FOREWARD

The following is the text of the motions passed by Council:

“the following scope of practice be approved in principle for the Designated Structural Engineer:

The services of a Designated Structural Engineer will be required by those who wish to become the structural engineer of record for Part 3 Buildings as defined in the BC Building Code, the Vancouver Building Bylaw and the National Building Code of Canada.”

[Buildings defined in Part 3 (Part 3 Buildings) are structurally designed in accordance with Part 4 of the BC Building Code, Vancouver Building Bylaw, and National Building Code of Canada.]

Following a positive by-law amendment vote by the APEGBC membership, the designation Structural Engineer of Record (SER) was renamed ‘Designated Structural Engineer’ (Struct.Eng.) effective January 1, 2004.
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1. DESIGNATED STRUCTURAL ENGINEER

The qualification of Designated Structural Engineer (Struct.Eng.) improves public safety in the structural design of buildings. The services of a Designated Structural Engineer is required by those who wish to act as the structural engineer of record for Part 3 Buildings as defined in the BC Building Code, the Vancouver Building Bylaw and the National Building Code of Canada. The Struct.Eng. designation is supported by legislation in the form of Bylaw 11(h) (1) of the Engineers and Geoscientists Act.

WHAT IS THE ROLE OF A STRUCTURAL ENGINEER OF RECORD?

A structural engineer of record is the Professional Engineer responsible for the structural design of the building Primary Structural System and for assuring that all structural design is undertaken as is necessary to achieve a building Primary Structural System that has structural integrity and that meets acceptable engineering standards. The Primary Structural System is the combination of elements supporting a building’s self-weight and the applicable live load based on occupancy, use, and environmental loads such as wind, snow and seismic forces. (Building means any structure used or intended for supporting or sheltering any use or occupancy.)

WHO SHOULD APPLY TO BE A DESIGNATED STRUCTURAL ENGINEER?

Only those who wish to act as the structural engineer of record for Part 3 Buildings as defined by the British Columbia Building Code, the Vancouver Building Bylaw, and the National Building Code of Canada, will be required to obtain the Designated Structural Engineer (Struct.Eng.) designation. Under the current BC Building Code, the Part 3 buildings would include those as described by Clause 2.1.2.1(1) (a) and (b) of the BC Building Code.

The professional seal and Struct.Eng. stamp of a registered Struct.Eng. will be required on all structural drawings and Letters of Assurance submitted for a building permit in those municipalities that specify this requirement. A Struct.Eng. is required to be the Engineer of Record to sign drawings and the Letters of Assurance for each applicable building project.

A Designated Structural Engineer not be required for:

- Part 9 Buildings;
- Structural components of Part 9 Buildings that are designed under Part 4;
- Structures which are outside the scope of the British Columbia Building Code, the Vancouver Building Bylaw, or the National Building Code of Canada; or
- Components that are not part of the Primary Structural System, e.g. support, anchorage and seismic restraint of electrical, plumbing and mechanical systems and architectural components, etc.
2. QUALIFICATION FOR DESIGNATED STRUCTURAL ENGINEER (STRUCT. ENG.)

In order to meet the requirements for Struct.Eng. Applicants must:

1. Be registered as a professional engineer in BC;
2. Demonstrate six years of significant post-graduation structural engineering experience, including two years in responsible charge of significant engineering work (see page 6: Acceptable Qualifying Experience);
3. Nominate four referees who must complete the Designated Structural Engineer Reference Form and submit it directly to the association. Candidates will send the reference forms to each referee, with a copy of the account of their experience. Referees are required to be registered or licensed professional engineers or chartered engineers practicing in the field of structural engineering and should have a detailed knowledge of the applicant's work. Generally, at least one of the referees should not be employed in the same firm as the candidate;
4. Demonstrate a commitment to continuing professional development;
5. Have completed one of the following requirements:
   a. Be eligible for license, having passed examination as a Structural Engineer in an approved U.S. jurisdiction (California and Washington State). Structural Engineer (S.E.) license holders who have completed the Structural II and Structural III examinations in other U.S. jurisdictions will also be considered); or
   b. Have successfully completed the Washington State Structural III Examination; or
   c. Have successfully completed the IStructE Chartered Membership (Part 3) Examination; or
   d. Have successfully completed the NCEES Structural Exam
6. Successfully complete the BC Codes and Practices Examination;
7. Pay all associated fees and dues.

