

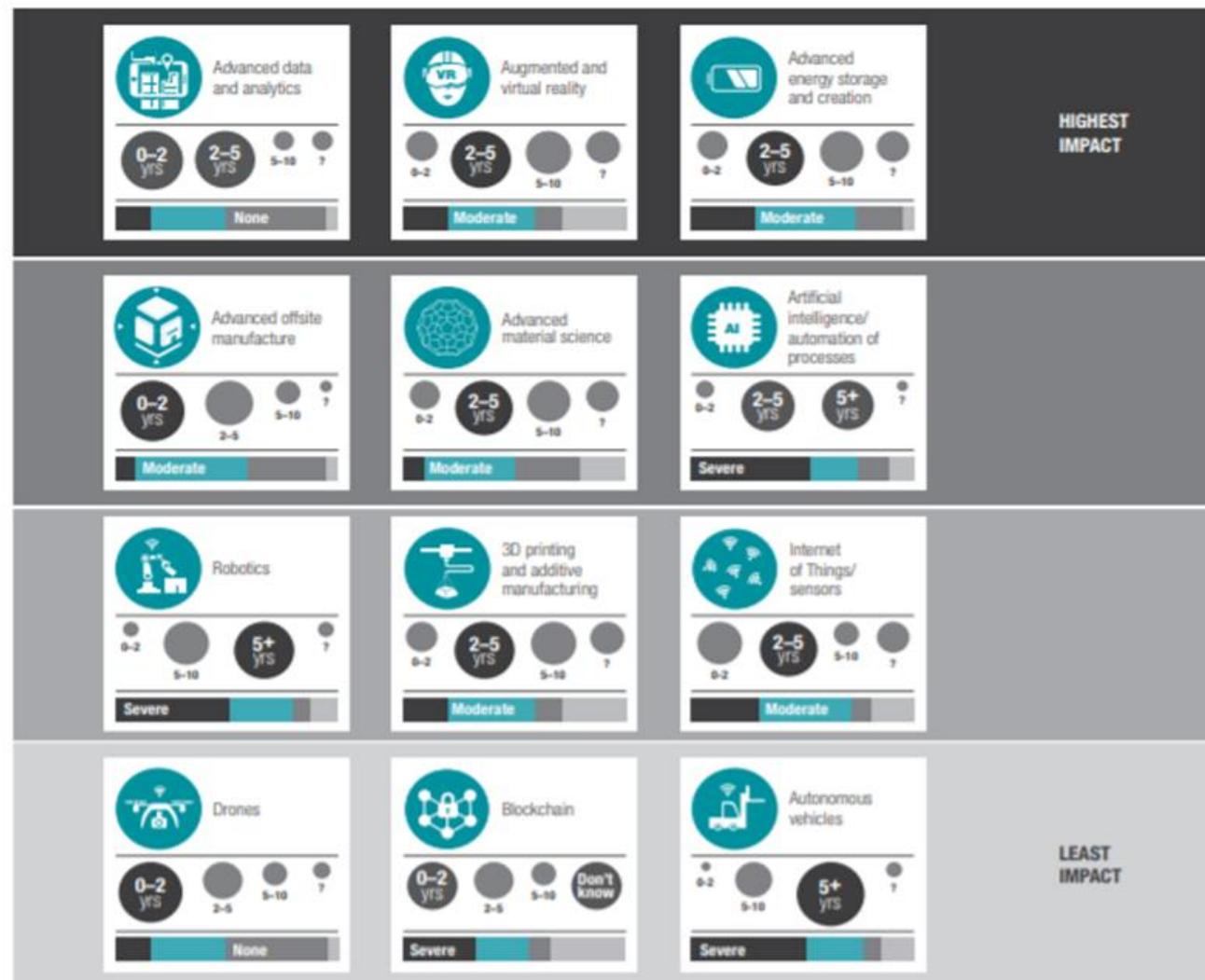
Digitalisation



New technology doesn't work without the competence to use it

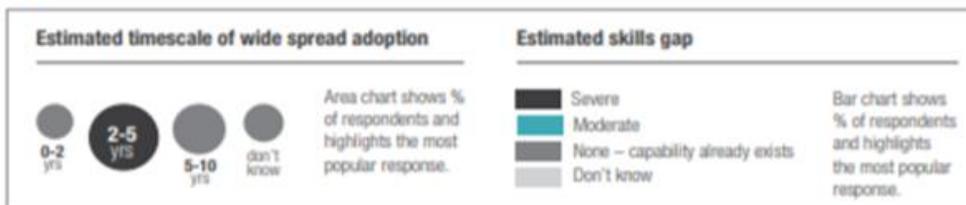


There are a range of technologies