

Technical Report Route Guidance

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Introduction

The Technical Report Route (TRR) is for engineers who want to become ICE Members (MICE) at Incorporated (IEng) or Chartered (CEng) level but do not have the academic qualifications they need to apply through the standard routes.

If you wish to apply for [Technician membership](#) (EngTech MICE), please read our [Technician guidance](#).

The TRR route lets you use the knowledge you have gained through your experience to show that you are at the level you would like to apply for.

The level of membership you can apply for depends on your experience and competence, as well as your understanding of engineering principles. How much experience you need depends on the academic qualifications you have which the [table below](#) provides a useful guide.

The Technical Report Route has three main stages:

- Initial assessment
- Professional Review application and submission (including the reports)
- Academic Interview and Professional Review (including the written exercise)

This document provides detailed guidance for all steps of the process.

You will also need three [sponsors](#) to support your application.

If you have any queries about the process, please contact the Professional Reviews team on +44 (0)207 665 2344 or via email trr@ice.org.uk.



What experience do I need?

Below is an indication of the minimum years you would normally need to have worked in civil engineering to get the required underpinning knowledge. But you should be aware that this is only a guide – it is the experience and knowledge you have gained that’s important, not the length of time you have spent in the profession.

| Chartered Engineer (CEng) level | Incorporated Engineer (IEng) level |
|--|--|
| Seven years’ experience plus: <ul style="list-style-type: none"> ▪ A BEng (Hons) degree (accredited with further learning for CEng) | Five years’ experience plus: <ul style="list-style-type: none"> ▪ A HND/HNC (accredited with further learning for IEng), or ▪ An equivalent qualification |
| Seven years’ experience plus: <ul style="list-style-type: none"> ▪ An engineering degree (or similar degree with sufficient technical basis of an equivalent standard), or ▪ An equivalent overseas degree, or ▪ An IEng-accredited degree | 10 years’ experience plus: <ul style="list-style-type: none"> ▪ National Diploma/National Certificate, or ▪ An approved NVQ, or ▪ An equivalent overseas qualification |
| 10 years’ experience plus: <ul style="list-style-type: none"> ▪ A foundation degree or ▪ HND/HNC or ▪ An overseas qualification of equivalent standard | 15 years’ experience plus: <ul style="list-style-type: none"> ▪ No appropriate qualifications |
| 15 years’ experience plus: <ul style="list-style-type: none"> ▪ No appropriate qualifications | |



Stage 1 - Initial assessment

For your initial assessment you need to send us:

- An [initial assessment application form](#)
- Written confirmation of mentor support
- A synopsis of your proposed technical report
- A two-page CV
- Evidence of your academic qualifications (if applicable)
- Payment of the initial assessment application fee

Apart from the receipt for the application fee which should be [paid online](#), you must email all documents as a single PDF file of no more than 5mb to trr@ice.org.uk

The initial assessment is to determine your eligibility to proceed to stage 2. It is an opportunity for ICE to provide feedback on your draft synopsis to ensure that your proposed technical report covers the right areas and to allow you the opportunity to produce a technical report of the appropriate standard.

Mentor

To apply for the Technical Report Route, you must have a mentor to support you. Your mentor plays an important role at all stages of the process. They make sure your technical report (and synopsis) shows that you have an understanding of how to apply engineering principles, and that you demonstrate the required professional attributes in your experience report and continuing professional development (CPD) documents.

Your mentor will also help you prepare for the Academic and Professional Interviews. They will need to provide a short note to confirm that they are acting as your mentor. They should also read this guidance document.

Technical report synopsis

The synopsis isn't simply a shortened version of your technical report. It must explain clearly how the full report will demonstrate your knowledge, understanding and application of scientific and engineering principles.

In no more than 750 words, it must show how this knowledge and experience demonstrates that you have achieved the required academic level, rather than describing projects you have worked on.

[Appendix A](#) outlines the academic competencies you need to demonstrate, and [Appendix B](#) gives

some examples of engineering principles. Your mentor must sign the synopsis to show they were consulted when you were preparing it.

Two-page CV

Your CV should show your personal details, academic achievements and brief details of jobs you have worked on, as well as your roles and responsibilities. We are particularly interested in work you have done in the last five years.

Try to include examples of problems you have encountered, unusual or extensive experience you have gained, and lessons you have learned. You need to demonstrate all the attributes as described in [Appendix C](#).

