



THE INSTITUTION OF FIRE ENGINEERS
FOUNDED 1918 • INCORPORATED 1924

Membership Rules for Titles and Grades

A guide to the requirements
to achieve the grades of membership available to Fire Engineers

Version 2011

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A. Introduction

The Institution of Fire Engineers (IFE) was founded in 1918 by a group of Chief Officers of Fire Brigades in the United Kingdom, with the objective:

"To promote, encourage and improve the science and practice of fire extinction, fire prevention and fire engineering and all expedients connected therewith, and to give an impulse to ideas likely to be useful in connection with or in relation to such science and practice to the members of the Institution and to the community at large"

Since its establishment, the IFE has grown into an International organisation representing fire engineers throughout the world.

A range of membership grades and titles have been developed, that provide professional recognition of fire engineers across a broad spectrum of competence, from the youngest entrant into the profession, to those operating at the highest level. The IFE has achieved recognition for its grades of membership by a number of professional bodies, including the United Kingdom's Engineering Council.

The purpose of this booklet is to describe the entry requirements of the various grades of membership, listed in the IFE's By-Laws, and how they can be achieved. The rules of membership described in this booklet will be those rules used in the IFE's internal procedures for determining membership. The IFE's By-Laws also contain rules in relation to the maintenance of membership, and these are described in general terms, in Section K of this booklet. A copy of the IFE's Memorandum and Articles of Association By-Laws and Standing Orders is available on request from IFE UK office or from the IFE's webpage 'About IFE'
<http://www.ife.org.uk/about/about/>

The IFE is committed to fairness and equality of opportunity in all its dealings with members and applicants for membership.

Further information on all aspects of the IFE can be obtained on request from:

The Institution of Fire Engineers
IFE House, 64-66 Cygnet Court
Timothy's Bridge Road
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| | |
|-----------|--------------------|
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B. Classes of Membership

1. Titles and Grades

The IFE draws a distinction between titles and grades of membership. Titles are awarded to persons or members who have demonstrated support for the objectives of the IFE. The grades of membership form the framework for recognition of professional development.

2. Titles

- a. The title of Companion is an award to members of the IFE, or to other persons judged to have made a significant contribution to the objective of the IFE. Refer to Section D8 for further information.
- b. The title of Affiliate is available for individual fire engineers or organisations with an interest in fire engineering, who wish to take part in the IFE's activities but have not, at this stage, met the requirements of a membership grade. Affiliate members are entitled to such rights and privileges as non-corporate members. Affiliate members may make reference to their affiliation to the IFE. Further information can be found on the web page at <http://www.ife.org.uk/membership/whichgrade/affiliatemembership>

3. Grades

The IFE has developed a progressive scheme of grades of membership to denote an individual's professional development. The grades are prescribed in the IFE's By-Laws and provide for both corporate (voting) and non-corporate membership. Figure 1 provides an overview of the relationship between the different grades. Further details for each grade are provided in section D of this booklet.

The IFE encourages all fire engineers to continually develop their membership status and to take a full part in the IFE's business.

a. Corporate Grades Designatory Letters

| | |
|-------------|----------------|
| Life Fellow | FIFireE (Life) |
| Fellow | FIFireE |
| Member | MIFireE |
| Associate | AIFireE |

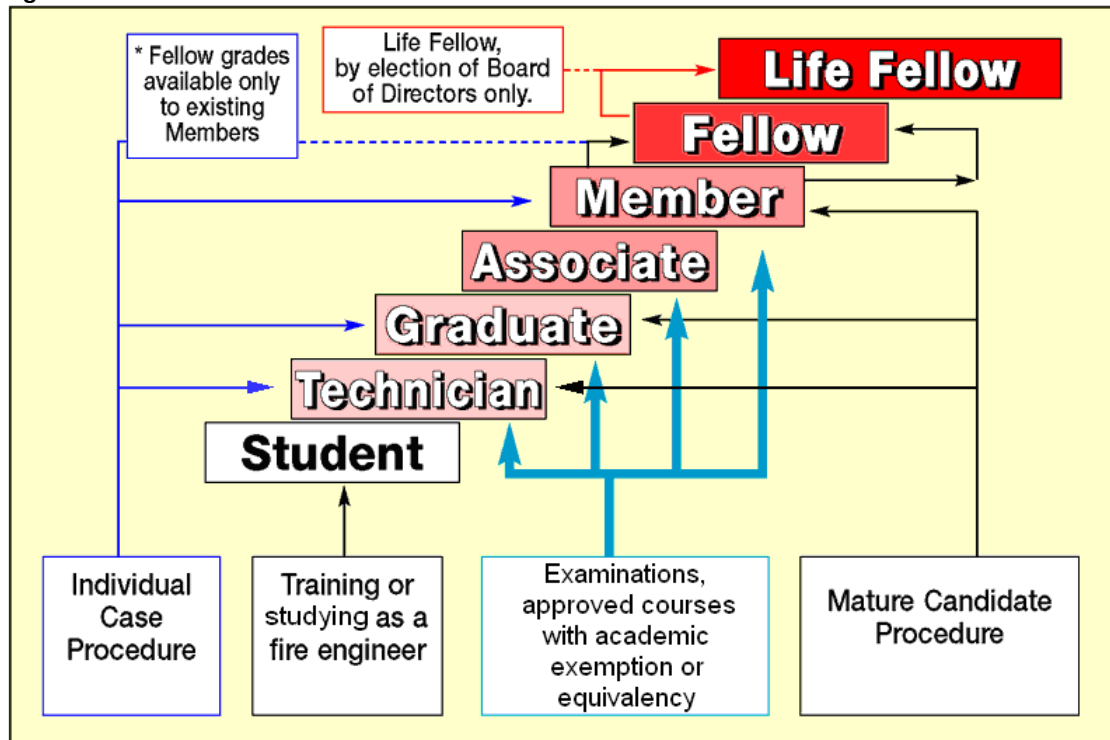
b. Non-corporate Grades Designatory Letters

| | |
|------------------------|---------|
| Graduate | GIFireE |
| Technician | TIFireE |
| Student | None |
| Affiliate | None |
| Affiliate Organisation | None |

NOTE: Members of the IFE who are also Engineering Council registrants may use an appropriate combination of abbreviations and designatory letters. For full details, refer to the "Rules of the IFE Registrants' Group", available from the Membership Department or from the IFE's webpage 'Engineering Council registration' <http://www.ife.org.uk/engineeringcouncil/>

Designatory letters may only be used for as long as the holder remains a paid up member. The IFE will take action to prevent unauthorised use.

Figure 1.



C. Examinations

The IFE conducts examinations at centres around the world. The examinations provide one method of meeting the required academic qualification for grades of membership.

