

OUR INSTITUTION: BUILDING THE FUTURE.

Institution of
**MECHANICAL
ENGINEERS**

**Presidential Address
27 May 2022**

Eur Ing Philip John Peel
BSc (Hons) MEng CEng FIMechE

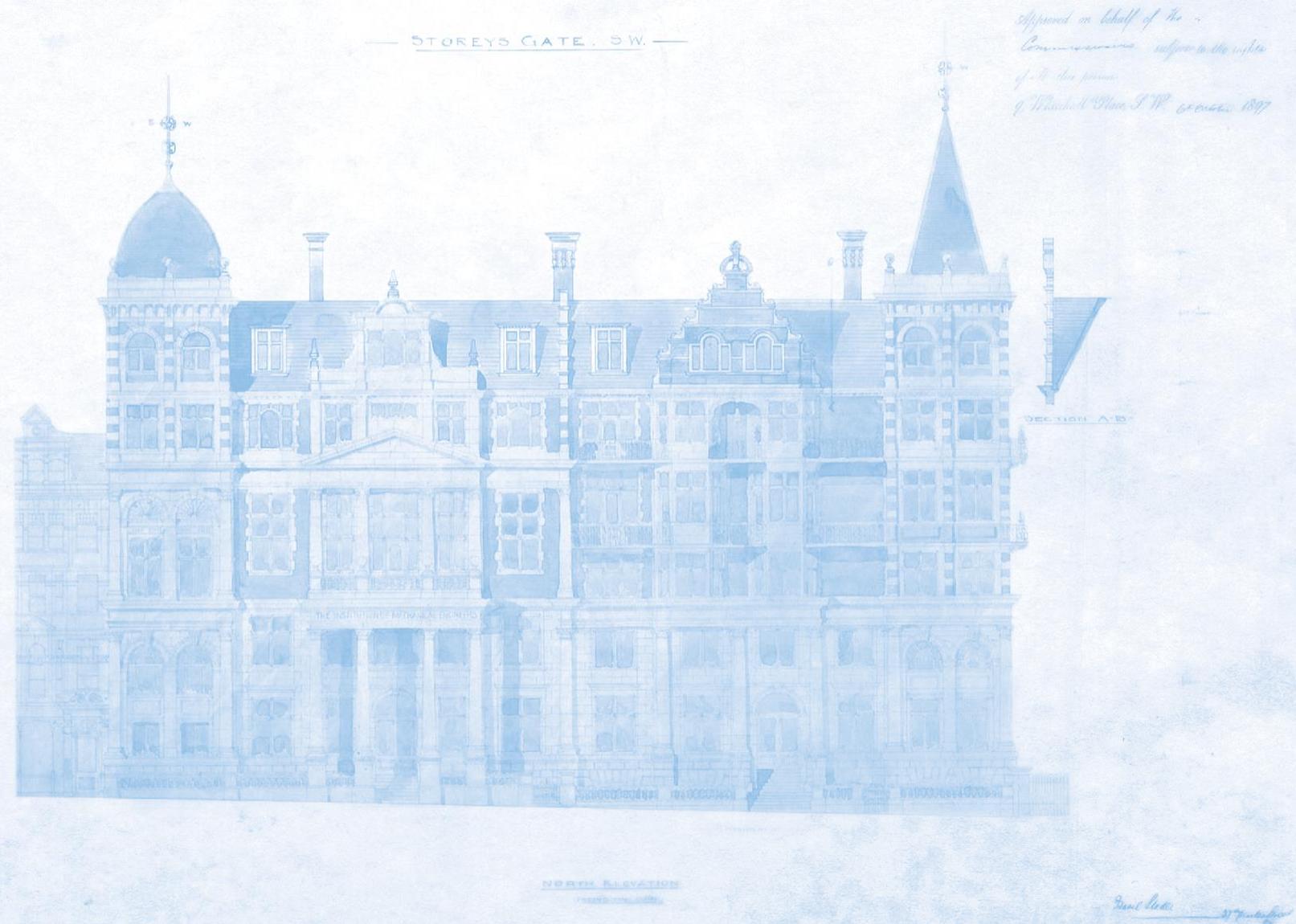
Improving the world through engineering



CONTENTS

- 01** 175 years as an Institution
- 02** Personal introduction
- 03** 175th Anniversary: the other celebrations
- 04** Power generation: past, present and future
- 05** Building the future
- 06** Concluding remarks

01 175 YEARS AS AN INSTITUTION



175 YEARS OF ENGINEERING HERITAGE

A reason to celebrate



175 YEARS OF ENGINEERING HERITAGE



175 YEARS OF ENGINEERING HERITAGE



Institution of
**MECHANICAL
ENGINEERS**

**#forward
thinkers**

“”

We aim to celebrate and honour our past whilst looking confidently towards the future.

Lucy Bonner
IMechE Archivist

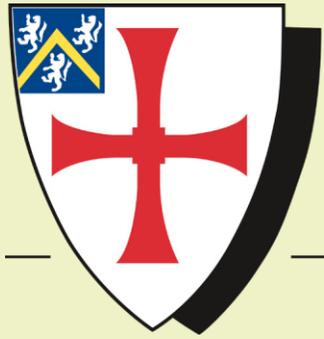
02 PERSONAL INTRODUCTION



ENGINEERING IN THE GENES



ENGINEERING EDUCATION



University
of Durham

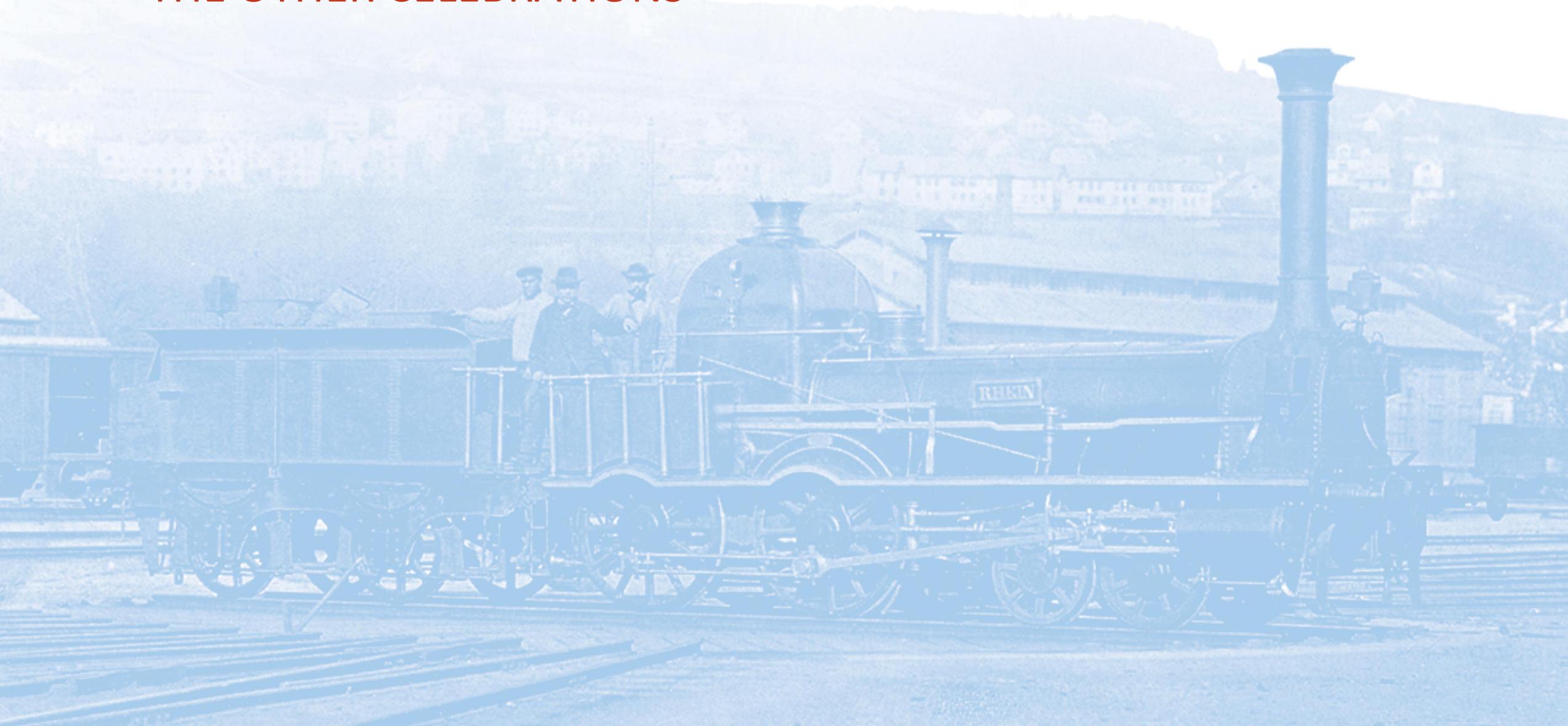
1985 BSc(Hons) in Engineering Science
1986 MEng in Turbomachinery



