INSTITUTE OF HIGHWAY ENGINEERS

Individual Routes to IEng

INSTITUTE OF HIGHWAY ENGINEERS
De Morgan House
58 Russell Square
London
WC1B 4HS
t: 020 7436 7487
f: 020 7436 7488
secretary@theihe.org
www.theihe.org

This document explains

- How to access the Incorporated Review without a degree
- Your options in a table
- How to get personal advice and confirmation of your progression route
- Possible academic top ups

An application flowchart is included

Annex 1: IEng degree learning outcomes (all routes)
Annex 2: Further learning options explained
Annex 3: Further learning - 60 credits top up option
Annex 4: The Technical Report option explained

Other Routes to IEng

The benchmark academic entry qualification for IEng is an ordinary degree for engineers qualifying in 2001 and beyond.

Older pre-2001 HNC/D qualifications continue to be accepted. For full guidance, see ***Document E1*** and check the Engineering Council list of approved and accredited qualifications on www.engc.org.uk.

If you do not meet the academic entry requirements, you can access the Incorporated Professional Review by demonstrating that you have achieved a breadth and depth of knowledge equivalent to degree level 'learning outcomes'.

You can do this by completing:

- further academic learning (See the Table below)
- Engineering Council examinations (www.engc.org.uk/examinations) (until 2011)
- work based learning (WBL) drawing on several years of experience if you have an HND or a science or foundation degree (**Annex 2**)
- two further learning projects for 60 credits to top up an HND or Foundation Degree (**Annex 3**)
- an employer-led accredited WBL programme (www.jbm.org.uk)
- a technical report focused on one significant project (**Annex 4**)
- any combination of the above.

In most cases (except the first two) you will need to submit in a report cross referenced to the learning outcomes and, an interview may be held to test that knowledge. Learning outcomes are explained in **Annex 1**. Once cleared, you may submit for a Professional Review.

IHE is happy to assess Overseas and combinations of qualifications to determine whether they are equivalent.

Look up your qualification in this Table to see your options.

Initial Qualification	Possible Academic top ups	Other possibilities
Science degree ('cognate')	Masters degree Postgraduate Diploma. (For Transportation Masters courses see Napier (D/L), Leeds, Southampton, IC/UCL) NTU Professional Certificate (entry closed) Bath Highways Open Tech (HOT) Certificate HNC/HND in engineering	Work-based Further Learning you manage yourself Employer provided WBL JBM accredited WBL scheme (www.jbm.org.uk) Technical Report option
HND in engineering started ≥ 1999	NTU, Masters, PostGrad Diploma as above. Bath HOT and 30 'I' degree credits. Transfer to BSc. EC Examinations (until 2011)	Work-based Further Learning programme you manage yourself 60 credits of further learning (**Annex 3**) Technical Report option
HNC in engineering started ≥ 1999	Gain an HND and proceed as above	Technical Report option
Any honours degree (eg BA Geography)	HNC Civils and 30 'I' degree level credits Technical Masters degree	Technical Report option
Registered EngTech with 8/10 years' experience. No engineering qualifications but with 10/15 years' experience. NVQ 3 or 4 in (eg) transportation, site management and experience	Gain BSc in engineering	Technical Report option (NVQs can contribute to proving knowledge and competence)

How to Get Advice – your first step

For informal advice and support, just telephone 020 74367487.

To get formal advice from IHE on your progression options or on whether your qualifications are degree equivalent: email secretary@theihe.org:

- Copies of your academic certificates and list of modules or units
- A brief description of any dissertation or final year project
- A career summary or CV
- A description of your current post and responsibilities.

If the information is not sufficient you may be asked for more information on the syllabus or for exam papers.

Your application will be considered by the Academic Standards Panel who will confirm:

1. that your qualifications are equivalent and you can proceed to the standard review ***(Document IE2)*, or**
2. that additional academic courses are required if you want the standard review ***(Document IE2)*, or**
3. that you maybe able to demonstrate work-based learning or a combination of off the job and work experience to bring you up to degree level ***(Annex 2 explains how to show your Further Learning)*, or**
4. that you should follow the Technical Report option ***(Annex 4)***.

The Panel may also provide additional guidance and will take up to eight weeks to comment.

If you need an academic top up, once you complete the course, tell us and we will confirm that you can submit for the standard Professional Review described in ***Document IE2***.