The examinations are

- IFE Level 2 Certificate (former Preliminary)
- IFE Level 3 Certificate (former Intermediate)
- IFE Level 3 Diploma (former Graduate)
- IFE Level 4 Certificate (former Membership)

The IFE also approves external providers of courses, some of which may provide an alternative means of supporting applications for the various grades of IFE membership. Details of currently approved courses are on the website at <http://www.ife.org.uk/edutrain/>.

The relationship between the examinations and the grades of membership are described in Section D of this booklet.

Full details of the IFE's examinations and approvals are available in the Examination Rules and Regulations and a list of examination centres are available from the Examinations Officer, or from the IFE web site at <http://www.ife.org.uk/exams/>.

D. Entry requirements

A pre requisite for membership of the IFE is an involvement, by study or employment, in fire engineering. Fire Engineering is a broad discipline, difficult to describe comprehensively in a few words. Applicants for membership will be expected to demonstrate that their work has a clear relationship with fire prevention, fire extinction or fire engineering (referred to collectively as 'fire engineering'). The IFE will assess an applicant's suitability for a grade of membership based on:

- educational qualifications relevant to their involvement in fire engineering
- initial professional development (incorporating training and experience)

Candidates seeking election to, or transfer between grades, will be expected to provide appropriate evidence of academic qualifications, training, and experience.

The educational requirements for grades may be satisfied by:

- a. holding the appropriate examination set by the IFE, or successfully completing an approved course with academic exemption - see webpage <http://www.ife.org.uk/edutrain/approvedcoursesacexempt>, or holding a recognised fire engineering qualification
- b. holding a qualification with relevance to the applicant's current involvement in fire engineering (Individual Case Procedure [ICP], see section E)
- c. meeting the requirements of the Mature Candidate Procedure (see Section H)

Applicants for Member will also be required to demonstrate they have undertaken Continuing Professional Development for a specified period, in accordance with the IFE's policy, which is outlined in Section G of this booklet. Entry requirements for each grade are set out below in terms of the required educational, training and experience requirements.

1. Student

Every person for election into the grade of Student shall be a person who has established, to the satisfaction of an appropriate Peer Review Panel, they meet the requirements below.

Standard Route

Is engaged as a part time or full time student of fire engineering (which may include vocational work place based training).

Full Time Education (FTE) Route

Is engaged as a full time student of fire engineering.

Persons may remain in the Student grade for a **maximum of 5 years** (subject to the rules of membership) and the IFE would hope that students would progress through the various grades of membership as soon as they are able.

2. Technician

Every person for election or transfer into the grade of Technician shall be a person who has established, to the satisfaction of an appropriate Peer Review Panel, they meet the requirements below.

Standard Route

- I. Hold the IFE's Level 3 Certificate (former Intermediate exam), **OR** hold the UK Statutory Sub Officers examination, **OR** is a registered Engineering Technician with the Engineering Council (**OR** an international equivalent) **OR** has completed an approved course with academic exemption - see web page <http://www.ife.org.uk/edutrain/approvedcoursesacexempt> , **and**
- II. Has met the relevant initial professional development criteria (see section F)

Individual Case Procedure (ICP) Route

- I. Hold an equivalent, relevant qualification from a recognised Institution **and**
- II. Has met the relevant initial professional development criteria (see section F)

Mature Candidate Route

- I. Fire engineers without the formal academic qualifications necessary for the grade of Technician may submit an application via the Mature Candidate Route. Such applicants will be required to demonstrate 12 years of increasing responsibility in fire engineering and, by submitting a technical paper, that they have achieved a standard of competence comparable to contemporaries who have achieved the Technician grade by academic achievement. (See Section H for details)

3. Graduate

Every person for election or transfer into the grade of Graduate shall be a person who has established, to the satisfaction of an appropriate Peer Review Panel, they meet the requirements of a, b or c below.

Standard Route

- I. Hold the IFE's Level 3 Diploma (former Graduate exam), **OR** hold the UK Statutory Station Officers examination **OR** has completed an approved course with academic exemption - see web page <http://www.ife.org.uk/edutrain/approvedcoursesacexempt> , **and**
- II. Has three years of acceptable training and responsible experience in Fire Engineering.

Individual Case Procedure (ICP) Route

- I. Hold at least a Level 3 Diploma qualification, or equivalent in relevant subjects – or has qualified by examination for membership at an appropriate level, of a professional body approved for this purpose by the Board of Directors, (ICP see Section E) **and**
- II. Has three years of acceptable training and responsible experience in Fire Engineering.

Mature Candidate Route

- I. Fire engineers without the formal academic qualifications necessary for the grade of Graduate may submit an application via the Mature Candidate Route. Such applicants will be required to demonstrate 12 years of increasing responsibility in fire engineering and, by submitting a technical paper, that they have achieved a standard of competence comparable to contemporaries who have achieved the Graduate grade by academic achievement, (See Section H for details)

4. Associate

Every person for election or transfer into the grade of Associate shall be a person who has established, to the satisfaction of an appropriate Peer Review Panel, they meet the requirements below.

Standard Route

- I. Has a relevant qualification to satisfy the academic requirements for membership in the grade of Member, **and**
- II. The application has the support of two corporate members of the IFE.

5. Member

Every person for election or transfer into the grade of Member shall be a person who has established, to the satisfaction of an appropriate Peer Review Panel, they meet the requirements of a, b, c or d below.

Standard Route

- I. Hold the IFE's Level 4 Certificate (former Member exam), **OR** has successfully completed a course (or courses) which has academic exemption – see web page <http://www.ife.org.uk/edutrain/approvedcoursesacexempt> **and**
- II. Has met the relevant initial professional development criteria (see section F), **and**
- III. Can demonstrate two years of continuing professional development (See G), **and**
- IV. The application has the support of two corporate members of the IFE.

Individual Case Procedure (ICP) Route

- I. Hold a Level 4 qualification, or equivalent in relevant subjects, from a recognised university or other equivalent academic institution, or has qualified by examination for membership at an appropriate level of a professional body approved for this purpose by the Board of Directors (ICP see Section E) **and**
- II. Has met the relevant initial professional development criteria (see section F) **and**
- III. Can demonstrate two years of continuing professional development (See G) **and**
- IV. The application has the support of two corporate members of the IFE.

Mature Candidate Route

- I. Fire engineers without the formal academic qualifications necessary for the grade of Member may submit an application via the Mature Candidate Route. Such applicants will be required to demonstrate 15 years of increasing responsibility in fire engineering, have met the relevant initial professional development criteria (see section F) and, by submitting a technical paper, that they have achieved a standard of competence comparable to contemporaries who have achieved the Member grade by academic achievement, (see Section H) **and**
- II. The application is supported by two corporate members of the IFE.