ENGINEERING CAREER

 <p>Ministry of Defence</p>				
<p>1981–1985 Ministry of Defence</p>	<p>1985–1998 GEC Turbine Generators / GEC Alsthom Power</p>	<p>1998–1999 ABB Alstom Power</p>	<p>1999–2015 Alsthom</p>	<p>2015–Present General Electric</p>

03 175TH ANNIVERSARY: THE OTHER CELEBRATIONS



175TH ANNIVERSARY: THE OTHER CELEBRATIONS

175th anniversary of the Swiss railways



Jahre Schweizer Bahnen
ans de chemin de fer en Suisse
anni di ferrovie svizzere
onns viafiers svizras



175TH ANNIVERSARY: THE OTHER CELEBRATIONS

Railway Pioneers



George Stephenson

1781–1848

First IMechE

President

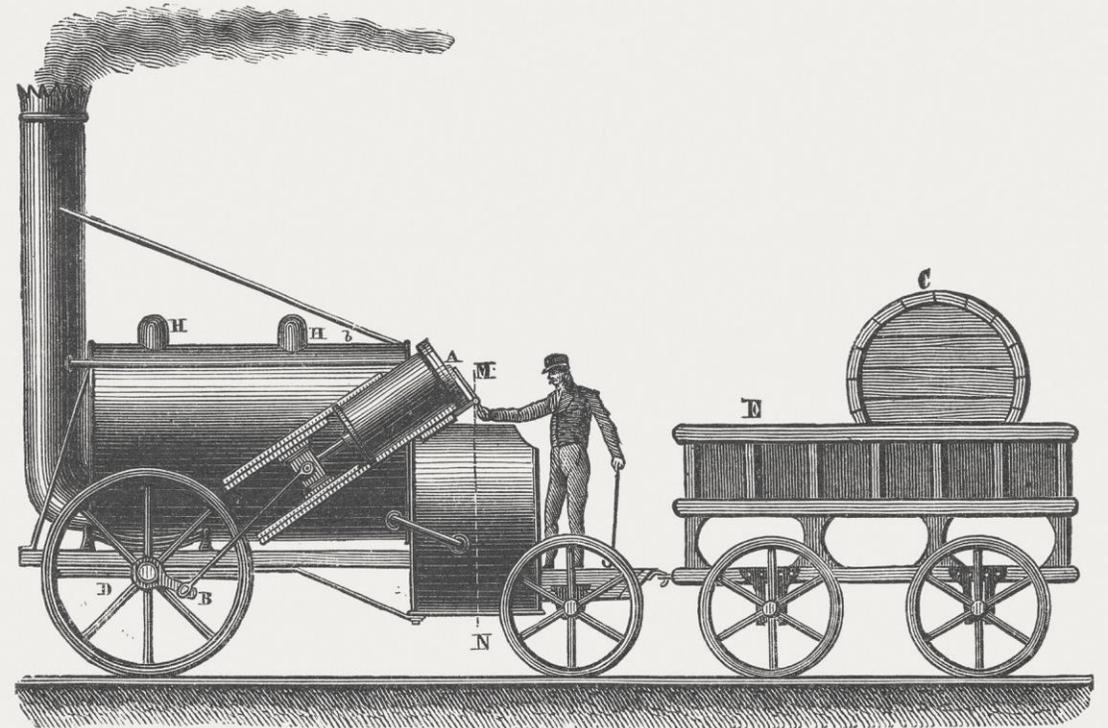


Robert Stephenson

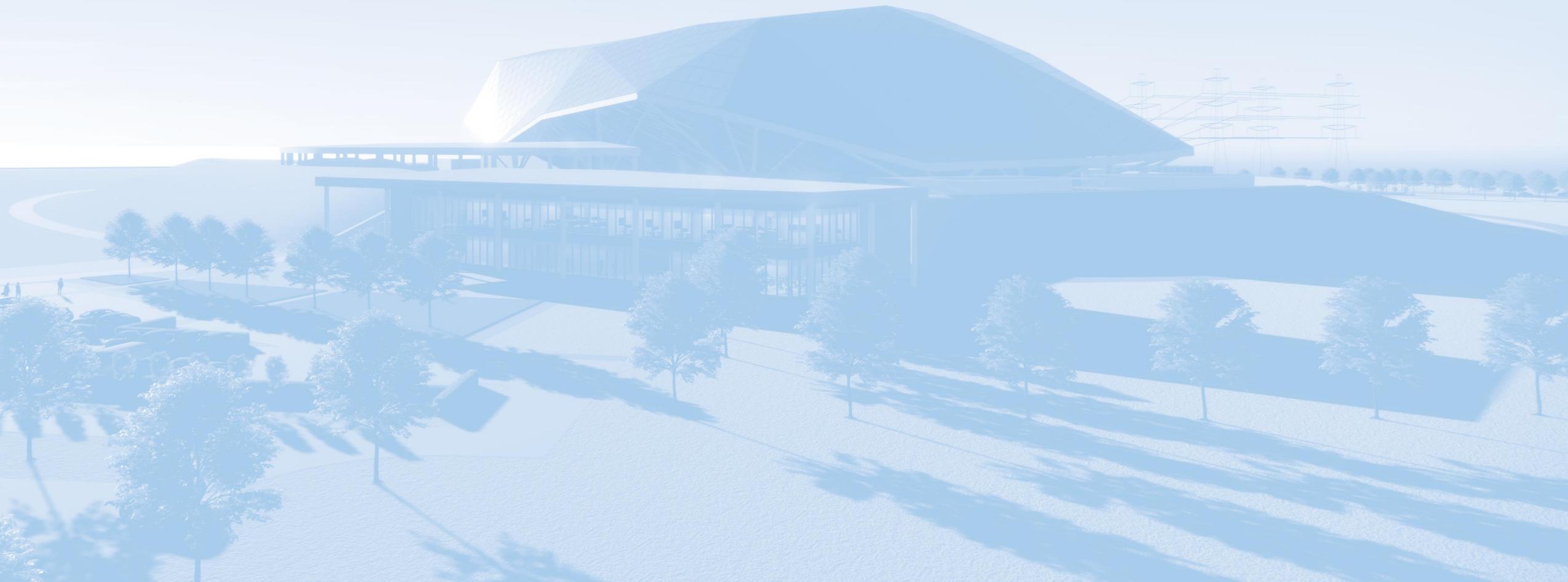
1803–1859

Second IMechE

President

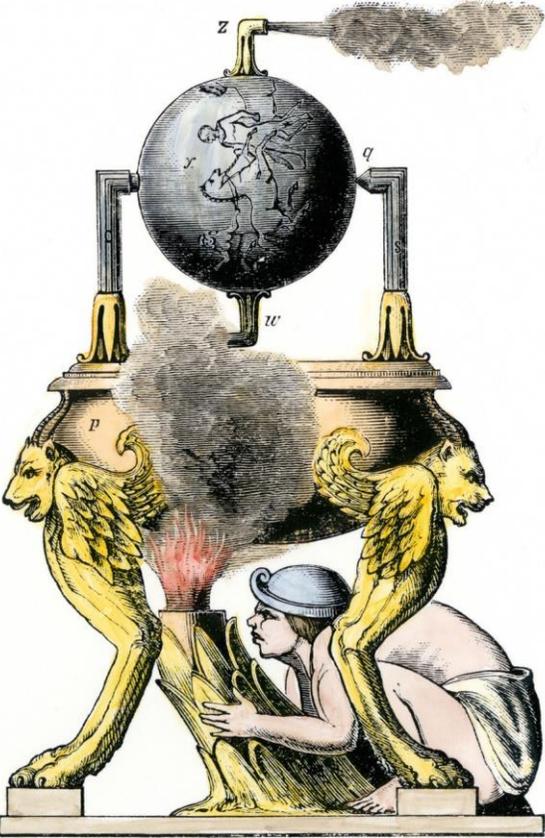


04 POWER GENERATION: PAST, PRESENT AND FUTURE

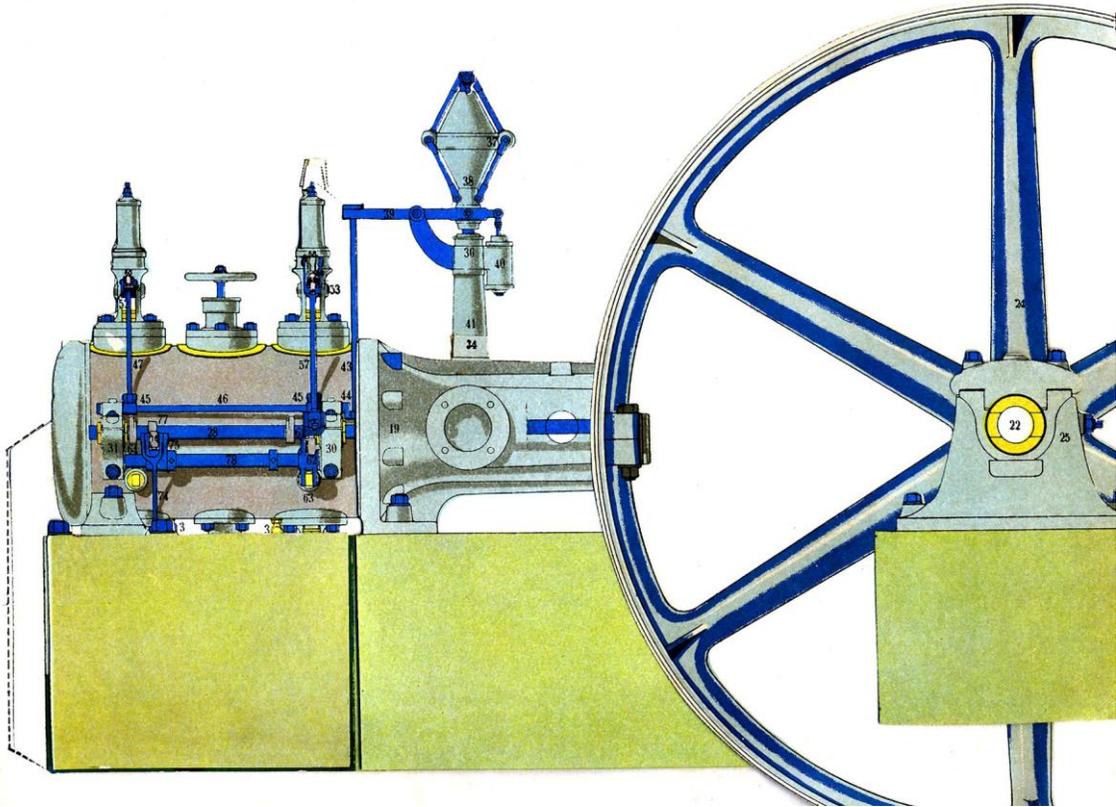


POWER GENERATION: PAST, PRESENT AND FUTURE

Early examples of steam power



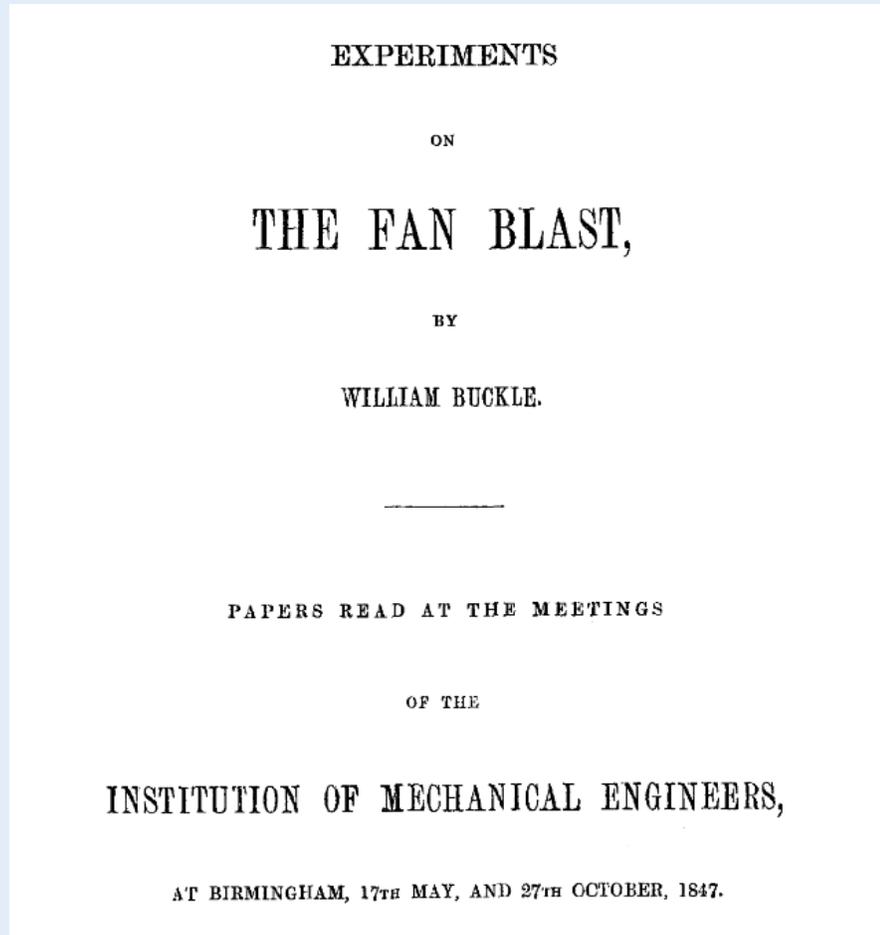
The Reaction Turbine of Hero of Alexandria (120BC)