If you are advised to follow one of the Further Learning options, **see *Annexes 2*** and ***3*, ** essentially you compile a Report demonstrating that you meet the Learning outcomes in ***Annex 1***, or the 60 credits. This will be assessed by the Panel to verify achievement of the Learning Outcomes or credits. You may be asked to attend an interview to confirm your knowledge and understanding. On successful completion you will receive formal notification from IHE that you meet the academic entry requirements for incorporated engineer. You can then submit your IEng Professional Review application under the standard route (***Document IE2***).

If you are following the Technical Report option, special rules apply – see **Annex 4** – in order for you to demonstrate the Learning Outcomes in **Annex 1**.

Possible Academic Top-ups

For a full list of available part time degree and Masters courses, email secretary@theihe.org

Distance Learning

Napier's MSc and Postgraduate Diploma in Transportation are available by distance learning, as is a civils degree at Heriot Watt.

The **Bath Highways Open Tech** certificate tops up a cognate degree and provides 30 credits towards the 60 credits needed to top up an HND. Taught Bath courses are available from TMS Consulting.

The **NTU** postgraduate qualification in highway and traffic engineering was available on a semi-distance learning basis via various employers and centres: www.fact.ntu.ac.uk/students/pgcpd.asp . UWE now offers a similar 60 credit Certificate in Transport Engineering (2010). A full award provides sufficient further learning for cognate degrees and HNDs but you must always ask IHE for formal confirmation. It does not provide sufficient top up for HNC awards, but does significantly reduce the depth of the Technical Report you would be asked to submit.

Cognate Degrees

If you have a physical science or mathematics degree there is an engineering shortfall to be met by completing an academic course or by work-based further learning or in a technical report. Your degree will not have covered engineering analysis and design. If it is not a numerate degree, you'll also need to demonstrate achievement of numerate competency. You must provide evidence that you have engineering level knowledge, skills and understanding applied to an engineering activity at degree level i.e. design decisions have been taken and are based on sound engineering first principles.

Engineering Council Examinations (withdrawn from May 2011)

The Engineering Council offers a range of examinations matched to its grades of registration. They are administered by City & Guilds and rely on self-study. Only a few colleges offer relevant courses.

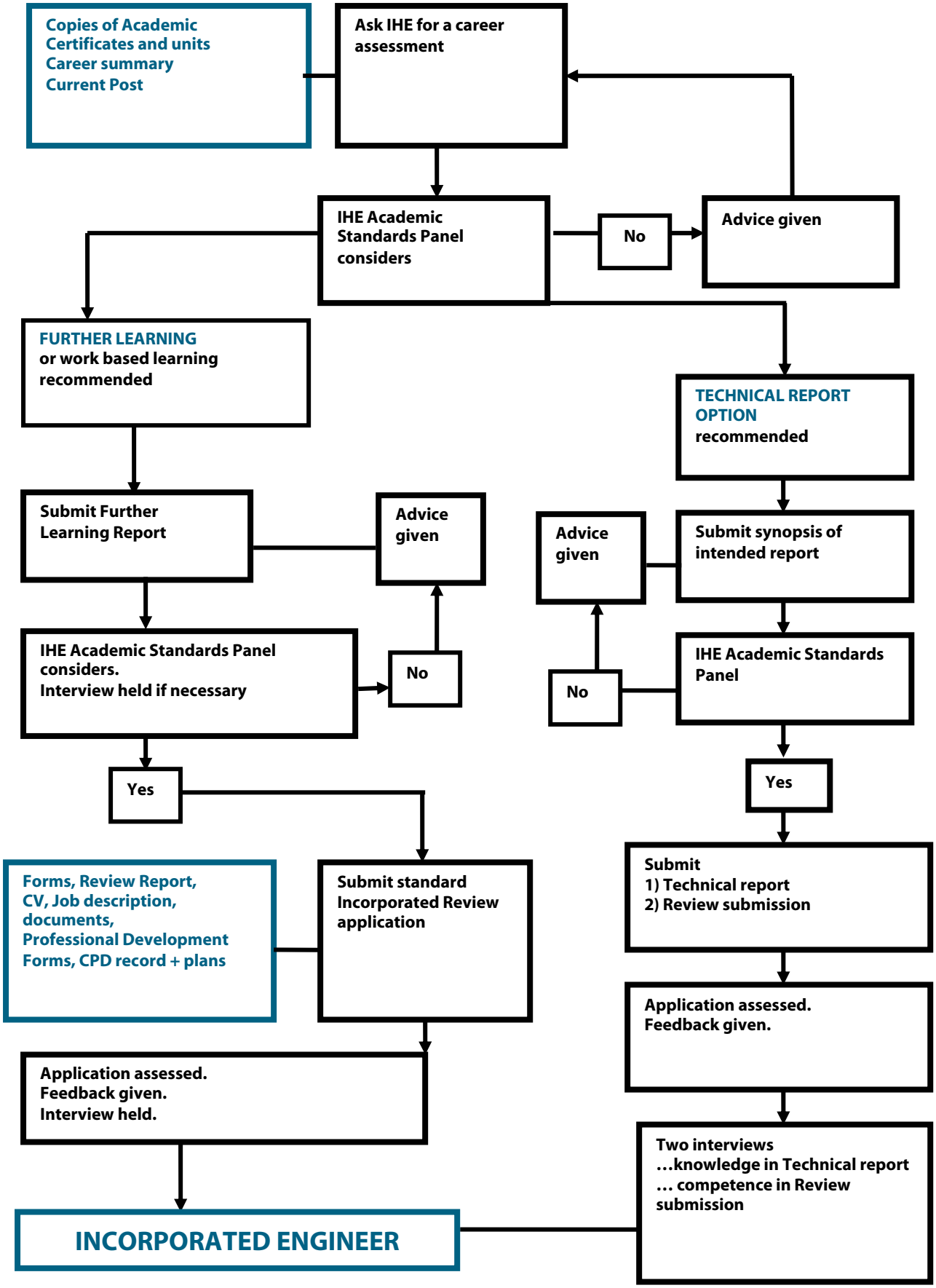
To top up an engineering HND, you may complete FOUR EC (UK) papers made up of not more than TWO from the Engineering Council Certificate (in subjects not part of your HND programme) and at least TWO from the Graduate Diploma chosen from: D204 Hydraulics and Hydrology, D208 Materials, D210 Structural Analysis, D211 Structural Design, D214 Engineering Surveying, D224 Mathematics, D222 Construction Management OR D223 Management.

