



INSTITUTE OF
HIGHWAY
ENGINEERS

Guidance Notes

IEng Professional Registration

The first step to completing your Professional Review
with the Institute of Highway Engineers

Guidance notes for:

Incorporated Engineer

(Recognised Qualification Route and Individual Assessment
Route) Professional Registration

About this booklet

This set of guidance notes is your first step in gaining Incorporated Engineer professional registration through the Institute of Highway Engineers. This booklet is essential for both Recognised Qualifications Route and Individual Assessment Route IEng Professional Review applicants. It provides you with information and guidance to ensure the relevant paperwork is completed to the required standard as quickly and easily as possible. Please read this booklet in conjunction with the IEng application form as the two are designed to go hand in hand.

Before you begin

In order to obtain IEng registration you will need to be an existing IHE member, or a member of one of our Professional Affiliate Partners (currently the Association of Cost Engineers (ACostE) and the Institute of Traffic Accident Investigators (ITAI). Please refer to our website at www.theihe.org/membership if you need to apply for IHE membership.

To gain Engineering Council registration, engineers and technicians prove their competence and commitment in a Professional Review of their portfolio submission to the IHE. Incorporated Engineers are the mainstream operational managers of current technology and are at the forefront of developing technology. They are characterised by their ability to act as exponents of today's technology through creativity and innovation, they maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operations. Incorporated Engineers are engaged in technical, financial and commercial planning and management and they demonstrate a personal and professional commitment to society, to their profession and to the environment.

Incorporated Engineers are able to demonstrate the theoretical knowledge to solve problems in developed technologies using well proven analytical techniques. Incorporated Engineers have effective interpersonal skills in communicating technical matters and maintain a continuing commitment to professional engineering values.

Traffic management engineers, network managers, maintenance engineers, development management officers, transportation planners, highway designers, signals engineers, project managers and road safety engineers are typical Incorporated Engineer positions. Successful applications of their knowledge deliver engineering projects or services using established technologies and methods, while maintaining a responsibility for projects, financial planning and management together with some responsibility for leading and developing other professional staff. Remember that, although you may work in a team, the Institute wants to know what you do, what you recommended, and the extent of your personal responsibility.

Becoming an Incorporated Engineer demonstrates a commitment to professional standards, setting you ahead of unregistered engineers and showing a pride in your achievements.

Many will have a BEng or BSc degree. Others will have gained the necessary skills, knowledge and experience via a non-academic route through practical experience in the highways industry.

This application process will help the Institute of Highway Engineers assess the five requirements of IEng standard contained within the UK-SPEC of UK Standard for Professional Engineering Competence laid down by the Engineering Council. These are:

- A.** Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.
- B.** Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products.
- C.** Provide technical and commercial leadership.
- D.** Demonstrate effective interpersonal skills.
- E.** Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

Completing the application form

To keep your application as clear as possible, we would request the following:

- If completing the application form by hand, please write in BLOCK CAPITALS and in black ink.
- Please complete only the relevant fields - we have included guidance as to which sections should be left blank if they are not relevant.
- You should aim to complete the application form with as much detail as possible. This will reduce the instances where we need to ask you for more information at a later date.
- Remember to include any additional documentation with your application where you see this symbol. Please tick the relevant box on the check list at the back of the application form if you are including additional evidence.



Please post your completed application form, along with your submission to:

Membership, Institute of Highway Engineers, Floor 4, Euston House, 24 Eversholt Street, London, NW1 1DB

Important: ITAI and ACostE members should send your application as described above, to the following address.

ACostE members should send your application directly to The Association of Cost Engineers:
ACostE Administration Office, Lea House, 5 Middlewich Road, Sandbach, Cheshire CW11 1XL

ITAI members should send your application directly to the Institute of Accident Traffic Investigators at:
ITAI, PO Box 16057, Solihull, West Midlands, B93 3GL

And finally

We hope you find the pathway to Incorporated Engineer application a simple process. The Institute of Highway Engineers is committed to helping you achieve the career benefits that professional registration can bring. Please contact us on: 020 3874 3066 or email us at professionalreviews@theihe.org if we can provide any assistance or guidance at any stage of your IEng application.

Section A

In this section we give some general guidance and background to making your IEng submission with the IHE.

1. Entry routes and requirements

Before you start compiling your IEng submission, you will need to establish which route of application you're going to take. Two routes are available to Incorporated Engineers, 'Recognised Qualifications Route' and 'Individual Assessment Route'. Choosing which one is applicable to you will depend on the training and qualifications you have undertaken so far in your career. Both routes will require you to demonstrate your competency in applying proven techniques to solve problems and supervise works or people.

It is not possible to cover every individual situation in this document. If your qualifications or experience are not covered in the following guidance you may still be suitable to apply for IEng. You should ask

the IHE for an individual Career Assessment. Forms and guidance on what we require to undertake this process are available on our website at <https://members.theihe.org/page/formsandguidance> (log in required) Your documents will then be put to the IHE Academic Standards Panel for consideration by engineering or academic professionals. They will either confirm your eligibility or provide you with feedback and guidance on the best route for you to achieve IEng registration.