that *may* change construction, but only one or two are of real interest (for now).



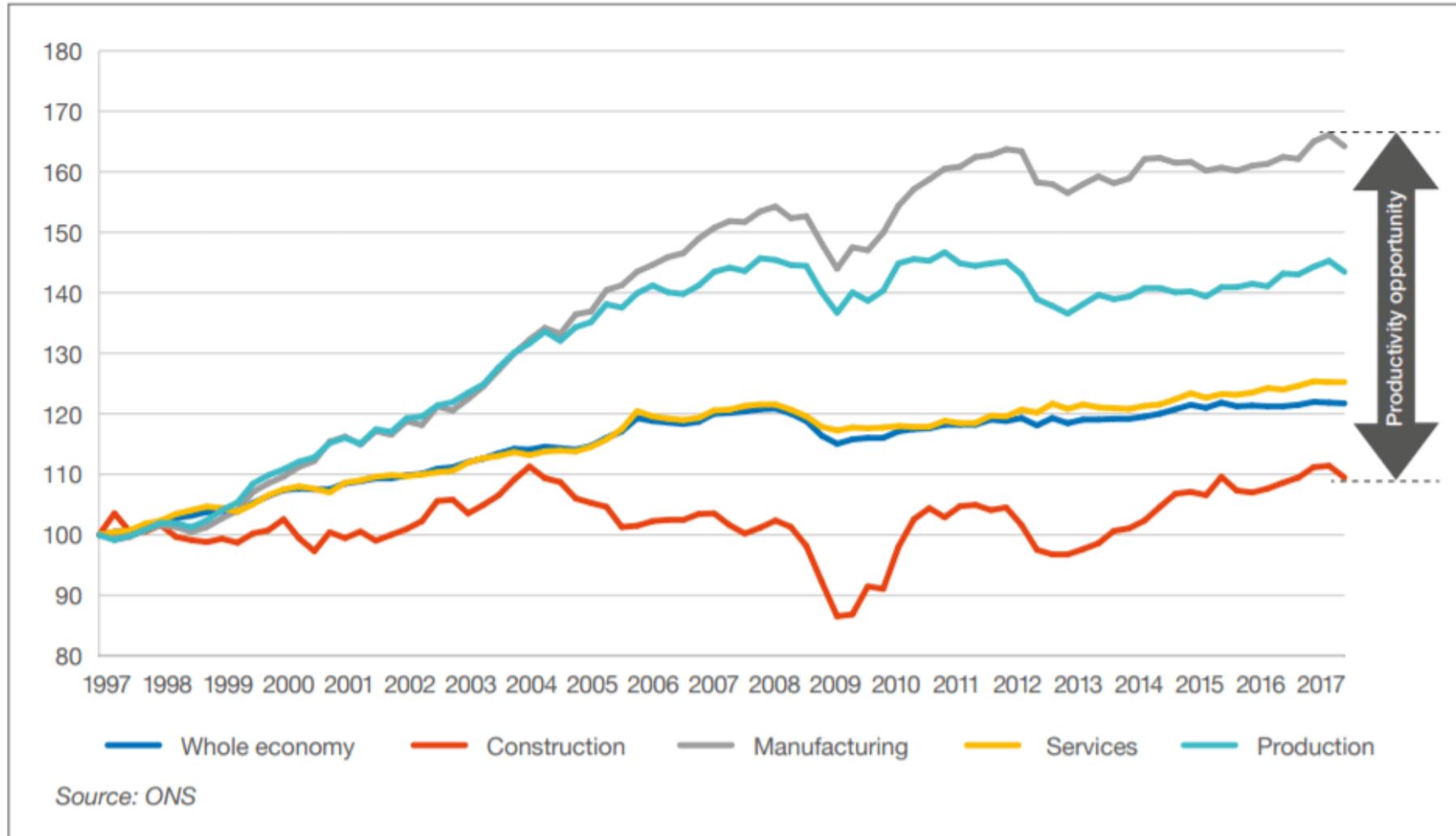
Technologies and their potential level of impact on how the industry works

