

Project Management: Delivering National Infrastructure

Philip Isgar, Sunbeam Management Solutions

***IStructE/ICE/ACED Annual Meeting
At ICE London 9th May 2018***

***The Institution
of Structural
Engineers***



Eur. Ing. Philip Isgar

BSc., HonD.Eng, CEng, FICE, FStructE, HonFAPM, MCIHT, MIMMM

- **Qualifications:** BSc Civil Engineering
- Honorary Doctorate in Engineering
- *(For outstanding service to Civil Engineering).*
-
- **Membership of Professional Bodies:**
-
- Fellow of the Institution of Civil Engineers
-
- Fellow of the Institution of Structural Engineers
-
- Honorary Fellow of the Association for Project Management and Life-time Membership
-
- Member of the Chartered Institution of Highways & Transportation
-
- Member of the Institution of Materials, Minerals and Mining
-
- Chartered Engineer & European Engineer
-
- Honorary Member of the Major Projects Association

- *A wide experience of developing, leading and managing multi-discipline high profile Capital Investment Programmes and organisations within both public and private sectors, that seek strategic level policy making, engineering excellence, complementary interpersonal, influencing and Leadership skills. A past Member of the Board of the Major Projects Association and Chair of its Programme Committee, I was awarded an Honorary Membership in 2014. Complementarily, I was awarded an Honorary Fellowship and Life-Time Membership with the Association for Project Management. In July 2017 I was awarded a Honorary Doctorate of Engineering. During the last 40 years, I have worked extensively within the Nuclear and Infrastructure sectors holding senior management roles in both. I have proven success in 3 Regulatory environments, Nuclear, Rail and Water. I sit on the NW Nuclear Forum Steering Group, Constructing Excellence Nuclear Theme Group and Constructing Excellence Manchester Executive. I have served on a number of Institutional Boards, currently the Immediate past Chair – ICE Manchester, Chair – Nuclear Institute Digital-SIG, member of ICE Northern Powerhouse Steering Group and have represented those Institutions with the Construction Industry Council (CIC). I am Chair CIC North West and sit on the 'After Grenfell Working Groups. My strength is providing leadership and connectivity across a number of sector platforms through collaborative working relationships at Board level and with government.*

Delivering National Infrastructure

- Setting the scene
- Industrial Strategy
- National Infrastructure Commission
- Project 13
- Project X
- Association for Project Management
- Northern Powerhouse
- Nuclear Institute and Constructing Excellence Nuclear Themes Group
- Construction Industry Council

Influencing the mega projects of today to improve the industry of tomorrow and setting the bar ever higher for the next one.



T5
Heathrow



London
2012



Crossrail



Nuclear
power



HS2

Royal Academy of Engineering Report

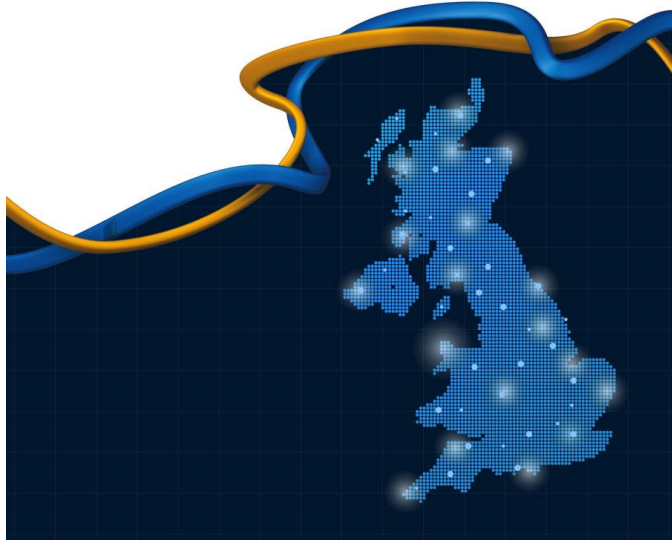


Engineering
the Future

Engineering an economy that works for all

INDUSTRIAL STRATEGY
Green Paper response

April 2017



Executive summary

Introduction

The government's renewed focus on industrial strategy is a crucial and very welcome step towards engineering an economy that works for all. The success of this endeavour is critical for the future of the UK. It provides an essential opportunity to build a shared vision – across government, industry and civil society – for the UK's new position on the global stage following its departure from the EU, and to create an accompanying policy framework that will ensure that resources are aligned in support of this vision.

This substantial response represents the collective voice of 38 professional engineering organisations supporting 450,000 UK engineers, led by the Royal Academy of Engineering. As this is a direct response to the government's Green Paper, it focuses on the actions for government but it recognises that the strategy must be based on a true partnership between government and industry, with strong interfaces with civil society and academia.

There has been an unprecedented level of engagement by the engineering community during the 12 weeks in which this submission has been prepared, with evidence gathered through a combination of an online survey of nearly 1,300 engineers (see Box 1) and a series of 10 workshops across the home nations and English regions. With engineering-related sectors contributing at least £280 billion in gross value added to the UK economy, some 20% of the total, and underpinning almost 50% of exports by value, engineering will be critical to delivering the outcomes sought by the industrial strategy¹. The exceptional level of engagement with this consultation demonstrates the UK engineering community's desire and commitment to ensure the industrial strategy succeeds. We stand ready to support the delivery of a modern industrial strategy that works for the whole of the UK.

