Minutes of the CIBSE Lifts Group Executive Committee Meeting

05 Jan 2024, 1400-1548h

The Chartered Institution of Building Service Engineers
222 Balham High Road
London SW12 9BS

Telephone 020 8675 5211
Facsimile 020 8675 5449
www.cibse.org

PRESENT

Adam Scott – AS
Dave Cooper - DC
John Bashford - JB
Michael Bottomley - MB
Nick Mellor - NM
Paul Clements - PC
Phil Pearson - PP
Richard Peters - RP
Wee Chuan Lim - CL

APOLOGIES

John Carroll
Rory Smith
Stefan Kaczmarczyk
Vincent Sharpe

DISTRIBUTION

Those present, apologies and web site.

1. Welcome and apologies

The meeting was opened by CL. — Note
Apologies received were noted. Purpose: pre AGM discussions.

2. Past AGM Minutes

Item 5:
- Elections, same apart from Gina and adding Erkan. Published on the Eventbrite invitations. — Note

Item 6:
- Events in 2024 covered in next section. — Note

Item 7:
- AS, MB and NM to share updates — AS/MB/NM
- PC shared linkedin Posts plan. All Execs to comment and contribute. — ALL Execs
- DC not update on training or apprenticeship.

Item 8:
- RP: will provide update on finances. Suggest we freeze our account for 2024. As CIBSE has approved the budget request for 2024. — RP

Item 9:
- AS and NM to share slides to be included. — AS/NM

3. Events in 2024

Annual General Meeting 2024 and Evening Seminars (London)
21 February 2024, 1530 - 1800h
CIBSE HQ – Balham
Seminar: Building Safety Act with Hywel Davies
PP to confirm. — PP
CL to set up TEAMS invite for recording and AS — CL

Scotland Regional Seminar
2 May 2024
Lester controls Glasgow
MB/PP to confirm. — MB/PP

Manchester Seminar
18 June 2024
Chambers
PP to confirm. — PP

15th Lifts and Escalator Symposium
18-19 September 2024
Kettering Park hotel and spa

Build2Perform at London Excel
13-14 November 2024

Annual Seminar
12 November 2024
CIBSE HQ – Balham
CL to confirm with CIBSE. — CL

4. AGM Eventbrite

CL: reminded All Execs to register. — ALL Execs

5. CLG to Society

CL: shared summary with all execs. — ALL Execs
RP: will not be able to help in 2024.
MB: wants a vote to be held by those who are attendance, that we should continue working towards moving into a society.

6. UK-Spec HRB – VT Annex

CL: shared draft a VT Annex that we can explore to create a VT specific professional qualification process. All Execs to share comments. — ALL Execs
AS: the published UK-Spec has nothing specific on lifts.
AS/NM/PP/MB: opportunity to clarify with Hywel Davies at the seminar on 21 Feb.

7. Next Meeting

21 February 2024 before AGM at CIBSE Balham — ALL Execs

End

CIBSE LIFTS GROUP  SOCIETY

Special Interest Groups

CIBSE's Special Interest Groups encompass topics that cut across our building services engineering disciplines to provide up to date information and resources.

- ASHRAE
- BUILDING SIMULATION
- CHP & DISTRICT HEATING
- DAYLIGHT GROUP
- ELECTRICAL SERVICES
- ENERGY PERFORMANCE
- FACILITIES MANAGEMENT
- HEALTHCARE
- HOMES FOR THE FUTURE
- HVAC SYSTEMS
- INFORMATION TECHNOLOGY (IT) & CONTROLS
- INTELLIGENT BUILDINGS
- **LIFTS**
- NATURAL VENTILATION
- RESILIENT CITIES
- SCHOOL DESIGN

Each group offers a programme of events each year from which you can participate to fulfil your CPD, as well as communicating with their members about the relevant policy and guidance updates for their chosen area of interest.

Our specialist interest groups are **run by committees; teams of volunteers that are elected annually at each group's Annual General Meeting.** Group members wishing to become a part of the committee can put their name forward for election when the date is announced to the group. The group chairs sit on the CIBSE Council.

Committees can co-opt members at any point throughout the year. **General members of group committees do not need to be a CIBSE member**; they just need to be a member of the Specialist Interest Group. Officer roles (Chair, Vice Chair, Honorary Treasurer and Honorary Secretary) do have membership requirements for election.

Currently

CLG Members = CIBSE Members + Non CIBSE Members
= 1017 + 723
= 1763

CIBSE Membership Grade	Number of CLG members 2022
Honorary Fellow	3
Fellow (FCIBSE)	82
Member	545
Associate (ACIBSE)	70
Licentiate (LCIBSE)	35
Affiliate	224
Graduate	37
Student Part Time and Apprentices	10
Student Full Time	11
Total	**1017**

Activities

Executive meetins
4-5 seminars/events annually
AGM
CIBSE Guide D
General assistance to industry

The Officer Nominations for 2024 are:

Chair - Michael Bottomley
Vice Chair - Phil Pearson
Secretary - Wee Chuan Lim
Treasurer - Richard Peters

The Committee Position Nominations for 2024 are:

Events Organiser (North and South) - Phil Pearson / Erkan Soydan
BSi Representative - Adam Scott
Event Exhibition - John Bashford
Training Development and SAFED Representative - David Cooper
Press and Publicity - Paul Clements
LEIA Representative - Nick Mellor
University of Northampton Representative - Stefan Kaczmarczyk
INITA Representative - Vince Sharpe
International Representative USA - Rory Smith
International Representative AU - John Carroll

Societies

CIBSE societies represent key specialisms of the building services industry, offering professional recognition to their members and support the science, art and practice of their field.

PATRONS

The 'corporate supporters' of CIBSE because we are a group of businesses who collaborate to give financial, technical and moral backing to a wide range of initiatives led by the Institution.


- The SLL Lighting Handbook (2018)
- The SLL Code for Lighting (2022)

SLL Lighting Guides

- SLL Lighting Guide 0: Introduction to light and lighting (2017)
- SLL Lighting Guide 1: The industrial environment (2012, updated 2018)
- SLL Lighting Guide 2: Lighting for healthcare premises (2019)
- SLL Lighting Guide 4: Sports lighting (2023)
- SLL Lighting Guide 5: Lighting for education (2015) (under review)
- SLL Lighting Guide 6: The exterior environment (2015)
- SLL Lighting Guide 7: Offices (2023)
- SLL Lighting Guide 8: Lighting for museums and art galleries (2021)
- SLL Lighting Guide 9: Lighting for communal residential buildings (2023)
- SLL Lighting Guide 10: Daylighting - A guide for designers (2014)
- SLL Lighting Guide 11: Surface reflectance and colour (2001)
- SLL Lighting Guide 12: Emergency lighting (2023)
- SLL Lighting Guide 13: Lighting for places of worship (2014, updated 2018)
- SLL Lighting Guide 14: Control of electric lighting (2023)
- SLL Lighting Guide 15: Transport buildings (2017)
- SLL Lighting Guide 16: Lighting for stairs (2017)
- SLL Lighting Guide 17: Lighting for retail premises (2018)
- SLL Lighting Guide 18: Lighting for licensed premises (2015)
- SLL Lighting Guide 19: Lighting for extreme conditions (2019)
- SLL Lighting Guide 20: Lighting for facilities management (2020)
- SLL Lighting Guide 21: Protecting the night-time environment (2021)
- SLL Lighting Guide 22: Lighting for control rooms (2022)

Other SLL Lighting Publications

- Commissioning Code L: Lighting (2018)
- TM56 Creating a circular economy in the lighting industry (2021)
- TM63.2 Embodied carbon in building services: lighting (2023)
- Reflections on 100 years of lighting in the UK (2009)

SOCIETY OF LIGHT AND LIGHTING (SLL)

With over **3300 members globally,** the SLL is recognised as an authority on lighting and welcomes all who are interested in any aspect of the world of light, lighting, and its design or application, with an impressive library of **publications**.

