CIOB Skills Gap Report

New and unique research to identify skills gaps in professional roles for the benefit of the sector

Commissioned by CIOB and conducted by Enventure Research

Executive Summary

CIOB

Contents

CIOB

Research overview

Methodology overview

CIOB appointed Enventure Research, an independent research agency, to deliver a research programme to identify specific skills gaps in autumn 2024.

A questionnaire was co-designed by CIOB and Enventure Research, covering topics such as skills mapped to the Corporate Plan themes, barriers to addressing the skills gaps, and training and development opportunities.

The survey was sent by email to a database of members, with follow-up reminders to encourage participation. A total of 2,556 useable responses were received.

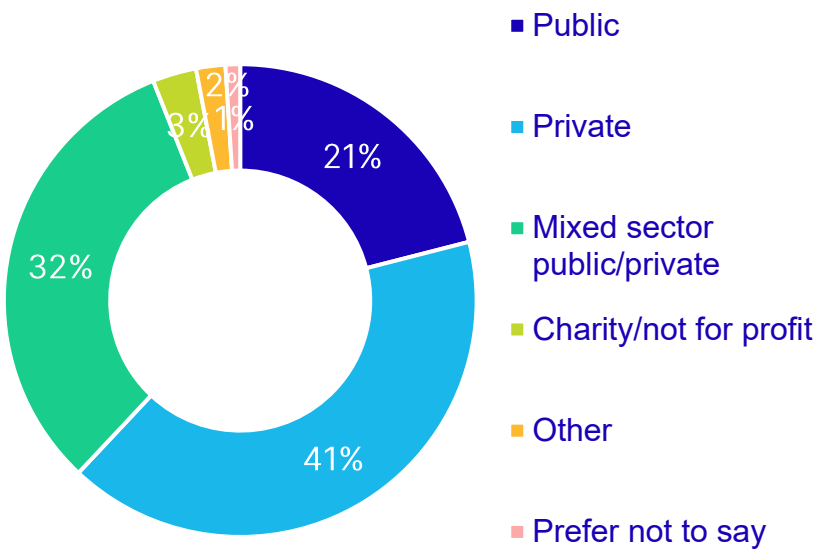
Five online focus groups and ten in-depth interviews were held with members, stratified to include members from a mix of different locations, member types and sectors.

CIOB

Survey respondent profile

Sector

Both the private and public sectors were represented in the survey response, with private the most common (41%), followed by a mix of public and private sector (32%). A fifth said they worked in the public sector only (21%).



Question: To help us understand your perspective on skills gaps, in which of these areas do you predominantly work in? | Base: All respondents (2,556)

Area of work

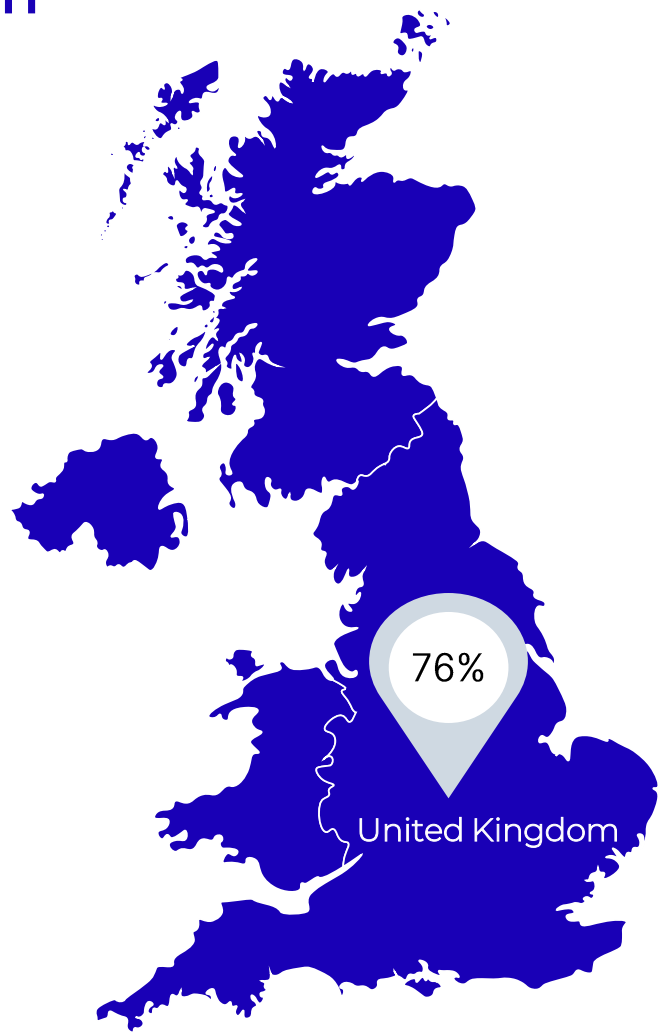
Commercial construction was the most common are of work (45%), followed by renovation or refurbishment (29%) and consultancy services (26%).

Question: Tell us a little more about the main area(s) you work in | Base: All respondents (2,556)

CIOB

Survey respondent profile

Location



Global regions

Where in the world?

- Hong Kong (7%)
- Middle East (6%)
- Ireland (5%)
- Africa (2%)
- Australasia/OCE (2%)

Question: Firstly, where are you currently working?
Base: All respondents (2,556)

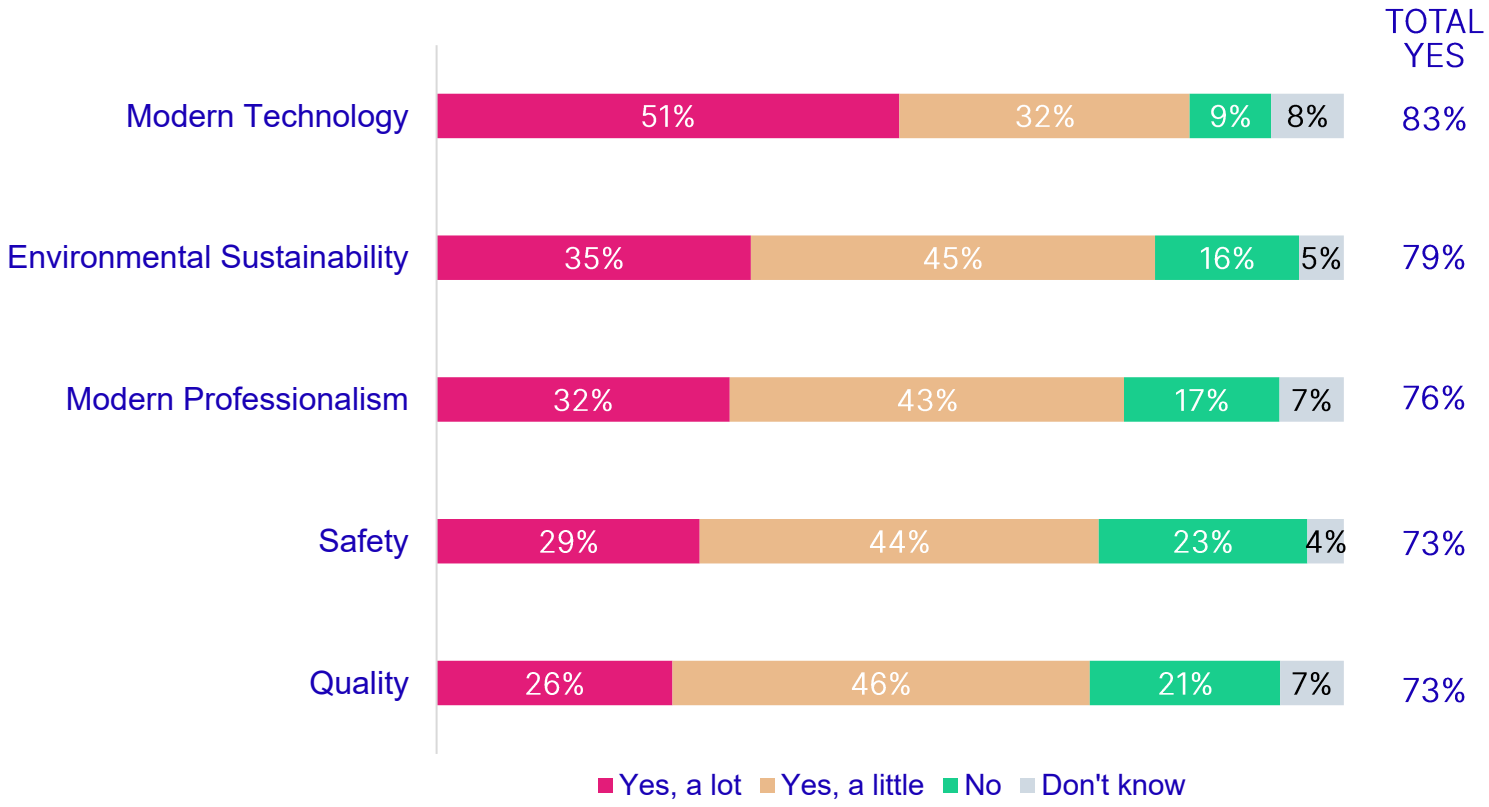
CIOB

Key findings

CIOB

Combined scores for each theme in the survey

Modern Technology recorded the highest combined skills gap (83%), followed by Environmental Sustainability (79%) and Modern Professionalism (76%). Safety and Quality saw slightly lower combined skills gaps (both 73%).



Question: Do you think there are skills gaps for the following? COMBINED AREAS
Base: All respondents (2,556)

Key findings from the survey

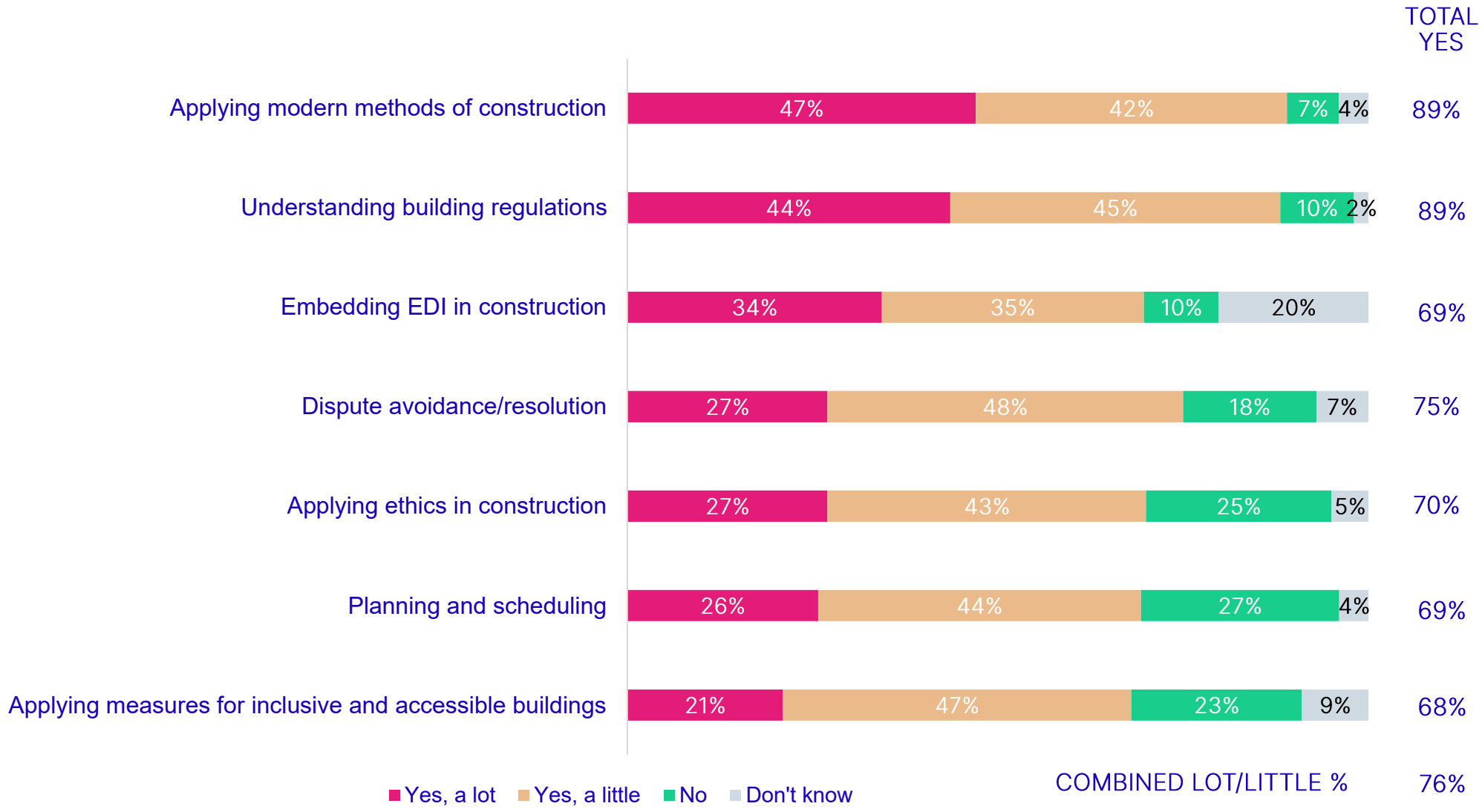
Modern Professionalism	• **Combined** skills gap of **76%** across the seven areas related to Modern Professionalism (lot/little gaps) • **47%** thought there were a lot of skills gaps related to **applying modern methods of construction (MMC)** • **44%** thought there were a lot of skills gaps in **understanding building regulations**
Environmental Sustainability	• Combined skills gap of 79% across the six areas related to Environmental Sustainability (lot/little gaps) • 41% thought there were a lot of skills gaps related to understanding the impact of climate change on the built environment • 38% thought there were a lot of skills gaps in retrofitting of traditional buildings, using green/environmental technologies, and understanding building pathology and optimising performance of a building
Modern Technology	• Combined skills gap of 83% across the two areas related to Modern Technology (lot/little gaps) • 54% thought there were a lot of skills gaps related to using artificial intelligence (AI) • 48% thought there were a lot of skills gaps in using digital technologies
Quality	• Combined skills gap of 73% across the five areas related to Quality (lot/little gaps) • 29% thought there were a lot of skills gaps related to applying building regulations and standards • 29% thought there were a lot of skills gaps in understanding building contracts and codes
Safety	• Combined skills gap of 73% across the three areas related to Safety (lot/little gaps) • 76% thought there were skills gaps in applying fire safety regulations • 76% thought there were skills gaps related to applying building regulations and standards

CIOB

Modern Professionalism

CIOB

Gaps for Modern Professionalism Skills



Question: CIOB Modern Professionalism theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Modern methods of construction (MMC)

- Limited understanding of modular design, logistics, standardisation, and core MMC principles
- Skills gap in managing logistics and integrating modern and traditional methods
- Lack of awareness of MMC benefits among clients, senior professionals, and mortgage lenders

Building regulations

- Confusion due to frequent changes, differences between devolved nations, and multiple regulatory documents
- Gaps in understanding Photovoltaic (PV) systems, EV charging infrastructure, and sustainable construction regulations
- Disconnect between building regulations and infrastructure planning, particularly for district heat networks

Planning and scheduling

- Gaps in baseline programmes, critical paths, key planning concepts, and resource management
- Lack of formal training in project scheduling for site managers & early-career professionals
- Unrealistic expectations from clients and contractors, leading to delays and cost overruns

Accessibility and ethics

- Confusion around Part M of the building regulations, particularly among tradespeople
- Poor documentation practices, including missing as-built drawings in high-rise buildings, impacting quality assurance & safety
- Concerns about over-reliance on contractor self-reporting rather than independent verification

Equality, diversity and inclusion (EDI)

- Underrepresentation of women and marginalised groups in senior leadership
- Limited mentoring and career support for women and marginalised groups , leading to retention issues at mid-management levels
- Gaps in understanding the practical application of EDI principles on projects

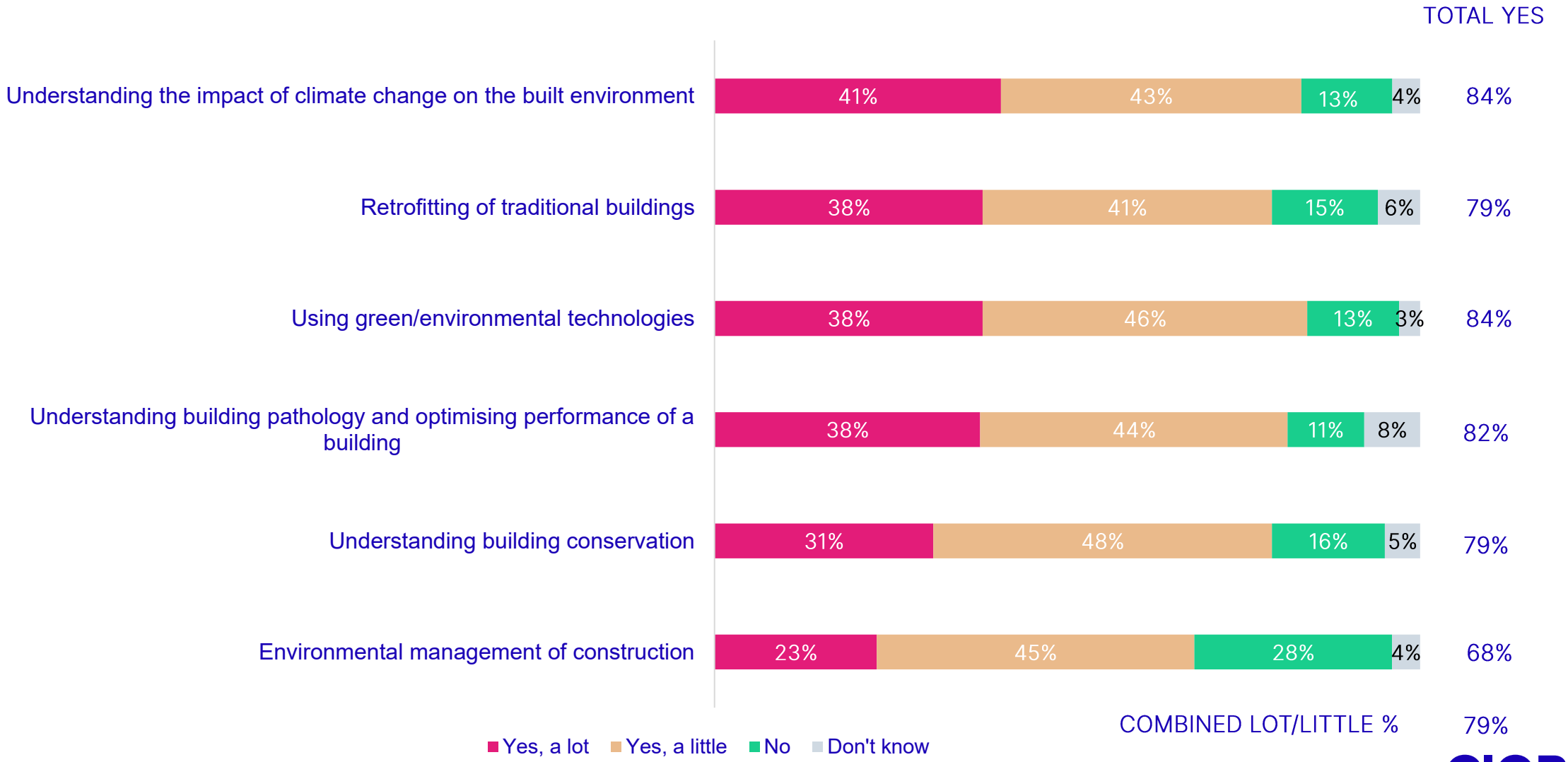
> "In a training workshop, perhaps do an exercise where you have to think like you're in a wheelchair and you are designing this building so that you can access it. You have to train them to think in the mind of someone who has a disability."