KEY



Industry Challenges and Opportunities

Productivity – output per worker



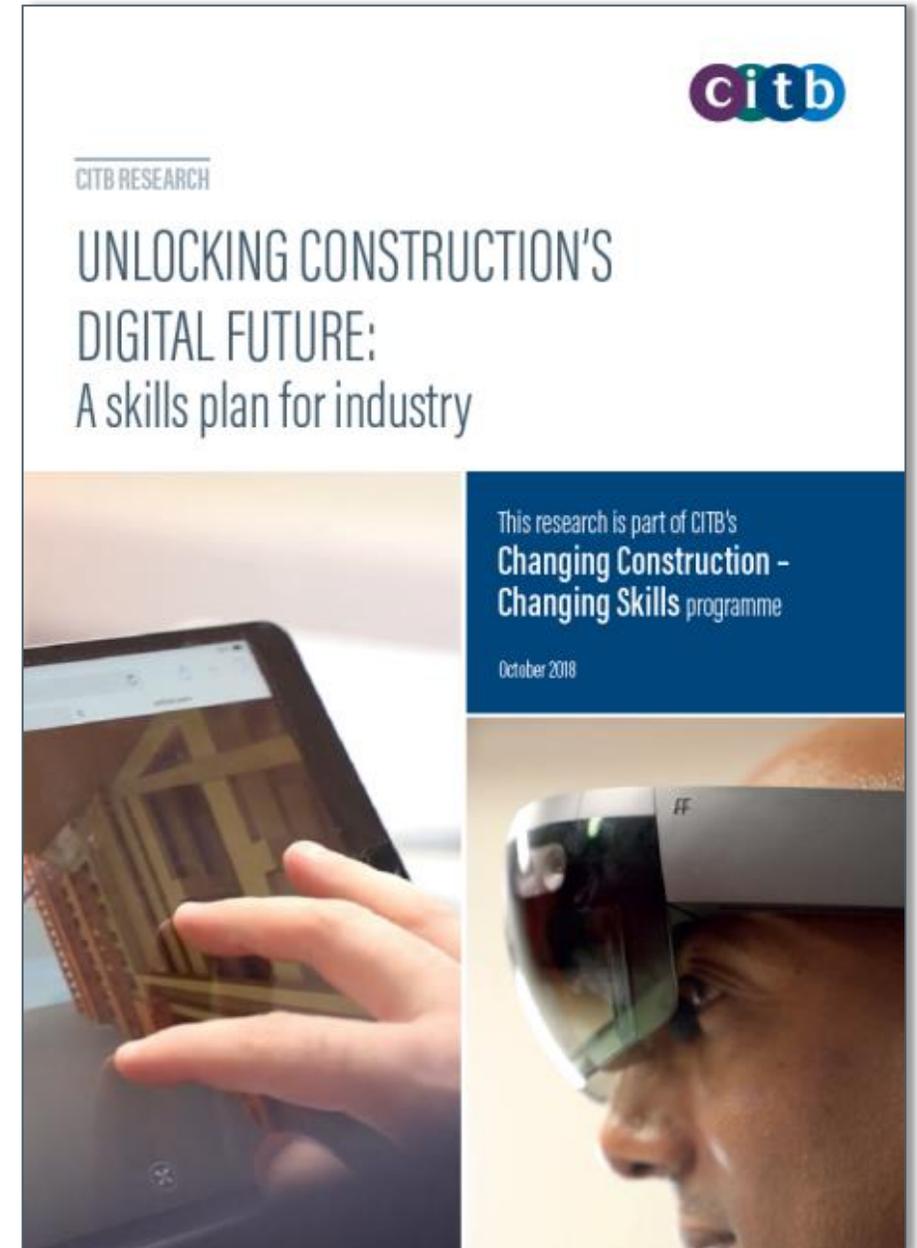
25% increase in productivity could double UK construction's average profit margin

