



Agenda

- 09.15: Welcome Address David Arthur, IOM3
- 09.20: Introduction to GLEAM and the Bridge
 Matthew Thornton, The Bridge, University of Lincoln
- 09.30: State of the Nation: Manufacturing Labour & Skills Chris Corkan, Make UK
- 09.50: Apprenticeships for the Manufacturing Sector James McIntosh, Catch UK
- 10.10: Coffee Break
- 10.30: Addressing Skills Gaps: Higher Education Opportunities Charlotte Kirton-Cook and Karen Burrows, University of Lincoln
- 10.50: Professional Development for a Skilled Workforce David Arthur, IOM3
- 11.10: Wrap-Up
 Matthew Thornton, The Bridge, University of Lincoln
- 11.15: Networking and Close





- The Greater Lincolnshire Engineering And Manufacturing (GLEAM) Network is an initiative founded by the University of Lincoln,
 Greater Lincolnshire Local Enterprise Partnership (GLLEP), and Business Lincolnshire and managed by the Bridge.
- GLEAM provides a knowledge-intensive business corridor locally at the heart of the manufacturing business in Greater
 Lincolnshire and is open to all manufacturing businesses in Greater Lincolnshire. Members are able to join free of charge and gain access to a range of benefits, including Affiliate Partner Membership with Make UK.

Make UK Affiliate Membership Benefit

- Join Make UK as an Affiliate Member
- Make UK Affiliate Membership is open to members of Make UK partner organisations. You'll receive industry information and insight, contribute to Make UK's policy positions and have access to events, guidance and support on issues affecting our sector.
- To register for Affiliate Membership just complete the form at:

https://www.makeuk.org/affiliate-member-registration



BRIDGING BUSINESS WITH INNOVATION

- Bridge operates from the University of Lincoln and has a dedicated team of R&D project specialists working alongside the University's academic community.
- We help businesses access technologies and methods at the forefront of research to create R&D solutions, and drive innovation.











Bridge – Advanced Materials and Engineering R&D Centre



CONSULTATION AND 1-2-1 SUPPORT FOR BUSINESS DEVELOPMENT

Our process builds on an initial 1-2-1 consultation, roadmapping potential programmes from small-scale interventions to large-scale projects.



CREATION OF NEW PROCESS AND PRODUCT INNOVATION WITH OUR DEDICATED BRIDGE TEAM AND R&D PARTNERS

Bridge can address your advanced materials needs, assisting with new process creation and product innovation; providing access to world-class R&D at the interface of science and engineering through links to the University of Lincoln and a consortium of industry R&D partners.



MATERIALS RESEARCH AND INNOVATION

Bridge provides access to state-of-theart instrumentation and laboratory workspaces. Our scientists and engineers are experienced in delivering cutting edge insight into materials



Bridge – Advanced Materials and Engineering R&D Centre



EXPERT USE OF INSTRUMENTATION AND MATERIALS ENGINEERING LABORATORIES

Our dedicated team of specialists includes a community of expert Instrument Scientists. We can share that knowledge and help upskill your team by creating bespoke training packages.



BUSINESS NETWORKING AND COLLABORATION

Our dedicated innovation centre provides a quality environment for business interaction facilitating exchange of expertise and business opportunities. We host a range of networking events and seminars and our facilities are available for business-led events.



TRAINING AND PROFESSIONAL DEVELOPMENT

Bridge houses a dedicated training facility for on-site and remote learning alongside laboratory settings for atinstrument or in-lab training. Bridge gives you direct access to academicand industry-experienced consultants to educate, develop and mentor your staff and they can upskill at our regular specialist courses.





Bridge to... Manufacturing Innovation

- With programmes designed to increase businesses' competitiveness, Bridge has delivered innovation to businesses and connected regional and international supply chains to cutting-edge materials science and engineering in the manufacturing and engineering sectors.
- Bridge has supported manufacturing businesses to access technologies at the forefront of research to deliver effective problem solving and to develop the workforce of tomorrow through accredited training.





 Visit our website for a virtual walkthrough of the Bridge at https://www.thebridge-lincoln.org/

- Follow us on:
 - https://www.linkedin.com/company/thebridge-lincoln
 - https://twitter.com/thebridge_linc
 - https://www.instagram.com/bridge_lincoln/
- E. mthornton@lincoln.ac.uk









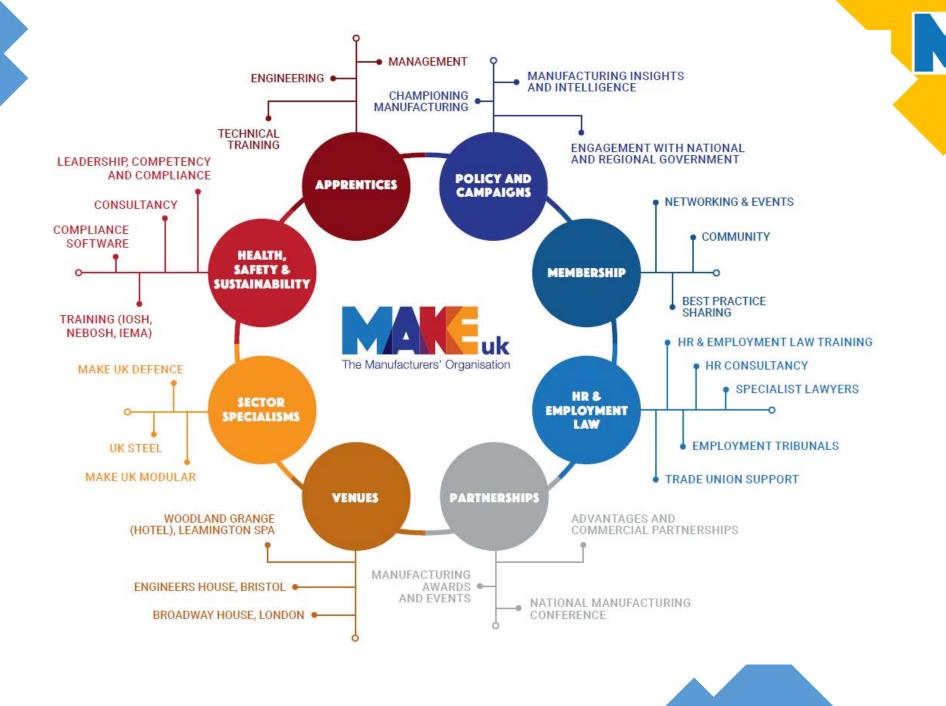
State of the Nation: Manufacturing Labour & Skills