CIOB

Environmental Sustainability

CIOB

Gaps for Environmental Sustainability Skills



Question: CIOB Environmental Sustainability theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Retrofit

- Shortage of certified professionals (e.g., PAS 2035, TrustMark) leading to higher costs and limited availability of skilled retrofit installers
- Limited knowledge of retrofit products and improving energy efficiency, and insufficient understanding of integrating sustainability and modern functionality

Green technology

- Skills gaps in renewable energy solutions and technology, and knowledge on integration into buildings
- Challenging to keep up to date with innovations and emerging solutions, as green technology is evolving rapidly

Environmental management

- Driven by regulation rather than proactive adoption, leading to minimal focus on long-term environmental impact
- Need for clearer guidance on biodiversity, flood risk management, and sustainability best practices, particularly for developers, taking regional differences into account

Climate change

- Lack of skills in climate-proofing buildings (e.g., flood resilience, overheating mitigation, drainage upgrades for older buildings)
- Need for global, standardised training and clearer industry direction on climate change resilience

Building conservation

- Shortage of skilled conservation professionals and regional variations in required skills, depending on historical building types
- Need for localised training, CPD, and better collaboration with planning authorities to streamline conservation efforts

Building pathology

- Shortage of competent building pathologists and need for specialised training in diagnosing structural issues, dampness, and defects in retrofit projects
- Need for increased awareness and structured qualifications in building pathology, defect diagnosis, and remediation strategies

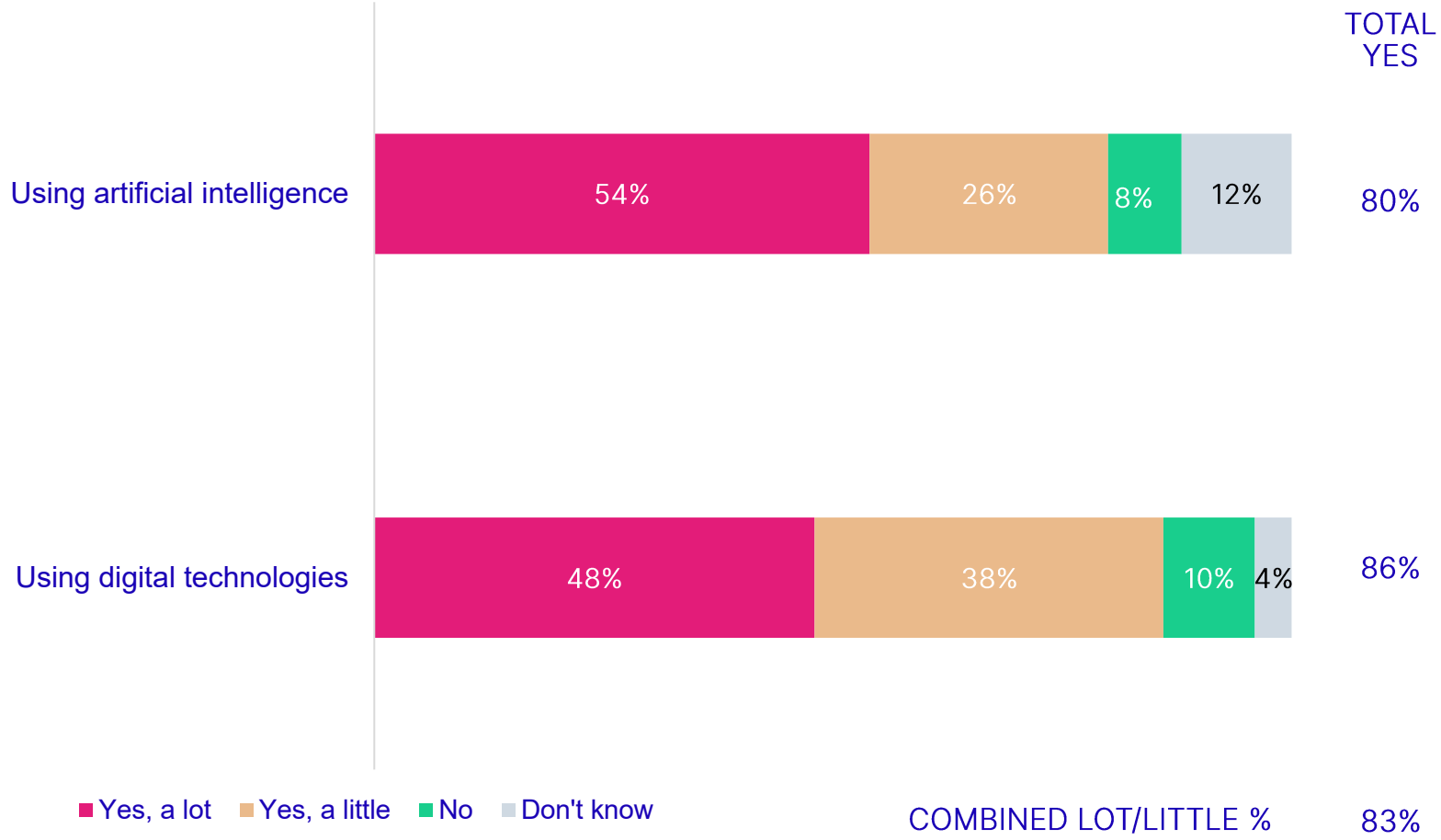
> “Get clear direction. What are we supposed to be doing? And if you don't know, let's get bigger stakeholders, everybody involved.”

CIOB

Modern Technology

CIOB

Gaps for Modern Technology Skills



Question: CIOB Modern Technology theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Digital technology

- While digital tools (e.g., BIM, Revit, cloud-based project management platforms, sensor technology) are valuable, there is slow adoption in some areas due to cost, lack of training, and resistance from older professionals, and a low awareness of the benefits
- Younger professionals often embrace digital technology solutions more easily, but many site teams, contractors, and SMEs still rely on outdated methods like 2D drawings
- Need for structured digital technology training across various skill levels (beginner, intermediate, expert), particularly for BIM and other relevant software

Robotics

- Despite robotics being used increasingly in off-site manufacturing and surveying, many clients and contractors are unaware of the benefits and opportunities
- Using robotics requires IT, programming, and maintenance skills, which are not traditionally part of construction training and education

Drones

- Drones are widely used for surveys, inspections, and marketing, but many smaller contractors and clients are unaware of their benefits, and so are hesitant to invest in hardware and upskilling in this area
- Operating drones requires certification and knowledge of regulations, and there is a need for better industry awareness of the regulations around drones and using drone-generated data within design and project management tools

Using artificial intelligence (AI)

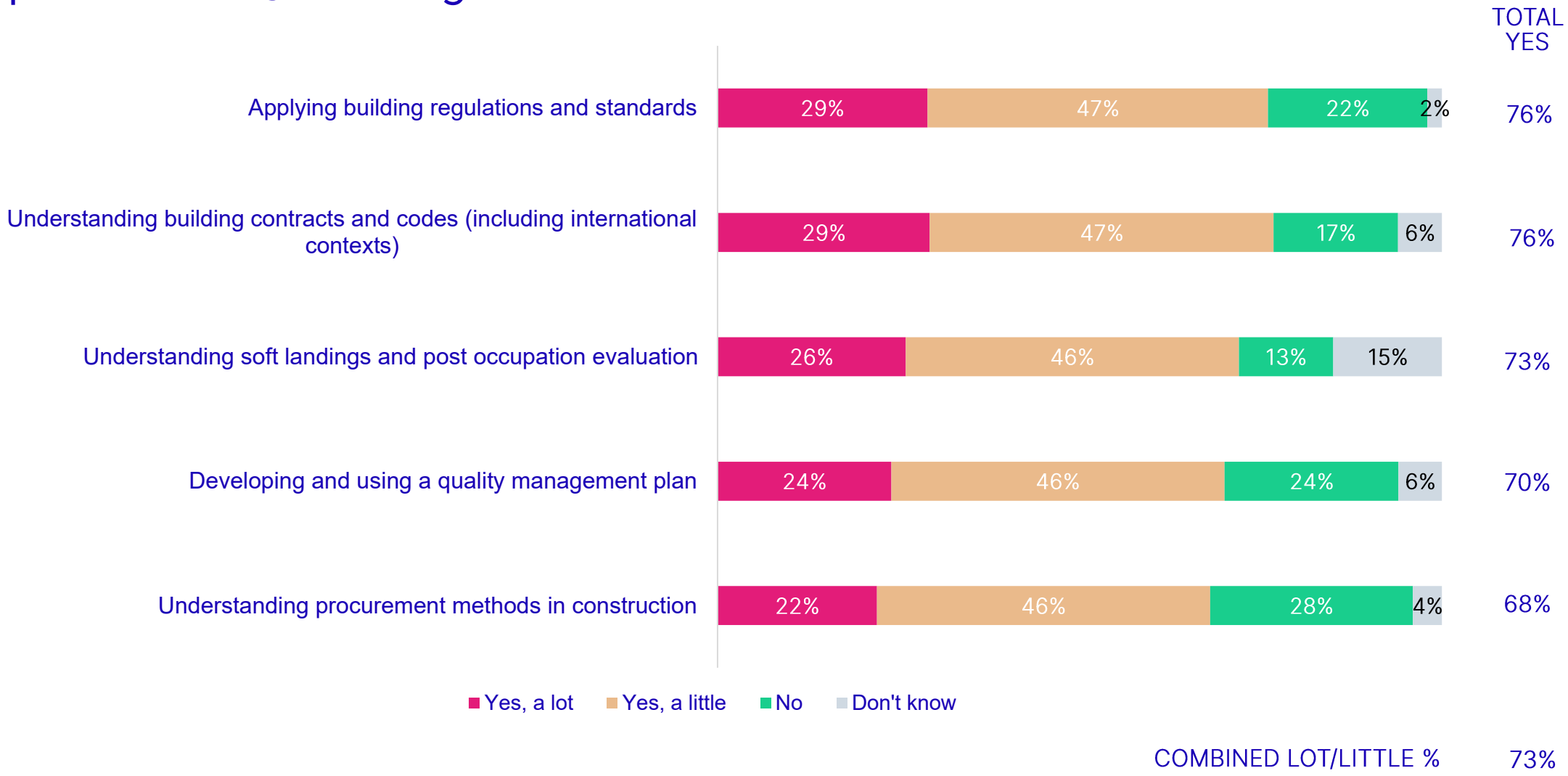
- AI can improve bid writing, compliance, safety documentation, and project management, but awareness of its practical applications is low
- Concerns exist around accuracy, over-reliance, and potential deskilling, requiring structured training and clear industry guidance
- Digital literacy and data science skills will be required, and there are upskilling opportunities on working with AI tools, interpreting AI-driven insights, and ensuring accuracy through human oversight

CIOB

Quality Theme

CIOB

Gaps for Quality Skills



Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Procurement

- Smaller contractors struggle with public sector procurement due to complexity and lack of awareness, leading to missed opportunities
- Often a disconnect between bid teams, construction teams, and clients, resulting in misaligned project goals and buildability issues
- Alternative procurement models (e.g. construction management, collaborative frameworks) are underutilised due to low awareness

Contracts

- Strong preference for JCT contracts in the public sector, while NEC contracts are underused due to lack of confidence and training
- Lack of understanding of key contract mechanisms (timeframes, compensation events, payment terms) and contract administration

Understanding and applying regulations and standards

- Building regulations, codes, and standards are fragmented and complex, making compliance challenging
- Confusion due to frequent changes, regional variations, and multiple regulatory documents
- Limited training opportunities for private sector professionals on building control responsibilities, with most training aimed at public sector officers

Soft landings and post occupation evaluation

- Post-occupancy monitoring of new technologies (e.g., heat pumps, solar panels) is often overlooked, impacting efficiency
- Training gaps exist in post-occupancy evaluation, leading to missed opportunities to improve building performance

Quality plans

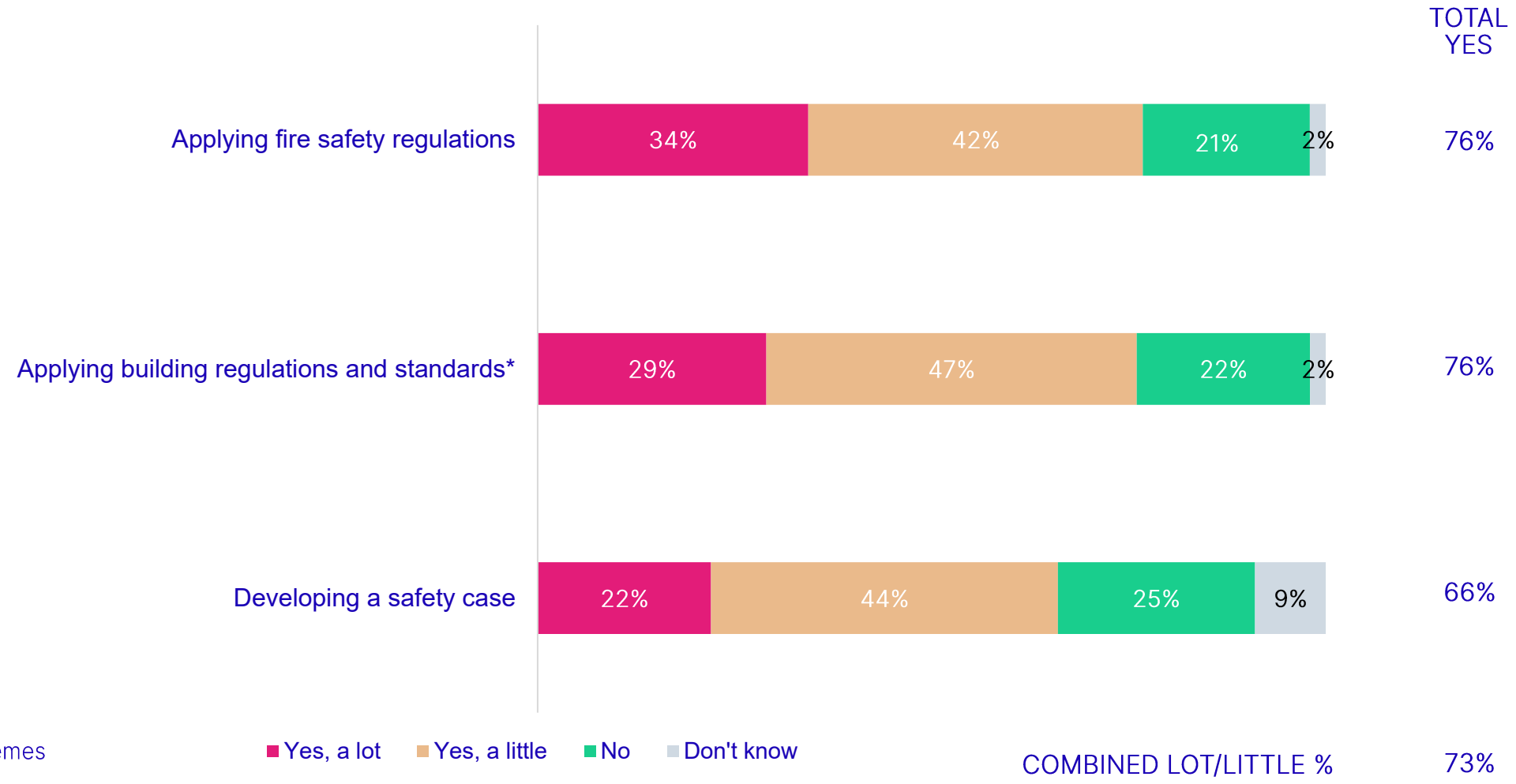
- No standardised approach to quality planning, leading to inconsistencies across projects
- More awareness is needed on quality planning from the design stage, ensuring contractor input early on to avoid impractical designs and on tendering methods and how they impact quality outcomes

> “There is a lack of understanding out there for the planning stage, for quality. So, when the designer is essentially producing the design and then tendering out to the contractor, right now, there's a lot of information out there about good communication, good design management etc. etc. that can keep the project on track.”