Gap to the UK industry average costs UK construction industry ~£15bn / annum

Why is digitalisation important?

- It can make information more accessible as well as reducing paperwork
- Streamline management
- Improve performance – HSE; environmental & quality
- Protect your company with its legal and contractual obligations
- Improve efficiency through better logistics, use of tools and materials
- Improve productivity
= margin & profitability

New technology doesn't work without the enabling competency



Risks challenges opportunities?

Too often industry is aware of the risks of change, without understanding the risk of not changing

The industry is facing an unprecedented number of challenges & opportunities

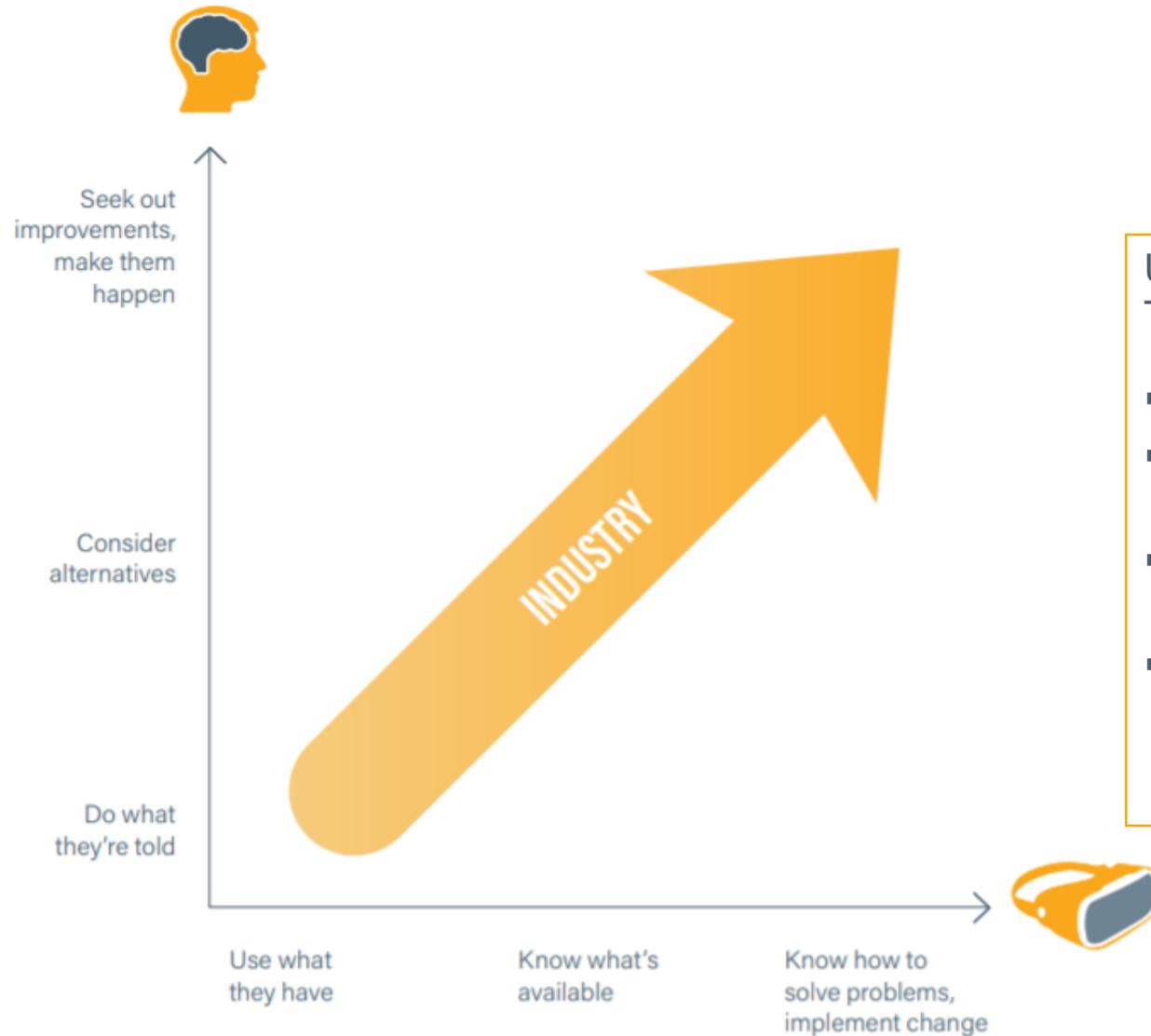


It's about underlying competence, not specific tech skills



FLEXIBLE MINDSET

- Curiosity
- Problem solving
- Creativity
- Emotional intelligence
- Communication



UNDERSTANDING TOOLS & DATA



- How tech works
- What's available or being developed
- How data supports development
- Collecting, storing, sharing, using data

Digital competency Bodies of knowledge

BODIES OF KNOWLEDGE

		BEHAVIOURAL & ATTITUDINAL									
		JOB SPECIFIC COMPETENCIES									
		CORE COMPETENCIES									
		Operatives	Occupational Supervisors	On Site Technicians	Site Supervisors	Site Managers	Off Site Technicians	Construction Managers	Engineers	Professionals	Company leaders
DIGITAL LITERACY	Use of devices such as smartphones, tablets and laptops, and their core capabilities										
SECURITY	Appropriate handling and protection of data and internet-connected devices										
DESIGN & DEVELOPMENT	Means of producing innovative solutions efficiently										
DATA CAPTURE, ANALYSIS & INSIGHT	Production and analysis of large amounts of raw data to produce conclusions										