RECOGNISED QUALIFICATIONS ROUTE

These qualifications meet the requirements to pursue IEng registration via the Recognised Qualifications Route:

- Accredited BSc or BEng
- Accredited BSc (Hons) or BEng (Hons)
- Relevant HND or HNC normally started before 1999
- Most accredited MEng degrees also fulfil the academic base for IEng

Your degree or diploma must be in a relevant discipline such as Engineering or Civil Engineering. You will need to ensure your degree has been accredited by the Joint Board of Moderators (of which the IHE is a member) or other licenced Engineering Council Institute as meeting the educational requirements for an Incorporated Engineer. You will need to refer to two sources of information to establish this:

- Engineering Council Accredited Course Search
www.engc.org.uk/education-skills/course-search/recognised-course-search/
- Joint Board of Moderators (JBM)
www.jbm.org.uk/accreditation.aspx

If you have studied overseas, a NARIC Certificate of Comparability that covers your degree should enable you to study via the Recognised Qualifications Route. You should contact NARIC directly, and obtain a Certificate of Comparability yourself before making your application. More information on this can be found on the NARIC website: <https://www.naric.org.uk/Qualifications/>

If your degree has not been accredited you may still be able to follow the Recognised Qualifications Route. If you feel your BEng, BSc or MEng are in a relevant field and fulfil the criteria for IEng registration, but are not listed, please ask the IHE for an individual Career Assessment. Forms and guidance on what we require to undertake this process are available on our website at <https://members.theihe.org/page/formsandguidance> (log in required) Your documents will then be put to the IHE Academic Standards Panel for consideration by engineering or academic

professionals. If the panel take the view that your degree contains enough scientific and mathematical knowledge to fulfil the requirements for IEng registration, their approval is then taken as being equivalent to Joint Board of Moderators or Engineering Council's accreditation.

INDIVIDUAL ASSESSMENT ROUTE

If you have other qualifications which do not fulfil the Recognised Qualifications Route criteria, or none at all, but can demonstrate competence and commitment to the appropriate depth and level through your work experience, then you can be individually assessed. This is divided into two areas: Further Learning and the Personalised Report Option.

To obtain Incorporated Engineer registration through the Individual Assessment Route you will need to demonstrate you have met the Learning Outcomes set by the Engineering Council. These Learning Outcomes are the same as those Higher Education providers need to meet in order to get JBM accreditation for their educational programme.

The Learning Outcomes you are seeking to demonstrate by Further Learning (that doesn't lead to a Recognised Qualifications Route pre-requisite qualification) or the Personalised Report Option are listed here:

1. Science and mathematics

Engineering requires a substantial grounding in engineering principles, science and mathematics.

Incorporated Engineers will need to:

1.1 Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems. Some of the knowledge will be informed by current developments in the subject of study.

2. Engineering analysis

Engineering analysis involves the application of engineering concepts and to analyse, model and solve problems.

Incorporated Engineers will:

2.1 Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.

2.2 Select and apply appropriate computational and analytical techniques to model broadly-defined problems, recognising the limitations of the techniques employed.

2.3 Select and evaluate technical literature and other sources of information to address broadly-defined problems.

3. Design and innovation

Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges.

Incorporated Engineers will therefore need the knowledge, understanding and skills to:

3.1 Design solutions for broadly-defined problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.

3.2 Apply an integrated or systems approach to the solution of broadly-defined problems.

4. The engineer and society

Engineering activity can have a significant societal impact and engineers must operate in a responsible and ethical manner, recognise the importance of diversity, and help ensure that the benefits of innovation and progress are shared equitably and do not compromise the natural environment or deplete natural resources to the detriment of future generations.

Incorporated Engineers therefore need the skills to manage their activities and to be aware of the various sustainability, ethical, risk, security and Equality, diversity and inclusion including:

- 4.1** Evaluate the environmental and societal impact of solutions to broadly-defined problems.
- 4.2** Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
- 4.3** Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
- 4.4** Adopt a holistic and proportionate approach to the mitigation of security risks.
- 4.5** Recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

5. Engineering practice

The practical application of engineering concepts and tools, engineering and project management, teamwork and communication skills. Engineers also require a sound grasp of the commercial context of their work, specifically the ways an organisation creates, delivers and captures value in economic, social, cultural or other contexts.

Incorporated Engineers will:

- 5.1** Use practical laboratory and workshop skills to investigate broadly-defined problems.
- 5.2** Select and apply appropriate materials, equipment, engineering technologies and processes.
- 5.3** Recognise the need for quality management systems and continuous improvement in the context of broadly-defined problems.
- 5.4** Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters.
- 5.5** Function effectively as an individual, and as a member or leader of a team.
- 5.6** Communicate effectively with technical and non-technical audiences.
- 5.7** Plan and record self-learning and development as the foundation for lifelong learning/CPD.

FURTHER LEARNING

There are two types of Further Learning. The first is to complete a programme of JBM approved or accredited Further Learning, the second is to work with the IHE Academic Standards Panel to produce a Further Learning Report.

Both options are only open to holders of approved HNC and HND qualifications in a relevant engineering discipline whom the IHE has confirmed may pursue this route.

Approved Further Learning

This Further Learning option consists of completing a JBM programme of accredited or accredited Further

Learning, by which you will be able to demonstrate you have met the Learning Outcomes set by the Engineering Council. This will enable you to reach the same level of technical knowledge as someone who has completed an accredited Bachelors degree. The Joint Board of Moderators provide a list of approved Further Learning on their website <http://www.jbm.org.uk/accreditation/accreditation-programmes/>

Further Learning Report

Further learning is the knowledge and understanding that underpins performance. Your activities should provide systematic understanding and critical awareness of current problems or insights into subjects at the forefront of professional practice. The important factor is that the learning must develop understanding of engineering principles to Bachelors degree level. It is not the same as training or initial development which is about performance and competence.

Your final report must indicate how, through Further Learning (that is to say, further to your HNC or HND), you have bridged the academic gap equivalent to a Bachelors level qualification, which forms the academic standard specified by the Engineering Council for eventual registration as an Incorporated Engineer.

This will be achieved through demonstrating achievement of the Bachelors level Learning Outcomes.

A further learning plan will need to be agreed by the IHE and this must be followed in order to produce a Further Learning Report. Your proposed Further Learning should be pre-planned and carefully thought through as the IHE Academic Standard Panel needs to be convinced that you have given detailed thought to the learning opportunities available to you and to a realistic programme timescale that will be dependent on your personal circumstances. Further Learning achieved prior to the submission of your plan of work may be taken into account when preparing your plan. If you believe that as part of your programme you are in a position to claim credit for prior learning you must produce evidence of when that learning was achieved together with details of how and to what extent it meets the Learning Outcomes.

