and celebrated women’s roles in engineering, electricity and power within the home, as well as considering future developments.



Caroline Haslett, the first director of the EAW, saw the use of electricity in the domestic sphere as key to freeing women from drudgery, allowing them to pursue fulfilling and independent careers. In an address to the Royal Society of Arts on ‘Women in Industry’ in 1941 she said: ‘I see in this new world ... of the application of scientific methods to daily tasks, a great opportunity for women to free themselves from the shackles of the past and to enter into a new heritage made possible by the gifts of nature which science has opened up to us.’ Haslett had been a practising engineer during and after the First World War; subsequently she was the UK's leading female public authority on electrical technology

and energy transmission, and the first female member of the Central Electricity Generating Board.

Haslett and the EAW founders set about educating women in the use and benefits of electricity in the home, with a thorough training programme. Today's climate crisis is making more demands on how we use electricity and supplies are changing. This is therefore an appropriate time to celebrate women's role in power generation, showcase women innovating in engineering and engage women in making important, informed decisions.

What was the project?

This project sought to explore the unique role of the EAW, the effect it had on the domestication of electricity in the UK, the role women played in influencing the industry and to share the exciting stories of some of the key players at the heart of the EAW's campaign. Recent research uncovered a theatre production by the EAW called *'Watts' in a Home* and a pivotal part of the project involved working with creative professionals to adapt and perform this play. The project sought to provide a creative and engaging platform for current engineers to engage and inform the public of the present and future of the electrical and energy industries.

The Electric Dreams project also drew on WES's success in developing innovative public engagement initiatives, including its Heritage Lottery Funded Centenary Trail in 2019. Celebrating 100 years of WES, this involved researching women engineers of the past (many of whose stories had not been previously widely shared) and raising awareness of them online, through editing and adding articles in Wikipedia and developing an online Centenary Trail map.

Who was involved?

WES is the UK's largest membership organisation for women in engineering and so was exceptionally well placed to lead a national initiative to engage the public with the history and future of electricity in the home, through the lens of women engineers. The project drew on WES's extensive national and regional cluster networks of engineers active in a range of industries and at the forefront of innovation.

Project team and leadership

- **Helen Close** – Project Coordinator and Heritage Manager at WES, overseeing the initiative.
- **Fiona Gleed** – Engineering academic at the Open University, active WES member, providing academic and technical support.
- **Jan Peters** – WES Past President and Royal Academy of Engineering Visiting Professor at the Open University, contributing strategic guidance and expertise in

training and facilitation.Together, this team brought a wealth of experience in engineering, education, heritage, research and creative public engagement.

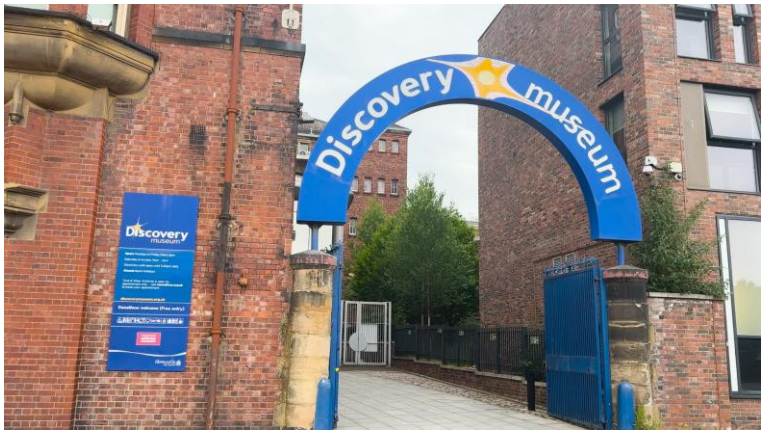
Regional collaboration and engineer cohorts

With input from WES clusters, the project team recruited cohorts of engineers in various UK regions. These cohorts were trained to deliver engaging, activities to the public that explore the evolution of electricity and the role of women engineers in shaping its use in homes.