MODELLING & SIMULATION	Production of representations of aspects of the real world at a point in time or showing changes over time										
SMART CONSTRUCTION & BUILT ASSETS	Technologies involved in an internet-enabled world, with sensors collecting data and prompting a response, including automation										

JOB ROLES

Examples of competencies:



Data Capture

Understanding the **range of tools** for collecting data and their capabilities

Capturing **high-quality images** and views of land and sites using particular tools

Incorporating sensors into buildings and equipment

Moving data from sensors via **communication protocols**

Understanding the use of data to be collected, as well as the necessary level of accuracy

Establishing a **local network** on site, allowing access to on-site information off-site (and vice versa)

Designing and constructing homes that include **smart home technology**, including the choice of materials and specific internet enabled devices.

Strong data collection practices ensure that the correct data is gathered. In turn, this ensures financial efficiency, as well as a reliable foundation for data processing and usage.

Examples of competencies:



Data Analysis

Managing data safely and effectively across platforms/processes/systems/and departments

Understanding and **analysing the data output** from sensors to explore options for change

Presenting data back to others in a **meaningful and engaging way**

Processing allows a vast body of data to be synthesised into something that enables meaningful changes to be made. As our experts highlighted, there is already an enormous amount of information being collected in every project, but this information is often siloed and remains untouched in a filing cabinet.