Once you have completed your agreed Further Learning plan, your report will then be assessed by the IHE against the Engineering Council Learning Outcomes. The IHE ASP will not expect to be overwhelmed with a massive portfolio containing evidence of everything you have ever done during your training but rather selective and appropriate evidence of how you have met the Learning Outcomes, as initially defined in, and developed from, your learning plan. The key principle is that it must represent learning at Bachelors level and there must be evidence that formal, documented assessment of learning has taken place. The completion of all the agreed training or courses detailed on your Further Learning plan is not in itself an indication that you have met the requirements of Further Learning no matter how well executed your training programme was. Further Learning and training are not the same thing although elements of training can contribute to a Further Learning programme. In judging any submission the ASP will need to be convinced that learning, and appropriate assessment of that learning, has taken place and it is to Bachelors level, in order to satisfy the Engineering Council Learning Outcomes.

The IHE Academic Standard Panel will need to work with you step by step throughout. Therefore, your first step should be to ask the IHE for an individual Career Assessment stating that you wish to apply for IEng via the Further Learning option. Forms and guidance on what we require to undertake this process are available on our website at <https://members.theihe.org/page/formsandguidance> (log in required) Your documents will then be put to the IHE Academic Standards Panel for consideration by engineering or academic professionals.

Your report is concerned with your learning since completing your undergraduate studies and can draw on formal academic learning, short courses, work-based learning or all three. By its very nature, Further Learning will be very specific to you as an individual, so the Career Assessment is the essential first step. The following advice on content and structure of your Further Learning Report is intended to help, but it is not mandatory.

1. Qualifications and career summary

List your formal academic qualifications and summarise your career to date (key posts and responsibilities)

and describe your current position. Attach certified copies (signed by your current Line Manager) of your certificates, list of units or modules and an abstract of any dissertation.

2. Learning Outcomes

Against each Learning Outcome, list any relevant formal training and provide details of syllabuses for all formal qualifications and courses explaining how they contribute to meeting the outcome. You will need to provide some background on how the Learning Outcome has been achieved. Summarise the technical nature of the learning, the technical objective of the scheme and support your explanation with relevant calculations, results, conclusions and recommendations.

3. Evidence

To support your report, include clear details of the activities and assignments used to test your knowledge and understanding of the learning undertaken. This can be details of assessment transcripts, copies of drawings or reports or witness testimonials. Records of oral and other assessments that have taken place in the workplace can be used and these records should contain the names, qualifications and job details of those carrying out the assessments. You should include sufficient supporting evidence, but please be selective and don't include unnecessary information.

4. General advice

To produce a successful Further Learning Report, you should ensure the completed document:

- Captures your involvement on significant engineering projects or schemes.
- Explains, not describes.
- Provides analysis, not discussion.
- Provides evaluation, not opinion.
- Explicitly refers to engineering knowledge not in your initial qualifications.
- Is not a review of your experience or employment responsibilities.
- Is not concerned with your managerial or organisational competency or experience.
- Is a separate, standalone document from your professional review report.
- Is driven by quality not quantity, particularly when it comes to including supporting evidence.

Further Learning depends on achieving the Learning Outcomes and not on adding up time spent on various activities.

- Identifies which parts are yours if your documents were produced jointly with others.
- Maintains a focus on demonstrating your academic knowledge and understanding of the principles that underpin your work. Including key calculations, engineering drawings and diagrams as appendices.
- Includes appropriate references to back up your analysis or conclusions.

PERSONALISED REPORT OPTION

This option opens up a pathway to Incorporated Engineer registration for any suitable candidate, regardless of academic background. The purpose of the Personalised Report Option is to establish your knowledge of engineering principles and therefore your report must be technical - a management-based report is not acceptable. The Personalised Report is a self-contained, standalone report that provides an ordered and critical account of your technical expertise and it should show what you have learned. This is not a general report of your work experience or your professional or managerial ability because you are seeking to demonstrate your knowledge of underpinning engineering principles and how you apply them. You should explain clearly in your report the activities you did or were responsible for.

Your Personalised Report should demonstrate not just what you did, but explain why and what engineering principles you considered and applied. Your report should not exceed 10,000 words, although 5,000 words are normally sufficient to set out the key aspects of your technical competence. It must give details of a technical aspect (or aspects) of highway engineering practice in which you have played a major part and it must show how you resolved technical problems using engineering principles and how your knowledge meets the Engineering Council Learning Outcomes. You should include the successes and failures in relation to the application of engineering principles, and the lessons you learned, importantly, your Personalised Report shouldn't include examples of your professional competence such as management skills and commercial awareness.

Before you start your Personalised Report you must submit a synopsis to the IHE for approval. This will be assessed by the IHE Academic Standard Panel and you cannot proceed without their approval. In your Personalised Report Synopsis you need to set out clearly how you intend to demonstrate your technical knowledge and understanding by identifying the engineering principles involved rather than just describing the projects on which you have been working. Set out the project or scheme and the strategy you adopted to address the problem, outline the structure of your proposed report and the type of evidence you will submit. The synopsis should be approximately two pages long and on the right-hand side, you should cross reference the synopsis to the Engineering Council Learning Outcomes.

You should then email your completed Personalised Report Synopsis to professionalreviews@theihe.org asking for it to be approved. Your documents will then be put to the IHE Academic Standards Panel (ASP) for consideration by engineering or academic professionals. We aim to grant Personalised Report Synopsis approval within about eight weeks, but in some circumstances it may take longer. Do not write your Personalised Report until you have received written confirmation from the IHE that your synopsis has been approved. Once the IHE ASP has approved your synopsis, you can begin writing your Personalised Report.

Write about one or two significant projects that you undertook relating your application of engineering principles to an engineering project. You should offer an ordered and critical exposition of a subject or project, clearly demonstrating your contribution, explaining the development aims and the problems you encountered and demonstrate how they were resolved or achieved by applying engineering principles and knowledge. You should demonstrate that you investigated the situation, critically evaluated options and interpreted results. Where applicable, you should include calculations and refer extensively to engineering principles and back up your analysis with references to supporting evidence. The project must be complex and you must demonstrate originality and creativity as theoretical and historical studies are not appropriate.