Chris Corkan Make UK









Make UK Executive Survey 2024

RISKS AND CHALLENGES



Cost pressures

Energy prices remain the biggest risk to growth. But it's not just energy costs as almost half see significant pressure on input costs as a major risk in the next 12 months



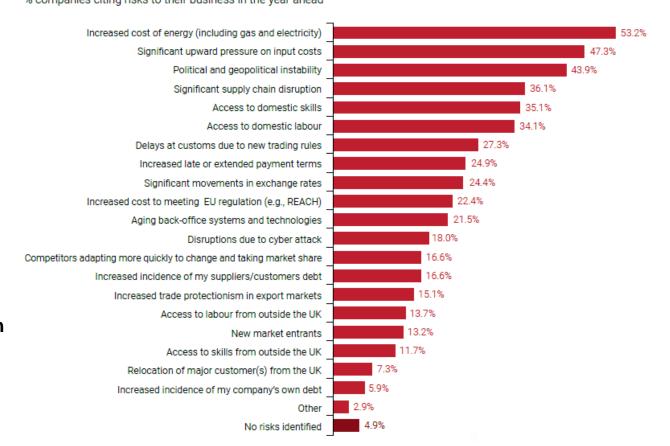
Access to people and skills

The vast majority expect employment costs to rise, either moderately or significantly, as they battle it out to recruit and retain top talent through pay premiums - while taking on significant rises in the National Living Wage.

Instability and disruption

Manufacturers have faced significant disruption and instability over the past few years and political and geopolitical instability remains in the top three risks for 2024, with 44% of manufacturers reporting this as a risk.

Chart 2: Increased costs, access to skills and instability are key risks identified in 2024 % companies citing risks to their business in the year ahead

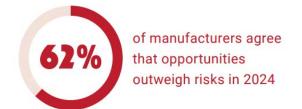


In association with

OPPORTUNITIES LIE AHEAD

More than half (53%) of manufacturers are gearing up to launch new products

Product portfolios





Net Zero

New

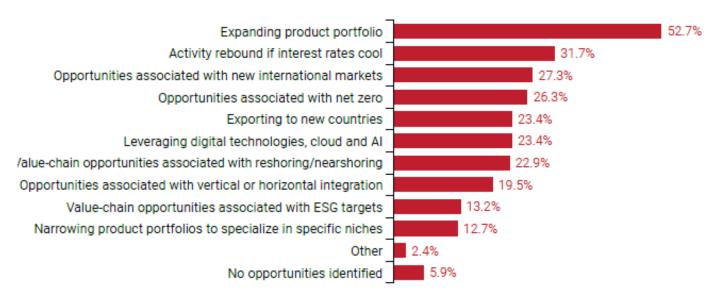
International

Markets

Around a quarter are looking to net zero opportunities to boost growth, with 13% to take advantage of the opportunities associated with **Environmental, Social and** Governance (ESG) standards and commitments.

More than a quarter (27%) are ready to expand into new, previously untapped markets

Chart 4: Digital, green and going global are major opportunities in the year ahead % companies citing biggest opportunities for their business in 2024

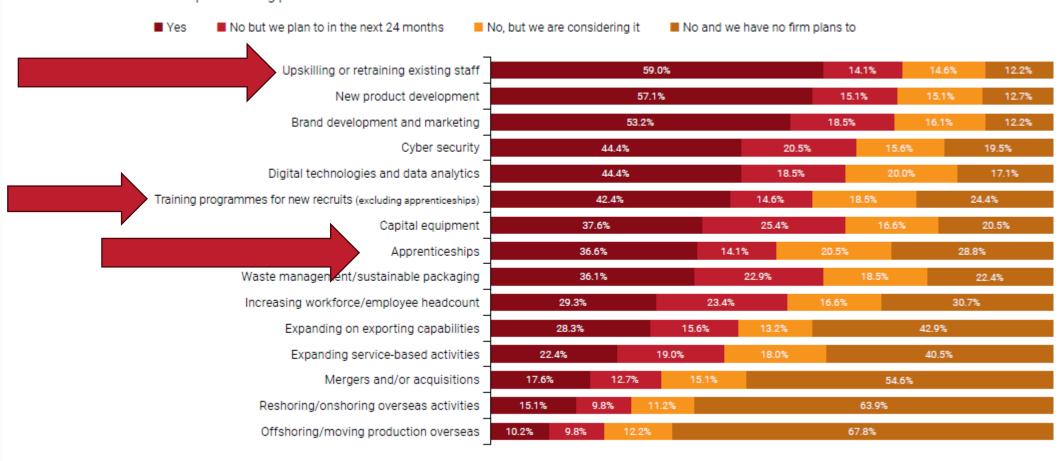


Source: Make UK/PwC, Executive Survey 2024

Investing in People & Skills

Chart 8: People and products remain priority investment areas for manufacturers in 2024

