

cabe

chartered
association
of building
engineers

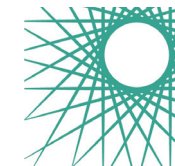
Membership

Competency Frameworks 2023

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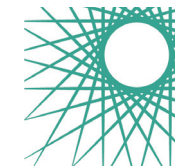
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Introduction – Raising the Standard



The **CABE 2023 Competency Framework** is designed to ensure that there are clear and concise descriptors against the levels of knowledge, skills, experience and understanding that are being demonstrated. They relate to both the expectation of competence against the grade of membership, and a clear structure for ensuring accurate measurement of the competencies required.

This framework, and its descriptors and measurement criteria (and, where appropriate, the subject specific guidance) regardless of the level of membership, incorporates the requirements of Flex 8670 and The UK Standard for Professional Engineering Competence and Commitment (UK-SPEC) Fourth Edition. Taken as suite of information, it enables our members to provide evidence of competence both as a Building Engineer and within (if required) a specialist working role.

CABE Building Engineers, at each grade of membership, are expected to maintain and manage the application of current and developing technology whilst undertaking a wide range of activities. These would include engineering, design, inspection, development, surveying, manufacture, construction, and operations appropriate to the grade of membership they currently hold.

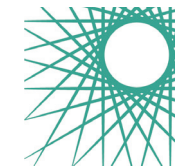
CABE members should demonstrate:

- the theoretical knowledge to solve problems within established technologies, using well-proven analytical techniques
- successful application of the knowledge to deliver engineering tasks or services using established technologies and methods
- an ability to contribute to the financial and planning aspects of projects or tasks and contribution to leading and developing other professional staff
- effective interpersonal skills in communicating technical matters
- the ability to specify and operate within safe systems of work and to demonstrate appropriate consideration of the principles of sustainability; and
- commitment to professional engineering values.

CABE members will be able to demonstrate their competence in all the core competences listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas; however, as a minimum requirement, they need to demonstrate an understanding of, and a familiarity with, the key aspects of each core competence whilst demonstrating higher levels of competence in those areas which are critical to their role. Overall, they must demonstrate an appropriate balance of competences to perform their role effectively at whichever level of CABE membership they hold.

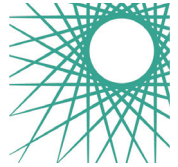
This framework consists of a suite of information, which is combined and utilised as a whole, to create all the necessary detail to understand, measure and align the **CABE 2023 Competency Framework** to the required standards;

Competency Framework Structure



Membership Level	Designation	Competence Framework	Built Environment Qualifications	Indicative RQF or equivalent	Experience with qualifications	Experience without qualifications	Engineering Council	Society for the Environment
Fellow Chartered Building Engineer	C.Build E FCABE	Fellow Chartered Building Engineer and Member Chartered Building Engineer	Doctor of Philosophy (DPhil or PhD)	7/8	5 years, with proven evidence of experience within a significant leadership snr role		Chartered Engineer (CEng)	Chartered Environmentalist (CEnv)
Member Chartered Building Engineer	C.Build E MCABE		Master's Degree, Postgraduate and/or Diploma	7/8	3 years, 2 in a senior role	6 years, 2 in a senior role		
Chartered Member	MCABE	Chartered Member	Bachelor's Degree (with or without Honours)	6	2 years	5 years	Incorporated Engineer (IEng)	Registered Environmental Practitioner (REnvP) Registered Environmental Technician (REnvTech)
Graduate	Grad CABE	Graduate Member			Qualification only – no experience			
Associate	ACABE	Associate	Vocational qualification, Foundation Degree, Diploma of Higher Education, HND	5	1 year	3 years	Engineering Technician (EngTech)	Registered Environmental Practitioner (REnvP) Registered Environmental Technician (REnvTech)
			Vocational qualification, Certificate of Higher Education, HNC	4	2 years			
Technician	Tech CABE	Technician	A-Level, AS-Level, High School Diploma, Vocational qualification	3	1 year	2 years		

The Core Competence Criteria Descriptors



The **CABE 2023 Competency Framework** is designed to ensure that there are clear and concise descriptors against the levels of knowledge, skills, experience and understanding that are being demonstrated.

They relate to both the expectation of competence against the grade of membership and then a clear structure for ensuring accurate measurement of the competences required.

Awareness (1)

- Has the basic knowledge of theory to understand key concepts relevant to their work
- Able to engage in discussions regarding specific competencies
- Performs routine tasks typically with significant supervision
- Learns how to do things

Understanding / Basic application or proficiency (2)

- Performs fundamental and routine tasks
- Requires occasional supervision in their execution
- Increased functional expertise and ability
- Works with others
- Decision making must remain within the limit of expertise.

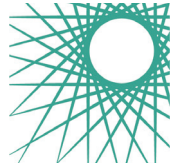
Detailed understanding / Detailed application or proficiency (3)

- Independent contributor
- Integrates work with other disciplines
- Assesses and compares options and makes key decisions
- Often mentors, coaches, or manages others.

Comprehensive understanding / Complex application or expert proficiency (4)

- Advanced experience in particular competence
- Applies creative solutions to difficult problems
- Defines and drives critical business opportunities and needs
- Represents the organisation internally and externally on critical issues
- Sets standards within the organisation
- Recognised as a subject matter expert.

Scope and Evidence Requirements



Scope – ‘CABE expects you to...’

The scope listed against each sub-competence provides an outline of the expected areas of competency, wherever these are relevant/applicable to the member’s/applicant’s specific area of practice.

A general awareness should be displayed against the relevant scope point, but applicants will be expected to evidence more specialised competence relevant to their own specific roles or activities. Members/applicants should also be able to demonstrate how they manage the interface of their work with others to ensure safe and effective outcomes.

Evidence – ‘you can demonstrate this by...’

The evidence is intended to help identify activities that demonstrate the required competence and commitment for CABE membership. They are intended as examples only; the most appropriate evidence will vary with each individual member’s/applicant’s job role, knowledge, skills and experience.

The examples given are not exhaustive and other types of evidence may be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks are expected.

Subject-specific Annex

Additional guidance on a range of critical issues is provided in a series of supporting annexes drawn from guidance issued by the Engineering Council UK and CABE.

CABE members must understand and be able to demonstrate how they apply this guidance in their day-to-day work which covers key crosscutting areas of professional competence often relevant to multiple areas of building engineering practice.

The annexes are:

ANNEX A – CABE Guidance on Building Safety

ANNEX B – Engineering Council Principles of Sustainability

ANNEX C – CABE Guidance on Inclusive Design

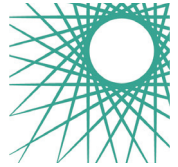
ANNEX D – Engineering Council Guidance on Risk

ANNEX E – Engineering Council Statement of Ethical Principles

ANNEX F – Engineering Council Guidance on Whistleblowing

ANNEX G – Engineering Council Guidance on Security

Competence Sections



The competence framework for every level of membership is designed around five sections of competence (see below); the main headings in the left-hand columns (e.g., A1, A2) describe the core competences that will be assessed. Assessment will be contextualised to be relevant to the specific role, discipline, or activity of the applicant/member as per the scope set out below, and they will be expected to demonstrate competence using suitable examples of evidence.

Each competence section is aligned with the corresponding subject-specific guidance as set out in the applicable annexes.

A – Knowledge and Understanding

This competence is about the foundational knowledge and understanding of technical principles and technologies relevant to an individual's area of building engineering practice.

The relevant annexes that support this are A, B and C

B – Design, Development and Solving Engineering Problems

This competence is about the ability to apply appropriate methods and approaches when undertaking building engineering tasks or functions.

The relevant annexes that support this are A, B, C and D

C – Responsibility, Management and Leadership

This competence is about the ability to plan your own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial.

The relevant annexes that support this are D, E and F

D – Communication and Interpersonal Skills

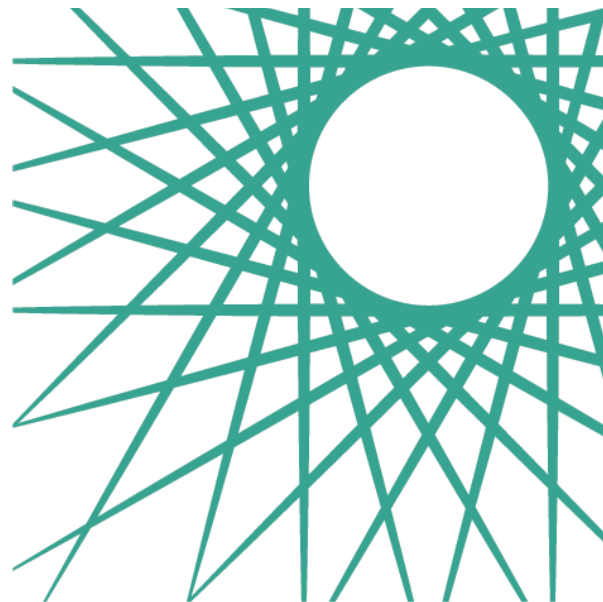
This competence is about the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.

The relevant annexes that support this are E and G

E – Professional Commitments and Standards

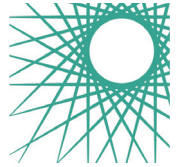
This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others.

The relevant annexes that support this are B, C, D and E



Guidance on Grades of Membership

Technician (Tech CABE)



Technician membership (Tech CABE) is for those who have gained a Level 3 qualification in the Built Environment and are working in a relevant role or can demonstrate the necessary equivalent professional experience. Holding Tech CABE is a clear sign of professional commitment to working towards the highest level of competence at the start of your career.

To achieve Tech CABE, you must show that you meet the competences laid out in the **Technician (Tech CABE) Competency Framework**.

Technicians shall demonstrate:

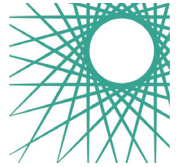
- building engineering awareness to apply technical and practical skills
- evidence of their awareness regarding the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes, or services
- technical responsibility within the limits of expertise
- effective interpersonal skills in communicating technical matters
- the ability to operate in accordance with safe systems of work and to demonstrate appropriate awareness of the principles of sustainability
- commitment to professional building engineering values
- the ability to perform routine tasks, typically with significant supervision; and
- the ability to learn new and best practice methods.

Technicians will be able to demonstrate their competence in all the areas listed, but the depth and extent of their experience and competence will vary due to the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (A1–E5) set out in the framework at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas.

Technicians are expected to understand their level of responsibility and work within the limits of their expertise; they will not be expected to have the authority to sign off any official documentation outside of that expertise.

Overall, they must demonstrate an appropriate balance of competence to perform their role effectively at Tech CABE level.

Associate Member (ACABE)



Associate membership (ACABE) is a developmental level of membership for those who have gained a Level 4/5 qualification in the Built Environment and are working in a relevant role or can demonstrate the necessary equivalent professional experience. Being an Associate is a clear sign of professional commitment to working towards the highest level of competence. To achieve Associate membership, you must show that you meet the competences laid out in the **Associate (ACABE) Competency Framework**. It is assumed that Associate membership will be used for a period of around five years; once five years' relevant experience is gained, the member should be eligible to apply to upgrade to Chartered Member (MCABE) and continue their professional development.

Associates shall demonstrate:

- building engineering knowledge and understanding to apply technical and practical skills
- evidence of basic application or proficiency to the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes, or services
- technical and functional responsibility with occasional supervision
- effective interpersonal skills in communicating technical matters
- the ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability
- commitment to professional building engineering values
- the ability to implement new and best practice methods.

Associates will be able to demonstrate their competence in all the areas listed, but the depth and extent of their experience and competence will vary due to the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (A1–E5) set out in the framework at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas.

Associates are expected to clearly understand their level of responsibility and work within the limit of their competence and expertise. They should seek more expert oversight where necessary.

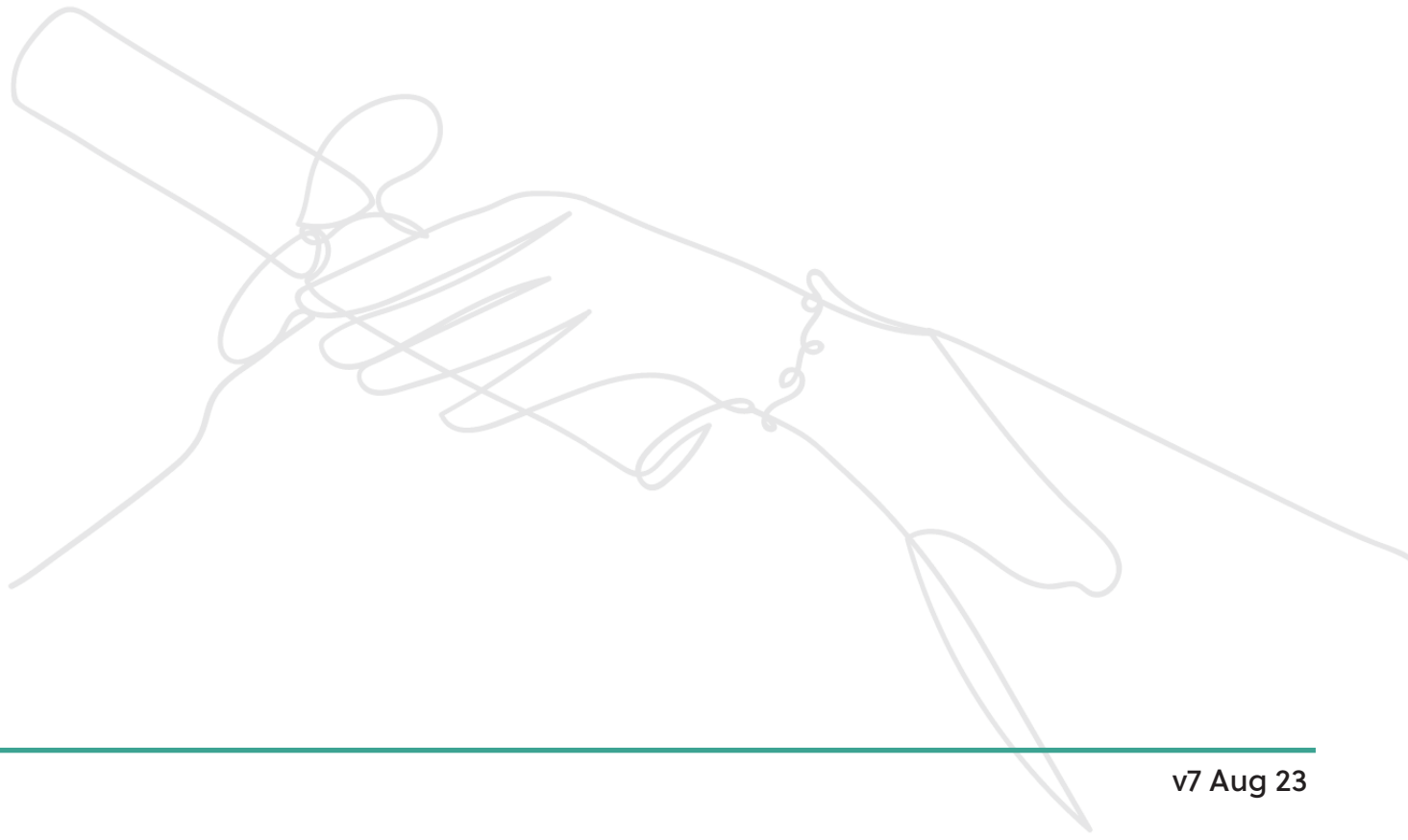
Overall, they must demonstrate an appropriate balance of competence to perform their role effectively at ACABE level.