Career Appraisal Route

- I. Route for Graduate member fire engineers without the academic qualifications for Member but who, prima facie, appear to have sufficient work based experience to allow them to demonstrate that they are able to satisfy the requirements for Member (see section I) **and**
- II. The application is supported by two corporate members of the IFE.

6. Fellow

Every person for election or transfer into the grade of Fellow shall establish, to the satisfaction of an appropriate Peer Review Panel, that he / she meets the requirements below:

Standard Route

- I. Be an existing Member of the IFE **and**
- II. Have demonstrated significant individual responsibility, sustained achievement and exceptional professionalism during his / her career. An applicant must demonstrate successful leadership or outstanding service / contribution to the fire engineering profession over an extended period, not normally less than 15 years **and**
- III. The application is supported by two **Fellow** members of the IFE.

Senior Candidate Route (by invitation of the Board of Directors only)

- I. Have held a senior position for a minimum of seven years or have equivalent demonstrable competence and responsibility. This position should have necessitated an involvement with significant financial and personnel resources, required input to their organisation's policy formation and responsibility for a major contribution to its core activity **and**
- II. Be able to demonstrate their competence to practise at a level which clearly meets or exceeds the requirements for Member and also satisfies the criteria for Fellow **and**
- III. Have a minimum of 20 years involvement in a fire-related environment.

7. Life Fellow

Life Fellow is the premier membership grade of the IFE. Access to this grade is by invitation of the IFE's Board of Directors, who may elect, as a Life Fellow, a Fellow who has given outstanding service to the IFE for many years. Life Fellows shall not normally be under the age of 60 years and at any one time the number of Life Fellows shall not exceed 6. The class of Life Fellow carries the same rights and privileges as that of the class of Fellow.

8. Companion

The Companion title is the IFE's only premier title that can only be made by a nomination. It is a title that is awarded to members of any grade who have given outstanding service to the IFE and / or the Branch and / or Fire Engineering. Please refer to page 13, and rule 25b on page 15 of the Memorandum and Articles of Association (available at <http://www.ife.org.uk/about/about/>) for the official statement on the Companion Grade. Members that have been awarded the Companion title will retain their original IFE grade. For example, a Companion Graduate would become CGIFireE; a Fellow Companion would become CFIFireE.

Branches that wish to nominate a member for the title of Companion should contact the IFE for guidance.

E. Individual Case Procedure

As an alternative to recognised and academically exempted qualifications in fire engineering, the IFE will consider academic qualifications of an appropriate standard, of relevance to the applicant's involvement in fire engineering. The academic level of the qualification required is described in the requirement for the grade. The subject matter is assessed individually, taking account of the applicant's current involvement in fire engineering and their training and experience. Accordingly, it is not possible to 'list' acceptable qualifications.

The applicant will need to demonstrate the relevance of the qualification by identifying how the syllabus content is of relevance to their current professional activities and the IFE's exam syllabus.

F. Initial Professional Development (IPD) (incorporating training and experience)

The entry requirements for some membership grades include reference to a period of 'acceptable training and responsible experience in fire engineering'.

All applicants must submit evidence of either training and experience or how they meet the relevant IPD criteria (depending on which grade they applied for) with their application. The applicant must satisfy the IFE that their qualification is at an appropriate level, is relevant to their work as a fire engineer (see Section E), and that their record of training and experience or IPD support their current professional activities.

For **Graduate** grade, the training and experience requirements have been expressed in terms of years, and the training and experience (T&E) report will not need to identify 156 weeks (ie. 3 x 52 weeks) of continuous training. What will be expected is that the applicant can demonstrate that they have followed a structured programme over that period. The actual length of time on formal structured training courses is not specified and will be judged as a part of the overall application. Significant weighting will be given to 'on the job' training supervision and mentoring.

Applicants should identify in chronological order the date of completion of the relevant academic study followed and any training courses attended, with a summary of the course objectives. A record of experience can be set out in a format used for a Curriculum Vitae (CV) or job application. The evidence of experience should identify what was done by the applicant and how it is relevant to their involvement in fire engineering.

For **Technician** and **Member** grade, applicants are expected to demonstrate how they meet the relevant Initial Professional Development (IPD) criteria in the following areas:

- a) Knowledge and Understanding
- b) Application and Practice
- c) Leadership / Management / Supervision
- d) Professional Conduct
- e) Interpersonal Skills

Details on these criteria can be found in the IPD fact sheets located in annex A and B for Technicians and C and D for Member. Further Guidance for Candidates is available in Annex E.

G. Continuing Professional Development requirements (Member)

The IFE supports the concept and practice of continuing professional development, (CPD) believing it to be essential to effective performance as a professional fire engineer. The IFE defines CPD as:

"The systematic maintenance, improvement and broadening of knowledge and skills and the development of personal qualities necessary for the execution of professional and technical duties throughout the practitioner's working life"

All members of the IFE are encouraged to undertake and record CPD. The entry requirements to the Member grade includes a requirement that the applicant must demonstrate that they have undertaken CPD for a specified period.

Full details of the IFE's policy on CPD plus a useful CPD template are available from the IFE website at <http://www.ife.org.uk/professional/>

The IFE places most emphasis on the outcome of any CPD activity, rather than meeting any fixed 'quota'. However, as a guide, an applicant would be expected to provide evidence that they have undertaken and recorded at least 25 hours of CPD per year, in the 2 years preceding their application.

It would be expected that a record would include a mix of formal (lectures, seminars, branch events etc) and informal (structured reading, personal development activities in voluntary work, observation and analysis of events). Formal activities would be expected to form at least 12.5 hours of each year and informal activities a further 25 hours (informal CPD is credited on a 'two hours for one' basis).

It is not necessary to provide copies of CPD certificates; rather more value is placed on a personal record of CPD, in which some analysis of the content value and future use of the development activity has been carried out. The method of recording is a matter for individuals; however, it should be structured around providing information which identifies what has been done, including the time spent on the activity and describes what was learned by the individual and how the development can be used in the future.

It is an obligation of membership that members maintain their standard of professionalism. Planning, undertaking and recording CPD in accordance with the guidance issued by the IFE, is a means of demonstrating that commitment to professionalism.

H. Mature Candidate Route

The purpose of the Mature Candidate Route (MCR) is to provide a direct route to membership as a Technician, Graduate or Member, for those who do not have the appropriate academic qualifications, but who are able to demonstrate that in later life they have achieved a standard of competence comparable to their contemporaries who have achieved these grades by academic attainment.