% companies citing plans to make investments in the next 12 months



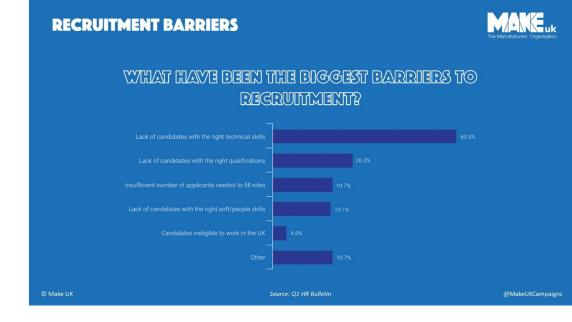
Source: Make UK/PwC, Executive Survey 2024

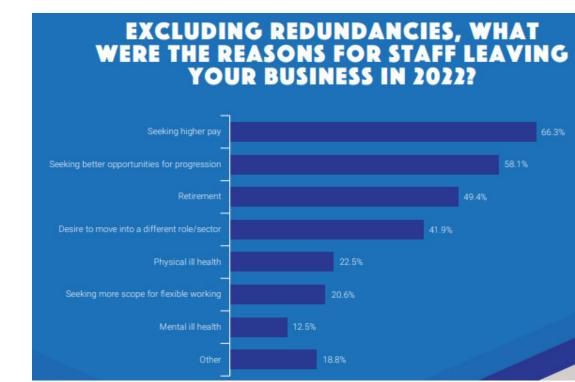
Labour Market

Lack of candidates turned into lack of skills

Why?

- Increasing number of the workforce now economically inactive.
- Increase in long term sickness and disability benefit claims
- 86% of inactive 50-54 year olds would consider a return. Likely inactive due to mental health & lifestyle reasons
- High pressure on wages and settlement agreements
- Labour Hoarding
- Immigration barriers

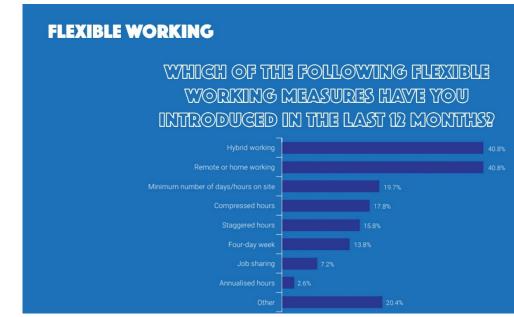




Recruitment & Retention

- Pay
- 44% of firms have increased skills training
- The same proportion have increased investment in health & wellbeing support for staff
- Hiring attitude if not the skill set
- Committing to Apprentice training
- Building an open and transparent culture a team
- More flexible and hybrid working
- Responding to the cost of living crisis
- Employee engagement
- Recruiting outside the box







CAMPAIGN: CREATING A SUSTAINABLE WORKFORCE

Campaign message: We must create a future fit talent pipeline to power manufacturing and engineering into the future and ensure the existing workforce is equipped with the skills needed now and in the future.

Ambition: Reduce the number of unfilled vacancies from 3 in every 100 to 1.6 in every 100 (pre-pandemic levels), and increase apprenticeship starts in manufacturing to pre-Levy numbers.

Main ask: A root and branch review of the Apprenticeship Levy and the wider skills system.

Autumn statement: £50m pilot for 'growth sector' apprenticeships



Apprentice minimum wage rises, while talks over levy restrictions continue



2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 2019/20 2020/21 2021/22

The Next Generation (Z)

- Characteristics: Ambitious, Digital Natives, Confident
- Their priorities?
 - Your Values
 - Company Mission
 - Their Interests
 - Personal Development
 - Environmental, Social, Governance
 - Equality, Diversity, Inclusion
- = pay isn't everything
- Workplace integration?
 - Communication
 - Tech
 - Snowflake generation

OVER THE NEXT DECADE, 20% OF THE WORKFORCE WILL RETIRE

CAN YOU AFFORD NOT TO ENGAGE WITH GEN Z?







UK MANUFACTURING FACTS

UK manufacturing sector accounts for

£224 BILLION OF OUTPUT

Providing

2.6 MILLION JOBS

Average wages

9% HIGHER

than the whole economy



49%

of the UK's total exports

41% of UK 16% of total business investment



BACKING MANUFACTURING, ENGINEERING THE FUTURE

UK #manufacturing climbs to eighth in world rankings





Sign Up Now!!!

www.makeuk.org/nmd

Spread the word to your contacts

Work with your local school, college, university or youth organisation

Share the collateral on your social media channels







A CHANGING POLICY LANDSCAPE

The 'big' issues facing UK manufacturers are unlikely to change, but how political parties respond to these may differ.

Conservatives

- Build on T Levels/the Advanced British Standard
- Pursue a pragmatic approach to EU relations via the Windsor Framework
 - Work towards the Net Zero by 2050 target

Lib Dems

- Update the shortage occupation list and better utilise the skills of older adults to train up younger workers
- Get 80% of Britain's electricity from green energy by 2030
- Develop a closer and more friendly relationship with the EU

Labour

- Reform the apprenticeship levy into a growth and skills levy
- Deliver a green prosperity plan and invest £28bn a year into a green economy
 - Improve the trading relationship with the EU, while remaining outside the single market and customs union

Labour and the Lib Dems have confirmed that an **Industrial Strategy** will form part of their 2023 manifestos. We can expect industry and business to be a big part of their manifestos.

We can expect the Conservatives to look at **reducing the** tax the burden in their manifesto.

