

Annual Report 2023

Engineer the future
for everyone



For everyone, for the future and for society

School children are amazing. Not only do they have the wonderful ability to come up with ideas, they are also naturally quick to find alternative solutions if the first one does not work. Maintaining concentration may not always be their forte, but give them a concrete task to investigate and solve, and new worlds open up.

Maybe that's why engineering works. The method, which teaches children to investigate, design and construct solutions for the real world is becoming increasingly popular in primary and secondary schools. From 2020-2023, VIVE, the Danish Centre for Social Science Research, carried out a thorough evaluation of our efforts relating to engineering in compulsory education, unequivocally concluding that teachers and students alike get a positive benefit from using the method.

VIVE's evaluation closely reflects my own observations when watching students embark on their various tasks. This is a form of teaching that embraces and captivates.

Engineer the Future is consequently delighted to have received approx. DKK 31 million from the VILLUM FOUNDATION and the Novo Nordisk Foundation to continue our work of establishing and expanding the engineering method in primary and secondary schools from 2024 to 2027. Taken together with new grants from NORDEN//Orient's Fond and the William Demant Foundation for our role model scheme, this gives us the opportunity to reach more students across the country and give them a taste for technology and science.

This is absolutely crucial because forecasts indicate that we will be facing a shortfall of 13,000 engineering, IT and science candidates in 2030. At the same time, annual cohorts are declining, so the battle to attract the young is set to intensify.

In Engineer the Future, Denmark's technological alliance, we undertake purposeful, long-term, knowledge-based work to ensure that young people in Denmark develop strong skills in technology and natural sciences and that more of them choose to follow that path for their education and career.

We do this in light of the following strategic objectives:

- **FOR EVERYONE**
Technology and science must be for all children and young people.
- **FOR THE FUTURE**
All children and young people must have strong skills in technology and science.
- **FOR SOCIETY**
More young people must choose a degree in engineering, IT and science.

Happy reading!

Laura Klitgaard
Chairman, Engineer the Future and Ingeniørforeningen, IDA



Selected results
from 2023
– see details on the
following pages

- **Young people's interest in taking an engineering degree is now almost double that of 2014**
- **22.1% of all higher education applications are for STEM programmes. This is the highest percentage we have measured**
- **Pupils who have worked with engineering have a greater interest in science**

- **67% of teachers believe that students learn more by using engineering**
- **In 2023, more than 6,700 students met one of our 200 volunteer role models**
- **Our latest study selection campaign has proved particularly attractive to women**
- **The alliance has gained five new partners in 2023**

For everyone

For the future

For society

All children and young people should have the opportunity to enjoy and excel at science. One of the ways in which we create substantive ideas in students about possibilities in science and technology is through our 200 or so volunteer role models. In 2023, they met more than 6,700 students at schools and colleges and shared their enthusiasm for technology, IT and science.

We train our role models to talk about their own path into the profession, including those times when it was difficult – struggling with dyslexia, for example, or having doubts about their degree choice or being a woman in a typically male profession.

These are stories that children and young people can relate to and it may strengthen their belief that technology, IT or science has a place for them too.

Technology and science must be for all children and young people

Hvad er programmering?

"It is a great pleasure to pass on my passion for programming to the next generation. It also feels meaningful to be an example of what a STEM education can lead to. Hopefully it will help inspire more young people to choose the same path."

- Christian Guldbæk, Lead software engineer, Mærsk. On being a role model.



"I really want to make more children and young people curious about the maritime industry. Through my presentations, I hope to inspire students towards the many different facets of the engineering profession. Beyond that, I also attach great importance to diversity, because diversity is a strength."

- Afshan Akram, Head of LTSA Spare Parts & Logistics, MAN Energy Solutions. On being a role model.

For everyone

For the future

For society

All children and young people must have strong skills in technology and science

With engineering, the subjects become more relatable to students, and they get the opportunity to express their creativity and independence. And with grants of DKK 18 million from the VILLUM FOUNDATION, the Novo Nordisk Foundation and the Lundbeck Foundation, the Engineering in High School project is really flying. In the very first year of the project, 25 high schools across the country signed up for a competence boost for their teachers.

2023 also provided clear evidence that the engineering method works. An evaluation by VIVE – the Danish Centre for Social Science Research – shows that the Engineering in School method increases students' interest in science. Two out of three teachers believe that engineering improves the quality of teaching and that students learn more. So far, more than 1,200 teachers have suitably developed their skills and more than 110,000 students have tried their hand at engineering.