For full Certificate syllabus and course details go to

www.cityandguilds.com/cps/rde/xchg/SID-B3E58835-29C77A58/cgonline/hs.xsl/1809.html

and for the Diploma: www.cityandguilds.com/cps/rde/xchg/SID-B3E58835-29C77A58/cgonline/hs.xsl/1810.html

APPLICATION PROCESS



ANNEX 1: Learning Outcomes

What is "Incorporated Degree level"?

All current UK qualifications are defined by "Learning Outcomes". The Engineering Council published the Learning Outcomes it expects of degrees at the different levels in UK SPEC:

http://www.engc.org.uk/ecukdocuments/internet/document%20library/AHEP%20Brochure.pdf

They are based on the QAA standards (see below) which are the ones you must use.

In general, incorporated degrees go beyond knowledge and understanding to require ability and application. Batchelor level learning is also about support know-how when applying technology to future engineering problems and processes. The Qualification Assurance Agency (QAA) defines this Intermediate level of its Framework as follows:

"Holders of qualifications at this level will have developed a sound understanding of the principles in their field of study, and will have learned to apply these principles more widely. Through this, they will have learned to evaluate the appropriateness of different approaches to solving problems. Their studies may well have had a vocational orientation, enabling them to perform effectively in their chosen field. They will have the qualities necessary for employment in situations requiring the exercise of personal responsibility and decision making."

Your report must highlight your individual contribution and demonstrate

- Science and mathematics
- Design
- Engineering practice

The Learning Outcomes you are seeking to achieve are listed here

Email IHE if you would like them in a table format to help you show us how your work experience, training and further education matches up.

1. Underpinning science and mathematics

    1.1. Knowledge and understanding of the scientific principles underpinning relevant current technologies, and their evolution;

    1.2. Knowledge and understanding of mathematics necessary to support application of key engineering principles

2. Engineering Analysis

    2.1. Ability to monitor, interpret and apply the results of analysis and modelling in order to bring about continuous improvement;

    2.2. Ability to apply quantitative methods and computer software relevant to their engineering technology discipline(s) frequently within a multidisciplinary context;

    2.3. Ability to use the results of analysis to solve engineering problems, apply technology and implement engineering processes;

    2.4. Ability to apply a systems approach to engineering problems through know-how of the application of the relevant technologies.