Make UK Membership

- Influence & Shape Policy Locally & Nationally
- People & Skills Benchmarking Salary,
 Turnover, Absence, Pay Settlements
- Preferential Support: Energy Procurement, Employee Benefits Provision
- Exclusive Industry Insight
- Best Practice Guides e.g. Adopting Technology
- Exclusive access, connections, network and events programme
- Community of over 22,000 manufacturers
- Supplier Capability Index

Contact details:

□ ccorkan@MakeUK.org LinkedIn: @ChrisCorkan

JOIN US TODAY

Championing Manufacturing

We create the most supportive environment for UK manufacturing growth and success, and we represent the issues that are most important to our members

Make UK's Manufacturing Connect - Driving Operational Excellence at Toyota



Apprenticeships for the Manufacturing Sector

James McIntosh Catch UK





Apprenticeships for the Manufacturing Sector

Delivered by

James McIntosh – Chief Commercial Officer



1 Conference Centre

2 NCPM

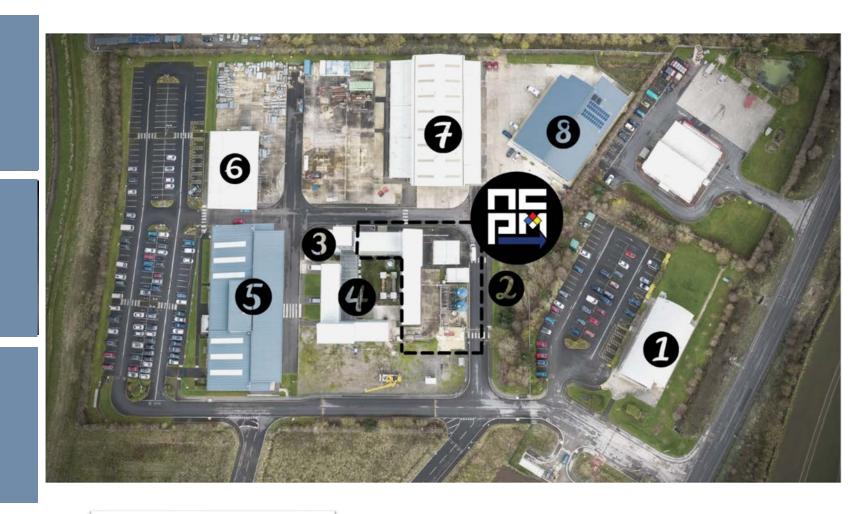
3 Working at Heights 4 Confined Spaces

5 Technical Training Centre

6 Scaffolding Training

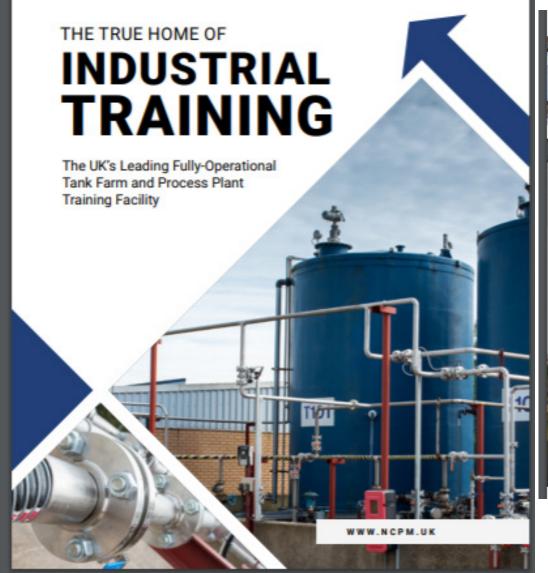
7
Welding &
Pipefitting Hub

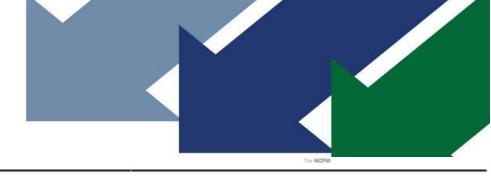
8
Apprenticeship
Workshop











Liver 1





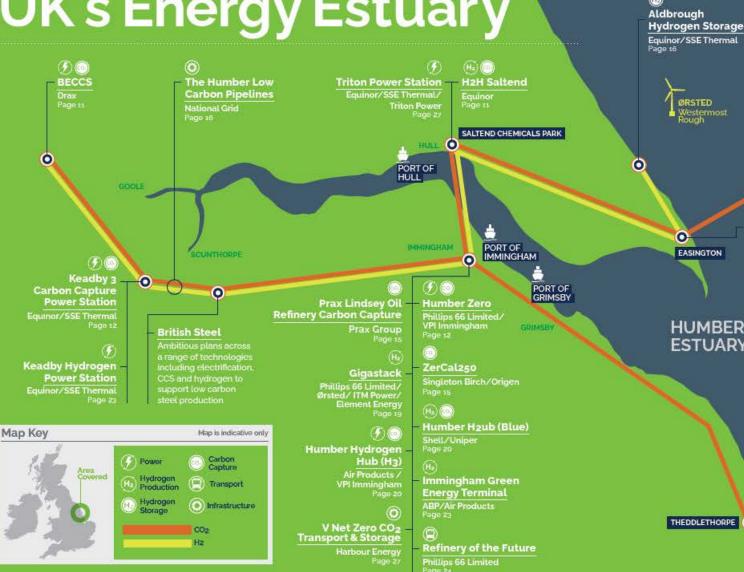
SET YOUR SITES ON SAFETY AND TECHNICAL EXCELLENCE

THE NCPM FROM ABOVE





The Humber: **UK's Energy Estuary**



£22 Bn of Identified Investment.