Single Cylinder Steam Engine

POWER GENERATION: PAST, PRESENT AND FUTURE

First IMechE proceedings paper



“““

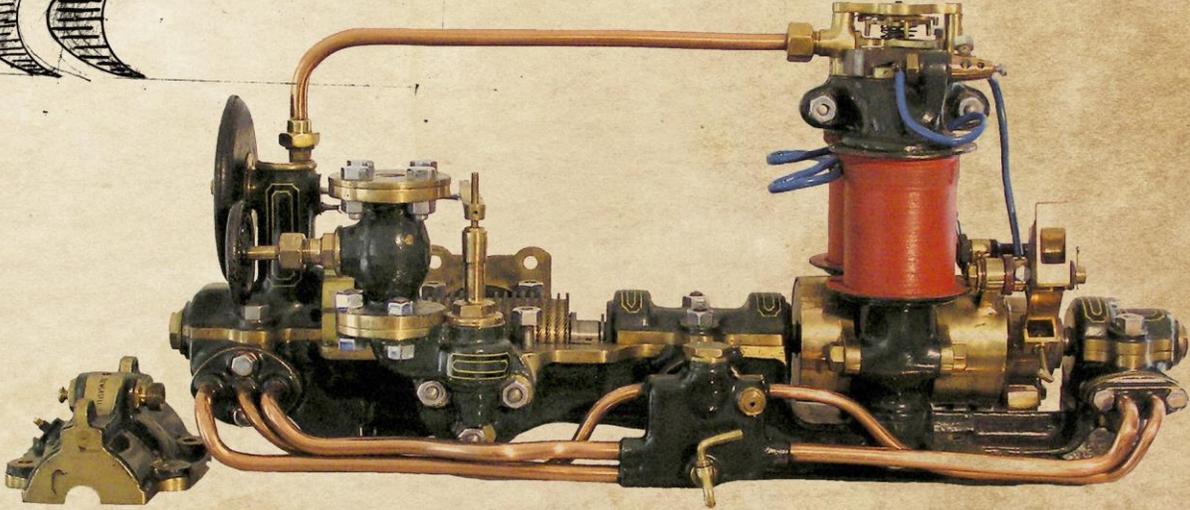
...it is hoped that the hints here thrown out may be serviceable in leading to such constructions of the fan as shall ensure the greatest useful effect with the least expenditure of power.

POWER GENERATION: PAST, PRESENT AND FUTURE

Sir Charles Algernon Parsons (1854–1931)



*Blades 2" pitch line
Reaction principle*



POWER GENERATION: PAST, PRESENT AND FUTURE

Baron Hinton of Bankside (1901–1983)

81st IMechE President

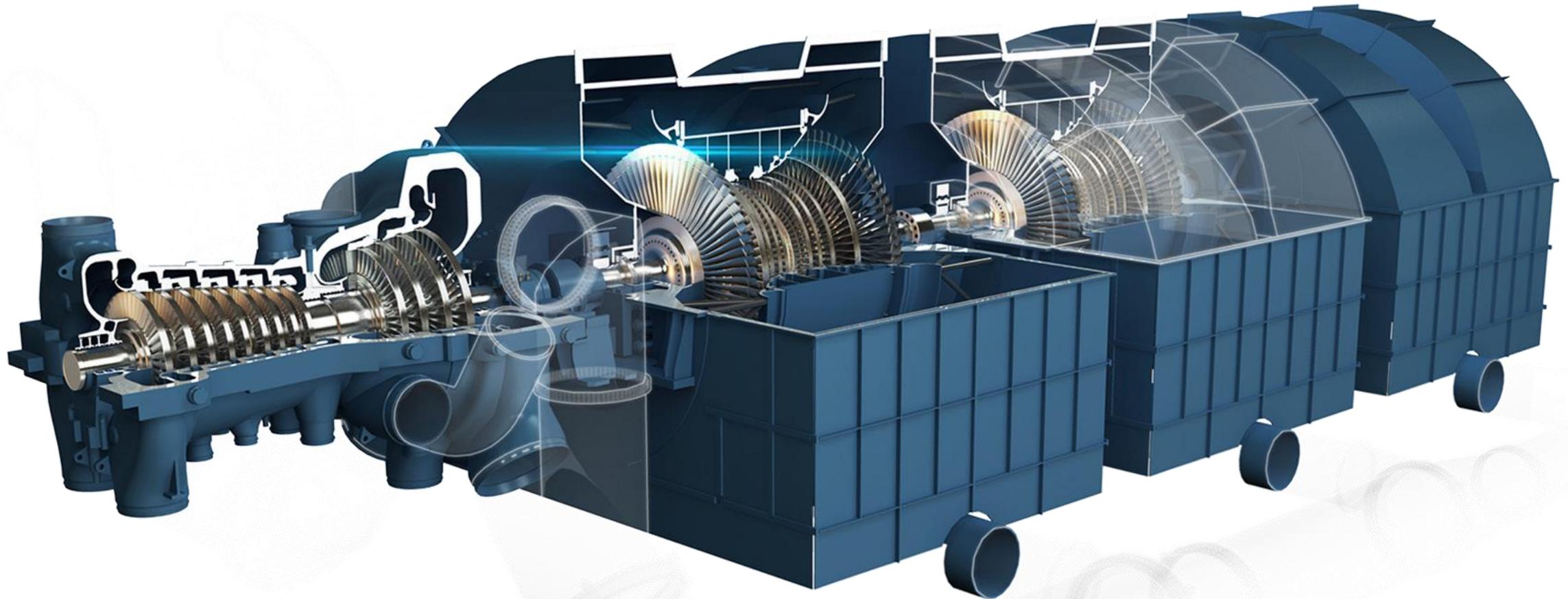


““”

1. Engineering is the science of knowing what you can get away with.
2. Progress is getting out of the trouble that you would not have been in had it not been for progress.

