

**Project Controls Expo UK - 13<sup>th</sup> November 2019**  
Emirates Arsenal Stadium, London

# Enhancing UK project controls skills

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**Andy Brown**

Director, Regional Operations, ECITB



334 in-scope companies



Nuclear



Oil & Gas

61,000 in-scope workers



Chemicals



Renewables



8 core sectors



The industry contributes up to **£100 billion** to the economy each year (GVA)



Food & Drink



Pharmaceuticals



Water Treatment



Power Generation



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# STRATEGIC CONTEXT AND DRIVERS FOR CHANGE

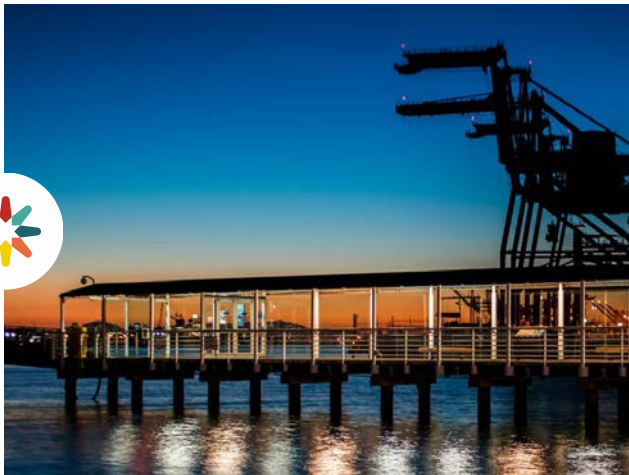
## Industry showing positive signs of recovery

- Companies moving into newer markets
- Oil & Gas Vision 2035
- Sector Deals
- Decarbonisation



## Skills shortages still remain

- Competition for skills
- Brexit uncertainty
- Increased investment in skills



# AGAINST THIS BACKDROP, THERE ARE FOUR MAIN DRIVERS UNDERPINNING OUR STRATEGY:

## COMPETITION FOR SKILLS

**£600bn**

worth of infrastructure projects set to be delivered by 2028



## INDUSTRY 4.0

**81%**

of employers expect new technologies to improve business efficiency



## DEMOGRAPHIC CHANGE

**14%**

of the ECI workforce are set to retire by 2026



## COMPETENT WORKFORCE

**30,000 Vocational Qualifications**

awarded to recognise and validate competence




# OUR STRATEGY

## Foundations



- Industry-leading standards, qualifications and quality assurance
- Strong evidence base
- An industry wide levy
- Collaborative approach

## Meeting the current skills need



- Tackling skills gaps and shortages
- Supporting new entrants
- Competence assurance
- Improving access to quality training

## Preparing for the future



- Anticipating future skills gaps and shortages
- Responding to Industry 4.0
- Influencing Government policy
- Diversity and inclusion



## ANTICIPATING FUTURE SKILLS NEEDS

### We will:

- Identify and forecast future skills requirements
- Create a data platform to identify the regional skills footprint
- Future proof our training standards and qualifications
- Maintain a future skills pipeline
- Upskill to address critical skills gaps

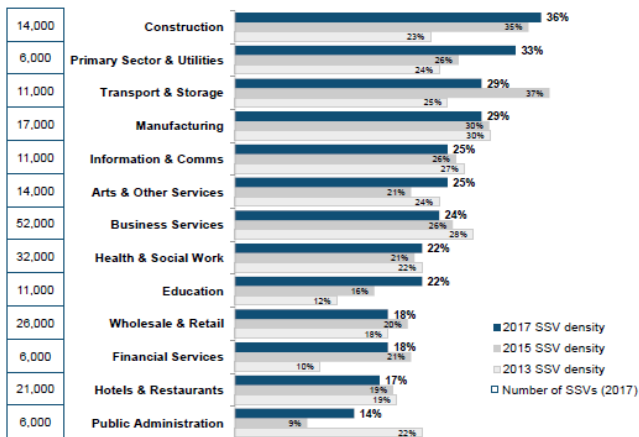


## INDUSTRY 4.0

### We will:

- Help employers understand the impact of Industry 4.0 on workforce skills and productivity
- Develop an Industry 4.0 roadmap for the ECI
- Work with the provider network to ensure appropriate programmes are developed and delivered
- Establish a tech seed fund

# Skills Shortages



Produced by IFF Research

Base: All establishments with vacancies (see Table A.3.4 in Appendix A for base sizes)

Number and density of skill-shortage vacancies (SSVs), by sector

Source: DfE/IFF, Employer Skills survey, 2017

# Overview of Infrastructure Projects Coming Up

- National Infrastructure Pipeline:
  - Over 700 projects worth £500 billion
  - £206 billion on energy
  - £138 billion on transportation
  - £75 billion on utilities