SLL **Sustaining Members** are a network of businesses who collaborate to give financial, technical and moral support to a wide range of Society initiatives. The Electrotechnical Certification Scheme **(ECS)** accepts applications from members SLL for the Professionally Qualified Person (PQP) card, providing construction site access.

The SLL offers different grades of membership, depending on lighting knowledge and experience.

- **Student Membership**
- **Affiliate Membership**
- **Associate Member (AMSLL)**
- **Member (MSLL)**
- **Fellow (FSLL)**

SOCIETY OF FACADE ENGINEERING (SFE)

Formed in 2004 as a joint initiative of CIBSE, IStructE and the RIBA, with about **1700 members**

It is now also possible to apply for MCIBSE CEng status through a **tailored Façade Engineering route**, which will also grant MSFE status. This will ensure that at least one interviewer on the panel is a façade engineer familiar with the experience required of façade engineers applying through this route.

- **Student Membership**
- **Affiliate Membership**
- **Associate Member (AMSLL)**
- **Member (MSLL)**
- **Fellow (FSLL)**

INSTITUTE OF LOCAL EXHAUST VENTILATION ENGINEERS (ILEVE)

The ILEVE recognise competence in the practical application of local exhaust ventilation and to raise awareness of the importance of good air quality and ventilation in workplaces.

Providing a membership designation **FILEVE, MILEVE, AILEVE** as a credential giving others evidence of demonstrated knowledge and skills. Setting the criteria for best practice in the profession

ILEVE corporate members are issued with **competency cards** to demonstrate their accredited fields of expertise. New cards are issued each year and the expiry date is clearly shown, ensuring that demonstrated competencies are up-to-date.

SOCIETY OF DIGITAL ENGINEERING (SDE)

Formed to provide a home for those involved in digitising the built environment, either as designers, contractors, manufacturers, clients, facility managers or software vendors.

SDE Partner Membership offers organisations the opportunity to 'Partner' with the Society of Digital Engineering and its members.

Those involved in the higher management of digital engineering on projects will be able to join as Associates, Members or Fellows, to recognise their seniority in the industry and gain designatory letters of **ASDE, MSDE or FSDE**

Digital Engineering Series | 18 CPD

The Digital Engineering Series is aimed at those involved in all stages of a project: engagement, design, construction, handover, and use of a constructed asset.

Each module purchased comes with a complimentary relevant publication to support your learning experience. View Digital Engineering publications

These Digital Engineering Series modules reflect the contents of the BS and PAS 1192 series. These have now been largely superseded by the ISO 19650 series. However, the processes and procedures remain the same, even if some of the names have changed. For a better understanding of these changes, please refer to PD 19650-0, which covers the transition from the "1192 series" to the ISO 19650 series.

SOCIETY OF PUBLIC HEALTH ENGINEERS (SoPHE)

The Society of Public Health Engineers (SoPHE) aims to provide a higher profile and focus for public health engineers within CIBSE.

The Society has its own classes of membership independent of those of CIBSE: (**ASoPHE, MSoPHE, FSoPHE**)

A society charge of £10-£30 over and above the lowest cost membership enables us to fund a greater level of activity and there is also a membership class for companies - **SoPHE Industrial Associates** - who wish to be involved with the Society's work.

Annual Technical Conference, Quarterly Newsletter and to attract YEN, talks and site visits arranged in 2023.

If we become a SOCIETY

New Name and LOGO

- Society of Vertical Transportation (SVT)

Regional and Young Engineers / Apprentice Networks

- UK - London and South East
- UK - Midlands
- UK - Scotland
- UK - Wales

- India
- Dubai
- Hong Kong
- Singapore
- KSA
- ...

More Publicity

- New publicity drive
- Opportunity to create more focused registration process to better understand the members' areas of interest and expertise
- Hopefully can improve event attendance

POSSIBILITIES

Succession

- The current committee is very stretched.
- More roles creates a pool of candidates for taking on committee responsibilities.
- Provide wider prospective of the industry

Targeted Learning and Events

- Technical
- Installation
- Construction
- Sales
- Repair
- Service
- Production
- Operations
- Compliance
- Inspection
- Health & Safety
- Project Management
- Traffic analysis
- Legislation, Codes and Standards
- ESG
- Contracts and financial awareness

Additional Funding

- Dedicated budget
- Trade affiliation
- Bursaries
- Scholarships and awards
- Gala Dinners
- Courses, Seminars + Training

More Publication
- CIBSE Guide D
- Design Handbooks
- Industry focused library / database

Route to qualification and grades of membership

- Student Membership
- Affiliate Membership
- Associate Member (AMSVT)
- Member (MSVT)
- Fellow (FSVT)

Refer Draft UK-SPEC-HRB VT Annex

CONCERNS

Limited CIBSE Support

- Although much improved in 2023, CIBSE depends on each Society / Group to lead and run all their activities. We do not think we will be receiving more support, even as a society.
- We may not gain access to the membership data collected due to privacy and confidentiality.

Route to qualification and grades of membership require more commitment

- The qualified VT Panel will need to be identified. Initially from the CLG Committee and hopefully more when more are professionally qualified via the bespoke VT route.

Committee is already stretched

- The current committee needs to grow with new volunteers to take on roles, it has been very difficult to attract new members willing to commit time.
- At least for the initial year of the Society, the current committee will be responsible. These usually lands on the shoulder of the same individuals.

Cost

- Society requires payment towards CIBSE and Society.

CIBSE takes over funding account

- At the moment CLG maintains a separate account and am free to decide how funds are used. Will we lose that autonomy?

Society of Facade Engineer (SFE) Feedback

- 1700-2000 members
- Need to pay for CIBSE and Society membership
- Events usually only attended by Facade related members
- 350 attended GALA dinner in Park Lane, £500/ ticket
- They have a budget but have not idea how the profits are used.
- Bespoke route to Facade Engineering qualification started 18 months ago.
- Require assessor training
- CIBSE support is generally lacking. many of the communication staff have left.
- Organising events still a huge weight on handful of volunteers. Finding succession is really difficult.

Engineering Council

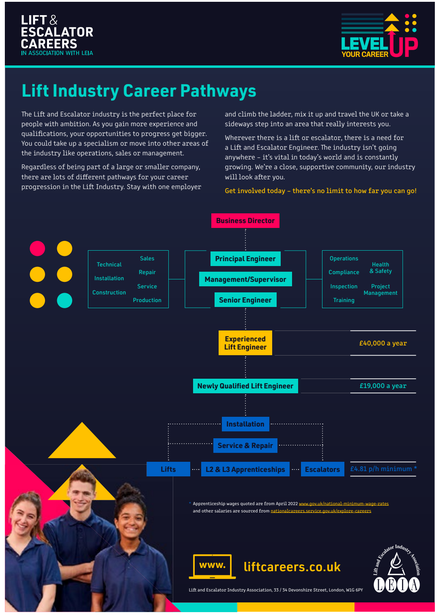
If the CLG wants to create a VT specific Competency ANNEX, it may look like this...