35% of total UK offshore wind capacity operating today from the Humber and growing

#80% of the UK's licensed CO2 storage capacity is accessible from the Humber



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EASINGTON

HUMBER

ESTUARY

THEDDLETHORPE (

Hydrogen Storage

RWE Humber Gateway

Centrica Storage

Hornsea One Hornsea Two

Homsea Three Hornsea Four



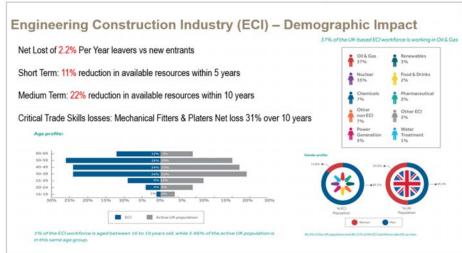
Skills & Resource Challenge

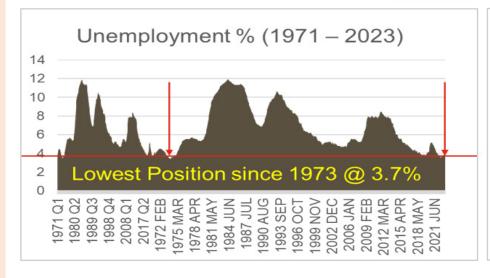
The case for moving now

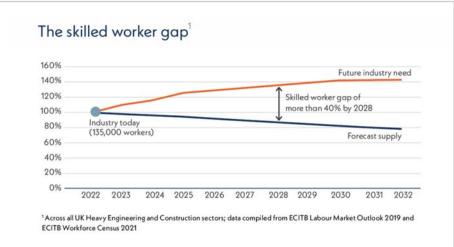


Significant demand for thousands more skilled apprentices

Table 1: Summary of estimated CAPEX to 2050			
Industrial Cluster	Emissions MtCO ₂ (NAEI 2019)	£bn	
North West	2.1	31.8	
East Coast - Humber	5.4	46	The second second
East Coast - Teesside	1.3	30	CAPEX
Grangemouth	1.5	35	£515bn
South Wales	2.7	24.3	
Southampton	1.4	16.5	to
Black Country	0.1	2	2050
Total Cluster shared & deployment infrastructure	14.5	185.6	The State of the S
Dispersed shared & deployment infrastructure	22.6	286.2	=
Total UK deployment infrastructure	37.1	471.8	353,155
Total Sector Sites	3327465456	43.2	jobs per year to deliver industria
Total UK		515.0	decarbonisation







Increase new learner numbers per year

100



1,000

Become an Industrial Innovation Leader in AI, Robotics and Automation & Sea Survival Centre



Mechanical Fitters

Increase from 20 to 200





Welders

Increase from 14 to 200



Pipe Fitters

Increase from 14 to 100



Project Management/Controls

Increase from 0 to 60



Platers

Increase from 0 to 100



Electrical & Instrumentation

Technicians

Increase from 20 to 150



Process Operators

Increase from 40 to 60



Other Trades

Increase from 0 to 150



We are working together to secure this workforce

CATCH Apprenticeships

The most specialist, employer focused, technical programmes in our regions



- Process Operations (Process Industry Manufacturing Technician)
- Electrical & Instrumentation (Maintenance, Operations Engineering Technician)
- Mechanical (Maintenance, Operations Engineering Technician)
- Plate/Pipe Welder
- Engineering Construction Pipefitter
- Metal Fabricator (Plater/ Sheet Metal)



Contextualised,
practical learning
scenarios utilising the
National Centre for
Process &
Manufacturing



Focus on workshop and plant based practical skills



Schools engagement programme integral to our provision



Employer led provision with design, development



Added value training courses built into the programme



Structured recruitment process which ensures employers get the right candidate



Personal development and pastoral care sessions to enhance the programme

Yorkshire – Lincolnshire – Humber & beyond

Employers we work with

























Innovative by nature



AGGREGATE

INDUSTRIES



An AB Sugar company



















Employer Engagement Opportunities

- Curriculum Development sessions
- Employer working group
- Site Visits
- Project Presentations
- Guest speaker opportunity
- Apprentice Ambassador Programme
- Schools Engagement
- Equipment donation





Why should you recruit an apprentice?

- Succession planning don't just recruit 1:1
- Great way to develop and retain talent
- Offers opportunities to young people and pathways to train others
- Enables current staff to become mentors and support learners with their experience
- Diversification across teams and workforce
- Encourages curiosity and innovation
- Have an active input into moulding your workforce
- It is an investment!



















We strive for

EXCELLENCE

noun: The quality of being outstanding or extremely good.



Coffee Break and Networking

Back at 10.30



Addressing Skills Gaps: Higher Education Opportunities

Charlotte Kirton-Cook and Karen Burrows
University of Lincoln





ADDRESSING SKILLS GAPS: HIGHER EDUCATION OPPORTUNITIES

Charlotte Kirton-Cook, Marketing Manager (Educational Partnerships)

Karen Burrows, Senior Lecturer and Apprenticeship Programme Lead (Department of Management)

CPD and Short Course Provision

- Higher Education credit bearing (e.g. microcredentials) as well as non-credit bearing options
- Flexible, online and hybrid delivery options available
- 6-12 weeks modules
- Designed to work around work and family commitments
- Affordable, pay as you go
- Bespoke cohorts for employers





CPD and Short Course Provision

- Key subject areas in demand:
 - Leadership
 - Sustainability
 - EDI
 - Finance
 - Marketing
 - Numeracy
 - ICT
 - Digital and AI
 - Wellbeing



Embed new skills and expertise with a Knowledge Transfer Partnership (KTP)

A three-way partnership that delivers:

- > the **expertise** to innovate and develop
- > the **grant funding** to enable partnership working
- > the resource to deliver transformational change

The UK picture:

- ❖ £43m annual grant budget (increasing to £50m)
- ❖ ~ 800 projects running currently (increasing to 1,000)
- 5 grant application deadlines per year (85% approved)
- has been running since 1975 (well established!)