- Large scale infrastructure projects:
  - Nuclear new build
  - Rail: Crossrail and HS 2
  - Heathrow 3<sup>rd</sup> runway
  - Power generation



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# Why Projects Fail

- **National Audit Office:** 1/3 of Government infrastructure projects suffer from “unrealistic” expectations and over-optimism. Infrastructure projects fail to plan adequately for their size.
- **Oil & Gas Authority** study reviewed 58 major projects in the oil and gas industry executed between 2011 and 2016 -
  - On average fewer than 25% of projects were delivered on time; projects averaged 10 months’ delay.
  - Projects delivered were on average around 35% over budget.
- **Arcadis, 2016:** Delays in planned infrastructure spending led to a £6bn loss to GDP in 2015-2016, the main reasons were:
  - Project Management
  - Organisational
  - Behaviours



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# Improving Project Performance: 4 challenges



1. Improving project leadership
2. Improving collaboration through supply chain
3. Transferability of skills
4. Future proofing



# Improving Project Performance:

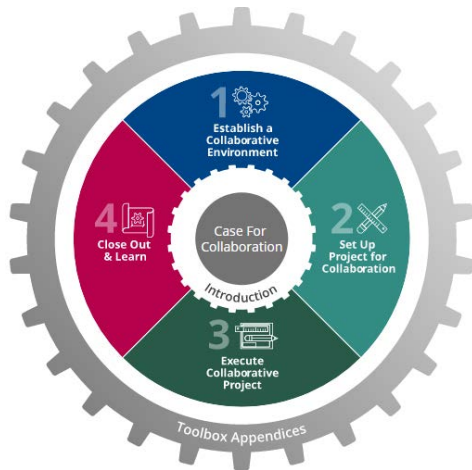
## I. Project Leadership

- Project leadership overlooked in favour of project management?
- Duration of project lifecycle
- Behavioural and organisational issues at the root of the project leadership deficit



# Improving Project Control:

## 2. Collaboration



- Collaboration can facilitate best practice in project leadership and management
- Open and collaborative relationships between clients and supply chain partners can improve project delivery
- Brings cost-efficiency improvements and boosts productivity
- Organisational culture is key

# Improving Project Performance:

## 3. Transferable skills

- Supporting the flow of the skilled workforce between projects is critical
- Heightened priority due to competing projects and 'Brexit' impact on labour supply
- Training must support progression and labour mobility
- Standardisation of qualifications and training requirements to remove duplication, overlap and unnecessary cost



# Improving Project Performance:

## 4. Future Proofing



- How do we prepare for the digital age?
- Creating a mobile workforce
- Impact of emerging technologies on skills
- Upskilling / life-long learning



# Industry Qualifications

## L3 Diploma in Project Controls Practice & Techniques:

Modular qualification with 13 units including:

- scope interpretation and project controls planning;
- work and cost breakdown and coding structures;
- scheduling;
- estimating;
- developing the initial budget and baseline;
- tracking progress and managing detailed controls data;

This qualification includes the use of approved simulation and online knowledge testing. It is accessible to candidates throughout The UK and enables those who wish to move into project controls to achieve this qualification.

Mandated in L3 Project Control Technician Apprenticeship Standard



# Project Control Apprenticeship Standard

PROJECT CONTROLS TECHNICIAN TRAILBLAZER EMPLOYER GROUP	
Lead Employer	Costain
Professional and Sector Bodies	ACostE, APM, BCECA, CECES, ECITB, European Construction Institute, GAPPS, IRM, N-SAN, RICS
Academia	Blackpool College, Cumbria University, Leeds University, Loughborough University, Richmond College, University of Manchester,
Training Organisations	20/20 Business Group, ACSL, Gen2, Monitor Mpower, Project Controls Institute, TASC
Consultants	Estimote, First Planner, Judgement Index, Pathfinder Planning, Sunbeam
Government	IfA, HMRC

Search the Apprenticeship Standards - Project Controls Technician

## PROJECT CONTROLS TECHNICIAN

**Overview of the role**

Analysing progress and performance data on engineering, manufacturing, construction and infrastructure projects.

**Details of standard**

**1. Occupation(s)**

A Project Controls Technician controls, monitors and systematically analyses progress and performance data on engineering, manufacturing, construction and infrastructure projects. They require strong analytical skills and a practical approach to interpret technical information. They use specific, complex software tools to

Status: Approved for delivery

Level: **3**

Reference: ST2163

Approved for delivery: 17 August 2017

Route: Engineering and manufacturing

Typical duration: 42 months

Maximum funding: £21000 (Funding Band 13)

Trailblazer contact: [www.furt@costain.com](mailto:www.furt@costain.com)

Employers involved in creating the standard: Costain, 2020 Business Group training



<https://www.instituteforapprenticeships.org/apprenticeship-standards/project-controls-technician>



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# ECITB Project Controls Training Courses

ECITB has supported the industry-led Project Controls Working Group since 2007. Together, they have developed a number of project controls training courses and training standards.