CIOB

Safety

Gaps for Safety Skills



*Features in both the Quality and Safety themes

Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

Qualitative feedback

Fire safety regulations

- Some smaller contractors lack awareness of fire stopping, cavity barriers, and fire socks, leading to poor installation practices
- Fire safety procedures (e.g. hot works permits, permit-to-work systems, fire watch protocols) are inconsistently followed, with many site workers unaware of their importance
- Some contractors lack understanding of fire alarm systems and fire strategy design, which affects compliance and safety

Understanding and applying regulations and standards

- CDM regulations are poorly understood on many sites, with labourers and smaller contractors often unaware of legal responsibilities (e.g. scaffolding tags, site tidiness, F10 notices)
- Health and safety is often treated as a "tick box" exercise, rather than integrated into site culture, with larger contractors delegating safety to specific officers instead of embedding it in daily operations
- Frequent updates to safety regulations (e.g., Part L & Part F) create confusion, particularly among smaller contractors who lack formal training
- Some safety regulations (e.g. fire safety, disability access) sometimes conflict, making compliance more complex
- Building standard inspectors are often overburdened, particularly in rural areas

Safety cases

- Limited awareness of safety cases, particularly among smaller contractors
- Need for more training related to safety cases for site managers

CIOB

Report commissioned on behalf of CIOB by:

- Ros Thorpe

  Director of Education and Standards
- Mark Harrison

  Head of EDI Transformation

Report prepared by:

- Andrew Cameron

Enventure Research

Report reviewed by:

- Matt Thurman
- Kayleigh Pickles

Enventure Research

First published April 2025

CIOB

CIOB Skills Gap Report

Research to identify skills gaps in professional roles for the benefit of the sector

Commissioned by CIOB and conducted by Enventure Research

Full report

CIOB

Contents

CIOB

Research overview

Background

The Chartered Institute of Building (CIOB) is a UK-based international professional association which exists to promote and advance for the public benefit the science and practice of building and construction. CIOB has around 45,000 members across more than 100 countries worldwide.

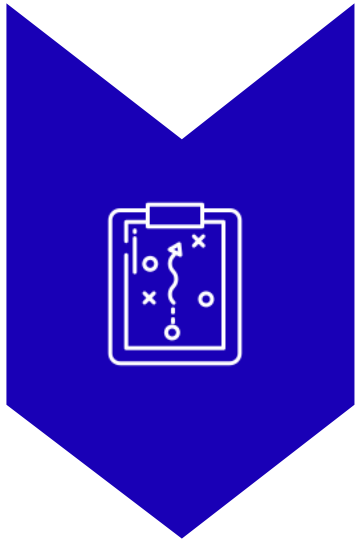
CIOB's Corporate Plan 2023-28 includes an ambition to 'contribute tangibly to reducing the industry skills gaps across priority skills by 2028'. To achieve this, we commissioned research into the skills gaps to inform strategic objectives.

CIOB plans to conduct the research on a regular basis to track progress in helping meet industry needs and understanding the evolving skills landscape.

CIOB appointed Enventure Research, an independent research agency, to deliver a research programme in autumn 2024. This report details the findings from the research.

CIOB

Research aims



Understand what the skills gaps are in relation to the themes in the Corporate Plan

Understand barriers for those in construction management roles seeking to address skills gaps

Identify training or professional development opportunities that would be beneficial to address the skills gaps

Identify actions CIOB and the wider sector can take to help address the skills gaps

Understand how skills gaps may differ by location, company size and sector

CIOB

Online survey methodology and response

- A questionnaire was co-designed by CIOB and Enventure Research, covering topics such as skills gaps, barriers to addressing the gaps, and training and development opportunities
- Lists of skills shown in the survey were developed by CIOB in consultation with internal and external stakeholders to identify specific skills rather than broad areas (e.g. People Management, Leadership) that are known to be catered for in existing course provision
- The research excludes trade skills already covered in existing research commissioned by other bodies
- The survey took 10 minutes to complete and was open to working CIOB members in the UK and in select locations internationally; company partners and training partners
- It was open between 17 September and 22 October 2024
- A total of 2,556 useable responses were received

Focus group and interview methodology

- A topic guide for focus groups and interviews was co-designed by CIOB and Enventure Research, covering the same topics as the survey, exploring and using the results of the survey as the basis for discussion.
- Online focus groups and ten in-depth interviews were facilitated during January & February 2025. These sessions included members from a mix of different locations, member types and sectors.
- All feedback in the focus groups and interviews was given anonymously.

Interpreting the survey results

- The large sample size provides valuable insight and allows for meaningful segmentation of responses by subgroups (see below) and identification of patterns and trends. However, as the survey was completed by a self-selecting sample and results have not been weighted, the survey results should be seen as reflective of the views of CIOB members who took part in the survey, rather than the entire target population.
- This report contains various tables and charts. In some instances, the responses may not add up to 100%. There are several reasons why this might happen:
- The question may have allowed each respondent to give more than one answer (multiple choice)
    - Only the most common responses may be shown in the table or chart
    - Individual percentages are rounded to the nearest whole number so the total may come to 99% or 101%
    - A response of between 0% and 0.4% will be shown as 0%
- For the analysis of certain questions, response options have been grouped together to provide an overall level. For example, in some instances ‘Yes, a lot’ and Yes, a little’ have been grouped and shown as ‘Total yes’.
- Statistical analysis has been used to explore differences in the results provided by key subgroup segments. Where base sizes for groups are not large enough, subgroups have been combined to create larger groups. Subgroup analysis is shown only where statistically significant differences between subgroups at the 95% confidence level have been found using the z-test.
- Verbatim comments from open-end (free text) questions were read in detail and code frames developed to show thematic analysis and categorisation of themes.

Interpreting qualitative feedback

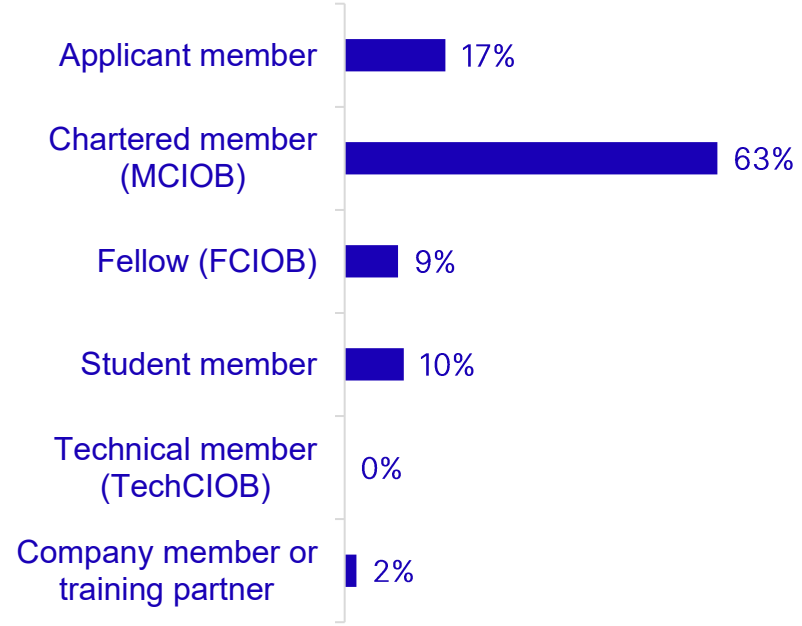
- When interpreting qualitative research findings collected via focus groups and in-depth interviews, the findings differ to those collected via a quantitative survey methodology because they are not statistically significant.
- Qualitative research provides additional insight and greater understanding based on in-depth discussion and deliberation, which is not possible via a quantitative survey. For example, if the majority of participants hold a certain opinion, this may or may not apply to the majority of the target audience.
- Only common and relevant themes are detailed in the report, rather than every viewpoint that was expressed.
- Verbatim quotations have been used as evidence of qualitative research findings where relevant.
- All quotations in this report are anonymous.

CIOB

Survey respondent profile

Involvement with CIOB

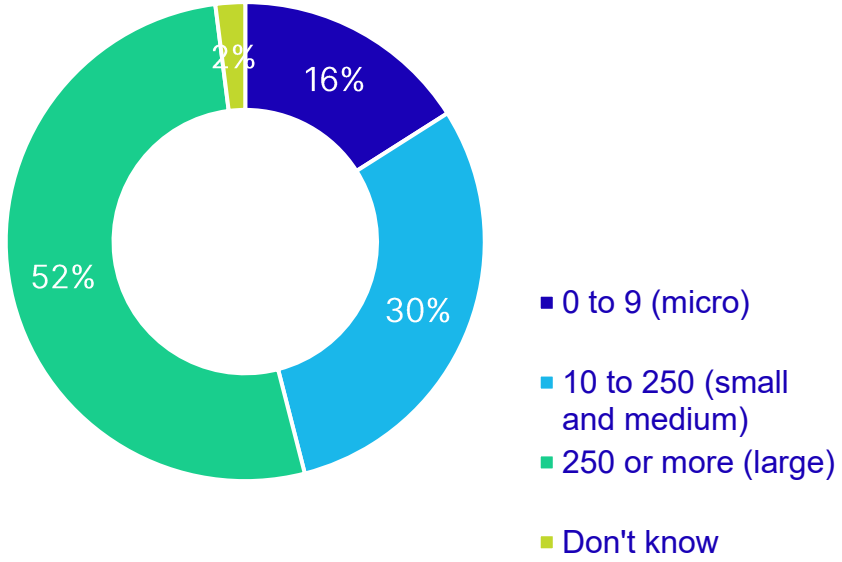
Six in ten (63%) of the sample were Chartered members. Smaller proportions were Applicant members, Fellows and Student members (17%, 9% and 10%). Company members and training partners were also represented in the response (2%).



Question: Linked from CIOB database
Base: All respondents (2,556)

Company size

Over half (52%) said the company they worked for had 250 or more employees, three in ten (30%) worked for small and medium companies with 10 to 250 employees and a smaller proportion (16%) worked for micro companies with 0 to 9 employees.



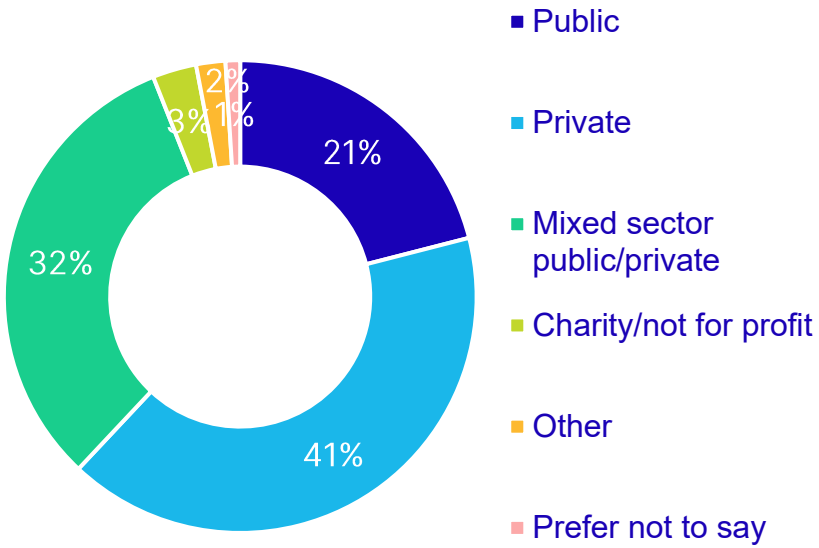
Question: What size is your company/organisation (number of employees)? | Base: All respondents (2,556)

CIOB

Survey respondent profile

Sector

Both the private and public sectors were represented in the survey response, with private the most common (41%), followed by a mix of public and private sector (32%). A fifth said they worked in the public sector only (21%).



Question: To help us understand your perspective on skills gaps, in which of these areas do you predominantly work in? | Base: All respondents (2,556)

Area of work

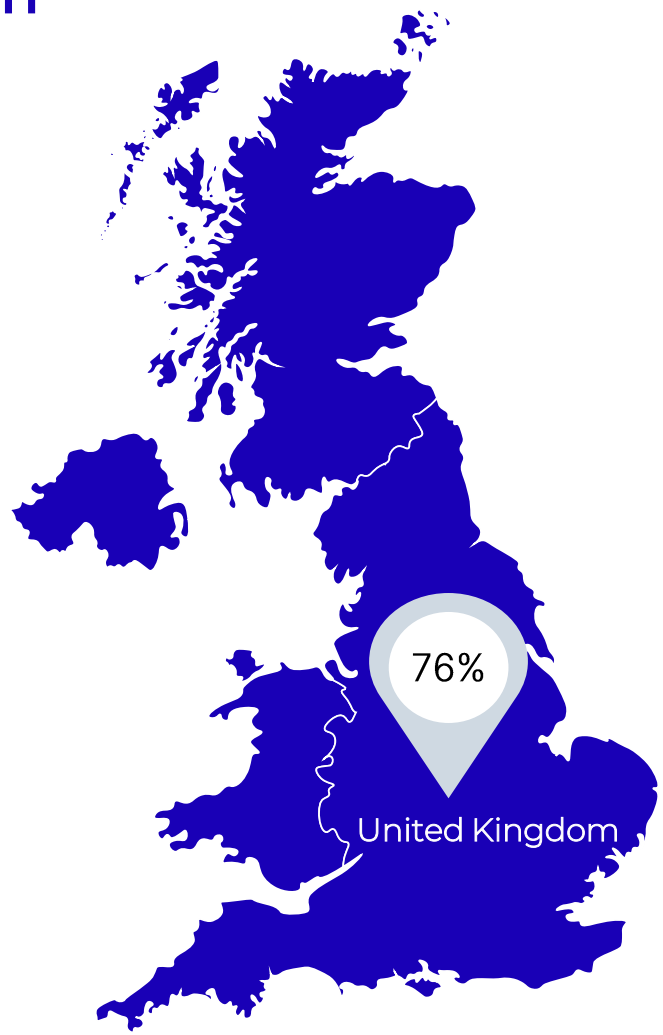
Commercial construction was the most common are of work (45%), followed by renovation or refurbishment (29%) and consultancy services (26%).

Question: Tell us a little more about the main area(s) you work in | Base: All respondents (2,556)

CIOB

Survey respondent profile

Location



Outside the UK

Where in the world?

- Hong Kong (7%)
- Middle East (6%)
- Ireland (5%)
- Africa (2%)
- Australasia/OCE (2%)

Question: Firstly, where are you currently working?
Base: All respondents (2,556)

CIOB

Focus group and interview participant profile

29
participants

Representation from all CIOB member grades

Representation from the UK and global regions

Different backgrounds represented

Representation from:

Academia

Commercial construction

Consultancy services

Educational buildings/maintenance

Energy and utilities

Government buildings

Health

Higher risk residential buildings

Infrastructure/transportation

Master planning

Private housing

Renovation/refurbishment

Retail and leisure

Social housing

Representation from small, medium and large organisations

Representation from private, public and charity sectors

Making use of this report

CIOB

When making use of this report …

- We hope that you have found this report informative and that it will help contribute to efforts to close the skills gaps in the sector.
- There is an Executive Summary version available should you wish to access the findings in a shorter format.
- Please be aware that this report investigated the gaps in skills and not the shortage of people.
- Please note that our members live and work around the globe with very different challenges and priorities. So answers to the questions will vary accordingly and may not be what you were expecting.
- We plan to repeat the research to track progress and help the industry understand the evolving skills landscape.

"If we share the information, and then people start realising there's a shortage of insulation contractors in Sheffield, which there is, the more we share it, the more the sector will react and create those people which will help everyone, not just us."