Graduate (Grad CABE)



The Graduate (Grad CABE) Competency Framework is mapped to the Level 6 qualification framework which recognises the relevant qualifications achieved, but also that members at this grade do not yet have the level of experience required for Chartered Member (MCABE). Grad CABE relates to the qualification of a bachelor's degree (with or without Honours) or equivalent vocational qualification. When a graduate has gained the necessary two years of experience, the member will be eligible to apply to upgrade to MCABE. Members cannot remain a Grad CABE with more than two years' experience; a move to ACABE may be suitable.

Graduates must be able to demonstrate technical and functional autonomy, self-awareness, and accountability. Regardless of the lack of experience, Graduates must also be able to demonstrate understanding and knowledge of the detail provided in the annexes of this competence framework, the CABE Guide to Ethical Professionalism and the CABE Code of Professional Conduct.



Chartered Member (MCABE)



Chartered Members (MCABE) maintain and manage the application of current and developing technology, whilst undertaking a wide range of activities including engineering, design, inspection, development, manufacture, construction, and operation.

To achieve Chartered membership, you must show that you meet the competences laid out in the **Chartered Member (MCABE) Competency Framework**.

Chartered Members should demonstrate:

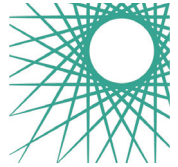
- theoretical knowledge to solve problems in established technologies using well proven analytical techniques
- successful application of the knowledge to deliver engineering tasks or services using established technologies and methods
- the ability to apply complex application or proficiency in the implementation of their role
- an ability to contribute to the financial and planning aspects of projects or tasks and contribution to leading and developing other professional staff
- effective interpersonal skills in communicating technical matters
- the ability to specify and operate within safe systems of work and to demonstrate appropriate consideration of the principles of sustainability
- the ability to work as an independent facilitator; and
- proven evidence of commitment to professional engineering values.

Chartered Members will be able to demonstrate their competence in all the areas listed, but the depth and extent of their experience and competence will vary due to the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (A1–E5) set out in the framework at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas.

Overall, they must demonstrate an appropriate balance of competence to perform their role effectively at MCABE level.

Member/Fellow Chartered Building Engineer

(C.Build E MCABE) (C.Build E FCABE)



Chartered Building Engineer Members and **Fellows** develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity, and technical analysis.

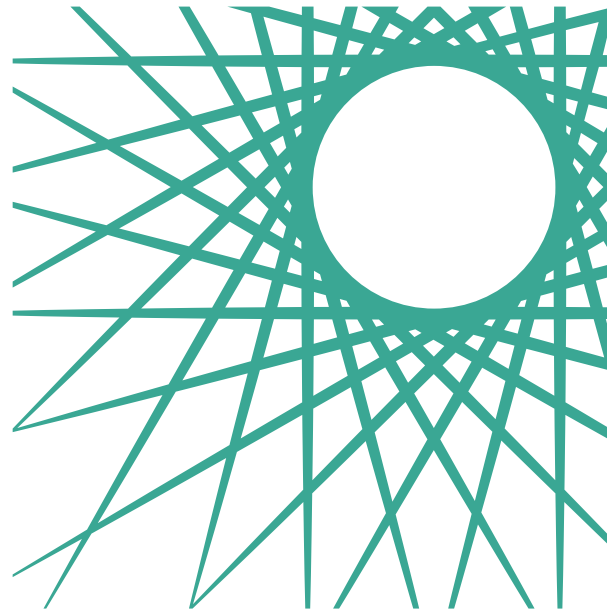
To achieve Chartered Building Engineer MCABE, you must show that you meet the competences laid out in the **Member Chartered Building Engineer (MCABE C.Build E)** and **Fellow Chartered Building Engineer (FCABE C.Build E) Competency Framework**, and to achieve Chartered Building Engineer FCABE, you must meet these competencies as well as meeting further criteria (further information on this criteria is available at cbuide.com)

Chartered Building Engineer Members and Fellows shall demonstrate:

- comprehensive understanding and detailed application at an expert level of proficiency
- theoretical and leadership knowledge to solve problems in new and established technologies and to lead on the development new analytical techniques
- successful application of the knowledge to deliver innovative products and services or taking technical responsibility for complex engineering systems
- responsibility for the financial and planning aspects of projects, sub-projects, or tasks
- Leadership and development of other professional staff through management, mentoring or coaching
- effective interpersonal skills in communicating technical matters
- leadership of the safety and sustainability implications of their and others work, seeking to improve aspects where feasible
- commitment to professional engineering values.

Chartered Building Engineer Members and Fellows will be able to demonstrate their senior competence in all the areas listed, but the depth and extent of their experience and competence will vary due to the nature and requirements of their role. They will demonstrate a level of complex expertise, competence, and commitment in each area (A1–E5) as set out in the framework at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas.

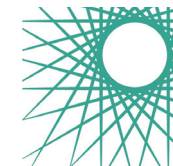
Overall, they must demonstrate an appropriate balance of competence to perform their role effectively at C.Build E MCABE/C.Build E FCABE level.



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Competency
Frameworks

Technician (Tech CABE) Competency Framework



A	KNOWLEDGE AND UNDERSTANDING (Tech CABE) Use building engineering knowledge and understanding to apply technical and practical skills relevant to your work. This competence is about an individual having knowledge of the technologies, standards, and practices relevant to their responsibility of work and having evidence of maintaining and applying this knowledge. SUPPORTING ANNEXES: A, B and C		
	Descriptor	Scope	Evidence
A1	Possess an awareness of appropriate techniques, procedures and methods that are needed to undertake tasks, displaying an understanding of construction technologies, systems, and products relevant to your work.	Possess an awareness of the following: - Typical construction techniques, technologies, systems, products, and practices relevant to your own building engineering practice - Technologies for the design, specification, or assessment for fire safety to meet or exceed statutory requirements to aid warning and escape; for facilities to enable access and intervention by the fire and rescue services; for containment of fire and to support extinction - Principles of structural safety - Technologies, building services, systems and standards including those required to protect public health and public safety - Building fabric, building services and design practices for sustainability - Technologies and practices to provide an inclusive built environment - Modern methods of construction and innovative digital technology - Building pathology, measurement, assessment, and inspection.	- Demonstrating knowledge of potential methods of carrying out a building engineering task - Contributing to improvements in techniques, procedures, process, or method - Showing an awareness of test procedures - Performing calculations using standard formulae - Demonstrating an ability to engage with digital technologies and systems - Working to develop new knowledge and maintain existing knowledge - Demonstrating an understanding of technologies and practices to provide an inclusive built environment.
A2	Understand appropriate scientific, technical, or building engineering principles and how they are used to meet required performance standards or outcomes.	Demonstrate a basic understanding of the following: - The thought process behind using technical research to inform engineering decisions - Problem solving to support safe, sustainable, and effective outcomes - Applicable building regulations, codes, or standards - Construction product and building system characteristics to meet or exceed safety or performance requirements throughout the building lifecycle - Construction product or building system testing information including certification, classification and industry approved or recognized standards (alongside as-built design and construction information on existing buildings) to inform decisions - Systems that support continuous improvement.	- Referring to relevant technical standards, codes, or regulations - Drawing on your own experience, an explanation of how a piece of equipment, construction technology, system or building engineering technique works - Collating or undertaking research on technical matters - Drawing on your technical knowledge to complete a task - Demonstrating the use of calculations using standard formulae - Collating of performance or test data - Referencing safe, sustainable, and effective outcomes.

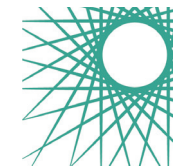
B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (Tech CABE)		
	Contribute to the design, assessment, development, manufacture, construction, commissioning, operation or maintenance of building products, equipment, processes, systems, or services relevant to your work responsibilities. This competence is about an individual's ability to apply engineering knowledge effectively and efficiently to individual tasks. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B1	Demonstrate a basic understanding of the application of appropriate building engineering methods used to identify causes and develop solutions that comply with performance standards and requirements of relevant regulatory frameworks or standards.	Demonstrate a basic understanding of the following: • Appropriate design, assessment, specification, and inspection activities and how construction products and building systems function effectively and safely • The impact of installation quality on quality assurance and quality management processes • The design, specification, or assessment for fire safety to meet or exceed statutory requirements • The requirements for structural, public health and public safety • The environmental impact of construction • The requirements for durability and maintenance.	• Contributing to identifying problems and improvement opportunities • Contributing to the design or assessment of an item of work or process • Demonstrating compliance with relevant legal frameworks, quality, safety, and performance standards and give examples of applying those frameworks in practice • Demonstrating knowledge of client user requirements
B2	Possess an awareness of how resources can be used effectively to complete tasks, with consideration for; cost, quality, safety, security, and environmental impact.	Demonstrate an awareness of the following: • Applying client user requirements, briefs, or specifications • Working within project programmes, schedules and timetables have an awareness of the need to maintain quality, safety, and performance standards • The consideration of compliance with relevant regulatory or legal frameworks • how to work to comply with strategies for fire safety, structural safety, public health, and public safety • Sustainability and zero carbon initiatives • The importance of inclusive design in the built environment • The purpose for coordinating building design, assessment, or construction activities to achieve holistic building safety and performance.	• Demonstrating an understanding of which information, material, component, people, or plant was chosen • Contributing to or undertaking the evaluation of risk • Considering how waste can be minimised, recycled, or disposed of safely if recycling is not possible • Contributing to the monitoring and reviewing of quality of an operation or process and identifying improvement • Describing how you have contributed to best practice methods of continuous improvement, e.g., ISO 9000 • Referring to the purpose of sustainability, zero carbon and inclusive design in the built environment.
B3	Possess an awareness of the importance of recording information throughout the building's lifecycle to ensure the golden thread of information is preserved.	• Possess an awareness of legal or client requirements for exchange of building information (including fire and building safety information) • Support the maintenance of information through identification of records to be kept, how they should be retained, accessed and managed over time to support safety, and performance • Comply with data protection legislation, requirements and outcomes • Possess an awareness of how and when research should be undertaken to obtain information, or identify and highlight missing information, relevant to building safety or performance, especially in existing buildings • Understand the requirements to share information with clients, residents and regulatory or enforcement bodies.	• Demonstrating familiarity with digital systems including building management systems, digital records and building information modelling and digital engineering standards and systems: • safety management systems and health and safety file • fire risk assessment and emergency plans • as-designed/as-built information • building safety strategies • building maintenance information and scheduling • testing and commissioning information including acceptance reports • inspection reports and any declarations, sign off or notices • lifecycle and replacement data • records and certificates • data protection and cyber security • management of deleterious materials, including asbestos • information relating to temporary works • information relating to safe demolition and disposal of building materials; and operation manuals.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (Tech CABE)		
	Accept and exercise personal responsibility.		
	This competence is about an individual's ability to plan and manage work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality of an individual's work.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C1	Work reliably and effectively with appropriate supervision, to the relevant codes of practice.	Possess an awareness of the following: - How to maintain safety and performance standards when executing building engineering work - The potential impact of client instructions/ procurement decisions including use of alternative construction products on holistic building safety and environmental performance - The importance of managing compliance with procedural requirements of legal frameworks - Compliance with internal quality management systems - The requirement to contribute to relevant risk assessment processes and activities, including (but not limited to): - fire risk assessment - safety case development - design risk management - major incident planning - Effective approaches to risk allocation within and between individuals' teams, disciplines, roles, and activities.	- Contributing to the identification and agreement of what needs be done and to what standards on a typical project - Demonstrating how to comply with requirements of building regulations, codes, or standards - Identifying issues which fall outside of your current knowledge and seeking advice - Contributing to challenging tasks successfully within your area of work and within the limit of your expertise - Showing recognition of effective approaches to risk allocation - Demonstrating an understanding of internal quality management systems.
C2	Accept responsibility for work of self.	- Work within project budgets, and to meet programmes and milestones under supervision - Understand and be accountable for your individual actions - Possess an awareness of responsibilities and duties critical to building safety - Request clear direction from superiors in achievement of regulatory compliance.	- Demonstrating an awareness of project budgets, programmes and milestones - Working with drawings, permits to work, instructions or other similar documents after appropriate checking, and contributing to identifying issues - Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work - Demonstrating a request for direction from superiors in relation to regulatory compliance.
C3	Accept and undertake technical and other tasks.	- Possess an awareness of any agreements or objectives and work plans with clients, managers teams and individuals - Contribute to the promotion of collaborative behaviours within teams and between organisations - Contribute towards effective communication within project teams.	- Ensuring that the scope of a task is clear before accepting it - Querying any aspect of a task which is not clear - Learning from your own experience and/or providing constructive feedback when working with others.

D	COMMUNICATION AND INTERPERSONAL SKILLS (Tech CABE)		
	Use effective communication and interpersonal skills.		
	This competence is about an individual's ability to work with others constructively, to explain ideas and proposals clearly and discuss issues objectively and constructively.		
	SUPPORTING ANNEXES: E and G		
	Descriptor	Scope	Evidence
D1	Communicate effectively with others, at all levels, through use of verbal, written and electronic methods.	Demonstrate a basic understanding of the importance of the following: - Effective report writing and correspondence - Good practice digital communication - Effective verbal communication skills - Effective communication of technical information to technical and non-technical audiences - Effective, accurate, and responsible communication of issues relating to risk or safety with members of project or management teams, occupants, and residents - The ability to prepare material in accessible formats considering diversity of the audience.	- Letters/reports/drawings/emails /minutes, including of progress meetings/work instructions/other task planning and organising documents - Contributing to meetings and discussions - Preparing or contributing to communications, documents, and reports on technical or legal/contractual matters.
D2	Work effectively with colleagues, clients, suppliers, or the public, and be aware of the needs and concerns of others.	- The ability to listen and feedback effectively within project teams or management lines - The ability to build relationships and work collaboratively.	- Contributing constructively as part of a team - Appropriately raising issues in discussions with team members, suppliers, clients, building residents or others - Agreeing and working towards collective goals - Demonstrating the ability to clearly describe your role as part of a team.
D3	Demonstrate personal and social skills and awareness of diversity and inclusion issues.	- Possess an awareness of how to listen and engage with occupants or others who are affected by work (including vulnerable, older, and disabled people) and responding appropriately - Possess an awareness of diversity and how it can affect engagement with a wide range of stakeholders - Deal with difficult conversations professionally.	- Knowing and managing own emotions, strengths, and weaknesses. - Being confident and flexible in dealing with new and changing interpersonal situations. - Creating, maintaining, and enhancing productive working relationships and understand the impact of conflict. - Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion - Contributing to the improvement of inclusion, diversity, and equality in the built environment through your own behaviour.

