

Conservation Accreditation Register for Engineers (CARE)



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1 Introduction

1.1 The Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE) are seeking to raise the standard of conservation engineering across the industry. As part of this process, the Conservation Accreditation Register for Engineers (CARE) has been established for those individuals who wish to demonstrate a defined level of competency in the application of conservation within the construction process.

1.2 The register is intended for individuals with advanced conservation attributes that exceed those required for professional membership. Registrants must have an appreciation of disciplines and interests that extend well beyond the normal requirements for professional training as engineers. They must demonstrate that they understand the philosophy and methods of the conservation of historic structures and sites.

1.3 CARE uses the International Council on Monuments and Sites' (ICOMOS) [Guidelines for Education and Training in the Conservation of Monuments, Ensembles and Sites](#) as the basis for assessment of candidate's experience and expertise.

1.4 The register is accessed by the owners or custodians of historic assets, and accreditation can be used as a minimum requirement in procuring consultancy services. Applicants must therefore demonstrate that they understand conservation processes and possess attributes that can be applied to a range of materials and types of historic construction from a range of eras.

1.5 The register aims to improve the awareness and standards of engineers by encouraging them to pursue their Continuing Professional Development (CPD) in the field of conservation.

1.6 CARE is a joint register between ICE and IStructE which ICE administers.

1.7 ICE and IStructE have entered into a bi-lateral registration agreement with Engineers Ireland (EI) to allow civil and structural engineers who are professionally qualified members of EI to apply to join CARE.

1.8 The UK Government Department of Culture, Media and Sport endorses the register

1.9 The register is intended to provide confidence to the client and the public that the specific activity undertaken by the registrant will reflect current best practice.

1.10 ICE will publish the names of all registrants on their [website](#).

1.11 To be accepted onto the register, you must be:

- a professionally qualified member of ICE, IStructE at chartered or incorporated level, or EI at chartered level only
- successful at CARE assessment

1.12 On admission to the register, individuals may describe themselves in the following format:

Name *Professional Qualifications*
Conservation Accredited Engineer

e.g. J E Smith *CEng MICE MIStructE*
Conservation Accredited Engineer

1.13 As a registrant, you must abide by the rules of professional conduct of your host Institution. If you breach these terms, you may be removed from the register.

In order to remain a registrant, you must:

- retain appropriate membership of ICE, IStructE or EI
- demonstrate your commitment to CPD, particularly in the area of conservation
- pay the annual [registration fee](#)

2 Initial enquiries

For full details, please visit the [ICE website](#) or contact registers@ice.org.uk.

If you would like the CARE Panel to assess your suitability for registration, you should first contact registers@ice.org.uk. The CARE Panel can give advice on whether you should consider making an application. For the panel to make that preliminary assessment, without prejudice, please email your up-to-date CV, giving details of your current and /or past responsibilities. See [Appendix B](#) for further guidance.

3 The assessment

3.1 To be accepted as a registrant, you must meet the requirements at the CARE assessment, as outlined in [Appendix A](#).

3.2 The CARE assessment consists of:

- the submission of the application documents, including application form, CV, CPD record and 5 case studies
- an interview with two assessors appointed by ICE

3.3 For further details of the application process, see [Appendix B](#).

4 Continuing Professional Development (CPD)

4.1 Continuing Professional Development (CPD) is defined as the systematic maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for the execution of professional and technical duties throughout your working life.

4.2 As part of your assessment you will be assessed on your commitment to CPD both to date and on your plan for the year ahead. CPD can best be demonstrated by regular use of planning and recording documents provided by your host institution. For further details, please see [Appendix B6](#).

5 Revalidation of registration

5.1 Registration is dependent on you retaining chartered or incorporated membership of ICE, IStructE or chartered membership with EI. Failure to do so may result in removal from the register.

5.2 Registration is valid for a period of five years. After this time, we will ask you to submit the following documentation to demonstrate that you have maintained your skills:

- Completed revalidation form
- CPD record
- Current CV

5.3 Completion of the revalidation form

This is to verify your personal details. You should include a short statement (maximum 250 words) of your working activities, outlining your development as a conservation engineer.

5.4 CPD record

You will be assessed on your commitment to CPD over the previous five year period and on your plan for the year ahead. This will be in accordance with your host institution's requirements and demonstrate a well-balanced programme, including technical, managerial and professional topics, but with a specific emphasis on conservation and heritage matters. It should be sufficiently detailed to list the subjects studied, including a course syllabus, or identify the relevant aspects of project work as appropriate.

When revalidating CARE membership, sufficient attendance at seminars and course(s), or appropriate on the job learning should be demonstrated. You are expected to focus this part of CPD on obtaining knowledge and understanding of new or emerging conservation legislation and other relevant conservation matters.