POWER GENERATION: PAST, PRESENT AND FUTURE

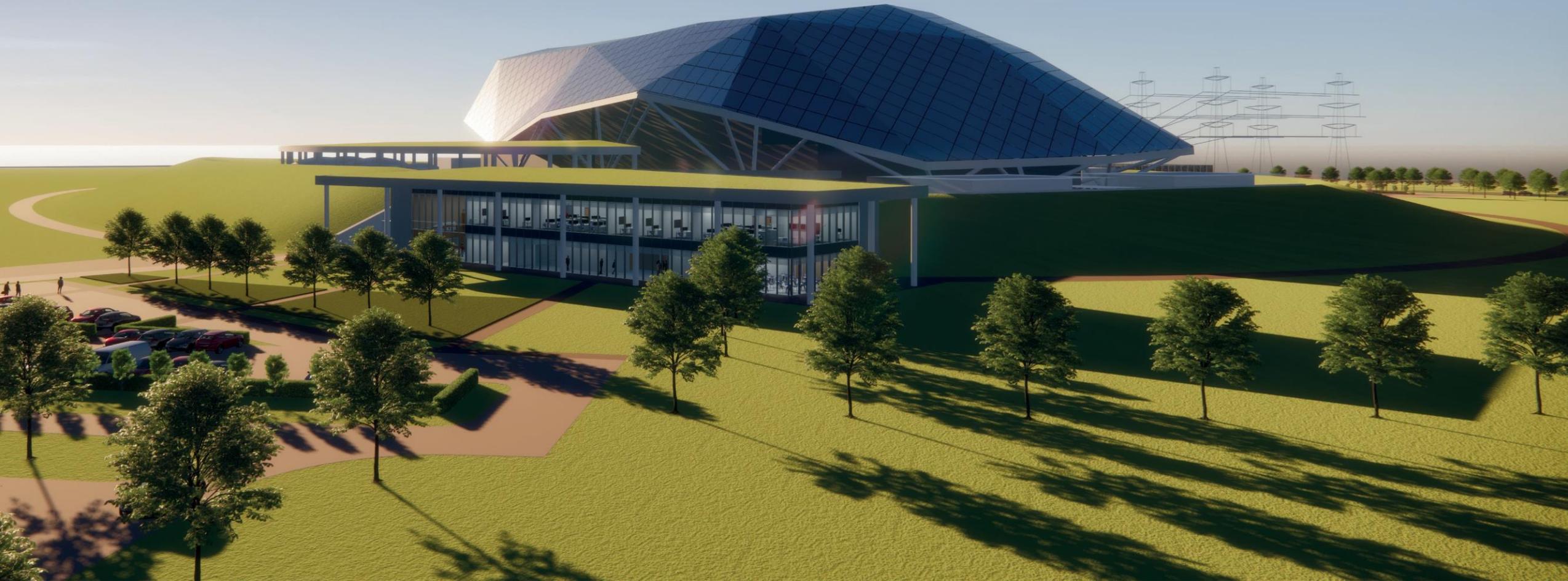
Hinkley Point C Steam Turbine



The largest last-stage blade (LSB) ever made – at 75 inches
was successfully designed, manufactured, and tested
at Belfort factory, France

POWER GENERATION: PAST, PRESENT AND FUTURE

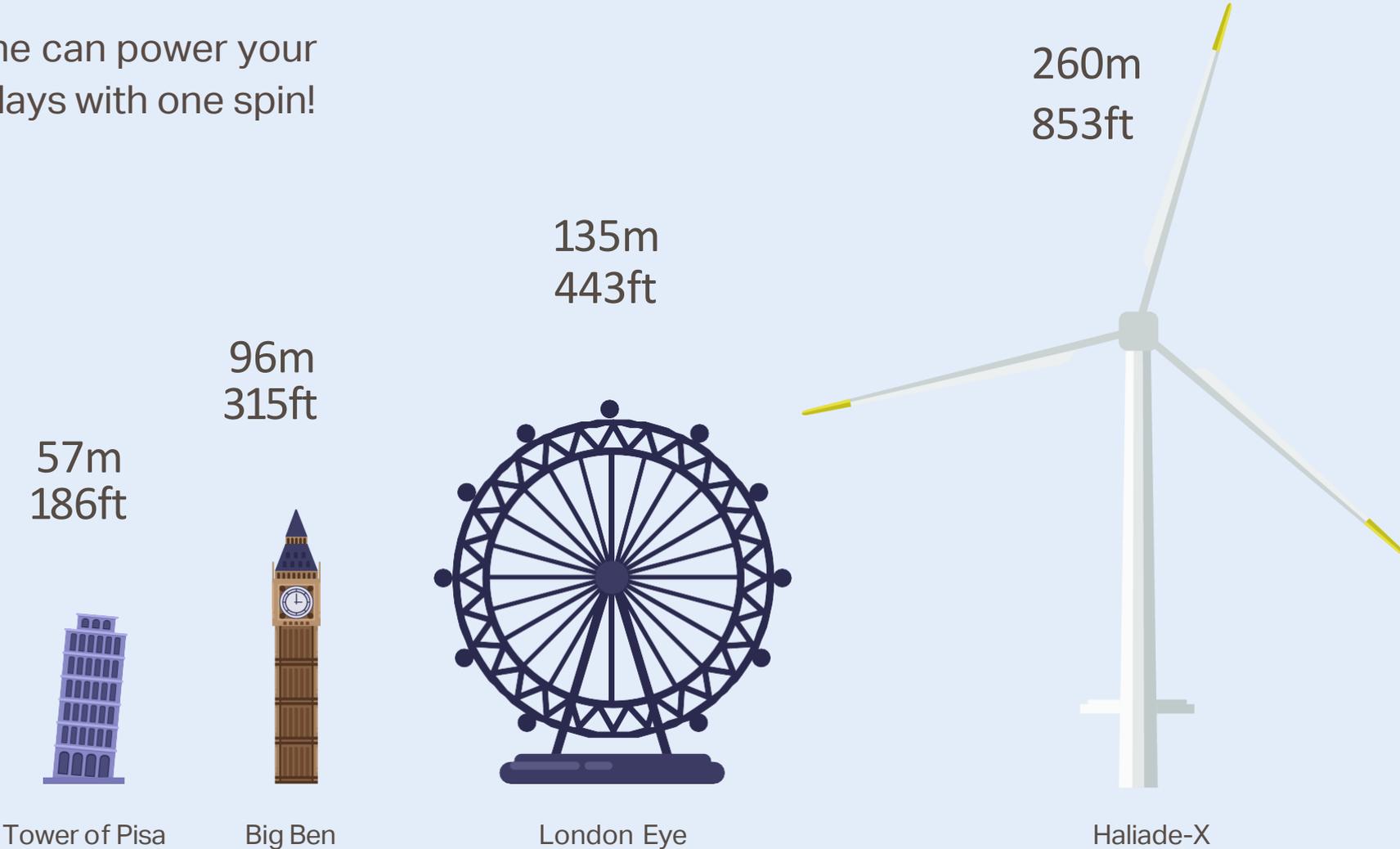
Small Modular Reactors (SMRs) – fast-tracking fission



POWER GENERATION: PAST, PRESENT AND FUTURE

Renewable energy: offshore wind

This giant turbine can power your house for two days with one spin!



POWER GENERATION: PAST, PRESENT AND FUTURE

Fusion – the power source of the future?