ACCEPTABLE QUALIFYING EXPERIENCE

Candidates must be able to demonstrate six years of significant post-graduation structural engineering experience, including two years in responsible charge of significant engineering work. This experience may include time spent as an Engineer-in-Training and experience gained during post-graduate studies.

To be significant, structural engineering work must:
1. Represent an application of the knowledge of structural engineering that goes beyond standard solutions found in manuals of practice;
2. Be done in an environment where the engineer has worked with at least two materials and has assumed a significant part of the overall structural engineering responsibility for the project;
3. Demonstrate responsibility for structural design of Part 3 Buildings (those as described by Clause 2.1.2.1(1) (a) and (b) of the 2006 BC Building Code), or an equivalent code approved by the associations Structural Qualifications Board;
4. Demonstrate experience with the design of buildings in significant seismic regions. Refer to Appendix B for more information.

PRESENTATION OF EXPERIENCE

Applicants are to include with their application a summary of experience that includes the following:

1. A chronological list of employers and positions held.
2. A structural project list specifying project name, date and your position. The description must indicate clearly your responsibilities on each project.
3. Detailed information about three projects for which you have acted as the 'structural engineer of record' or have had a significant part of the overall structural engineer's responsibility for the project. The information must indicate clearly your responsibilities on each project.
4. A list of continuing professional development activities.

If the candidate has not completed an application within a period of two years, the candidate may be required to submit updated experience information and references.

Please review the Seismic Design Guidelines when choosing your sample projects (Appendix B)

STRUCTURAL ENGINEERING EXAMINATIONS

U.S. State Board Structural Engineer License & Examinations

A candidate may qualify by completing U.S. State Licensing Board examinations such as the NCEES Structural Exam. Candidates must successfully pass both Modules A and B in order to use the exam for the Struct.Eng. designation.

Washington State Structural III Examination

Washington State no longer offers the Structural III Examination. If you have previously passed this examination, you can use the WA SE III exam to fulfill part of the technical requirements. Please arrange to have confirmation of your passed examination sent directly to the association from Washington State.
Institution of Structural Engineers (IStructE) Chartered Membership (Part 3) Examination

Qualifying for Membership in the Institution of Structural Engineers

The association has entered into an agreement with the IStructE, whereby candidates wishing to qualify for Struct.Eng. by completing the IStructE Chartered Membership (Part 3) Examination may complete the requirements for Chartered Membership with the IStructE through the association and concurrently with obtaining their Struct.Eng. designation.

Candidates wishing to apply for Chartered Membership must submit a completed Form M Part 8, with their application. Information on the benefits of Chartered membership is available on The Institution of Structural Engineers website.

Writing the Examination

The IStructE has designated the association as an examination centre. Candidates may apply directly to the association to write the examination, which takes place in the Lower Mainland and scheduled in April by the IStructE. Institution. Examinations and examiners' reports from prior years are available on the IStructE website.

The IStructE will inform candidates directly of their examination results. This will include information on reasons for failure, if applicable; the IStructE will also inform candidates of their qualification for Chartered Membership in the IStructE and for Chartered Engineer Status with the Engineering Council in the U.K.

BC CODES AND PRACTICES EXAMINATION

This examination will be of approximately six hours' duration and held once per year. It will focus on:

- Seismic requirements
- Wind forces
- BC Building Code requirements
- Current design issues
- Engineering materials (concrete, steel, masonry, wood)

Candidates who fail all or part of the examination will have to reapply for the examination and pay the full examination fee.

Applicants have the option of taking the examination outside of Lower Mainland British Columbia with proper supervision. Applicants in Canada can write the examination at Engineers Canada constituent association/ordre office invigilated by staff. Candidates in the US may write the BC Codes and Practices Examination at the US State Board under the same conditions. In British Columbia, applicants have the option of writing the examination with a P.Eng. invigilator.
It is the responsibility of the candidate to find a suitable P.Eng. or P.E. to invigilate the examination.

- To be eligible to write the examination, the association prior to the exam application deadline must receive all required documentation.

- Applicants who do not earn their Struct. Eng. designation within five years of writing and passing the examination are required to re-sit and pass the BC Codes and Practices Examination in order to become a Designated Structural Engineer.