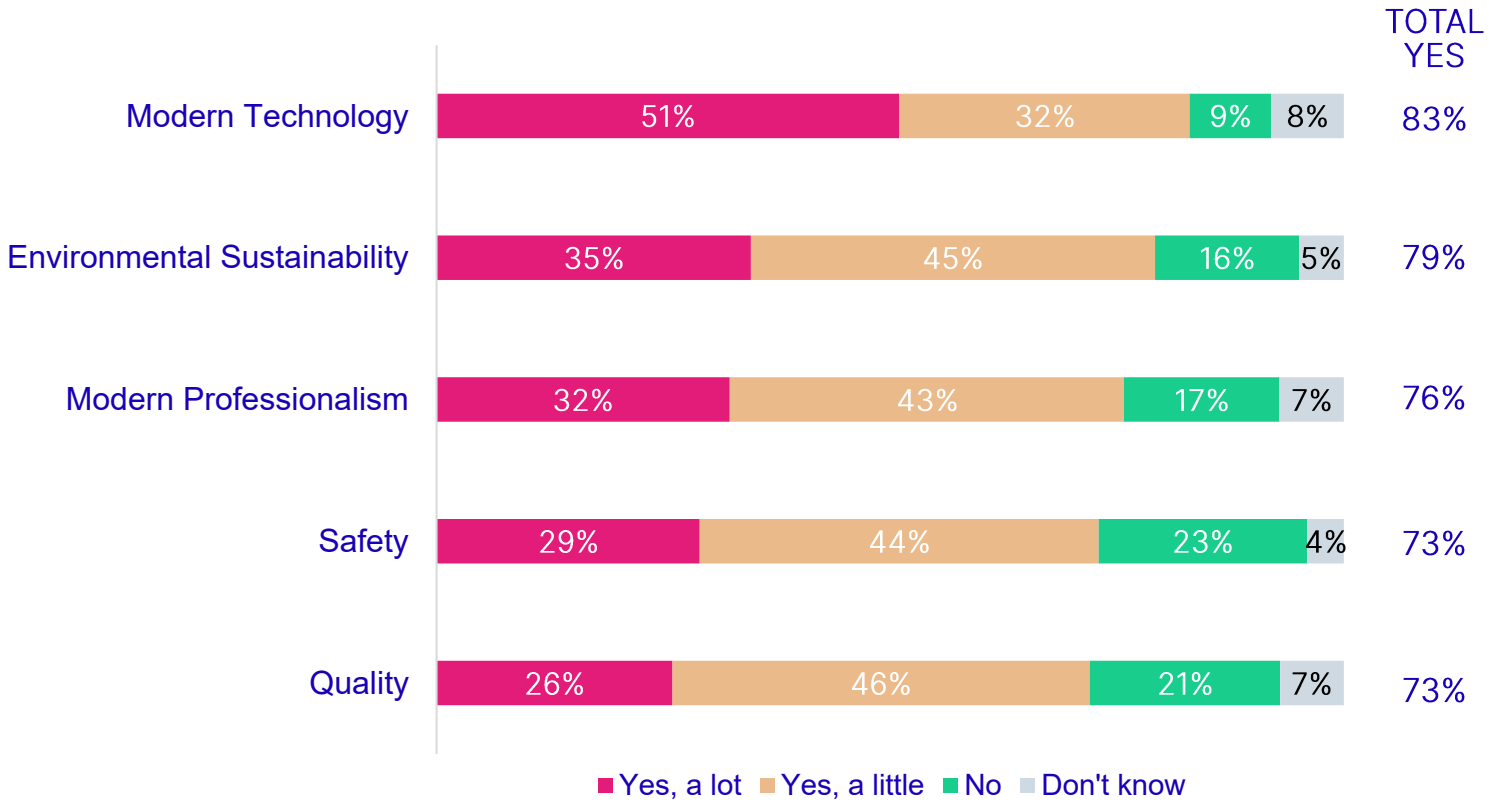
"Years ago you had BBC Bitesize and you could go to that and they'd have videos on the mathematics equations and all that kind of stuff. Maybe something like that for site managers and construction managers to access to say, 'Right today, like we're going to sit down and we're just going to watch this quick video'."

Key findings

CIOB

Combined scores for each theme

Modern Technology recorded the highest combined skills gap, with 83% saying a lot or little across the two areas linked to this theme. This was followed by Environmental Sustainability (79%) and Modern Professionalism (76%). Safety and Quality saw slightly lower combined skills gaps (both 73%).



Question: Do you think there are skills gaps for the following? COMBINED AREAS
Base: All respondents (2,556)

Modern Professionalism Theme

Survey

- A **combined** skills gap of **76%** across the seven areas related to Modern Professionalism (lot/little gaps)
- **47%** thought there were a lot of skills gaps related to **applying modern methods of construction (MMC)**
- **44%** thought there were a lot of skills gaps in **understanding building regulations**

Focus groups & interviews

Modern methods of construction (MMC)

- Limited understanding of modular design, logistics, standardisation, and core MMC principles
- Skills gap in managing logistics and integrating modern and traditional methods
- Lack of awareness of MMC benefits among clients, senior professionals, and mortgage lenders

Building regulations

- Confusion due to frequent changes, differences between devolved nations, and multiple regulatory documents
- Gaps in understanding Photovoltaic (PV) systems, EV charging infrastructure, and sustainable construction regulations
- Disconnect between building regulations and infrastructure planning, particularly for district heat networks

Planning and scheduling

- Gaps in baseline programmes, critical paths, key planning concepts, and resource management
- Lack of formal training in project scheduling for site managers & early-career professionals
- Unrealistic expectations from clients and contractors, leading to delays and cost overruns

Accessibility and ethics

- Confusion around Part M of the building regulations, particularly among tradespeople
- Poor documentation practices, including missing as-built drawings in high-rise buildings, impacting quality assurance & safety
- Concerns about over-reliance on contractor self-reporting rather than independent verification

Equality, diversity and inclusion (EDI)

- Underrepresentation of women and marginalised groups in senior leadership
- Limited mentoring and career support for women and marginalised groups , leading to retention issues at mid-management levels
- Gaps in understanding the practical application of EDI principles on projects

CIOB

Environmental Sustainability Theme

Survey

- A combined skills gap of 79% across the six areas related to Environmental Sustainability (lot/little gaps)
- 41% thought there were a lot of skills gaps related to understanding the impact of climate change on the built environment
- 38% thought there were a lot of skills gaps in retrofitting of traditional buildings, using green/environmental technologies, and understanding building pathology and optimising performance of a building

Focus groups & interviews

Retrofit

- Shortage of certified professionals (e.g. PAS 2035, TrustMark) leading to higher costs and limited availability of skilled retrofit installers
- Limited knowledge of retrofit products and improving energy efficiency, and insufficient understanding of integrating sustainability and modern functionality

Green technology

- Skills gaps in renewable energy solutions and technology, and knowledge on integration into buildings
- Challenging to keep up to date with innovations and emerging solutions, as green technology is evolving rapidly

Environmental management

- Driven by regulation rather than proactive adoption, leading to minimal focus on long-term environmental impact
- Need for clearer guidance on biodiversity, flood risk management, and sustainability best practices, particularly for developers, taking regional differences into account

Climate change

- Lack of skills in climate-proofing buildings (e.g. flood resilience, overheating mitigation, drainage upgrades for older buildings)
- Need for global, standardised training and clearer industry direction on climate change resilience

Building conservation

- Shortage of skilled conservation professionals and regional variations in required skills, depending on historical building types
- Need for localised training, CPD, and better collaboration with planning authorities to streamline conservation efforts

Building pathology

- Shortage of competent building pathologists and need for specialised training in diagnosing structural issues, dampness, and defects in retrofit projects
- Need for increased awareness and structured qualifications in building pathology, defect diagnosis, and remediation strategies

CIOB

Modern Technology Theme

Survey

- A combined skills gap of 83% across the two areas related to Modern Technology (lot/little gaps)
- 54% thought there were a lot of skills gaps related to using artificial intelligence (AI)
- 48% thought there were a lot of skills gaps in using digital technologies

Focus groups & interviews

Digital technology

- While digital tools (e.g. BIM, Revit, cloud-based project management platforms, sensor technology) are valuable, there is slow adoption in some areas due to cost, lack of training, and resistance from older professionals, and a low awareness of the benefits
- Younger professionals often embrace digital technology solutions more easily, but many site teams, contractors, and SMEs still rely on outdated methods like 2D drawings
- Need for structured digital technology training across various skill levels (beginner, intermediate, expert), particularly for BIM and other relevant software

Robotics

- Despite robotics being used increasingly in off-site manufacturing and surveying, many clients and contractors are unaware of the benefits and opportunities
- Using robotics requires IT, programming, and maintenance skills, which are not traditionally part of construction training and education

Drones

- Drones are widely used for surveys, inspections, and marketing, but many smaller contractors and clients are unaware of their benefits, and so are hesitant to invest in hardware and upskilling in this area
- Operating drones requires certification and knowledge of regulations, and there is a need for better industry awareness of the regulations around drones and using drone-generated data within design and project management tools

Using artificial intelligence (AI)

- AI can improve bid writing, compliance, safety documentation, and project management, but awareness of its practical applications is low
- Concerns exist around accuracy, over-reliance, and potential deskilling, requiring structured training and clear industry guidance
- Digital literacy and data science skills will be required, and there are upskilling opportunities on working with AI tools, interpreting AI-driven insights, and ensuring accuracy through human oversight

CIOB

Quality Theme

Survey

- A combined skills gap of 73% across the five areas related to Quality (lot/little gaps)
- 29% thought there were a lot of skills gaps related to applying building regulations and standards
- 29% thought there were a lot of skills gaps in understanding building contracts and codes

Focus groups & interviews

Procurement

- Smaller contractors struggle with public sector procurement due to complexity and lack of awareness, leading to missed opportunities
- Often a disconnect between bid teams, construction teams, and clients, resulting in misaligned project goals and buildability issues
- Alternative procurement models (e.g. construction management, collaborative frameworks) are underutilised due to low awareness

Contracts

- Strong preference for JCT contracts in the public sector, while NEC contracts are underused due to lack of confidence and training
- Lack of understanding of key contract mechanisms (timeframes, compensation events, payment terms) and contract administration

Understanding and applying regulations and standards

- Building regulations, codes, and standards are fragmented and complex, making compliance challenging
- Confusion due to frequent changes, regional variations, and multiple regulatory documents
- Limited training opportunities for private sector professionals on building control responsibilities, with most training aimed at public sector officers

Soft landings and post occupation evaluation

- Post-occupancy monitoring of new technologies (e.g. heat pumps, solar panels) is often overlooked, impacting efficiency
- Training gaps exist in post-occupancy evaluation, leading to missed opportunities to improve building performance

Quality plans

- No standardised approach to quality planning, leading to inconsistencies across projects
- More awareness is needed on quality planning from the design stage, ensuring contractor input early on to avoid impractical designs and on tendering methods and how they impact quality outcomes

CIOB

Safety Theme

Survey

- A combined skills gap of 73% across the three areas related to Safety (lot/little gaps)
- 34% thought there were a lot of skills gaps in applying fire safety regulations
- 29% thought there were a lot of skills gaps related to applying building regulations and standards

Focus groups & interviews

Fire safety regulations

- Some smaller contractors lack awareness of fire stopping, cavity barriers, and fire socks, leading to poor installation practices
- Fire safety procedures (e.g. hot works permits, permit-to-work systems, fire watch protocols) are inconsistently followed, with many site workers unaware of their importance
- Some contractors lack understanding of fire alarm systems and fire strategy design, which affects compliance and safety

Understanding and applying regulations and standards

- CDM regulations are poorly understood on many sites, with labourers and smaller contractors often unaware of legal responsibilities (e.g. scaffolding tags, site tidiness, F10 notices)
- Health and safety is often treated as a "tick box" exercise, rather than integrated into site culture, with larger contractors delegating safety to specific officers instead of embedding it in daily operations
- Frequent updates to safety regulations (e.g. Part L & Part F) create confusion, particularly among smaller contractors who lack formal training
- Some safety regulations (e.g. fire safety, disability access) sometimes conflict, making compliance more complex
- Building standard inspectors are often overburdened, particularly in rural areas

Safety cases

- Limited awareness of safety cases, particularly among smaller contractors
- Need for more training related to safety cases for site managers

CIOB

Barriers to upskilling

- Lack of time: 69% in the survey identified this as a barrier for those in construction management roles to address skills gaps and this was cited as a barrier in the focus groups and interviews
- Cost of training and certification: 61% cited the cost of training as a barrier in the survey, and focus group and interview participants cited the high costs of certifications (e.g. PAS 2035, NEC Contracts, Fire Safety), especially for SMEs
- Insufficient employer support: 47% felt that insufficient support from employers was a barrier in the survey
- Lack of access to quality training programmes: 39% cited this as a barrier in the survey
- Increased risk of losing trained employees: 36% cited this as a barrier in the survey
- Limited or no provision of training opportunities: 33% thought this is a barrier in the survey
- Lack of awareness of training opportunities: Suggested in focus groups and interviews that some do not know what training is available or how to access it

Preferred learning and training approaches

- Flexible and accessible training and learning formats
  - Online CPD courses and webinars are often preferred for their flexibility and ability to fit around work schedules
  - 53% in the survey said online courses would be beneficial to them and their team and 54% said workshops and seminars would be
  - Short, engaging webinars are seen as useful for regulatory updates and emerging industry trends
  - 52% of survey respondents thought in-house training programmes would benefit them and their team

- Practical, hands-on learning
  - In some cases, on-site demonstrations and real-world applications are necessary for learning
  - 59% in the survey said face-to-face training programmes would be beneficial to them and their team, and this was cited in focus groups and interviews as important for technical subjects such as retrofit, fire safety and digital tools
  - Scenario-based training (e.g. workshops and interactive learning) could be effective for inclusivity, accessibility, fire safety, and quality assurance

- Bite-sized learning content
  - Short, informative videos (especially on social media) could be effective for reaching site workers and contractors who may not engage with formal training

- Accessible and structured qualifications
  - Demand for structured qualifications in key areas, such as retrofit (PAS 2035), AI in construction, procurement, and environmental management
  - Cost barriers prevent many smaller companies and self-employed professionals from gaining certification
  - 37% cited certifications/licensing programmes as being beneficial to them and their team

- Mentorships and knowledge transfer
  - 43% in the survey suggested mentorship programmes would benefit them and their team
  - Focus group and interview participants felt that mentorship programmes could help retain diverse talent and transfer knowledge from experienced professionals

CIOB

Addressing skills gaps

Access to training and education

- ✓ Reduce financial barriers: In the survey, cost of training was suggested as a common barrier. CIOB could explore subsidised or lower-cost training options, particularly for SMEs and self-employed professionals, in high-demand areas like PAS 2035 (retrofit), NEC contract management, and fire safety.
- ✓ Enhance collaboration with other training and education partners: 38% of survey respondents suggested CIOB could better engage with other training and education partners. Focus group and interview participants highlighted a need for joint programmes with educational institutions, academia, and industry experts.
- ✓ Improve training visibility and accessibility: Some professionals are unaware of CIOB's training opportunities—targeted email campaigns, employer outreach, and social media marketing could help increase engagement. 38% of survey respondents also highlighted the need for more inclusive and accessible training, such as recorded webinars.
- ✓ Provide digital and blended learning options: 53% of survey respondents said CIOB Academy could offer more blended or distance learning programmes. Qualitative feedback suggested these would be particularly beneficial for technical topics such as fire safety and retrofit.
- ✓ Promote practical and on-site training: 59% of survey respondents indicated face-to-face training would benefit them or their team. Focus group participants suggested CIOB could incorporate on-site demonstrations and real-world applications into existing programmes.
- ✓ Develop more bite-sized and accessible CPD content and easy to understand guides: Short, engaging webinars and social media videos (e.g. on regulatory updates and fire safety) were cited as preferred learning methods. Guides, videos, and microlearning content could help professionals keep up to date with emerging trends in modern technology, procurement, and contracts.

CIOB

Addressing skills gaps (ii)

Knowledge sharing, mentorships, apprenticeships and career support

- ✓ **Promote vocational training, apprenticeships, and built environment career pathway:** Focus group and interview participants suggested working with the Department of Education, industry partners and education providers to raise awareness of careers in the built environment. 38% suggested CIOB could explore closer engagement with education providers in the survey and 45% suggested expanding apprenticeships and internships.
- ✓ **Encourage knowledge sharing and mentorship**: Focus group and interview participants suggested facilitating mentorship programmes to retain diverse talent and transfer knowledge from experienced professionals. 50% in the survey said CIOB should provide more industry expert led CPD sessions.
- ✓ **Support career progression for underrepresented groups**: Establish leadership development programmes and mentorships to help women and marginalised groups reach senior roles.

Help to understand building regulations and standards to improve compliance and safety

Focus group and interview participants suggested:

- ✓ Offering **short informative videos** and **webinars** to engage professionals and improve awareness of new regulations and best practices (e.g. Part L, CDM, fire safety).
- ✓ Working with **HSE and other stakeholders** to make health and safety regulation more engaging and **accessible**, particularly for smaller contractors and site workers.
- ✓ Developing **practical, real-world safety case training** for site managers and decision-makers.
- ✓ Providing **clear, concise guidance** on regulations and standards, particularly for smaller contractors and self-employed.

CIOB

Addressing skills gaps (iii)

Supporting digital and technology adoption

Focus group and interview participants suggested:

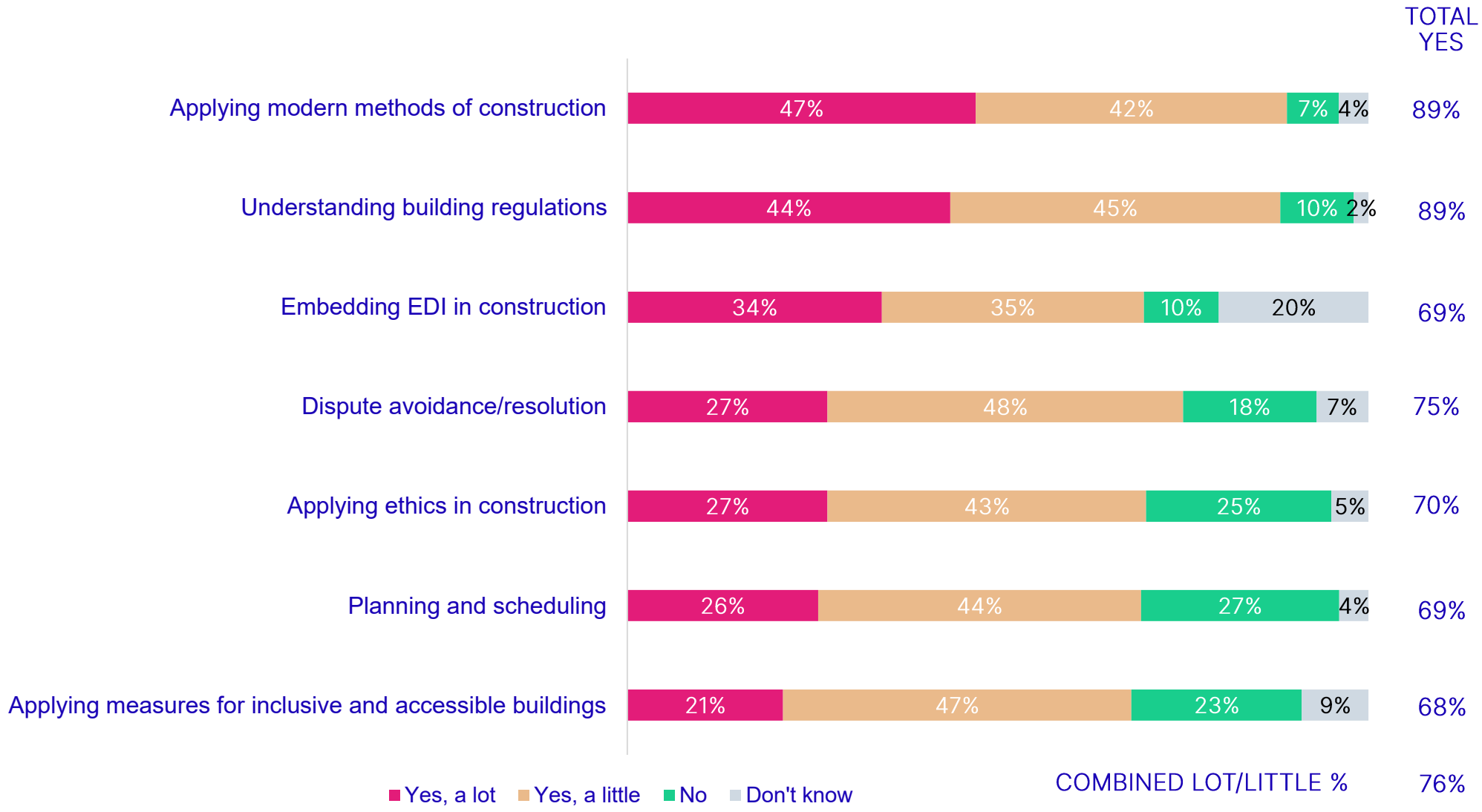
- ✓ Providing **structured training** on BIM, AI, digital tools, robotics, and drones, with courses tailored for different skill levels (beginner to expert).
- ✓ Collaborating with **software and tech providers** (e.g. Autodesk, Archicad, robotics manufacturers) to develop courses and training programmes on how to use and best practice.
- ✓ Supporting **cross-industry knowledge sharing**, especially for emerging technologies such as AI, robotics, and digital construction tools.
- ✓ Providing **case studies** on technology adoption, best practices and reviews of products and software.