The report can include, or be largely based on, a technical report or design study written as part of your normal job, provided you add a commentary identifying how the work contributed to your learning and development as well as highlighting how you applied engineering principles to solving problems. Throughout the report, you should cross reference in the right-hand margin against the Engineering Council Learning Outcomes. Do not confuse managerial responsibility with technical responsibility, the project(s) chosen must be technical to allow you to demonstrate knowledge of the fundamentals in your discipline and an ability to apply those principles to a particular problem. A suggested framework for your Personalised Report is as follows:

1. Title Page

2. List of contents

3. Summary

Provide a brief summary of main conclusions or findings and achievements.

4. Introduction

What the paper is about (one page) indicating main topics and points to be covered.

5. Background

Aim of the project/study.

6. Main body of the report

Explain the whole project, use engineering principles to interpret and evaluate data, explain your contribution. Cross reference your Personalised Report in the right-hand margin to the EC Learning Outcomes. It is also helpful to cross reference your supporting documentary evidence to the Learning Outcomes in a matrix or grid.

7. Discussion

Draw together the arguments in the report. From a summary of the main points, develop how these led to a particular view or course of action.

8. Conclusion

Conclude with a critical evaluation of your work. Identify any lessons learned and recommendations for further work.

9. References

10. Bibliography

11. Glossary

12. Appendices

Your Personalised Report should include sufficient supporting evidence documents. These should be included as appendices and may include calculations, diagrams/drawings/documents etc. Choose key documents that show your engineering knowledge and understanding, but these need to be chosen carefully.

Once your report has been approved, the two-stage interview will be conducted by at least two reviewers. In the first interview the focus is on testing the academic relevance of your knowledge and understanding against the Engineering Council Learning Outcomes. You will be expected to give a presentation of approximately twenty minutes in which you will expand upon your Personalised Report and the reviewers will aim for a balance of discussion that will enable you to fully demonstrate you have met the Engineering Council's expectation, identified through achievement of the Bachelors level Learning Outcomes. On completion of this interview the reviewers will confer privately and make a decision as to whether or not you have successfully demonstrated the Learning Outcomes. There will be a short break between the two interviews and if you have not satisfied the reviewers that you have met the Learning Outcomes, they will explain and will not hold the second interview. If the reviewers are satisfied that you have achieved the Learning Outcomes then you will proceed to a second presentation and interview, which will look at your professional competence in the same manner as that of a Recognised Qualifications Route applicant. More information on this is detailed in the 'Your Professional Review' section of this guidance booklet.

2. Getting started

Help and support – Mentors

Getting the right help and support is crucial to ensuring you are successful in achieving IEng registration.

You are responsible for your own development and pathway to producing your IEng submission, but support from a colleague or mentor enables you to try out ideas and keep a focus on objectives. Good mentors will try to ensure that the engineers they work with gain confidence and independence as a result of their one-to-one relationship, and are empowered to take full and effective responsibility for themselves.

The Institute of Highway Engineers has produced a short booklet explaining the roles and responsibilities of both mentors and applicants. Please refer to our website at <https://members.theihe.org/page/formsandguidance> (log in required) for more information.

Creating your folder

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder and cross reference these with the section headings in the IEng application form.

The coversheet provided in section 1 of the application form must be affixed to the front of your folder.

Please note: *Submissions presented in any other style of folder or binding, or without the coversheet affixed will be returned to you.*

3. Your Professional Review

When you have satisfied both the education and experience requirements (by whichever route), and have completed the Incorporated Engineer application form, together with all the accompanying documents you should have the following ready to send to the IHE:

- Recognised Qualifications Route applicants will have a single folder that contains the IEng application form, the documents we require to support this and relevant supporting evidence you have referenced throughout your application.
- Individual Assessment Route (Further Learning and Personalised Report) applicants will have a single folder divided into two distinct sections. The first part contains your Further Learning Report or your Personalised Report. The second part contains the IEng application form, the documents we require to support this and relevant supporting evidence you have referenced throughout your application.

Make three hard copies of your submission, together with a digital copy on a CD or USB memory stick, and keep the original for yourself. Send one copy and the CD or USB memory stick to the IHE and once we consider your submission to be complete, with no outstanding or missing information, we will make arrangements for two (or sometimes three, depending on the route of application) IHE Incorporated reviewers (and potentially an Engineering Council representative) to assess your application. At this point we usually arrange a provisional date, time and place of your review interview. If you have any disability, special access requirements or medical problems that might affect your performance, tell the IHE in advance and we will make appropriate arrangements. You will be provided with the address of your reviewers and will be expected to post (via Royal Mail) a hard copy of your submission to them. The reviewers will assess your submission in order to decide whether or not to call you for interview and you may receive a summary of their assessment and, if they are satisfied you meet the requirements for Incorporated Engineer, the details of your interview. The reviewers may ask you to bring additional evidence to the interview if they feel this will support the discussion. However, if the reviewers are not

convinced that you have achieved the required standards, you will be asked to provide further information and we will work with you during this period. Any identified weaknesses should be addressed in your interview presentation.

The format of your Incorporated review interview will take one of the following:

- Recognised Qualifications Route and Individual Assessment Route (Further Learning) applicants will present (approximately 20 minutes) one or two recent projects at an interview with your reviewers. Your presentation and interview are to assess your competence against the Engineering Council UK-SPEC Competencies.
- Individual Assessment Route (Personalised Report) applicants will first present (approximately 20 minutes) their Personalised Report project to two reviewers in order to satisfy them that you have met the requirements of the Engineering Council Learning Outcomes. There will then be a short break whilst your reviewers will decide whether or not you have satisfied the IEng Learning Outcomes. If you have, then you will be invited to give a second presentation on one or two recent projects at a second interview to assess your competence against the Engineering Council UK-SPEC Competencies. If you have not been able to satisfy the reviewers you have met the Engineering Council Learning Outcomes in your first interview this second interview cannot take place. You will be provided with feedback and guidance if you wish to make another application at a later date.