“Engineering is much more motivating for the students, and they have learned more than they would have from my regular teaching.”

- High school teacher. About engineering.



“Engineering is a big space where there’s never just one right answer. And working hands-on means the experience sticks that much better. You really understand the subject and feel more confident in your own learning. We became very involved in the lessons because we were allowed to be ourselves and be creative. It was really fun.”

- Hira and Sabrina, 9th grade students at Strandgård School, Ishøj. About engineering.

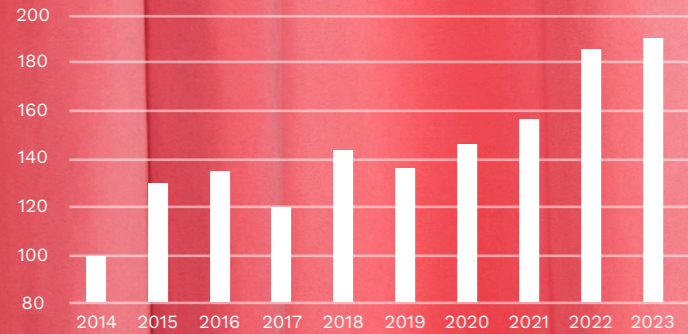
For everyone

For the future

For society

In 2023, applications for STEM* programmes made up 22.1% of all higher education applications. This amounts to 18,621 applications in all and is the highest percentage we have so far measured (2019–2023).

*STEM: Science, Technology, Engineering and Mathematics.



Young people's interest in engineering degrees

Every year since 2014, we have measured young people's interest in engineering degrees, and it is very much on the increase. We have also measured interest in STEM degrees more broadly since summer 2022, and here too there is progress.

More young people must choose a degree in engineering, IT and science

Year upon year, alongside KU SCIENCE and technical universities across the country, we are helping to increase the number of young people considering or seeking a degree in science, engineering or IT. We systematically involve young people in our work to ensure we see eye-to-eye with the target group.

Such is the case with the development of our study selection campaign, for example, where we show young people that many different types of people are needed to create a world that suits everyone.





Engineering in School works

We have always believed that engineering works. We have heard it from teachers, seen it in the classrooms and experienced it with the students.

Now the proof is in: VIVE – the Danish Centre for Social Science Research – has carried out a thorough assessment of the 'Engineering in School' project, and the results are clear: Students who have worked with engineering have:

- **A greater interest in science**
- **A more positive experience of the tuition**
- **An experience that science is more relevant and important**

With grants from the Villum Foundation and the Novo Nordisk Foundation, Engineering in School is set to continue in the years to come.

This means skills development for well over 1,000 teachers and engineering for at least 300,000 students. The next phase is to focus on increased establishment and expansion of the method.

Click or scan the QR code and watch our film about Engineering in School.



94%

of the teachers we have trained subsequently keep engineering in their annual plan



"I find that all pupils are able to participate with their different skills."

- Primary school teacher. About engineering.

69%

of teachers believe that engineering improves the quality of teaching

83%

of teachers believe that engineering increases students' investigative skills

67%

of teachers believe that students learn more by using engineering

Engineering in School 2020-2023 was a collaboration between Engineer the Future, VIA University College, University College Copenhagen and Astra, and was financed by the Villum Foundation.



"When I'm finished with my presentation, a little girl comes up to me. She hardly said anything during the visit because she was too shy. But then she came up, her eyes shining, and said: "When I grow up, I want to be like you."

- Book an Expert role model

"The many examples of how gender is expressed in everyday life help to clarify how gender awareness plays into and influences teaching. I became aware of areas where I myself use gendered language unconsciously."

- Teacher at Engineer the Future's workshop on gender-aware science education.