Partner museums and science centres

The project received venue space, logistics and other support in kind from multiple museum partners and science centres around the UK which hosted the public events. These organisations were located in towns and cities that were selected in part because, historically, active regional branches of the EAW operated there. The partner museums and centres were:

- **The Discovery Museum** (Newcastle) (shown right)
- **Glasgow Science Centre**
- **M-Shed** (Bristol)
- **National Museum of Computing** (Milton Keynes)
- **Techniquest** (Cardiff)
- **Thinktank** (Birmingham)



Creative partners

WES and participating engineers worked with Angel Exit and its co-artistic directors Tamsin Fessey and Lynne Forbes to devise and deliver the short interactive theatrical performance based on the play *'Watts' in a Home*. This South West-based company draws on traditions of storytelling and physical ensemble theatre to produce original and engaging creative works, appealing to all generations.

Extended research and dialogue

Beyond the core team, various WES members and volunteer consultants contributed to expanding the research brief. Their work, alongside that of the participating engineers, helped to shape public dialogue around both historical and contemporary engineering challenges, particularly in designing for sustainable power demands in the future.

Key individuals included Anne Locker, Library and Archives Manager, Institution of Engineering and Technology (IET); Professor Graeme Gooday, Principal Investigator of the Electrifying Women project, and Dr Katie Carpenter, University of Leeds; Dr Eleanor Peters, Historic Scotland; and Professor Dawn Bonfield MBE, Past President of WES.

The project was also part of a wider festival (also known as Electric Dreams) celebrating women's role in energy and the electricity industry to coincide with the centenary of the founding of the EAW, and providing a wider framework for other activities that could link into this Ingenious-funded project.

What were the aims and objectives?

At the heart of the project was the opportunity for professional engineers working in industry today to be trained in how to use interactive activities and a theatre performance to share the story of the Electrical Association of Women and electricity from 1924 to 2024. The project sought to:

- deliver **at least 4 interpretation and communication skills development workshops** using original materials (including WES and EAW archives) to help engineers engage diverse audiences and promote understanding of technical disciplines.
- train **a minimum of 24 engineers** to confidently participate in creative public and informal education activities across **6 UK visitor attractions**.
- highlight women engineers, past and present, as role models to challenge gender stereotypes in engineering and showcase their global impact.
- facilitate **at least 6 public events** around the UK, where engineers could share their personal stories, expertise and enthusiasm with families and broader audiences.
- offer the public opportunities to engage with engineers and explore how electricity has shaped women's roles historically and how women influence its future.
- establish a lasting cross-disciplinary network of engineers, heritage ambassadors and educators to promote engineering's diversity and impact across communities.
- develop online resources to support collaboration between engineering, heritage and community sectors in public engagement.

Project timeline

Month/Year (Actual)	Activity
April 2024	Project announcement at WES Annual Conference
May – June 2024	Recruitment of engineers through WES networks
June 2024	Publicising project at International Women in Engineering Day (INWED) 2024
Oct 2024 – February 2025	Development of hands-on technical activities by engineers, and training for engineers in communication and engagement; confidence-building; and narrative and storytelling ideas
May – September 2025	Delivery of theatre performance and public events
August 2025	Film editing
September 2025	Reporting

These dates were changed from the original project forecast, with approval from the Royal Academy of Engineering.

What were the project activities?

Recruiting engineers

The project was officially launched at the WES Annual Conference in April 2024 through a talk by Helen Close on the EAW and a call for participation. Promotion continued through the annual International Women in Engineering Day (a global initiative led by WES) on 23 June, WES's participation in Heritage Open Days, and through WES's own channels, including its journal, newsletter and social media.

WES social media reach

WES has an extensive and well-established social media reach, via several channels, including dedicated platforms set up and run throughout the year for International Women in Engineering Day.