Key overarching messages

A successful industrial strategy requires the following overarching actions to be taken:

- 1 **Clearly define an ambitious, bold, global vision**
- 2 **Provide long-term commitment and stability**
- 3 **Adopt a systems approach**
- 4 **Build on what already exists**
- 5 **Support culture change through communication and engagement**
- 6 **Embed actions to promote inclusion and societal benefit**
- 7 **Prepare for a digital future**

Clearly define an ambitious, bold, global vision

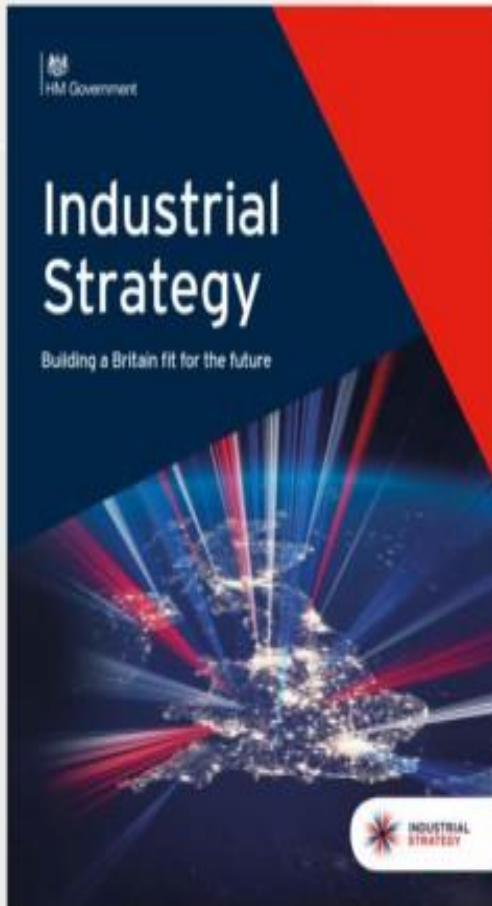
An essential component of any strategy is a clearly defined vision of a successful outcome. The industrial strategy must set an ambitious, bold, global vision for the UK as an outward-looking trading nation and a top destination for inward investment and international talent, drawing on the UK's existing credentials as a leader in engineering, innovation and manufacturing. Many UK companies have global ambitions and global supply chains and the strategy cannot be considered in isolation from the international context in which it operates; if deployed successfully, it will be the key vehicle through which the UK exploits the opportunities and mitigates the risks associated with exiting the EU.

Provide long-term commitment and stability

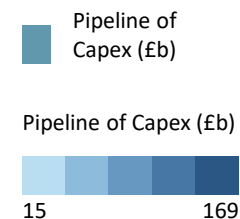
An effective industrial strategy must provide a long-term horizon against which industry and other stakeholders can plan and align their activities. Stability and continuity are critical for giving business and others the confidence to make investments over the long term and to accrue the benefits from a wide range of policies from those related to improving our skills base to delivering the right infrastructure. Cross-party

¹ Assessing the economic returns of engineering research and postgraduate training in the UK, Technopolis 2015

Aligned government support

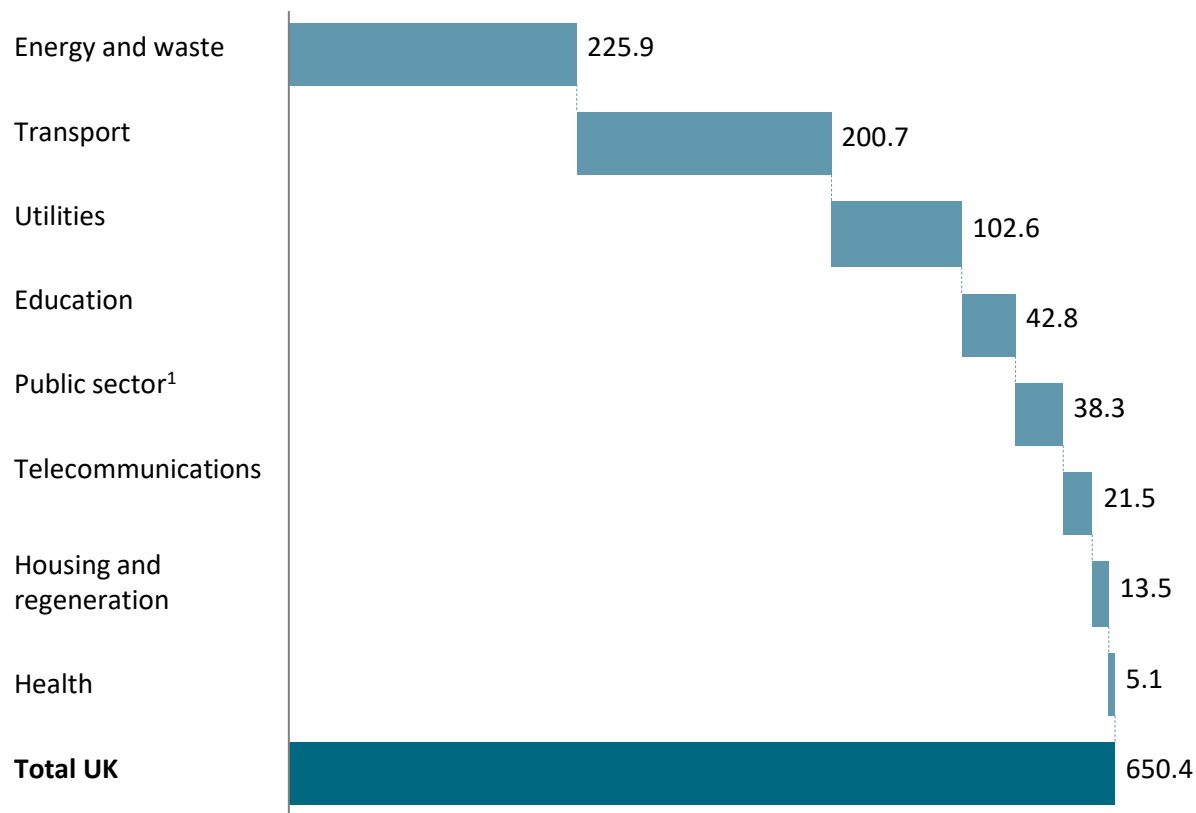


The projected infrastructure projects pipeline of £650b gives an opportunity to drive improvements