Academic qualifications

You need to provide certified copies of any academic qualifications you have gained, together with certified English translations, where applicable.

To certify a copy of your certificate, your university lecturer, senior member of your employing company, a solicitor, or a corporate ICE member needs to write the following:

“I confirm this to be a true copy of this applicant's qualification.”

- *Signature:*
- *Name (clearly printed):*
- *Date:*
- *Employing organisation/university or college:*
- *Position:*
- *A contact telephone number or email address:*
- *ICE membership number (if applicable):*

We may contact your university, college or professional institution to verify your qualification. You give us permission to do so by signing your initial assessment application.

Assessment

We will email you within 12 weeks of receipt of your documents to tell you that you can proceed to stage 2 or ask you for more information. This might include extra technical and professional information, or we may need to discuss something with your mentor.

After your initial assessment is approved, you have one year to send us your application. If you leave it later, you will need to start the process again.

Stage 2 - Professional Review Application

Application deadlines and locations

You can specify where you would like your Professional Review to take place on your application form – please see the [TRR key dates page](#) on our website for locations and application deadlines. While ICE will do its best to accommodate your first option, in some instances this may not be possible due to over demand for one centre, and you will be allocated your second centre option. We ask that you do not book any travel or accommodation until you have received your notification letter.

While face to face Professional Reviews remain the preferred approach, ICE can now offer remote Professional Reviews, via video conference, for international candidates:

- Who are unable to travel to one of the Professional Review locations, or
- Whose specialism does not match any of the available reviewers at that location

To find out more, please see [Appendix E](#).

If there are no suitable dates or locations listed please contact the [Professional Reviews team](#) and we can discuss alternative arrangements.

Making your application

Your application should include:

- A [Technical Report Route application form](#)
- [Review fee](#) (non-refundable and payable on line)
- [Sponsor questionnaires](#) (sent separately by the sponsors – see below for more details)
- Evidence of any special requirements you would like taken into account at your Professional Review – for example, if you have a hearing impairment or if there are restrictions on what you can discuss about a particular project you've worked on. You can find out more in [Appendix D](#)

Sponsors

Your application must be supported by three sponsors, who can confirm your suitability for membership. To do so, they must complete a [sponsor questionnaire](#) and upload it into the [Professional Reviews sponsor's portal](#) a minimum of **one week** before the application opening date of the [centre/location](#) which you are applying for. It is your duty to ensure this has been completed.

It is important that you also read the questionnaire as it provides guidance on who is eligible to sponsor your application and what they are required to demonstrate.

You need to select one sponsor to be your lead sponsor; this person is likely to be your mentor. They have additional responsibilities and play a particularly important role in the success of your application.

Your lead sponsor:

- Must be an ICE Member at the same grade or higher than the one you are applying for
- Has a duty to act as a mentor during the Review submission process
- Should be familiar with the Technical Report Route and the standards you need to meet
- Able to provide constructive criticism of your report, and advice on the Academic and Professional Interviews.

Individual Requirements

You should state any individual requirements you would like considered at your interview – for example, a disability or a security issue. You can find out more in [Appendix D](#).

Unspent convictions

No person with an unspent conviction relating to a Serious Criminal Offence* will be admitted to any grade of membership unless there are special circumstances that show beyond reasonable doubt that the person is a fit and proper person to be admitted to membership of the Institution.

If you have an unspent conviction relating to a serious criminal offence, please complete the [unspent convictions form](#) which must also be signed by your sponsors, and submitted with your application, a member of staff will contact you directly and in confidence.

*“Serious Criminal Offence” means an offence involving dishonesty or deception or any offence punishable by a Court of competent jurisdiction by a term of imprisonment of 12 months or more (whether or not any custodial sentence is in fact imposed).

Submitting your initial application

All documents (except the sponsor questionnaires and receipt for the application fee) should be included in your initial application– in the order noted above – within a **single PDF file** of no more than 5mb. You must submit the application through the [Professional Reviews upload portal](#) completing all details and confirming the checklist before upload. If you are experiencing issues with the site, please call us on +44 (0) 207 665 2344 or trr@ice.org.uk.

After submitting your initial application, ICE will check it for completeness and contact you to acknowledge receipt and, if necessary, request any missing documents.