At the interview, the reviewers will expect you to lead a discussion of about one hour during which the reviewers will test your knowledge, competence and judgement in order to satisfy themselves that you meet the EC standards. They may also ask about other projects and responsibilities described in your submission and discuss commitment issues under Competence and Commitment requirement E of Engineering Council UK-SPEC 'Personal and professional commitment.' We try to match candidates and reviewers in the same discipline and area of practice in the highways field to ensure a rigorous and fair interview.

After your interview, the reviewers will prepare a holistic assessment of your competence and commitment and submit a recommendation for the next IHE Membership and Qualifications Portfolio Group meeting.

If you are successful, you will receive a letter within a week of the M&Q meeting notifying you of your election as an Incorporated Fellow and IHE will then register you with the Engineering Council. If you are unsuccessful in your application, you will be given detailed reasons and advice in a letter but the IHE are always happy to provide further help.

If you wish to appeal, ask the IHE Membership team about the procedures and reply within six weeks after receipt of your notification. You can appeal if there were unforeseen events or if you are dissatisfied with the way the review was conducted (Eg. If the format, procedure or structure of the review significantly compromised your ability to convince the reviewers that you meet the Institute's published requirements). It is unlikely that appeals based around the reviewers' assessment of engineering competence will be pursued. Advice is not available during an appeal.

An Incorporated Engineer professional review is a holistic assessment, hence if you wish to re-sit you will be required to undertake the whole process again. You should take care to ensure that your

new submission addresses the original reviewer's concerns. In the re-sit you will have to satisfy new reviewers (unaware of the previous review) that you can demonstrate all the competences, not just those that caused the original failure.

Section B

In this section we will guide you through completing the IHE IEng application form. The application form pulls together your personal details, aims to assess some of your skills and knowledge, as well as providing a checklist for your additional documents.

Guidance on all sections of the application form is detailed below.

1. The coversheet

Please complete the coversheet in section 1 at the front of the application form. This *must* be affixed to the front of your folder.

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder. These should cross reference with the relevant sections of this form.

Please note: *Submissions presented in any other style of folder or binding, or without the coversheet attached will be returned to you.*

2. Your details

Please complete all fields in this section.

3. Current employment details

Please complete all fields in this section.

4. Area of specialism

Please tick *one* of the listed categories of highway specialism that best describes the specialist area of your IEng submission. This information is essential for us to identify reviewers in your field that can assess your submission.

5. Route of application

Use this section to indicate if you hold the necessary qualifications to apply via the Recognised Qualifications Route or if you will be applying via the Individual Assessment Route.

6. Your CV

We require an up-to-date copy of your CV covering your employment, academic and training history. This CV should be no more than two pages in length.

7. Higher and further education

Please complete this section in chronological order as per the instructions on the application form.

8. Your qualifications

We require copies of your certificates for the further and higher education courses you have listed in section 7. These should be authenticated (signed and dated) by either your Line Manager, Proposer or Secunder who can confirm that these are true copies of your original certificates. Do not send us original certificates as these will not be returned to you.

9. Career history

Please complete this section in chronological order as per the instructions on the application form.

10. Your current job

We require a copy of your current Job Description to be attached with your application. Self-employed applicants should produce a one page document describing your direct clients.

11. Mapping your organisation

You should supply the IHE with a clear organisation chart that identifies the structure of your organisation. This organigram should be of a hierarchical design and you should clearly highlight your own position on it. Self employed applicants do not need to complete this section.

12. Continuing Professional Development

Continuing Professional Development is the systematic maintaining, improving and broadening of your knowledge and skills and the development of personal qualities necessary for the execution of professional duties throughout your working life. Most employers require you to keep a personal CPD record and you can submit this as evidence in your folder. If your employer does not require this, a blank CPD record form can be downloaded from the members area of our website at <https://members.theihe.org/page/cpdhub> (log in required)

The IHE recommends you record your CPD using the Engineering Council Mycareerpath tool. If you use this, please export your CPD record and print it out. It can then be included in your evidence folder.

Please ensure you submit evidence of Continuing Professional Development and demonstrate how you intend to meet your obligations to CPD in the future by submitting a forward plan.

More information on CPD can be found in the members area of our website at <https://members.theihe.org/page/cpdhub> (log in required).

This should be essential reading before making your professional review submission.

13. Personal competence statements

Competence is the ability to carry out a task to the required standards. To achieve this, you will need to demonstrate that you have the level of knowledge and skills required to achieve IEng registration. Competence is developed by a combination of formal and informal learning, training and experience.

Incorporated Engineers maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation. Incorporated Engineers are characterised by their ability to act as exponents of today's technology through creativity and innovation and are variously engaged in technical and commercial management and possess effective interpersonal skills.

Incorporated Engineers should be able to demonstrate the following:

- The theoretical knowledge to solve problems in developed technologies using well proven analytical techniques.
- Successful application of their knowledge to deliver engineering projects or services using established technologies and methods.
- Contribution to project and financial planning and management together with some responsibility for leading and developing other professional staff.
- Effective interpersonal skills in communicating technical matters.
- The ability to specify and operate to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability
- Commitment to professional engineering values.

To assess this and ensure the individual being registered is a competent engineer, the Engineering Council expect professional registrants to be competent in five broad areas:

A Knowledge and understanding.

B Design, development and solving engineering problems.

C Responsibility, management or leadership.

D Communication and interpersonal skills.

E Personal and professional commitment.