How does a KTP work?



Company driven partnership with an academic team



Apply knowledge – deliver new capabilities



Projects 12 – 36 months



Associate fulltime on the project (@ Business)





Strategic business project



Any Business Any Size UK Location



Grant Funding rates 50 to 75%



IP Exploitation



Economic (profit/reserves) Societal Environmental

https://www.ktp-uk.org/



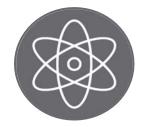


Setting up a Partnership



Business Partner

- Sees a strategic opportunity to transform and grow
- No off-the-shelf solution available
- Requires expertise only available in academia



Academic Partner

- A university, college, RTO, or Catapult in the UK
- Has knowledge to develop innovative solutions
- Cross disciplinary expertise provided half a day per week



Associate

- Recruited to deliver and lead the project
- Employed by KB and based in business partner
- Transfers and embeds new knowledge
- Develops new capabilities



KTPs can be about...

- Introducing new technologies
- Introducing new expertise
- Developing deeper understanding
- Developing new products, processes
 & services
- Optimising business processes
- Entering new markets



https://www.ktp-uk.org/





Eligibility

- Large, SMEs and Micro businesses or organisations
- Affordability with absorptive capacity (2-3 yrs' accounts preferred)
- Any structure and ownership (plc/Ltd/LLP)
- Multinationals (ensuring net benefit to UK economy)
- University Spin-outs
- Charities and not-for-profit organisations
- Public Sector Organisations (recently added mKTP for up to 2 years only)

Grant rates:

SME and micro businesses 67%
Large businesses 50%
Not-for-profit/charities 75%
Public sector 50%

Typical total project costs per annum approx. £90k - £100k

https://www.ktp-uk.org/





Case study: Arktis Endurance Textiles



The University of Lincoln's Biomechanics team, led by Dr Franky Malloy, is working with Arktis Endurance Textiles Ltd. on a Knowledge Transfer Partnership project which applies scientific principles and biomechanical analysis techniques to enhance the research and development process for police, military and outdoor load bearing equipment.





Management Apprenticeships Level 4 -7

Our Mission is 'to develop socially responsible leaders ready to meet the challenges of 21st century business.'

Associate Professor Amy Mumby – Director of Online and Flexible Learning

Senior Lecturer Karen Burrows – Apprenticeship Lead

Senior Lecturer Nicola Pattinson – Apprenticeship Quality Lead

Lecturer Amanda Boyd – Portfolio Lead

askwbdl@lincoln.ac.uk



Celebrating Success

Lincoln International Business School

• Apprenticeship programmes. Launched in 2018, with 204 apprentices enrolled in the last five years

- 100% Successful EPA
- Working with a range of employers























Apprenticeship Suite

Within Work-Based

- An Apprenticeship with underpinning Qualification
- Progression from level 3 to level 7
- Improving competence for industry
- CMDA/SLA: Chartered Manager
- Project Manager: PMQ (APM)
- Supply Chain Leadership Professional: CILT

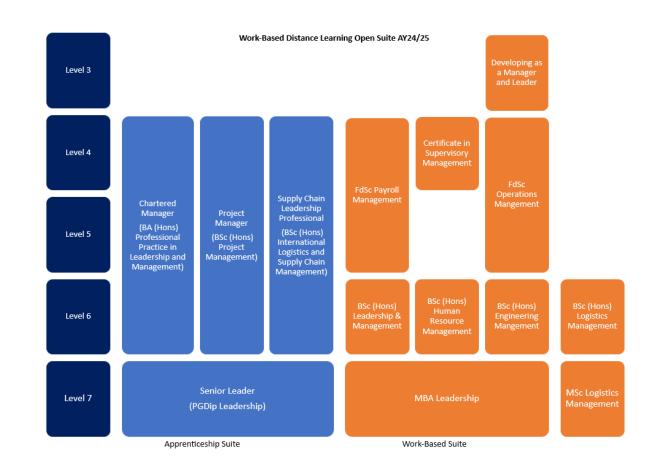
Chartered Manager Academic Qualification Professional Qualification

Apprenticeship Professional Accreditation



Work-based Provision

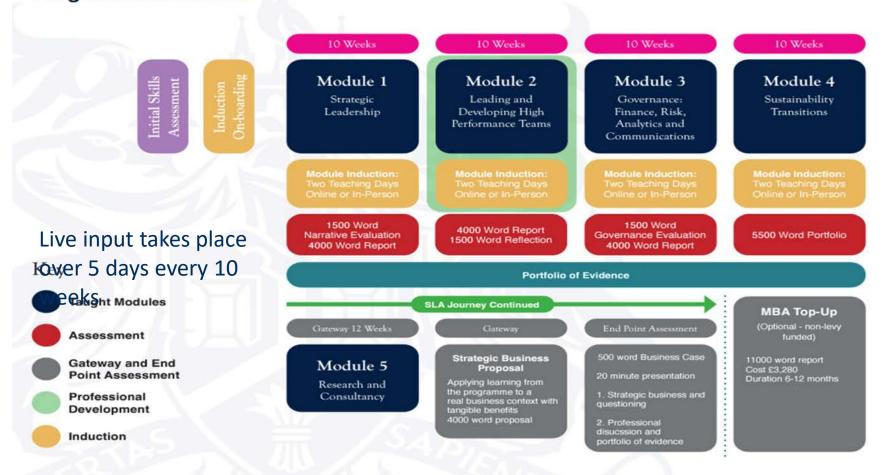
- Designed for those in work
- Flexible
- Apprenticeship and nonapprenticeship options