05 BUILDING THE FUTURE



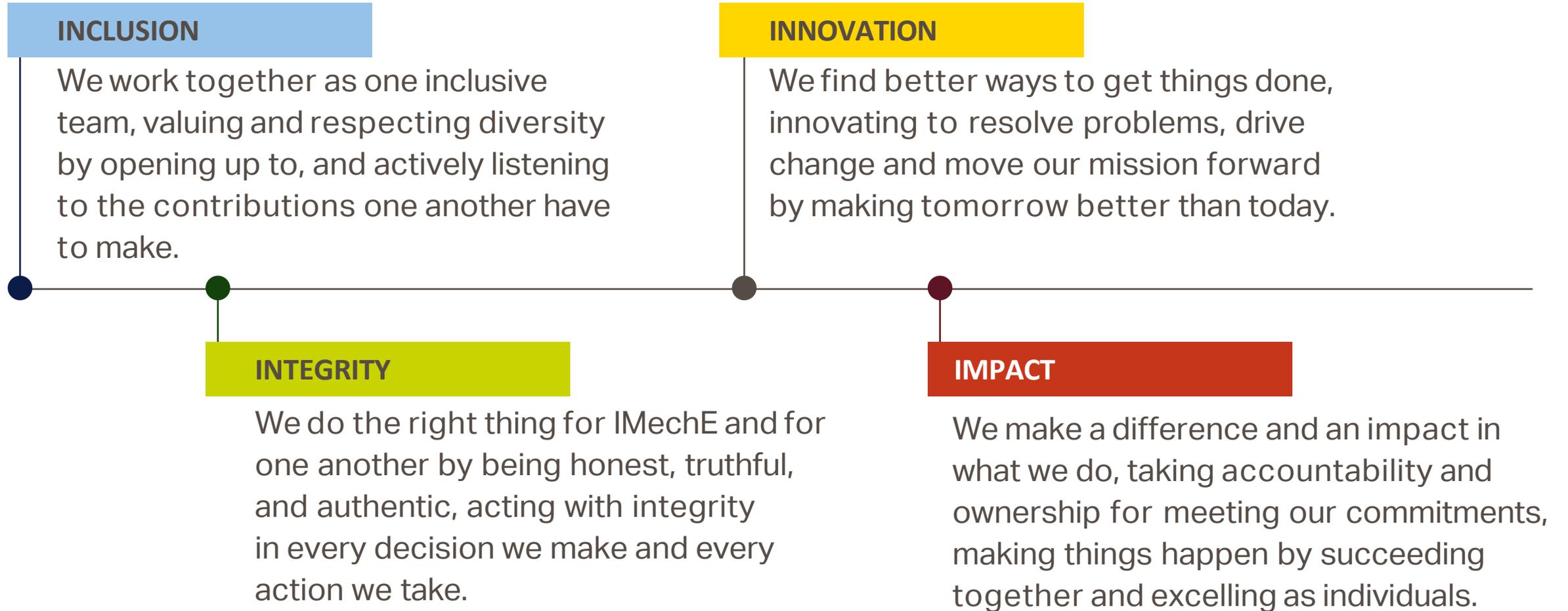
BUILDING THE FUTURE

Our future strategy



BUILDING THE FUTURE

Our values



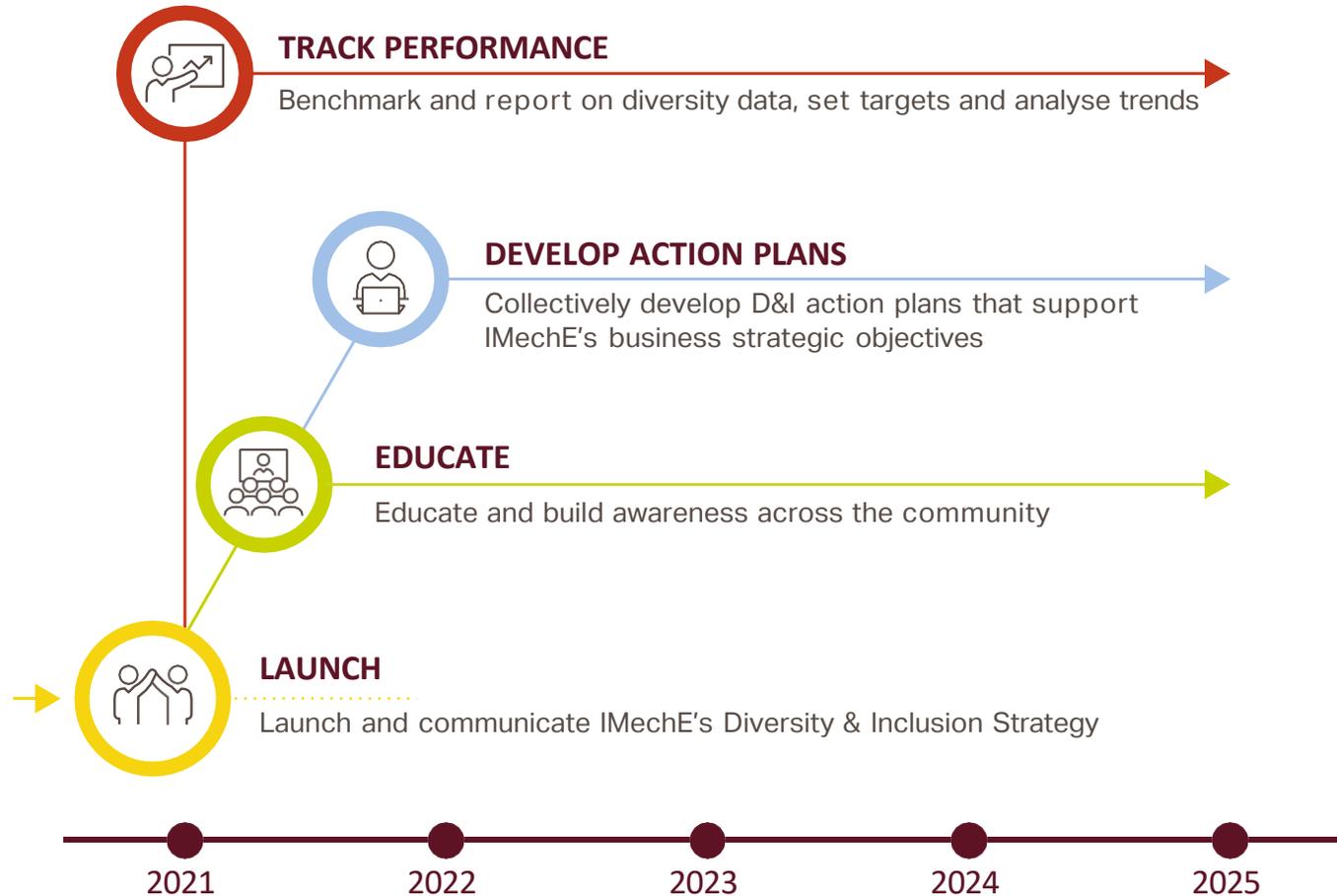
BUILDING THE FUTURE

Our strategic enablers



BUILDING THE FUTURE

Commitment to D&I



A CASE FOR CHANGE.