3. Design

3.1. Define a problem and identify constraints.

3.2. Design solutions according to customer and user needs;

3.3. Use creativity and innovation in a practical context;

3.4. Ensure fitness for purpose (including operation, maintenance, reliability etc);

3.5. Adapt designs to meet their new purposes or applications.

4. Engineering Practice

4.1. Understanding of and ability to use relevant materials, equipment, tools, processes, or products;

4.2. Knowledge and understanding of workshop and laboratory practice;

4.3. Knowledge of contexts in which engineering knowledge can be applied (eg operations and management, application and development of technology etc);

4.4. Ability to use and apply information from technical literature;

4.5. Ability to use appropriate codes of practice and industry standards;

4.6. Understanding of the principles of managing engineering processes;

4.7. Awareness of quality issues and their application to continuous improvement.

5. Economic, social and environment context

5.1. Knowledge and understanding of commercial and economic context of engineering processes;

5.2. Knowledge of management techniques which may be used to achieve engineering objectives within that context;

5.3. Understanding of the requirement for engineering activities to promote sustainable development;

5.4. Awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues;

5.5. Understanding of the need for a high level of professional and ethical conduct in engineering.

ANNEX 2: Further Learning Option (1)

If you have an HND or Foundation Degree in Engineering or a cognate degree, you can choose to

EITHER (1) compile a report matched to the Learning Outcomes drawing on your work experience and any courses attended– see below –

OR (2) submit two projects at degree level in order to show that you to meet the requirements for the academic base FL option 2 explained in Annex 3.

What is Further Learning?

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.

It is not the same as training or initial development which is about performance and competence.

Some companies have had their work based learning programmes accredited by the JBM which acts for ICE, IStructE, CIHT and IHE. Most run alongside initial professional development programmes. See the list here: http://www.jbm.org.uk/uploads/JBM154_ApprovedFLSchemesIEng.doc

Otherwise, individual engineers can manage their own development by asking IHE to agree a further learning plan leading to a report or by looking back over their work experience to compile a further learning report. It is helpful to include evidence of formal assessment by examination, presentations or reports subjected to cross examination by your mentor or line manager. JBM has agreed rather prescriptive guidance - http://www.jbm.org.uk/GeneralContent.aspx?ContentID=19 but the advice below is sufficient if applying to IHE.

Your report will be assessed by IHE against the QAA learning outcomes in ***Annex 1***.

There are no timescales. The important factor is that the learning must develop understanding of engineering principles to Masters level. Anything up to 1800 hours of effort may be required depending on your starting point.

Report Structure (FL Option 1)

The following advice on content and structure is intended to help; it is not mandatory.

Your report can draw on formal academic learning, short courses, work-based learning or all three, depending on your initial academic qualifications and hence the 'gap' you are seeking to fill.

Once IHE interviews you and confirms that you meet the benchmark academic level for IEng, you take the standard Professional Review **(*Document IE2*)**.

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 of your certificates, list of units or modules and an abstract of any dissertation.

2. Learning Outcomes

Against each Learning Outcome in **Annex 1**, list any relevant formal training and provide details of or syllabuses for all formal qualifications and substantial short courses explaining how they contribute to meeting the outcomes.

Similarly list your post-qualification work-based experience, explaining how it demonstrates achievement of the Learning Outcomes. Summarise the technical nature of the work or learning, the technical objective of the scheme and support your explanation of your key project with relevant calculations, results, conclusions, recommendations.

Include, as Appendices, copies of drawings or reports or witness testimonials if necessary.

Let quality not quantity be your guide.

You can submit a report you authored with a covering explanation with cross-referencing to the learning outcomes.

If your documents were produced joint with others, explain clearly which parts are yours.

Focus on demonstrating your academic knowledge and understanding of the principles that underpin your work.

Include key calculations, engineering drawings and diagrams as Appendices and include appropriate references.

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

Examples of Further Learning plans are available: email IHE. We can also provide a template spreadsheet.

Support and Authentication (FL Options 1 and 2)

You will find it helpful to engage a mentor, a more senior colleague, who can give a second opinion and general advice. IHE Academic Standards Panel members may be able to give them additional back up support.

Your report should be authenticated by a senior EC registered Engineer, usually your line manager.

He or she is also asked to satisfy themselves by questioning you on your knowledge, that your report demonstrates achievement of the Learning Outcomes.

Important Advice (FL Options 1 and 2)

- Ensure your Report:
  - captures your involvement on a significant engineering project or scheme
  - explains, not describes
  - provides analysis, not discussion
  - provides evaluation, not opinion
  - explicitly refers to engineering knowledge not in your initial qualification.