E	PROFESSIONAL COMMITMENT AND STANDARDS (Tech CABE) Make a personal commitment to the CABE Code of Professional Conduct, recognising obligations to society, the profession, and the environment. This competence is about ensuring that Building Engineers act in a professional manner in their work and in their dealings with others. A Technician should strive to meet the standard and example with regards to professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E1	Understand and comply with the CABE Code of Professional Conduct and any other code of conduct which you are subject to.	- Understand and comply with the CABE Code of Conduct and the CABE Guide to Ethical Professionalism - Act within limits of own competence (particularly in relation to building safety) - Possess an awareness of the importance of meeting contractual obligations - Respond professionally and effectively to complaints - Possess an awareness of the need to manage money responsibly - Possess an awareness of the need for public, professional, property, construction product and business insurances, warranty, or other protections.	- Demonstrating an awareness of the CABE code of Conduct, where to find it and how it can be applied. - Demonstrating an awareness of relevant legislative and regulatory frameworks, including social and employment legislation. - Understanding the importance of working within limits of own competence and how to identify where these limits are - Demonstrating how you would find your contractual obligations. - With direction, undertaking effective self-assessment, annual appraisal, and personal development planning activities.
E2	Understand the safety implications of your role and apply safe systems of work	- Understand the necessity for a commitment to strong safety culture - Understand and implement health and safety legislation relevant to your work - Understand your personal role and responsibilities for health safety and welfare issues - Communicate with persons outside the project team and respond effectively to reported risks or concerns that affect safety - Understand and work within hazard identification and risk management systems, procedures, or processes.	- Knowing where to find risk assessment and other examples of good practice you should adopt in your work - Where applicable, proving that you have received a formal safety instruction relating to your workplace, or an update on statutory regulations. In the UK an example would be COSHH requirements - Evidencing the applicable health and safety legislation for example: HASAW 1974, CDM Regulations, ISO 45001 and company safety policies.
E3	Understand the principles of sustainable development and apply them in your work	- Possess an awareness of those products and services which maintain and enhance the quality of the environment and community and meet financial objectives. - Where applicable, possess an awareness of stakeholder involvement in sustainable development - Use resources efficiently and effectively.	- Showing an awareness of how your workplace has taken sustainability issues into account. - Demonstrating an involvement in an environmental impact assessment - Promoting awareness of sustainability and understanding the importance of reducing the environmental impact of construction activities.
E4	Carry out and record Continuing Professional Development (CPD) as necessary to maintain and enhance competence in your own area of work	- Possess an awareness of your own competence, knowledge, skills and understanding - Understand the importance of working within limits of competence and how to identify where these limits are - Understand of different types of formal and informal learning and their value.	- Seeking help where necessary, reviewing your development needs and goals then planning how to meet those personal goals and, where appropriate, organisational objectives - Taking part in relevant formal and informal CPD activities - Maintaining evidence of professional and competence development - Actively seeking to keep your knowledge current by studying new standards or techniques.
E5	Carry out your responsibilities in an ethical and professional manner	- Maintain an awareness of ethical principles to promote safe and sustainable outcomes, including: i. respect for life, the law, environment and public good ii. honesty and integrity iii. accuracy and rigour iv. responsibility for direction, conduct and communication - Understand your duty of care to protect the health and safety of co-workers and others, including the public, building occupants and residents, throughout the building lifecycle.	- Understanding of ethical issues that could be encountered - Providing examples of the practical application of ethical principles by following guidance as defined in the CABE Guide to Ethical Professionalism, by your organisation or the Engineering Council Statement of Ethical Principles - Being able to demonstrate and discuss your views or your position on ethical issues.

Associate (ACABE) Competency Framework



A	KNOWLEDGE AND UNDERSTANDING (ACABE) Use building engineering knowledge and understanding to apply technical and practical skills relevant to your work. This competence is about an individual having knowledge of the technologies, standards, and practices relevant to their responsibility of work and having evidence of maintaining and applying this knowledge. SUPPORTING ANNEXES: A, B and C		
	Descriptor	Scope	Evidence
A1	Review and select appropriate techniques, procedures, and methods to undertake tasks utilising knowledge and understanding of construction technologies, systems, and products relevant to your building engineering practice.	• Demonstrate knowledge of construction techniques, technologies, systems, products, and practices relevant to your own building engineering practice • Understand technologies for the design, specification, or assessment for fire safety to meet or exceed statutory requirements to aid warning and escape; for facilities to enable access and intervention by the fire and rescue services; for containment of fire and to support extinction • Understand the principles of structural safety • Demonstrate knowledge of technologies, building services, systems and standards including those required to protect public health and public safety • Demonstrate knowledge of building fabric, building services and design practices for sustainability • Understand technologies and practices to provide an inclusive built environment • Understand modern methods of construction and innovative digital technology • Demonstrate knowledge of building pathology, measurement, assessment and inspection.	• Evaluating potential methods of carrying out a building engineering task and selecting the most appropriate solution • Recognising a difficulty and then identifying an approach to resolve it • Identifying an improvement in a technique, procedure, process, or method • Interpreting and carrying out test procedures • Evidencing how you develop new knowledge and maintain existing knowledge.
A2	Use appropriate scientific, technical, or building engineering principles to meet required performance standards or outcomes.	• Undertake and utilise technical research to inform engineering decisions • Analyse and solve problems to support safe, sustainable and effective outcomes • Identify technical requirements and performance standards necessary to comply with or exceed applicable building regulations, codes or standards • Understand construction product and building system characteristics in order to meet or exceed safety or performance requirements throughout the building lifecycle • Understand and use construction products or building system testing information including certification, classification and industry approved or recognized standards (alongside as-built design and construction information on existing buildings) to inform decisions • Understand systems that support continuous improvement.	• Undertaking a self-assessment of the scope of work you undertake, and the knowledge required to be competent to do so • A mapping of relevant technical standards, codes or regulations • Providing practical examples of how you have applied these standards • Drawing from your direct experience, an explanation of how a piece of equipment, construction technology, digital system or building engineering technique works • Integrating the principles of inclusive design. • Drawing on your technical knowledge to complete a task • Performing calculations using standard formulae and provide the necessary recommendations from the outputs gained • Analysing performance or test data or comparing performance information with published material.

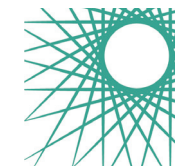
B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (ACABE)		
	Contribute to the design, assessment, development, manufacture, construction, commissioning, operation or maintenance of building products, equipment, processes, systems, or services relevant to your work responsibilities. This competence is about an individual's ability to apply engineering knowledge effectively and efficiently to individual tasks. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B1	Identify problems and apply appropriate building engineering methods to identify causes and develop satisfactory solutions that comply with performance standards and requirements of relevant regulatory frameworks.	- Understand and apply client user requirements, briefs, or specifications - Work within programmes, schedules and timetables taking into account the need to maintain quality, safety and performance standards - Identify and plan/manage/check compliance with relevant regulatory or legal frameworks through the building lifecycle including occupation - Understand and work to comply with strategies for fire safety, structural safety, public health and public safety in executing building engineering tasks - Implement effective approaches to sustainability and/or strategies that support deployment and use of low or zero carbon technologies, reduce environmental impact and mitigate the effects of climate change - Adopt and integrate effective programmes for inclusive design in the built environment - Coordinate building design, assessment, or construction activities to achieve holistic building safety and performance.	- Using knowledge to identify a problem or an opportunity for improvement - Investigating a problem to identify the underlying cause - Identifying a solution to a problem or an improvement opportunity - Contributing to the design or assessment of an item or work or process - Demonstrating compliance with relevant legal frameworks, quality, safety, and performance standards and give examples of applying those frameworks in practice - Providing examples of the application of those frameworks in practice.
B2	Identify, organise, and use resources effectively to complete tasks, with consideration for cost, quality, safety, security, and environmental impact.	- Undertake appropriate design, assessment, specification, and inspection activities so that construction products and building systems function effectively and safely, individually and together - Understand the impact of installation quality on construction product and building system performance and the need for quality assurance and quality management processes - Design, specify or assess for fire safety to meet or exceed statutory requirements to aid warning and escape; for facilities to enable access and intervention by the fire and rescue services; for containment of fire and to support extinction - Understand the requirements for structural, public health and public safety. - Understand and utilise provisions for energy efficiency, carbon mitigation and reduction, embodied energy and environmental impact - Understand the requirements for inspection, assessment, testing and monitoring during construction and in occupation - Understand and take into account the likely use, location, and requirements for durability and maintenance.	- Providing evidence of what information, material, component, people or plant to use - Balancing these factors in selecting appropriate materials - Identifying precautions as a result of evaluating risks and other factors - Considering how waste can be minimised, recycled or disposed of safely if recycling is not possible - Improving the quality of an operation or process - Describing how you have contributed to best practice methods of continuous improvement, e.g. ISO 9000 - Referring to the purpose of sustainability, zero carbon and inclusive design in the built environment.
B3	Contribute to the recording of, development, collection, organisation, and sharing of information about a building's design, construction, operation, maintenance, and refurbishment throughout the building lifecycle to ensure the golden thread.	- Identify legal or client requirements for exchange of building information (including fire and building safety information) - Maintain a 'golden thread' of information through identification of records to be kept, how they should be retained, accessed and managed over time to support safety and performance - Comply with data protection legislation, requirements and outcomes - Identify when and how to undertake research to obtain information, or identify and highlight missing information, relevant to building safety or performance, especially in existing buildings - Understand the requirements to share information with clients, residents and regulatory or enforcement bodies.	Providing evidence of understanding/participation in the below: - digital systems including building management systems, digital records and building information modelling and digital engineering standards and systems; - safety management systems and safety case - health and safety file - fire risk assessment and emergency plans - as-designed/as-built information - building safety strategies, building maintenance information and scheduling - testing and commissioning information including acceptance reports - inspection reports and any declarations, sign off or notices - lifecycle and replacement data - records and certificates - data protection and cyber security - management of deleterious materials including asbestos - information relating to temporary works, safe demolition and disposal of building materials and operation manuals.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (ACABE)		
	Accept and exercise personal responsibility.		
	This competence is about an individual's ability to plan and manage work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality of their work.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C1	Work reliably and effectively without close supervision, to the appropriate codes of practice.	- Effectively deliver to maintain safety and performance standards when executing building engineering work - Understand the potential impact of client instructions/ procurement decisions including use of alternative construction products on holistic building safety and environmental performance - Understand the need to manage compliance with procedural requirements of legal frameworks such as building regulations, codes and standards - Comply with internal quality management systems - Understand and contribute to relevant risk assessment processes and activities, including (but not limited to): - fire risk assessment - safety case development - design risk management - major incident planning - Understanding effective approaches to risk allocation within and between individuals, teams, disciplines, roles, and activities.	- Identifying and agreeing what needs to be done and to what standards on a typical project - Identifying and complying with requirements of building regulations, codes, or standards - Identifying issues which fall outside of your current knowledge and seeking advice - Identifying standards and codes of practice relevant to a new task - Completing challenging tasks successfully within your area of work.
C2	Accept responsibility for work of self or others.	- Work within project budgets and to meet programmes and milestones - Understand and be accountable for your individual actions and where appropriate for the actions of those within project teams - Understand and, where relevant, fulfilling of roles, responsibilities, and duties critical to building safety - Manage and check competence (including building safety competence) of persons undertaking activities within your limit of expertise - Request clear direction from superiors and have full knowledge and information to achieve regulatory compliance.	- Providing minutes of meetings / site notes and instructions / variation orders / programmes of work / specifications, drawings, and reports - Demonstrating a full understanding of drawings, permits to work, instructions or other similar documents after appropriate checking, and identifying issues - Inspecting work carried out by others - Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work.
C3	Accept, allocate and/or supervise technical and other tasks.	- Agree objectives and work plans with clients, managers teams and individuals - Promote collaborative behaviours within teams and between organisations - Manage effective communication within project teams.	- Ensuring that the scope of a task is clear before accepting and/or allocating it to others - Providing examples of delegated or instructed work to be undertaken by others - Querying any aspect of a task which is not clear and/or providing an explanation if a query is raised by others - Learning from own experience and/or providing constructive feedback when working with others.

D	COMMUNICATION AND INTERPERSONAL SKILLS (ACABE) Use effective communication and interpersonal skills. This competence is about an individual's ability to work with others constructively, to explain ideas and proposals clearly and discuss issues objectively and constructively. SUPPORTING ANNEXES: E and G		
	Descriptor	Scope	Evidence
D1	Communicate effectively with others, at all levels, through use of verbal, written and electronic methods.	- Carry out effective report writing and correspondence - Understand good practice digital communication - Demonstrate effective verbal communication skills - Demonstrate effective communication of technical information (and where necessary providing advice) to technical and non-technical audiences. - Demonstrate the effective, accurate, and responsible communication of issues relating to risk or safety with members of project or management teams, occupants, and residents - Prepare material in accessible formats considering diversity of the audience.	- Providing letters, reports, drawings, emails, minutes, including of progress meetings, work instructions, other task planning, and organising documents - Contributing to (where appropriate) and recording meetings and discussions - Preparing communications, documents, and reports on technical or legal / contractual matters.
D2	Work effectively with colleagues, clients, suppliers, or the public, and be aware of the needs and concerns of others.	- Demonstrate the ability to listen and feedback effectively within project teams or management lines - Build relationships and work collaboratively.	- Contributing constructively as part of a team - Successfully resolving issues in discussion with team members, suppliers, clients, building residents or others - Persuading others to accept suggestions or recommendations - Identifying, agreeing, and working towards collective goals - Clearly describing your role as part of a team.
D3	Demonstrate personal and social skills and awareness of diversity and inclusion issues.	- Undertake effective consultation, listen, and engage with occupants or others who are or could be affected by work (including vulnerable, older, and disabled people) and responding appropriately - Understand diversity and how to engage with a wide range of stakeholders in a professional manner - Deal with difficult conversations professionally.	- Knowing and managing own emotions, strengths and weaknesses and understanding the impact of behaviours both negative and positive - Demonstrating confidence and flexibility in dealing with new and changing interpersonal situations - Creating, maintaining, and enhancing productive working relationships and resolving conflicts - Supporting the needs and concerns of others especially in relation to diversity and inclusion - Providing evidence of public consultation or direct engagement with people to improve inclusion, diversity, and equality in the built environment.

E	PROFESSIONAL COMMITMENT AND STANDARDS (ACABE) Make a personal commitment to the CABE Code of Professional Conduct, recognising obligations to society, the profession, and the environment. This competence is about ensuring that Building Engineers act in a professional manner in their work and in their dealings with others. An Associate should strive to meet the standard and example with regards to professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E1	Understand and comply with the CABE Code of Professional Conduct and any other code of conduct which you are subject to.	- Understand and comply with the CABE Code of Professional Conduct and the CABE Guide to Ethical Professionalism - Act within limits of own competence, particularly in relation to building safety - Meet contractual obligations - Respond professionally and effectively to complaints - Understand the need to manage money responsibly - Understand the need for public, professional, property, construction, product and business insurances, warranty, or other protections.	- Demonstrating compliance with the CABE Code of Conduct - Working within all relevant and regulatory frameworks, including social and employment legislation - Understanding and discharge contractual obligations - Understanding the importance of working within limits of own competence and how to identify where these limits are - Undertaking effective self-assessment, annual appraisal, and personal development planning activities - Understanding different types of formal and informal learning and their values.
E2	Understand the safety implications of your role and apply safe systems of work	- Demonstrate a professional commitment to a strong safety culture - Demonstrate a sound knowledge of health and safety legislation relevant to your work - Understand your personal role and responsibilities for health, safety, and welfare issues - Communicate with persons outside the project team and respond effectively to reported risks or concerns that affect safety - Understand and apply appropriate hazard identification and risk management systems, procedures, or processes.	- Applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work - Proving that you have received a formal safety instruction relating to your workplace, or an update on statutory regulations. In the UK an example would be COSHH requirements - A sound knowledge of health and safety legislation for example: HASAW 1974, CDM Regulations, ISO 45001, and company safety policies.
E3	Understand the principles of sustainable development and apply them in your work	- Operate and act responsibly, taking into account the need to progress environmental, social and economic outcomes simultaneously - Provide products and services which maintain and enhance the quality of the environment and community and meet financial objectives - Understand and encourage stakeholder involvement in sustainable development - Use resources efficiently and effectively - Apply the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users.	- Implementing sustainability issues into your building engineering practice - Contributing to environmental impact assessment - Implementing the promotion of sustainability - Reducing the environmental impact through design, inspection, assessment, or construction activities - Integrating principles of inclusive design within your work.
E4	Carry out and record Continuing Professional Development (CPD) as necessary to maintain and enhance competence in your own area of building engineering practice.	Understand competence and competence frameworks.	- Undertaking reviews of your own development needs - Planning how to meet personal and organisational objectives through the development of a Personal Development Plans (PDP) - Carrying out planned formal and informal CPD activities - Maintaining evidence of competence development - Evaluating CPD outcomes against any plans made - Assisting others with their own CPD - Actively seek to keep yourself up to date, by studying new standards or techniques - Taking opportunities to network in order to keep abreast of change.
E5	Understand the ethical issues that may arise and carry out responsibilities in an ethical manner.	- Understand and apply the practice of ethical principles to promote safe and sustainable outcomes, including:: i. respect for life, the law, environment and public good ii. honesty and integrity iii. accuracy and rigour iv. responsibility for direction, conduct and communication - Understand your duty of care to protect the health and safety of co-workers and others, including the public, building occupants and residents, throughout the building lifecycle.	- Understanding of ethical issues that could be encountered - Providing examples of the practical application of ethical principles by following guidance as defined in the CABE Guide to Ethical Professionalism, by your organisation or the Engineering Council Statement of Ethical Principles - Being able to demonstrate and discuss your views or your position on ethical issues.