The MCR is only available to applicants over the age of 35 years, with the appropriate period of increasing responsibility. **The MCR is not an easy option, the burden of proof is with the applicant and it will be stringent.**

The process comprises three phases, as follows:

Phase one – An application form is completed, which includes full details of the individual, all their professional training and experience, their responsibilities and employment record. This application will form the basis of phase two. The applicant is also required to submit a proposal for their technical paper.

Phase two – A panel will assess the appropriateness of the proposed technical paper and the applicant's ability to successfully complete the work.

Phase three - The applicant completes a technical paper, which is then assessed by two members of an appropriate grade and background. The assessors will judge whether the candidate has demonstrated an understanding of the principles of fire engineering comparable to what could be expected of a normally qualified fire engineer, of average ability, of the same age, in that grade.

Mature Candidate Route Guidance can be found at:

<http://www.ife.org.uk/membership/maturecandidate/>

or contact the Membership Department before commencing your application.

I. The Career Appraisal Route

The Career Appraisal Route is for Graduate member fire engineers without the academic qualifications for Member but who, prima facie, appear to have sufficient work based experience to allow them to demonstrate that they are able to satisfy the requirements for Member.

Application Requirements

Current Graduate member of the IFE (GIFireE). Although there is no minimum age requirement for following this route, applicants must be able to demonstrate that they fully meet the Initial Professional Development (IPD) requirements for the grade of Member. Applicants should complete an application form for Member as an Individual Case Procedure.

Career Appraisal Route Guidance can be found at:

<http://www.ife.org.uk/membership/whichgrade/membergrade>

or contact the Membership Department before commencing your application.

J. Engineering Council Registration

The IFE established an IFE Registrants Group (IFERG) to provide the means to register members with the Engineering Council in the United Kingdom. The Engineering Council has five sections of registration:

1. Chartered Engineer (CEng)
2. Interim Registrant for Chartered Engineer
3. Incorporated Engineer (IEng)
4. Interim Registrant for Incorporated Engineer
5. Engineering Technician (EngTech)

Full details of Engineering Council registration are contained in the document entitled 'Rules of the IFE Registrants Group', available from the IFE or webpage

<http://www.ife.org.uk/engineeringcouncil/> .

The broad nature of fire engineering is such that not all members of the IFE will meet all of the requirements for registration with the Engineering Council.

A parity of esteem exists between the IFE grades of membership and sections of registration with the Engineering Council. If you are applying for registration, the appropriate membership grade will be automatically awarded, on successful completion of your application as follows:

| | |
|----------------------------------|---------------------------------------------------|
| Chartered Engineer (CEng) | Member (MIFireE) |
| Incorporated Engineer (IEng) | Member (MIFireE) |
| Interim Registrants | Associate (AIFireE) |
| Engineering Technician (EngTech) | Technician (TIFireE) OR Graduate (GIFireE) |

K. Rules of Membership

The By-Laws of the IFE prescribe certain matters that are relevant to maintaining membership. The By-Laws must be consulted for detailed requirements, which are outlined below:

1. Entrance fees and subscriptions

There are no entrance fees to join the IFE, although there are to become registered with the Engineering Council.

The annual membership fee is renewable in January of each year, although new members, joining in the last three months of a membership year, are entitled to the full rights of membership for the following year.

Non payment of subscription fees results in the member being struck off the membership list and losing the privileges of membership, including the right to use the distinctive titles. Members who wish to rejoin may be charged an administrative fee.

Subscription fees are reviewed and adjusted annually. Where an International Branch exists, the membership fee is payable to the local branch, which retains 50 percent to support local activity, and remits the remainder to IFE Head Office to fund central membership expenses such as the Fire Risk Management Journal and administration.

2. Membership of a Branch of the IFE

The IFE has local branches and groups established across the world as well as a small number of Special Interest Groups (SIGs).

Membership of the IFE is not conditional on membership of a geographical branch, or a Special Interest Group.

Membership of a branch or a group is, however, conditional on membership of the main body of the IFE.

In some cases, additional fees are payable to be a member of a local branch of the IFE, although these are usually minimal.

Members will find a great deal of benefit in joining one or more of these organisations. Branches, Groups and Special Interest Groups offer access to CPD activities, useful networks, potential mentors and social activities of advantage to fire engineers. Their activities are usually locally based (further details plus contacts are available from <http://www.ife.org.uk/branches/>).

3. Code of Conduct

Members of the IFE may be suspended, asked to resign, or struck off the membership roll, if in the opinion of the Board of Directors the member is guilty of dishonourable or unprofessional conduct. See By-Law 20 for details (available at <http://www.ife.org.uk/about/about/>).

Annex A - Competence and Commitment of Technicians

Note: The 'task' can be 'to develop', 'to produce', 'to install', 'to maintain', 'to construct', 'to commission', 'to operate', (etc).

Technicians must be competent, by virtue of their initial formation and throughout their working life, to:

- A. Use engineering knowledge and understanding to apply technology. This includes an ability to:
 - A.1 review and select techniques, procedures and methods to undertake tasks.
 - A.2 use appropriate scientific and fire engineering principles.

- B. Contribute to the design, development, manufacture, construction, commissioning, operation and maintenance of products, equipment, processes, systems and services. In this context, this includes the ability to:
 - B.1 identify problems and apply diagnostic methods to achieve satisfactory solution in a fire engineering environment.
 - B.2 identify, organise and use resources effectively to complete tasks, with due regard to cost, quality, safety and environmental impact.

- C. Accept and exercise personal responsibility. This includes an ability to:
 - C.1 work reliably and effectively without close supervision, to the appropriate codes of practice.
 - C.2 accept responsibility for work of self and others.
 - C.3 accept, allocate and supervise technological and other tasks.

- D. Use effective communications and interpersonal skills. This includes the ability to:
 - D.1 use oral, written and electronic methods for the communication of technical and other information.
 - D.2 function as an effective team member.

- E. Make a personal commitment to live by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment. In order to satisfy this commitment, they must:
 - E.1 comply with the Codes and Rules of Conduct.
 - E.2 manage and apply safe systems of work.
 - E.3 undertake their engineering work in compliance with relevant Codes of Practice on Risk and the Environment.
 - E.4 carry out the continuing professional development necessary to ensure competence in their areas of future intended practice.

Annex B - IPD Objectives for Technicians

These IPD Objectives provide a framework for setting out the related skills and knowledge of the discipline of fire engineering.

The scope of fire engineering is wide and is more fully described in the definitions forming part of the Competencies and Commitments (Annex A). This sets out all of the Competence and Commitment criteria as contextualised by the IFE in relation to fire engineers.