- Ensure your Report is **not**:
  - a review of your experience or employment responsibilities
  - concerned with your managerial or organisational competency or experience
  - like a professional review report.

If your work is confidential, please get clearance from your company and warn us. IHE will make every effort to maintain confidentiality.

Submitting Your Report (FL Options 1 and 2)

Your Further Learning Report will be assessed by IHE's Academic Standards Panel to verify achievement of the Learning Outcomes or the 60 credit criteria.

You may be asked to attend an interview to confirm your knowledge and understanding.

On successful completion you will receive formal notification from IHE that you meet the academic entry requirements for incorporated engineer. You can then submit your IEng Professional Review application under the standard route (***Document IE2***).

ANNEX 3: Further Learning Option (2) - 60 credits Top-up

If you have an HND or Foundation Degree in Engineering or a cognate degree you can submit two engineering projects at degree level to show you meet the requirements for the academic base. This is a JBM-approved route.

Purpose of the Submission

- To demonstrate use of higher subject knowledge in solving technical problems associated with your employment.
- To produce a complete solution to a technical problem, or problems, which you have undertaken.
- To demonstrate your ability to translate a client's ideas into effect.

Ask IHE to agree the subject material of the projects before you start. Send us a CV and a short description of your intended projects. We aim to reply within the eight weeks.

Your Submission

Send IHE a CV, 1000 words on the development aspect of the study* and a report of up to 2000 words with supporting drawings etc and references for each project.

List attendance at courses/ Institution meetings and texts and journals you have read to show study beyond HND level.

*Your short development statement (1000 words) should set out how the study has benefited, or will benefit, you in your career development.

The project or projects should not be repetitive but be of sufficient scope to allow you to demonstrate knowledge and ability in your chosen field of civil engineering beyond the HND/FD level.

Where practicable the nature and scope of the submission should be agreed with a senior manager or supervising engineer.

Projects should be real schemes in the workplace.

The projects may need to be extended to include any elements that should be tested but are missing from your actual contribution to the scheme.

The scope and content of the project should be as defined as a client brief.

Minimum Pass Standard

- Two academic areas have been developed beyond HND/FD level.
- A viable complete solution to a problem, together with any ancillary surveys, drawings, calculations etc, has been made.
- Conclusions are supported by evidence and references

- Clear evidence of not less than 120 hours of study in not less than two subject areas is shown.
- The complete solution has few errors.
- Awareness of sustainability issues is demonstrated.

You will be judged against the brief you specify.

Failure to comply with health, safety and welfare regulations will result in the rejection of the whole submission.

The Project Reports

Your reports should include plans, drawings, calculations, research, design synthesis and evaluation, planning and some economic and environment assessment where possible. You are encouraged to seek out help from external sources but to give credit in the submission to this assistance.

You should identify a project or scheme which requires you to carry out a holistic appraisal of the project, exploring the complex inter-relationships related to the client, the site, planning design, construction processes, post construction processes, health and safety, community, environment, financial and legal issues. Typical projects may require you to demonstrate knowledge and skill in structural design, transportation studies, hydraulics and drainage or construction/project management.

Prepare a brief that includes an agreed timescale for the staged development of the overall plan of work within defined constraints, working towards and acceptable and viable solution to the brief.

Examples

1. A project brief for a simple structure

- Produce two options for a footbridge to cross a one metre deep river with a span of 6 metres.
- The underside of the bridge deck should be no lower than one metre above the river water level.
- There are to be no supports in the river.
- The ground is poor so the foundations will need to be piled to rock that is 5 metres below the river bed level.
- Choose one option, giving reasons for the option, and produce preliminary design calculations, a general arrangement drawing and a detail drawing(s).
- Produce a cost estimate, based on a simple bill of quantities, for the construction to an accuracy of +/- 15%.

To be able to complete this project candidates would need to research the following: Simple bridge types such as concrete slab and beam; steel truss with concrete deck; timber beam and deck, simple piling in steel or concrete, footbridge loadings, bills of quantities and typical unit rates for the materials used.