Before you upload your documents:

- Your three sponsors must each complete a sponsor's questionnaire and upload the questionnaire through the [Professional Reviews sponsor's portal](#) a minimum of one week before the application opening date of the centre/location you are applying for.
- An application fee must be paid – you can find more details on the [fees page](#) of our website

Professional Review day details

You will be emailed the names of your reviewers, as well as full details of the time, date and venue of your Professional Review approximately four weeks before the Review. Under no circumstances should you contact your reviewers directly.

Conflict of interest

Your reviewers should not be connected to either you or your employer. If you know one of your reviewers or feel there may be a conflict of interest, you should let us know immediately on +44 (0) 207 665 2344 or at professional.reviews@ice.org.uk

Your reviewers will also have been given the opportunity to identify any conflicts prior to you being notified of who they are.

Professional Review Submission

Your submission should include:

- [A technical report](#)
- [An experience report](#)
- [CPD records](#) – development action plan (DAP) and personal development record (PDR)

You can find details on how to format and send us these documents at the end of this section.

You should upload your submission in a single pdf file to the [Professional Reviews upload portal](#) at least 15 full working days before your Professional Review date. If you miss the deadline or your submission is incomplete your Professional Review may be deferred.

The technical report

Your technical report should be an ordered and critical account of your technical competencies, as set out in your report synopsis. Your report should not exceed 10,000 words, although 5,000 words is normally sufficient for applicants to set out the key aspects of their technical competence.

Your technical report must give details of a technical aspect (or aspects) of civil engineering practice in which you have played a major part. It must show how you resolved technical problems using engineering principles such as those in [Appendix B](#), and how your knowledge meets the academic competencies in [Appendix A](#).

You should include the successes and failures in relation to the application of engineering principles, and the lessons you learned. If appropriate, appendices can be used for supporting details.

The technical report is deemed to cover attributes 1 and 2 which can be found in [Appendix C](#). It should not include examples of your professional competence – for example, management skills and commercial awareness – as this will be covered in your experience report. It's up to you and your mentor to structure the report to suit your experience.

The experience report

Your experience report should demonstrate your professional competence – i.e. attributes 3 to 9. You can find the attributes in [Appendix C](#). Your experience report should be no more than 2,000 words. Brief appendices may be used to illustrate attributes 3 to 9.

Continuing professional development (CPD)

You need to submit the following CPD records:

- A development action plan (DAP) which details your objectives for the current/forthcoming year
- Your personal development record (PDR) for a minimum of three years (with a minimum of 30 hours of effective learning per year)

These records must include current formal training related to health safety and welfare (attribute group 6 in [Appendix A](#)).

Before applying for your Review, you need to complete a minimum of 90 hours effective learning time at Incorporated Engineering (IEng) level and 180 at Chartered Engineer (CEng) level. For more information, please read our [CPD guidance](#).

Submitting your Review documents

Your submission must be sent in the following format:

- The overall document must be –
 - One self-contained PDF file
 - A4-sized (A3 is suitable for drawings if required)



- No larger than 15mb
- The submission cover must include –
 - A recent photo of you, as a JPEG file
 - Your signature and membership number
 - The lead sponsor's signature and membership number
- Include hyperlinks to link data in the appendices with the relevant text in your report
- Use colour where necessary – for example, images and drawings but ensure the file is printable in the correct format and can be read in black and white.
- Where possible, convert individual documents to PDF electronically, rather than scan them.
- Use an appropriate font and text size

Important information

You must submit your submission in a single PDF file through the [Professional Reviews upload portal](#) completing all details and confirming the checklist before you upload at least 15 full working days before your Professional Review date. If you are experiencing issues with the site, please call us on +44 (0) 207 665 2344 or email trr@ice.org.uk.

The PDF document must be submitted at least 15 full working days before your review. If you miss the deadline your Professional Review may be deferred.

Admission Procedure 3

[Your name](#) will be published on the ICE website for a minimum of 28 days in accordance with [Admission Procedure 3](#).



Stage 3 - The Technical Report Route Review

The Technical Report Review is an assessment of your academic and professional competence by two senior reviewers. The Review has three main parts which take place on the same day:

- [Academic Interview](#)
- [Professional Interview](#)
- [Written Exercise](#)

Academic Interview

The Academic Interview lasts around 90 minutes. The aim of the Academic Interview is to find out whether your experience has given you the same level of academic competence in your technical area as someone with the required educational base.