Institution of
**MECHANICAL
ENGINEERS**

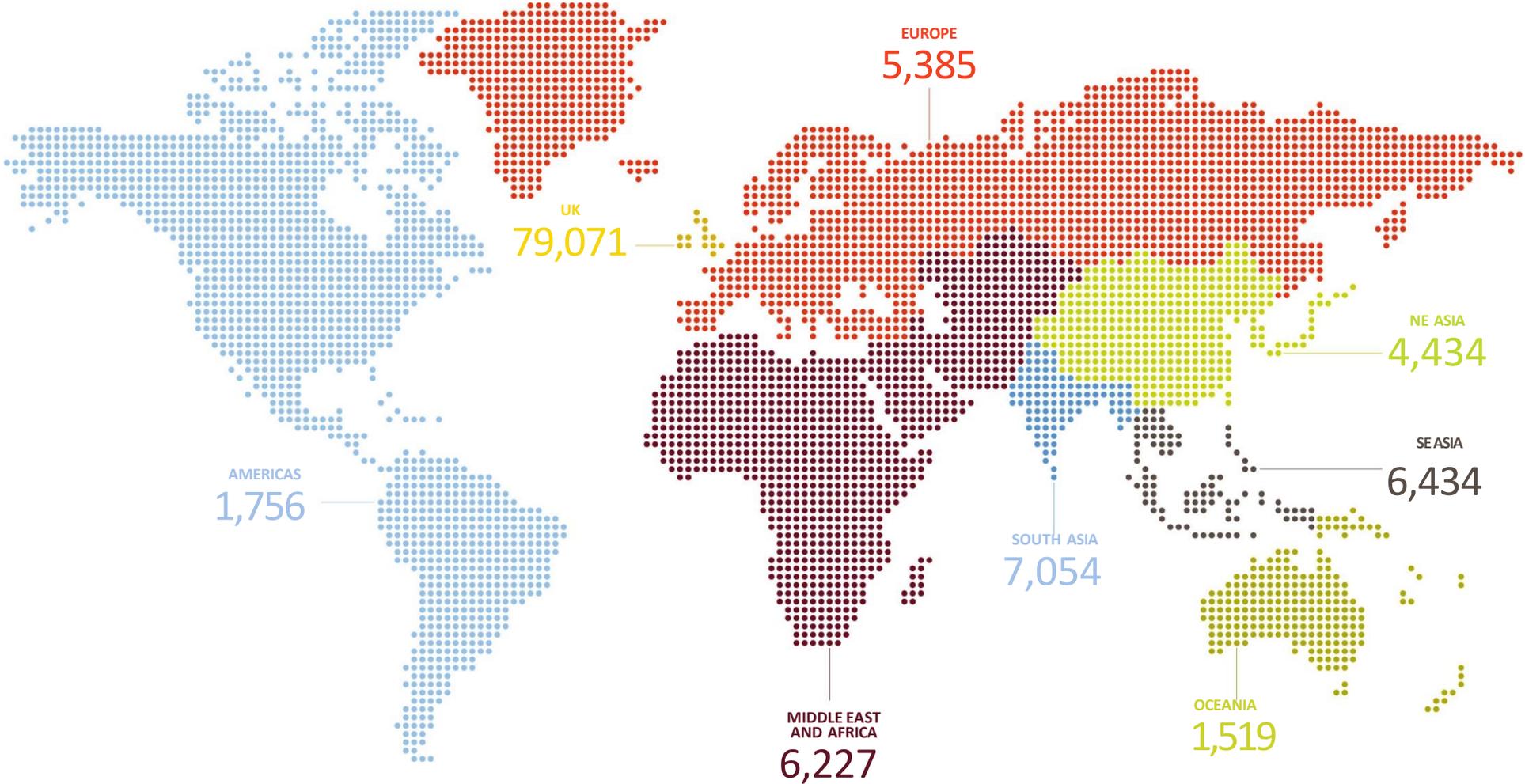
Diversity & Inclusion Strategy Report



Improving the world through engineering

BUILDING THE FUTURE

Expanding our global presence



BUILDING THE FUTURE

Expanding our global presence



BUILDING THE FUTURE

Our future building strategy

One Birdcage Walk – A Moment in Time
by Ravi Bhela



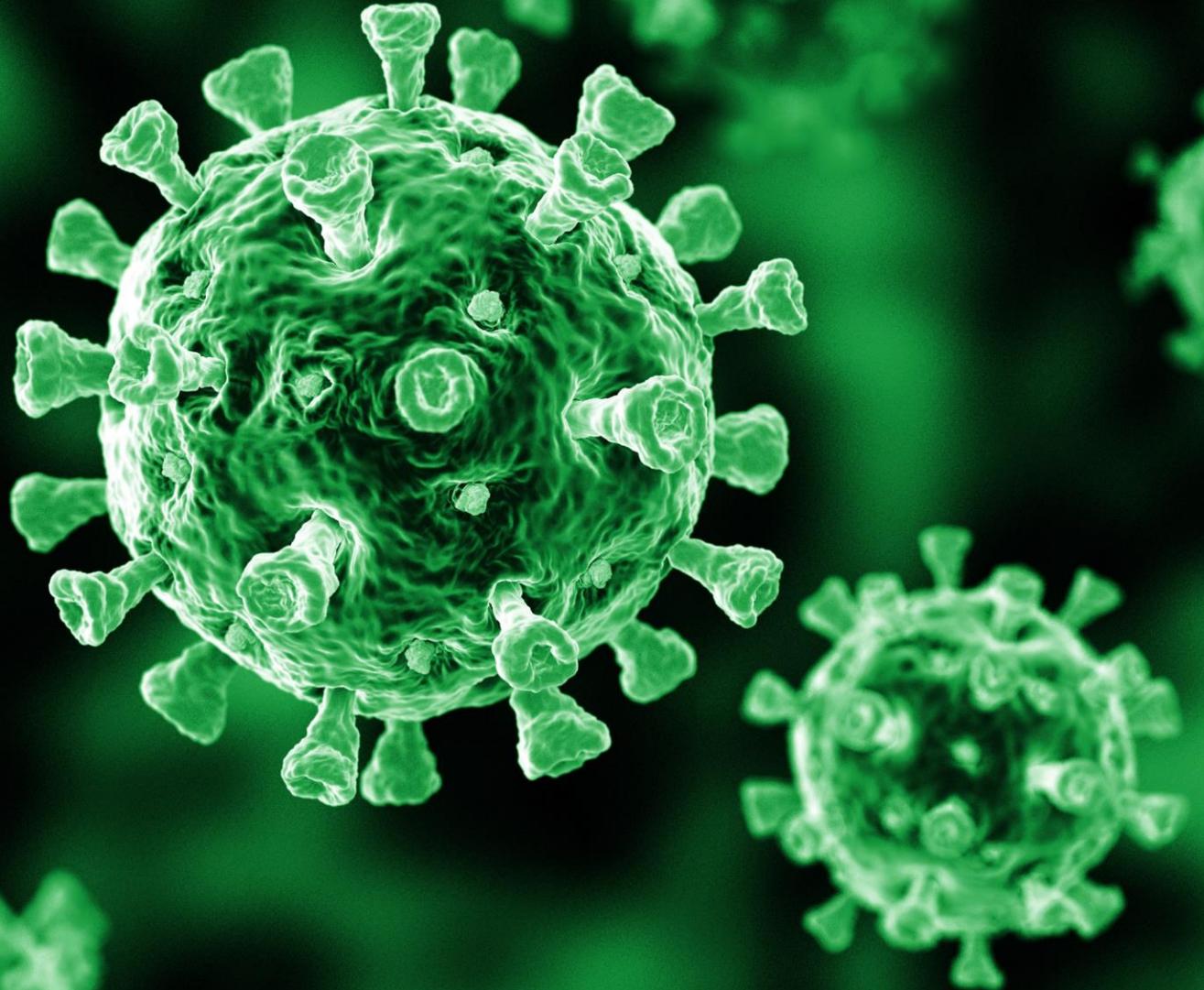
BUILDING THE FUTURE

Effective infection control – learning for the future



PICS

Pandemic Infection Control Solutions



BUILDING THE FUTURE

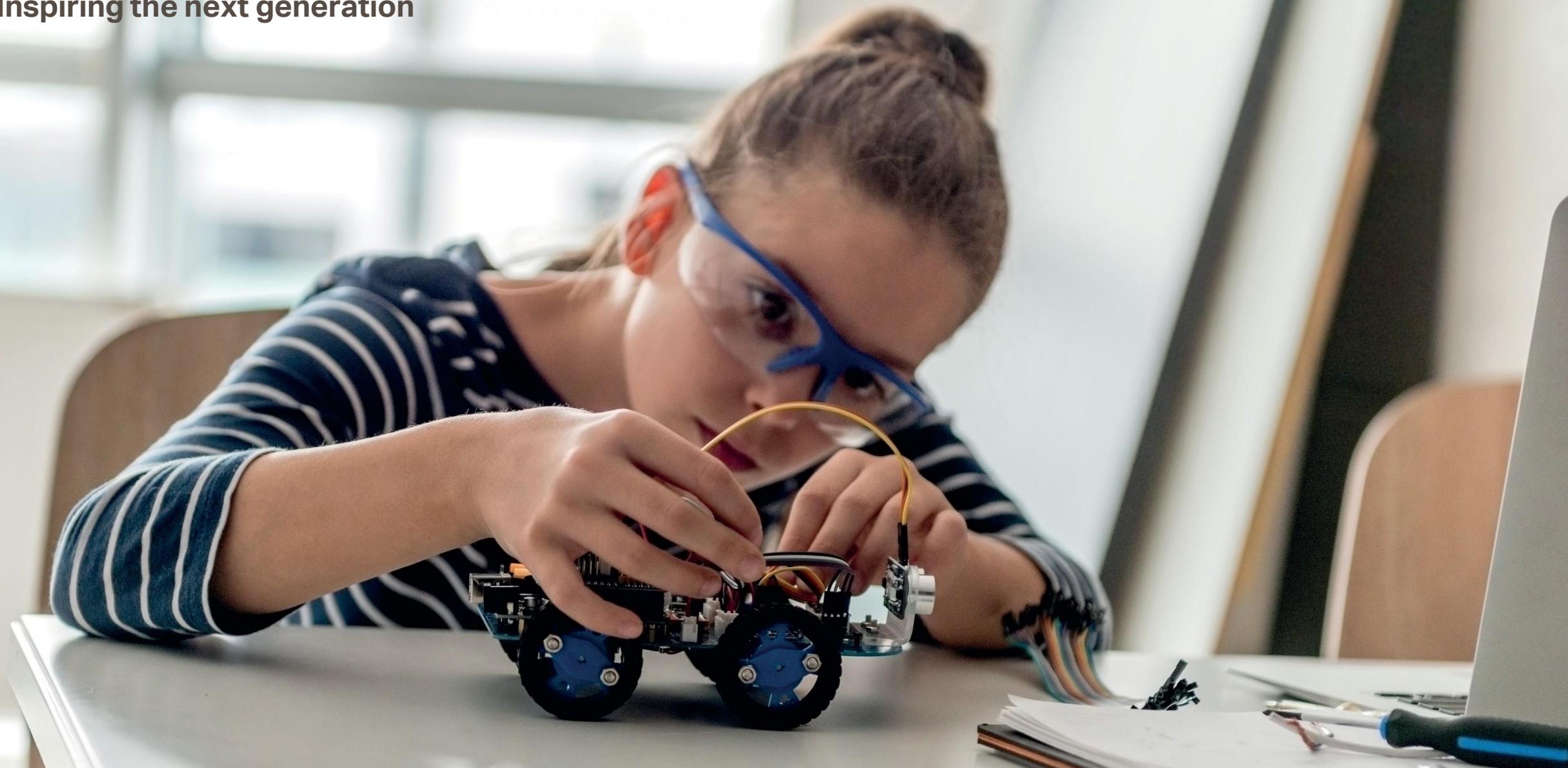
Enthusiasing our Young Members

Victoria Jones, from BAE Systems, has taken the 'Audacious' step to follow a career in engineering and is loving it!



BUILDING THE FUTURE

Inspiring the next generation



BUILDING THE FUTURE

Inspiring the next generation

My wife and I became first time grandparents last December. What will the future hold for our new granddaughter?



BUILDING THE FUTURE

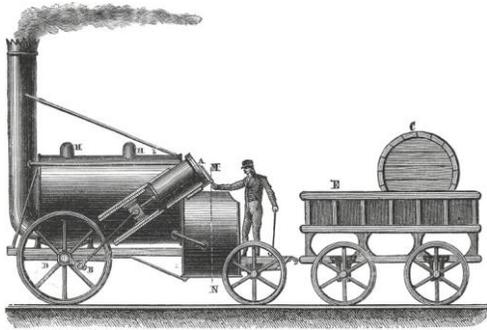
The future of engineering

It's engineering Jim, but not as we know it!



BUILDING THE FUTURE

Fourth Industrial Revolution



FIRST 1760 – 1840

- Coal
- Steam engine
- Railways
- Mechanisation and factories
- Iron production



SECOND 1880 – 1910

- Electricity
- Steel
- Mass production
- Large corporations



THIRD 1965 – 1995

- Semi-conductors
- Computing & software
- Internet
- Automation



FOURTH 2000 –

- Digital manufacturing
- Virtual Modelling
- Embedded computing
- Artificial intelligence and autonomy