2. A highways brief

- Produce two options for highway works either new road projects or alterations to existing highways.
- Show how ground conditions, accident statistics, or other elements relate to the proposal.
- Indicate how the proposals relate to environmental and sustainable issues along with the promotion of modes of transport other than the car.
- Provide an assessment of road safety implications.
- Choosing one option, give reasons for your choice and provide preliminary design criteria or calculations with appropriate drawings.
- Provide cost estimates based on simple bill of quantities.
- Provide a risk assessment or safety review

To be able to complete this project you would need to research the following: - Design and layout of the highways, capacity of highway, accident data, drainage requirements, bills of quantities and typical unit rates for materials used.

3. Typical Project Examples taken from a degree course

Structures: SCI Bridge Competition or the Concrete Centre Competition

Highways: Assess or improve the A12 entry from Witham southbound or Design an alternate link route from M25 to Chelmsford (West).

Transportation: Bicycle route from station to Rivermead or Park and Ride schemes for Ipswich, Bury or Colchester

Hydraulics: Impounding a river for leisure use or a Flood Protection Scheme for a site of your choice.

ANNEX 4: The Technical Report Option

For this option (which opens up the IEng Review to any suitable candidate), you submit a Technical Report and a Review submission. Your presentations and separate interviews will be conducted around these two reports on the same day. You will also need a continuing professional development plan and seven 'CPD' days.

Your Technical Report, and the first interview, will focus on establishing your knowledge of engineering principles.

The second interview is like the standard Professional Review but it will concentrate more on your management and communications skills and confirm your level of responsibility and professional commitment.

You may opt to submit your Technical Report and be interviewed on it separately first and then, once you have achieved the Knowledge requirements, to submit for your Review at a later date.

Your report must be technical; a management based report is not acceptable.

The Technical Report is not just what you did but explains why and what engineering principles you considered and applied and it should show what you have learned since completing your academic qualifications, if any.

Contact IHE for Exemplar synopses and Reports.

Your next step, after a career assessment (see Page 4) is to ask IHE to agree your report synopsis.

Your Next Step: Getting Approval for Your Synopsis

Before submitting the full report, you must submit a synopsis to IHE for approval. In it you set out clearly how you intend to demonstrate your technical knowledge and understanding.

Ask IHE if you'd like to see examples.

Identify 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. On the right-hand side, please cross reference, as much as you can, the synopsis to the Learning Outcomes in Annex 1.

You may put forward more than one topic (each must be two pages) and ask for advice. If you want any other guidance ask at this stage. IHE will help wherever possible.

IHE's Academic Standards Panel will consider your application within about 8 weeks.

DO NOT WRITE THE PAPER UNTIL YOU HAVE CLEARANCE.

YOU CAN SUBMIT YOUR SYNOPSIS AND YOUR REPORT AT ANYTIME: the normal deadlines do not apply.

Mentor support

You will need to work with a Mentor in planning and preparing your Synopsis, Technical Report and your Review submission. IHE cannot always supply an Institute Mentor but will assign an experienced Reviewer able to give back up advice.

Your Mentor could be a colleague at work, a lecturer or trainer who is a knowledgeable and experienced engineer. Most importantly, it should be someone whom you know well and trust, and who is prepared to spend some time with you to:

- Understand how your project satisfies the learning outcomes
- Question you on your knowledge to degree level
- Learn about the requirements for EC Registration
- Support you as you work on it
- Read and comment on you work
- Endorse your synopsis and your Report.

You might wish to attend an IHE course together and we can provide back up advice from experienced reviewers.

Your Technical Report

Your paper is not a general report of your work experience or your professional or managerial ability. You are seeking to demonstrate your knowledge of underpinning engineering principles developed since gaining your academic qualifications and how you apply them.

You should explain clearly in the report the activities you did or were responsible for.

Write about one or two significant projects 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; explain the problems encountered or the development aims 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. Provide references or evidence to back up your analyses or assertions. You should include calculations and refer extensively to engineering principles. Most applicants submit a project or design study in which they have played a significant role at the relevant level. 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 formation and highlighting how you applied engineering principles to solving problems.

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 Technical Report

Title Page
List of contents
Summary of main conclusions or findings and achievements

Introduction; what the paper is about (one page) indicating main topics and points to be covered
Background

Aim of the project/study

Main body of the report

> Explain the whole project; use engineering principles to interpret and evaluate data; explain your contribution

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.