You are **not** expected to be fully competent in **all** of these objectives. You must, however, have broad based experience and responsibility in one or more aspects of fire engineering as well as some knowledge of related aspects. More information on this, and guidance on how to use these IPD Objectives in submitting your application, is given in the Guidance for Candidates on Preparing Applications and Professional Review Reports (Annex E).

| OBJECTIVE | | RANGE | | EVIDENCE EXAMPLES |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Use engineering knowledge and understanding to apply technology. | A1 | Review and select techniques, procedures and methods to undertake tasks. | Demonstrate an ability to identify limits of personal knowledge, understanding and skills and a striving to maintain currency in Fire Engineering techniques, procedures and methods using appropriate resources. Demonstrate a systematic extension of limits of personal knowledge, understanding and skills to reflect best practice in relevant fields of work. Demonstrate through use of evidence from own experience and best practice the ability to review current Fire Engineering techniques, procedures and methods to select those most appropriate to undertake tasks. |
| | | A2 | Use appropriate scientific and fire engineering principles. | Be able to demonstrate an ability to analyse the requirements of tasks, based on Fire Engineering principles and know-how. Demonstrate an ability to plan, monitor and evaluate tasks against expectations of best practice, based on appropriate Fire Engineering principles and scientific understanding. Be able to demonstrate an ability to apply scientific and Fire Engineering principles to the provision of engineering advice and professional opinion. |
| B | Contribute to the design, development, manufacture, construction, commissioning, operation and maintenance of products, equipment, processes, systems and services. | B1 | Re identify problems and apply diagnostic methods to achieve satisfactory solution in a fire engineering environment. | Demonstrate an ability to monitor performance and outcomes of Fire Engineering products, procedures, processes and systems to identify deviations from expectations and standards. Determine causes of deviations, using appropriate diagnostic tools and methods. Demonstrate an ability to evaluate the potential consequences of a problem and make judgements about rectification requirements, priorities and reporting. Demonstrate an ability to rectify problems and test solutions against appropriate criteria. |

| | | | | |
|---|------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | B2 | Identify, organise and use resources effectively to complete tasks, with due regard to cost, quality, safety and environmental impact. | Demonstrate an ability to identify how to undertake a task and to identify the resources required to satisfy specified and agreed criteria. Demonstrate an ability to schedule and marshal the resources required and an ability to apply the resources effectively and correctly to complete the task. Demonstrate an ability to evaluate the outcome against the agreed criteria, including quality, time and cost and against specified safety and environmental criteria. |
| C | Accept and exercise personal responsibility. | C1 | Work reliably and effectively without close supervision, to the appropriate codes of practice. | Demonstrate an ability to contribute to planning by identifying effective methods to undertake relevant tasks. Demonstrate an ability to comply with relevant regulatory and professional codes of practice in the implementation of tasks. Demonstrate an ability to apply best practice to complete designated tasks. |
| | | C2 | Accept responsibility for work of self and others. | Demonstrate an ability to identify and agree criteria for the completion of designated tasks. Define responsibility of self and others to achieve criteria for designated tasks. Demonstrate an ability to evaluate the outcome of designated tasks. |
| | | C3 | Accept, allocate and supervise technological and other tasks. | Demonstrate an ability to accept responsibility for the completion of designated tasks to time, resources and cost. Demonstrate an ability to accept responsibility for the quality of the outcome of work in which self and team are involved. |
| D | Use effective communication and interpersonal skills | D1 | Use oral, written and electronic methods for the communication of technical and other information. | Demonstrate an ability to clarify objectives, identify main purpose and select appropriate medium for communication. Be able to select appropriate methods of communication using words and images, audio and visual as appropriate. Be able to communicate competently in written and oral expression. |
| | | D2 | Function as an effective team member. | Establish and maintain effective relationships with colleagues, clients and others. Be able to identify and work towards collective goals. Develop effective team working relationships to enhance performance. Be able to give clear and accurate instructions, as appropriate. |

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|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E | Make a personal commitment to live by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment | E1 | Comply with the Codes and Rules of Conduct | Demonstrate an ability to place responsibility for the welfare, health and safety of the community at all times before the responsibility to the profession, to sectional interests, or to other engineers. Comply with Codes of Conduct of the profession and apply professional skill in the interests of employer and client for whom you act in professional matters. Give evidence, express opinions or make statements in an objective and truthful manner and on the basis of adequate knowledge. |
| | | E2 | Manage and apply safe systems of work | Take account of potential professional risks and liabilities and accept responsibility for them. Consider and implement as necessary appropriate occupational health and safety requirements. Investigate community safety requirements, act to resolve any incipient safety issues, take appropriate precautions in relation to hazardous operations and take account of disaster prevention, mitigation and recovery methods. |
| | | E3 | Undertake your engineering work in compliance with the Code of Practice on Risk and the Environment | Promote the actions required in engineering practice to improve, sustain and restore the environment. Be aware of the wise use of non-renewable resources through waste minimisation, recycling and the development of alternatives where possible. Strive to achieve the beneficial objectives of Fire Engineering tasks with the lowest possible consumption of raw materials and energy and the adoption of sustainable management practices. Take account of total life-cycle implications with respect to how Fire Engineering products and projects will impact on the environment. |
| | | E4 | Carry out the continuing professional development necessary to ensure competence in your areas of future intended practice | Undertake continued professional development (CPD) to maintain and enhance technical competence. Demonstrate an ability to set your own goals to achieve personal and organisational objectives. Maintain a career action plan and records of professional development activities. |

Annex C - Competence and Commitment of Members

Note: The 'task' can be 'to develop', 'to produce', 'to install', 'to maintain', 'to construct', 'to commission', 'to operate', (etc).

Members must be competent, by virtue of their initial formation and throughout their working life, to:

- A. Use a combination of general and specialist fire science and fire engineering knowledge and understanding to optimise the application of existing and emerging technology. This includes an ability to:
 - A.1 maintain a sound theoretical approach to the application of technology in fire engineering practices.
 - A.2 use appropriate scientific and fire engineering principles.
 - A.3 use a sound evidence-based approach to problem solving and quality enhancement.

- B. Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate and maintain products, equipment, processes, systems and services. In this context, this includes an ability to:
 - B.1 develop, review and select techniques, procedures and methods to undertake fire engineering tasks.
 - B.2 contribute to design and development.
 - B.3 identify problems, evaluate options and formulate solutions; taking cost, benefits, safety quality, reliability, appearance and environment impact into account.
 - B.4 determine evaluation criteria and monitor and assess performance against these criteria.