3. THE PROCESS: TIMING, AND ORDER OF EXAMINATIONS

The process of qualifying for Struct.Eng. is dependent on an applicant’s and their references ability to submit the required documentation in a timely manner and the length of time it takes the applicant to pass the required examinations.

Applicants can complete the examinations in any order to accommodate those who wish to complete the process in as short a time as possible.

In general, it takes up to 12 months for an applicant to go through the application process.

4. FEES (ALL FEES INCLUDE APPLICABLE TAXES)

The association accepts VISA, MasterCard, or American Express. A list of current fees can be found on the association [website](#).

5. CONTINUING COMPETENCE REQUIREMENTS

A Designated Structural Engineer for buildings may forego the right to use the designation if the member fails to maintain active practice rights or meet conditions related to continuing competency.

- Practicing Struct. Eng. members must accumulate the required number of Professional Development and Continuing Active Practice Hours (see Appendix I).

- Struct. Eng. Members who declare themselves as non-practicing will have the Struct.Eng. designation revoked and will need to reapply when they reenter active practice. A member who stops practicing may voluntarily request revocation.

- Struct.Eng. members who resign their P.Eng. membership, or who fail to pay the annual fee, will automatically have their Struct.Eng. designation revoked.
CONTINUING PROFESSIONAL DEVELOPMENT

The Association will require Struct. Eng. members meet the Continuing Professional Development requirements and complete an additional 20 hours of CPD hours annually, or 60 hours averaged over a three-year period directly relate to the member’s structural engineering practice area.

Struct. Eng. members are required to report on their CPD activities annually by maintaining their Continuing Professional Development records through the member portal in the CPD reporting module.

The Association will review and selectively audit reports to ensure compliance with CPD requirements. Audits may occur as the result of focus on specific practice areas; or following a complaint, Practice Review, or Investigation. Revocation of the designation will be considered if CPD levels are low for three consecutive years. Struct. Eng. members failing to submit reports, submitting fraudulent reports, or failing to correct deficiencies as directed, will not be entitled to maintain their Struct. Eng. designation. With the exception of those submitting fraudulent reports, or contravening the Code of Ethics in any other way, any Struct. Eng. losing his or her designation for continued low CPD levels, will be considered for reinstatement (see below).

REINSTATEMENT OF THE STRUCT. ENG. DESIGNATION

In order to regain the Designated Structural Engineer designation, it will be necessary for the member to apply to the Structural Qualifications Board for reinstatement and to pay the associated fees. This will provide an opportunity to review the reasons for revocation and the reasons for requesting reinstatement. The Structural Qualifications Board will review and approve applications for reinstatement and the requirements: at a minimum, the candidate for reinstatement will be required to write and pass the B.C. Codes and Practices Examination, and to demonstrate suitable continuing active practice and professional development.
APPENDIX A: CONTINUING COMPETENCE REQUIREMENTS FOR THE STRUCTURAL ENGINEER OF RECORD DESIGNATION

PDH = Professional Development Hour

A Designated Structural Engineer:

- Must accumulate at least 150 PDHs over 3 years. (Averaging at least 50 PDHs per year).
- Must be active in at least three of the six categories.
- Can only claim professional development hours that are in the civil/structural and related disciplines.
- Must list twenty professional development hours per year separate from active practice hours related to the development of structural engineering knowledge. This time is required in addition to the PDH total earned in the six activity categories.

SIX ACTIVITY CATEGORIES

1. Continuing Active Practice Requirement (750 hours)

   A minimum 750 hours of Structural and related Engineering Practice is required.

2. Continuing Professional Development

   (50 PDH required per annum, with 150 PDH over a three-year period)

2.1. Formal Activities

Formal activities are those provided as a structured course or program, often for credit, occasionally with an evaluation process. Although formal activity is not specifically required, all members should strive to include some formal activities within their continuing professional development program. Formal activities could include:

- Courses provided through universities, technical institutes and colleges;
- Industry-sponsored courses, programs and seminars;
- Employer training programs and structured on-the-job training;
- Short courses provided by technical societies, industry or educational institutions.