Vertical Transportation Discipline Annex

to the UK Standard for Professional Engineering Competence and Commitment
Contextualised for Higher-Risk Buildings (UK-SPEC HRB)

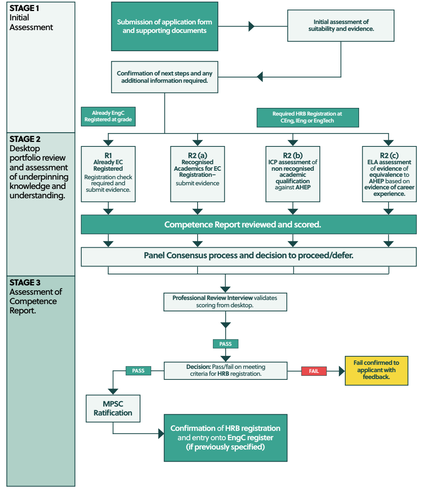
First edition

Published December 2023



Section 2: HRB Application Process

The following flow chart provides an overview of the three primary stages of the HRB registration process which are the same for all applicants. The detailed route you will follow is determined at Stage 1 following receipt of your application form and HRB Competence Report, with desktop assessment and review of evidence submitted at Stage 2 before proceeding to a Professional Review Interview at Stage 3. Further detail on each stage is provided in the guidance documents.



Chartered CEng Engineer

Chartered Engineers are able to demonstrate:

The theoretical knowledge to solve problems in new technologies and develop new analytical techniques

- Successful application of the knowledge to deliver innovative products and services and/or take technical responsibility for complex engineering systems
- Accountability for project, finance and personnel management and managing trade-offs between technical and socio-economic factors
- Skill sets necessary to develop other technical staff
- Effective interpersonal skills in communicating technical matters.

Eligibility

- A Bachelors degree, with Honours, in engineering or technology, accredited for CEng, plus an appropriate and accredited Masters degree or Engineering Doctorate (EngD), or appropriate further learning to Masters level
- An accredited integrated MEng degree

Incorporated IEng Engineer

Incorporated Engineers are able to demonstrate:

- The theoretical knowledge to solve problems in developed technologies using well proven analytical techniques
- Successful application of their knowledge to deliver engineering projects or services using established technologies and methods
- Responsibility for project and financial planning and management together with some responsibility for leading and developing other professional staff
- Effective interpersonal skills in communicating technical matters
- Commitment to professional engineering values.

Eligibility

The IEng title is open to anyone who can demonstrate the required professional competences and commitment, as set out in the professional standard UK-SPEC. Individuals generally develop this through education and working experience.

- An accredited Bachelors or honours degree in engineering or technology
- An accredited HNC or HND in engineering or technology (for programmes started before Sept 1999)
- An HNC or HND started after Sept 1999 (but before Sept 2010 in the case of the HNC) or a Foundation Degree in engineering or technology, plus appropriate further learning to degree level
- An NVQ4 or SVQ4 that has been approved for the purpose by a licensed engineering institution, plus appropriate further learning to degree level*

Engineering EngTech Technician

Engineering Technicians are required to apply safe systems of work and are able to demonstrate::

- Evidence of their contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services
- Supervisory or technical responsibility
- Effective interpersonal skills in communicating technical matters
- Commitment to professional engineering values.

Eligibility

EngTech registration is open to anyone who can demonstrate the required professional competences and commitment.

Typically, applicants will have successfully completed an Advanced/ Modern Apprenticeship or other work based learning programme approved by their professional engineering institution. This can lead directly to Engineering Technician registration.

Or, alongside appropriate working experience, they will hold:

- a qualification, approved by a licensed professional engineering institution, in engineering or construction set at level 3 (or above) in the Qualifications and Credit Framework/National Qualifications Framework for England and Northern Ireland; or at level 6 (or above) in the Scottish Credit and Qualifications Framework; or at level 3 (or above) in the Credit and Qualifications Framework for Wales;
- or equivalent qualifications approved by a licensed professional engineering institution.

Overview and FAQs

https://liftcareers.co.uk/wp-content/uploads/2021/12/leia-career-map-download-final.pdf

https://cdn.ymaws.com/cbuilde.com/resource/resmgr/engineering_council/hrb/ec_hrb_overview_-_no_link.pdf

https://www.cibse.org/membership-registration/professional-registration/higher-risk-buildings-registration

https://www.engc.org.uk/professional-registration/the-professional-titles/

Assessment

All applicants for the HRB Register will be required to write an Engineering Practice Report demonstrating how they meet the HRB Competences and attend Professional Review Interview.

I already hold EngC Registration and wish to apply for the same level of HRB Registration.

You will be required to write an Engineering Practice Report on the HRB Competences and attend Professional Review Interview.

Golden thread definition

Summary

The golden thread is both the information that allows you to understand a building and the steps needed to keep both the building and people safe, now and in the future.

Full definition

1. The golden thread will hold the information that those responsible for the building require to:

- show that the building was compliant with applicable building regulations during its construction and provide evidence of meeting the requirements of the new building control route throughout the design and construction and refurbishment of a building
- identify, understand, manage and mitigate building safety risks in order to prevent or reduce the severity of the consequences of fire spread or structural collapse throughout the life cycle of a building

2. The information stored in the golden thread will be reviewed and managed so that the information retained, at all times, achieves these purposes.

3. The golden thread covers both the information and documents and the information management processes (or steps) used to support building safety.

4. The golden thread information should be stored as structured digital information. It will be stored, managed, maintained and retained in line with the golden thread principles (see below). The government will specify digital standards which will provide guidance on how the principles can be met.

5. The golden thread information management approach will apply through design, construction, occupation, refurbishment and ongoing management of buildings. It supports the wider changes in the regime to promote a culture of building safety.

6. Building safety should be taken to include the fire and structural safety of a building and the safety of all the people in or in the vicinity of a building (including emergency responders).

7. Many people will need to access the golden thread to update and share golden thread information throughout a building's lifecycle, including but not limited to building managers, architects, contractors and many others. Information from the golden thread will also need to be shared by the Accountable Person with other relevant people including residents and emergency responders.

The golden thread principles

1. Accurate and Trusted: the dutyholder/Accountable Person/Building Safety Managers and other relevant persons (e.g. contractors) must be able to use the golden thread to maintain and manage building safety and ensure compliance with building regulations. The Regulator should also be able to use this information as part of their work to assess the compliance with building regulations, the safety of the building and the operator's safety case report, including supportive evidence, and to hold people to account. The golden thread will be a source of evidence to show how building safety risks are understood and how they are being managed on an ongoing basis. The golden thread must be accurate and trusted so that relevant people use it. The information produced will therefore have to be accurate, structured, and verified, requiring a clear change control process that sets out how and when information is updated and who should update and check the information.

2. Residents feeling secure in their homes: residents will be provided information from the golden thread – so that they have accurate and trusted information about their home. This will also support residents in holding Accountable Persons and Building Safety Managers to account for building safety. A properly maintained golden thread should support Accountable Persons in providing residents the assurance that their building is being managed safely.

3. Culture change: the golden thread will support culture change within the industry as it will require increased competence and capability, different working practices, updated processes and a focus on information management and control. The golden thread should be considered an enabler for better and more collaborative working.

4. Single source of truth: the golden thread will bring all information together in a single place meaning there is always a 'single source of truth'. It will record changes (i.e. updates, additions or deletions to information, data, documents and plans), including the reason for change, evaluation of change, date of change, and the decision-making process. This will reduce the duplication of information (email updates and multiple documents) and help drive improved accountability, responsibility and a new working culture. Persons responsible for a building are encouraged to use common data environments to ensure there is controlled access to a single source of truth.

5. Secure: the golden thread must be secure, with sufficient protocols in place to protect personal information and control access to maintain the security of the building or residents. It should also comply with current GDPR legislation where required.