For Incorporated Engineers, the Engineering Council UK-SPEC of UK Standard for Professional Engineering Competence identifies 17 competencies that fit into the skill areas outlined above. The complete document can be found on the Engineering Council website www.engc.org.uk/UKSPEC In the accompanying application form, each of the sub competencies are grouped under the overall statement heading on a separate page. You will need to make sure you address all the competencies in your answer and provide evidence to support your answers. You will be expected to have a knowledge and understanding of each specific competency (A1, A2 etc) and to be competent overall in each broad statement (A, B, C, D and E).

List on the Professional Competence section of the application form, and include in your submission, relevant documentary evidence you have produced which illustrates achievement of each Statement. Aim to submit documents only from a few schemes overall allowing you to refer to the same ones across several statements, choosing documents to illustrate and substantiate the work described on the application form. Put yourself in the assessors' shoes and select your strongest evidence and it is sometimes useful when looking for evidence, to ask 'What can I show someone to convince them that I can do this Statement?'. Remember to seek clearance from your employer for any confidential or commercially sensitive work that you are including and warn the IHE if this is the case. All documents should be your own work, if not explain your role.

Your formal educational qualifications, Further Learning Report or Personalised Report demonstrate the necessary knowledge that underpins each of the five competences. Therefore, you should aim to complete each competency area (A-E) using approximately 600 words with sufficient evidence to demonstrate achievement of the sub competency statements. The ability to analyse and summarise is part of the communication skills requirement, if we need more information, we will ask you for it. There is no problem in referring to the same scheme or experience in more than one statement, but ensure you explain which aspects are relevant in each case and don't repeat descriptions. The following pages outline what information is required and provide some IHE guidance alongside a list of typical documents you could select to illustrate your experience.

If you are a member of our Professional Affiliate partners (the Institute of Accident Traffic Investigators, ITAI, or The Association of Cost Engineers, ACostE) you should contact these Institutes directly for specific guidance to assist you with your application. Your Institute will be best placed to supply you with specific guidance in your area of engineering expertise.

A. Knowledge and Understanding. Incorporated Engineers shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.		
Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
A1. Have maintained and extended a sound theoretical approach to the application of technology in engineering practice.	<p><i>In your submission, show you:</i></p> <ul style="list-style-type: none"> • Have extended your knowledge over time, learning and developing your knowledge continually. • Critically evaluate your learning. • Know, understand and apply current relevant legislation, specifications, codes of practice, trade publications, software and guidance by referring to them in your submission. • Give appropriate advice. • Learn and apply new practice. 	<ul style="list-style-type: none"> • Client briefs. • Inspection reports. • Feasibility reports. • Commission reports. • Design option appraisals with costings. • Interpretation and analysis and application of survey results or other data in reaching a design solution. • Use of databases. • Transport policies, strategies and plans, (LTPs, Local frameworks) • Transport assessments, Travel plans. • Safety audit reports. • Test results and interpretation. • Failure investigations. • Use of relevant computer software. • Appeals statements. • Cost benefit analyses. • Value engineering exercises. • Correspondence demonstrating engineering knowledge. • Examples of attendance and appropriate learning from CPD.
A2. Use a sound evidence-based approach to problem solving and contribute to continuous improvement.	<p><i>In your submission, show you:</i></p> <ul style="list-style-type: none"> • Manage/contribute to market research, products and process research and development. • Investigate, identify and agree client, user and community requirements. • Conduct statistically sound appraisal of data and evaluate. • Apply engineering principles to solve client needs. • You are logical in your approach • Critically evaluate evidence from best practice to improve effectiveness, • Recommend or apply appropriate departures from standards based on sound evidence. • Know the “why” as well as “how” that underpins relevant engineering practice. • Understand the principles of engineering and not purely the technology of achieving them. • Use feedback from previous schemes to improve your next ones. 	

B. Design, development and solving engineering problems. Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products.

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
<p>B1. Identify, review and select techniques, procedures and methods to undertake engineering tasks.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Contributed to the marketing of and tendering for new engineering products, process and systems. • Contributed to the specification and procurement of new engineering products, processes and systems. • Prepare or assist with the drafting and preparation of Contract/Tender documents. • Conduct surveys. • Investigate relevant factors and variables. • Identify and evaluate options. • Use and interpret good practice guides etc. • Develop and test options. • Develop decommissioning processes. • Recommend optimum solutions which contribute to improved social, economic and environmental outcomes. • Can respond to unforeseen circumstances. • Set targets and draft programmes and action plans. • Schedule activities. 	<ul style="list-style-type: none"> • Documents indicating your responsibilities. • Site investigation and condition reports. • Traffic survey and data reports. • Accident data and analysis reports. • Road user or safety audits. • Specifications/Tender documents you drew up. • Preliminary designs and drawings. • Detailed design drawings you prepared or initiated. • Calculations. • Alternative costings. • Test reports. • Design mixes. • As built drawings. • Site type approvals and acceptance tests. • Writing of, or interpretation of, design guides, safety statements. • Technical advice statements or reports.
<p>B2. Contribute to the design and development of engineering solutions.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Contributed to theoretical and applied research. • Conduct surveys. • Investigate relevant factors and variables. • Identify, evaluate and test options. • Work in design teams. • Manage /contribute to value engineering and whole life costings. • Use and interpret national and local guides etc. • Draft specifications. • Identify resources and cost of options. • Can respond to unforeseen circumstances. • Be aware of IP constraints and opportunities. 	<ul style="list-style-type: none"> • Health and Safety plans/ files. • Instructions on monitoring performance. • Maintenance manuals and maintenance schedules. • Cost benefit analyses. • Tender or appraisal reports you prepared. • Section 38 agreements. • Assessment reports. • Evaluations of materials or processes. • Before and after studies (Eg photographs). • Tender appraisal reports. • Final account comparisons. • Post-project evaluations. • Maintenance schedules. • Monitoring utilities and evaluation of schemes.

<p>B3. Implement design solutions for equipment or processes and contribute to their evaluation.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Follow the design process from start to finish. • Operate and maintain processes, systems etc. • Contribute to reports on the evaluation of the effectiveness of the designs, including risk, safety and life cycle considerations. • Contribute to product improvement. • Contribute to determining critical success factors. • Interpret and analyse performance. • 	
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C. Responsibility, management and leadership. Incorporated Engineers shall provide technical and commercial management.