First, you must give a presentation of up to 30 minutes, based on your technical report. Your presentation must expand on the report, rather than simply repeat information in it. You may use visual aids such as flip portfolios (not larger than A3) to illustrate the presentation. You can also use a laptop computer, but a power source isn't supplied, and we won't be able to help you with any technical problems you might encounter.

Your reviewers will then ask you a series of questions about the information in your technical report. The interview will last around 60 minutes.

After your Academic Interview, your reviewers will adjourn to determine whether you have satisfied the educational base for the grade of membership and level of Engineering Council registration you have applied for. You will be called back in to the interview room and they will tell you whether or not you have been successful. If you have been successful, you will move on to the Professional Interview.

If you have been unsuccessful, the process will end, and we will write to you informing you of the reasons.

Professional Interview

The Professional Interview lasts around 60 minutes.

The Professional Interview is based on your experience report. It is an opportunity to show that you have the professional competence and attributes required for the grade of membership you have applied for (see [Appendix C](#)). If you are already a member at Incorporated Engineer (IEng) level, you will only be assessed against the attributes at Chartered (CEng) level.

You need to be aware that engineering activity can have impacts on the environment, commerce,

society and individuals. You therefore need the skills to manage your activities and to be aware of the various legal and ethical constraints under which you are expected to operate. Observers may sit in on your interviews but will not be involved in any of the process.

The Written Exercise*

You will be set two questions by your reviewers and you must answer one in the allotted two hours. Questions will be based on subjects that relate to your experience, but you will still need to prepare for the written exercise by studying and gaining industry-related knowledge.

The aim of the written exercise varies slightly:

- At MPR, the objective is to ascertain that you can produce straightforward documents without assistance from others
- At CPR and CPRP, the aim is to test your ability to organise your thoughts and present them logically and clearly.

Although it is not a direct test of engineering knowledge, sufficient understanding and knowledge of the professional subject matter is required. Factual errors or lack of knowledge could affect the outcome, but examples of well-reasoned personal opinion will not.

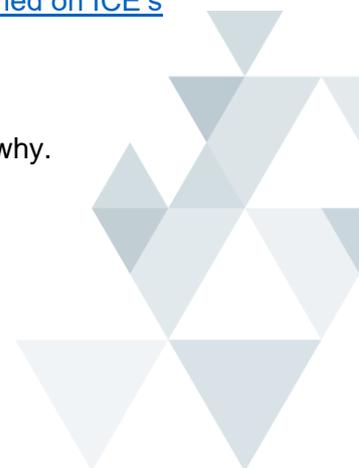
*** All candidates who make an application to sit the Technical Report Route from 1 January 2020 will be required to undertake a Written Exercise regardless of the amount of experience they have.**

You will find full guidance on the written exercise, use of a laptop for your written exercise, and how to avoid plagiarism and collusion in [Appendix E](#).

Results

We will let you know when to expect your result, which will be sent by email. Providing you select the tick-box on the application form, [if you are successful your name will be published on ICE's website](#) and will subsequently appear on the 'New Civil Engineer' website.

If you are unsuccessful at your Professional Review you will be given the reasons why.



Appeals

Candidates have the right to appeal where they feel there was an error in the process, and in cases of unforeseen events. Appeals must be received within two months of the date of your result letter. Appeals after this date will not be considered.

If you plan to appeal, we recommend that you read our [appeals guidance](#) and contact your [Membership Support Team](#) as listed below:

- If you are based in the UK, please email membership@ice.org.uk or call +44 (0) 121 227 5948 for help.
- If you are based in Hong Kong, please email membershiphk@ice.org.hk for help.
- If you are based anywhere else please email iceinternational@ice.org.uk or call +44 (0) 207 665 2006 for help.

The re-sit process

If you are unsuccessful at the Academic Interview you will need to undertake the whole Review process again. You should therefore prepare in the same way you did for your original Review starting from Stage 2 unless you are changing the content of your Technical Report, in which case you will need to start from Stage 1.

If you were successful at the Academic Interview but unsuccessful at the Professional Interview you will need to follow the process from Stage 2, but you do not have to submit the Technical Report. There will be no Academic Interview, just a Professional Interview which will cover attributes 3-9 and, a written exercise.