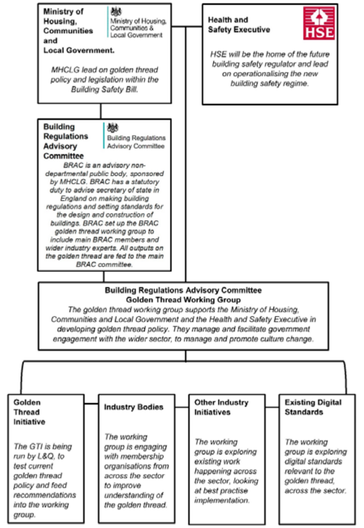
6. Accountable: the golden thread will record changes (i.e. updates, additions or deletions to information, data, documents and plans), when these changes were made, and by who. This will help drive improved accountability. The new regime is setting out clear duties for dutyholders and Accountable Person for maintaining the golden thread information to meet the required standards. Therefore, there is accountability at every level – from the Client/Accountable Person to those designing, building or maintaining a building.

7. Understandable/consistent: the golden thread needs to support the user in their task of managing building safety and compliance with building regulations. The information in the golden thread must be clear, understandable and focused on the needs of the user. It should be presented in a way that can be understood, and used by, users. To support this, dutyholders/Accountable person should where possible make sure the golden thread uses standard methods, processes and consistent terminology so that those working with multiple buildings can more easily understand and use the information consistently and effectively.

8. Simple to access (accessible): the golden thread needs to support the user in their task of managing building safety and therefore the information in the golden thread must be accessible so that people can easily find the right information at the right time. This means that the information needs to be stored in a structured way (like a library) so people can easily find, update and extract the right information. To support this the government will set out guidance on how people can apply digital standards to ensure their golden thread meets these principles.

9. Longevity/durability and shareability of information: the golden thread information needs to be formatted in a way that can be easily handed over and maintained over the entire lifetime of a building. In practical terms, this is likely to mean that it needs to align with the rules around open data and the principles of interoperability – so that information can be handed over in the future and still be accessed. Information should be able to be shared and accessed by contractors who use different software and if the building is sold the golden thread information must be accessible to the new owner. This does not mean everything about a building and its history needs to be kept, the golden thread must be reviewed to ensure that the information within it is still relevant and useful.

10. Relevant/proportionate: preserving the golden thread does not mean everything about a building and its history needs to be kept and updated from inception to disposal. The objective of the golden thread is building safety and therefore if information is no longer relevant to building safety it does not need to be kept. The golden thread, the changes to it and processes related to it must be reviewed periodically to ensure that the information comprising it remains relevant and useful.



High Risk Building (HRB)

Use criteria

For a building to qualify as a higher-risk building, it will meet

either

the height (18 metres or higher)
or storeys (seven storeys or more) threshold,
and will contain at least two residential units,

or

be a care home or hospital, as specifed in the regulations set out at: www.legislation.gov.uk

To be considered a higher-risk building during the design and construction phase of the regime, a proposed new building must meet a certain set of use criteria. This is in addition to meeting the height or storeys threshold.

If a proposed new building meets the height or storeys threshold and contains at least two residential units, is or contains a hospital or a care home, then it is a higher-risk building. This applies unless the entire building is used as a secure residential institution, hotel, or military barracks, or if the building contains any living accommodation provided by the Ministry of Defence for military personnel. These buildings are explicitly excluded.

Higher-risk buildings, for the design and construction requirements, are defined in both Section 120D of the Building Act 1984 (the 1984 Act) as amended by the Building Safety Act 2022 (the 2022 Act) and the Higher-Risk Buildings (Descriptions and Supplementary Provisions) Regulations 2023 (the Regulations).

To understand whether a proposed new building is a higher-risk building, the 1984 Act as amended by the 2022 Act, and the Regulations need to be considered together.

https://www.gov.uk/government/publications/building-regulations-advisory-committee-golden-thread-report/building-regulations-advisory-committee-golden-thread-report#golden-thread-definition

https://www.gov.uk/government/collections/guidance-on-the-criteria-for-being-a-higher-risk-building

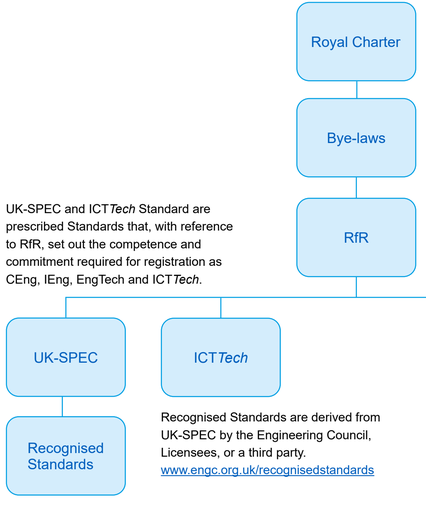
Hierarchy of regulations and standards

The Engineering Council is the UK's regulatory body for the engineering profession. It operates under a Royal Charter and is governed by a Board that represents UK Licensees as well as individuals from industries and sectors with an interest in the regulation of the profession.

This document is one in a series of closely related publications:

- **Regulations for Registration (RfR)**
- **Regulations for Licensing (RfL)**
- **The UK Standard for Professional Engineering Competence and Commitment (UK-SPEC)**
- **Information and Communications Technology Technician Standard (ICT*Tech* Standard)**
- **Approval and Accreditation of Qualifications and Apprenticeships (AAQA)**
- **Accreditation of Higher Education Programmes (AHEP)**

The Engineering Council publishes these documents on behalf of the UK engineering profession, with whom they were developed and are kept under review. The relationship between these publications is:



The Royal Charter is an instrument of incorporation granted by the UK monarch. It confers independent legal personality on the Engineering Council and defines its objectives, constitution and powers to govern its own affairs.

The Bye-laws are the rules by which the Engineering Council regulates itself.

RfR sets out the regulations that Licensees of the Engineering Council must adhere to when registering applicants, recognising programmes of learning and development, and undertaking related processes. These are expanded on in the four prescribed Standards below.

UK-SPEC and ICT*Tech* Standard are prescribed Standards that, with reference to RfR, set out the competence and commitment required for registration as CEng, IEng, EngTech and ICT*Tech*.

Recognised Standards are derived from UK-SPEC by the Engineering Council, Licensees, or a third party. www.engc.org.uk/recognisedstandards

AAQA and AHEP are prescribed Standards that, with reference to RfR set out the policy, context, rules and procedures for recognising learning and development programmes that help develop the competence and commitment set out in UK-SPEC and ICT*Tech* Standard.

The Engineering Council also publishes policy statements, guidance for institutions and guidance for individuals. These, along with all the publications listed above, are available on the Engineering Council website: www.engc.org.uk

Same as UK-SPEC-HRB

This process is subject to licensing by Engineering Council and ongoing third-party review of the assessment process to ensure that outcomes are consistent and based on robust evidence of competence. However, applicants are reminded that:

I. Registration provides evidence of general levels of competence only and does not indicate the ability to undertake any task.

II. Building Engineers must therefore adhere strictly to working within the limits of their own competence and refuse to undertake work they know is beyond those limits.

Grades of registration for HRB

Registration for HRB is available at the existing three grades of Engineering Council registration which will be recognised by descriptors in addition to CEng, IEng and EngTech post nominals* (if applicable) (TBC once designations have been approved by the Engineering Council).

Types of registration for HRB

UK-SPEC for HRB sets out competence criteria relating to:

- Generalist Engineering Disciplines (including Building Engineers) — Competencies **CC - EE** are common
- Structural Engineering disciplines
- Services Engineering Disciplines
- Fire Safety Disciplines.

Vertical Transportation Annex?

WHY?
Elevators as part of evacuation strategy
Stranded Assets / modernisation considerations
Demonstrated competence to meet legislation and regulations

Contents

Foreword

Following the Grenfell Tower tragedy in 2017, Dame Judith Hackitt, commissioned by the UK Government, undertook an independent review of UK building regulations and fire safety: ‘Building a Safer Future’ . This report identified inconsistency in the processes and standards for assuring the skills, knowledge, experience and behaviours of those working on higher-risk buildings (HRBs), constituting a major flaw in the current regulatory system.