Graduate (Grad CABB) Competency Framework



A	KNOWLEDGE AND UNDERSTANDING (Grad CABB)		
	Use building engineering knowledge and understanding to apply technical and practical skills relevant to your work. This competence is about an individual having knowledge of the technologies, standards, and practices relevant to their responsibility of work and having evidence of maintaining and applying this knowledge. SUPPORTING ANNEXES: A, B and C		
	Descriptor	Scope	Evidence
A1	Review and select appropriate techniques, procedures, and methods to undertake tasks. Utilise knowledge and understanding of construction technologies, systems, and products relevant to your building engineering practice.	Demonstrate the ability to review compare, analyse, evaluate, and select appropriate techniques, procedures, and methods to undertake building engineering tasks.	Reviewing and selecting appropriate techniques, procedures, and methods to undertake tasks utilising knowledge and understanding of construction technologies, systems, and products relevant to your building engineering practice.
A2	Use appropriate scientific, technical, or building engineering principles including demonstration of suitable knowledge and ability to apply technical standards, codes, and regulations relevant to your work.	Compare, review, analyse, evaluate, and justify the use of appropriate scientific, technical, or building engineering principles including demonstration of suitable knowledge and ability to apply technical standards, codes, and regulations relevant to work as a Graduate Building Engineer.	Providing evidence of using appropriate scientific, technical, or building engineering principles including demonstration of suitable knowledge and ability to apply technical standards, codes, and regulations relevant to your work.

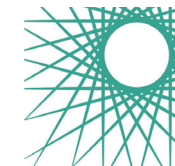
B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (Grad CABB)		
	Contribution to the design, assessment, development, manufacture, construction, commissioning, operation or maintenance of building products, equipment, processes, systems, or services relevant to your work responsibilities. This competence is about an individual's ability to apply engineering knowledge effectively and efficiently to individual tasks. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B1	Contribute to the design, assessment, development, manufacture, construction, commissioning, operation or maintenance of building products, equipment, processes, systems, or services relevant to your work.	- Identify problems and research, develop, and apply appropriate building engineering methods to develop satisfactory solutions - Demonstrate the ability to explain, apply, evaluate, and critique the legal statutory and regulatory frameworks relevant to Building Engineers.	Contributing to the design, assessment, development, manufacture, construction, commissioning, operation or maintenance of building products, equipment, processes, systems, or services relevant to your work.
B2	Identify, organise, and use resources effectively to complete tasks, with consideration for cost, quality, safety, security, and environmental impact.	Identify, organise and establish strategies to use resources effectively to complete complex tasks, with consideration for cost, quality, safety, security and environmental impact.	Identifying, organising and using resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (Grad CABE)		
	Accept and exercise personal responsibility. This competence is about an individual's ability to plan and manage work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality of their work. SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C1	Work reliably and effectively without close supervision, to the appropriate codes of practice.	Identify projects or needs and develop strategies and processes to ensure effective implementation and project delivery, considering safety, sustainability and managing risk.	Working reliably and effectively without close supervision, to the appropriate codes of practice.
C2	Accept responsibility for work of self or others and accept, allocate or supervise technical and other tasks.	- Demonstrate autonomy, self-awareness, and accountability and devise strategies for improvement - Understand leadership roles. Accept, allocate or supervise technical and other tasks.	Accepting responsibility for work of self or others and accepting, allocating or supervising technical and other tasks.

D	COMMUNICATION AND INTERPERSONAL SKILLS (Grad CABE)		
	Use effective communication and interpersonal skills. This competence is about an individual's ability to work with others constructively, to explain ideas and proposals clearly and discuss issues objectively and constructively. SUPPORTING ANNEXES: E and G		
	Descriptor	Scope	Evidence
D1	Use verbal, written and electronic methods for the communication of technical and other information.	Demonstrate the ability to use and evaluate the most appropriate method for the communication of technical and other information.	Using verbal, written and electronic methods for the communication of technical and other information.
D2	Work effectively with colleagues, clients, suppliers, or the public, and be aware of the needs and concerns of others, especially where related to inclusion, diversity, and equality.	Demonstrate the ability to lead and work effectively with colleagues and be able evaluate the concerns and act on the needs of others, and provide leadership on.	Working effectively with colleagues, clients, suppliers, or the public, and be aware of the needs and concerns of others, especially where related to inclusion, diversity, and equality.

E	PROFESSIONAL COMMITMENT AND STANDARDS (Grad CABE)		
	Make a personal commitment to the CABE Code of Professional Conduct, recognising obligations to society, the profession, and the environment. This competence is about ensuring that Building Engineers act in a professional manner in their work and in their dealings with others. A Graduate should strive to meet the standard and example with regards to professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E1	Comply with the CABE Code of Professional Conduct and any other code of conduct to which you are subject.	Demonstrate the ability to explain, apply, evaluate, and critique the CABE Code of Professional Conduct.	Demonstrating compliance with the CABE Code of Professional Conduct and any other code of conduct to which you are subject.
E2	Undertake building engineering work in a way that contributes to sustainable development. Operate and act responsibly, taking account of the need to progress environmental, social, and economic outcomes simultaneously. Apply the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users.	- Set an example to colleagues to operate and act responsibly, taking account of the need to progress environmental, social, and economic outcomes simultaneously - Evaluate the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users.	- Undertaking building engineering work in a way that contributes to sustainable development - Operating and acting responsibly, taking account the need to progress environmental, social, and economic outcomes simultaneously - Applying the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users.

Chartered Member (MCABE) Competency Framework



A	KNOWLEDGE AND UNDERSTANDING (MCABE)		
	Use a combination of general and specialist building engineering knowledge and understanding to apply existing and emerging technology relevant to your work. This competence is about an individual having the foundational knowledge and understanding of technical principles and technologies relevant to an their area of building engineering practice. This includes the knowledge necessary to undertake assessment, analysis, design or management of technical solutions to address complex building engineering problems. This competence also requires demonstration of the ability to identify opportunities for continuous improvement and an ongoing commitment to maintain and develop relevant knowledge. SUPPORTING ANNEXES: A, B and C		
	Descriptor	Scope	Evidence
A1	Maintain and extend a sound theoretical approach to the application of technology to relevant markets, sectors and scales of work undertaken in building engineering practice including appropriate construction technology and techniques.	Possess detailed knowledge of the following: • common, specialised, or complex construction techniques, technologies, systems, products and practices relevant to your own building engineering practice • technologies for the design, specification, or assessment of fire safety to meet or exceed statutory requirements to aid warning and escape; for facilities to enable access and intervention by the fire and rescue services; for containment of fire and to support extinction • structural safety and stability including primary and secondary structural elements • technologies, building services, systems and standards including those required to protect public health and public safety • building fabric, building services and design practices for sustainability • technologies and practices to provide an inclusive built environment • modern methods of construction and innovative digital technology • building pathology, measurement, assessment, and inspection.	• Utilising a range of common construction methods and technologies • Deploying understanding of principles or using specific technologies to address fire, structural, public health or public safety issues in your building engineering practice • Deploying understanding of principles or technologies to achieve sustainable outcomes • applying the principles of inclusive design and deploying technical solutions to create a more inclusive environment • Identifying the limits of your knowledge and skills • Taking steps to develop and extend personal knowledge of appropriate technology, both current and emerging • Applying newly gained knowledge successfully in a task or project • Reviewing current procedures and processes and recommended improvements or changes to reflect best practice • Developing knowledge needed to work in a new industry area or discipline • Learning new building engineering theories and techniques in the workplace, • Broadening your knowledge of building engineering codes, standards, and specifications • Assisting in the development of industry standards and codes of practice.
A2	Use a sound, evidence-based approach to problem solving and contribute to continuous improvement.	• Undertake and use technical research to inform engineering decisions. • Exercise sound judgement including anticipating, identifying, analysing and solving problems to support safe, sustainable and effective outcomes • Identify technical requirements and performance standards necessary to comply with applicable building regulations, codes or standards and undertake relevant design, specification, assessment, or inspection activities • Demonstrate an understanding of construction product and building system characteristics to meet or exceed safety or performance requirements throughout the building lifecycle. • Develop solutions involving complex or multi-disciplinary technology • Work within systems that support continuous improvement.	• Applying knowledge and experience to investigate and solve problems arising during engineering tasks and implementing corrective action • Demonstrating the ability to apply or deploy knowledge to comply with or exceed technical standards, codes, building regulations and any other performance requirements relevant to your work • Using an established process to analyse issues and establish priorities • Carrying out technical research and development into products, materials or technology • Conducting assessment or appraisal of data or technical proposals • Identifying opportunities for improvements and how these have been/could be implemented.

B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (MCABE)		
	Apply appropriate theoretical and practical methods to manufacture, assess, design, develop, construct, commission, operate, maintain, de-commission and recycle using building engineering process, systems, products, and services relevant to your work. This competence is about an individual's ability to apply appropriate methods and approaches when undertaking building engineering tasks or functions. It also requires competence in implementing solutions and managing, sharing, and protecting data through the project lifecycle. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B1	Identify, review, and select techniques, procedures, and methods to undertake engineering tasks to comply with required performance standards and requirements of relevant regulatory frameworks.	- Develop client user requirements, briefs or specifications - Identify regulatory and legal frameworks and requirements to protect people and property during construction and occupation including statutes, building regulations, national or international standards and good practice guidance - Plan for the execution, assessment, management and monitoring of work so that it meets client and user requirements and complies with technical and procedural requirements of applicable building regulations, standards or codes - Establish realistic programmes, schedules and timetables taking into account the need to maintain quality, safety and performance standards - Coordinate building design, assessment, management or construction activities to achieve holistic building safety and performance.	- Establishing user requirements for improvements - Identifying resources required and the costs of different options - Establishing the steps needed to carry out a task efficiently - Identifying the available products or processes needed to undertake an engineering task and establishing a means of identifying the most suitable solution - Identifying and understanding relevant frameworks and legislation and their implications for project delivery - Contributing to effective tendering / procurement and review of building engineering products, processes and systems to meet user requirements - Preparing technical specifications - Reviewing and comparing responses to the technical aspects of tender invitations.
B2	Contribute to the assessment, design, and development of building engineering solutions.	- Undertake appropriate design, assessment and specification for intended use so that construction products and building systems function effectively and safely, individually and together - Comply with relevant legal requirements for fire safety, structural safety, public health and public safety, sustainability and inclusive design - Account for impact of installation quality on construction product and building system performance - Apply quality assurance and quality management processes - Identify and manage risk in assessment, design and development activities - Utilise test and research data.	- Producing detailed designs and specifications - Undertaking and managing inspections or assessments - Contributing to the identification and specification of design and development requirements for engineering products, processes, systems and services - Identifying operational risks and evaluating possible engineering solutions, taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact. - Carrying out necessary tests including physical tests, inspection, and trials, analysing and evaluating the results.
B3	Effectively manage information and knowledge, comply with data protection legislation. Contribute to the recording, updating, development, collection, organisation, and sharing of information about design, construction, operation, maintenance, and refurbishment of buildings or built environment assets throughout the building lifecycle to maintain safety and performance	- Identify legal or client requirements for exchange of building information (including fire and building safety information) - Maintain a 'golden thread' of information through identification of records to be kept, how they should be retained, accessed and managed over time to support safety, performance and data protection outcomes - Identify when and how to undertake research to obtain information, or identify and highlight missing information, relevant to building safety or performance, especially in existing buildings - Possess a detailed knowledge of and the ability to comply with any relevant requirements for information (including building safety information) to be available to building occupants including residents, visitors and staff, emergency services or persons otherwise affected by building and building work, such as duty holders, regulators, clients and project team members - Demonstrate the ability to effectively share information about design, construction and maintenance of buildings with regulators, clients, designers and contractors whilst maintaining legal compliance with requirements for data protection and cyber security.	- Deploy a detailed knowledge of digital systems, including building management systems, digital records and building information modelling and digital engineering standards and systems; - safety management systems and safety case - health and safety file - fire risk assessment and emergency plans - as-designed/as-built information - building safety strategies - building maintenance information and scheduling - testing and commissioning information including acceptance reports - inspection reports and any declarations, sign off or notices - lifecycle and replacement data, records and certificates - data protection and cyber security - management of deleterious materials including asbestos - information relating to safe demolition and disposal of building materials operation manuals - statutory records and certificates relating to building work - information relating to temporary works.