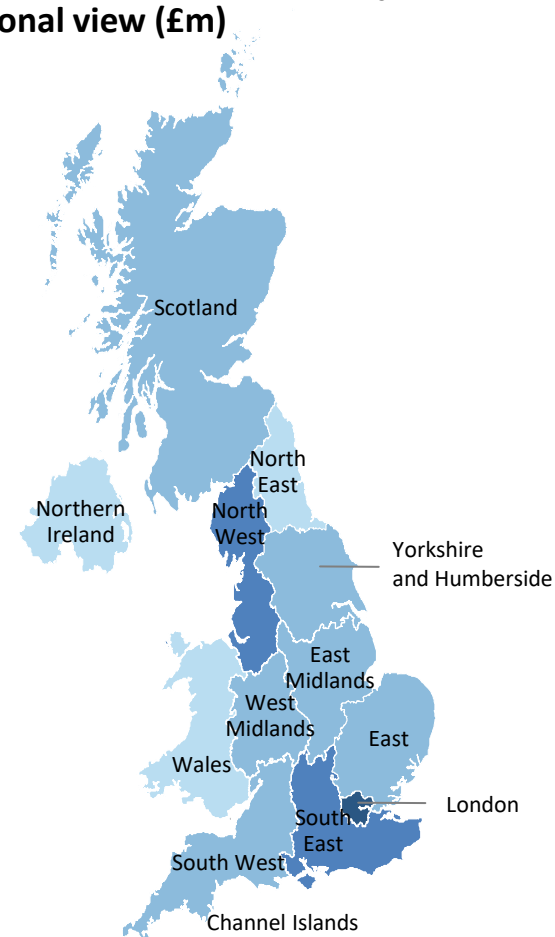


Infrastructure and Construction Projects across the UK (£b)

Sectoral view



Regional view (£m)



¹ Includes sectors Science and Research, Ministry of Defence, NPIF 2021/22, Flood, Justice, Police Forces, Home Office and CPS

State Of The Nation 2017: Digital Transformation

Productivity – Behaviours - Resilience

<https://www.ice.org.uk/media-and-policy/policy/state-of-the-nation-2>



Digital Built Britain

Level 3 Strategic Plan

The strategy describing the Level 3 BIM approach:

Level 3A – Enabling improvements in the Level 2 model

Level 3B – Enabling new technologies and systems

Level 3C – Enabling the development of new business models

Level 3D – Capitalising on world leadership



HM Government

Digital Built Britain

Level 3 Building Information Modelling - Strategic Plan



February 2015



Digital Built Britain

Where does Infratech fit?



Launch Day 1st May 2018



- **Data for the Public Good**
- **Project 13**
- **Digital Transformation**

A new approach to delivering high performance infrastructure

The Institution of Civil Engineers

Institution of Civil Engineers

From Transactions to Enterprises

**A new approach
to delivering
high performing
infrastructure**

Infrastructure Client Group
March 2017

Why do we need to change?

Britain needs high performing infrastructure. Without it we have little hope of improving the productivity of our economy. Without an improvement in productivity we will not be able to secure the quality of life demanded by our growing population.

Yet the model we use to deliver and operate much of our infrastructure is broken. Too often it produces assets and networks that are expensive, perform poorly and fail to exploit the advances in technology that are transforming other industries. Too often the supply chain that delivers our infrastructure seems locked into a cycle of low margins, low investment and dysfunctional relationships.

What are we going to do about it?

We are creating a community of infrastructure owners and suppliers committed to change.

We are committed to a moving away from transactional, cost driven procurement of individual assets. We are embracing the creation of value driven, collaborative teams that can deliver investment programmes that secure the outcomes demanded by clients and the public.

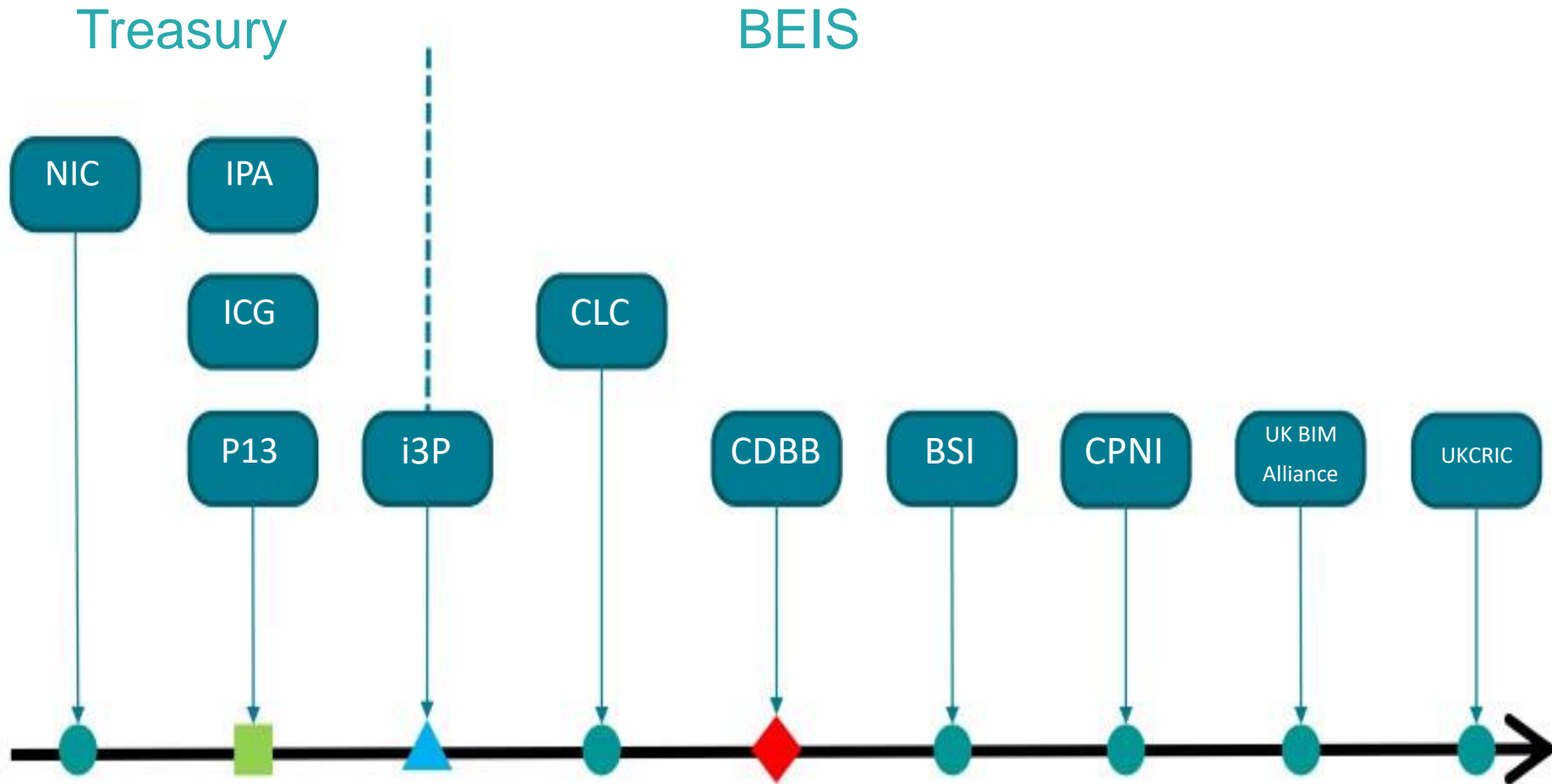
How can I get involved?