In response, a Competence Steering Group was set up under the auspices of the Industry Response Group and subsequently published two reports – Raising the Bar (2018) and Setting the Bar (2020). These reports led to development of the BSI 8670. This code of practice sets core building safety criteria for bodies that assess the competence of designers, contractors, fire risk assessors, building managers and specialist technical or corporate roles including engineers/technicians working on higher-risk buildings.Dame Judith’s report informed drafting of building safety legislation which led to the Building Safety Act 2022. The intention is to ensure that everyone undertaking design work or building work is competent to do their work in a way that ensures compliance with building regulations.

In response to these reports, the Engineering Council developed UK-SPEC HRB as a Proprietary Standard designed to assess the competence and commitment of individual engineers and technicians working on higher-risk buildings in the UK. UK-SPEC HRB incorporates the criteria from BSI 8670 and sets out a sector-specific competence framework consisting of a core document and discipline annexes. Demonstrating competence could involve registration against the core framework only, or a combination of the discipline annexes: Fire Engineering, Structural Engineering and Building Services Engineering.

VT Annex for

The Engineering Technician (EngTech) Standard

Engineering Technicians apply proven techniques and procedures to the solution of practical engineering problems.

Engineering Technicians shall demonstrate:

- Engineering knowledge and understanding to apply technical and practical skills
- Evidence of their contribution to the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services
- Supervisory or technical responsibility
- 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 engineering values

An Engineering Technician will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the context, nature and requirements of their role. They will demonstrate a level of competence and commitment in each area, (AA1–EE5), 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. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in those areas of limited experience as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Engineering Technician level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Engineering Technician registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might 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 would be useful.

† It is not expected that applicants will necessarily meet all the listed criteria, but they will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Same as UK-SPEC-HRB

“Wherever relevant, applicants shall demonstrate the **knowledge and understanding** of: …”

Competence		Scope
AA. Knowledge and understanding **Engineering Technicians shall use engineering knowledge and understanding to apply technical and practical skills.** This competence is about having knowledge of fire, structural and life safety, legislation, technologies, standards and practices relevant to higher-risk buildings (HRBs) and having evidence of maintaining and applying this knowledge.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Review and select appropriate fire, structural and building life safety systems and principles, throughout the building life cycle of HRBs*.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Formal training related to your role in the application of relevant fire, structural and building life safety systems, as well as the principles and practices that are important throughout the building life cycle of HRBs • Learning and developing the engineering knowledge needed to work in an industry area or discipline where the application of relevant fire, structural and building life safety systems, principles and practices are required • Understanding the current and emerging technology and technical best practice principles and practices throughout the building life cycle of HRBs, in the relevant fire, structural and building life safety systems • Developing a broader and deeper knowledge base through research and experimentation in the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Learning and developing new engineering theories and techniques on the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs	Wherever relevant, applicants shall demonstrate the knowledge and understanding of†: • The principles of fire propagation and control within buildings including the properties and influences of materials, interaction of systems and control processes • The effects of fire / emergencies within buildings on human behaviours and how this affects the safe evacuation of the building • Being familiar with the current and emerging fire legislation and code compliances with respect to HRBs for building services design, application, and installation • The design concepts of appropriate fire detection and protection systems to address specific risks within buildings to ensure the safety of occupants and their safe escape • The building and its systems likely to react in the event of a fire / emergency. Consider the building as system and ensure correct function, integration and co-ordination of all fire / life safety systems and interfaces • The commissioning strategy and operating regimes for fire detection and protection systems in relation to the building structure and means of escape • The need for access and maintenance principles and document within the design principles and operating and maintenance procedures • The golden thread of information on any development, design, application and integration fire safety and evacuation systems including any related life critical sub-systems * See Glossary: 'building life cycle' † See p5

Can consider more specific codes
eg. BS EN 81-70, BS EN 81-72, BS EN 81-76, BS 9999, BS 8899, London Plan etc

Understanding of VT specific BIM framework?

Competence		Scope
AA. Knowledge and understanding		

Examples of evidence	HRB specific criteria
• Recognising, consulting with, updating and applying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systemsapplying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systems	

Competence		Scope
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Use appropriate scientific, technical, engineering and information management principles to integrate fire, structural and building life safety systems throughout the building life cycle of HRBs*.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems • Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology • Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems • Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems	Wherever relevant, applicants shall demonstrate the knowledge and understanding of: • The building regulations and appropriate fire safety standards and recognised guidance in respect of life safety systems within HRB • The boundaries and interfaces with other life safety and building systems with appropriate control and monitoring to ensure the operation and function of the system • The levels of risk and design appropriate multidisciplinary systems covering rated fire safety and evacuation systems • The importance of passive fire protection and how these may be impacted the installation of services within the building • The resilience of all Building Services water, electrical, VT and smoke and ventilation systems for firefighting purposes and assess potential risks to loss of supply and develop a strategy to ensure that critical life safety systems are protected with secondary systems where appropriate • Implementing the testing and commissioning strategy for the life safety systems individually and as integrated system to demonstrate function and operation in respect of the design intent eg Black building test • The correct function of the life safety systems and undertake regular performance tests to demonstrate the systems continue to meet the fire safety strategy and systems design intent

Explain secondary power supplies, switch over times, provision for Fire Fighters and Evacuation.

Competence		Scope	
BB. Design, development and solving engineering problems **Engineering Technicians shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services in relation to HRBs.**	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Identify problems and apply appropriate theoretical and practical methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and product, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs.	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998 • Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation	

Examples of evidence	HRB specific criteria
• Identifying projects (for technical improvements to products, processes, or systems that are needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety system, and taking account of functional and other requirements • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems, and identifying mitigation measures • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Wherever relevant, applicants shall demonstrate the knowledge and understanding of: • The roles of all disciplines forming part of the design, construction and operation teams eg Architect, Structural Engineers, Specialists, Contractors, Manufacturers, Facilities Managers / Engineers • Theoretical and practical methods to the co-ordinated design and development of engineering solutions suitable for HRB to ensure safety in construction, use, maintenance and demolition • Identifying problems and applying appropriate techniques, systems, procedures and methods to undertake the engineering design, construction and operation co-ordinating at all times with other members of the design, construction and facilities management teams • Identifying problems and applying interfaces with static and dynamic life safety systems and co-ordinate the outcomes with other team members to ensure the building and systems are fully compatible and function to the required performance • Repairing, de-construction, dismantling and recycling of products, materials and systems. Contribute towards measures within the procurement, design and construction to provide for future de-construction of the building and systems • Testing and commissioning of the life safety systems individually and as an integrated system to demonstrate function and operation in respect of the design intent eg Black building test • The correct function of the life safety systems and undertake regular performance tests to demonstrate the systems continue to meet the fire safety strategy and systems design intent for the HRB • The Golden Thread by ensuring all appropriate of information with importance on fire safety and means of escape including performance and interfaces of life safety systems, the engineering services and building fabric are fully documented and issued to the appropriate parties throughout the building life cycle

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Identify, organise and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs.	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Wherever relevant, applicants shall demonstrate the knowledge and understanding of: • Appropriate specification and selection of appropriate materials and products standards as far as they relate to your particular expertise and appreciate those standards, materials and products that have an interface with the design, construction and operational requirements for the life safety systems as designed • Appropriate products, components, assemblies and systems will ensure that the building and its life safety systems operate and perform safely throughout the building life cycle of HRBs • And ensure that the design of the life safety system respects the methods and requirements for ongoing regular maintenance throughout the life of the building to ensure the correct function of the systems and that they are operational at all times • Through inspection, commissioning and testing the quality and suitability of the installed life safety systems

VT Annex for

The Incorporated Engineer (IEng) Standard

Incorporated Engineers maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.