B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (MCABE) Continued...		
	Apply appropriate theoretical and practical methods to manufacture, assess, design, develop, construct, commission, operate, maintain, de-commission and recycle using building engineering process, systems, products, and services relevant to your work. This competence is about an individual's ability to apply appropriate methods and approaches when undertaking building engineering tasks or functions. It also requires competence in implementing solutions and managing, sharing, and protecting data through the project lifecycle. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B4	Implement or assess building engineering solutions and contribute to their evaluation.	- Identify critical factors likely to affect successful implementation including the establishment of the required level and type of resources - Undertake inspection, testing or assessment of design, construction work or installations and make effective interventions to assure compliance with required performance - Possess a detailed understanding of the requirements for maintaining fire or structural safety including instructing, planning or undertaking assessment, inspection, or maintenance tasks - Possess a detailed understanding of the processes and duties to notify building operators, suppliers and manufacturers where defects or maloperation issues are found in construction products or building systems which could impact on building safety or performance - Identify and provide feedback on unsafe or inadequate designs, process, equipment, procedures, construction products, building systems, standards or quality.	- Identifying and obtaining resources including money, people and time required for effective implementation - Ensuring that the design or work undertaken results in desired standards of performance and safety - Operating and maintaining processes and systems - Implementing design solutions, taking account of critical constraints, including due concern for safety and sustainability - Identifying problems during implementation and taking corrective action - Contributing to recommendations for improvement and actively learning from feedback on results.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (MCABE)		
	Provide technical and commercial management. This competence is about an individual's ability to plan their own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Building Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C1	Plan for effective project implementation or project management.	• Project budgeting, cost management, cost control and reporting • Programme assessment, management and reporting • Management of appointments and contracts • Mitigate actions to avoid building safety and performance being adversely affected by procurement, cost, management, specification or commercial decisions • Ensure the application of relevant legal frameworks for safety and risk management through the building lifecycle • Personal evaluation planning • Develop and implement control measures to mitigate risks posed to safety throughout the building lifecycle • Accept and manage accountability for individual actions and for the actions of those under their supervision or direction. • Where relevant, fulfil or manage roles, responsibilities, and duties critical to building safety • Manage risk allocation within and between teams, disciplines, roles, and activities, particularly at boundaries / interfaces of responsibility, and communicate these effectively to others and implement effective control measures • Manage or work within the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers).	• Identifying factors affecting the project implementation • Carrying out holistic and systematic risk identification, assessment and management • Preparing and agreeing implementation plans and method statements • Securing the necessary resources and confirming roles in a project team • Applying the necessary contractual arrangements with other stakeholders (clients, subcontractors, suppliers) • Managing and contributing to relevant risk assessment processes and activities, such as: • fire risk assessment • safety case development • design risk management • major incident plans • occupants and residents information • residents engagement plans.
C2	Manage, programme or schedule budget and resource elements of engineering tasks or projects to meet required performance or safety standards.	• Operate within appropriate management systems • Work to the agreed quality and safety standards, programme and budget, within legal and statutory requirements • Manage and acting effectively within teams, co-ordinating project activities • Identify variations from quality and safety standards, programme and budgets, and take corrective action • Manage and check competence (including building safety competence) of persons undertaking activities including specification, design, construction, management during occupation, operation, installation, maintenance, demolition • Identify and communicate duty holder obligations when making appointments or allocating tasks within teams • Provide persons under your control with suitable supervision, instruction, and information to support regulatory compliance • Manage impacts of use of alternative construction products, solutions or building systems with potential to affect holistic building safety and performance • Evaluate persons or organisations under your control, supervision or instruction and provide feedback.	• Operating appropriate management systems • Working to the agreed quality standards, programmes and budgets, within legal and statutory requirements • Managing work teams and coordinating project activities • Identifying variations from quality standards, programmes and budgets, and taking corrective action • Evaluating performance and recommending improvements.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (MCABE) Continued...		
	Provide technical and commercial management. This competence is about an individual's ability to plan their own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Building Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C3	Manage teams and the input of others into own work and assist others to meet changing technical and management needs.	• Manage effective communication within and between project teams, organisations and individuals • Accept and manage accountability for individual actions and for the actions of those under their supervision or direction • Identify team and individual needs and consider competence requirements for specific roles, disciplines activities or tasks, and planning for their development • Collaborate effectively • Demonstrate effective team working skills • Undertake effective appraisal and feedback • Recognise and promote consideration and understanding of inclusion and diversity.	• Agreeing objectives and work plans with clients, managers, teams and individuals • Reinforcing team commitment to professional standards • Promoting collaborative behaviours within teams and between organisations • Leading and supporting team and individual development • Seeking input from other teams or specialists where necessary and managing the relationship • Assessing team and individual performance and providing feedback.
C4	Take an active role in continuous quality improvement.	• Record, monitor, analyse and act to improve outcomes as part of a learning culture • Apply principles of quality management, including undertaking quality assurance and quality control activities • Apply obligations to raise, escalate or flag risks to life safety during the design, manufacture, construction, maintenance or management process and the ability to take action through whistleblowing and mandatory reporting regimes.	• Demonstrating how you ensure the application of quality management principles by yourself, team members or colleagues • Managing operations and building engineering tasks to maintain or meet quality, safety, and performance standards • Evaluating projects and make recommendations for improvement • Raising and escalating safety concerns where necessary • Implementing and sharing the results of lessons learned.

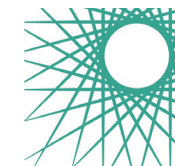
D	COMMUNICATION AND INTERPERSONAL SKILLS (MCABE) Building Engineers shall demonstrate effective communication and interpersonal skills. This competence is about an individual's ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively. SUPPORTING ANNEXES: E and G		
	Descriptor	Scope	Evidence
D1	Communicate effectively in with others at all levels through use of verbal, written, drawn, digital or graphic information and in accessible formats.	• Prepare communications, documents and reports on technical or contractual matters • Effectively communicate technical information (and, where necessary, provide advice) to technical and non-technical audiences • Effectively, accurately and responsibly communicate issues relating to risk or safety with members of project or management teams, occupants and residents. • Contribute to, chair and record meetings and discussions • Prepare material in accessible formats, taking into account diversity of the audience.	• Providing reports, letters, emails, drawings, specifications and working papers (e.g. meeting minutes, planning documents, correspondence) in a variety of formats • Engaging or interacting with professional networks, client or public consultation groups in meetings, presentations, workshops or seminars.
D2	Clearly present and discuss proposals.	• Possess the ability to listen and feedback effectively within project teams or management • Supply the provision of information, training and education on building safety, building performance or management matters to colleagues, communities, occupants, clients and residents as required and in accessible formats • Provide balanced, proportionate and factual explanation of technical issues, particularly where risks to life safety have been identified, the potential consequences and make clear recommendations for mitigating measures.	• Providing records of discussions and their outcomes • Preparing and delivering appropriate presentations • Managing debates with audiences • Feeding the results back to improve the proposals • Managing the contribution and impact of risk.
D3	Demonstrate personal and social skills and awareness of diversity and inclusion issues.	• Deploy effective consultation, listening and engagement with occupants or others who are or could be affected by work (including vulnerable, older, and disabled people) and respond appropriately • Lead on diversity programmes and how to engage with a wide range of stakeholders in a professional manner • Deal with difficult conversations professionally • Possess knowledge of the different routes to resolving disputes or complaints, including mediation and arbitration.	• Knowing and managing own emotions, strengths and weaknesses and understand impact of behaviours both negative and positive • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion • Applying diversity and anti-discrimination legislation • Taking part in public consultation or direct engagement with a diverse range of people to improve inclusion, diversity and equality in the built environment.

E	PROFESSIONAL COMMITMENT AND STANDARDS (MCABE)		
	Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession, and the environment.		
	This competence is about ensuring that an individual is acting in a professional manner in their work and in their dealings with others. A Chartered Member should set a standard and example to others about professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E1	Comply with, and have detailed knowledge of, the CABE Code of Professional Conduct, and any other relevant code of conduct and maintain professional standards to which you are subject.	- Act within limits of own competence (particularly in relation to building safety) and seek further appropriate advice where necessary - Ensure appointments, terms and conditions, contracts and transactional relationships are recorded clearly in writing and adhered to - Operate adequate complaints handling procedures and deal with issues raised by clients or the public fairly, cordially and professionally - Manage finance and money responsibly and in compliance with the law - Obtain adequate public, professional, property, construction product and business insurances, warranty or other protections, including those enabling routes of recourse to address building defects.	- Reflecting the requirements of the Code of Professional Conduct in your daily work - Evaluating your own activities, competence and performance - Managing work within all relevant legislative frameworks including social and employment legislation - Working with a variety of conditions of contract and appointment - Dealing with issues or complaints in a professional manner - Managing risk through obtaining suitable insurance or warranty protection for yourself, your business, clients and the public - Protecting clients' money and managing finances responsibly - Mitigating risks of potential fraud, tax evasion or financial irregularities.
E2	Manage and apply safe systems of work.	- Demonstrate professional commitment to a strong safety culture - Demonstrate a sound knowledge of health and safety legislation relevant to your work, including operations on-site and through the building life cycle, including occupation - Possess a detailed knowledge of your personal role and responsibilities for health safety and welfare issues - Communicate with persons outside the project team and respond effectively to reported risks or concerns - Manage systems that satisfy health, safety and welfare requirements relevant to your work - Develop and implement appropriate hazard identification and risk management systems, procedures or processes; manage, evaluate and improve these systems - Respond to events which affect fire, structural, public health or public safety including identifying when there is a need for competent specialist advice or execution of work - Anticipate, identify and challenge unsafe or inappropriate behaviours and escalate concerns through reporting or whistleblowing mechanisms.	- Undertaking formal health and safety training - Identifying and taking responsibility for your own obligations for health, safety, and welfare issues - Working with health and safety legislation and best practice. In the UK, examples include HASAW 1974, CDM regulations, OHSAS 18001:2007 and company safety policies - Carrying out safety audits - Carrying out risk assessments - Identifying and minimising hazards - Assessing and controlling risks - Delivering health and safety briefings and inductions - Ensuring compliance with CDM regulations or other health and safety legislation.

E	PROFESSIONAL COMMITMENT AND STANDARDS (MCABE) Continued...		
	Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession, and the environment.		
	This competence is about ensuring that an individual is acting in a professional manner in their work and in their dealings with others. A Chartered Member should set a standard and example to others about professionalism.		
	SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E3	Undertake building engineering activities in a way that contributes to sustainable development considering social, environmental, and economic factors.	Possess a detailed knowledge of: - climate science and impacts of climate change - climate change mitigation - sustainability and the built environment - lifecycle costing and embodied carbon - circular economy, recycling, and re-use - social sustainability including community engagement - inclusive design, inclusion and diversity.	- Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously - Adopting sustainable principles and practices in your building engineering work or practice - Carrying out/contributing to environmental risk assessments - Managing best practice environmental management systems, e.g. ISO 14000 - Managing best practice risk management systems e.g. ISO 31000 - Working within, or ensuring others comply with, environmental legislation - Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives - Applying the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users - Demonstrating respect for diversity and principles of inclusivity - Encourage stakeholder involvement in sustainable development - Using resources efficiently and effectively.
E4	Carry out and record Continuing Professional Development (CPD) as necessary to maintain and enhance competence in your own area of building engineering practice.	- Understand competence management systems and frameworks - Demonstrate practical approaches to career planning and development - Identify appropriate training and development opportunities.	- Undertaking reviews of your own development needs - Planning how to meet personal and organisational objectives - Carrying out formal and informal CPD activities - Maintaining evidence of competence development through on-the-job learning, private study, in-house courses, external courses, and conferences. - Evaluating CPD outcomes against any plans made - Assisting others with their own CPD.
E5	Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	- Prove application in the practice of ethical principles to promote safe and sustainable outcomes, including: i. respect for life, the law, environment and public good ii. honesty and integrity iii. accuracy and rigour iv. responsibility for direction, conduct and communication - Act on your duty of care to protect the health and safety of co-workers and others, including the general public and building occupants and residents, throughout the building lifecycle.	- Demonstrating your knowledge of the ethical issues you encounter in practice - Demonstrating how you consider the ethical principles as set out in the CABE Guide to Ethical Professionalism in your building engineering work - Demonstrating how you exercise your duty of care to others in the execution of your building engineering work.

Member/Fellow Chartered Building Engineer

(C.Build E MCABE) (C.Build E FCABE)



Competency Framework

A	KNOWLEDGE AND UNDERSTANDING (C.Build E MCABE) (C.Build E FCABE)		
	Use a combination of general and specialist building engineering knowledge and understanding to optimise the application of existing and emerging technology and systems relevant to your work. This competence is about an individual's ability to understand underpinning technical principles relevant to their building engineering work and applying them to develop technical solutions. This could involve technical solutions for novel problems or dealing with significant technical complexity. This may involve the integration of a range of technologies and consideration of other factors. This competence also requires Building Engineers to maintain and develop knowledge in their field of practice and not just that required for specific tasks. SUPPORTING ANNEXES: A, B and C		
	Descriptor	Scope	Evidence
A1	Maintain and extend a sound theoretical approach to enable them to develop their building engineering role, including construction technologies and techniques relevant to their practice.	Possess a comprehensive knowledge and demonstrate a detailed proficiency in the following: - Common, specialised or complex construction techniques, technologies, systems, products and practices relevant to your own building engineering practice - Technologies for the design, specification, or assessment for fire safety to meet or exceed statutory requirements to aid warning and escape; for facilities to enable access and intervention by the fire and rescue services; for containment of fire and to support extinction - Structural safety and stability including primary and secondary structural elements - Technologies, building services, systems and standards including those required to protect public health and public safety - Building fabric, building services and design practices for sustainability - Technologies and practices to provide an inclusive built environment - Modern methods of construction and innovative digital technology - Building pathology, measurement, assessment, and inspection.	- Utilising a range of common construction practices, methods and technologies - Demonstrating how you have deployed understanding of principles or used specific technologies to address fire, structural, public health or public safety issues in your building engineering practice - Demonstrating how you have deployed understanding of principles or technologies to achieve sustainable outcomes - Demonstrating how you have applied principles of inclusive design and deployed technical solutions to create a more inclusive environment - Engaging in formal post-graduate academic study - Undertaking formal training related to your role - Learning and developing new engineering knowledge in a different industry or role - Leading on the current and emerging technology and technical best practice in your area of expertise - Continuously developing a broader and deeper knowledge of building technology through research and experimentation - Learning and developing new engineering theories and techniques in the workplace - Continuously developing and demonstrating an expertise of building codes, standards and specifications - Leading in the development of industry standards or codes of practice.
A2	Develop technological solutions to unusual or challenging problems, using knowledge, and understanding and/or dealing with complex technical issues or situations with significant levels of risk.	- Undertake and use technical research to inform engineering decisions - Exercise sound judgement including anticipating, identifying, analysing and solving problems to support safe, sustainable and effective outcomes - Manage and lead on construction product and building system characteristics to meet or exceed safety or performance requirements throughout the building lifecycle - Identify and comply with technical requirements and performance standards necessary to comply with applicable building regulations, codes or standards and undertaking relevant design, specification, assessment, or inspection activities - Develop solutions involving complex or multi-disciplinary technology - Lead on development or use of systems that support continuous improvement.	- Carrying out technical research and development - Developing new designs, processes or systems based on new or evolving technology - Carrying out complex and/or non-standard technical analysis - Developing, inspecting, or assessing solutions involving complex or multidisciplinary technology - Developing, evaluating or contributing to continuous improvement systems - Developing solutions in safety-critical applications.

B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (C.Build E MCABE) (C.Build E FCABE)		
	Apply appropriate theoretical and practical methods to manufacture, assess, design, develop, construct, commission, operate, maintain, de-commission and recycle using building engineering process, systems, products and services relevant to your work.		
	This competence is about an individual's ability to apply appropriate methods and approaches when undertaking building engineering tasks or functions. It also requires competence in implementing solutions and managing, sharing and protecting data through the project lifecycle. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B1	Take an active role in the identification and definition of project requirements, problems, and opportunities, including identifying relevant regulatory frameworks and requirements.	- Develop client / user requirements, briefs or specifications - Develop strategic approaches to project delivery - Identify procedural, technical requirements and performance standards necessary to comply with or exceed applicable building regulations, codes or standards - Establish realistic programmes, schedules and timetables taking into account the need to maintain quality, safety and performance standards - Identify regulatory and legal frameworks to protect people and property from fire during construction and occupation including statutes, building regulations, national or international standards and good practice guidance - Coordinate building design, assessment, management or construction activities to achieve holistic building safety and performance.	- Establishing user requirements - Identifying resources required and the costs of different options - Identifying projects or technical improvements to products, processes or systems - Preparing or assessing designs, specifications, taking account of functional and other requirements - Identifying and understanding relevant legislative frameworks and their implications for project delivery - Reviewing specifications and tenders to identify technical issues and potential improvements - Carrying out technical risk analysis and identifying mitigation measures - Considering and integrating new and emerging technologies.
B2	Identify appropriate investigations and research to undertake the design, development and analysis required to complete a building engineering task and conduct these activities effectively.	- Undertake appropriate investigations, design, or specification for intended use so that construction products and building systems function effectively and safely, individually and within a team - Undertake design, inspection, assessment or development to comply with applicable regulatory requirements - Mitigate actions required to avoid building safety and performance being adversely affected by cost, management, specification or commercial decisions - Develop and manage quality assurance and quality management processes - Undertake risk assessment and putting in place effective risk mitigation strategies.	- Identifying and agreeing appropriate research or evaluation methodologies - Allocating and managing resources - Identifying and carrying out physical tests and trials, then analysing and evaluating the results - Investigating technical issues, and identifying appropriate solutions - Preparing specifications or assessment methodologies - Producing detailed designs, specifications or assessments - Collecting, analysing and evaluating relevant data - Carrying out technical calculations, simulations or analysis - Undertaking building engineering design or assessment using research findings - Preparing, presenting and agreeing building engineering recommendations, with appropriate analysis of risk, and taking account of factors such as cost, quality, safety, reliability, appearance, fitness for purpose, security, intellectual property (IP) constraints and opportunities, and environmental impact.