ICE is working with a group of leading infrastructure owners under the banner Project 13 to:

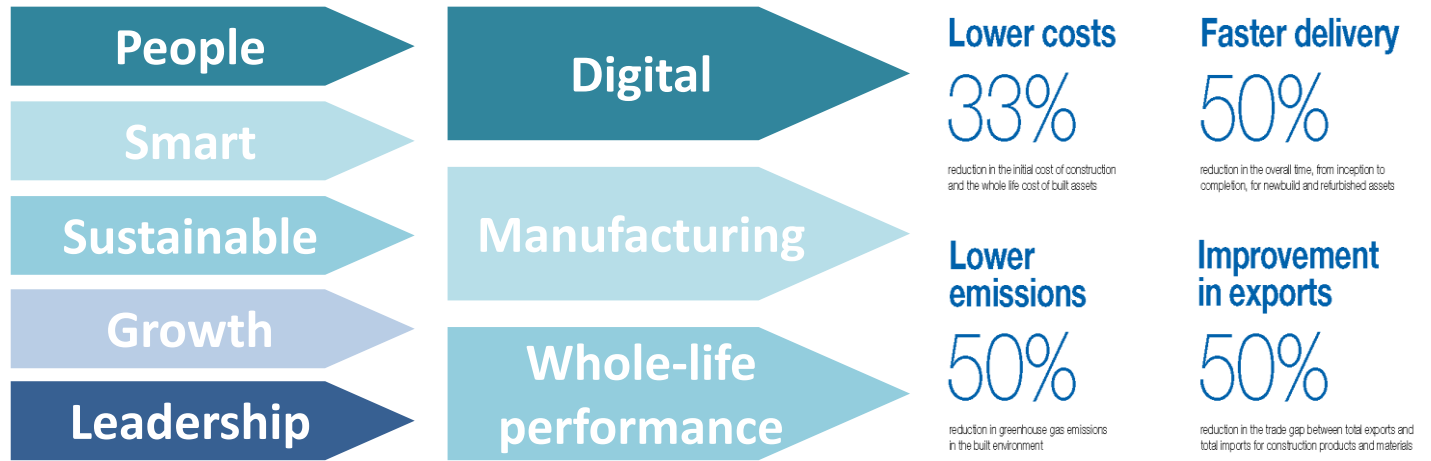
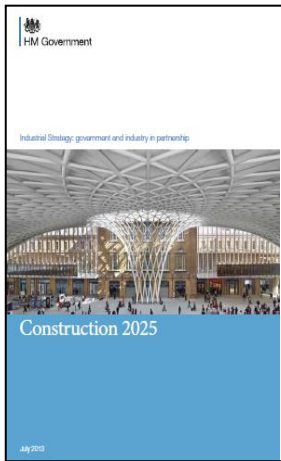
- Pilot new approaches to delivery on live projects
- Offer peer review and support to other colleagues seeking to implement the ideas in this report
- Disseminate findings through a programme of publications and events

If you want to join the Project 13 community and help transform our sector please contact policy@ice.org.uk or visit ice.org.uk/project13

Digital transformation landscape



Government Industrial Strategy 2017 (*Construction 2025*, BIS, 2013)



Project X

#BetterGovProjects

A collaboration of UK Government, Universities and Industry supported by
The Economic and Social Research Council and
The Infrastructure and Projects Authority

*“Projects and programmes are the means
by which government policies are made
real; their successful implementation is
vital to our economic wellbeing.”*