In total there were 5 newsletter mentions, 2 journal articles and 15 dedicated social media posts for the project through the following channels:

Channel	Channel reach
WES monthly e-newsletter	15,400 subscribers
Instagram: WES	4,100 followers
Instagram: International Women in Engineering Day (INWED) channel	2,400 followers
LinkedIn	26,800 followers
Facebook WES	1,900 followers
Facebook INWED	300 followers
Bluesky WES	170 followers

Examples of WES online callouts to volunteer engineers:

https://www.wes.org.uk/2024/08/19/can-you-help-with-our-new-project-electric-dreams/

https://www.wes.org.uk/2025/05/01/calling-engineers-historians-and-enthusiasts/

In collaboration with WES regional and special interest clusters, the project team recruited 40 women engineers – far exceeding the target of 24 – representing different backgrounds.

These engineers were invited to participate in confidence-building and public engagement workshops, contribute ideas for electricity-themed hands-on activities and a pop-up exhibition, and attend a one-day event at their nearest venue to facilitate activities.

The strength, enthusiasm and wide reach of the WES networks are evident not only in the way the target number of participants was far exceeded, but also in how engineers themselves played a part in raising awareness of the project, for example by sharing callouts across their personal social media platforms:

https://www.linkedin.com/posts/rachel-j-arthur_watts-in-a-home-activity-7318678011245981696-WCCk

https://www.linkedin.com/posts/sarah-maplesden-24391425_watts-in-a-home-electric-dreams-2024-activity-7257715253356949505-NPAD

Training for engineers

Following the call out, registration questionnaires were set out to all engineers who responded, asking them which region they would like to participate in. At the same time respondents were asked to help identify their key personal strengths through completing CliftonStrengths profiling.

1. Online introductions
Online welcome and briefing meetings were held on 24 and 29 October 2024 and 27 March 2025 to introduce participants to one another and the project, and to set objectives.

2. Online workshops
This was followed by five online workshops, in two groups ('pods') running concurrently, once a month for five months. Each session was 90 mins long and was designed to enhance engineers' public engagement skills and encourage them to shape regional events. These sessions were repeated in a 'lunch and learn' for late entrants to the project In March.

The sessions included looking at the history of the EAW reports, teaching what made the organisation so effective, and helped engineers design hands-on electricity and appliance-themed activities for the public. Ideas were also gathered for a pop-up exhibition about the EAW's history and technological progress. Due to high demand, the five online training sessions were repeated.

There was also an online session "Sensational STEM Outreach" led by Alex Knight of Stemazing about public engagement and delivering hands-on activities.

Sessions were delivered by Jan Peters and Alex Knight and focused on the following:

- What's your Superpower? Getting to know each other.
- Strengths connection (Exploring motivation and satisfaction)
- The art of great questions and listening
- Managing your imposter (Saboteurs and Sages)
- Stand and deliver – how to connect to your audience
- Sensational STEM Outreach

Sessions were interactive, with teach-back and practice elements.

3. In-person workshops
Alongside this there were three in-person meet ups in the chosen regions to support networking and to work on the activities for public engagement. Engineers were also invited to events in the Electric Dreams festival in November 2024, including at the IET in London and the Common Room in Newcastle, to learn more about the EAW and to observe how public engagement events work in practice.

Training timeline

Event and location (if live)	Date	Format
Welcome and briefing	24 October 2024	Online
Welcome and briefing	29 October 2024	Online
Welcome and briefing	27 March 2025	Online
In-person training: Bristol – Central Library	9-Nov	In person
In-person workshop: Milton Keynes – hired workspace	23-Nov	In person
In-person workshop: Newcastle – Discovery Museum	14-Dec	In person
Online public engagement training 1: What's your Superpower? 'Getting to know each other '	18-Nov and 20-Nov	Online
Online public engagement training 2: 'Strengths connection' – motivation and satisfaction	16-Dec and 18-Dec	Online
Online public engagement training 3: 'The power of great questions'	20-Jan and 22-Jan	Online
Online public engagement training 4: 'Manage your imposter'	10-Feb and 12-Feb	Online
Online public engagement training 5: Stand and Deliver	15 and 17 March	Online
Online public engagement training 6: Sensational STEM Outreach	9 April	Online
A lunch and Learn week of 1-hour sessions in June for late starters	16-19 and 23rd June	Online

Organisation of events was dependent on ensuring geographical spread across the UK, so was adapted as the project developed, to allow flexibility for participation.