ECITB's skills arm quality audits training companies that deliver training to Engineering construction companies – these training companies become approved ECITB training suppliers.

Project Document Managers Course – 2 days

Estimating Methodology Course – 3 days

Commercial Awareness – 1 day

Introduction to Project Control – 4 days

Certificate in Project Control – 9 month qualification



# Training Standards

## ECITB Training Standards: Project Controls, Estimating, Planning and Cost Engineering

Level 2 Training Standards		Level 3 Training Standards		Level 5 Training Standards	
TS PC02-01	Introduction to Project Controls	TS PC03-01	Project control overview	There are 23 Level 5 Training Standards – here are the first	
TS PC02-02	Introduction to Commercial Awareness and Risk	TS PC03-02	Breakdown and coding structures	TS PC05- 01	Manage effective application of quality processes and IT
TS PC02-03	Gather and Process Data for Project Control Activities	TS PC03-03	Project control reporting and related governance systems	TS PC05- 02	Scoping and requirements definition
TS PC02-04	Introduction to Monitoring, Forecasting and Reporting	TS PC03-04	Monitoring risk, opportunity and uncertainty	TS PC05- 03	Acquiring and acting on information
TS PC02-05	Introduction to Quality Management Systems and Change Management	TS PC03-05	Monitoring, tracking, forecasting and reporting project progress	TS PC05- 04	Risk analysis and management (including opportunity and uncertainty)
TS PC02-06	Introduction to Estimating	TS PC03-06	Commercial awareness and planning procurement activities	TS PC05- 05	Maintaining, controlling and reporting on project progress
TS PC02-07	Introduction to Planning and Scheduling	TS PC03-07	Financial controls and techniques	TS PC05- 06	Task & project close-out
TS PC02-08	Introduction to Cost Engineering	TS PC03-08	Estimating practice	TS PC05- 07	Advanced estimating practice
TS PC02-09	Communicating with Stakeholders	TS PC03-09	Planning and scheduling practice	TS PC05- 08	Advanced planning and scheduling practice
TS PC02-10	Introduction to Health & Safety, Environmental, Ethical and Behavioural Procedures	TS PC03-10	Budgeting and cost control practice	TS PC05- 09	Advanced budgeting and cost control practice
TS PC02-11	Introduction to Self-development	TS PC03-11	Supporting construction or manufacturing planning	TS PC05- 10	Interpreting and applying financial controls
		TS PC03-12	Optimisation and efficiency	TS PC05- 11	Leading the establishment of construction or manufacturing plans
		TS PC03-13	Generating and using statistical data	TS PC05- 12	Earned value management
		TS PC03-14	Using learning curve models	TS PC05- 13	Advanced optimisation and efficiency practice
		TS PC03-15	Communicating with stakeholders	TS PC05- 14	Analysing and interpreting statistical data
		TS PC03-16	Professional ethics	TS PC05- 15	Developing and calibrating learning curve models
		TS PC03-17	Professional development		



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# Linking with Professional Bodies



Represent the professional interests of those with responsibility, at all levels, for the prediction, planning and control of resources and cost for activities that involve engineering, manufacturing, and construction. Benefits include professional recognition, networking opportunities, access to knowledge resources and much more. [Read more](http://www.acoste.org.uk) [www.acoste.org.uk](http://www.acoste.org.uk)



Committed to developing and promoting project and programme management through its [FIVE Dimensions of Professionalism](#): [membership](#), [qualifications](#), [events](#), [publications](#), [online services](#).

Recent publication in joint collaboration with ACostE- Estimating Guide.



the UK regulatory body for the engineering profession. Holds the national registers of 222,000 Engineering Technicians (EngTech), Incorporated Engineers (IEng), Chartered Engineers (CEng) and Information and Communications Technology Technicians (ICTech).



# Driving Forwards – Maintaining Momentum

- Raising the profile of the profession
- Project controls as a rewarding, long-term career
- Awareness of the skills and professional pathway
- Increase those with nationally recognised qualifications in project controls
- Expanding the reach of the working group
- Encouraging investment in project controls training and apprenticeships
- Closer links to and with professional bodies
- L6 Project Controls Professional Apprenticeship Standard – to be expected mid 2020
- L6 Project Control Vocational Qualification



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