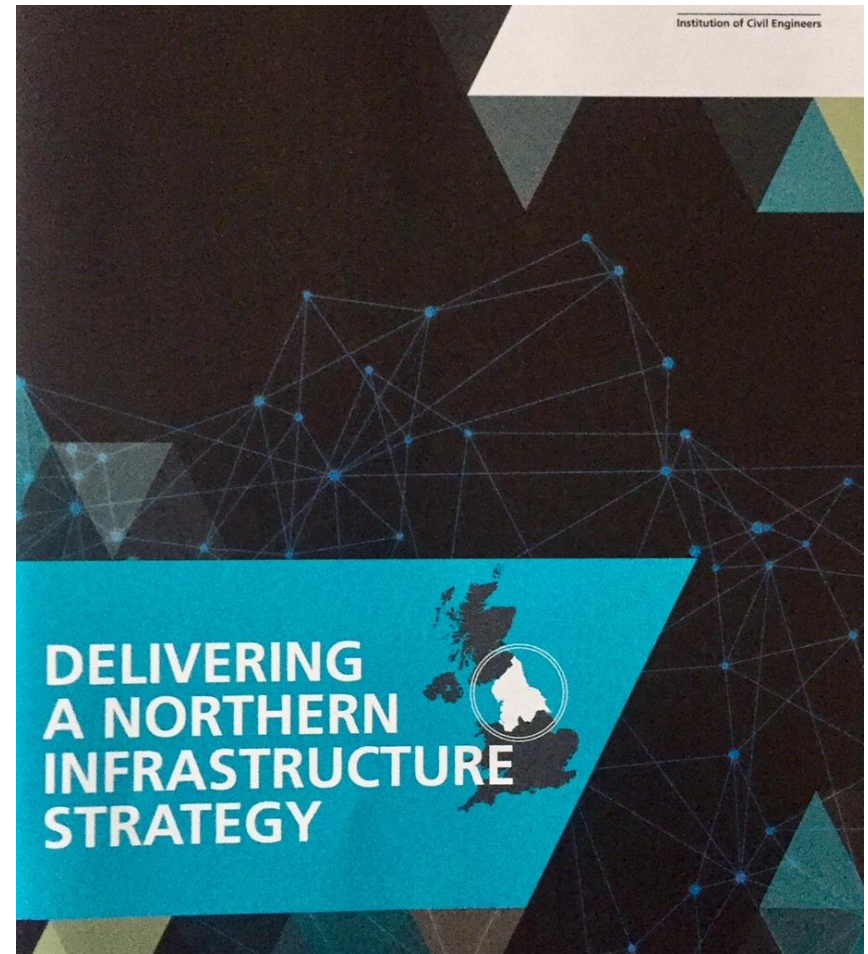
Tony Meggs, Chief Executive, Infrastructure and
Projects Authority

Project X - *BetterGovProjects*

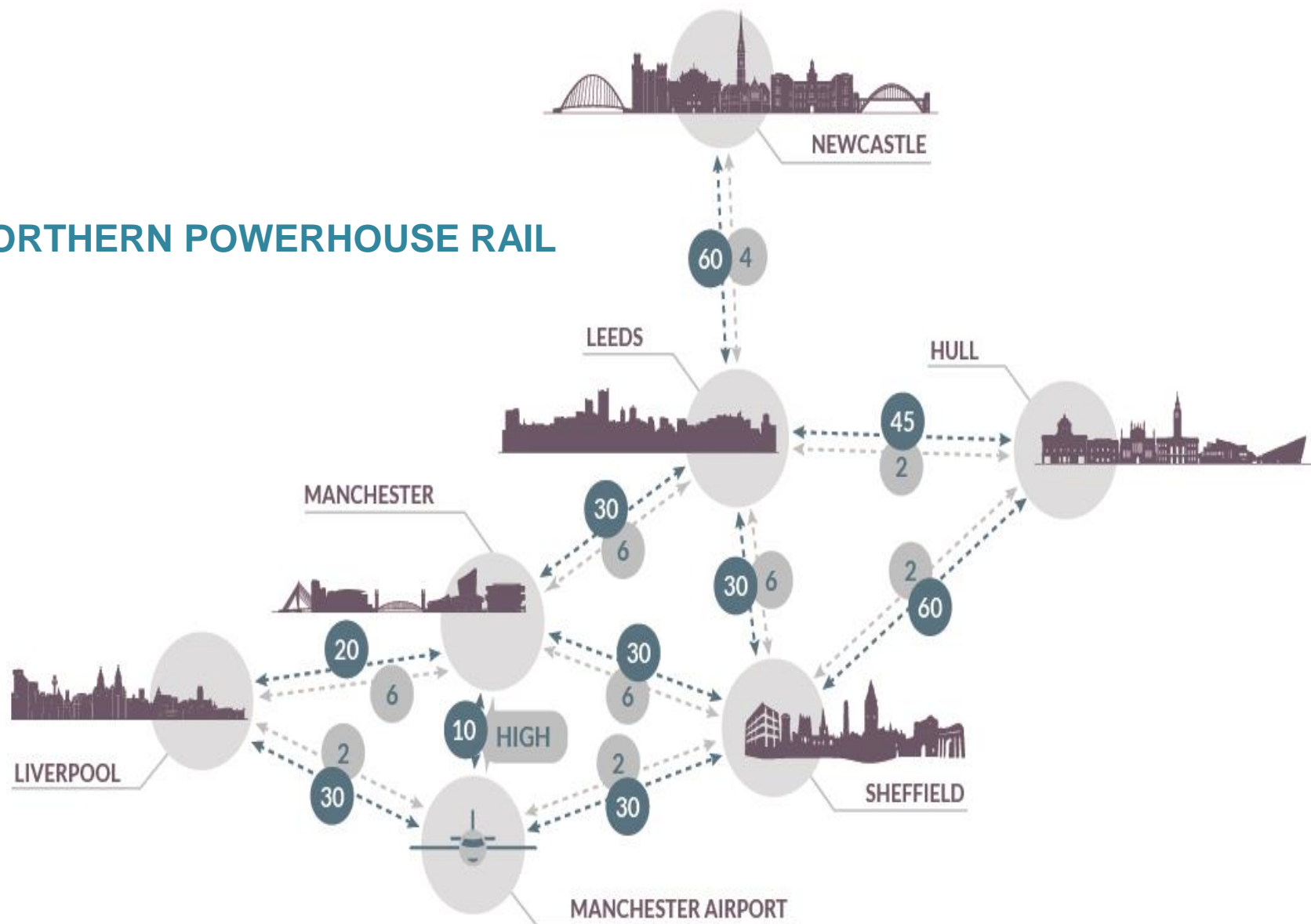
- Theme F – Transformation – Schools of Mechanical, Aerospace and Civil Engineering University of Manchester / Science Policy Research Unit University of Sussex / Construction Director MoJ and EU Exit and Transformation IPA.
- Leadership and 360 Feedback – Leadership in UK Government Major Projects: What does good look like? Jon Conwell Edgecumbe Consulting Group / Gill Evans HMRC
- Leadership and Transformation – Dickle Kortantamer University of Brighton
- Identifying and realising Major Project Benefits – Mike Bourne / Hang Vo with PMI / IPA / University of Manchester / University of Edinburgh / University of Hull / Cranfield.
- Future – University of Sussex.
- Theme D - Governance and Assurance – Mike Bourne Cranfield / Joanne Bradshaw Cabinet Office Lead DWP.