Senior Leader Apprenticeship (SLA) Programme Structure







$\overline{}$	0900- 1030	0900- 1030		1100 - 1200		1300-1430		1450-1700
Mon	Introduction to Programme Expectations of Module	Introduction to Programme Expectations of Module	BREAK	Knowledge Module Leader	LUNCH	Skill Module Leader	BREAK	Knowledge Module Leader
1	Module Leader	Leader	l	Module Leader		Module Leader		Module Leader
Tue	0900-10.30 Knowledge		BREAK	1100-1200 Skili	LUNCH	1300-1500 Responsible Management	BREAK	1530-1700 Responsible Management and Functional Skills
	Module Leader		1	Module Leader		Module Leader		Module Leader
			ш					
Wed	Expectations of Apprenticeship Standard Success Coach, Work Based		BREAK	1100 – 1200 Working with your Mentor and Success Coach Success Coach, Work Based Mentor	LUNCH	Building your Portfolio and Recording Impact Introduction to OneFile Success Cosch, Work	BREAK	Work Place Mentor Meetings Success Coach, Work
Thu	Mentor 0900-1030 Functional Skills and ASL Screening Success Coach		BREAK	1100 = 1200 Safeguarding (Including PREVENT) British Values (One Community) Success Coach	LUNCH	Based Mentor 1300-1430 Community Impact Success Coach	BREAK	Based Mentor 1500-1700 Personal Professional Development Success Coach
FrI	Wash Up Academic/Funct		BREAK	Assignment Work	LUNCH	13:00 – 16:00 One-to-One Support		

Week	Contact Time (live, Online)	Expectations	Attended by
Week 5	One Hour	Mid-module Review. Student to provide progress update and highlight any challenges. Tuto to provide feedback themes from formative work, challenge guidance and suggest areas for exploration to expand on current work in-line with Learning	Students Module Tutor
Week 4-5	One Hour	outcomes Mid-module review. Apprentice to share progress made within one file, and highlight challenges. Success Coach to gap check and provide guidance to improve and develop in-line with KSB requirements	Apprentice Success Coach
Week 9	One Hour	Final Assessment Workshop. Student to provide progress update and highlight any challenges. Tutor to provide feedback themes from formative work, challenge guidance and suggest areas for exploration to expand on current work.	Students Module Tutor
Week 11	90 Minutes	Tripart-Review. Review progress, action plan for gaps and identify needs for next area of standards to be achieved.	Apprentice Success Coach Work place Mentor

A typical module timetable



Thanks for listening!

Feel free to get in touch ©
Charlotte – <u>ckirton@lincoln.ac.uk</u>
Karen – <u>kburrows@lincoln.ac.uk</u>

Professional Development for a Skilled Workforce

David Arthur
Institute of Materials, Minerals
and Mining





Institute of Materials, Minerals and Mining

IOM3 is:

A professional engineering, environmental and scientific membership body

PROFESSIONAL ENGINEERING, ENVIRONMENTAL & SCIENTIFIC MEMBERSHIP BODY



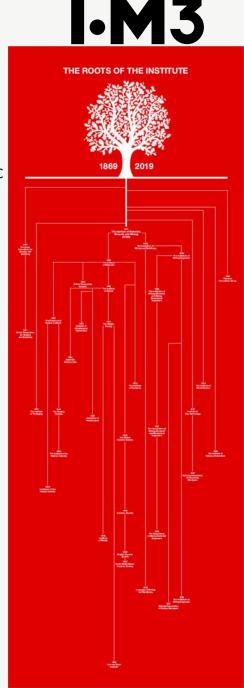


Incorporated by Royal Charter (RC000267)

OSCR Scottish Charity Regulator A registered charity in England & Wales (269275) and in Scotland (SC050586)



Formed by a series of mergers since 1869 (the creation of our earliest national predecessor, the Iron and Steel Institute)



IOM3

I-M3

Institute of Materials, Minerals & Mining

The global network for the materials cycle, promoting sustainability and greater circularity in the extraction, processing and use of natural resources.

IOM3 Vision & Mission



Vision

To be recognised as the global leader for professionals involved with the materials cycle.

Finding stuff, making it into things, using them and handling at end of life

Mission

To promote the science, design, engineering and technology of materials, minerals and mining and their practical applications and facilitate qualifications, professional recognition and development, and to deliver knowledge, information and networking services to a global membership and wider community.









Our member workshops

CSci in a Day

CEng in a Day

Introduction to Professional Registration

Becoming a Fellow

Women into Fellowship

CEnv Registration Workshop





Our Affiliated
Local and
International
Societies



...and 4 International Societies

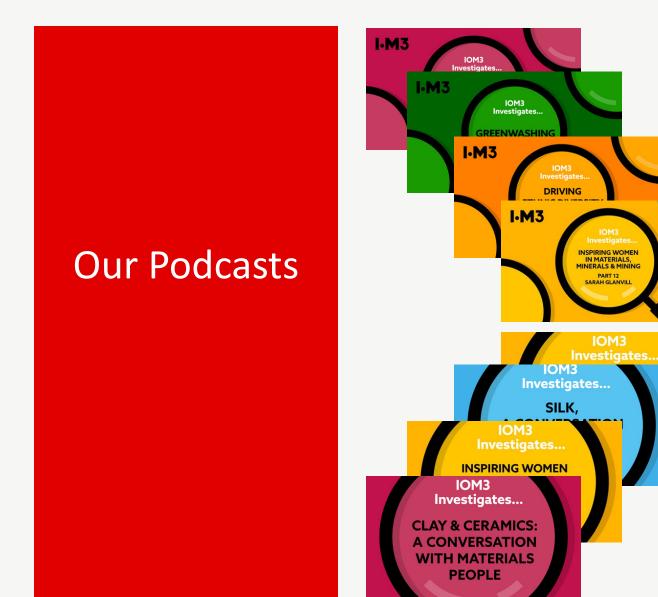








...altogether with >240 volunteers





I-M3

Delivering training to support professional development in the materials cycle in technical and non-technical areas

Training as a conduit to PD



Outreach for schools and students

Technical Content





Professional Development

Technical Content

- Deliver a comprehensive portfolio of professional development opportunities and support to individuals and organisations working within IOM3 topics;
- Provides a mix of online and blended learning capabilities to accommodate different learner needs; and
- Existing outreach offering that seeks to engage, educate, and enthuse the next generation of professionals across the materials cycle and extend it to increase the focus on potential future minerals and mining professionals as well.