In short, the revalidation process focuses on the quality and range of CPD undertaken and must focus on the five years since registration.

5.5 CV

For the revalidation assessment, you will need to submit a CV of no more than 1,000 words that provides a chronological review of your career. It should clearly identify conservation projects worked on in the previous five year period, giving a brief description of the projects, including your specific roles and/or activities with which you have been associated.

5.6 Additional information

If the assessors are not satisfied with the information provided, you may be requested to provide additional information or attend a revalidation interview.

Appendix A

Attributes of a registrant

A1 As a chartered or incorporated member of ICE, IStructE or EI (see paragraph 1.7) you will have demonstrated a number of attributes when you were awarded membership. At the CARE assessment, you must demonstrate that you have obtained additional conservation knowledge, experience and responsibility to a level such that you can demonstrate all of the attributes shown in the following units:

Unit 1: Cultural significance

Unit 2: Aesthetic qualities and value

Unit 3: Investigation, materials and technology

Unit 4: Social and financial issues

Unit 5: Implementation and management of conservation works

A2 You should submit five case studies to demonstrate that you have acquired the relevant attributes and skills. It is not expected that every case study is to include ALL of the attributes. The assessors will judge your level of attainment of the attributes, with regard to their relative importance within your field of work as described in your application.

A3 The attributes in detail

Unit 1: Cultural significance		
Title	Requirements to be demonstrated	Commentary
1a. Cultural, historical and social significance	An ability to identify and assess the cultural, historical and social significance of the structure or site to be conserved.	Conservation concerns the preservation of the cultural, historical and social significance as well as the overall appearance of the site. Conservation also prolongs the life of the fabric. The term 'historical' is not synonymous with age as recent structures or sites will frequently also be of historical significance.
1b. Conservation strategy	An ability to devise an approach to the conservation strategy based on the assessment of the significance of historical structures and contemporary conservation principles. An understanding of conservation planning processes.	This strategy must take into account all issues arising from the assessment. It is vital to identify areas of vulnerability. The choice of materials and repair techniques should respect the original system of construction. All new work must be appropriate to the appearance, texture, composition and performance characteristics of the original.
1c. Methods of recording	An ability to identify the method of recording best suited to fulfil the aims of a project.	It is vital to record the existing state of a structure or site in order to understand its physical form and how this has developed. Records of the interventions must also be kept.

Unit 2: Aesthetic qualities and values

Title	Requirements to be demonstrated	Commentary
2a. Aesthetic qualities and values	An appreciation and understanding of the preservation of the aesthetic quality of the structure, site or works in terms of form, proportion, light, colour, texture, detailing and use of materials.	Any structure or site is more than the sum of its parts. Mass, space, materials and details all combine to produce the quality, which the conservation process is intended to preserve. Therefore, no single part of an ensemble can be altered without affecting the quality of the whole. The appreciation of aesthetic qualities is largely a matter of observation and experience and it is therefore impossible to lay down exact guidelines. However engineers and architects alike must be able to exercise their aesthetic judgment and debate their views with other interested parties.

Unit 3: Investigation, materials and technology

Title	Requirements to be demonstrated	Commentary
3a. Investigation and survey	<p>An ability to carry out investigations and surveys using the appropriate methods.</p>	<p>Investigation and surveying aim to provide an understanding of the structure or site, establish its present condition, identify defects and consider the need for action. The principles of minimum intervention and minimum loss of fabric must always be observed and invasive/destructive methods of investigation avoided wherever possible.</p> <p>The condition survey should be integrated with historical and other documentary investigation. The potential involvement and requirements of other professionals, together with previous evidence, must be taken into account in deciding future action.</p>
3b. Materials and construction	<p>An understanding of the behaviours of a wide range of materials.</p> <p>A thorough understanding of the existing fabric and construction techniques.</p>	<p>It is crucial to understand the materials and construction techniques of the existing fabric and the causes of deterioration. From the mid-19th century onwards new materials were increasingly used in the repair of older structures. Some of these materials have since been found to be incompatible with the original work.</p> <p>Please bear in mind that construction, which does not conform to present-day standards, is not necessarily defective.</p>
3c. Degrees and appropriate levels of intervention	<p>An ability to provide solutions to technical and functional problems.</p> <p>An ability to assess a solution's impact on an existing structure.</p> <p>An understanding of technical, functional and cost constraints and their implications on a project.</p>	<p>Any technical or functional problem will have a number of solutions, each with a different implication for the project. When developing a solution, its impact on the existing quality of the original structure or site must be taken into account, as must the technical, functional and cost constraints of the brief.</p> <p>Until a thorough investigation and survey has been undertaken, it will be impossible to judge what, if any, intervention is justified.</p> <p>Any intervention, even the smallest repair, will affect appearance and/or character.</p> <p>Matters to be considered include repair, change of use, maintenance, rebuilding, new landscaping, public safety and the introduction of modern services.</p>