Northern Powerhouse and the ICE Northern Infrastructure Strategy

Meeting at Westminster Portcullis House 6th Feb 2018



NORTHERN POWERHOUSE RAIL

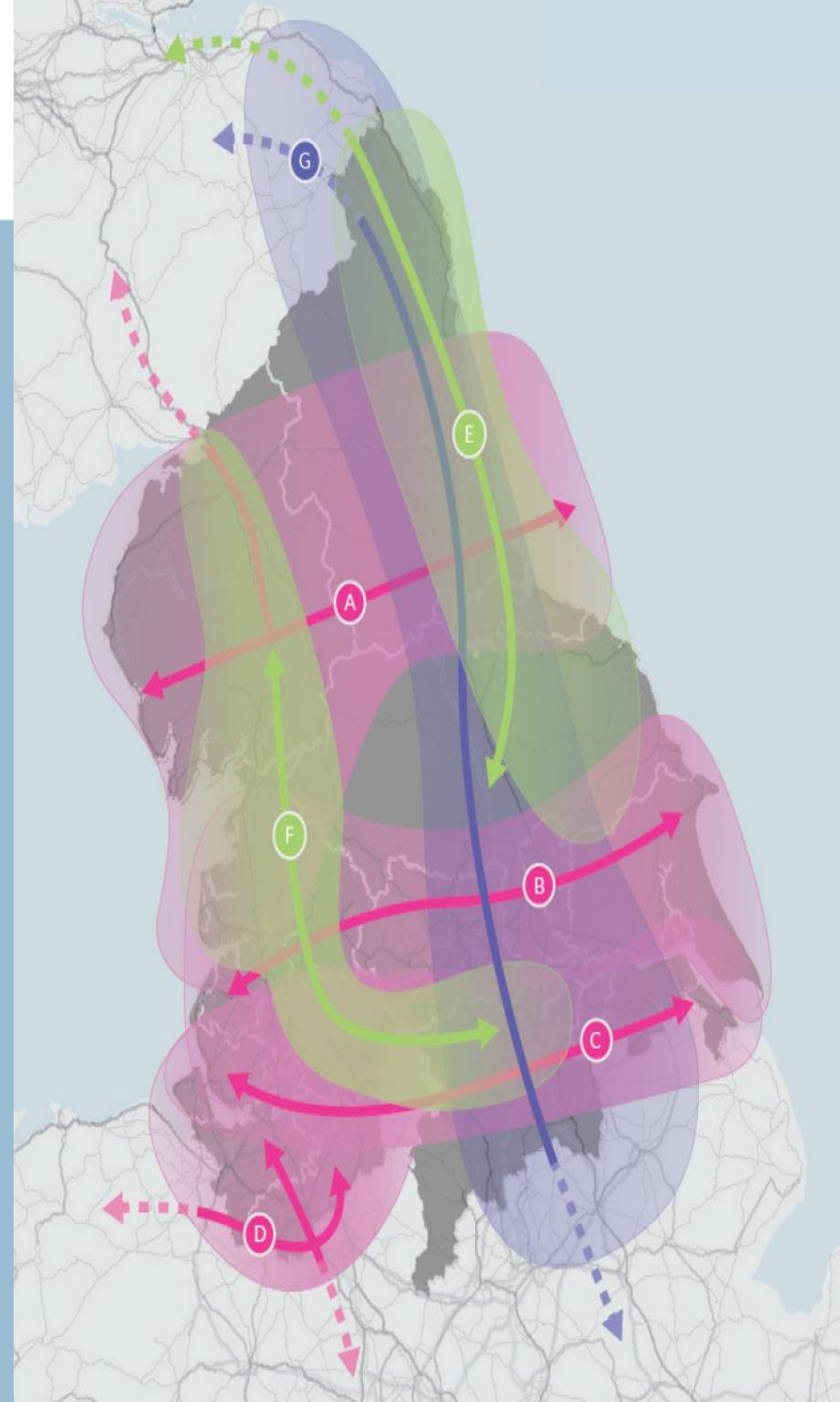


6 Service frequency per hour

45 Journey time (Minutes)

STRATEGIC DEVELOPMENT CORRIDORS

- A** Connecting the Energy Coasts
- B** Central Pennines
- C** Southern Pennines
- D** West and Wales
- E** East Coast to Scotland
- F** North West to Sheffield City Region
- G** Yorkshire to Scotland



Two solid dark blue circles stacked vertically on the left side of the slide.

APM @ ACED

Philip Isgar

A large graphic on the left side of the slide consisting of many concentric circles in a magenta color, creating a ripple effect.