No information regarding a previous application will be made available to your Reviewers.



Appendix A - Academic competencies to be demonstrated at Review

Incorporated engineer (IEng)

1. **Science and mathematics:** Have knowledge and understanding of the mathematical, scientific and engineering principles that underpin civil engineering. Be able to undertake and properly apply engineering analysis to problems using relevant information technology, as well as being able to implement engineering processes and technologies.
2. **Design:** Possess the knowledge, understanding and skills to define problems, identify constraints and contribute to the design and development of engineering solutions in a practical context. Ensure that designs are appropriate to meet their purposes or applications.
3. **Engineering practice:** Demonstrate a knowledge and understanding of relevant materials, processes and products as applied to the solution of civil engineering problems. Be able to use and apply information from technical literature, appropriate international and national technical standards, codes of practice and industry generated standards.

Additional competencies required for Chartered Engineer (CEng) level

1. **Science and mathematics:** Have a deeper understanding of the mathematical principles supporting your engineering activity together with knowledge of developing techniques and technologies. Understand the applications and limits of information technology. Demonstrate an ability to develop analysis and solutions to problems faced.
2. **Design:** Possess a wide knowledge and a comprehensive understanding of the design process. Show an ability to adapt solutions and be able to generate innovative design/engineering solutions for/to problems encountered.
3. **Engineering practice:** Have a thorough understanding of current practice and limitations as well as an appreciation of new developments and areas of innovation. Show extensive knowledge and understanding of engineering materials and be able to apply these in the solution of both routine and non-routine problems.



Appendix B - Examples of engineering principles

When producing the technical report and its synopsis, you must identify engineering principles involved in your work and demonstrate how they were used to solve problems. Here are some examples:

1. General

- Loading and the use of partial safety factors to find service and ultimate design loads
- Forces and equilibrium
- Establishment of compression, shear, bending, torsion, buckling and deflection in members
- Stress and strain and use of partial safety factors to find design strengths etc.

2. Geotechnics

- Establishment of soil shear strengths, settlement, active/passive pressures or pore water pressure
- Stability of slopes and embankments
- Pressures developed in soil masses under different types of foundation
- Principle of flotation of structures and seepage under structures etc.

3. Foundations

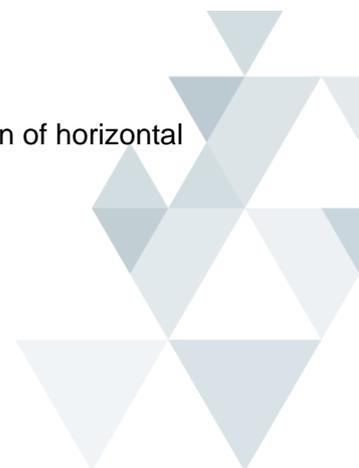
- Calculation of pressure distribution beneath foundations, transmission of pile loads to strata and effect of pile interaction
- Stability of excavations, de-watering and performance of cofferdams etc.

4. Reinforced and pre-stressed concrete

- Design principles and modes of failure of beams and slabs
- Rigid frame structure concept and transmission of horizontal forces to foundations
- Alternative use of shear walls or bracing
- Stability and design to prevent progressive collapse
- Causes and estimation of loss of pre-stress
- The principles used to design cantilevered retaining walls etc.

5. Steel structures

- Design principles and modes of failure of beams and columns
- The principles of rigid frame and simple frame construction and transmission of horizontal forces to the foundations through frame action or bracing
- Plastic hinge formation in portals
- Composite action between beams and slabs
- Performance and use of bolted or welded joints etc.



6. Hydraulics

- Fluid pressures on surfaces, buoyancy
- Flow through pipes and channels, friction, headlosses, turbulence, siltation
- Flow over weirs
- Design of pipe networks
- Application of SUDS etc.

7. Transportation

- Principles of transportation modelling – for priority junctions, roundabouts, signalled junctions
- Algorithms used to develop network models – trip generation modal split, distribution, assignment, microsimulation
- The basics of junction and highway design, road-safety analysis, signal control

8. Highways

- The principles of pavement design, from CBR to road surface friction course
- Highway and junction design: vertical and horizontal curvature, super-elevation, drainage, sight distances, safety features of highways and highway design

9. Construction

- Criteria for plant and equipment selection
- Pressures on formwork, scaffold and temporary works design principles
- Engineering principles involved in design of temporary works such as foundations and roads
- Concrete mix design and quality control processes
- Soil testing etc.