B	DESIGN, DEVELOPMENT, AND SOLVING ENGINEERING PROBLEMS (C.Build E MCABE) (C.Build E FCABE) Continued...		
	Apply appropriate theoretical and practical methods to manufacture, assess, design, develop, construct, commission, operate, maintain, de-commission and recycle using building engineering process, systems, products and services relevant to your work. This competence is about an individual's ability to apply appropriate methods and approaches when undertaking building engineering tasks or functions. It also requires competence in implementing solutions and managing, sharing and protecting data through the project lifecycle. SUPPORTING ANNEXES: A, B, C and D		
	Descriptor	Scope	Evidence
B3	Lead in managing information and knowledge, comply with data protection legislation. Contribute to the recording, updating, development, collection, organisation, and sharing of information about design, construction, operation, maintenance, and refurbishment of buildings or built environment assets throughout the building lifecycle to maintain safety and performance.	- Manage and ensure compliance with legal or contractual requirements for documented building information (including safety information) at a project, premises and organisational level - Maintain a 'golden thread' of information through identification of records to be kept, how they should be retained, accessed and managed over time to support safety, performance and data protection outcomes - Identify when and how to undertake research to obtain information, or identify and highlight missing information, relevant to building safety or performance, especially in existing buildings - Possess a comprehensive knowledge, understanding and ability to comply with any relevant requirements for information (including building safety information) to be available to building occupants including residents, visitors and staff, emergency services or persons otherwise affected by building and building work, such as duty holders, regulators clients and project team members - Demonstrate the ability to effectively share information about design, construction, and maintenance of buildings with regulators, clients, designers and contractors whilst maintaining legal compliance with requirements for data protection and cyber security.	Demonstrating a skilled proficiency in using digital systems, including building management systems, digital records and building information modelling and digital engineering standards and systems: - safety management systems and safety case - health and safety file - fire risk assessment and emergency plans - as-designed/as-built information - building safety strategies - building maintenance information and scheduling - testing and commissioning information including acceptance reports - inspection reports and any declarations, sign off or notices - lifecycle and replacement data - Records and certificates - data protection and cyber security - management of deleterious materials including asbestos - information relating to temporary works - information relating to safe demolition and disposal of building materials; and operation manuals.
B4	Implement building engineering tasks and evaluate the effectiveness of engineering solutions.	- Identify critical factors likely to affect successful implementation including establishing required level and type of resources - Plan for the execution, assessment, management and monitoring of work so that it meets client and user requirements - Undertake inspection, testing or assessment of design, construction work or installations and make effective interventions to assure compliance with required performance - Ensure across the sphere of responsibility that the process and duties to notify regulators, building operators, suppliers and manufacturers where defects or maloperation issues are found in construction products or building systems which could impact on building safety or performance is implemented at all times - Identify and provide feedback on unsafe or inadequate designs, process, equipment, procedures, construction products, building systems, standards, or quality.	- Identifying and obtaining resources, including money, people and time required for effective implementation - Ensuring that the design or work results in appropriate practical outcomes, including meeting standards of performance and safety - Operating and maintaining processes and systems - Identifying problems during implementation and taking corrective action - Implementing design solutions, taking account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning - Identifying and implementing lessons learned - Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations - Actively learning from feedback on results to improve future design solutions and build best practice.

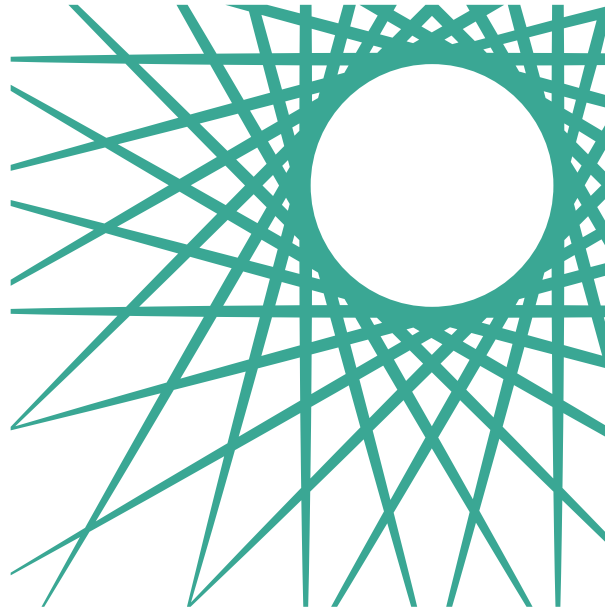
C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (C.Build E MCABE) (C.Build E FCABE)		
	Provide technical and commercial management. This competence is about an individual's ability to plan their own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Building Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C1	Plan the work and resources needed to enable effective implementation of a significant building engineering task or project.	• Demonstrate project budgeting, cost management, cost control and reporting • Lead on programme assessment, development, management, and reporting • Negotiate and execute conditions of appointment or contract • Mitigate actions to avoid building safety and performance being adversely affected by procurement, cost, management, specification or commercial decisions • Lead on the application of relevant legal frameworks for safety and risk management through the building lifecycle • Fulfil and/or manage roles, responsibilities, and duties critical to building safety • Lead in developing and implementing control measures to mitigate risks posed to safety throughout the building lifecycle • Understand and manage risk allocation within and between teams, disciplines, roles, and activities, particularly at boundaries/interfaces of responsibility, communicating these effectively to others and implementing effective control measures • Lead on managing or working within the necessary contractual arrangements with other stakeholders.	• Preparing budgets and associated work programmes for projects or tasks • Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations • Carrying out a task or project risk assessment and identifying mitigation measures • Leading on preparing and agreeing implementation plans and method statements • Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies • Ensuring that information flow is appropriate and effective • Leading and contributing to relevant risk assessment processes and activities, including (but not limited to): • fire risk assessment • safety case development • design risk management • major incident plans • occupants and residents information • residents engagement plans. • Personal evaluation planning
C2	Organise, direct and control, and programme or schedule, budget and resource elements of a significant engineering task or project to meet required performance and safety standards.	• Develop and operate within appropriate management systems • Work to the agreed quality and safety standards, programmes and budgets, within legal and statutory requirements • Establish, manage or act effectively within teams, coordinating project activities • Identify variations from quality and safety standards, programmes and budgets, and take corrective action • Manage and check competence (including building safety competence) of persons undertaking activities including specification, design, construction, management during occupation, operation, installation, maintenance, demolition • Identify and communicate duty holder obligations when making appointments or allocating tasks within teams • Provide persons under your control with suitable supervision, instruction, and information to support regulatory compliance • Manage impacts of use of alternative construction products, solutions or building systems with potential to affect holistic building safety and performance • Undertake evaluation of persons or organisations under your control, supervision or instruction and provide feedback.	• Operating appropriate management systems including risk registers and contingency plans • Managing the balance between quality, cost and time • Monitoring progress and associated costs and cost forecasts, taking appropriate actions when required • Establishing and maintaining appropriate quality standards within legal and statutory requirements • Interfacing effectively with customers, contractors and other stakeholders • Managing outcomes to achieve required standards of performance and safety • Contributing to the management of fees, project funding, payments and recovery • Satisfying legal and statutory obligations • Managing tasks within identified financial, commercial and regulatory constraints.

C	RESPONSIBILITY, MANAGEMENT AND LEADERSHIP (C.Build E MCABE) (C.Build E FCABE) Continued...		
	Provide technical and commercial management. This competence is about an individual's ability to plan their own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Building Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.		
	SUPPORTING ANNEXES: D, E and F		
	Descriptor	Scope	Evidence
C3	Lead teams or technical specialists and assist others to meet changing technical and managerial needs.	- Lead in order to ensure effective communication within and between project teams, organisations and individuals - Lead on, accept and manage accountability for individual actions and for the actions of those under their supervision or direction - Provide strategic direction to identify team and individual need, and consider competence requirements for specific roles, disciplines activities or tasks, and plan for their development - Collaborate effectively - Demonstrate effective team working skills - Undertake effective appraisal and give feedback - Recognise and promote consideration and understanding of inclusion and diversity.	- Agreeing objectives and work plans with teams and individuals - Reinforcing team commitment to professional standards - Leading and supporting team and individual development - Assessing team and individual performance and providing feedback - Seeking input from other teams or specialists where needed and managing the relationship - Providing specialist knowledge, guidance and input in your specialism to engineering teams, engineers, customers, management and relevant stakeholders - Developing and delivering a teaching module at Master's level, or leading a university research programme.
C4	Bring about continuous quality improvement and promote best practice.	- Put in place systems for the recording, monitoring, analysis and actions required to improve outcomes as part of a learning culture - Ensure the application of principles of quality management including undertaking quality assurance and quality control activities - Lead in promoting awareness and understanding of obligations to raise, escalate or flag risks to life safety during the design, manufacture, construction, maintenance or management process and the ability to - Put in place or promote systems to facilitate taking action through whistleblowing and mandatory reporting regimes - Apply obligations to raise, escalate or flag risks to life safety during the design, manufacture, construction, maintenance or management process and the ability to take action through whistleblowing and mandatory reporting regimes.	- Promoting quality throughout the organization, as well as its customer and supplier networks - Developing and maintaining operations to meet quality standards e.g. ISO 9000, EQFM, balanced scorecard - Supporting or directing project evaluation and proposing recommendations for improvement - Implementing and sharing the results of lessons learned - Raising concerns in a way which supports effective mitigation of risk - Monitoring, maintaining and improving delivery of your building engineering services.

D	COMMUNICATION AND INTERPERSONAL SKILLS (C.Build E MCABE) (C.Build E FCABE) Building Engineers shall demonstrate effective communication and interpersonal skills. This competence is about an individual's ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively. SUPPORTING ANNEXES: E and G		
	Descriptor	Scope	Evidence
D1	Communicate effectively in with others at all levels through use of verbal, written, drawn, digital or graphic information, and in accessible formats.	• Prepare communications, documents, and reports on technical or contractual matters • Effectively communicate technical information (and where necessary providing advice) to technical and non-technical audiences • Effectively, accurately, and responsibly communicate issues relating to risk or safety with members of project or management teams, occupants and residents • Effectively chair and record meetings and discussions • Prepare material in accessible formats and consider diversity of the audience.	• Preparing reports, drawings, specifications, and other documentation on complex matters • Leading, chairing, contributing to and recording meetings and discussions • Exchanging information and providing advice to technical and non-technical colleagues on complex or difficult subjects • Engaging or interacting with professional networks, client or public consultation groups in meetings, presentations, workshops or seminars.
D2	Clearly present and discuss proposals, justifications, and conclusions.	• Demonstrate the ability to listen and feedback effectively within project teams, management lines, executive teams, or boards • Supply the provision of information, training, or education on building safety, building performance, legal or management matters to colleagues, communities, occupants, clients and residents as required and in accessible formats • Provide balanced, proportionate, and factual explanation of technical issues, particularly where risks to life safety have been identified, the potential consequences and make clear recommendations for mitigating measures.	• Contributing to scientific papers or articles as an author • Designing, preparing and delivering presentations on strategic matters • Preparing bids, proposals or studies • Identifying, agreeing and leading own and others' work to ensure delivery of collective goals • Leading debates with audiences or discussing proposals or outcomes from assessments with clients or contractors • Acting on feedback back to improve proposals or outcomes • Contributing to the awareness of risk and to the management of building safety issues.
D3	Demonstrate personal and social skills and awareness of diversity and inclusion issues.	• Provide effective consultation, listening and engagement with occupants or others who are, or who could be, affected by building engineering work (including vulnerable, older and disabled people) and respond appropriately • Implement diversity and inclusive strategies on how to engage with a wide range of stakeholders in a professional manner • Deal with difficult conversations professionally • Manage and lead on the differing routes to resolving disputes or complaints including mediation and arbitration.	• Knowing and managing own emotions, strengths and weaknesses and understand impact of behaviours both negative and positive • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion • Applying diversity and anti-discrimination legislation • Providing evidence of public consultation or direct engagement with a diverse range of people to improve inclusion, diversity and equality in the built environment • Undertaking or participating in dispute resolution, mediation or arbitration activities.

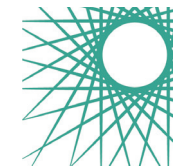
E	PROFESSIONAL COMMITMENT AND STANDARDS (C.Build E MCABE) (C.Build E FCABE)		
	Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession, and the environment.		
	This competence is about ensuring that an individual is acting in a professional manner in their work and in their dealings with others. A Chartered Building Engineer should set a standard and example to others regarding professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E1	Possess a comprehensive understanding of and ensure compliance with the CABE Code of Professional Conduct and any other relevant code of conduct to which you are subject, and maintain professional standards.	- Ensure continuous evidence of complying with the CABE Code of Professional Conduct - Act within limits of own competence (particularly in relation to building safety) and seek further appropriate advice where necessary - Ensure appointments, terms and conditions, contracts and transactional relationships are recorded clearly in writing and adhered to - Operate adequate complaints handling procedures and deal with issues raised by clients or the public fairly, cordially and professionally - Manage finance and money responsibly and in compliance with the law - Manage the ability to obtain adequate public, professional, property, construction product and business insurances, warranty or other protections, including those enabling routes of recourse to address building defects.	- Complying with the requirements of the Code of Professional Conduct in your day-to-day work - Leading work within all relevant legislation and regulatory frameworks, including social and employment legislation - Evaluating your own activities, competence and performance and providing professional leadership within organisations. - Working with a variety of conditions of contract and appointment - Dealing with issues or complaints in a professional manner - Managing risk through obtaining suitable insurance or warranty protection for yourself, your business, clients and the public - Protecting clients' money and managing finances responsibly - Mitigating risks of potential fraud, tax evasion or financial irregularities.
E2	Manage and apply safe systems of work.	- Demonstrate professional commitment to a strong safety culture - Demonstrate a sound knowledge of health and safety legislation relevant to your work, including operations on-site and through the building life cycle, including occupation - Possess a detailed knowledge of your personal role and responsibilities for health safety and welfare issues - Communicate with persons outside the project team and respond effectively to reported risks or concerns - Manage systems that satisfy health, safety and welfare requirements relevant to your work - Develop and implement appropriate hazard identification and risk management systems, procedures or processes; manage, evaluate and improve these systems - Respond to events which affect fire, structural, public health or public safety including identifying when there is a need for competent specialist advice or execution of work - Anticipate, identify and challenge unsafe or inappropriate behaviours and escalate concerns through reporting or whistleblowing mechanisms.	- Undertaking formal health and safety training - Identifying and taking responsibility for your own obligations for health, safety, and welfare issues - Working with health and safety legislation and best practice. In the UK, examples include HASAW 1974, CDM regulations, OHSAS 18001:2007 and company safety policies - Carrying out safety audits - Carrying out risk assessments - Identifying and minimising hazards - Assessing and controlling risks - Delivering health and safety briefings and inductions - Ensuring compliance with CDM regulations or other health and safety legislation.