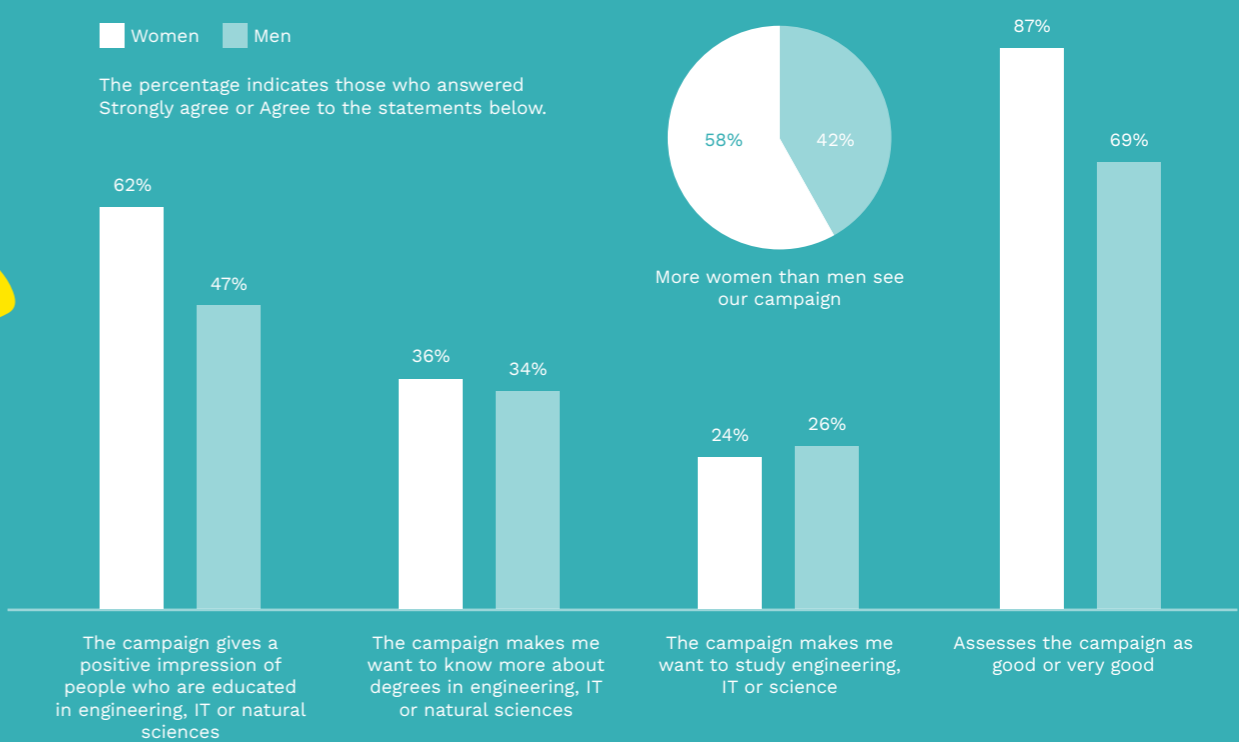
"The 'For Everyone' campaign is very special and really speaks to me. Maybe because I'm a woman. The engineering profession is dominated by men, and as a woman you want to do something about it. Equality is important, and it is good to focus on it so that we can change it."

- Karin, student AAU. About Engineer the Future's study selection campaign

Women in science and technology

In many fields within technology and science, there is still a shortage of women. We are working purposefully to change that. With a grant from the Villum Foundation for the project "Gender-aware Science Teaching", we teach science teachers how to go about getting more girls on board in technology and science. Among other things, the project challenges teachers' unconscious prejudices and ideas about gender stereotypes.

The study selection campaign 'Engineer the Future for Everyone', which encourages young people to become part of the community that develops good solutions for everyone, appeals particularly to women. This can be seen both in the share of video views (58% women) and in the assessment of the campaign.