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
<p>C1. Plan the work and resources needed to enable effective implementation of engineering tasks and projects.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Manage/contribute to project planning activities. • Produce and implement procurement plans. • Contribute to project risk assessment. • Collaborate with key stakeholders. • Plan programmes and the delivery of tasks, schemes etc. • Identify resources and costs. • Schedule activities. • Prepare and agree contracts/work orders. • Monitor and evaluate after implementation. 	<ul style="list-style-type: none"> • Work instructions. • Non-standard tenders, manuals and guides written by you. • Progress meetings and action plans. • Works programmes. • Best practices audits. • Statutory undertaker enquiries, orders and co-ordination plans. • Works instructions, site diaries. • Exchanges of letters. • Scheme briefs and monitoring reports. • Minutes of meetings showing actions on you.
<p>C2. Manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Manage/contribute to project operations. • Understanding of contracts and their operation. • Manage the balance between quality, costs and time. • Manage contingency processes. • Contribute to the management of project funding, payments and recovery. • Satisfy legal and statutory obligations. • Manage tasks within identified financial, commercial and regulatory constraints. • Apply your organisation's financial rules and regulations. • Prepare or manage budgets or estimates. 	<ul style="list-style-type: none"> • Budget control cash flow analyses. • Schedule of tasks with the delivery monitored. • Audit reports. • Preparation or evaluation of estimates, bids and tenders. • Costings. • Bills of quantities. • Monitoring reports. • Estimates. • Planning gain agreements. • Partnering arrangements showing your role. • Monitoring reports. • Quality system reviews. • Manuals you wrote. • Materials laboratory reports.

<p>C3. Manage teams, or the input of others, into own work and assist others to meet changing technical and management needs.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Manage yourself. • Gather evidence from colleagues of the management, assessment and feedback that you have provided. • Plan activities and determine work methods to achieve objectives. • Manage teams. • Contribute to/carry out staff appraisals. • Plan/contribute to the training and development of staff. • Carry out/contribute to disciplinary procedures. <p>Note:</p> <ul style="list-style-type: none"> • “Teams” may be your staff or all those concerned with delivering your project, including the public, clients, consultants and contractors. 	<ul style="list-style-type: none"> •
<p>C4. Take an active role in continuous quality improvement.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Promote quality. • Manage/contribute to best practice methods of continuous improvement, eg ISO 9000, EFQM, balanced scorecard. • Identify, implement and evaluate changes to meet quality objectives and continuous improvement. • Carry out/contribute to quality audits. • Monitor, maintain and improve delivery. 	

D. Communication and interpersonal skills. Incorporated Engineers shall demonstrate effective communication and interpersonal skills.

Engineering Council Statement of Competence	IHE Guidance	Examples of Evidence
<p>D1. Communicate effectively with others, at all levels, in English.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Have written reports, letters and emails. • Produced and used drawings, specifications, and working papers in a variety of formats. • Establish and maintain effective working relationships with colleagues, clients and others. • Responded to correspondence efficiently. • Engaged and interacted with professional networks. 	<ul style="list-style-type: none"> • Work or site instructions. • Correspondence conducted by you. • Internal documents or briefing materials. • Minutes which show your participation. • Committee or cabinet reports you wrote. • Advice and recommendations you made. • Interpretative reports. • Public consultations you conducted.
<p>D2. Clearly present and discuss proposals, justifications and conclusions.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Have carried out presentations, kept records of discussions and their outcomes. • Manage information. • Prepared your reports in a professional manner. • Participate in and lead meetings. 	<ul style="list-style-type: none"> • Public inquiry evidence you prepared. • Public exhibitions you prepared or participated in. • Appropriate presentation of data. • Impact and environmental assessments.

<p>D3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Taken records of meetings. • Indicate evidence from colleagues of your personal and social skills. • Contributed to productive and effective working relationships. • Have applied diversity and discrimination legislation. • Give clear and accurate instructions. • Mentor colleagues. • Assess the performance of others. • Can resolve conflicts. 	<ul style="list-style-type: none"> • Task planning and organisation documents. • Training and development plans. <p>Note:</p> <ul style="list-style-type: none"> • “All levels” means colleagues, subordinates, line managers, clients, consultants, utilities, developers, contractors, elected members, interest groups, the public – as applies to your job. • “Teams” may be your staff or all those concerned with delivering your project, including the public, clients, consultants and contractors. • Appropriate voluntary activities may provide evidence for D1, D2 and D3.
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E. Personal and professional commitment. Incorporated Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

Engineering Council Statement of Competence	IHE Guidance	Examples of Evidence
<p>E1. Understand and comply with relevant codes of conduct.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Have contributed to the affairs of the IHE. • Know your organisation’s goals and ethos (refer to its conduct statements) • Behave appropriately and professionally. • Know the purpose of the IHE and its codes of conduct. • Can resolve a conflict of interest or know the procedures to do so. • Know the duty of an engineer under EC and IHE codes and rules of conduct. • Participate in IHE activities. • Work with a variety of conditions of contract. <p>Note:</p> <ul style="list-style-type: none"> • Include an example of where ethical behaviour has been an issue at work or of how a conflict of interest was resolved, or the procedures for doing so • Refer to your company's standing orders, equal opportunities and conduct statements in your submission but do not include them. • At your interview, expect to discuss the profession's values, your aspirations and practical ethical issues arising from work. 	<ul style="list-style-type: none"> • Risk Assessments. • Application of CDM regulations, Chapter 8, Codes etc. • COSHH assessments and method statements. • Environmental or social impact assessments. • Reports recommending improvements in safety or the environment. • Safety audits. • Pre-tender health and safety plans • Reports of consultations with conservation and local groups. • Environmental assessments. • Waste disposal/recycling in your projects. • LTPs, travel plans or green transport initiatives you wrote or to which you made a significant identifiable contribution. • A structured Professional Development Plan. • Copies of recent annual appraisals. • A structured professional appraisal of ethical matters.