3d. Identify repair techniques	An ability to identify and assess the range of available repair techniques.	A wide range of repair techniques and materials is now available. These must be assessed according to their impact on the original work. Intervening in historical work requires a flexible approach both to structural alterations and to the repair of defects. Reversibility should be considered.
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Unit 4: Social and financial Issues		
Title	Requirements to be demonstrated	Commentary
4a. Function and use	An ability to identify, analyse and assess problems relating to function and use.	Any successful strategy for a structure or site must reconcile the needs of the owner and the potential user or visitor with the needs of the structure or site and its historic value. This must be achieved within the framework of current legislation and the restraints of available financial resources.
4b. Public responsibility	An understanding of the public attitudes, perception, expectations and use of a historical structure or site.	Public attitudes and understanding are matters of fundamental importance. Engineers should consider all issues relating to public use, perception and expectations of an historical structure or site.
4c. External causes of damage or decay	An ability to identify external causes of damage or decay affecting a structure or site. An understanding of their implications for the conservation of the structure.	External causes of damage or decay can have widespread implications for the conservation of historical structures. These causes can be vibration, water abstraction, traffic, mining subsidence, atmospheric pollution, poor maintenance, inappropriate repairs, vandalism and theft. Unless they are properly evaluated, the wrong action may be taken.
4d. Legislative and financial	An understanding of legislative controls and long-term financial implications.	Legislative controls, compatible re-use, sources of funding, and promotion and interpretation of a structure or site do not usually fall within the brief of an engineer. But in running a conservation project you may have to consider these factors.

Unit 5: Implementation and management of conservation works

Title	Requirements to be demonstrated	Commentary
5a. Consultants and contractors	An ability to select the appropriate competent consultants and contractors and to advise health and safety requirements in line with current legislation.	The conservation and management skills and the size of the potential consulting practices and contracting firms must be matched to the quality, size, complexity and health and safety requirements of the project.
5b. Contracts and procurement	An ability to select and implement the most appropriate form of contracts and procurement and prepare drawings and specifications for the proposed works.	There are many procurement routes and types of contract available but their suitability is dependent on the size, nature and complexity of the works involved.
5c. Cost control	An understanding of cost planning and cost control procedures. An ability to provide pre- and post-contract control of a project.	Efficient cost planning and control make scarce resources go further. Engineers must always provide effective pre- and post-contract control of the works, including evaluation of quantities, reconciliation of estimates or tenders, monitoring of costs and risk management. These controls assume particular importance in conservation work.
5d. Management and supervision	An ability to manage and/or supervise a project in accordance with conservation strategy. An ability to establish procedures for notification of, and response to, discoveries on site.	Ensuring that any statutory applications for Listed Building or Scheduled monument consent are completed and discharged before works commence. Supervision and day-to-day management of conservation work requires a thorough understanding of the historical significance of the original work. Site management and site supervision may differ from normal practice. It may also involve establishing procedures to protect vulnerable elements and for notification of, and response to, discoveries on site.
5e. Maintenance, management and monitoring	An understanding of the future maintenance, management and monitoring of a site.	Although such demands do not usually fall within their brief, engineers should be aware that they may be asked to advise on future maintenance, limiting the impact of tourism on vulnerable sites, and on-going monitoring and review of the project.

Appendix B

Detailed guidance

B1 Assessment process

Assessment is based on both the submission documents and an interview. The documents are reviewed by two registered CARE assessors and a Conservation Accredited architect or surveyor. The interview is conducted by the same two CARE assessors.

B2 Application process

B2.1 Your submission documents should include:

- An [application form](#), including a written statement of approximately 500 words, outlining your philosophy of conservation
- Five case studies, with a minimum of three within the previous five years, using the [CARE case study template](#)
- A CV detailing your involvement and practice in conservation projects and activities
- A CPD record comprising a Personal Development Record (PDR) for the past three years plus a Development Action Plan (DAP) for the year ahead, particularly focusing on conservation matters
- Evidence of any special circumstances or experience which you would like to be taken into account at the assessment
- An [application fee](#)
- If not a member of the ICE, a copy of your IStructE or EI membership certificate

Your application can be submitted electronically to registers@ice.org.uk. Please note that documents exceeding 5MB may be sent via a file-sharing website.

Application documents will be checked by the Professionalism Executive. You will be advised whether or not your application is complete and can proceed. The interview may be deferred if, on review, the document submission does not demonstrate sufficient attributes to warrant proceeding further without resubmission.

Applicants whose applications are complete will be invited to interview.