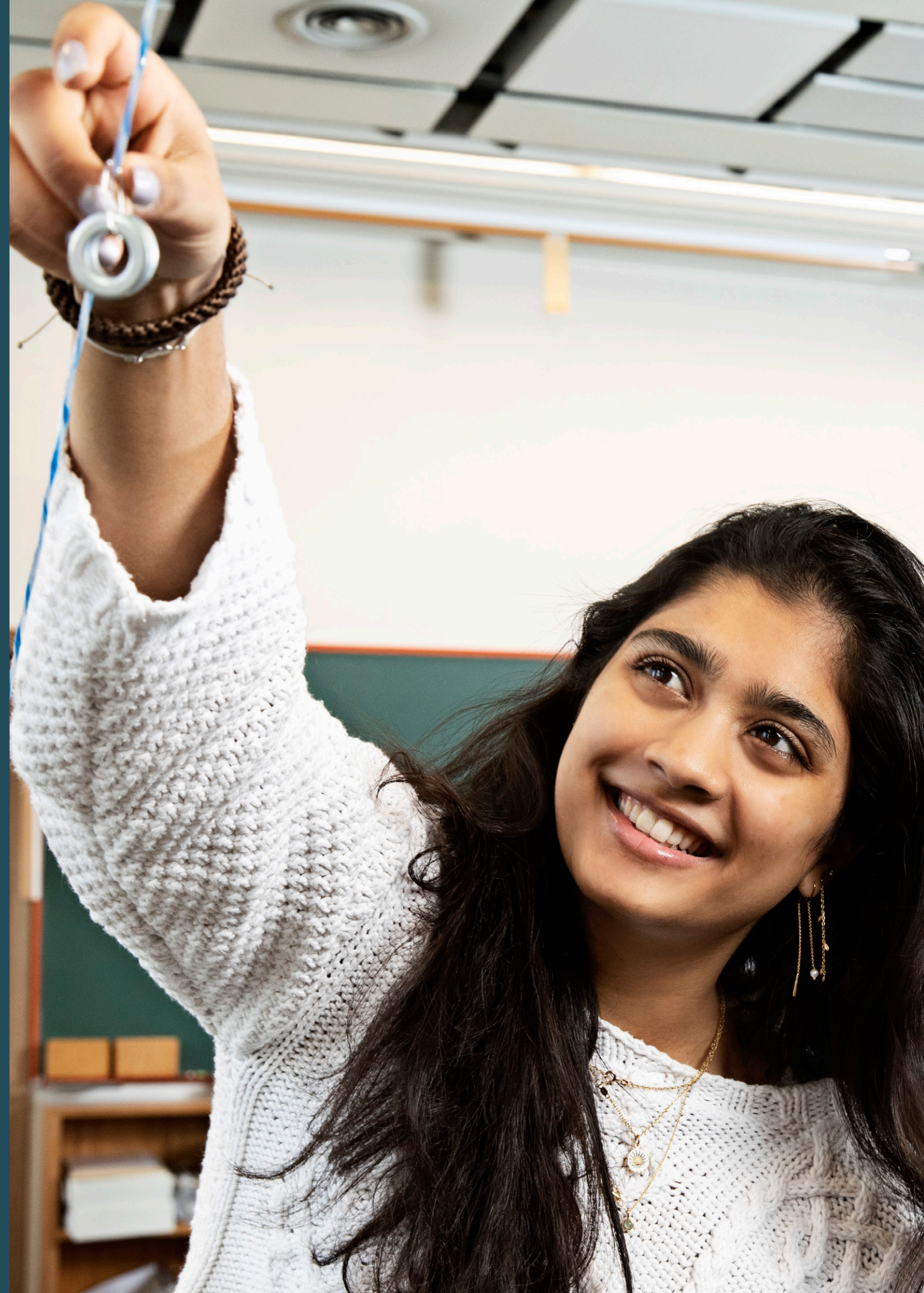




Denmark's Technological Alliance

Engineer the Future is Denmark's technological alliance and consists of around 50 companies, educational institutions and interest organisations. Together, we create space for all children and young people in science and technology, and we work to ensure that Danish companies have access to strong candidates in engineering, IT and science.

Welcome to our new partners:





"There is tremendous demand for newly qualified engineers, and as one of the major takers of that group, we at NIRAS believe that we have a responsibility to help solve the current lack of engineers."

It's not going to be a quick fix, but collaborating with other leading companies and educational institutions in the Engineer the Future alliance gives us a stronger voice towards decision-makers, parents and young people, which will ultimately motivate students to choose STEM courses."

- Susanne Kynne Frandsen,
Senior Vice President,
Global People & Communication, NIRAS

Why we are part



"Engineer the Future is good at focusing on two areas. Firstly, that being an engineer is great fun and that many different people can become engineers. And, secondly, that it is important to consider the opportunity at an early age."

- Eva Rindom, CEO, SYSTRA Danmark



Click or scan the QR code and watch the film with SYSTRA Denmark

Click or scan the QR code and watch the film with Coloplast



"We participate in the Book an Expert role model scheme because it is important for us to have the opportunity to inspire young people and show them how to translate knowledge into products that make a difference in people's lives."

- Peter Herskind, Vice President,
Product Design & Engineering, Coloplast

"We want to ensure that everyone, regardless of background, gets interested in technology. In the end, of course, it's about creating as large a talent pool within the STEM subjects as possible"

Mette Marie Buhl, HR-director, Bankdata



Click or scan the QR code and watch the film with Bankdata

of the alliance



"Engineers are pioneers in a technological world. At Engineer the Future, we share a vision to inspire and educate the next generations of engineers. Our commitment to the project stems from our deep belief that engineers shape the future."