Conclude with a critical evaluation of your work; identify any lessons learned, and recommendations for further work

References

Bibliography

Glossary

Appendices of essential supporting evidence: research date, calculations, diagrams/drawings/documents

Your Technical Report should include sufficient documents to set the scene for the Reviewers, to make the project description self-explanatory and to show your level of knowledge. Other documents may be brought to the interview to allow you to demonstrate your abilities and depth of experience when presenting your report but must be described fully in the written submission. Choose key documents to show your engineering knowledge and understanding. Remember: Quality not Quantity – your presentation needs to be persuasive and focused.

Cross reference your report to the learning outcomes in Annex 1.

Cross refer your Technical Report in the right hand margin to the learning outcomes in Annex 1.
Some of the outcomes, for example those on team roles or management, may be better referenced in the Experience Report. This is acceptable provided all the outcomes are covered in either report.

It is also helpful to cross reference your supporting documentary evidence to the learning outcomes in a matrix or grid.

Plus, for the Professional Review

- An IHE Application or Transfer form
- A payment form and your cheque or credit card details
- Academic certificates authenticated as true copies
- Your job description
- An organisation chart with your position highlighted … AND …

1. A CV summarising your employment history: date, employer, job and responsibilities.

Describe clearly the work undertaken and your personal responsibilities. It can be helpful to start each section "I was responsible for ….."

Mention the size and complexity of schemes for which you were directly responsible.

Keep it short: aim for one page for each five or ten years of employment.

2. Professional Development Forms

Give a succinct description, drawn from your more recent experience, of how you meet each of the 16 Competence and Commitment Statements listed in ***Document IE3***.

Aim for no more than 250 words per statement explaining what you have done. The ability to analyse and summarise is part of the communication skills requirement. If we need more information, we will ask you for it.

Describe at least two schemes or projects per statement. This gives your Reviewers more confidence in your abilities.

Do not cite training courses as examples. Courses provide you with knowledge – the Review asks you to demonstrate how you have used that knowledge.

Your Mentor should sign off each statement.

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.

3. Supporting Evidence

List on the Professional Development Forms, 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.

Choose documents to illustrate and substantiate the work described on the Forms.

When looking for evidence, ask 'What can I show someone to convince them that I can do this Statement?'

Put yourself in the assessors' shoes and obviously select your strongest evidence.

Examples of documents and of a cross referencing schedule or matrix you can use to quickly summarise how your chosen documents relate to the 16 EC Standards are included in ***Document IE3***.

4. Review Presentation

On one or two sides of A4, briefly describe one or two projects you will discuss at the Review to demonstrate you meet the five broad IEng requirements but particularly statements C, D and E.

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 people
- Are committed to the profession's code and rules of conduct
- Are committed to your personal and professional development.

The schemes may be among those described on your forms.

5. Continuing Professional Development (CPD)

To satisfy Statement E.4 you need to include a CPD record and plan.

Your CPD record should show five days a year of structured development (which may include internet research and reading). Use IHE form BO4 or your employer's record.

The plan could be your recent appraisal forms or use IHE forms BO2 and BO3.

Please attach a list of seven "CPD Days", formal off the job education and training taken in the two years before you submit. Identify two on health and safety and one on sustainable issues. Do not bother with attendance certificates, a list is sufficient.

6. Corroboration from your Employer Proposer

You should ask a line manger to endorse and authenticate your full completed application. He or she should be a Chartered Engineer familiar with your work and with the Chartered Review who is able to sign off your submission in terms of Engineering Council standards. Your mentor can act as your Proposer but remember that an independent Proposer brings another viewpoint

He or she should offer constructive criticism and final advice and either your mentor or proposer should offer a mock interview.

Your proposer should complete a confidential report (Form 301) to be sent direct to IHE or enclosed with your submission in a sealed envelope.

Compiling your submission step by step

Collect: CV, job description, organisation chart, certified copies of certificates, recent appraisals, and training records.

Put them into a ring binder with dividers and a preliminary list of contents.

Identify a Mentor. Timetable meetings.

For the Technical Report: Re-read the Learning Outcomes and write the report as explained above

For the Review submission: Read the EC Statements of competence and commitment (***Document IE3***). Make notes alongside listing recent projects and documents you have produced. Identify 4/5 recent schemes you can draw on for most of the statements. Expand your CV into a chronological experience report with more about recent work and responsibilities. Meet your Mentor.

Collect relevant documents. Take site photos. Meet your Mentor.

Bring your CPD record and plans up to date.

If there are gaps in your experience or documentation, fill them.

Write your 16 Profession Development Forms. Meet your Mentor.

Identify and number the key documents which best illustrate your knowledge and competence. List them.