E	PROFESSIONAL COMMITMENT AND STANDARDS (C.Build E MCABE) (C.Build E FCABE) Continued... Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession, and the environment. This competence is about ensuring that an individual is acting in a professional manner in their work and in their dealings with others. A Chartered Building Engineer should set a standard and example to others regarding professionalism. SUPPORTING ANNEXES: B, C, D and E		
	Descriptor	Scope	Evidence
E3	Possess comprehensive understanding of the principles of sustainable development and apply them in your work, considering social, environmental, and economic factors.	Possess a comprehensive understanding of and a detailed proficiency of application in the following: - Climate science and impacts of climate change - Climate change mitigation - Sustainability and the built environment - Lifecycle costing and embodied carbon - Circular economy, recycling, and re-use - Social sustainability including community engagement - Inclusive design, inclusion, and diversity.	- Operating and acting responsibly, and providing leadership for the purpose of progressing environmental, social and economic outcomes simultaneously - Understanding and leading stakeholder involvement in sustainable development - Using resources efficiently and effectively - Providing products and services which maintain and enhance the quality of the environment and community and meet financial objectives - Carrying out/contributing to environmental risk assessments - Integrating or applying best practice environmental management systems, e.g. ISO 14000 - Integrating or applying best practice risk management systems e.g. ISO 31000 - Showing leadership in applying the principles of inclusive design to ensure the built environment meets the needs of a diverse range of users - Demonstrating leadership in engendering respect for diversity and principles of inclusivity.
E4	Carry out and record Continuing Professional Development (CPD) as necessary to maintain and enhance competence in your own area of building engineering practice.	- Possess a comprehensive understanding and skilled proficiency of application in the use of competence management systems and frameworks - Take practical approaches to career planning and development - Identify appropriate training and development opportunities.	- Undertaking reviews of your own development needs, including for management and leadership activities - Planning how to meet personal and organisational objectives - Carrying out formal and informal CPD activities - Maintaining evidence of competence development through on-the-job learning, private study, in-house courses, external courses, and conferences - Evaluating CPD outcomes against any plans made - Assisting others with their own CPD.
E5	Demonstrate a comprehensive understanding of the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	- Put in place the application in practice of ethical principles to promote safe and sustainable outcomes, including: - respect for life, the law, environment and public good - honesty and integrity - accuracy and rigour - responsibility for direction, conduct and communication - Act on your duty of care to protect the health and safety of co-workers and others including the general public, building occupants and residents, throughout the building life-cycle - Provide ethical leadership within organisations, sectors and disciplines.	- Demonstrating your knowledge and expertise of the ethical issues you encounter in practice - Demonstrating how you consider the ethical principles as set out in the CABE Guide to Ethical Professionalism in your building engineering work. - Exercising your duty of care to others in the execution of your building engineering work - Providing evidence of how you have provided ethical leadership.



Supporting **Annexes**

ANNEX A – CABE Guidance on Building Safety



Building Engineers have a responsibility to undertake their work in a way which protects the safety and welfare of people in the built environment, and throughout the life-cycle of the buildings and places they help to create, maintain, or operate.

The following guidance sets out key considerations for Building Engineers to help identify the knowledge and competence they need to keep people safe in their day-to-day work.

This guidance should be used to inform self-assessment, personal development planning and training to develop and maintain safety-critical competence.

1. Fire safety

Building Engineers should understand the principles of fire safety and be able to deploy or use technologies and engineering techniques to prevent or mitigate fire safety risks including:

- Principles of fire chemistry and physics, including ignition and heat transfer
- The influence of structure, construction product selection and buildings systems on fire safety performance
- Human behaviour, escape strategies and requirements
- Methods of fire suppression and how to limit fire growth and fire spread
- Mitigation and control functionalities of fire protection technologies including active and passive systems.

They should also be able to integrate factors affecting fire safety during occupation into design, assessment, specification, or management activities, considering:

- Appropriate fire design concepts and strategies that enable safe use and occupancy of a building
- The need for good housekeeping and fire safety practices amongst residents
- The need to control factors affecting building fabric or building systems to maintain compartmentation and prevent fire spread
- Interaction between building users/residents and building safety, considering human factors
- Maintenance and replacement requirements for construction products and building systems through the building life-cycle, including planning, procuring, monitoring, undertaking, or managing maintenance of building fabric, fire protection or life safety systems.

2. Structural safety

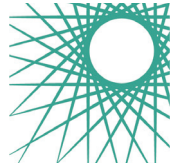
Building Engineers should be aware of core principles relating to structural safety, and have higher levels of competence wherever their activities involve interaction with structural design, installation or maintenance including:

- Provisions for structural stability of primary structure, secondary structure, and fixings, including through life inspection and maintenance
- Characteristics of structural systems and their performance
- Performance of structures under load and principles of structural stability
- Understanding where more specialised advice is required and appointing suitably competent persons
- Requirements for inspection, maintenance, and protection of building structures during occupation.

3. Public health and public safety

Building Engineers should have a broad awareness of key risks to public health and public safety in and around buildings, and develop and maintain higher levels of competence wherever their activities involve design, installation or maintenance of public health and public safety related systems and building elements including (but not limited to):

- Provisions to protect public health and public safety including requirements for Inspection, assessment, testing, and monitoring during construction and in occupation
- Radon, methane, and site contamination including asbestos
- Waste and grey water drainage and rainwater recovery systems
- Electrical safety including lightning protection
- Gas supply and combustion appliance safety including carbon monoxide detection and the provision of devices and information for identifying and isolating gas supply
- Ventilation
- Moisture, damp, and condensation risk
- Water supply and storage including hot water safety and public health risks, such as Legionella
- Overheating and heating failure
- Stairs, glazing, guarding and balustrading safety
- Lift and escalator safety.



4. Understand buildings as systems, building systems and construction products

Building Engineers need to understand how materials, components, sub-systems and building systems will perform individually and as a part of the building as a whole system. This includes:

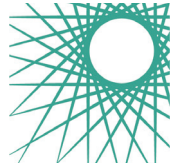
- Appropriate selection for intended use so that construction products and building systems function individually and together to maintain building safety and consider buildings as holistic systems
- Impact of installation quality on construction product and building system performance and need for quality assurance and quality management processes
- Requirements for construction product durability over time taking building use into account
- Consideration of location and context in construction product performance and selection, e.g., proximity to boundary, boundary conditions (fire resistance, water resistance) size, distance, environmental conditions, geometry
- Understand requirements for replacement (and safe disposal) of construction products and buildings systems at the end of their life-cycle to maintain building safety.

5. Understand, meet, and comply with regulatory requirements for building safety

Building Engineers should understand the principles and objectives of regulatory frameworks relating to building safety throughout the building life-cycle. They should be confident in their ability to comply with the requirements imposed by those systems. They should:

- be aware of relevant legislation relating to building safety and keep that knowledge current
- understand how regulatory systems are intended to keep people safe and work in alignment with those principles
- demonstrate suitable competence in executing technical engineering tasks so that they comply with relevant legislation and safety standards
- understand and comply with procedural requirements of regulatory frameworks
- understand their legal duties in relation to building safety, collaborate and share information with regulators and others, and effectively report risks when they are identified.

ANNEX B – Engineering Council Principles of Sustainability



Building Engineers are required to carry out their work in a way which contributes to sustainable development, as outlined in the UK Standard for Professional Engineering Competence (UK-SPEC) and the CABE Competence Framework. The six principles set out by the Engineering Council to support Building Engineers when making decisions for clients, employers and society that affect sustainability are as follows:

1. Contribute to building a sustainable society, present and future

Engineering professionals have a responsibility to maximise the value of their activity towards building a sustainable world. This requires an understanding of what society demands and what is achievable, recognising that both change over time. This is not only about doing less harm, but also about actively restoring and regenerating, where possible. They should:

- recognise that though their activity may be local and immediate, its potential impacts may be global and long-lasting and may span several supply chains
- understand the full range of sustainability implications across the life cycle of products, processes, or systems
- understand other relevant social and cultural structures outside their own normal community of practice
- be proactive, contribute and positively influence the sustainable development of communities, local or global

2. Apply professional and responsible judgement and take a leadership role

Engineering is a profession with a strong ethical dimension. Engineering professionals have an important role in contributing solutions for issues such as poverty, under-development, and environmental degradation. In making a sound judgement, the engineering professional should:

- consider the broad context for their work
- be aware that there are inherently conflicting and un-measurable aspects of sustainability
- adopt a system-thinking approach wherever appropriate
- keep their sustainable development knowledge up to date
- provide issues, options and solutions to decision-makers enabling sound decisions, congruent with sustainable development principles
- lead by example, influencing others to improve their engineering sustainability performance, including non-engineers and those in the supply chain
- include lessons learnt as part of the engineering process.

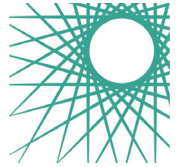
3. Do more than just comply with legislation and codes be prepared to challenge the status quo

In seeking sustainable solutions, simply complying with current legislation, codes and environmental protection regulations may not be sufficient. Engineering professionals should:

- strive to go beyond the minimum wherever possible, anticipating future legislation which may be more stringent
- question current standards and seek improvement
- drive the development of future legislation and regulations in line with sustainable development principles
- alert the relevant authorities if proposed regulatory change could give rise to fresh issues which endanger sustainable engineering practice.

4. Use resources efficiently and effectively

Those working in engineering have a stewardship role with respect to the planet's finite resources. This brings a responsibility to use resources efficiently and effectively, and to take account of the whole life-cycle from the design phase to manufacturing and use, and to end-of-life waste management. Engineering professionals should:



- minimise any adverse sustainability impacts at the design stage
- design and use products, processes, and services with the lowest possible consumption of raw materials, water, energy, and other resources
- adopt life-cycle assessment as normal practice, including in the supply chain, to quantify the environmental implications of projects
- apply the principles of circularity (circular economy), promoting the elimination of waste and pollution, and the continued safe use of resources for as long as possible
- adopt strategies for re-use, recycling, decommissioning and safe disposal of components and materials
- seek regenerative outcomes to redress damage and past harm.

5. Seek multiple views to solve sustainability challenges

Solving increasingly complex and interconnected sustainability challenges will require working in multi-disciplinary teams, across geographical boundaries, and with greater inclusivity of communities. Engineering professionals should:

- pro actively engage with all those who may be impacted, positively or negatively, by proposed solutions
- seek to involve those who traditionally may not have had a voice in the development of engineering solutions
- listen to, and recognize, the value of the perspectives of others
- utilise cross-disciplinary knowledge and expertise and diverse skills at all stages of a project
- consider the potential impacts for future generations
- seek a balanced approach.

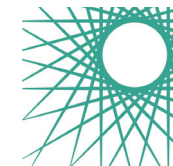
6. Manage risk to minimise adverse impact and maximise benefit to people and the environment

Engineering professionals are routinely involved in planning and managing projects, where they should:

- undertake a comprehensive risk and benefit assessment before a project begins and after completion
- strive to ensure responsible and ethical sourcing
- include the risks and benefits of environmental, economic, and social impacts beyond the lifetime of the engineering project, product, or service
- consider the potential risks of how the product or service will be used, to enable mitigation at the design stage
- prioritise sustainability goals including where scientific knowledge is not conclusive, applying the precautionary principle
- instigate monitoring systems so that all impacts of engineering projects are identified at an early stage.

NOTE: It is recommended that all building engineers review Annexes A-D of BSi Flex 8670 *Built Environment – Core criteria for building safety in competence framework – Code of practice* to help provide a broad overview of expected behaviours and safety related issues in the Built Environment.

ANNEX C – CABE Guidance on Inclusive Design



Building Engineers play a major role in shaping our built environment and should understand their responsibility to a diverse range of clients and users to ensure equitable access in the built environment. Building Engineers should consider inclusive design as an integral part of their day-to-day work. They should:

- apply the principles of inclusive design from the outset of a project, and work creatively to solve challenges and remove barriers to access and inclusion
- contribute to building an inclusive society now and in the future
- do more than just comply with legislation and codes, and acquire the skills, knowledge, understanding and confidence to embed inclusion making it the norm not the exception.

1. Apply the principles of inclusive design from the outset of a project, and work creatively to solve challenges and remove barriers to access and inclusion

Building Engineers should take practical steps to integrate inclusive design principles into their day-to-day processes and practices, so that inclusion becomes a non-negotiable, fully integrated part of delivering their professional services. The principles of inclusive design are:

- Acknowledge and incorporate diversity and difference
- Create people focussed places which everyone can use, are convenient and welcoming with no disabling barriers
- Provide independent access without additional effort, separation, or special treatment, offering choice where a single solution cannot accommodate all users
- Create an environment that is convenient and enjoyable for everyone to use.

2. Contribute to building an inclusive society now and in the future

Building Engineers should understand the key elements that contribute to a future-proofed, accessible, and inclusive built environment. These include (but are not limited to):

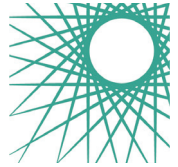
- Inclusive access from transport hubs, terminals, interchanges, parking and drop of points
- Enabling clear wayfinding through provision of suitable lighting, legible signage and information, and visual emphasis on key building features and destinations
- Making horizontal and vertical access, egress, and circulation routes safe and usable, avoiding separation from other users and exceeding minimum requirements where possible
- Providing facilities to meet the broadest range of user requirements.

3. Do more than just comply with legislation and codes, and acquire the skills, knowledge, understanding and confidence to embed inclusion making it the norm not the exception.

Building Engineers should be competent in advising on relevant equality legislation, and regulatory requirements for the design, construction, maintenance, or operation of buildings to provide equitable access, as well as how to exceed these. This should include:

- Knowledge and understanding of relevant equality or accessibility legislation for the built environment relevant to use of buildings in occupation
- Knowledge of relevant building regulations, codes, or standards for the built environment to be accessible and inclusive
- Awareness, knowledge, and ability to apply best practice guidance on inclusive design to building engineering tasks and activities they undertake.

ANNEX D – Engineering Council Guidance on Risk



1. Apply professional and responsible judgment and take a leadership role

Engineering professionals should demonstrate, by example, a commitment to safety, reliability, and ethical conduct through the professional management of risk, from the inception of any engineering activity. They should clearly demonstrate the standards by which they expect risks to be managed, thus setting an example to others. In doing so, engineering professionals should:

- be prepared to challenge assumptions and proposals
- ensure that safety receives appropriate consideration
- assess the balance of risk and benefit
- strive for all those involved to be able to identify potential problems and opportunities
- ensure that any engineer reporting to them can maintain competence in the process of risk management
- lead others in improving practice.