Pop-up exhibition

Five pop-up banners providing historical context were used across all public engagement events; About the EAW, About the Project, engineers Mabel Matthews and Caroline Haslett, and the All-Electric House in Bristol, commissioned by the EAW. Additional banners were also tailored for specific locations: North East England, Buckinghamshire, Cardiff and North Monmouthshire, Glasgow, and Birmingham, some with input from engineers. Local versions incorporated content from the EAW's journal, highlighting relevant historical details such as Glasgow's status as the first branch, notable figures, dates and local engineering-related businesses.

Interactive theatrical play

WES supported engineers to think creatively on how to engage audiences to discuss technological advancements and their effects on society and the environment, spanning from the all-electric house of 1935 to the envisioned all-hydrogen house of 2035.

Working with the Angel Exit theatre professionals, they contributed (through questionnaires) to the adaptation of the recently rediscovered EAW playscript *'Watts' in a Home: A play in four parts* into an interactive performance at the selected UK visitor attractions.

This short play, performed by Angel Exit co-artistic directors Tamsin and Lynne, highlighted the evolution of electrical engineering and encouraged dialogue with the audience in a fun and informative way about energy use, including the contributions of women engineers and women as consumers. Cue cards were provided to the audience to ask questions of the performers in role.

Engineers also helped shape projections for the years 1935, 1985 (including the domestic use of the microwave oven – shown right) and 2035, with some participating in character roles such as Caroline Haslett, giving a speech and a reading from the EAW's *Electrical Handbook for Women*.

What were the public events?

Alongside the interactive theatre performance and pop-up exhibition mentioned above, each location provided a range of practical activities and drop-in sessions for the public to engage with engineering and opportunities to connect with female engineers currently working in industry.

One of the public activities running at different venues was the **Lottie doll story corner** using specially written books, dolls and building blocks to showcase engineering and STEM-related careers to young children.

Note that the participating engineers were not all able to attend on the day because of previous engagements or their wish to be 'behind the scenes'.

Regional events

1. National Museum of Computing, Milton Keynes: 5 May 2025, 10:30am to 4:30pm

Number of participating engineers: 8

Activities **included:**

- Magnet demonstration
- Electric Home Model demonstration
- 'Electric drawing'
- Copper loop demonstration
- Generator demonstration
- Drawing electrical circuits
- 'Build your own all-electric house'
- Storytime
- Selfies
- 'Fuzzy faces'
- Interactive trail with questionnaire

Links:

https://www.tnmoc.org/events/watts-in-the-home

https://www.mkheritage.org.uk/watts-in-a-home-electric-dreams/

2. M-Shed, Bristol: 31 May 2025, 10:30am to 3:30pm

Alongside the activity day at M Shed was a circular walking tour of Bristol on the theme of electricity in infrastructure, entertainment, and education. The route included the location of the historic EAW branch meeting venue at the top of Park Street. Behind-the-scenes electricity-themed tours were also offered at M Shed by museum staff and curated by one of the engineers.

Number of participating engineers: 5

Activities included:

- Treasure Trail
- 'Electric drawing'
- Circuits
- 'Fuzzy faces'
- Dress up selfies
- 'Wedding list'
- 'Build your own all-electric house'
- Design your own electric flat
- Walking tour

Links:

https://www.bristolmuseums.org.uk/whats-on/m-shed/historical-walk-watts-in-a-home-electric-dreams/

https://www.bristolwalkfest.com/event/watts-in-a-home-electric-dreams-2/

https://www.wes.org.uk/2025/05/09/historical-walk-in-bristol/

https://www.facebook.com/mshedbristol/posts/get-ready-to-spark-your-imaginationjoin-us-at-m-shed-on-saturday-31-may-for-a-fr/1114452927389660/

3. Discovery Museum, Newcastle: 21 June 2025

Number of participating engineers: 8

Activities included:

- Treasure Trail
- ‘Electric drawing’
- Circuits
- ‘Fuzzy faces’
- Selfies
- Build a wind turbine
- ‘Build your own all-electric house’
- Design your own electric flat
- Walking tour

https://www.northeastmuseums.org.uk/discoverymuseum/whats-on/watts-in-a-home-electric-dreams

https://www.getintonewcastle.co.uk/whats-on/discovery-museum/watts-home-electric-dreams

4. Techniquest, Cardiff: 12 July 2025, 11:00am to 5:00pm

Number of participating engineers: 6

Activities included:

- ‘Electric drawing’
- Circuits
- Fuzzy faces
- Selfies
- Build a wind turbine
- ‘Build your own all-electric house’
- Design your own electric flat

Link:

https://www.techniquest.org/events/watts-in-a-home-electric-dreams/

5. Glasgow Science Centre, Glasgow: 9 August 2025, 11:00am to 3:00pm

Number of participating engineers: 5

Activities included:

- ‘Electric drawing’
- Circuits
- Fuzzy faces
- Selfies
- Build a wind turbine
- ‘Build your own all-electric house’
- Design your own electric flat

Link: https://www.instagram.com/p/DM0RS7wt5iK/

6. Thinktank, Birmingham, 21 September 2025 11-4pm

Number of engineers participating: 3

Activities included:

- Angel Exit performance repeated for a public audience and a private invited audience
- Talk on the women in the EAW who changed the use of electricity in the home
- Panel event with 2 engineers, Angel Exit and an EAW trained electrical demonstrator (age 92)

Evaluating the project

WES implemented formative evaluation during the project and made adjustments when necessary to meet project targets, such as selecting Birmingham as a location after recruitment challenges in Belfast. This process included regular team meetings and collecting informal feedback from engineers and the public to revise activities as appropriate.

To assess the overall reach, outcomes and impact we developed the following evaluation framework, tools and methods.

Evaluation framework

Project objective	Ingenious aim	Evaluation focus
Train 24+ engineers in public engagement using storytelling and interactive methods	Motivate engineers and develop their skills	Engineers' skill development, confidence change (pre/post participation surveys)
Engage families via public events and interactive performances	Inspire creative public engagement	Audience engagement, learning, enjoyment
Raise awareness of women's role in electricity and engineering	Raise awareness of engineering's diversity and impact	Public attitudes about events, level of interest in women in engineering
Reach underrepresented groups	Provide access to non-traditional audiences	Demographics analysis, qualitative feedback
Build a lasting legacy of cross-sector collaboration	Provide legacy	Evidence of or willingness for continued engagement, outputs reused post-project

Quantitative assessment – project reach

Measure	Target	Actual	Notes
Target number of engineers	24	40	Target exceeded by 66%. N.B. 43 engineers registered for the project, 3 withdrawals). Not all engineers participated in all training sessions
Proportion of female engineers	100	100	
Training hours per engineer	6	15hrs (+5hrs catch up lunch and learn)	Target hrs exceeded by 250% The average training hours per fully engaged participant was 15hrs hours (4 x confidence workshops, Stand and Deliver, STEM engagement, in person workshop)
Number and type of activities	4 training workshops 6 pop up displays/exhibitions	13 training workshops 6 pop up displays/exhibitions	Target number of training workshops exceeded by 325%

	6 electricity-themed workshops 6 theatre performances	6 electricity-themed sessions 11 theatre performances	Target achieved for exhibition and sessions. No hands on activities took place at Thinktank due to timing restrictions for public/private event.
Audience numbers and types in person	1500 families and general public attending 6 museum and science-based visitor attractions (6 x 250)	3789 families and general public attending 6 museum and science-based visitor attractions	Target number exceeded by more than 100%.
Under-served audiences: Socio-economic data and/or other information	**Family and community groups** 25% of people in highest three deciles (30%) of deprivation using postcode IMD/WIMD/SIMD data	32.4% of respondents' postcodes are in the highest three deciles (8 – 10) of deprivation according to the latest Indices of Multiple Deprivation	Target exceeded
Social media and web analytics		Impressions: 38,340 Engagements: 2745 Comments on post: 54 New followers: 991	