CIOB

Modern Professionalism

CIOB

Gaps for Modern Professionalism Skills



Question: CIOB Modern Professionalism theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following thought there were a lot of gaps in each area, when compared with other groups.

Applying modern methods of construction

Master planning

Social housing

Understanding building regulations

UK

Higher risk residential buildings

Embedding EDI in construction

No significant differences seen by subgroups

Dispute avoidance/resolution

Global regions

Consultancy services

Applying ethics in construction

Global regions

Consultancy services

Master planning

Private housing

Micro organisations (0-9 employees)

Planning and scheduling

Global regions

Energy and utilities

Master planning

Applying measures for inclusive and accessible buildings

Social housing

Question: CIOB Modern Professionalism theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Skills gaps in modern methods of construction (MMC) identified by participants

- Lack of clarity around what MMC encompasses (such as off-site manufacturing, sustainable materials, logistics, carbon reduction)
- Limited understanding of **core MMC principles and benefits** among designers, clients, and other stakeholders (e.g. senior professionals, mortgage lenders)
- **Insufficient promotion** of MMC to dispel myths and demonstrate its advantages
- Gaps in understanding **standardisation** and **modular design principles**, especially for rapid project rollouts, particularly amongst designers and clients
- Skills gaps in **managing logistics** in MMC (such as alignment of pre-cast panels, merging modern and traditional methods and aligning different manufacturing processes)

> “Client side, actually embracing the modern methods of construction. The other one would be senior professionals who are possibly either scared or concerned or complacent about using modern methods of construction.”

Suggestions for reducing the skills gaps around MMC

- Provide **clear guidance** on what MMC encompasses including examples of different types (e.g. off-site manufacturing, carbon reduction techniques, logistics)
- Undertake a **targeted awareness campaign** to promote understanding and trust in MMC amongst senior professionals, clients, and mortgage lenders
- Collaborate with public sector clients (e.g. NHS and schools) to showcase successful MMC projects through **case studies**

> "There's possibly an educational piece to be done towards clients, developers, housing associations, government and people like that to actually embrace these methods of construction. There are so many different kinds. It's not sort of a one size fits all. So, I do think that there's an education piece, but it would be an absolutely massive task to do.”

CIOB

Qualitative feedback

Skills gaps in building regulations identified by participants

- Limited understanding of how to install and integrate EV charging stations, with a limited awareness regarding infrastructure support, regulations, and the need for early grid connections, particularly in rural areas
- Insufficient client-side knowledge regarding regulations and requirements for private street lighting
- Gaps in understanding legal responsibilities, grid connections, registration processes, feed-in tariffs, and maintenance of Photovoltaic (PV) systems
- Lack of understanding of regulations relating to sustainable construction
- Overwhelming number of building regulations spread across multiple documents and codes of practice, with constant changes, making compliance and understanding difficult
- Contradictory or unclear regulations hinder collaboration between local authorities and private sector stakeholders
- Confusion and challenges arising from differences between building regulations in different parts of the UK (i.e. England and Scotland)
- Lack of public understanding that planning applications must adhere to building regulations, leading to non-compliance issues

Suggestions for reducing the skills gaps around building regulations

- Develop and provide training courses on installing and integrating EV charging stations, focusing on grid connections and rural infrastructure challenges
- Offer client-side educational resources and training on regulations and best practices for private street lighting
- Provide detailed guidance and comparison documents to explain differences between building regulations in different parts of the UK
- Offer resources on PV system management, including legal responsibilities, grid integration, and maintenance
- Collaborate with stakeholders to simplify building regulations by offering consolidated and easy-to-understand guidance documents
- Provide training programmes pitched at different levels (basic to advanced) to improve understanding of and compliance with building regulations
- Public awareness campaigns to inform those submitting planning applications about the importance of adhering to building regulations

"You'll get clever people that understand them and can probably recite them off by heart at times, but they're few and far between. For it's making them more easy to read and [be] understandable, and then there have been lots of changes in legislation over the last four years."

CIOB

Qualitative feedback

Skills gaps in planning and scheduling identified by participants

- Insufficient understanding of how to build and manage project programmes, especially in consultancy roles
- Site managers often lack adequate training in planning and scheduling, affecting program execution on projects
- Limited technical knowledge of key planning concepts and terminologies, such as baseline programmes, critical paths, and other scheduling fundamentals and it was felt that university courses and graduate programmes do not sufficiently cover these concepts
- Limited awareness of how scheduling impacts other project elements, such as cost forecasting and resource management
- Lack of coordination between design and construction programmes, especially with modern methods of construction and sustainability requirements
- Contractors may underestimate project timelines during the bidding process to secure contracts, leading to delays and compromised quality
- Some clients hold unrealistic expectations about project timelines, which creates pressure and impacts the planning and scheduling process

Suggestions for reducing the skills gaps around planning and scheduling

- Develop targeted training for consultants and site managers on building and managing project programmes and include modules on practical scheduling techniques within existing site management and project management training
- Offer training programmes (possibly within the CIOB chartership path) that focus on key planning concepts such as baseline programmes, critical paths, and project milestones
- Increase awareness of how scheduling affects cost forecasting and resource management to help planners better understand the broader impacts of their work
- Offer educational resources for clients to set more realistic expectations around project scheduling and execution timeframes

> "People need to come into the industry understanding how to build a programme, durations, sequencing, activities, and it's overlooked at universities on their programmes, it's overlooked in FE colleges and in the graduate training programmes. I don't think enough emphasis is put on it."

CIOB

Qualitative feedback

Skills gaps in inclusion, accessibility and ethics identified by participants

- Limited consideration and inconsistent standards for neurodiverse and physically accessible building designs across different projects and regions
- Insufficient understanding of workspace needs for neurodiverse staff (e.g. problems related to hot-desking)
- Confusion among some tradespeople regarding Part M of the building regulations, which governs accessibility requirements for buildings
- Designers may lack skills and expertise in inclusion and accessibility, often requiring specialist consultants to ensure these needs are met in projects
- There is a need for more scenario-based training (e.g. interactive workshops) to improve awareness and application of inclusion in design practices
- There are issues with poor documentation, particularly the absence of as-built drawings in high-rise buildings, which complicates future remediation efforts, caused by lack of prioritisation by developers to maintain proper records, highlighting a gap in ethical responsibility and accountability

> “Part M, which is all to do with disabled access, that tends to get confused quite a lot.”

Suggestions for reducing the skills gaps around in inclusion, accessibility and ethics

- Develop and promote training on neurodiversity and physical accessibility for both designers and tradespeople
- Provide guidance on designing inclusive workspaces that cater to the needs of neurodiverse staff and individuals with physical disabilities
- Offer courses to tradespeople and other professionals on Part M of the building regulations, focusing on practical implementation and compliance, and provide guidance to reduce confusion about accessibility regulations
- Provide workshops or interactive training sessions that present real-world scenarios, enabling participants to experience and solve inclusion-related design challenges
- Advocate for improved documentation practices, including as-built drawings

> "In a training workshop, perhaps do an exercise where you have to think like you’re in a wheelchair and you are designing this building so that you can access it. You have to train them to think in the mind of someone who has a disability.”

CIOB

Qualitative feedback

Skills gaps in equality, diversity and inclusion (EDI) identified by participants

- Lack of structured support and training for individuals from marginalised backgrounds to progress to senior roles
- Gaps in the practical application of EDI principles at mid and senior management levels
- Insufficient focus on creating inclusive career pathways and environments that support the development of diverse talent
- Women remain under-represented in senior positions and often occupy support roles rather than leadership roles, facing barriers partly due to cultural and organisational practices, including exclusionary networks and informal hierarchies

Suggestions for reducing the skills gaps around equality, diversity and inclusion (EDI)

- Establish targeted programmes (e.g. mentoring, networking opportunities or training) to support the careers of individuals from marginalised backgrounds and women in their career progression
- Provide EDI training and practical guides on implementing EDI policies targeted at mid and senior managers to enhance understanding of inclusive leadership and strategies for fostering diversity and inclusion within organisations
- Provide case studies where organisations have successfully increased representation of women and other marginalised groups in senior positions to raise awareness and promote diversity

> “What training could be done about how people can feel more confident to be able to get into those senior positions? They start to doubt themselves. They start to think, “Well, I don't see people like myself in that boardroom”. How can we get past that fear to say, “No, I'm skilled. I'm talented”?”

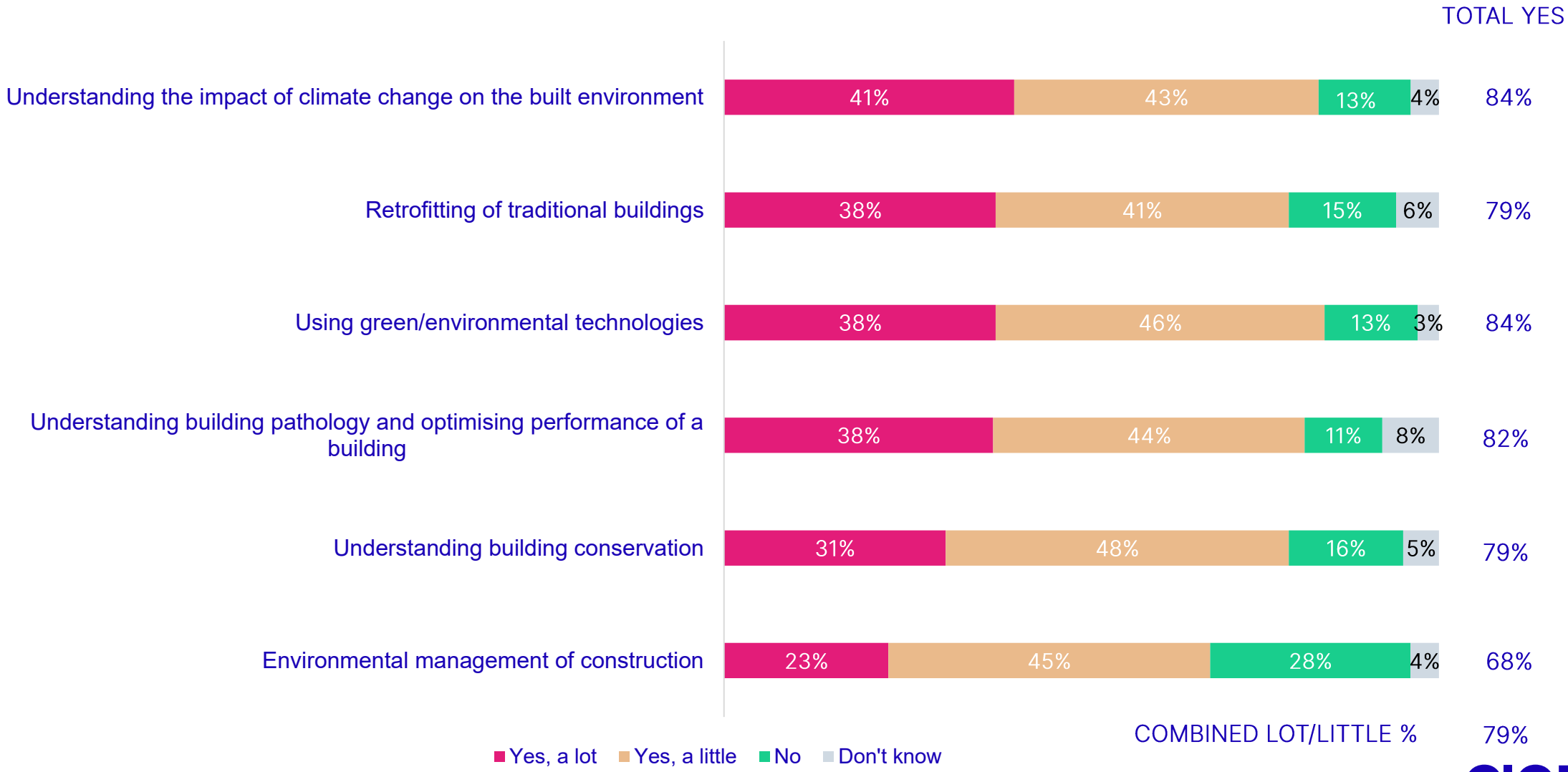
> "Training also then goes to managers, or even hiring managers to say, “How can you make sure that your employees, regardless of their background, are able to be given those opportunities to progress?”

CIOB

Environmental Sustainability

CIOB

Gaps for Environmental Sustainability Skills



Question: CIOB Environmental Sustainability theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following thought there were a lot of gaps in each area, when compared with other groups.

Understanding the impact of climate change on the built environment

Charity/not for profit sector

Micro organisations (0-9 employees)

Retrofitting of traditional buildings

UK

Charity/not for profit sector

Higher risk residential buildings

Social housing

Using green/environmental technologies

Social housing

Understanding building pathology and optimising performance of a building

Health

Higher risk residential buildings

Social housing

Understanding building conservation

Private housing

Environmental management of construction

Global regions

Energy and utilities

Question: CIOB Environmental Sustainability theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Skills gaps in retrofit identified by participants

- Shortage of tradespeople with certifications like PAS 2035 and TrustMark due to high demand, with costs of certification a possible barrier and a need for streamlining and simplifying qualification processes
- Poor quality control in residential retrofit projects due to low government funding and companies prioritising speed over quality and lack of proper oversight in projects and limited knowledge of modern retrofit products (e.g. insulation methods) can compromise quality
- Need for industry-wide mechanisms to educate consumers on quality standards and how to identify reputable installers, as there is a lack of awareness of the potential impact of retrofit work, including risks such as overheating due to excessive insulation without proper ventilation
- Limited skills in assessing and advising on how to improve energy efficiency in older buildings, particularly while preserving heritage features
- Insufficient understanding of building performance evaluations and long-term energy management strategies
- Clients not always aware of how to integrate both sustainability and modern functionality effectively in retrofit projects, highlighting a need for better education and communication

"We are seeing a lot of trades and individuals within the industry that don't have the requisite certification."

Suggestions for reducing the skills gaps around retrofit

- Subsidise certification costs (e.g. PAS 2035, TrustMark) to encourage more tradespeople and small businesses to achieve accreditation
- Explore ways to incorporate certifications into existing courses and training programmes
- Collaborate with industry partners to streamline and simplify certification processes, making them more accessible and efficient
- Promote accredited training courses that emphasise quality and compliance for retrofit installers and ensure that training is tailored to the needs of different roles and pitched at the appropriate level, balancing practical application with sufficient depth
- Develop training programmes that improve tradespeople's understanding of modern retrofit products and installation methods
- Provide training and CPD focused on energy efficiency assessments, building performance evaluations, and integrating energy efficiency into retrofit projects
- Offer training on retrofitting older buildings without compromising heritage value
- Client education on balancing sustainability with modern functionality in retrofit projects
- Awareness campaign to educate homeowners on the benefits, risks, and quality standards of retrofit work

CIOB

Qualitative feedback

Skills gaps in green technology identified by participants

- General shortage of skilled workers in green technology fields, such as specialists in solar panels, heat pumps, wind turbines, and energy storage systems
- Companies often struggle to advise clients on how to integrate renewable energy solutions due to limited expertise in green technology
- Many in construction industry lack awareness and knowledge of renewable energy technologies and their practical applications
- Green technologies are evolving rapidly, making it challenging for professionals to stay updated on innovations and emerging solutions
- Cost and accessibility are possible barriers to undertaking training courses for green technology

> "If a client came to us and said, "Oh, we want to reduce energy on our buildings. Can you point us in the right direction? Can you make some recommendations?", there might be a bit of knowledge in our team, but there's probably not an enormous amount. I think that probably kind of says a lot about the industry really."