THE CHARTERED BODY FOR THE PROJECT PROFESSION

APM overview

25,000 members

550 corporate members

A Chartered body

Key member of IPMA

18,000 qualifications sat

Europe's largest professional
body for PM

200 CPD events a year

13 APM branches

15 Special Interest Groups

APM Professionalism Model

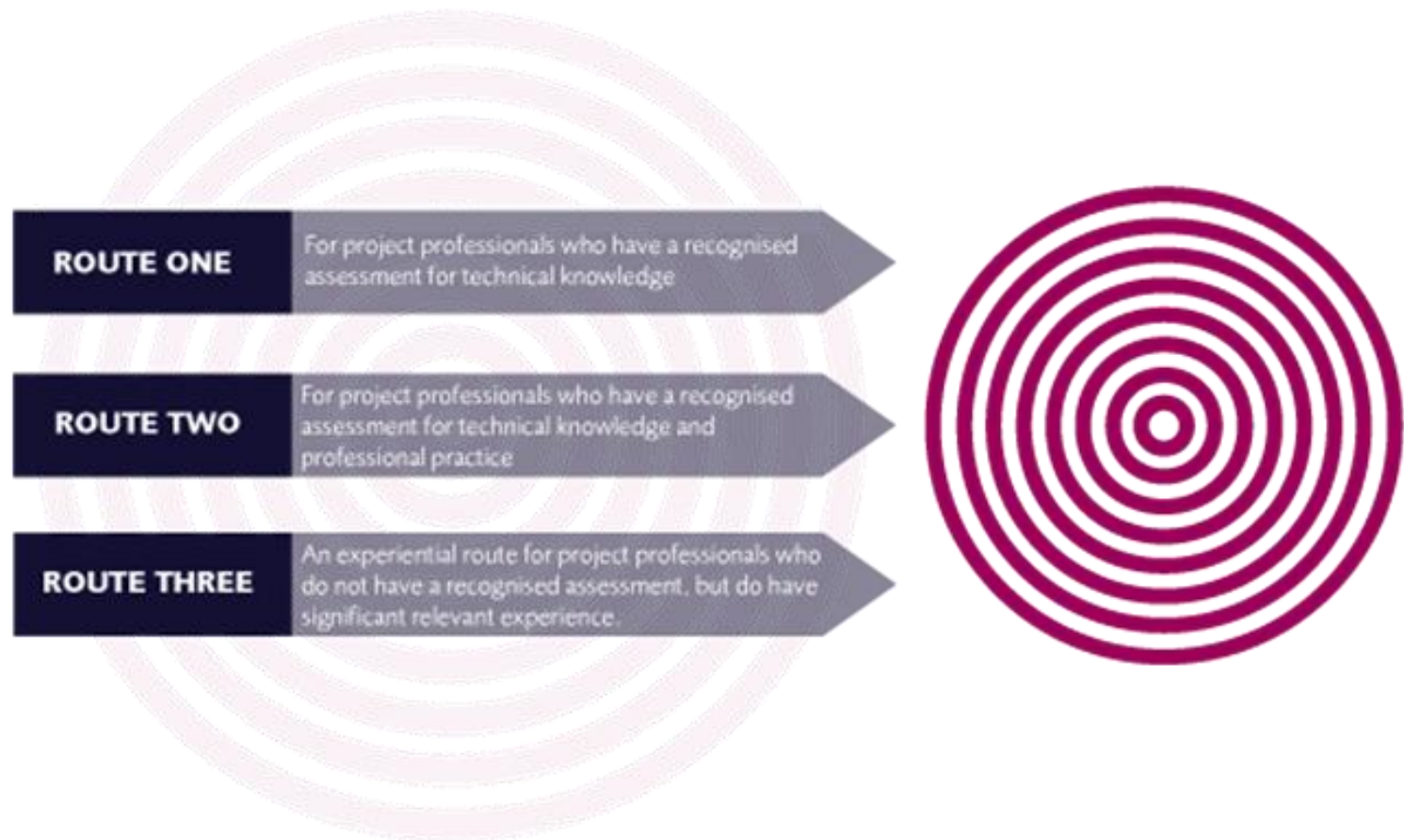
Five dimensions of professionalism	Explanation
Breadth	APM Body of Knowledge
Depth	APM Competence Framework
Achievement	APM Qualifications
Commitment	Continuing Professional Development
Accountability	APM Code of Professional Conduct



FIVEDimensions
of Professionalism



Chartered Project Professional (ChPP)



www.apm.org.uk/chartered

Route 1

For those who have a recognised assessment for technical knowledge

STAGE ONE – WRITTEN SUBMISSION
Assessment of technical knowledge is via the recognised assessment that is held.
Assessment of professional practice is via written submission and interview.
Declaration of up-to-date CPD.
STAGE TWO - INTERVIEW
Up to one hour face-to-face interview to cover: <ul style="list-style-type: none">■ Professional practice: validates written submission.■ Ethics.

Route 2

For those who have a recognised assessment for technical knowledge and professional practice

STAGE ONE – WRITTEN SUBMISSION
Assessment of technical knowledge is via the recognised assessment that is held.
Assessment of professional practice is via the recognised assessment that is held.
Upload of CPD logo to declare 35 hours.
STAGE TWO - INTERVIEW
<p>Up to 30 minute phone interview to cover:</p> <ul style="list-style-type: none">■ CPD: discussion of competence related to CPD.■ Ethics.

Route 3

An experiential route for those who do not have a recognised assessment but do meet the eligibility criteria

STAGE ONE – WRITTEN SUBMISSION
Assessment of technical knowledge is via an extended interview.
Assessment of professional practice is via written submission and interview.
Declaration of up-to-date CPD.
STAGE TWO - INTERVIEW
<p>Up to two hour face-to-face interview to cover:</p> <ul style="list-style-type: none">■ Professional practice: validates written submission.■ Technical knowledge: questioning to assess breadth of knowledge.■ Ethics.