Incorporated Engineers shall demonstrate:

- The 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
- Contribution 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 to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability
- Commitment to professional engineering values

An Incorporated Engineer will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (AA1–EE5) 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. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while 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 Incorporated Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Incorporated Engineer registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might 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 would be useful.

† It is not expected that applicants will necessarily meet all the listed criteria, but they will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Same as UK-SPEC-HRB

“Wherever relevant, applicants shall demonstrate the **experience** of: …”

Competence		Scope
AA. Knowledge and understanding **Incorporated Engineers shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.** This competence is about having knowledge of the technologies, standards and practices relevant to HRBs and the applicant's area of practice and having evidence of maintaining and applying this knowledge.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Maintain and extend a sound theoretical approach to the application of relevant fire, structural and building life safety systems, principles, and practices throughout the building life cycle of HRBs*.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Formal training related to your role in the application of relevant fire, structural and building life safety systems, as well as the principles and practices that are important throughout the building life cycle of HRBs • Learning and developing the engineering knowledge needed to work in an industry area or discipline where the application of relevant fire, structural and building life safety systems, principles and practices are required • Understanding the current and emerging technology and technical best practice, principles and practices throughout the building life cycle of HRBs in the relevant fire, structural and building life safety systems • Developing a broader and deeper knowledge base through research and experimentation in the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Learning and developing new engineering theories and techniques on the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Recognising, consulting with, updating and applying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systems	Wherever relevant, applicants shall demonstrate the experience of†: • Fire science and the principles of fire propagation and control. Further considering the properties and influences of materials and components used in the construction of buildings, inclusive of the interaction of systems and control processes • Human factors and the effects of fire / emergencies within buildings. Further understanding how this affects the safe evacuation of the building • Current and emerging fire legislation and code compliances with respect to HRBs for building services design, application, and installation • Engineering knowledge to understand the current and emerging technologies and technical best practices in the development, design, application, construction and integration of fire safety and evacuation systems, including all life critical sub-systems • Engineering theories and techniques in how the building and its systems are likely to react in the event of a fire / emergency. Develop technical solutions that consider the building as a system to ensure the integration and coordination of all fire / life safety systems and interfaces • First principles and / or independently peer review commissioning strategies and operating regimes for fire safety and evacuation systems. Including all life critical systems in relation to the building structure and means of escape • Developing the access and maintenance documentation, considering the design principles and operating and maintenance procedures Developing maintenance documentation, considering the design principles and operating and maintenance procedures • Recognising, consulting with, updating and applying the golden thread of information on any development, design, application and integration fire safety and evacuation systems including any related life critical sub-systems * See Glossary: 'building life cycle' † See p17

Same as UK-SPEC-HRB Building Services Annex + Additions

Can consider more specific codes
eg, BS EN 81-70, BS EN 81-72, BS EN 81-76, BS 9999, BS 8899, London Plan etc

Lobby design
Escape stairs
Access hatch and car rescue requirement
Traffic Analysis
People movement simulations

CIBSE Guide M, understanding of periodic maintenance, testing of fire fighters lifts and evacuation lifts

Understanding of VT specific BIM framework?

Competence		Scope
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Use a sound evidence-based approach to problem solving to apply relevant principles and technical standards for fire, structural and building life safety systems throughout the building life cycle of HRBs, and support continuous improvement in building safety	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services • Collaboration and system integration **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems • Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology • Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems. • Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems • Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems	Wherever relevant, applicants shall demonstrate the experience of: • Contributing to all disciplines forming part of the design, construction and operation teams eg Architect, Structural, Fire Engineers, Specialists, Contractors, Manufacturers, Facilities Managers / Engineers • Identifying project or technical requirements and improvements to products, processes, or systems appropriate to the building's fire safety and evacuation systems including all life critical sub-systems • Being a leader and contributing to the co-ordinated design and development of engineering solutions suitable to ensure safety in construction, use, maintenance and demolition. Seek checking and approval at all key milestones • Implementing and evaluating appropriate techniques, systems, procedures and methods to undertake the engineering design, construction and operation co-ordinating at all times with other members of the design, construction and facilities management teams • Identifying and establishing interfaces with static and dynamic life safety systems and co-ordinate the outcomes with other team members to ensure the building and systems are fully compatible and function to the required performance • Considering repair, de-construction, dismantling and recycling of products, materials and systems. Implementing measures within the procurement, design and construction to provide for future de-construction of the building and systems • Preparing specifications and defining operational requirements appropriate to the building's normal and fire safety, ventilation and evacuation systems including all life critical sub-systems • Reviewing specifications, tenders and contractor proposals to identify technical issues, emerging technologies and potential improvements. The review must consider, contribute and innovate towards the continuation of the golden thread of information appropriate to the building's fire safety and evacuation systems including all life critical sub-systems • Implementing suitable testing and commissioning of the life safety systems individually and as an integrated system to demonstrate function and operation in respect of the design intent eg Black building test

Same as UK-SPEC-HRB Building Services Annex + Additions

Explain secondary power supplies, switch over times, provision for Fire Fighters and Evacuation.

Understanding of components, installation, operation, maintenance and replacement procedures

Competence		Scope
AA. Knowledge and understanding		

Examples of evidence	HRB specific criteria
	• Operating the correct function of the life safety systems and undertake regular performance tests to demonstrate the systems continue to meet the fire safety strategy and systems design intent for the HRB • Maintaining the Golden Thread by ensuring all appropriate of information with importance on fire safety and means of escape including performance and interfaces of life safety systems, the engineering services and building fabric are fully documented and issued to the appropriate parties throughout the building life cycle

Fire Fighters / Evacuation Modes of operation

Competence		Scope	
BB. Design, development and solving engineering problems **Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products.** This competence is about the ability to identify appropriate methods and approaches to use to undertake a task within their area of practice and to make a significant contribution to the development of a design or process or the maintenance of operations in relation to HRBs.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1.Identify, review and select appropriate techniques, procedures, and methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and products, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs.	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998 • Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation	

Examples of evidence	HRB specific criteria
• Identifying projects (or technical improvements to products, processes, or systems that are needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety systems and taking account of functional and other requirements • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems. and identifying mitigation measures • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Wherever relevant, applicants shall demonstrate the experience of: • Contributing to all disciplines forming part of the design, construction and operation teams eg Architect, Structural, Fire Engineers, Specialists, Contractors, Manufacturers, Facilities Managers / Engineers • Identifying project or technical requirements and improvements to products, processes, or systems appropriate to the building's fire safety and evacuation systems including all life critical sub-systems • Being a leader and contributing to the co-ordinated design and development of engineering solutions suitable to ensure safety in construction, use, maintenance and demolition. Seek checking and approval at all key milestones • Implementing and evaluating appropriate techniques, systems, procedures and methods to undertake the engineering design, construction and operation co-ordinating at all times with other members of the design, construction and facilities management teams • Identifying and establishing interfaces with static and dynamic life safety systems and co-ordinate the outcomes with other team members to ensure the building and systems are fully compatible and function to the required performance • Considering repair, de-construction, dismantling and recycling of products, materials and systems. Implementing measures within the procurement, design and construction to provide for future de-construction of the building and systems • Preparing specifications and defining operational requirements appropriate to the building's normal and fire safety, ventilation and evacuation systems including all life critical sub-systems • Reviewing specifications, tenders and contractor proposals to identify technical issues, emerging technologies and potential improvements. The review must consider, contribute and innovate towards the continuation of the golden thread of information appropriate to the building's fire safety and evacuation systems including all life critical sub-systems