2. Adopt a systematic, broad, and holistic approach to risk identification, assessment, management, and review

The factors that give rise to risk are interdependent and cannot be examined in isolation. It is vital in managing risk to be aware of this interdependency and, rather than dealing with risks one-by-one as they arise, use approaches that deal with whole systems. This requires engineers to:

- make risk management an integral part of all engineering activity and decision making
- look beyond purely technical considerations, to address non-technical factors, including social, economic, environmental, and political perspectives
- don't discount weak signals without further consideration
- ensure that human factors are considered
- adopt a decision-making approach, proportionate to the risk and consistent with their organisations defined risk appetite
- aim to quantify the risks with as much precision as is relevant, sufficient and can be supported by evidence
- ensure consideration of high severity, low frequency events along with low severity, high frequency events
- be responsive to changes in the operating environment
- look for connections, patterns and relationships between risks and opportunities
- bear in mind that risk assessment should be used as an aid to professional judgment and not as a substitute for it.

3. Comply with legislation and codes, but be prepared to suggest or promote further improvements.

Regulations and codes are generic. They can only deal with anticipated events and cannot predict every possible situation. Engineering professionals should take a measured, yet challenging, approach to potential risks, whether regulations apply. They should:

- act in accordance with codes of conduct
- know about and comply with the law in countries where they are operating or where their products or services will be used
- organize and understand the intent behind standards and codes, and understand when their limits are being approached
- comply with current relevant legal requirements governing engineering risk issues
- seek advice where necessary
- where it is practicable, seek further improvements, thus embedding a culture of seeking continuous improvement
- be open-minded and avoid hiding behind regulations.

4. Ensure good communication with the others involved

Communicating effectively with all stakeholders is important to ensure that risks and their implications are understood properly. Within an organisation, risk management should be communicated as a core value. Engineering professionals should:

- establish strong, honest, and effective two-way communication within and beyond their organisation
- establish a consultation and feedback process about risks with all stakeholders, including the public and local community
- clearly express the balance of risk and benefit
- communicate clearly assumptions made during the risk management process
- clearly communicate individuals' responsibilities in managing risk over the lifetime of the engineering activity
- encourage a culture of 'open reporting' and a spirit of questioning and learning from others
- avoid a 'good news only' or closed culture.



5. Ensure that sustainable systems for oversight and scrutiny are in place

Effective oversight and assurance processes are important safeguards in controlling risk. They should be challenging and carried out with independence from those creating the risk or attempting to control it. Engineering professionals should:

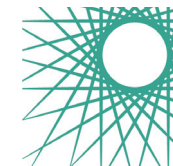
- be aware that risk assessment documentation may be used in incident investigations
- ensure that effective oversight and assurance procedures and systems are in place, and are sufficiently independent
- ensure that roles, responsibilities, and accountabilities are understood and clearly defined, especially where functions are outsourced
- include assessment of culture
- not limit assurance to audit or physical systems.

6. Contribute to public awareness of risk

The perception of risk among the public is influenced by a range of factors, including emotional ones. Engineering professionals have an important role in raising awareness and understanding about actual levels of risk and benefit and helping to prevent misconceptions. They should:

- be prepared to engage in public debate on the perceived risks and benefits
- ensure that discussion with the public includes management of risk
- ensure that the public are informed about all aspects of risk management
- explain the quantitative and qualitative aspects of risk with clarity and supporting evidence
- be honest and clear about assumptions
- be prepared to challenge misrepresentations
- communicate to the public its role in risk management.

ANNEX E – Engineering Council Statement of Ethical Principles



1. Honesty and integrity

Engineering professionals have a duty to uphold the highest standards of professional conduct including openness, fairness, honesty, and integrity. They should:

- act in a reliable and trustworthy manner
- be alert to the ways in which their work and behaviour might affect others and respect the privacy, rights and reputations of other parties and individuals
- respect confidentiality
- declare conflicts of interest
- avoid deception and take steps to prevent or report corrupt practices or professional misconduct
- reject bribery and improper influence.

2. Respect for life, law the environment and public good

Engineering professionals have a duty to obey all applicable laws and regulations and give due weight to facts, published standards and guidance and the wider public interest. They should:

- hold paramount the health and safety of others and draw attention to hazards
- ensure their work is lawful and justified
- recognise the importance of physical and cyber security and data protection
- respect and protect personal information and intellectual property
- protect, and where possible improve, the quality of built and natural environments
- maximise the public good and minimise both actual and potential adverse effects for their own and succeeding generations
- take due account of the limited availability of natural resources
- uphold the reputation and standing of the profession.

3. Accuracy and rigour

Engineering professionals have a duty to acquire and use wisely the understanding, knowledge and skills needed to perform their role. They should:

- always act with care
- perform services only in areas in which they are currently competent or under competent supervision
- keep their knowledge and skills up to date
- assist the development of engineering knowledge and skills in others
- present and review theory, evidence, and interpretation honestly, accurately, objectively and without bias, while respecting reasoned alternative views
- identify, evaluate, quantify, mitigate, and manage risks not knowingly mislead or allow others to be misled.

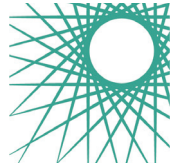
4. Leadership and communication

Engineering professionals have a duty to abide by and promote high standards of leadership and communication. They should:

- be aware of the issues that engineering, and technology raise for society, and listen to the aspirations and concerns of others
- promote equality, diversity, and inclusion
- promote public awareness and understanding of the impact and benefits of engineering achievements
- be objective and truthful in any statement made in their professional capacity
- challenge statements or policies that cause them professional concern

This guidance should be read alongside the **CABE Guide to Ethical Professionalism**.

ANNEX F – Engineering Council Guidance on Whistleblowing



Engineers and technicians should understand their professional obligations with respect to whistleblowing and know where to go for guidance and advice. The following guidance describes whistleblowing and the processes that engineers, and technicians should follow when confronted by a potential whistleblowing situation.

1. What is whistleblowing?

Whistleblowing is defined by the UK Whistleblowing Commission as 'the raising of a concern, either within the workplace or externally, about a danger, risk, malpractice, or wrongdoing which affects others. For engineers, engineering technicians and ICT technicians, whose professional lives revolve around the management of risk, 'risk' is better interpreted to mean 'inadequate quantification and management of risk'. A concern may include something which you may not be directly involved in but become aware of in the course of your work.

2. What are my obligations if I have such a concern?

Your obligations when you have a concern can be categorised as ethical, professional, and legal:

- You have an ethical responsibility as an engineer to act when you encounter a material and unmanaged risk, danger, malpractice, or wrongdoing which adversely affects others
- You have an obligation as a member of a professional engineering institution to act in line with your institution's Code of Conduct
- You have a legal obligation to comply with the laws of the country in which you operate, and in all countries, you will have an obligation to carry out your duties as an engineer or technician in a competent manner.

Your obligation to act when encountering something inconsistent with your Code of Conduct arises under that Code, it is not a legal requirement. However, you may become liable in law if you fail to act when it is part of your own professional duty. Your professional engineering institution's Code of Conduct may have changed since you joined, so it is important to ensure that you are up to date on your obligations.

This guidance does not cover the consequences of failing an ethical responsibility or a legal obligation; however, if you fail in your professional obligations, you may be subject to your professional engineering institution's disciplinary procedures and you could, if professionally registered, face removal from the Engineering Council's register.

Members of the Armed Forces and those involved in protecting National Security who are not protected by the Public Interest Disclosure Act 1998 (PIDA) will be excluded from following some aspects of this guidance, for example by working through the military chain of command and not externally. You should check with your employer.

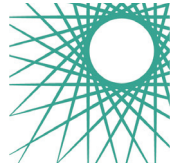
3. What does the relevant legislation say?

The general principles of this guidance apply in whichever country engineers and technicians are working. However, the laws affecting whistleblowing vary widely from country to country. Some countries may have little or no protective legislation in place, or it may favour the state, or the employer more than UK or US legislation does.

In considering how to act, the underlying law applicable to you or your employer may be that of the country where you are working, but if your contract of employment is made in England, it is subject to English law. Other combinations of circumstances may create more complexity, and often both English and local law may be relevant.

If you are considering whistleblowing outside the UK, you should ensure that you are aware of local legislation and local culture.

4. How do I raise a concern?



Technicians and engineers who cannot easily address a concern on their own should discuss it with, or report the concern to, their immediate employer or manager.

If this does not address the concern, you should ensure you are aware of, and make use of, existing company and industry sector regulatory reporting systems. Where there is no whistleblowing policy, you should still try to raise any concern internally. If this approach has not resolved the concern, or your immediate employer or manager is part of the cause, then you are obliged by your institution's Code of Conduct to escalate your concern, which could mean raising it externally.

Provided that a genuine concern is raised, and you have a reasonable belief that you are acting in the public interest, UK law offers individuals protection from action taken by an employer for simply reporting a concern.

Your industry may be regulated. You should make use of any reporting systems which have been put in place by, for example the Health and Safety Executive (HSE); Civil Aviation Authority (CAA); Maritime and Coastguard Agency (MCA); Office of Rail and Road (ORR) or other prescribed persons or bodies.

You should not try to use the protection which relevant legislation may offer whistle-blowers simply to air or extend a personal disagreement or grievance with your employer.

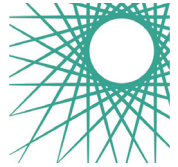
5. Where can I get advice?

If the concern is a technical one which does not go beyond the application of engineering principles, your professional engineering institution may be able to offer guidance and advice. You should follow your professional engineering institution's guidance and advice and make use of any procedure it offers for raising, discussing, and monitoring a technical issue.

If the concern is of a legal or HR nature, then advice should be sought elsewhere. In addition to Public Concern at Work (the whistleblowing charity), industry regulators, trades union or employee legal assistance programmes may be able to provide additional help and advice.

If you are in a position of responsibility in an organisation without a clear ethical Code of Conduct and whistleblowing policy, you should take steps to ensure these are put in place. In the UK, guidance is available from Code of Practice PAS 1998:2008 issued by the British Standards Institute (BSI) in conjunction with Public Concern at Work; the recommended code of practice in the UK Whistleblowing Commission Report; and the Department for Business, Innovation and Skills' Whistleblowing Guidance for Employers.

ANNEX G – Engineering Council Guidance on Security



Security can be defined as the state of relative freedom from threat or harm caused by deliberate, unwanted, hostile, or malicious acts. It operates on several levels ranging from national security issues to countering crime.

This guidance sets out six key principles to guide engineers and technicians in identifying, assessing, managing, and communicating issues about security.

Cyber Security

Launched in Augil 2021, the [UK Cyber Security Council](#) is the self-regulatory body for the UK's cyber security profession. It develops, promotes and stewards nationally recognised standards for cyber security in support of the UK Government's National Cyber Security Strategy to make the UK the safest place to live and work online. A range of information for individuals and organisation is available on its website.

The [UK's National Cyber Security Centre](#) is a single point of contact for small and medium sized enterprises (SMEs), larger organisations, government agencies, the general public and departments. It works collaboratively with other law enforcement, defence, the UK's intelligence and security agencies and international partners.

Many of the [professional engineering institutions](#) (PEIs) and [Professional Affiliates](#) provide material on security, data and privacy, which is a very useful starting point for engineers and technicians.

1. Adopt a security-minded approach to your professional and personal life

A security-minded approach requires engineers and technicians to:

- be aware that their behaviour, use of social media, publications and public presentations affects their own security and the security of others
- assess potential threats and vulnerabilities end to end, taking account of the potential harm to people, the asset or system, and the sensitivity of the information, which may be societal, environmental, or commercial
- be aware that security risks are interdependent, adopting a holistic risk management view that is appropriate and proportionate, and is an integral part of all engineering activity and decision-making
- remember that security risk assessment is an aid to professional judgement, not a substitute for it
- be aware that overly elaborate processes and procedures can lead to poor compliance and undermine a security culture
- identify vulnerabilities that may be used in a hostile, malicious or inadvertent manner to create security breaches or failures
- be responsive to changes in the operating environment, including the impact of changes in use of the asset or system, its wider connectivity and emerging threats and vulnerabilities

2. Apply responsible judgement and take a leadership role

When implementing a security-minded approach, engineers and technicians should demonstrate a commitment to privacy, reliability, and ethical conduct by:

- leading others in improving practice
- working with other professionals to ensure informed, proportionate, holistic judgements
- empowering all those involved to identify potential security challenges and opportunities
- being prepared to challenge assumptions and proposals
- ensuring that everybody reporting to them can maintain competence in security.

3. Comply with legislation and codes, understand their intent, and be prepared to seek further improvements

Seeking advice where necessary, engineers and technicians should:

- be aware of, and comply with, the security-related laws in countries where they operate or where their products or services will be used
- act in accordance with relevant security-related codes of conduct
- recognise and understand the intent behind security standards and codes, as well as their limitations
- seek further improvements where reasonably practicable, thus embedding a culture of continuous security development
- be open-minded and avoid using regulations to facilitate complacency.

4. Ensure good security-minded communications

Good security depends on communicating effectively and appropriately with customers, clients, suppliers, sub-contractors, and non-engineering colleagues.

Engineers and technicians should:

- adopt appropriate measures to protect sensitive information when it is communicated, used, and stored, both within and beyond their organisation
- be able to clearly express the risks and benefits
- where appropriate, encourage an 'open reporting' approach to security risks, incidents, and near-misses, coupled with a spirit of questioning and learning
- take a measured approach to publishing information at conferences, workshops, and seminars, or in professional or trade publications, to avoid helping those intent on hostile reconnaissance
- be aware of the impact of data aggregation, both through accumulation and association, including the use of disparate sources
- recognise the persistent nature and accessibility of information published on the internet or otherwise made publicly available
- recognise that indiscriminate publication of project, technical or personal information can aid reconnaissance and enable security breaches through social media
- be aware of the use of social engineering* to manipulate individuals to give up confidential information
- ensure responsible use of social media for both personal and professional purposes.

*Social engineering:

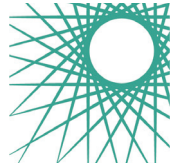
www.cpni.gov.uk/advice/Personnel-security1/Social-engineering-Understanding-the-threat

5. Understand, comply with, and seek to improve lasting systems for security governance

Effective security requires good governance, with clear reporting lines and accountability at board or executive level.

Engineers and technicians should:

- ensure that they, and those who work with them, understand the relevant security management policies, processes, and procedures
- seek regular briefings on the security threats facing their organisation and understand how threat agents might exploit vulnerabilities in their customers/users and their own assets, systems, or business processes
- ensure that security-related roles and responsibilities are clearly assigned and understood, irrespective of whether functions or services are outsourced
- ensure that there are appropriate mechanisms for reporting and feedback on security incidents and issues
- contribute to the development and review of relevant security management frameworks, particularly about aspects which may not be well understood
- scrutinise the security culture and responses to management systems, with audits encompassing processes and technical and paper systems.



6. Contribute to public and professional awareness of security

Engineers and technicians have an important role in raising awareness and understanding about security risk and benefit. They should:

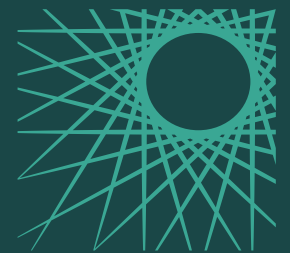
- be prepared to engage in debate on security risks and benefits, especially in relation to new technologies and innovative developments
- be security-minded during public discussion
- recognise the social, political, and economic implications of security risks and acknowledge these through appropriate channels
- be honest and clear about uncertainties, and prepared to challenge misrepresentations and misconceptions
- contribute to public and professional awareness of security by sharing and promoting knowledge of effective solutions.

We're here to help

If you have any queries about **Membership Competency Frameworks**, please contact us. You can also find out further information at cbuilde.com

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