Suggestions for reducing the skills gaps around green technology

- There is a need for upskilling workers from related or declining industries (e.g. gas engineers transitioning to heat pump specialists) to help meet demand in green technology roles and CIOB could develop partnerships with other stakeholders to offer tailored courses focused on transferable skills
- Advocate for increased apprenticeship opportunities to provide hands-on learning experiences and attract new talent to green technology fields
- Promote government-run and other training programmes related to green technology
- Ensure training programmes and CPD courses on green technology balance theory with practical application
- Offer affordable or free training courses to encourage broader participation, including from individuals with general interest in green technologies
- Build on previous success with company-specific training programmes, making these available online to maximise accessibility and convenience
- Collaborate with suppliers and innovative technology providers to raise awareness of emerging technologies and their potential applications in construction

CIOB

Qualitative feedback

Skills gaps in environmental management identified by participants

- Environmental management is primarily driven by regulatory requirements rather than client choice, leading to minimal proactive consideration of environmental issues
- Biodiversity and flood risk management are particularly seen as areas of regulatory compliance rather than strategic priorities, as developers struggle to balance short-term financial returns with long-term environmental impacts
- Environmental management is not often seen as an immediate risk and therefore receives less priority compared to health and safety issues, often resulting in a lack of training in this area for employees
- Need for stronger environmental management plans on projects to address areas like waste management, materials impact, and whole-life assessments
- Skills gaps in environmental management are likely to vary by region
- Environmental management skills may be already well-covered by professional schemes like BREEAM (Building Research Establishment Environmental Assessment Method)

Suggestions for reducing the skills gaps around environmental management

- Promote the importance of environmental management by developing and offering comprehensive training and CPD courses on key topics such as waste management, materials impact, and whole-life assessments
- Encourage the implementation of stronger environmental management plans on both large and small projects
- Offer targeted mini-courses and apprenticeships focused on biodiversity, flood risk management, and compliance to upskill professionals and improve efficiency
- Facilitate collaboration and information sharing between organisations, especially regarding data on building stock and regional skills shortages, to improve national awareness and coordination

> “I think sometimes people perceive that sustainability is kind of a nice to have, rather than it being essential. I think it's getting that mindset changed so that people see that as one of the priority items for the project.”

CIOB

Qualitative feedback

Skills gaps in understanding the impact of climate change identified by participants

- Many struggle to act on climate change due to inconsistent government messaging, a lack of clear direction, and over-reliance on carbon offsetting strategies, which creates confusion and scepticism about which initiatives are effective
- Often there is a lack of funding for implementing climate change mitigation and adaptation measures, making it difficult for companies to prioritise climate initiatives
- Skills needed to retrofit and climate-proof buildings, particularly in response to extreme weather events such as heatwaves, floods, and storms
- Older buildings (e.g. Victorian-era properties) require modern upgrades to infrastructure like drainage systems and rainwater goods to cope with evolving weather patterns
- No centralised or consistent source of authoritative information on how construction professionals can effectively address climate change challenges

Suggestions for reducing the skills gaps around understanding the impact of climate change

- Lobby the government and stakeholders for consistent and clear messaging on climate change initiatives, helping to provide direction on mitigating climate change and eliminate scepticism
- Collaborate with other stakeholders to develop and maintain a unified, credible source of information on climate change, offering practical, evidence-based best practices and strategies for the construction industry
- Offer training programmes and CPD modules that cover climate-proofing buildings and adapting to extreme weather conditions, including retrofitting older buildings
- Collaborate with other stakeholders to ensure that all professionals in the built environment have access to high-quality, standardised training on climate resilience and sustainability
- Work with stakeholders to secure funding or subsidies for climate-related initiatives and training, ensuring companies can afford to adopt and implement sustainable solutions

CIOB

Qualitative feedback

Skills gaps in building conservation identified by participants

- Contractors and project teams often underestimate the time and resources needed to meet planning conditions, planning permissions, and listed building consents, leading to project delays when applications are rejected
- Different regions have varying conservation needs based on local building types and architectural eras, requiring region-specific conservation skills and expertise
- Lack of skilled labourers and craftspeople in building conservation, leading to difficulties in meeting project demands
- While local authorities hold data on conservation areas and buildings, there is no national, centralised source for this information, limiting data sharing and accessibility
- Building conservation encompasses a wide variety of specialisms, making it difficult to develop a single training programme and expertise often comes through experience, which limits the effectiveness of purely theoretical courses
- Professionals moving from commercial roles to conservation projects may lack specialised knowledge of conservation standards and practices

Suggestions for reducing the skills gaps around building conservation

- Collate and facilitate the sharing of data on conservation areas and buildings across regions, in collaboration with local authorities
- Offer conservation training programmes tailored to the specific needs of different regions, addressing the building types and heritage issues relevant to those areas
- Offer courses that combine both theory and practical, on-site training to build real-world expertise
- Partner with planning authorities to understand their expectations for conservation projects and offer guidance on improving planning applications and meeting regulatory requirements
- Provide accessible online CPD courses specifically aimed at professionals transitioning from commercial construction roles to conservation, which focus on key conservation principles, planning processes, and best practice

> “The southwest has quite a lot of roof conservationists. You can't go into a pub without falling over a thatcher in Devon, but you aren’t going to find many in Sheffield.”

CIOB

Qualitative feedback

Skills gaps in building pathology identified by participants

- Building pathology often limited to diagnosing building defects (e.g. structural damage, dampness) without integrating sustainability considerations, particularly in retrofitting projects
- Shortage of competent building pathologists capable of accurately diagnosing complex building issues, which is critical for both retrofitting and maintaining structural integrity
- Diagnosing building issues is complex and requires specialised expertise, which is currently lacking in many parts of the industry
- Like with building conservation, the skills required for building pathology vary depending on regional building types, materials, and the age of buildings, creating a need for tailored knowledge and training

Suggestions for reducing the skills gaps around building pathology

- Offer region-specific courses and training programmes through local hubs, addressing the unique building pathology challenges associated with local construction methods and heritage buildings
- Offer courses that integrate both building pathology and sustainability, ensuring professionals can diagnose defects while considering long-term environmental impacts and energy efficiency
- Raise awareness of the importance of building pathology and the standards and requirements that professionals should follow

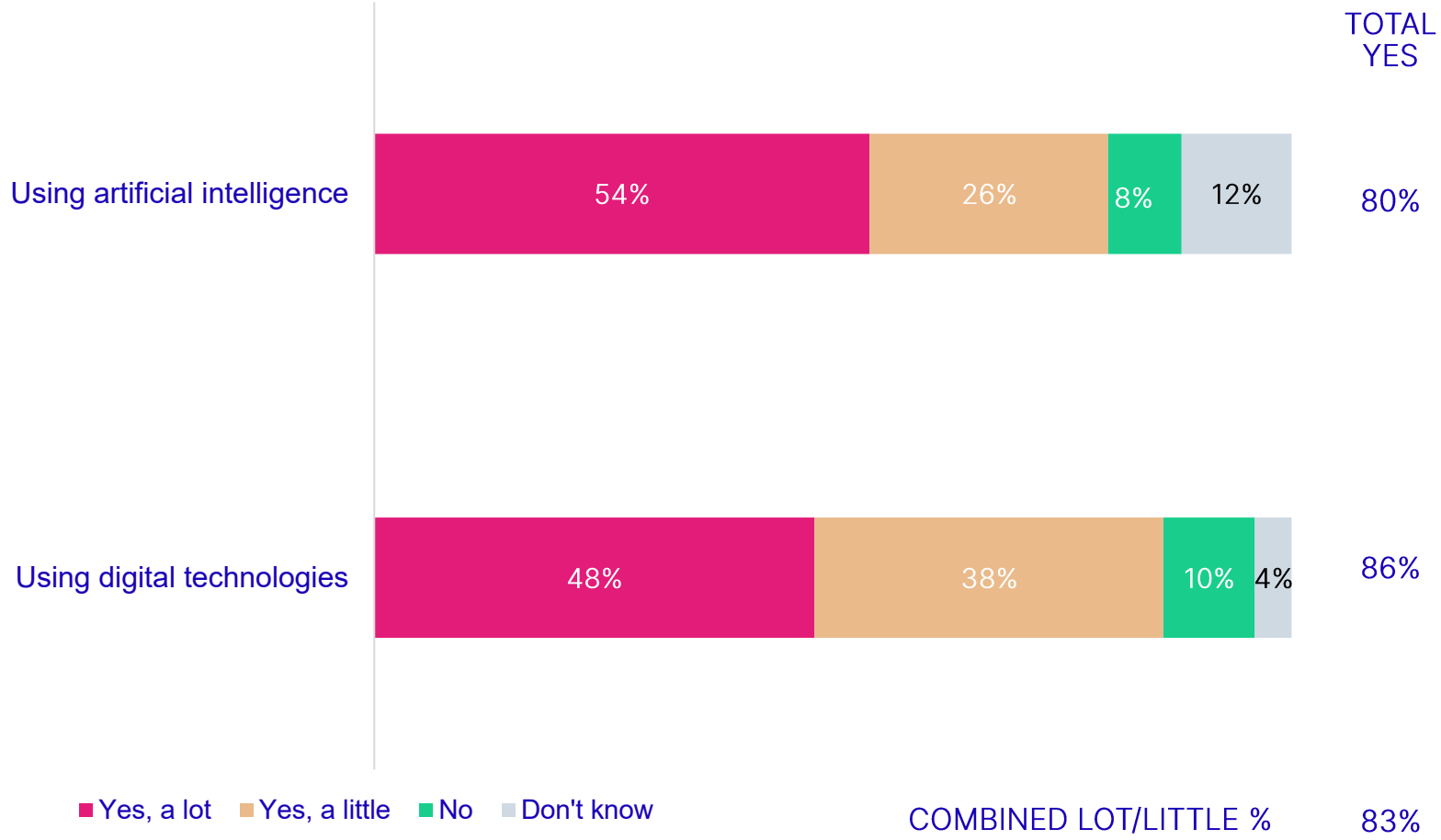
> “Someone who is competent in building pathologies are few and far between. A lot of people can talk confidently about diagnosing damp structural failures and things like that, but those types of courses are so specific. It goes into that building conservation as well. You look at one property, a Victorian property, and then you go into another property that's of a different age, it can have exactly the same symptoms but completely different cause.”

CIOB

Modern Technology

CIOB

Gaps for Modern Technology Skills



Question: CIOB Modern Technology theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following thought there were a lot of gaps in each area, when compared with other groups.

Using artificial intelligence

Energy and utilities

Using digital technologies (for example: BIM, robotics, drones, AI technology and related)

Energy and utilities

Social housing

Question: CIOB Modern Technology theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Skills gaps in digital technology identified by participants

- Adoption of digital tools such as 3D technology and Revit has slowed, with many professionals still relying on printed drawings instead of digital tools
- Many construction workers, particularly on-site teams, lack basic digital skills and proficiency in using modern software such as BIM tools, sensor technology, and cloud-based project management platforms
- Some resistance amongst older professionals, including building inspectors, to learning digital technologies, creating a generational gap, while younger professionals tend to adopt tech more easily
- Some hesitancy to invest in digital technology by some clients and contractors, particularly SMEs, often due to a limited understanding of long-term value or affordability issues
- Tier 1 contractors and designers often use advanced digital tools, but there is a lag in adoption among sub-contractors and SMEs, who may still rely on 2D drawings
- Poor network coverage and lack of on-site tools can hinder effective use of digital technologies, especially during site inductions and other processes
- Lack of structured digital technology training across various skill levels (beginner, intermediate, expert), particularly for BIM and other relevant software

Suggestions for reducing the skills gaps around digital technology

- Raise awareness of successful implementations of digital technologies, particularly for SMEs and public sector projects, to demonstrate their benefits and encourage adoption
- Provide structured training on digital technologies, including BIM, cloud-based project management tools, and digital literacy, including modules on different software systems, and with beginner, intermediate, and expert levels
- Collaborate with companies like Autodesk and Archicad to offer software training and accreditation programmes
- Integrate digital technology skills into CIOB chartership requirements and promote regular CPD sessions to help professionals keep up with technological advancements
- Partner with tech companies and local authorities to improve infrastructure on construction sites, such as better network coverage and digital tools access
- Work with industry bodies like CITB to incorporate digital literacy into training programmes, especially for project management and site management roles

CIOB

Qualitative feedback

Skills gaps in using robotics identified by participants

- Despite advances, robotics adoption remains slow compared to other industries like aeronautics and automative, with some scepticism around the quality and durability of off-site robotic construction
- Robotics could help address the resource shortage in construction, particularly for repetitive tasks (e.g. prefabrication, bricklaying, surveying), but the technology is still in development and lacks wider acceptance
- Lack of awareness amongst clients and contractors of the potential benefits of robotics and scepticism about ROI, reliability, and quality, especially among SMEs, where the cost of investment is a significant barrier
- IT, programming, automation, and maintenance skills are required, which are not currently widespread in the construction workforce
- Some fear robots and AI may replace jobs, leading to resistance to automation, but there may be new roles created in robotics operation, system maintenance, and programming through retraining and upskilling

> "It could be a new qualification in robotics. The adoption of robotics in construction, something like that. Something vocational and again, maybe there's a link there with educational institutes, colleges, etc. to develop a suite of programmes, courses, maybe accredited by CIOB and similar institutes."

Suggestions for reducing the skills gaps around using robotics

- Collaborate with robotics manufacturers, contractors and professional bodies to develop case studies, guides, and reviews showcasing successful use of robotics to promote adoption across the industry
- Work with educational institutions, robotics manufacturers, and contractors to create a vocational qualification or courses in robotics for construction, covering areas such as usage, maintenance, and safety protocols
- Offer courses to retrain and upskill workers in system operation, programming, and maintenance to support robotics integration
- Help alleviate fears about job replacements, instead focusing on the benefits and opportunities around using robotics
- Encourage innovation in practical and user-friendly robotic tools, particularly for small-scale projects, to promote broader use across different project types
- Continue to organise site visits and tours to increase exposure to real-world applications of robotics and demonstrate the potential benefits
- Work with the government, local authorities, education providers, and construction firms to develop a coordinated strategy for robotics adoption and skills development

CIOB

Qualitative feedback

Skills gaps in using drones identified by participants

- Lack of awareness amongst smaller contractors and clients of full potential of drones beyond marketing and filming, such as for safety inspections, digital site mapping, and surveys
- Drones require licensing, certification, and knowledge of safety regulations, which are often outsourced to specialist contractors, as internal staff do not have relevant knowledge, understanding and skills
- Project teams sometimes lack sufficient understanding of drone technology to contract and collaborate with drone service providers effectively
- Need for better proficiency in using drone-generated data within project management tools, such as BIM, Revit, and digital analysis platforms
- While drone services are relatively affordable, smaller contractors and clients can be hesitant to invest in them due to concerns about costs and unclear returns on investment
- Limited promotion of drone operation as a career path in construction, even though it offers opportunities in system operation, data management, and maintenance

"One of the vital skills really was just understanding what kind of permits are in place and the legislation that goes with drones."

Suggestions for reducing the skills gaps around using drones

- Develop case studies, videos, and product reviews that demonstrate the benefits of drones, including time savings, improved safety inspections, and enhanced project documentation, and highlight their successful implementations on both large and small projects
- Create a comprehensive guide to drone-related legislation, safety protocols, and permits to support professionals in navigating regulatory requirements and to help with contracting drone services
- Partner with drone technology providers to offer a certified drone pilot programme tailored for construction, covering regulatory compliance, data collection, and integration of drone data into project management tools
- Integrate drone data analysis and digital tools (e.g. BIM, Revit) into CIOB's existing digital technology and project management courses
- Promote drone operation as a viable career path within the construction industry, highlighting opportunities in system operation, data collection, and maintenance

"I think if a guide to the legislation was produced by the CIOB and then sent out to all its members and do short videos."

CIOB

Qualitative feedback

Skills gaps in using artificial intelligence (AI) identified by participants

- Lack of awareness of AI's uses, benefits, and potential to improve processes like bid writing, safety documentation, compliance, project management, and uncovering patterns and trends, and uncertainty about how it can be integrated into construction projects beyond basic automation
- Perception that built environment is slow to adopt new technologies such as AI, which limits its potential to drive innovation and improve efficiency
- Digital literacy and data science skills will be essential for professionals to use AI effectively in construction processes
- Upskilling opportunities on working with AI tools, interpreting AI-driven insights, and ensuring accuracy through human oversight
- Scepticism about AI's reliability and accuracy, which means there is a need for human oversight
- Concerns that over-reliance on AI in areas such as bid writing could lead to deskilling and generic outputs that do not meet client-specific needs
- Contractors may lack the time and resources to conduct trials or evaluate AI products independently

"Using these systems will require knowledge of the digital platforms, how best to use them."