Competence		Scope
BB. Design, development and solving engineering problems		

Examples of evidence	HRB specific criteria
	• Implementing suitable testing and commissioning of the life safety systems individually and as an integrated system to demonstrate function and operation in respect of the design intent eg Black building test • Operating the correct function of the life safety systems and undertake regular performance tests to demonstrate the systems continue to meet the fire safety strategy and systems design intent for the HRB • Maintaining the Golden Thread by ensuring all appropriate of information with importance on fire safety and means of escape including performance and interfaces of life safety systems, the engineering services and building fabric are fully documented and issued to the appropriate parties throughout the building life cycle

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Contribute to the design and development of engineering solutions through application of relevant standards, testing, site inspection, assessment and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs.	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Identifying and agreeing appropriate research methodologies on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Investigating a technical issue within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying potential solutions, and determining the factors needed to compare them • Identifying and conducting physical tests or trials on HRB fire safety, structural and building life safety systems • Conducting technical simulations or analysis with regards to the development / design / application / integration of HRB fire safety, structural and building life safety systems • Preparing, presenting, and agreeing design recommendations, with appropriate analysis of risk on the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then taking account of quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, as well as environmental impact	Wherever relevant, applicants shall demonstrate the experience of: • Assessing the appropriateness of the specification and selection of appropriate materials and products standards as far as they relate to your particular expertise and appreciate those standards, materials and products that have an interface with the design, construction and operational requirements for the building's life safety systems • Implementing new and emerging technologies appropriate to fire safety and evacuation systems including all life critical sub-systems. Be up to date with the current and emerging legislation around HRBs • Assessing and the appropriateness of the selected products, components, assemblies and systems including identifying and conducting physical tests or trials to ensure that the building and its life safety systems operate and perform safely throughout its life cycle • Preparing, presenting, and agreeing design recommendations, with appropriate analysis considering, quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, and environmental impact • Ensuring that the design, specification and construction of the life safety systems has taken into account of, quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints. The environmental impact should respect the methods and requirements for ongoing regular maintenance throughout the life of the building to ensure the correct function of the systems and that they are operational at all times are considered

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Implement design solutions for equipment or processes and contribute to their evaluation.	• Design solutions applicable across the life cycle of HRBs

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Wherever relevent, applicants shall demonstrate the experience of: • Ensuring the application of the design is inclusive of all products, components and systems to implement the fire safety strategy and safety in design, construction and operation for the building • Identifying the constraints of the building, develop and implement fire safety design solutions that consider safety and wellbeing of occupants, sustainability, resilience and future proof in operation, decommissioning and disposal • Evaluating existing building systems and, installation within the designs or processes during construction, commissioning and operation. Make corrective actions and implement lessons learnt, propose alternative solutions. within the development of, design, application and integration of fire safety and evacuation systems, including any related life critical sub-systems • Completing reviews and or audits in operation including feedback from the operators and occupants of the building on its processes and systems. Implement and integrate corrective measures and or development of future design solutions to improve and build on best practice within the development, design for the application and integration of fire safety and evacuation systems, including any related life critical sub-systems

VT Annex for

The Chartered Engineer (CEng) Standard

Chartered Engineers develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis.

Chartered Engineers shall demonstrate:

- The theoretical knowledge to solve problems in new and established technologies and to develop 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
- Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible
- Commitment to professional engineering values

A Chartered Engineer will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area, (AA1–EE5), 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. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Chartered Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Chartered Engineer registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might 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 would be useful.

† It is not expected that applicants will necessarily meet all the listed criteria, but they will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Same as UK-SPEC-HRB

“Wherever relevant, applicants shall demonstrate the **ability** to: …”

Competence		Scope
AA. Knowledge and understanding **Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems.** This competence is about the ability to understand underpinning technical principles in fire, structural and life safety relevant to the applicant's area of practice 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 requires that an applicant is maintaining and developing their knowledge in their field of practice and not just that required for specific tasks.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Maintain, extend and develop a sound theoretical approach to application of relevant fire, structural and building life safety systems, principles and practices throughout the building life cycle of HRBs*.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Formal training related to your role in the application of relevant fire, structural and building life safety systems, as well as the principles and practices that are important throughout the building life cycle of HRBs • Learning and developing the engineering knowledge needed to work in an industry area or discipline where the application of relevant fire, structural and building life safety systems, principles and practices are required • Understanding the current and emerging technology and technical best practice, principles and practices throughout the building life cycle of HRBs, in the relevant fire, structural and building life safety systems • Developing a broader and deeper knowledge base through research and experimentation in the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Learning and developing new engineering theories and techniques on the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Recognising, consulting with, updating and applying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systems	Wherever relevant, applicants shall demonstrate the ability to†: • Develop, demonstrate, and extend underpinning knowledge & understanding for fire science and the principles of fire propagation and control. Further considering the properties and influences of materials and components used in the construction of buildings, inclusive of the interaction of systems and control processes • Understand human factors and the effects of fire / emergencies within buildings. Further understanding how this affects the safe evacuation of the building • Understand and be familiar with the current and emerging fire legislation and code compliances with respect to HRBs for building services design, application, and installation • Expand engineering knowledge and understanding of current and emerging technologies and technical best practices in the development, design, application, construction and integration of fire safety and evacuation systems, including all life critical sub-systems • Develop a broader and deeper knowledge base through research and experimentation. Develop and apply engineering theories and techniques in how the building and its systems are likely to react in the event of a fire / emergency. Develop technical solutions that consider the building as a system to ensure the integration and coordination of all fire / life safety systems and interfaces • Develop from first principles and / or independently peer review commissioning strategies and operating regimes for fire safety and evacuation systems. Including all life critical systems in relation to the building structure and means of escape • Develop the access and maintenance documentation, considering the design principles and operating and maintenance procedures • Recognise, consult with, update and apply the golden thread of information on any development, design, application and integration fire safety and evacuation systems including any related life critical sub-systems * See Glossary: 'building life cycle' † See p33

Same as UK-SPEC-HRB Building Services Annex

Explain the challenges of transitioning from ' Do Not Use Lift in the event of a Fire" to active use during evacuation.

Can consider more specific codes
eg. BS EN 81-70, BS EN 81-72, BS EN 81-76, BS 9999, BS 8899, London Plan etc

Explaining Fire Fighter and Evacuation Modes of Operation

Lobby design
Escape stairs
Access hatch and car rescue requirement
Traffic Analysis
People movement simulations
Emergency and Automatic Rescue

Understanding of VT specific BIM framework?

Competence		Scope
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Address and develop solutions to complex or challenging building safety problems with significant levels of risk. Apply knowledge and understanding of relevant principles and technical standards to co-ordinate and integrate these into the building design.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services • Collaboration and system integration **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems • Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology • Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems • Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems	Wherever relevant, applicants shall demonstrate the ability to: • Identify the building regulations and appropriate fire safety standards and recognised guidance in respect of life safety systems • Identify system boundaries and interfaces with other life safety and all building systems. Develop, specify and construct appropriate control and monitoring strategy to ensure the operation and function of the system • Assess and select suitable use of passive fire protection and how they may be impacted by the installation of services within the building. Select appropriate passive protection methods / systems to maintain fire integrity of the building • Consider the resilience of all Building Services water, electrical, VT and smoke and ventilation systems for firefighting purposes and assess potential risks to loss of supply and develop a strategy to ensure that critical life safety systems are protected with secondary systems where appropriate • Establish the levels of risk and develop cause and effect solutions for all multidisciplinary systems covering rated fire safety and evacuation systems • Consider and develop a strategy for the testing and commissioning of the life safety systems both individually and also as an integrated system to demonstrate function and operation in respect of the design intent eg Black building test • Identify the operation and understand the correct function of the life safety systems be able to demonstrate regular performance tests and housekeeping to ensure the systems continue to meet the fire safety strategy and systems design intent

Explain secondary power supplies, switch over times, provision for Fire Fighters and Evacuation.