22 Technical Communities

I-M3

Applied Earth Science Group

I-M3

Biomedical Applications Group

I-M3

Ceramics Group

I-M3

Composites Group

I-M3

Construction Materials Group

I-M3

Defence, Safety & Security Group

I-M3

Elastomers Group

I-M3

Energy Materials Group

I-M3

Energy Transition Group

I-M3

Iron & Steel Group

I-M3

Joining Technologies Group

I-M3

Materials Characterisation & Properties Group

I-M3

Materials Processing & Manufacturing Group

I-M3

Mineral Processing & Extractive Metallurgy Group

I-M3

Mining Technology Group

I-M3

Natural Materials Group

I-M3

Non-Ferrous & Light Metals Group

I-M3

Packaging Group

I-M3

Polymer Group

I-M3

Surface Technologies Group

I-M3

Sustainable Development Group

I-M3

Wood Technology Group

I-M3

Technical Content

Membership

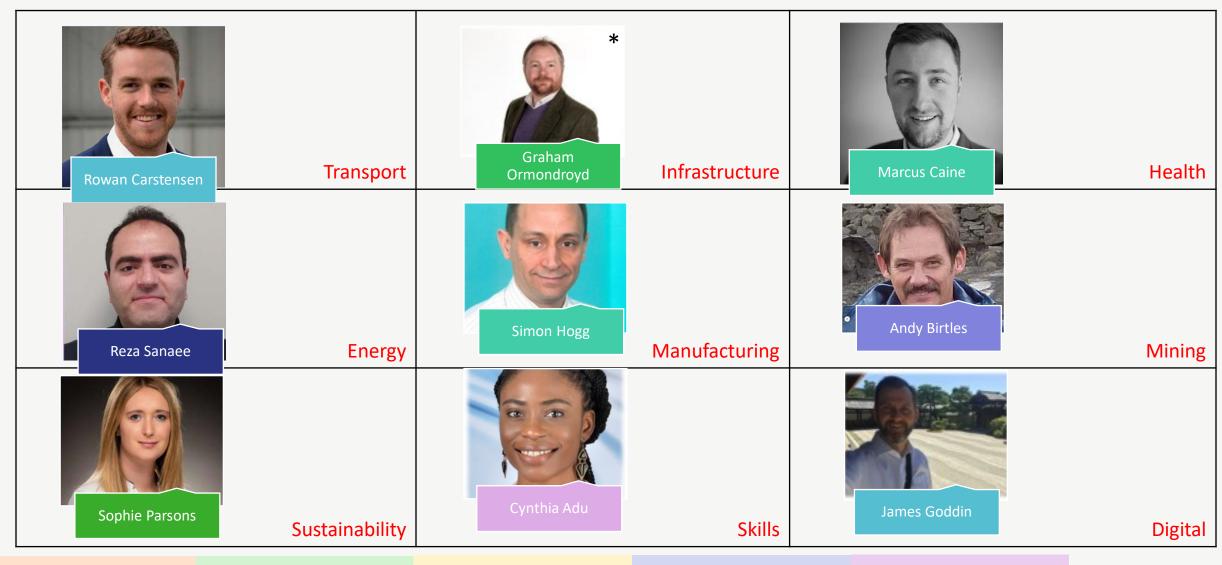
Professional Development

Influence

Infrastructure

9 Themes, 9 Strategic Advisors

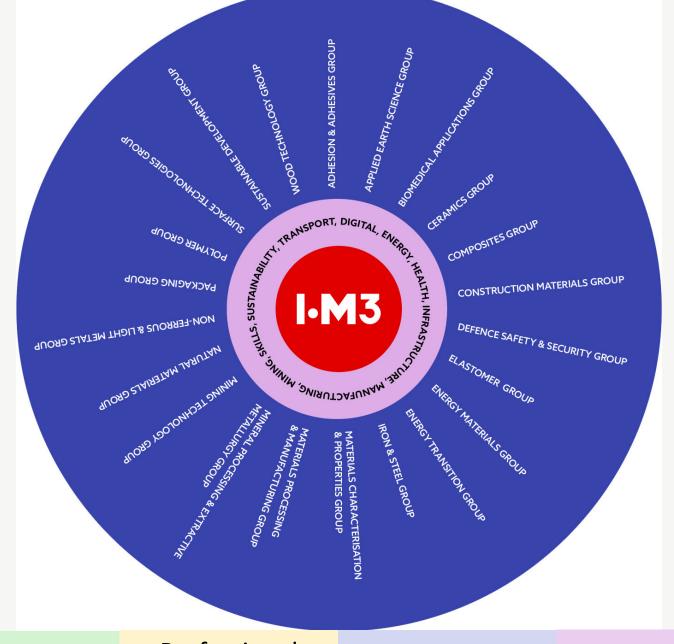




Professional Development

Themes & TCs





Wrap-Up

Matthew Thornton
Bridge @ University of Lincoln



Save The Date!

Funding and Support for Innovation in Manufacturing

Thursday 6 June 2024 Bridge, Lincoln

















Institute of Materials, Minerals & Mining





Close and Networking