Appendix C - Table of attributes

At any Review you must have had responsible and relevant experience at a level such that you can demonstrate the attributes shown in the table below.

The interpretation of Attributes 1 and 2 will relate to your fields of work as indicated to the reviewers on your application form. You must demonstrate a sound understanding of core engineering principles in those fields, particularly if you do not hold the educational requirement necessary for Engineering Council registration. The reviewers will judge your level of attainment of Attributes 3 to 9 with regard to their relative importance within your fields of work.

As a prospective professional civil engineer, in order to fulfil your obligation to society and to meet the requirements of Health, Safety and Welfare legislation, you must have a sound knowledge and understanding of the construction process ⁽¹⁾ together with the activities connected to it. You must have an appreciation of, and be able to identify and manage, risks to all those engaged and affected by the design, construction, operation, use, maintenance and demolition of any works. For those whose experience includes the construction process, site experience will ordinarily be required.

| Attribute group | Attributes of CEng MICE to be demonstrated at Chartered Professional Review (CPR) | | | |
|---|---|---|--|---|
| | Attributes of MICE/IEng MICE to be demonstrated at Member Professional Review (MPR) | | Additional Attributes of CEng MICE to be demonstrated, if you are already IEng MICE, at Chartered Professional Review Progressive (CPRP) | |
| 1. Knowledge and understanding of engineering | A | Maintain and extend a sound theoretical approach to the application of technology in engineering practice. | C | Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology. |
| | B | Use a sound evidence -based approach to problem solving and be able to contribute to continuous improvement. | D | Engage in the creative and innovative development of engineering technology and continuous improvement systems. |
| 2. Technical and practical application of engineering | A | Identify , review and select techniques, procedures and methods to undertake engineering tasks . | D | Conduct appropriate research, relative to design or construction and appreciate its relevance within own area of responsibility. |
| | B | Contribute to the design and development of engineering solutions. | E | Undertake the design and development of engineering solutions and evaluate their effectiveness. |
| | C | Implement or construct design solutions and contribute to their | F | Implement or construct design solutions and evaluate their effectiveness. |

| | | | | |
|--|----------|--|----------|--|
| | | evaluation. | | |
| 3. Management and leadership | A | Plan for effective project implementation. | E | Plan, direct and control tasks, people and resources. |
| | B | Manage the planning and organisation of tasks, people and resources. | F | Lead teams and develop staff to meet changing technical and managerial needs. |
| | C | Manage teams and develop staff to meet changing technical and managerial needs. | G | Demonstrate continuous improvement through quality management. |
| | D | Manage quality processes. | | |
| 4. Independent judgement and responsibility | A | Identify the limits of personal knowledge and skills. | C | Identify the limits of a team's skill and knowledge. |
| | B | Exercise sound independent engineering judgement and take responsibility. | D | Exercise sound holistic independent judgement and take responsibility. |
| 5. Commercial ability | A | Prepare and control budgets. | C | Demonstrate sound judgement on statutory, contractual and commercial issues in relation to your area of responsibility. |
| | B | Use sound knowledge of statutory and commercial frameworks within own area of responsibility and have an appreciation of other commercial arrangements. | | |
| 6. Health, safety and welfare | A | A sound knowledge of legislation, hazards and safe systems of work. | D | Leading continuous improvement in health, safety and welfare. |
| | B | Manage risks. | | |
| | C | Manage health, safety and welfare within own area of responsibility. | | |
| 7. Sustainable development | A | A sound knowledge of sustainable development best practice. | C | Leading continuous improvement in sustainable development. |
| | B | Manage engineering activities that contribute to sustainable development. | | |
| 8. Interpersonal skills and communication | A | Communicate well with others at all levels including effective use of English ⁽²⁾ orally and in writing. | E | Communicate new concepts and ideas to technical and non-technical colleagues including effective use of |
| | B | Discuss ideas and plans | | |

| | | | |
|-----------------------------------|----------|--|--|
| | | competently and with confidence. | English ⁽²⁾ orally and in writing |
| | C | Effective personal and social skills. | |
| | D | Manage diversity issues. | |
| 9. Professional commitment | A | Understanding and compliance with the ICE Code of Conduct. | |
| | B | Plan, carry out and record CPD and encourage others. | |
| | C | Engage with ICE activities. | |
| | D | Demonstration of appropriate professional standards, recognising obligations to society, the profession and the environment. | |
| | E | Exercise responsibilities in an ethical manner. | |

Notes:

1. The construction process is held to include the conception, design, construction, commissioning, maintenance, decommissioning, removal, management and procurement of civil engineering works.
2. All Reviews for Engineering Council registration will be conducted in English, subject to the provision of the Welsh Language Act 1993 and any regulations which may be made in implementation of European Union Directives on free movement of labour.