Understanding of components, installation, operation, maintenance and replacement procedures

Identify appropriate VT system capacity for the respective types of HRB with reference to the building fire evacuation strategy.

Competence		Scope	
BB. Design, development and solving engineering problems **Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.** This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role in relation to HRBs.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1.Take an active role in the identification and definition of project requirements, problems, and opportunities throughout the building life cycle of HRBs.	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998 • Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation	

Examples of evidence	HRB specific criteria
• Identifying projects (or technical improvements to products, processes, or systems needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems. • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety systems, and taking account of functional and other requirements. • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems. • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information. • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems, and identifying mitigation measures. • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Wherever relevant, applicants shall demonstrate the ability to: • Understand, respect and appreciate the contribution and roles of all disciplines forming part of the design, construction and operation teams eg Architect, Structural, Fire Engineers, Specialists, Contractors, Manufacturers, Facilities Managers / Engineers • Identify project or technical requirements and improvements to products, processes, or systems appropriate to the building's fire safety and evacuation systems including all life critical sub-systems • Demonstrate leadership and contribute to the co-ordinated design and development of engineering solutions suitable to ensure safety in construction, use, maintenance and demolition • Develop, implement and evaluate appropriate techniques, systems, procedures and methods to undertake the engineering design, construction and operation co-ordinating at all times with other members of the design, construction and facilities management teams • Identify and establish interfaces with static and dynamic life safety systems and co-ordinate the outcomes with other team members to ensure the building and systems are fully compatible and function to the required performance • Consider repair, de-construction, dismantling and recycling of products, materials and systems. Implementing measures within the procurement, design and construction to provide for future de-construction of the building and systems • Prepare specifications and define operational requirements appropriate to the building's normal and fire safety, ventilation and evacuation systems including all life critical sub-systems • Review specifications, tenders and contractor proposals to identify technical issues, emerging technologies and potential improvements. The review must consider, contribute and innovate towards the continuation of the golden thread of information appropriate to the building's fire safety and evacuation systems including all life critical sub-systems • Implement suitable testing and commissioning of the life safety systems individually and as an integrated system to demonstrate function and operation in respect of the design intent eg Black building test

Competence		Scope
BB. Design, development and solving engineering problems		

Examples of evidence	HRB specific criteria
	• Identify the operation and understand the correct function of the life safety systems and undertake regular performance tests to demonstrate the systems continue to meet the fire safety strategy and systems design intent for the HRB • Maintain the Golden Thread by ensuring all appropriate of information with importance on fire safety and means of escape including performance and interfaces of life safety systems, the engineering services and building fabric are fully documented and issued to the appropriate parties throughout the life cycle of HRBs

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Undertake research, analysis and development to define, refine and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle.	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Identifying and agreeing appropriate research methodologies on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Investigating a technical issue within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying potential solutions, and determining the factors needed to compare them • Identifying and conducting physical tests or trials on HRB fire safety, structural and building life safety systems • Conducting technical simulations or analysis with regards to the development / design / application / integration of HRB fire safety, structural and building life safety systems • Preparing, presenting, and agreeing design recommendations, with appropriate analysis of risk on the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then taking account of, quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, as well as environmental impact	Wherever relevant, applicants shall demonstrate the ability to: • Research agree appropriate research methodologies, fully understand and assess the appropriateness of the specification and selection of appropriate materials and products standards as far as they relate to your particular expertise and appreciate those standards, materials and products that have an interface with the design, construction and operational requirements for the building's life safety systems • Consider and implement new and emerging technologies appropriate to fire safety and evacuation systems including all life critical sub-systems. Be up to date with the current and emerging legislation around HRBs • Assess and be satisfied the appropriateness of the selected products, components, assemblies and systems including identifying and conducting physical tests or trials to ensure that the building and its life safety systems operate and perform safely throughout its life cycle • Conduct technical simulations or analysis with regards to the development, design, application and integration of fire safety and evacuation systems, including any related life critical sub-systems • Prepare, present, and agree design recommendations with appropriate analysis considering, quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, and environmental impact • Ensure that the design, specification and construction of the life safety systems has taken into account of quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints. The environmental impact should respect the methods and requirements for ongoing regular maintenance throughout the life of the building to ensure the correct function of the systems and that they are operational at all times are considered

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Can implement engineering tasks and evaluate the effectiveness of engineering solutions.	• Engineering solutions applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems.	Wherever relevant, applicants shall demonstrate the ability to: • Ensure the application of the design is inclusive of all products, components and systems to implement the fire safety strategy and safety in design, construction and operation for the building • Identify the constraints of the building, develop and implement fire safety design solutions that consider safety and wellbeing of occupants, sustainability, resilience and future proof in operation, decommissioning and disposal • Evaluate existing building systems and installation within the designs or processes during construction, commissioning and operation. Make corrective actions and implement lessons learnt, propose alternative solutions within the development of design, application and integration of fire safety and evacuation systems, including any related life critical sub-systems • Actively learn from reviews and or audits in operation including feedback from the operators and occupants of the building on its processes and systems. Implement and integrate corrective measures and or development of future design solutions to improve and build on best practice within the development, design for the application and integration of fire safety and evacuation systems, including any related life critical sub-systems

Glossary

BSI 8670	Relates to 'Built environment – Core criteria for building safety in competence frameworks – Code of practice' See: www.bsigroup.com
Building Safety Act 2022 (BSA)	Gives **residents** and **homeowners** more rights, powers, and protections resulting in safer homes. It overhauls existing regulations and makes clear how residential buildings should be constructed, maintained, and made safe. See: www.legislation.gov.uk
Building life cycle	This includes selecting appropriate techniques, procedures and methods to design, construct, commission, operate, maintain, refurbish / repurpose, decommission, demolish and recycle. These can apply to building engineering processes, systems, services and products. This ensures compliance with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs.
Building Safety Regulator (BSR)	They oversee the safety and standards of all buildings, helping and encouraging the built environment industry and building control professionals to improve their competence. Leading implementation of the new regulatory framework for high-rise buildings. See: www.hse.gov.uk/building-safety/regulator.htm
CROSS	Collaborative Reporting for Safer Structures UK (CROSS-UK) is a confidential reporting system which allows professionals working in the built environment to report on fire and structural safety issues. These are published anonymously to share lessons learned, create positive change, and improve safety.
Higher-risk building (HRB)	For a building to qualify as a higher-risk building it will meet either the height (18 metres or higher) or storeys (seven storeys or more) threshold, and will contain at least two residential units, or be a care home or hospital, as specified in the regulations set out at: www.legislation.gov.uk
Joint Competent Authority (JCA)	Consists of local authority building standards, fire and rescue authorities, and the Health and Safety Executive. Proposed by Dame Judith Hackitt in her review of building regulations and fire safety.
Occupant	An individual who occupies a house, office, vehicle on a regular basis. The occupant does not extend to living in or use the space as their own.
Owner/ homeowner	The legal owner or leaseholder of a property or individual dwelling.
UK-SPEC HRB	The UK Standard for Professional Engineering Competence and Commitment Contextualised for Higher-Risk Buildings UK-SPEC HRB. The document sets out the competence and commitment requirements for registration as an EngTech, IEng or CEng. UK-SPEC HRB is one of the Standards the Engineering Council publishes, along with UK-SPEC, AAQA, AHEP, and the ICTTech Standard.