Suggestions for reducing the skills gaps around using artificial intelligence (AI)

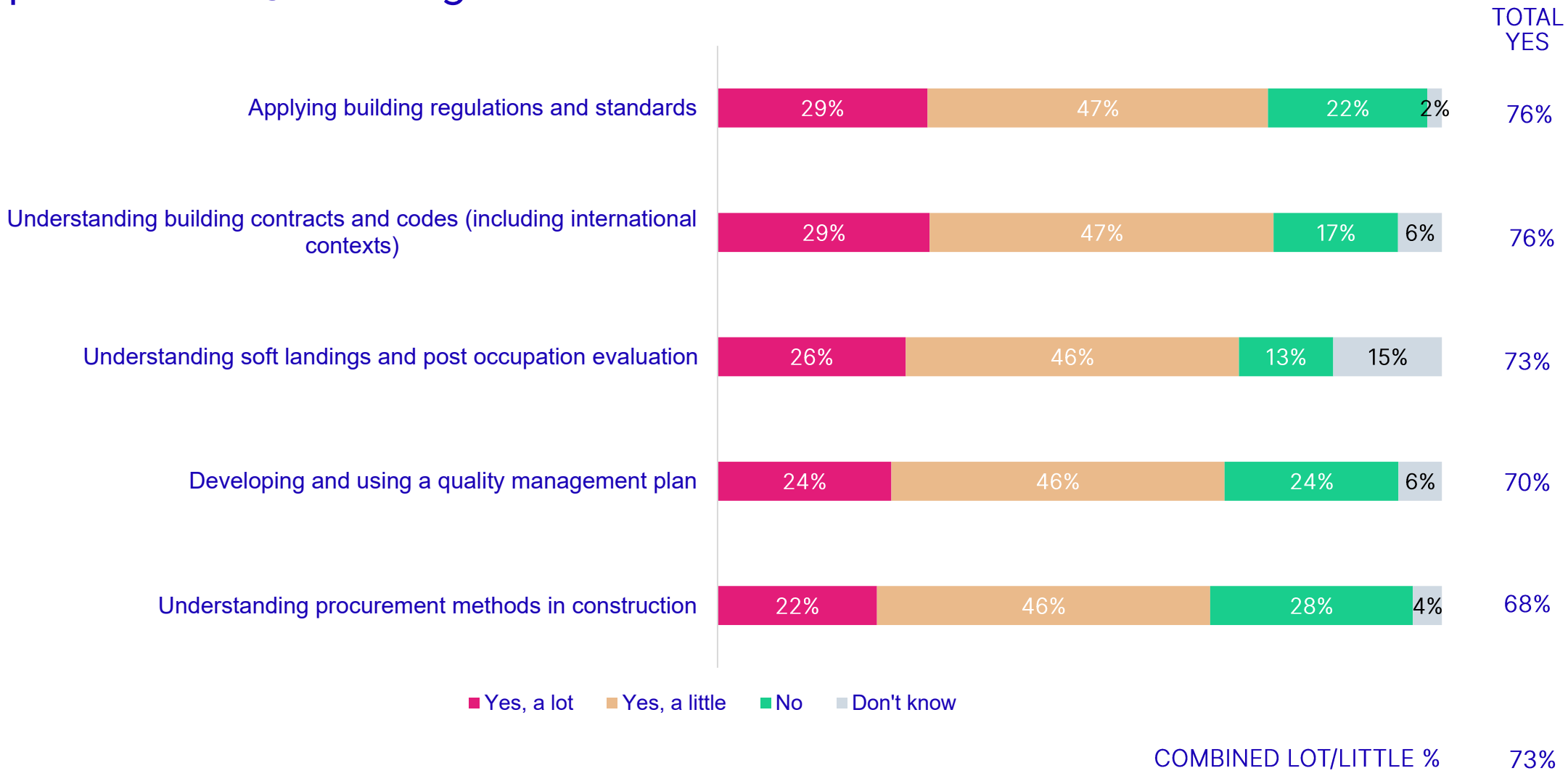
- Provide webinars and case studies that demonstrate practical applications of AI on construction sites, with explanations of how AI can enhance decision-making, improve processes, and drive innovation, thus helping to demystify the technology
- Partner with academia and technology developers to foster research into AI, particularly in areas like generative AI and predictive analytics
- Advocate for a balanced approach to using AI, promoting both the benefits and the continued importance of human oversight
- Develop and share reviews of AI tools, applications, and platforms to save contractors time and provide guidance on selecting the most effective solutions
- Provide training programmes and courses on digital literacy, AI tools, and interpretation of AI outputs

CIOB

Quality

CIOB

Gaps for Quality Skills



Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following thought there were a lot of gaps in each area, when compared with other groups.

Applying building regulations and standards

Public sector

Higher risk residential buildings

Social housing

Retail and leisure

Understanding building contracts and codes (including international contexts)

Mixed sector public and private

Master planning

Energy and utilities

Consultancy services

Understanding soft landings and post occupation evaluation

Public sector

Mixed sector public and private

Developing and using a quality management plan

Public sector

Understanding procurement methods in construction

No significant differences seen by subgroups

Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Skills gaps in procurement identified by participants

- Lack of knowledge amongst some contractors, particularly SMEs, of public sector procurement processes, leading to missed business opportunities
- Lack of coordination between bid writers, construction teams, and clients, resulting in misaligned project goals, poor buildability, and inefficient project execution
- Tender submissions may prioritise marketing and PR over practical project requirements, which negatively impacts quality in project delivery
- Procurement processes often favour price competitiveness rather than long-term value, leading to compromised project quality and efficiency
- Unfamiliarity amongst many contractors with innovative or collaborative procurement models, such as construction management
- Many training courses and qualifications, especially in technical areas such as retrofit and structural engineering, do not include procurement training, resulting in low awareness of procurement best practices

Suggestions for reducing the skills gaps around procurement

- Offer resources aimed at SMEs to increase understanding of public sector procurement processes, helping them identify and take advantage of more opportunities
- Raise awareness of benefits of collaborative and innovative procurement models, and provide training on their implementation
- Offer procurement-specific courses, particularly in fields like retrofit and engineering
- Partner with existing resources like The Construction Playbook to develop consolidated, actionable guides that outline best practices for procurement
- Provide guidance on how to involve both bid and construction teams throughout the procurement process, ensuring alignment of project goals, buildability, and client expectations

"A lot of the suppliers, the contractors we're dealing with clearly don't have a full understanding of the public sector procurement regulations. So, I think that's a bit of an area that could be looked at and worked on."

CIOB

Qualitative feedback

Skills gaps in contracts identified by participants

- The public sector tends to favour JCT contracts in the public sector due to familiarity, with reluctance to use NEC contracts because of a lack of confidence and experience in managing them
- Often a lack of collaboration between those drafting, implementing, and enforcing contracts, and contracts are frequently seen as adversarial, only to be referred to when issues arise, rather than as a proactive tool for project management
- Lack of understanding of key contract mechanisms, such as timeframes, compensation events, and payment terms, amongst both contractors and clients, leading to project delays and disputes
- There is a need for better knowledge of contract administration and the collaborative benefits that NEC contracts can offer
- Clients' legal teams often modify standard contract terms, which complicates risk management, creates inconsistencies, and increases the likelihood of disputes and strained relationships

Suggestions for reducing the skills gaps around contracts

- Develop training programmes and CPD courses focused on NEC contracts to improve understanding, build confidence, and demonstrate the collaborative benefits they offer
- Provide best practice guidance on improving communication and collaboration between those drafting, implementing, and enforcing contracts
- Offer resources that explain essential contract mechanisms (e.g. compensation events, timeframes) in practical terms
- Provide resources that demystify contracts for smaller contractors and early-career professionals, helping them navigate complex terms and improve their confidence in contract management
- Advocate for the consistent application of standard contracts (e.g. JCT and NEC) to reduce unnecessary modifications that complicate risk allocation and execution
- Help clients understand appropriate risk allocation and how misallocated risk can hinder project success

CIOB

Qualitative feedback

Skills gaps in understanding and applying regulations and standards identified by participants

- Lack of awareness and understanding of building regulations and CDM (Construction Design and Management) regulations in retrofit, as they are not well covered in retrofit training
- Challenges with complying with regulations and standards, as they can be complicated in the UK and difficult to navigate, particularly due to cross-referencing between multiple documents
- Regulations, particularly around retrofitting, are interpreted differently by local councils, leading to inconsistencies in planning approvals
- Perceived gap between the expectations set by policy makers and the practicalities of implementing these regulations and standards on-site
- New legislative changes are bringing building control responsibilities in-house for private companies, but there is a shortage of accessible training and qualifications for private sector workers, as most current building control training is only available for public sector officers
- Site managers require more training and education on regulations and standards, as compliance is crucial to quality assurance and safety

Suggestions for reducing the skills gaps around understanding and applying regulations and standards

- Develop training programmes and CPD courses focused on building regulations and CDM requirements for those working in retrofit to improve compliance
- Work with other organisations to consolidate regulations and standards into a single, clear, accessible document to help professionals navigate compliance more easily
- Continue to engage with government bodies and policy makers to ensure regulations are practical, aligned with real-world challenges faced on construction sites and are not open to interpretation in different areas
- Develop and offer accessible training and qualifications for building control officers in the private sector
- Offer targeted training for site managers to ensure they fully understand the regulations and standards they need to comply with
- Ensure training and education on regulations and standards is available to an international audience, ensuring global best practices are shared and adopted

CIOB

Qualitative feedback

Skills gaps in soft landings and post occupation evaluation identified by participants

- While handovers have improved in recent years, there is still a lack of understanding that they a crucial phase for ensuring long-term building performance, rather than just a procedural step
- Often little to no assessment or ongoing monitoring of building performance after occupants move in, leading to missed opportunities for improvement
- Lack of post occupancy evaluation skills, as there is a lack of formal training, which limits professionals' ability to assess and improve building performance over time
- New technologies like ground source heat pumps and solar panels need continuous performance monitoring to ensure they are working as intended, but this is often overlooked in standard handover processes

> "I think there seems to be a lack of professionals that are skilled in conducting and analysing post occupancy evaluations, specifically to access building performance against design intent. That is leading to massive performance gap, and those poor feedback loops between the building's performance and the design processes. This leads to inefficiencies being repeated and missed opportunities for learning and improvement."

Suggestions for reducing the skills gaps around soft landings and post occupation evaluation

- Provide structured frameworks for handover and post-occupation assessment to ensure they are seen as crucial project phases and that key considerations are addressed
- Provide training programmes and courses to upskill professionals in post-occupancy evaluation, equipping them with the knowledge and methodologies needed to assess and optimise building performance after occupancy
- Provide CPD courses and training to ensure that professionals understand how to track the long-term performance of renewable energy systems and other green technologies
- Provide additional education to those in retrofit evaluator roles that achieve PAS certification

CIOB

Qualitative feedback

Skills gaps in quality plans identified by participants

- Quality is interpreted differently across regions and organisations, leading to inconsistencies in execution and outcomes
- Quality plans can sometimes be subjective, and ensuring that competent professionals complete them is crucial
- Some lack of awareness and understanding of the importance of quality planning right from the initial design phase
- Lack of awareness of the benefits of involving contractors early in the design process to ensure realistic and achievable quality objectives
- Some poor understanding of how tendering methods (e.g. single and two-stage tendering) can impact quality outcomes, which can lead to inefficiencies and lower quality outcomes in projects

> "There is a lack of understanding out there for the planning stage, for quality. So, when the designer is essentially producing the design and then tendering out to the contractor, right now, there's a lot of information out there about good communication, good design management etc. etc. that can keep the project on track."

Suggestions for reducing the skills gaps around quality plans

- Provide a globally recognised template for quality management plans to ensure best practice across the industry
- Provide courses and training programmes on quality planning, ensuring professionals understand best practices from design to project completion
- Educate clients on the importance of involving contractors early in the design process to ensure quality expectations are realistic
- Enhance the existing CIOB Guide to Quality Management and Construction by addressing the impact of different tendering methods on quality outcomes
- Work with industry bodies to define and standardise what quality means in different contexts and promote a universal understanding of quality planning that ensures consistency across projects and regions.

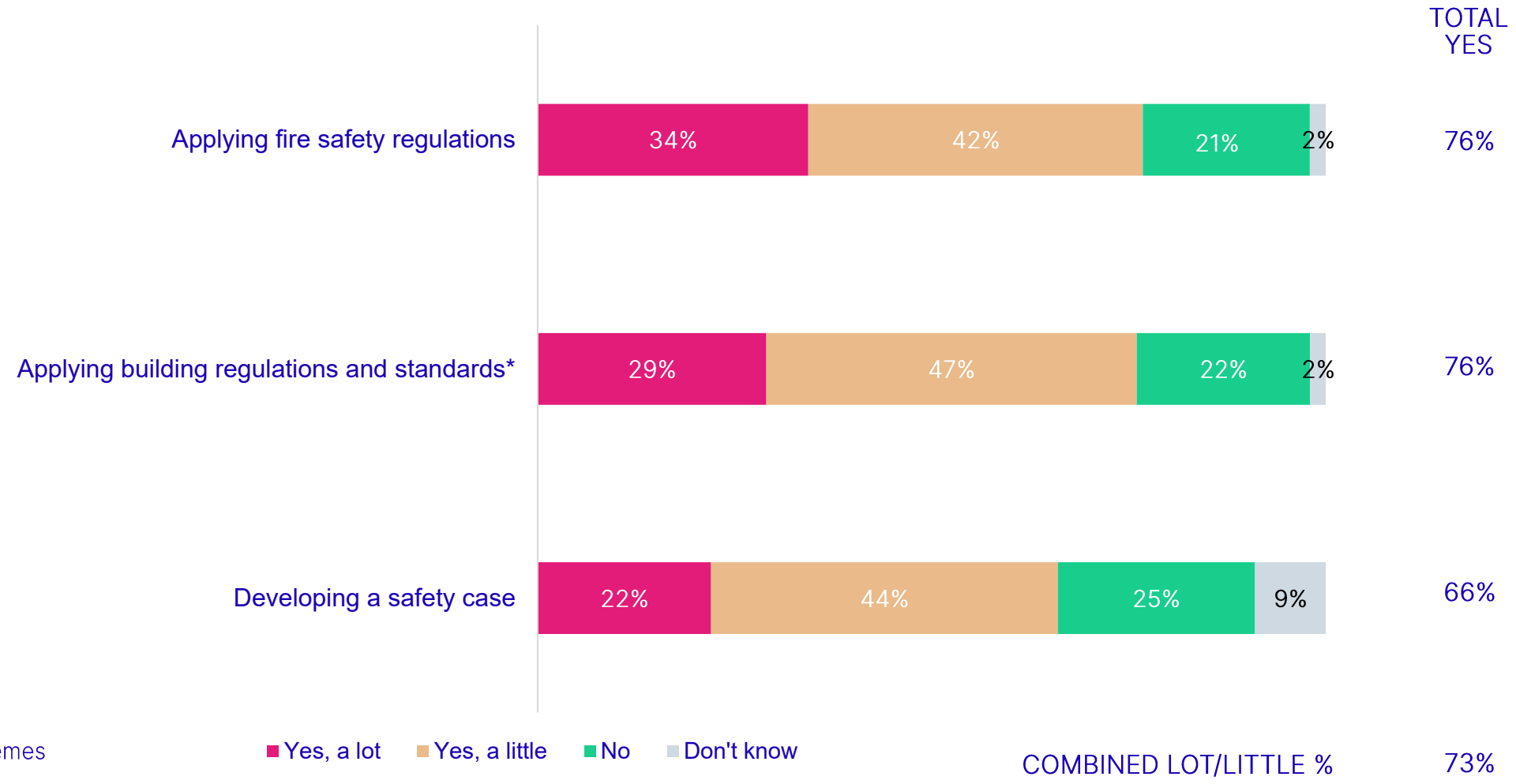
> "If I open, right now, the CIOB Guide to Quality Management and Construction, there is not much in there about the tendering process and the different types of one-stage contracts and two-stage contracts. I'd say it might be worth adding any supplementary technical guidance for some of the existing materials out there."

CIOB

Safety

CIOB

Gaps for Safety Skills



*Features in both the Quality and Safety themes

Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

Subgroup differences in the survey

Larger proportions working in the following thought there were a lot of gaps in each area, when compared with other groups.

Applying fire safety regulations

UK

Higher risk residential buildings

Retail and leisure

Social housing

Applying building regulations and standards*

Higher risk residential buildings

Public sector

Social housing

*Features in both the Quality and Safety themes

Developing a safety case

Global regions

Higher risk residential buildings

Consultancy services

Social housing

Question: CIOB Quality and (Building) Safety theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Skills gaps in safety regulations and standards, and safety cases identified by participants

- Some of lack of knowledge on sites of CDM regulations, including those related to scaffolding tags, site tidiness, and safety documentation, and CDM advisors are sometimes perceived as adversarial rather than collaborative
- Lack of awareness amongst smaller contractors, including self-builders, of legal responsibilities under CDM regulations, such as scaffold checks, F10 notices, and health and safety files
- Regular updates to regulations like Part L and Part F create confusion, particularly among smaller contractors and those without formal qualifications, and it was felt some safety regulations conflict with one another, making compliance challenging
- Health and safety is prioritised on some sites but treated as a “tick box” exercise on others, and there is a challenge in motivating workers to actively engage with and understand safety regulations
- Building Standards Inspectors are overburdened, particularly in remote areas, with limited capacity for on-site safety checks
- Contractors sometimes work ahead of stage warrants to maintain timelines, resulting in gaps in compliance checks
- Some feeling that CSCS accreditation is a “tick box” exercise and does not offer real safety benefits beyond demonstrating basic health and safety knowledge, and that health and safety Induction processes on larger sites are often more effective in managing site safety than CSCS accreditation

Suggestions for reducing the skills gaps around safety regulations and standards, and safety cases

- Create bite-sized training modules for site managers and construction professionals covering CDM requirements, best practices, and safety cases
- Offer video-based training on social media demonstrating core health and safety practices, with compliance tips for smaller contractors
- Provide guides to help small contractors navigate CDM responsibilities such as scaffold checks, F10 notices, and safety files
- Provide CPD courses, training sessions, webinars, and communication that simplify and demystify regulatory updates, explaining the impact of changes
- Advocate for more practical-based competency assessments rather than theoretical evaluations for building control officers
- Encourage chartership for site managers and introduce a company accreditation scheme to raise industry safety standards
- Work with industry bodies to develop an intermediate accreditation level that sits between Chartered and non-Chartered to enhance professional development
- Collaborate with HSE to make safety information more engaging and practical for workers at all levels
- Involve those drafting regulations and standards in CIOB training courses and webinars, allowing professionals to ask questions and gain direct insights

CIOB

Qualitative feedback

Skills gaps in fire safety identified by participants

- Due to [...] Grenfell, insurance companies are imposing stricter fire safety requirements, which can change during live projects, leading to uncertainty and implementation challenges
- Lack of awareness amongst smaller contractors of fire safety practices, particularly around fire stopping, cavity barriers, and fire socks in residential buildings
- The quality of advice and information provided by fire safety experts can vary significantly, leading to inconsistencies in fire safety planning
- Some construction teams do not fully understand or consistently follow fire safety procedures, including hot works permits and fire watch protocols, permit-to-work systems and fire system requirements and protocols
- Poor digital connectivity in remote areas can disrupt site fire safety induction processes
- Limited availability of fire engineers, which impacts the design of fire strategies for new builds and major refurbishment projects

Suggestions for reducing the skills gaps around fire safety

- Create bite-sized training videos and promote via social media and CIOB platforms that cover fire stopping and compartmentation, hot works permits and fire watch responsibilities, permit-to-work systems, critical fire safety procedures, and fire alarm system protocols
- Improve marketing and visibility of CIOB's fire safety training courses, ensuring they are easy to find on social media and CIOB's website, and highlighted in newsletters etc.
- Provide practical, scenario-based fire safety training for site teams to help improve compliance and understanding of fire safety systems
- Work with professional bodies and educational institutions to increase the number of fire engineers through apprenticeships and specialised training programmes

> "In terms of fire engineering, we do buy in that service when we're designing new schools and things. It's probably quite niche, I would have thought. I'm not sure there's an awful lot of people that do that."