- C. Provide technical and managerial leadership. This includes the ability to:
 - C.1 plan, implement and co-ordinate activities against objectives.
 - C.2 assist in the preparation and control of budgets, and operate within the financial and commercial constraints of an organisation and the overall statutory framework.
 - C.3 use people management skills and provide leadership in the working environment, supporting and developing team members and managing work groups and projects.
 - C.4 manage continuous improvement processes.

- D. Use effective communications and interpersonal skills. This includes an ability to:
 - D.1 work and communicate with others at all levels.
 - D.2 effectively present and discuss ideas and plans.
 - D.3 build teams and negotiate.

- E. Make a personal commitment to live by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment. In order to satisfy this commitment, members must:
 - E.1 comply with the Codes and Rules of Conduct.
 - E.2 manage and apply safe systems of work.
 - E.3 undertake their work in compliance with relevant Codes of Practice on Risk and the Environment.
 - E.4 carry out the continuing professional development necessary to ensure competence in their areas of future intended practice.

Annex D - IPD Objectives for Members

These IPD Objectives provide a framework for setting out the related skills and knowledge of the discipline of fire engineering.

The scope of fire engineering is wide and is more fully described in the definitions forming part of the Competencies and Commitments (Annex C). This sets out all of the Competence and Commitment criteria as contextualised by the IFE in relation to fire engineers.

You are **not** expected to be fully competent in **all** of these objectives. You must, however, have broad based experience and responsibility in one or more aspects of fire engineering as well as some knowledge of related aspects. More information on this, and guidance on how to use these IPD Objectives in submitting your application, is given in the Guidance for Candidates on Preparing Applications and Professional Review Reports (Annex E).

| OBJECTIVE | | RANGE | | EVIDENCE EXAMPLES |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Use a combination of general and specialist fire engineering knowledge and understanding to optimise the application of existing and emerging technology. | A1 | Maintain a sound theoretical approach to the application of technology in fire engineering practices. | Demonstrate an ability to identify and accept limits of personal knowledge, understanding and skills and a striving to maintain currency in the Fire Engineering field by accessing and exploiting relevant sources. Be conversant with key information resources such as the internet, the media, professional journals, attending professional seminars and networking with peers. Demonstrate a systematic deepening of personal knowledge base in the Fire Engineering field through research and experimentation. |
| | | A2 | Use appropriate scientific and fire engineering principles. | Be able to demonstrate an ability to interpret and analyse the requirements of clients, based on Fire Engineering principles and scientific understanding, for the provision of products, systems and services. Demonstrate an ability to plan, monitor and evaluate the operation of projects, against best practice indicators as well as using appropriate Fire Engineering principles and scientific understanding. Be able to demonstrate an ability to apply scientific and Fire Engineering principles to the provision of engineering advice and professional opinion. |
| | | A3 | Use a sound evidence-based approach to problem solving and quality enhancement. | Demonstrate a willingness and ability to review current methods and operations, to arrive at a valid diagnosis of faults and explanation of problems. Demonstrate the use of market intelligence and knowledge of technological developments to improve the effectiveness of Fire Engineering products, services and systems. Demonstrate the use of evidence from best practice to improve the effectiveness, reliability, maintainability and economy of Fire Engineering products, systems and services. Demonstrate an ability to evaluate and develop quality management systems. |

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| B | Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate and maintain products, equipment, processes, systems and services. | B1 | Develop, review and select techniques, procedures and methods to undertake fire engineering tasks. | Using personal experience, an understanding of the employer's commercial position and available Fire Engineering resources, develop a review methodology. Review the potential for enhancement of Fire Engineering products, processes, systems and services and establish an action plan to implement the results of any such review. |
| | | B2 | Contribute to design and development. | Contribute to the determination of design and development requirements for Fire Engineering products, processes, systems and services. Contribute to the specification of implementation methods and procedures to achieve design requirements and demonstrate an ability to obtain the resources required for implementation. Demonstrate an ability to schedule activities to implement the production of Fire Engineering products, processes, systems and services. |
| | | B3 | Identify problems, evaluate options and formulate solutions; taking cost, benefits, safety, quality, reliability, appearance and environmental impact into account. | Demonstrate an ability to identify problems and evaluate possible Fire Engineering solutions to meet clients' needs. Demonstrate an ability to formulate effective Fire Engineering solutions that meet all relevant criteria. Demonstrate an ability to review the effectiveness of the chosen Fire Engineering solution. |
| | | B4 | Determine evaluation criteria and monitor and assess performance against these criteria. | Be able to determine the task requirements of Fire Engineering solutions, processes, systems and services. Demonstrate an ability to monitor and evaluate the task processes. Demonstrate an ability to resolve task problems with appropriate solutions. |
| C | Provide technical and managerial leadership. | C1 | Plan, implement and co-ordinate activities against objectives. | Demonstrate an ability to identify and develop objectives for projects to meet clients' requirements. Demonstrate an ability to plan for the delivery of tasks to complete a project. Demonstrate an ability to identify and obtain the resources required to achieve project objectives. Demonstrate an ability to specify and co-ordinate the engineering resources and activities required to achieve project objectives. |

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| | | C2 | Assist in the preparation and control of budgets, and operate within the financial and commercial constraints of an organisation and the overall statutory framework. | Using appropriate techniques, set and implement work objectives and priorities, including time, resource and cost estimates. Demonstrate an ability to manage tasks within identified financial, commercial and regulatory constraints. Monitor, evaluate and adjust tasks as appropriate to ensure that they are performed within financial, commercial and regulatory constraints. |
| | | C3 | Use people management skills and provide leadership in the working environment, supporting and developing team members and managing work groups and projects. | Contribute to the development and improvement of individuals and teams through planning and activities, including identification, review and improvement of activities for individuals, the setting and updating of work objectives for teams and individuals. Plan activities and determine work methods to achieve objectives. |
| | | C4 | Manage continuous improvement processes. | Contribute to the promotion of quality throughout the organisation and its customer and supplier networks. Demonstrate an ability to develop and maintain operations to meet quality standards and to implement and evaluate changes to Fire Engineering services, products and systems. Perform work to appropriate quality standards and contribute to the evaluation of proposed changes to Fire Engineering services, products and systems. |
| D | Use effective communication and interpersonal skills. | D1 | Work and communicate with others at all levels. | Establish and maintain effective relationships with colleagues and clients and advise and inform them as appropriate. Respond effectively and efficiently to all received communication, howsoever it is received. |
| | | D2 | Effectively present and discuss ideas and plans. | Be able to select the most appropriate medium to clearly communicate objectives, proposals and designs using words, images, audio and visual, as appropriate. Be able to communicate fluently in written and oral expression and prepare reports and published papers at a professional level. |
| | | D3 | Build teams and negotiate. | Identify collective goals and responsibilities and promote the creation of teams to work towards these effective goals. Create, maintain and develop effective working relationships to enhance performance. Undertake negotiation, conflict resolution and counselling within the team. |