Appendix D - Individual requirements

We are committed to making reasonable adjustments to our Review process to accommodate specific individual requirements. Individual requirements may include disabilities and security clearance.

You need to include a short description about your requirements in the space provided in your Technical Report Route application form. We will also need to see supporting evidence, such as certified documents or statements.

Disability or sensory impairment

In line with the Equality Act 2010, we will make 'reasonable adjustments' required for candidates with a disability, dyslexia, speech impairment or sensory loss. Our [Equality and Diversity Policy](#) ensures everyone receives the same opportunities during the Review process.

Security-mindedness and Security clearance

You should consider whether information in your review submission should be omitted or reduced in its level of detail due to security reasons. However, there's no reason why this should detract from the quality of your report.

If your submission is affected by security issues, you should consider the following suggestions:

- Make your report non-site specific – for example don't state that the facility was on the Sellafield site or on the Hinkley site or that the asset serves a critical function to the site or country, or is or was vulnerable to various threats
- Don't state building numbers or names – it's sufficient to say 'nuclear facility' or 'nuclear store'
- Remove site and building names from drawings or snapshots of models
- Don't include photographs or other images which reveal the location of buildings and facilities
- Avoid stating, or showing in drawings or extracts from models, technical details (such as wall thickness) which may reveal security-sensitive information

If you work on a security-sensitive project, we recommend that your organisation's information security manager (and also the asset owner's/client's) reads your Professional Review submission and approves the content before submission.

Familiarise yourself with the [Engineering Council's guidance note on Security](#) (published May 2016).

You should also let us know if you believe your reviewers need security clearance.

Appendix E - The written exercise

This is a two-hour test of your ability to communicate in written English.

Your reviewers will draft two questions and you must answer one. The questions will be unique to you, based on your areas of experience, and appropriate to your level of work-based knowledge and responsibility. However, you will still need an appreciation of broad industry and society-related topics, which you should try to gain through your experience at work, general reading, CPD study and discussions with colleagues.

Below, you will find a list of potential question topics within broad subject areas. However, this list is not exhaustive, and you may be given a question from a different area, relevant to your experience.

You are expected to show that you can develop ideas and support them with reasoned opinion. Your answer should follow a logical structure, either as an essay or a report. It does not have to be a polished article, but consistent with a 'first draft'.

The written exercise is a closed book exercise and you will only be allowed to bring in 2 sides of A4 (hard copy) as reference material.

You are advised to prepare a plan for your written exercise although this will not be marked. A plan will help you formulate a coherent argument and can help your reviewers to see your thought process.

This table shows the written exercise requirements.

| | Incorporated | Chartered |
|-------------------------------|--|--|
| Written exercise requirements | Demonstrate an ability to produce straightforward documents without assistance | Demonstrate an ability to organise your ideas and opinions and communicate them clearly in writing |
| Time allowed | 120 minutes | 120 minutes |

Please note: All candidates who make an application to sit the Technical Report Route from 1 January 2020 will be required to undertake a Written Exercise.

Assessment

Your written exercise will be assessed for:

- Knowledge and relevance
- Use of English (grammar, spelling, punctuation and syntax)

- Clarity and presentation

You will receive an overall assessment of satisfactory or unsatisfactory.

Discussion groups

Organised discussion groups can help develop your writing skills and encourage debates between engineers. Your Membership Recruitment Team (in the UK and Hong Kong) or regional representative (in other parts of the world) can give you more information about discussion groups.

If you are based in the UK, please email membershiprecruitment@ice.org.uk or call +44 (0)121 237 3648 / 3649.

If you are based in Hong Kong, please email membership@icehk.org.hk.