Examples of competencies:



Insight

Understanding how to **optimise processes** from the data produced

Being able to use **relevant software packages**, which could include simulators and design software

Understanding and evaluating courses of information in the production of digital twins

Choosing when to **employ digital models or simulations** over their physical counterparts

Using associated hardware, such as glasses, headsets, drones, and camera

Understanding the potential for **artificial intelligence and machine learning** to optimise processes

Understanding the current capabilities and limits of **automation**, and the instructions with which to provide automated machinery

Understanding the ways in which data can be used *effectively* will be crucial to ensuring companies get the biggest benefits from it. The effective use of data can enable the reduction of cost and time, as well as increased safety, particularly because it enables the mitigation of human error within the construction process.

www.supplychainschool.co.uk/topics/digital/



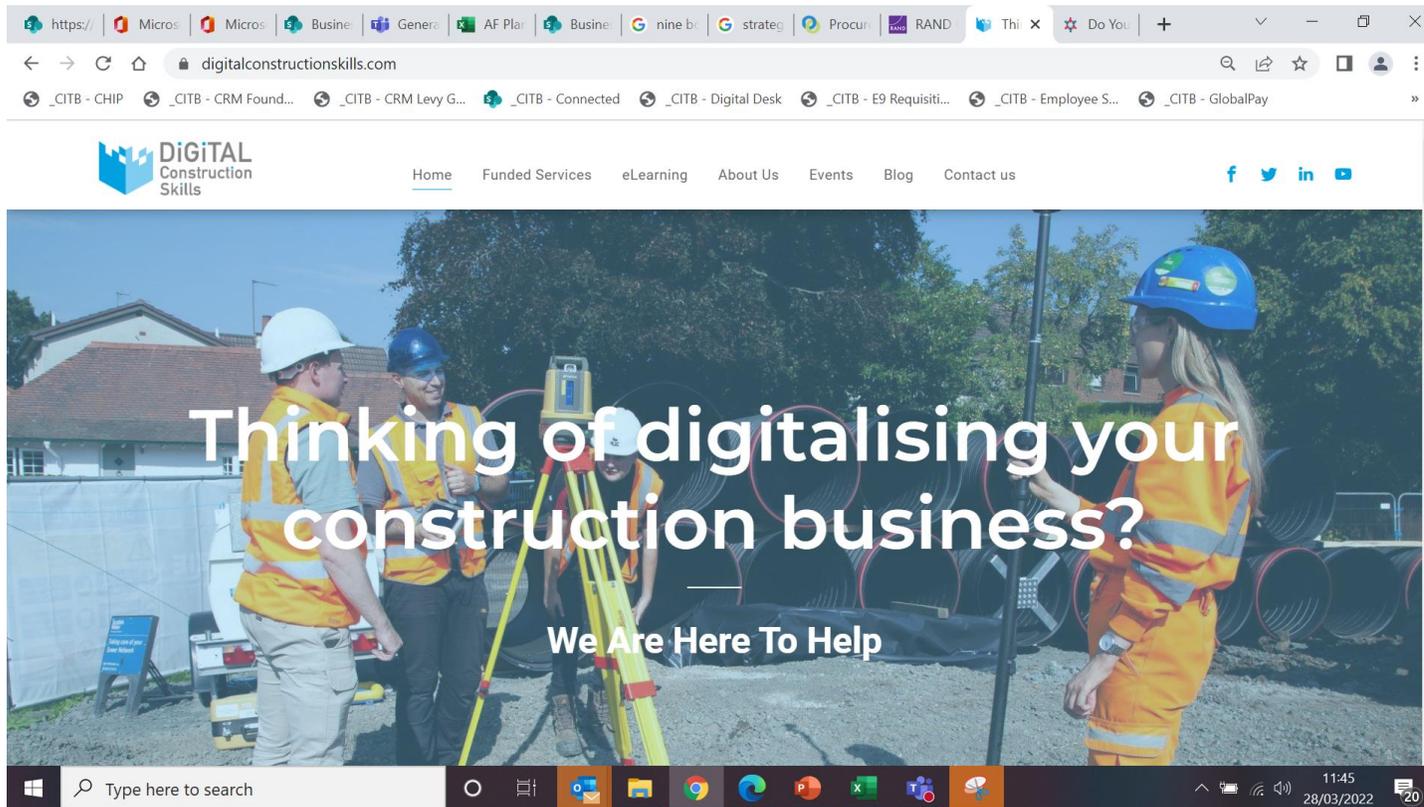
A screenshot of a web browser displaying the 'Digital' page on the Supply Chain School website. The browser's address bar shows the URL 'supplychainschool.co.uk/topics/digital/'. The website header includes the 'SUPPLY CHAIN SUSTAINABILITY SCHOL' logo and navigation menus for Home, About, Learn, Markets, Topics, Partners, and Contact. A search bar and 'EVENTS' link are also visible. The main content area features a large image of a person with a 'Digital' title and the tagline 'Helping you to understand and develop your digital strategy.' Below this is a dark blue search box with the text 'Search our catalogue of FREE digital training resources' and a search input field containing 'Search All Learning'. A blue cookie consent banner is visible at the bottom of the page, and the Windows taskbar is shown at the very bottom.