B3 Statement of Philosophy of Conservation

A written statement, of approximately 500 words, outlining your philosophy of conservation should be included as part of the [application form](#). It provides an opportunity for you to demonstrate your approach to conservation and your understanding of the role of a practicing conservation engineer.

B4 Case studies

B4.1 The purpose of the case studies (using the [CARE case study template](#)) is to demonstrate how you have acquired the attributes and skills necessary to practice as a Conservation Accredited Engineer. They provide the opportunity to enlarge on aspects of a project that are of particular personal interest and may provide more in-depth detail of a particular set of attributes. The case studies should demonstrate how you have achieved the attributes across a range of materials and types of historic construction from a range of eras. Potential applicants may forward an example case study to the CARE Panel via registers@ice.org.uk for feedback before submitting their application.

B4.2 You will need to submit five case studies. A completed copy of the [CARE Case Study template](#) should accompany each case study. At least three of the case studies must relate to projects undertaken in the last five years. Each case study should be presented in the context of the five attributes to demonstrate your competence as a potential registrant. The assessors will look for a good distribution of attributes over the range of submitted case studies, but it is not expected that every case study will include all of the attributes and some sections may be left blank. All attributes have to be demonstrated within the five cases studies.

Case studies should describe particular projects (or part of projects) for which **you** have played a major part, including taking a lead in some or all of the elements. You must indicate **your role** in the development and management of the projects. You should give the background to the important decisions to which you have made a significant contribution, and emphasise any problems encountered and the solutions provided. Above all, you should indicate where you have exercised independent scientific / technical and professional judgment.

B4.3 When completing each case study the following guidelines are to be followed:

- In the Case Study summary field it is useful to address:
- What did you do?
- Why did you do it?
- If you were faced with similar issues in the future, would you adopt the same approach? If not, why not?
- Numerical analysis, cost data, drawings and hand-drawn sketches, or other relevant additional documentation (these should number no more than five pages of A4 in total, and can be included to support decisions described in each case study)
- The order of the content of the case study is not rigid and should be set out in the order that is most suitable

B4.4 Two case studies, for which you are the principle author, may cover evidence other than practical conservation in their context, such as:

- the objectives and curriculum of a conservation teaching course
- relevant research paper(s) with report
- a conservation-based paper published in a peer reviewed professional journal
- an approved post-graduate conservation course

B5 CV

For the assessment, you will need to submit a CV of no more than 1,000 words that provides a chronological review of your career. It should indicate your role and responsibilities held in various projects and/or activities with which you have been associated.

B6 Continuing Professional Development (CPD)

For the assessment process, your CPD record should adhere with the requirements of your home institution and highlight conservation CPD undertaken. For your application, your Professional Development Record (PDR) should cover the last three years. Your Development Action Plan (DAP) should highlight additional conservation learning targeted for the forthcoming year.

B7 The Interview

B7.1 Interviews will be arranged at a date, time and location which are mutually convenient to both you and your assessors.

B7.2 You will be given approximately four weeks' notice of your interview date and the names of your two assessors (experienced members of CARE). If, on being notified of your assessors' details, you find that you personally know an assessor, or feel there may be a conflict of interest, you should advise the Professionalism and Registers Executive immediately, via registers@ice.org.uk. Assessors are similarly advised to notify ICE of any conflicts of interest.

B7.3 You may postpone your interview if three weeks' notice is given.

B7.4 The interview will last no longer than one hour to determine how, through your experience and responsibilities, you have achieved the relevant attributes. Assessors will be seeking to confirm that the evidence of competence that you have provided in your submission documents meets the requirements of Appendix B and is supported by your responses to their questioning. If you have not demonstrated sufficient evidence of a particular criterion, assessors may structure specific questions to try to draw out your knowledge and experience in that area. However, it is your responsibility to demonstrate achievement of the criteria, as well as that of the assessors, to see if you possess them. This requires considerable communication skills on your part, both in the compilation of the case studies and in discussion.

B8 Assessment results

B8.1 Should you be successful at your assessment, you will be asked by the Professionalism Executive how you would like your contact details to be listed on [the CARE list of registrants](#). You will receive a registration certificate.

B8.2 You will be advised of your result date upon arrangement of your interview date.

B8.3 If the assessment results in a deferral, we will provide you with an indication of where you were satisfactory as well as the reasons for deferral. You will be given brief advice on corrective measures to take before resubmitting further evidence.

You should prepare for a resubmission in the same way as the original submission, taking care to show how the concerns of the original assessors have been addressed.

B8.4 There is a right of appeal in cases of perceived error in the process or for unforeseen events. Appeals are only accepted if received within two months of receiving the assessment result. Please contact registers@ice.org.uk for full details.

B8.5 A non-refundable fee must accompany any appeal.

Our vision

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

Core purpose

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

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