06 CONCLUDING REMARKS



CONCLUDING REMARKS

This year, as we look back on 175 years of Institution heritage, we can be rightly proud of what we have achieved. The world is a better place for it. Let us strive to continue working together to create an even better Institution and, in the words of our archivist Lucy Bonner, 'look confidently towards the future' and the next 175 years.



IMAGE CREDITS

Cover

© Institution of Mechanical Engineers

Page

03 © Institution of Mechanical Engineers

04 © Institution of Mechanical Engineers

07 © Institution of Mechanical Engineers

08 © Philip Peel

09 © Bryan Pready

13 © Institution of Mechanical Engineers

14 © Rolls-Royce plc

15 © North Wind Picture Archives/Universal Images

15 © Group North America LLC/Alamy Stock Photo

16 © Institution of Mechanical Engineers

17 © Institution of Mechanical Engineers

18 © Institution of Mechanical Engineers

19 © GE Power

20 © GE Power

21 © Rolls-Royce plc

23 © Dani331/Shutterstock.com

24 © StockRocket/istockphoto

30 © swisshippo/swissmediavision/Paolo
Paradiso/JaCZhou/istockphoto / XRISTOFOROV/
Youproduction/Shutterstock

31 © Ravi Bhela

32 © BlackJack3D

33 © Victoria Jones

34 © StockRocket/istockphoto

35 © Philip Peel

36 © Chris Willson/Alamy Stock Photo

37 © World History Archive/John Robertson/Alamy
Stock Photo / mennovandijk/istockphoto

38 © Institution of Mechanical Engineers

THANK YOU.

Institution of
**MECHANICAL
ENGINEERS**

1 Birdcage Walk
Westminster
London SW1H 9JJ

president@imeche.org
imeche.org