If you are based anywhere else, please email iceinternational@ice.org.uk or call +44 (0)207 665 2006.

Use of laptop computers

You may use your own laptop to complete the written exercise, unless a computer is provided for you at your review centre. Where a computer is provided, you won't be allowed to use or connect to your own external media drive or device.

Guidance for using laptops for the written exercise:

- The use of the internet on any mobile device or computer is not permitted
- You will be asked at the start of the written exercise to put all mobile devices on silent and place them on the table in front of you.
- If the invigilator spots that you are using the internet, they will make you aware of their concerns, record their observations and pass this information to your reviewers. You will receive a copy of this report.
- Your reviewers may use this information in the marking of your written exercise or other attributes
- You will only be allowed to bring in 2 sides of A4 (hard copy) as reference material, you will not be allowed to bring any other hard copy reference material or access any other information
- We won't be able to help if you experience technical problems with your own equipment. If there is a problem, you will be given a maximum of 60 additional minutes to complete the written exercise. In exceptional circumstances, you can submit work that has been partly hand-written and partly done on computer

- At the end of the written exercise, the invigilator will ask you to download your work on to a USB. You must ensure that your laptop allows downloads to an external drive

Plagiarism

Plagiarism is presenting the work of others as your own. This means using words or ideas without the permission of the original author or authors, and without acknowledgement of the original author. Plagiarism should be avoided at all stages of your Professional Review, including reports, drawings, presentations and the written exercise.

Here are some guidelines to help avoid plagiarism:

- Don't cut and paste material from others
- Where you have directly quoted others, or the work of others, attribute the source fully and, where appropriate, use quotation marks. As a rule of thumb, material derived from others should be considered a quote, unless it is assumed to be common knowledge – for example, standard equations that are in the public domain

Plagiarism is taken seriously by the ICE. Should there be concerns with your behavior during the written exercise or with the content of your written exercise the ICE will investigate including using plagiarism detection software. If this shows significant levels of similarity with any unattributed sources you will be contacted by the ICE and asked to provide an explanation.

Collusion

In the context of the Professional Review, collusion is any agreement to conceal someone else's contribution to your piece of work, when you know that they intend to submit the same material. The plagiarism guidance above equally applies to avoiding collusion.

Plagiarism and collusion may lead to a ban on applying for ICE membership or, for existing ICE members, permanent expulsion from ICE membership.

If an allegation of plagiarism or collusion is made relating to your application for membership, your result may be delayed until an investigation has taken place.



Example subjects for written exercise questions

Please note: This list is indicative not exhaustive.

Financial

- The financial implications of decisions made by civil engineers
- Whole-life asset management
- Budget management
- Cost control
- Private finance
- The financing of infrastructure development
- Operational and maintenance cost analysis
- Estimating/tendering
- Payment and compensation

Management

- Re-thinking construction
- Quality, health, safety welfare, and environmental management systems
- Effective delegation
- Team leadership
- Communication during the design and construction of civil engineering works
- Training/development of staff
- Partnering/alliances
- Business improvement
- Marketing
- Site/project management

Societal

- Equality and diversity in the UK in relation to the construction industry
- Sustainable development
- Influencing local, national and international political decisions
- The influence of recent international events on civil engineering
- The role of ICE
- Overseas aid
- ICE's Code of Professional Conduct



- Health and safety management
- Aesthetical and environmental issues in civil engineering
- Health, safety and welfare during the design, construction, maintenance, operation and subsequent removal of the works
- Environmental impact of construction projects
- Status of the civil engineer in society

Commercial

- Methods of funding and procuring construction projects
- Forms of contract for civil engineering works
- Joint venture contracts
- Risk analysis
- Target cost contracts
- Partnering/alliances
- Supply-chain management

Technical/academic

- Research and development
- Knowledge transfer
- The professional development of civil engineers
- Performance specifications
- National and international regulations on the control of pollution
- The role of an engineer as a specialist or a generalist
- Quality management
- Infrastructure maintenance



Our vision

Civil engineers at the heart of society, delivering sustainable development through knowledge, skills and professional expertise.

Core purpose

- To develop and qualify professionals engaged in civil engineering
- To exchange knowledge and best practice for the creation of a sustainable and built environment
- To promote our contribution to society worldwide

Diversity statement

As a membership organisation and an employer, we value diversity and inclusion - a foundation for great engineering achievement

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