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|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E | Make a personal commitment to live by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment. | E1 | Comply with the Codes and Rules of Conduct. | Maintain the interests for the welfare, health and safety of community as a priority above those of the profession, to sectional interests or to other engineers. Comply with the codes of conduct of the profession and apply professional skill in the interests of the employer and client for whom you act in professional matters. Give evidence, express opinions or make statements in an objective manner and on the basis of adequate knowledge. |
| | | E2 | Manage and apply safe systems of work. | Take account of potential professional risks and liabilities and accept responsibility for them. Consider and implement as necessary appropriate occupational health and safety requirements. Investigate community safety requirements, act to resolve any incipient safety issues, take appropriate precautions in relation to hazardous operations and take account of disaster prevention, mitigation and recovery methods. |
| | | E3 | Undertake your engineering work in compliance with the Code of Practice on Risk and the Environment. | Promote the considerations and actions required in engineering practice to improve, sustain and restore the environment. Be aware of the wise use of non-renewable resources through waste minimisation, recycling and the development of alternatives where possible. Strive to achieve the beneficial objectives of Fire Engineering design whilst striving to minimise the consumption of raw materials and energy, and by designing sustainable management procedures. Take account of life-cycle implications with respect to how Fire Engineering designs will impact on the environment. |
| | | E4 | Carry out the continuing professional development necessary to ensure competence in your areas of future intended practice. | Undertake continued professional development (CPD) to maintain and enhance technical and management competence. Set your own objectives in relation to personal and organisational objectives and maintain a career plan. Maintain records of professional development activities. |

Annex E - Guidance for Candidates on preparing applications and Professional Review Reports

1. Introduction

Applications for Technician and Member grade require a professional review. Professional Review is the process by which the final judgement for IFE membership is made. Before a candidate is presented for review, administrative judgements will have been made to ensure that there is a prima facie case (ie that the candidate has achieved an appropriate Educational Base and has satisfied the key criteria for the 'Initial' aspect of Professional Development, whether via an approved route or by an individually managed one). This prior clearance both reduces the work to be done by the Professional Review Assessors and highlights the particular contribution they have to make. 'Competence and Commitment' are the key words in preparation for the Professional Review and general descriptors of Roles and Responsibilities have been classified within the following structure:

| | | |
|------------|---|---------------------------------------|
| Competence | A | Knowledge and Understanding |
| | B | Application and Practice |
| | C | Leadership / Management / Supervision |
| | D | Interpersonal Skills |
| Commitment | E | Professional Conduct |

Professional Review Guidance Documents (of which this is one) amplify these 'Roles and Responsibilities' statements with more detailed 'Competence and Commitment' outcome statements within the same structure. These statements have been adapted to reflect the technology and usage of the fire engineering sector and are specified as 'outcomes' under each heading. It is these adapted statements that form the basis of assessment criteria for Professional Review and that candidates will need to use to develop their portfolios.

2. Initial Professional Development (IPD) Objectives

Separate sets of IPD Objectives for each grade (Technician or Member) are available as Fact Sheets and a careful study of those appropriate to the grade for which you are applying is needed as you will need to show in your Professional Review that you have met these. The Objectives are in 5 sections, A to E as follows:

- a) Use a combination of general and specialist Fire Engineering knowledge and understanding to optimise the application of existing and emerging technology.
- b) Apply appropriate theoretical and practical methods to the analysis and solution of Fire Engineering problems.
- c) Provide technical, commercial and managerial leadership.
- d) Use effective communication and interpersonal skills
- e) Make a personal commitment to live by the appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

Each section contains a sub-set of **range statements** to help you understand better where each objective might be achieved and a further sub-set of **evidence examples** that suggest how to show you have gained competence.

3. Organising the Evidence (writing your report)

The judgements made about a candidate during the Professional Review Process, are based on evidence submitted by candidates in support of their case. In organising their evidence for the Professional Review, candidates should refer to the appropriate Fact Sheet which sets out the IPD objectives for the grade being applied for. To match the 'Evidence Examples' given, candidates are advised to choose a small but significant number of projects or work activities in which they have been engaged.

These will be activities which:

Are the candidate's own work or are larger pieces of work in which the candidate's personal contribution is clearly identified and substantiated

Are able to act as a 'spine' running through several of the A1 to E4 'Evidence Examples'.

An example of the use of such a 'spine' is in the 'B1 to B4' area, which deals with technical practice. Each of the criteria could be met through a totally different project but it ought to be simpler to organise and present if a consistent theme is used. This might then extend from the technical 'applications' of the Bs into some of the C, D and E activities.

The Reviewers will be interested in what **you** have done, **your** role and responsibilities in a particular project and what **you** know about the technical aspects related to it. If you have completed Internal Training Reports as part of a company scheme or just for your own guidance, you should use these to help you decide which projects or career episodes you can write about.

You will be expected to demonstrate competency with respect to **all objectives** but not necessarily all range statements or evidence examples.

4. Format and Submission

To assist in the assessment process we seek a basic standard format for presentation, namely:

- I. The report must be typed, or printed, on A4 paper, single sided only (ie no double sided printing), and no more than 10 pages long. **Please do not bind submissions or use ring binders.**
- II. The report should be written in the first person singular. Failure to do this may result in you not being given credit for something which is rightfully yours. In cases of doubt, the Review Panel will assume that there was a third party involvement.
- III. The report must be your own work and must be in English. It should be of sufficient length to demonstrate that you meet the relevant criteria.
- IV. Any drawings or other supporting papers submitted must be folded to ensure that they do not exceed the dimensions of the report. Original drawings should not be sent as the report will become the property of the IFE when received and may be destroyed after assessment.
- V. The report will be treated as confidential by the Professional Review Panel and any other persons authorised to see it. However, it is the responsibility of the applicant to secure any necessary clearance from employers or others to whom information contained in the report may be considered confidential.

5. General Guidance on content

Compile your report, making reference to the relevant evidence examples given in the IPD Objectives. Begin with a short **introduction** to give a general picture, in a few sentences, of the type of work and professional development you have had to date.

An example is given on the following pages of how you may wish to format your report. However you present it, it must be clear which competence you are claiming.

Section 3 of this guidance makes suggestions about the use of a single piece of evidence to satisfy a number of objectives. You should appreciate, however, that there is a danger of putting too much reliance on one project. Professional recognition is not narrow and job-specific; it

requires a breadth of experience and an ability to transfer capability from one area of work to another. You thus also need to be able to show a reasonable range of work.