<p>E2. Understand the safety implications of their role and manage, apply and improve safe systems of work.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Undertake formal health and safety training • Work with health and safety legislation and best practice • In the UK, examples include HASAW 1974, CDM regulations, OHSAS 18001:2007, company, transport and road safety policies • Carry out safety audits and work safely by identifying and minimizing hazards. • Analyse, assess and control risk • Accept responsibility for your own and others' safety • Are aware of emergency measures and procedures. <p>Note:</p> <ul style="list-style-type: none"> • Include in your submission, evidence of CPD days on health and safety (including road safety) in the last two years that show you are aware of the latest requirements. 	<p>.</p>
<p>E3. Understand the principles of sustainable development and apply them in their work.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Carried out/contributed to environmental impact assessments. • Carried out/contributed to environmental risk assessments. • Managed best practice environmental management systems, eg ISO 14000. • Managed best practice risk assessment systems eg ISO 31000. • Work within environmental legislation. • Adopt sustainable practices. • Contribute to social, economic and environmental outcomes. <p>Note:</p> <ul style="list-style-type: none"> • Include in your submission, evidence of appropriate CPD on Sustainability issues in the last two years indicating that you are aware of latest rules, regulations and requirements - Guidance on Sustainability is published by the EC and IHE. 	
<p>E4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Keep up to date with national and international engineering issues. • Maintain CPD plans and records. • Have involvement with the affairs of the IHE. • Evidence of your development through on-the-job learning, private study, in-house courses, external courses and conferences. • Set goals to achieve personal and organisational objectives. • Undertake professional development to enhance competence. • Prepare and maintain a professional action plan. 	

	<p>Note:</p> <ul style="list-style-type: none"> • Include in your submission a record, over the last two years, showing evidence of structured development (which can include reading and research) showing that you are aware of up to date and latest knowledge. A list of 'CPD days' is required, of off the job education and training in the last two years showing that you are aware of up to date and latest knowledge. • At your interview, expect to discuss your learning experiences to date. 	
<p>E5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.</p>	<p>In your submission, show you:</p> <ul style="list-style-type: none"> • Give an example of where you have applied ethical principles as described in EC Ethical Principles. • Give an example of where you have applied/upheld ethical principles as defined by your organisation or company, which may be in its company or brand values. <p>Note:</p> <ul style="list-style-type: none"> • Include in your submission, a record over at least the last two years, showing structured development to indicate that you have maintained knowledge of ethical principles. 	

14. Document matrix

Please map how your evidence documents meet the Competency Standards in a document matrix. An example of this would be:

Doc No.	Doc Name	A1	A2	B1	B2	B3
1	Drawing of a roundabout design	✓			✓	
2	CAD drawing of approach junction		✓			✓

15. Presentation synopsis

Use this page to provide a synopsis, (briefly) describing one or two projects you will discuss at your review interview to demonstrate you meet the five broad CEng requirements (Statement headings A, B, C, D and E) of UK-SPEC.

You should show that you:

- Solve problems from first principles.
- Exercise independent technical judgement.
- Manage safety and risk.
- Understand financial, statutory and commercial issues.
- Manage schemes and resources.
- Are self motivated and a team player.
- Can communicate concepts and ideas to technical and non-technical audiences.
- Are committed to the profession's code of conduct.
- Are committed to your personal and professional development

16. Statement by applicant

You must sign and date the declaration in section 16. *We will not accept any application without this declaration signed.*

17. Completing your submission

Please follow the guidance in the application form regarding our required format for IEng submissions.

All submissions must be presented in a single ring binder or lever arch folder. Any other style of folder or binding, or without the coversheet affixed will be returned to you.

Please send your complete submission and this form to:

Membership, Institute of Highway Engineers, Floor 4, Euston House, 24 Eversholt Street, London NW1 1DB

Please note: We reserve the right to reject and return any submission that does not include all of the documents and attachments marked on the checklist at the back of this form, or with sections of this application form incomplete or left blank unless not required.

Important: ITAI and ACostE members should send your application as described above, to the following address.

ACostE members should send your application directly to The Association of Cost Engineers: ACostE Administration Office, Lea House, 5 Middlewich Road, Sandbach, Cheshire, CW11 1XL

ITAI members should send your application directly to the Institute of Accident Traffic Investigators at: ITAI, PO Box 16057, Solihull, West Midlands, B93 3GL.

18. Electronic copy of your submission

Please follow the guidance in the application form and supply us with a digital copy of your CEng folder and any documents you have submitted on a writeable CD or USB memory stick.

19. Employer proposal statement

Section 19 details the employer proposal statement we require from you. We cannot pass your submission to a reviewer without an employer proposal statement. Self-employed applicants should ask a recent Client to complete this section.

20. Proposer and seconder

Please ask your proposer and seconder to complete all fields in this section.

21. Payment form

The fee required as part of paying for your CEng application comprises of (2021 rates):

1. IHE IEng professional review fee: £250.00 (Recognised Qualifications Route) or £295.00 (Individual Assessment Route)
2. Engineering Council IEng registration entry fee (collected on their behalf by the IHE) £34.70

Please check our website for up-to-date fee information.

An additional upgrade to your membership fee might also be required. If you are currently a Member you will be required to pay the difference between your current annual membership fee and the annual fee for IHE Fellow grade of £167.00.

If you are a member of the Institute of Traffic Accident Investigators or The Association of Cost Engineers, an additional £65.00 administration fee is required to process your application.

Please note: ACostE and ITAI applicants should contact the appropriate Institute directly to arrange payment of your application fee. The IHE will receive your payment directly from ACostE or ITAI.

22. Checklist

This section provides you with an opportunity to ensure you have included all the applicable documents and paperwork we have asked for. It also helps us to ensure we have received all of your submission when we process your application.