CIOB

Barriers to addressing the Skills gaps

CIOB

Barriers identified in the survey

Question: What barriers exist for those in construction management roles seeking to address skills gaps? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following thought there were the following barriers, when compared with other groups.

Lack of time

UK

Health

Cost of training

No significant differences seen by subgroups

Insufficient support from employers

Global regions

Master planning

Lack of access to quality training programmes

No significant differences seen by subgroups

Increased risk of losing trained employees

UK

Mixed sector public and private

Limited or no provision of training opportunities

Global regions

Mixed sector public and private

Consultancy services

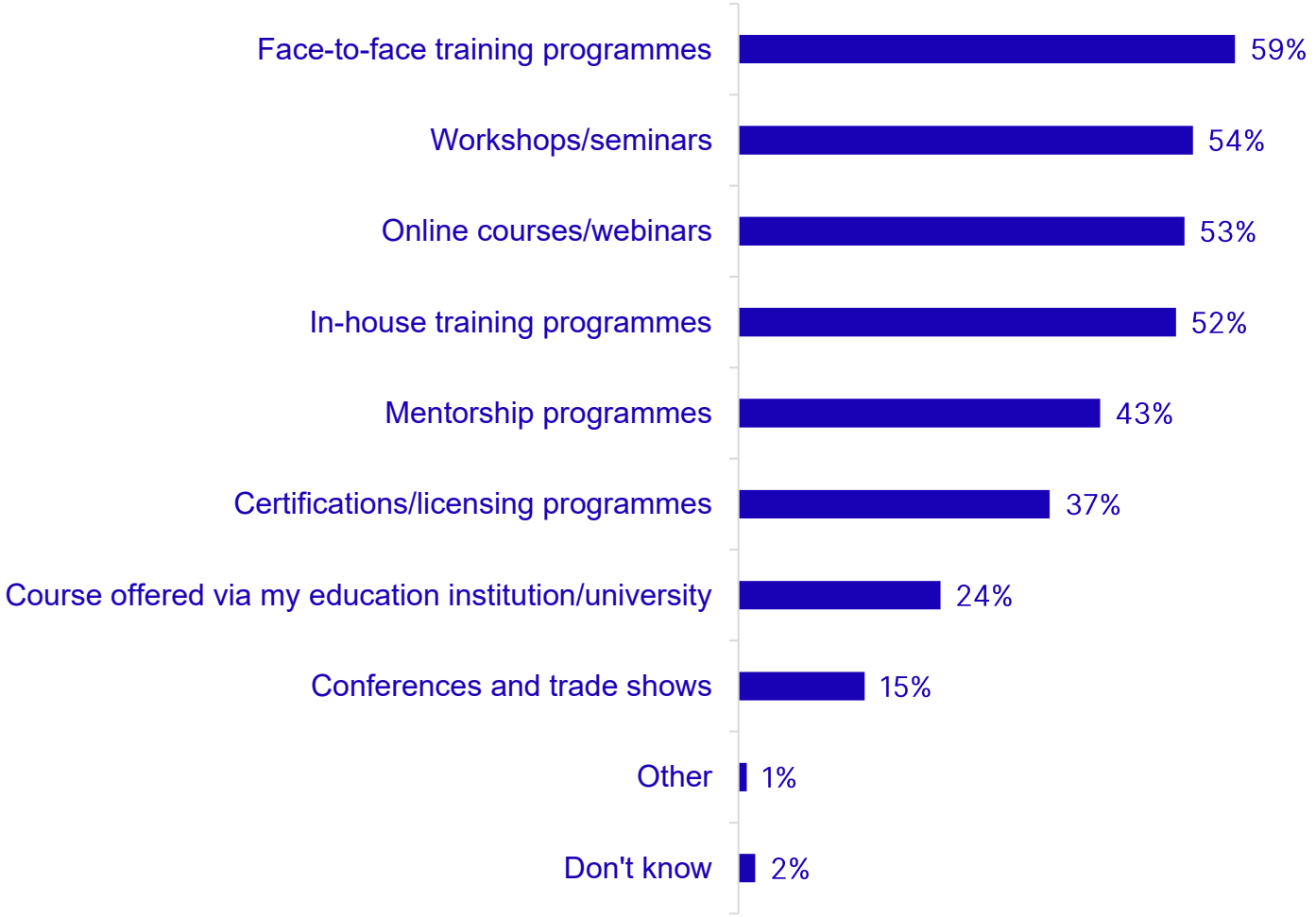
Question: What barriers exist for those in construction management roles seeking to address skills gaps? | Base: All respondents (2,556)

CIOB

Meeting development needs and addressing the skills gaps

CIOB

Training and development opportunities



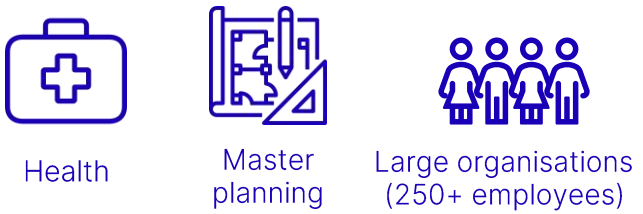
Question: What types of training or professional development opportunities would be most beneficial to you or your team? | Base: All respondents (2,556)

CIOB

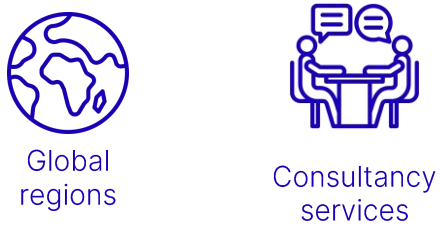
Subgroup differences in the survey

Larger proportions working in the following thought the following would be beneficial, when compared with other groups.

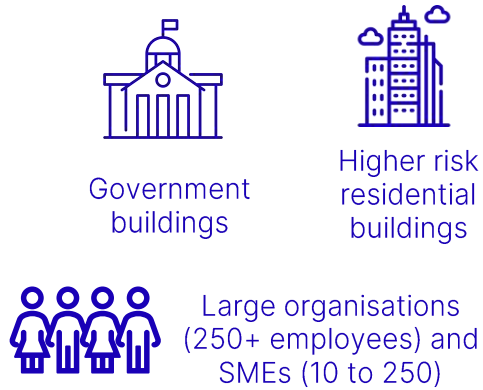
Workshops/seminars



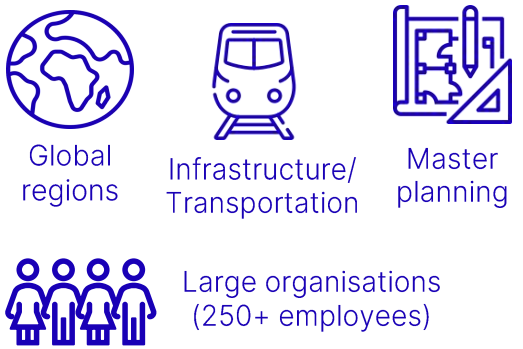
Online courses/webinars



Mentorship programmes

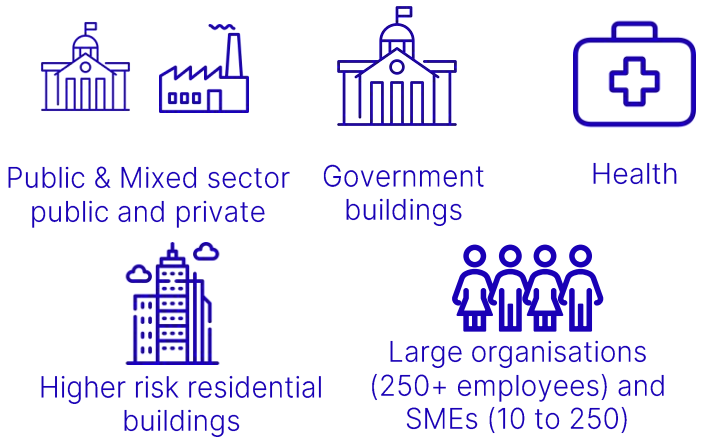


Certifications/licensing programmes

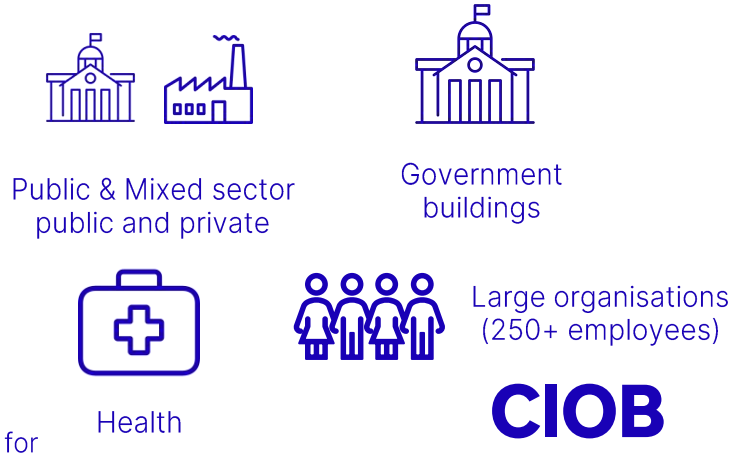


Face to face training programmes

In-house training programmes



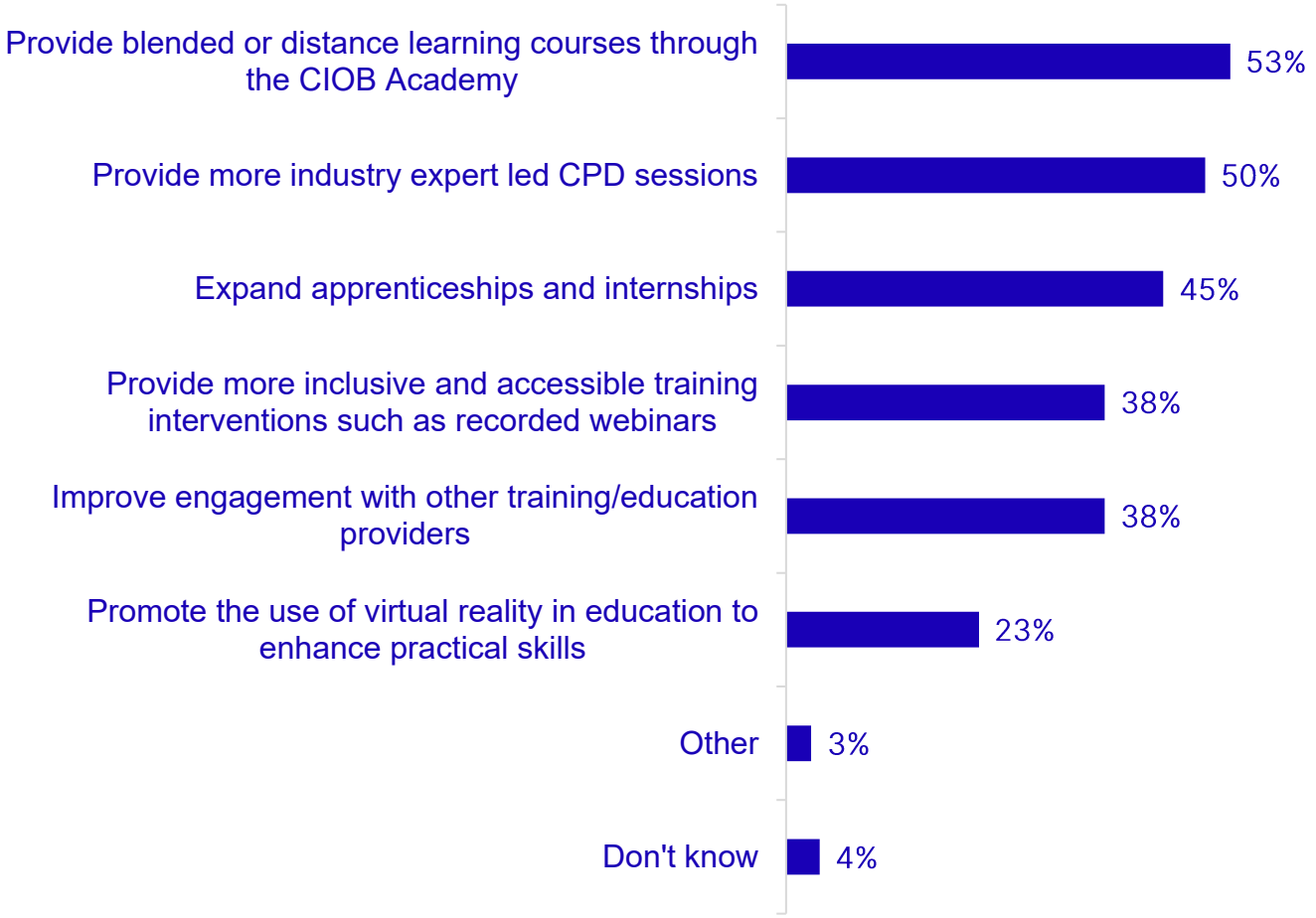
Course offered via education institution/ university



Question: CIOB Modern Professionalism theme: Do you think there are skills gaps for the following? | Base: All respondents (2,556)

CIOB

How CIOB could help address the gaps



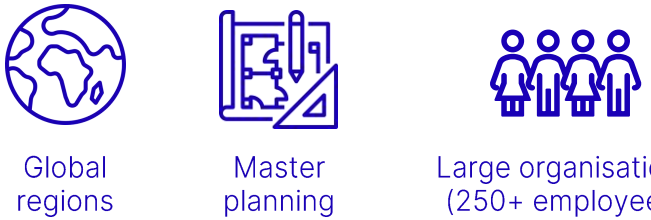
Question: Which three things could CIOB do to better address the skills gaps outlined in this survey? | Base: All respondents (2,556)

CIOB

Subgroup differences in the survey

Larger proportions working in the following suggested the following, when compared with other groups.

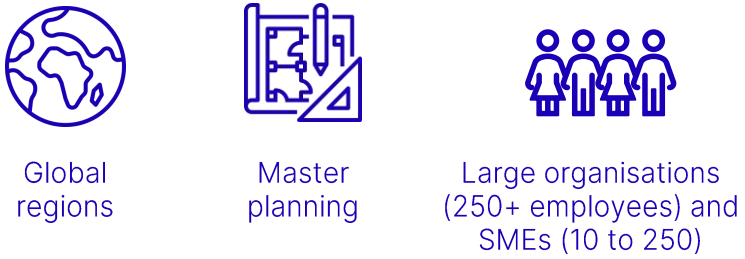
Provide blended or distance learning courses through the CIOB Academy



Provide more industry expert led CPD sessions

Expand apprenticeships and internships

Provide more inclusive and accessible training interventions such as recorded webinars



Improve engagement with other training/education providers

Promote the use of virtual reality in education to enhance practical skills

Question: Which three things could CIOB do to better address the skills gaps outlined in this survey? | Base: All respondents (2,556)

CIOB

Qualitative feedback

Addressing skills gaps

- Many participants highlighted the value of CPD courses, particularly if they are relevant to day-to-day work and available online
- Requirement for CPD on emerging trends (e.g. climate-proofing buildings, digital tools, using AI etc.)
- Online training is often preferred due to accessibility and flexibility
- Short, engaging webinars on regulatory updates and emerging industry trends seen as useful
- A mix of online learning and in-person workshops is preferred for technical subjects like retrofit, fire safety, and digital tools, where on-site demonstrations and real-world applications are required
- Short, focused training modules (e.g. short videos) may help site workers and busy professionals absorb information quickly
- Apprenticeships are seen as essential for addressing industry shortages, particularly in green technology and digital skills
- Mentorship programmes can help retain diverse talent and transfer knowledge from experienced professionals
- Collaborate with software providers (e.g. Autodesk, BIM platforms) to develop relevant courses
- More structured qualifications in areas such as retrofit, AI, procurement, and environmental management
- Case studies and real-world applications could be integrated into training content

"It'd be really good to have more online, accessible CPD, because it's not always possible to go to another part of the country."

"There may be an element online, but realistically it's going to have to be hybrid. If you're being taught how to do something and you're going to get stuck in, you need to be on site."

"Years ago you had BBC Bitesize and you could go to that and they'd have videos on the mathematics equations and all that kind of stuff. Maybe something like that for site managers and construction managers to access to say, 'Right today, like we're going to sit down and we're just going to watch this quick video'."

CIOB

Report commissioned on behalf of CIOB by:

- Ros Thorpe

  Director of Education and Standards
- Mark Harrison

  Head of EDI Transformation

Report prepared by:

- Andrew Cameron

Enventure Research

Report reviewed by:

- Matt Thurman
- Kayleigh Pickles

Enventure Research

First published June 2025

CIOB