- Digital maturity assessment tool
- Training Needs Assessment

Topics

- Digital Leadership
- How and why to understand digital capabilities
- Cyber security
- Digital adoption
- Business case for digital

www.digitalconstructionskills.com



E-learning modules

- 50 digital tools in construction you should know about
- Getting started with digital construction
- Taking digital construction to the next level
- Driving behavioural change in digital construction
- Legal & contractual elements of digital construction
- HR & digital construction



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GLOUCESTERSHIRE CONSTRUCTION TRAINING GROUP

Gloucester Construction Training Group (GCTG) was established in 2004 and is a not for profit membership organisation funded by the CITB.

The focus of this group is to:

- ✓ Support training within the construction sector

Taskbar: Windows logo, Search (Type here to search), Task View, Edge, File Explorer, Chrome, Microsoft Edge, PowerPoint, Excel, Teams, OneDrive, Citrix Receiver

System tray: 13:58, 28/03/2022, Network, Volume, Notification (20)

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Digital Leadership Skills In Construction SMEs Spring Programme 2022

Will help construction SMEs adopt digital solutions to improve business performance and will explore the barriers highlighted by participants of previous Digital Boardrooms

- **26 April** Creating short and medium-term plans for digital adoption in construction
- **6 May** How do construction SMEs develop the skills to support digital adoption?
- **10 May** Using digital solutions to manage Health & Safety in construction SMEs
- **20 May** Exploring digital data collection in construction SMEs, including timesheets
- **24 May** Developing digital leadership skills in construction SMEs: a F2F workshop

info@gctraining.group

www.constructiondigitalleadership.co.uk/



CONSTRUCTION DIGITAL LEADERSHIP

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ABOUT THE PROJECT

The project, part-funded by the Construction Industry Training Board (CITB), is a collaboration between Leeds Beckett University, Horbury Group, the Dry Lining and Plastering Training Forum (DLPTF), Whitefrog, and Northumbria University. It aims to help business leaders develop skills and mindsets to drive digital transformation. We recognise that the nature of the construction industry hinders the widespread diffusion of innovation. Factors such as the industry's fragmentation, demand structures, procurement, risk-sharing, and discontinuities in relationships are barriers to innovation. Therefore, a supply-chain perspective is essential to boost the diffusion of digital innovation in the construction industry. The project seeks to deliver free digital leadership training to senior leaders and managers in construction supply chains using a hub & spoke model. The training model provides a coordinated approach to digital innovation in the construction supply chain.

Leeds Becket University; Horbury Group; Dry Lining & Plastering Training Forum; White Frog Training; Northumbria University

Five modules.

Digital:

- Orientation – overview & evaluation
- Transformation – understand the business case
- Leadership – the role in driving innovation
- Understand the digital environment [what]
- Strategy & implementation [how & when]



Thank you

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