Note on venues and attendance factors

Visitor participation across venues was influenced by both entry policies and external conditions. Notably, the National Museum of Computing, Glasgow Science Centre and Techniquest require paid admission, whereas M Shed in Bristol and Discovery Museum offered free entry. This distinction likely shaped the demographic and volume of attendees, with free-entry sites attracting a broader and potentially more diverse audience. Additionally, weather conditions played a significant role in attendance. Events at Techniquest and Discovery Museum coincided with exceptionally hot days, which according to the venues, typically deters visitors and impacts overall footfall.

Qualitative assessment – project impact

To assess impact we used the following tools and methods.

Area	Tools	Outcomes measured
Engineers' development	- Participation questionnaires; pre and post programme	- Increased confidence in public engagement. - Better communication and storytelling skills. - Understanding of how to engage diverse audiences.
Public engagement Impact	- Standardised audience evaluation form. - Postcode collection for reach and demographic spread.	- Learning about engineering and women's historical roles. - Enjoyment and relevance of activities. - Increased interest in engineering.
Project legacy	- Legacy tracking: reuse of materials, ongoing local engagement. - Reflection reports by facilitators, theatre professionals, engineers and visitor attractions. - Exploration of WES adopting the skills training for members	

Engineers' learning outcomes

Participating engineers were invited to complete questionnaires on registration, at the end of the first session, and after the project, in order to assess their learning outcomes and evaluate how WES may enhance outreach effectiveness and project management.

Registration questionnaire

An analysis of questionnaire responses from participants who expressed interest in joining the project revealed rich qualitative insights into their motivations, backgrounds and expectations for the project. The following summary synthesises responses from open-ended questions:

What do you hope to gain from taking part in this project?

Key themes identified:

- **Skill development**: Most participants hoped to improve public speaking, presentation and engagement skills.
- **Confidence building**: Many explicitly mentioned wanting to build confidence, especially in presenting to non-specialist audiences.
- **Networking**: Several responses highlighted the desire to connect with other women in STEM and share experiences.
- **Outreach impact**: Participants were motivated by the opportunity to inspire others, especially young people and underrepresented groups.
- **Creative exploration**: A few mentioned interest in theatrical or creative aspects as a way to step outside their comfort zones.

Representative quotes:

- "Help develop my career, build my confidence in presenting and public speaking."
- "I'd like to gain more experience with public engagement and outreach, from the planning through to the delivery stage."
- "I hope to utilise this opportunity to support outreach activities and help support more young people from underrepresented backgrounds."

Introduction session questionnaire

At the end of their first welcome session in the training programme, participants were asked what they loved about the session/project, what they learned, and what will they would do. The following is a summary of their responses:

💔 Loved (about the training)

- Meeting new people.
- Enjoying the energy and interactive nature of the sessions.
- Appreciating shared experiences and insights from like-minded women.
- Discovering their strengths and the freedom to express themselves.

📚 Learned

- Gained awareness of personal strengths and how they can be reframed from perceived weaknesses.
- Learned about positive psychology.
- Reflected on personal growth and how they've changed over the year.

✅ Do

- Plan to apply strengths more intentionally in work and life.
- Share insights with colleagues and family.
- Shift mindset from weakness-based thinking to strength-based thinking.
- Continue learning about personal and team strengths.

Post-event questionnaire

Participating engineers were asked to complete a final form on completion of the project. Responses reflect a diverse range of experiences, motivations and outcomes, offering valuable insights into the project's impact on professional development, public engagement confidence and perceptions of diversity in engineering. The following is a summary of responses under each question asked:

Can you briefly introduce yourself and your current role in engineering?

- Roles ranged from students and post-docs to senior engineers and lecturers.
- Fields included electrical, mechanical, process, transport systems and photonics engineering.
- Many participants highlighted their involvement in education, outreach or leadership roles.