Compile a matrix cross referencing the documents to the learning outcomes or EC statements. Meet your Mentor.

Review the Submission file to maximise ease of handling. Add tables, dividers etc.

Write a page describing one or two recent projects showing competence on Statements C, D and E which you will present at the interview.

Ask colleagues to read drafts for English and technical detail.

Ask colleagues to comment on the submission.

Mentor signs Professional Development Forms.

Practice your presentations. Identify key documents to use at the interview.

Arrange a mock interview on your Technical Report and a mock Review based on a presentation of your Review project(s).

Employer Proposer reviews final draft, comments and completes Employer Proposer form and authenticates the Technical Report.

Make four photocopies and a CD of the Technical Report and the Review submission. Keep your final original.

Send one copy and the CD to IHE who will give you details of your Reviewers.

Send to Reviewers by post.

Receive initial assessment from IHE. You will only be called for interview if the Reviewers are broadly satisfied with your Technical Report.

Revise presentation and documentation. Resubmit, if necessary.

Make travel arrangements.

Attend Review.

Receive results, **Celebrate!**

Applying for Review

Send IHE one copy of your submission.

We will confirm your eligibility and give you details of two IHE Reviewers and the Engineering Council representative. You then send them a copy of your full submission direct by post.

The Reviewers complete an Initial Assessment of your submission against each of the 16 EC Standards over about 8 weeks. You will receive copies of their assessments from IHE. They may ask you to bring additional evidence to the interview.

You will receive a copy of their assessments and you may be asked to provide additional material or to respond to any comments on both Reports either before or at the interview.

Any identified weaknesses should be addressed in your interview presentation.

If the Reviewers are not convinced that you have broadly achieved the Learning Outcomes or the EC, you will be asked to provide additional information.

Once they are satisfied, you will be told the date and place of your Review.

If you have any disability, special access requirements or medical problems which might affect your performance, tell the IHE Membership Manager in advance and we will do our best to accommodate you. Advice is available for dyslexic applicants.

The interview will be arranged once you have passed this preliminary assessment and the Technical Report is judged sufficient to justify an interview.

If you have any disability, special access needs or medical problems which might affect your performance, tell IHE's Membership Manager in advance and we will do our best to assist. Advice is available for dyslexic applicants.

The Interviews

Your Reports have been read by the Reviewers who will expect you to answer questions on the specialist and general engineering principles underpinning your work.

Before you get there:

- Time yourself - allow yourself an hour and a half to two hours to discuss your Technical Report including questions and answers.
- Arrange a mock review to see how you respond to technical knowledge questions and prepare yourself for the probing which may cover basic as well as advanced engineering relevant to your specialism.
- Practice a fifteen minute presentation of Review projects.

What happens on the day?

In the first interview the focus is on testing the academic relevance of your knowledge and understanding through the medium of your **Technical Report**. Although you should start by presenting your Report, expect this interview to be more led by the reviewers. The **Third Reviewer** will participate in questioning.

The second interview looks at your professional competence through the experience outlined in your Review submission. You will be expected to lead this with a presentation of your chosen schemes. The Reviewers will arrive at a rounded evaluation of your competence and commitment using the broad EC statements and will explore the professional commitment and conduct aspects of Statement E. They may ask about other projects and responsibilities described on the Professional Development Forms.

Reviewers have their own interview styles and the balance of discussion will reflect your individual experience and background in relation to the Engineering Council's expectation.

There will be a short break between the two interviews. If you have not satisfied the reviewers that you meet the learning outcomes, they will explain and may not hold the second interview.

After the Review

After your review, the Reviewers prepare two recommendations for the next Institute Membership Committee:

(1) an assessment of your engineering knowledge , and

(2) a general assessment of your competence and commitment.

If you are successful, you will receive a letter within three weeks of the Committee meeting notifying you of your election as a Fellow. IHE will register you with the Engineering Council as IEng.

If you do not succeed you will be given detailed reasons and advice in a letter which you should discuss with your employer. IHE can provide further help and a Mentor will be offered.

If you wish to appeal, ask the IHE Membership Manager about the procedures and reply within six weeks after receiving your notification. Advice is NOT available during an appeal. You can appeal if you are dissatisfied with the way the Review was conducted, for instance, if the format procedure or structure of the Review significantly compromised your ability to convince the Reviewers that you meet the Institute's published standards. It is unlikely that appeals based around the Reviewers' assessment of engineering knowledge or competence will be pursued.