Every hour spent in attendance at a course, (contact hour) earns one PDH. For courses offering Continuing Education Units (CEUs), each CEU will equate to 10 PDHs to a maximum of 30 PDHs per year.
2.2. Informal Activity

These are activities not normally offered by an educational institution or other non-structured course, but expand your knowledge, skills or judgment. They include:

- Self-directed study;
- Attendance at conferences, technical sessions, talks, seminars, workshops and industry trade shows;
- Attendance at meetings of technical, professional or managerial associations or societies;
- Structured discussion of technical or professional issues with one's peers.

Each hour of informal activity earns one PDH to a maximum of 30 PDHs per year.

2.3. Participation

Activities that promote peer interaction and provide exposure to new ideas and technologies both enhance the profession and serve the public interest. These activities include:

- Acting as a mentor to a Member-in-Training or other less experienced professional member or technologist;
- Service on public bodies that draw on your professional expertise (i.e., planning board, development appeal board, investigative commissions, review panels or community building committees);
- Activities that contribute to the community which require professional and ethical behaviour, but not necessarily the application of technical knowledge, including active service for professional, service, charitable, community or church organizations, coaching league sports teams, or elected public service on municipal, provincial or federal levels or school boards (1 PDH per hour of service, a maximum of 10 PDHs per year may be claimed);
- Service on standing or ad-hoc committees of technical, professional or managerial associations, or societies.

Each hour of participation activity earns one PDH to a maximum of 20 PDHs per year.

2.4. Presentations

Technical or professional presentations that you make outside your normal job functions. Both preparation and presentation of material are expected.
Presentations within:

- A conference or meeting;
- A course, workshop or seminar;
- A company or at an event sponsored by a technical or professional organization.

Each hour of participation activity earns one PDH to a maximum of 20 PDHs per year.

2.5. Contributions to Knowledge

Activities that expand or develop the technical knowledge base in the three disciplines of engineering, geology and geophysics.

Contributions could include:

- Development of published Codes and Standards (one PDH per hour of committee work);
- Patents (15 PDHs per patent registered);
- Publication of papers in a peer-reviewed technical journal (15 PDHs per paper published);
- Publication of articles in non-reviewed journals (10 PDHs per article, maximum of 10 PDHs per year may be claimed);
- Reviewing articles for publication (1 PDH per hour of review, a maximum of 10 PDHs per year may be claimed);
- Editing papers for publication (1 PDH per hour of editing).

A maximum of 30 PDHs this category per year may be claimed.

2.6. Professional Practice

Active professional practice is known to be a significant factor in maintaining and improving skills, either where you are actually practising according to the legal definition as per the Engineers and Geoscientists Act or “influencing” the practice of the professions. “Influencing” means having some effect on how the professions are practised without necessarily performing technical work.

15 hours of work equals one PDH.
APPENDIX B: SEISMIC DESIGN GUIDELINES

To demonstrate that the applicant has achieved acceptable experience with the seismic design of buildings in significant seismic regions. The applicant shall provide samples of at least three building projects, completed in the last five years, that are located in a seismic region with an importance modified short period design spectral acceleration value of $I_{E}F_{a}S_{a}(.2)$ of not less than 0.35 or equivalent, for which the applicant was significantly involved in the seismic design. All projects must have a SFRS with a ductility-related force reduction factor, $R_d$, equal to or greater than 2 or equivalent.

Each of the projects shall have a minimum building area of greater than 600 m$^2$. If the building has a building area of less than or equal to 600 m$^2$, the seismic design of the building must be designed entirely under the scope of Part 4 of the BCBC/NBC or equivalent.

For each of the three projects, the following information shall be included:

Seismic design parameters including the site class and site spectral design acceleration values. For building projects outside of Canada, a demonstration of their seismic equivalencies to the above stated seismic requirements, $I_{E}F_{a}S_{a}(.2)$ of not less than 0.35, ductility level and building area.

1. A description of the Structural configuration and foundation issues of the building project.

2. A description of the SFRS and the rationale in its adoption.

3. A description of the seismic load path of the building including the specific load path in the roof and floor diaphragms of the structure.


5. A general description of the seismic issues related to the building projects including system restrictions, deflection controls and foundation provisions.

6. A set of structural floor plans and related seismic details on pdf files.

For each project, the applicant shall either be the engineer of record of the building design or be significantly involved in the seismic design of the building structures.

If the applicant is not the engineer of the record of the building structural design, the engineer of record must confirm that, the applicant was significantly involved in the seismic analyses and design of the building project.