Through visits to schools, we want to share our passion for innovation and construction. Our goal is to inspire young people to understand that being an engineer is about solving the world's most complex challenges and turning ideas into reality."

- Henrik Juul Sørensen,
CEO, EKJ Consulting Engineers

Special events in 2023

In 2023, we had a number of events and happenings that brought us even closer together in the alliance and provided a deeper common understanding of what it takes to raise enthusiasm for technology, IT and science in the next generation. Here is a selection of our activities:



Captain for a day

In September, 45 students from Strandgård School, Ishøj, were lucky enough to be on board the Laura Mærsk, the world's first green container ship, to learn about green energy.

Inventors of the future

In the spring, almost 500 high school students from all over the country attended the Science Cup final, where they presented prototypes and received feedback on their ideas and inventions. Our thanks go to all the judges, who maximised the good experience for students by providing qualified feedback and encouragement in science and technology.



"Do you want to be a role model?"

We visited Siemens, COWI, Artelia, Velux and KK Wind Solutions and had great dialogues with employees about their company's commitment and how to become a Book an Expert role model.

Network meeting for role models

In May, we invited the Book an Expert volunteer role models to a networking afternoon, where they shared stories, advice and experience of their meetings with students.



Danish schools celebrate engineering

In June, we launched our evaluation report of the programme Engineering in School phase 2 and had invited our stakeholders to share insights and knowledge. The day included presentations from children, teachers and school leaders who have worked with Engineering.

Debate in the Tech tent

At Folkemødet 2023, we organised and participated in debates in the Tech tent about diversity, the new science strategy and recruitment for education in collaboration with, among others, Danske Maritime, Mino Denmark, AAU, DTU, SDU, IDA, Topsoe, the LIFE Foundation, the House of Natural Sciences, the Science Club and the Danish Teachers' Association.



Political awareness of engineering

Minister for Digitalisation and Minister for Gender Equality Marie Bjerre visited 5th grade students for Engineering Day at Abybro School in North Jutland. Minister for Children and Education Mattias Tesfaye also showed great interest in engineering at a meeting with chairman Laura Klitgaard in November.



What's happening in 2024

- With two new grants totalling DKK 30,780,400 from the VILLUM FOUNDATION and the Novo Nordisk Foundation, Engineering in School is now entering the 3rd phase of its 10-year programme, extending the spread of the method to benefit thousands of students.
- Even more teachers are signing up for skills development in the Engineering in High School project so that students in secondary education can also try their hand at developing solutions to concrete challenges.
- With new grants from NORDEN//Orient's Fond and William Demant Fonden, Book an Expert will be making extra efforts to reach out to children and young people who have limited opportunities of meeting a role model in engineering, IT or science.
- A new series of FAQ films will be launched as part of our study selection campaign, where students and employees from partner companies give good advice to young people looking to choose a course for study.
- We are intensifying our work to make children and young people more competent and self-confident in the digital field.
- 2024 sees the alliance's 10th anniversary, and we regard it as a perfect occasion to hold an annual meeting and look into the future together with you. We look forward to seeing you on the 1st of October, 2 to 5 pm, at Kalvebod Brygge in Copenhagen!

A warm thank you to the board for their support and positive cooperation.

Laura Klitgaard
Chairman,
Engineer the Future
and IDA



Henrik Garver
CEO
(FRI (the Danish Association
of Consulting Engineers))



Stine Gry Roland
Project Vice President,
Strategy, Public Affairs, &
Communications, Novo Nordisk



Lars D. Christoffersen
Senior Vice President
and Dean of Undergraduate
Studies and Student Affairs,
DTU



Jesper Toubøl
Vice President Operations,
LEGO



Mikkel Harder
Deputy Director,
DI



Maria Vinther Fenger
Director People and Culture,
Liftra



Per Hessellund Lauritsen
Head of Research,
Siemens Gamesa



Søren Fogt Lundbo
Head of Branding
and Marketing,
Netcompany



Hans Ubbe Ebbesen
Head of Global Employer
Branding Maersk



Save the date

Annual meeting

October 1st 2024

2pm - 5pm

We also celebrate our
10th anniversary

Engineer the future
for everyone

A big thank you to



novo
nordisk
fonden

A.P. MØLLER FONDEN



VILLUM FONDEN

William
Demant | Fonden



ELLEHAMMER FONDEN



THOMAS B. THRIGES FOND