What motivated you to participate in the project?

- Desire to promote diversity and inclusion in engineering.
- Interest in public engagement and STEM outreach.
- Opportunity to connect with peers and share personal engineering journeys.
- A chance to develop interpersonal and communication skills.

What types of public engagement activities did you develop during the project?

- Most common: hands-on demonstrations, treasure hunts/trails, talks/discussions.
- Others included exhibition displays, local heritage walks, dress-up/photo stations and custom drawing sheets.
- Some contributed to event logistics and idea generation.

How did the training workshops support your ability to engage the public?

- Helped build confidence, self-awareness and communication strategies.
- Provided tools for understanding audience needs and tailoring messages.
- Clifton Strengths and storytelling exercises were particularly valued.

Which aspect of the public engagement activities did you find most effective or enjoyable?

- Engaging directly with families and children.
- Seeing curiosity and excitement in young participants.
- Collaborative planning with fellow engineers.
- Activities like electric home demos, dress-ups and interactive shows were highlights.

Overall, how enjoyable did you find participating in this project?

- Ratings ranged from 3 to 5 (out of 5), with most giving 4 or 5.
- Enjoyment was linked to meaningful interactions and team collaboration.

What new skills did you gain through this project?

- Frequently mentioned: Public engagement, communication, confidence, teamwork, self-awareness.
- Some also noted project management and technical skills.

Did the project help you feel more confident about public engagement?

- Majority felt ‘much more confident’ or ‘somewhat more confident’.
- A few reported no change, often due to prior experience.

Have you used or do you plan to use these skills in your professional or educational work?

- Most have already used or plan to use the skills gained.
- Applications include teaching, outreach and professional development.

Did you feel the project helped to highlight diversity in engineering?

- Many affirmed this, citing impact on young girls and cultural representation.
- Some shared personal stories of challenging stereotypes.

Were there moments where you felt your story had an impact on the public?

- Yes: Stories resonated with families, especially around gender and career paths.
- Some noted indirect impact through shared historical narratives.

What challenges did you face during the project?

- Time constraints and scheduling conflicts.
- Coordination among volunteers with differing availability.

- Limited preparation or structure in some groups.
- Adapting technical content for diverse audiences.

What improvements would you suggest for similar future projects?

- More structured planning and clearer deadlines.
- Earlier and more consistent communication.
- Greater input from engineers in activity development.
- Enhanced promotion and social media presence.

Would you take part in public engagement activities again?

- Overwhelmingly yes, with enthusiasm to continue volunteering.
- A few said “maybe,” depending on future commitments.

How has your perception of public engagement in engineering changed?

- Many now see it as essential and impactful.
- Increased appreciation for storytelling and audience connection.

What lasting impact has this project had on you personally or professionally?

- Boosted confidence and motivation.
- Inspired new hobbies and outreach initiatives.
- Strengthened sense of community and purpose in engineering.
- Helped shape future career aspirations.

How and what do you think we should use the resources/training/activities that have been developed during this project in the future? Do you have any ideas for further public engagement activities?

- Suggestions included:
    - Reusing materials in schools, libraries and community centres.
    - Creating online versions of activities and webinars.
    - Annual pop-up events and heritage walks.
    - More STEAM integration (adding arts to STEM).

Public learning outcomes

Assessing the overall project against objectives

The following table assesses the project overall against each of the stated objectives, highlighting what went to plan and what did not:

Project objective	Overall assessment and explanation
deliver **at least 4 interpretation and communication workshops** using original materials (including WES and EAW archives) to help engineers engage diverse audiences and promote understanding of technical disciplines.	The project successfully delivered thirteen interpretation and communication workshops – over treble the target - using WES and EAW archival materials. These sessions equipped engineers with presentation, storytelling and engagement techniques, fostering confidence and creativity. The use of historical resources enriched understanding of technical disciplines and helped engineers connect meaningfully with diverse audiences across regions.
train **a minimum of 24 engineers** to confidently participate in creative public and informal education activities across **6 UK visitor attractions**.	Forty engineers were trained - exceeding the target of 24 - through a blend of online and in-person workshops. Participants gained skills in public engagement, creative facilitation and confidence-building, enabling them to lead activities at six UK visitor attractions. The training was well received, with engineers reporting increased confidence and enthusiasm for future outreach. Engineers did not take up opportunities to take part in the theatrical performance – but engineers contributed to what the future would be like (1935, 1985, 2035) – and some engineers did participate e.g. dressing up as Caroline Haslett.
highlight women engineers, past and present, as role models to challenge gender stereotypes in engineering and showcase their global impact.	The project foregrounded women engineers past and present through theatrical performances, exhibitions and storytelling. Caroline Haslett and other pioneers were featured prominently, while contemporary engineers shared personal narratives. These efforts challenged gender stereotypes and showcased the global impact of women in engineering, resonating strongly with public audiences and participants alike.
facilitate **at least 6 public events** around the UK, where engineers share their stories, expertise and enthusiasm with families and broader audiences.	Six public events were held at major UK museums and science centres. Engineers facilitated interactive activities and shared their expertise, creating engaging experiences for families and broader

	audiences. Feedback indicated high enjoyment and increased interest in engineering among participants of all ages
offer the public opportunities to engage with engineers and explore how electricity has shaped women's roles historically and how women influence its future.	Through hands-on activities, theatrical performances and heritage trails, the public explored electricity's historical and future impact on women's roles. Engineers facilitated dialogue on domestic power, sustainability and innovation, sparking curiosity and reflection. The events successfully connected past narratives with present challenges, highlighting women's influence in shaping energy futures.
establish a lasting cross-disciplinary network of engineers, heritage ambassadors and educators to promote engineering's diversity and impact across communities.	The project fostered collaboration among engineers, heritage professionals, educators and creative partners. Regional workshops and public events enabled networking and knowledge exchange, while shared planning and delivery built lasting professional relationships and friendships. Several venues expressed interest in future collaborations, indicating strong potential for sustained cross-sector engagement beyond the project's lifespan.
develop online resources to support collaboration between engineering, heritage and community sectors in public engagement.	Online resources, including 2 films about the project and interviews with women engineers, and downloadable activity materials, were developed to support ongoing collaboration. These assets will be hosted on the WES website and shared via social media and webinars. They offer scalable tools for future public engagement, enabling continued cross-sector dialogue and outreach.

Project outputs and dissemination

Insights and learnings derived from this initiative will be shared throughout the WES community and wider engineering sector – via WES partners, clusters and networks – to provide guidance and inspire creativity in future public engagement activities. Outcomes will also be reported to the Royal Academy of Engineering as part of the Ingenious Final Report Form, and further disseminated through journal publications and conference presentations. Our project legacy outputs will be as follows:

Format	**Audience**	**Channels**
Evaluation report	RAEng	Email
Summary evaluation report	WES clusters, board, key contacts and project partners	Email
Videos of the project and engineers interviews/play excerpts	Public	Links on YouTube, WES social media and newsletter
Webinars	WES trustees; WES members	Zoom events after the project has completed, explaining project outputs and achievements
Conference/journal papers	Engineering and outreach professionals	Academic and engineering/history conferences and events

Legacy recommendations: What are the next steps?

Given the success of this project, WES is planning to apply for follow-on funding to continue this work with each of the cohorts of engineers involved. We will further explore other avenues to replicate some of the activities, for example in national initiatives such Heritage Open Days, with which WES has strong links. One of the venues has expressed interest in hosting Angel Exit again for a repeat performance, indicating strong engagement and potential for sustained collaboration.

Project materials will continue to be used at partner museums and visitor attractions, with venues having access to the specific trails: some of which are already in use. Additionally, an online archive of engineering resources, including activities and films, will be made available via our website, although this will be launched at a later date as the site is currently under review and development.

WES is also preparing a paper to seek Trustee engagement and approval to take the training workshops to its wide membership.

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Angel Exit Theatre Company

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