No matter how much original material is available, it will only be valuable if it is indexed, cross-referenced and organised against the A1 to E4 criteria. To avoid burdening the submitted document with a mass of supporting evidence, you should think initially in terms of an overview of your experience, showing how the available evidence demonstrates how you meet the relevant criteria.

You must ensure that you have demonstrated an awareness of all of the IPD Objectives. Whilst the full range of activities must be covered, the extent to which each one of the elements has to be demonstrated by each candidate will vary with their job role. All of the elements must be present to some extent; however, the balance between them is a key judgement to be made by the Professional Review Panel.

The **Introduction** to your report should give a general picture in a few sentences of the type of work and training you have done in your career to date. It should also **list**, in tabular form, the different **projects** or **career episodes** you mention in the body of your report. This will help the reader when you refer back to the name of a project you have already used elsewhere. For example:

| | | |
|---------------|-----------------------------|----------------------------------------------------------------------------------------|
| Jan - June 99 | Porsche Lane Apartments, W1 | Luxury apartments - timber frame construction issues relating to fire safety. |
| Oct - Dec 99 | Green Storage PLC, Anytown | Very large warehouse - compartmentation, personnel safety and fire fighting issues etc |

The example on the following pages deals with the first project and covers a variety of Evidence Examples across various IPD Objectives but does not cover everything. The second and any subsequent projects will thus need to cover the remaining ranges of the principal objectives.

In this example, notice how the candidate separates the project in his layout, to help the reader summarise the key features of the project, before describing the details and clearly stating his own role and responsibilities in the project. The candidate **does not** describe every detail of what he / she did day by day, **but does** describe in detail the incidents which relate directly to the Evidence Examples he / she is claiming - in this case, activities in which he / she has identified and solved problems. The candidate repeatedly uses the **first person** 'I, me, my' to show the reader what his / her personal contribution was in every case.

6. A Final Word to Candidates

Professional Review is the final stage of assessment of competence and commitment prior to achieving membership. It is up to the candidate to make the case that the criteria have been satisfied. However, it is the final outcome - evidence of meeting the A1 to E4 'roles and responsibilities' in a sensible and balanced way - which is vital. That case must finally be proved by the candidate, by virtue of the material presented to, the Professional Review Panel.

7. Example of a Professional Review Report

| Career Episode | IPD evidence example |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <p>Porsche Lane Apartments, W1</p> <p>This project related to a six storey block of 24 luxury apartments with a Platform Timber Frame structure and an architectural masonry rain screen cladding. The building was planned with a single stair core serving each floor of the building via a protected lobby and the stair was specified with a softwood main structure and oak balustrading. The local authority rejected the plans on the grounds that the stair design did not comply, on fire safety grounds, with current requirements. At this point the Architect contacted us for professional fire engineering advice.</p> <p>My first task was to establish the nature of the local authority's concern and my first port of call, not surprisingly, was the published guidance that the local authority would be referencing. By virtue of the building size and geometry, statutory guidance published in Part B1 of the Approved Document B in support of the England & Wales Building Regulations recommends that the building be provided with a stair constructed of Materials of Limited Combustibility. This means that the materials used would have to satisfy the appropriate criteria of the British Standard BS476: Part 11 fire test. A stair constructed from timber cannot satisfy this requirement since timber materials, no matter how they are treated, will not satisfy the test criteria.</p> <p>This presented the Design Team with a dilemma. One of the major advantages of timber frame construction is the speed at which the building can be erected and mixing trades in terms of providing a concrete or steel stair would introduce delays into the programme that could potentially effect the viability of the scheme, notwithstanding potential difficulties introduced by differential expansion of the different materials over the height of the medium rise building.</p> <p>At a Design team meeting, I agreed a scope of work with the client (Developer) that involved confirming the concerns of the local authority; then working with the architect to develop, where practicable, a technical specification for a timber stair that would satisfy the client and the local authority.</p> <p>I informally confirmed with the local authority that their concern related to the recommended performance criteria of Limited Combustibility for the stair. I also established with them the principle that, due to the functional nature of the Building Regulations, an appropriately justified alternative approach to published recommendations could be followed.</p> <p>Since the Limited Combustibility guidance of the Approved Document B relates to Reaction To Fire performance, this implies a design fire scenario within the stair itself. The logic of this is inescapable in that fires do occur in stair shafts, generally in association with accumulated temporary storage of materials/goods and that are often ignited maliciously. It is therefore extremely important that the stair itself does not contribute significantly to fire growth nor exhibits loss of load bearing capacity under fire exposure. In terms of accommodation involving a sleeping risk, I determined that this load bearing capacity would be important to enable fire fighters' access to the building, initially to fight the fire and remove persons immediately at risk whilst being available to evacuate other occupants post-fire should this be deemed necessary.</p> <p>A keyword search on the Internet yielded details of a government sponsored research project carried out on a medium rise timber frame building [1]. As part of this research a series of tests were carried out by project engineers that involved fires in a timber frame stair shaft incorporating a timber stair. The research tests, involving fire scenarios based on a simultaneous accelerant, timber crib and double mattress were successful (ie load bearing capacity of the stair was maintained) based on a wholly softwood timber stair treated with an impregnated fire retardant treatment to give a notional Class 1 Reaction To Fire Performance (BS476: Part 7).</p> | <p>B.3</p> <p>A.2</p> <p>B.3</p> <p>C.1</p> <p>D.2</p> <p>B.1</p> <p>A.1</p> |

| Career Episode | IPD evidence example |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <p>Despite having discovered the potential solution, I was faced with the problem of applying the specific results of the research to the situation in hand that involved the use of an alternative timber specification (oak) for the balustrading. A discussion with the stair manufacturers revealed that the timber balustrading has to be of a hardwood specification in order to comply with the structural safety recommendations of Approved Document K. I gathered additional information through contact with the research engineers that indicated that their choice of using Whitewood throughout their test was by virtue of Whitewood representing an onerous timber specification in terms of its low permeability to the treatment process. Hence any more permeable timber would take up a greater quantity of the fire retardant thus maximising the field of application of the research test result. Consultation with industry timber experts confirmed that oak has a slightly better permeability than Whitewood and I sourced benchmark test data from the manufacturers of the treatment process that established treated oak as giving at least as good a test result in terms of BS476: Part 7 as treated Whitewood. I put together a report detailing a design fire scenario, the functional fire safety objectives, an analysis drawing on the available research and standard test data, and an executive summary. This was submitted to the Local Authority by the Design Team and was accepted by them as an appropriate solution allowing the client to proceed with a slightly modified timber and keeping the project on track.</p> | <p>A.1 B.1 B.2 D.4 D.1</p> <p>E.1</p> |
| <p>Green Storage PLC, Anytown This project</p> | |