APM in Higher Education

- New outreach strategy
- Promotion of free Student membership
- Greater engagement with wider range of students at B & M levels
- Greater engagement with academics
- Many more on-campus events
- Caspar.Bartington@apm.org.uk

About the Nuclear



Institute Charity



- The Nuclear Institute's charitable objectives are:
 - Support nuclear professionalism
 - Encourage education for nuclear energy & technology
 - Further public understanding of the uses of nuclear energy



Membership Body

- The NI works entirely for its members. Professional development and volunteering across branches and networks

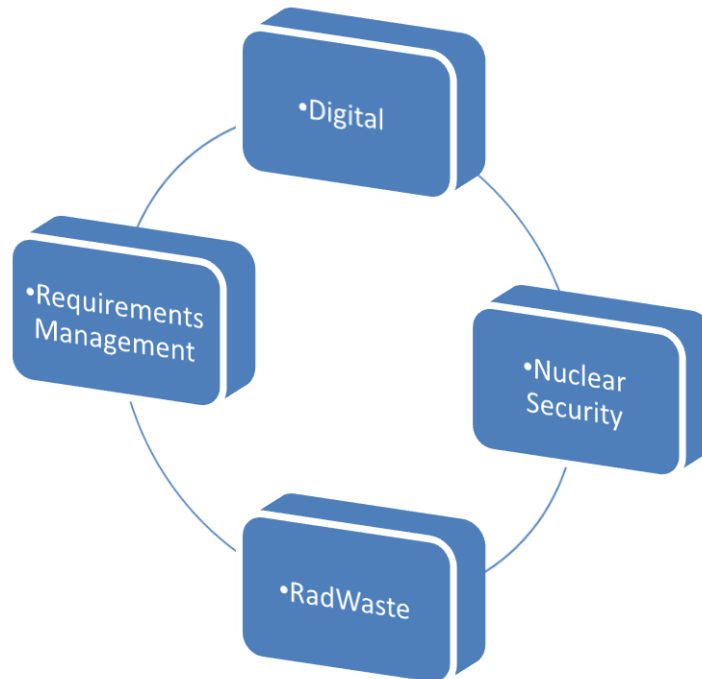


Professional Engineering & Science Institute

- The NI is licensed by both the Engineering and Science Councils for professional registration, Chartership (CEng/CSci), etc.

Nuclear Institute Special Interest Group Programme

Provision of a strong influential voice for the sector drawing on our significant range of subject matter expertise





Shows that the Nuclear Institute has added value to the other Professional Institutions

Contributes collaboratively a nuclear professional expertise that compliments other professional scientists, engineers, technologists and business specialists.

By meeting the Nuclear Delta standard, Professional Members of the NI demonstrate that they understand and apply working practices which support:

- Nuclear safety culture and personal behavioural standards
- Nuclear safety and the supporting science, engineering, and technology
- Nuclear security culture, nuclear security and safeguarding standards

ITER and Hinckley C a comparison

10th May 2018 Constructing Excellence Nuclear Themes Group
Spring Conference London



Hinckley A Feb 1958 and insert Hinckley C Feb 2018



A reflection of productivity

Reports observing UK construction in nuclear projects

*Industrial Strategy and the productivity challenge in nuclear
A construction sector-led response Conference 10th May 2018 London*

- ***Critical factors that affect productivity***

- Early investment levels
- Design status
- Regulations and legal requirements
- Site layout and logistics
- Quality
- CDM/ Safety
- Nuclear impacts
- Interfaces
- Industrial relations
- Contract.

- ***Critical factors that lead to greater productivity:***

- Client leadership
- Collaborative structures
- Engagement with unions
- Engaging the workforce
- Removal of confrontational relationships
- Use of integrated client teams
- Planning and scheduling
- Design and sequencing
- Use of robust project controls
- Construction start
- Incentives.

ICE200 Calder Hall – A nominated Project from the NW



Construction Industry Council

- ACED – 9th May 2018



Construction Industry Council

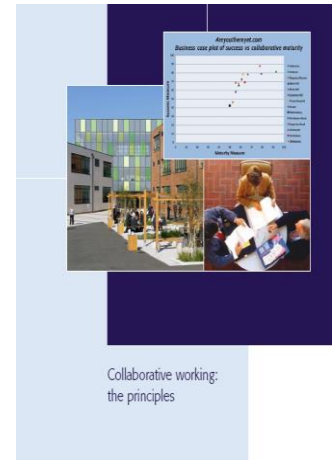
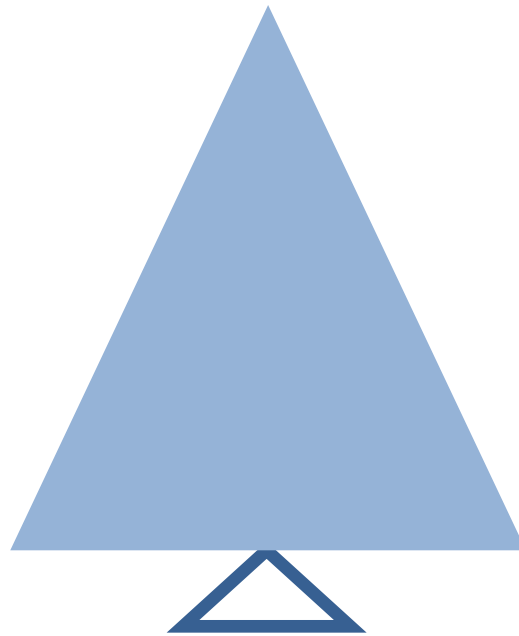
- **Vision:**
- To be recognised and respected by Government and across the UK construction industry as an effective thought leader.
- **Mission:**
- To improve the UK construction industry by collectively representing and supporting the built environment professions.
- Founded in 1988
- “umbrella” body for Professionals in the Built Environment
- 34 Members, 11 Associates
- = 500,000 people; 25,000 Businesses
- Owns CICAIR Ltd
- Co-owns Considerate Constructors Scheme
- **Strategic Priorities 2016 – 2020**
- Provides thought leadership relevant to the construction industry and the wider built environment
- Champions and collectively represents UK built environment professions
- Promotes collaboration and knowledge sharing amongst its members

Three overriding principles of collaborative working

Common vision and leadership

Culture and behaviours

Processes and tools



CONSTRUCTING
EXCELLENCE
in the built environment

WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM

-Albert Einstein

