

# Professional Engineers and Geoscientists of BC

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## **BUILDING ENVELOPE PRACTICE - ROLES AND RESPONSIBILITIES**

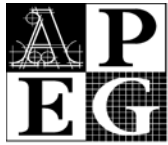
The roles of architects and engineers with respect to building envelopes have evolved significantly over the last five years, as British Columbia has responded to the Leaky Condo disaster. Most notably this has resulted in greater attention being directed at the building envelope by the entire design and construction team. More extensive detailing, field testing and mock-ups are now common place both on new and rehabilitation construction projects. This greater attention to the building envelope has seen the emergence of a new area of practice in which both architects and engineers contribute expertise.

In recognition of this growing field, and shared expertise, AIBC and APEGBC developed the *Building Envelope Professional* (BEP) program. The intent was to establish minimum qualification standards for architects and engineers practicing in the building envelope consulting field. In addition, a joint task force (Building Envelope Practices Task Force) was established to define, and develop guidelines for the respective roles of architects and engineers with respect to the building envelope.

The task force completed its work and submitted its recommendations just prior to the court decision that resulted in the suspension of the BEP program (temporarily we anticipate). Despite the suspension of the BEP program both AIBC's council and APEGBC's council have approved the recommendations of the task force as *Points of Principle*. It is anticipated that once the BEP status is resolved that these *Points of Principle* will be incorporated into the Memorandum of Agreement (MOA) that defines other shared aspects of our professional roles and responsibilities.

In recognition of the considerable construction activity that is currently focused on building envelope rehabilitation projects, the *Points of Principle* were developed to reflect two types of projects; those of new construction (or those where more general renovations are being undertaken), and those for which building envelope rehabilitation is the primary focus of the work.

The approved *Points of Principle* refer to Schedules D and C-D which are anticipated will be added to the British Columbia Building Code in conjunction with the reintroduction of the BEP designation. Until that happens these schedules do not exist, except in the City of Vancouver where they are designated Schedules D-1 and D2.



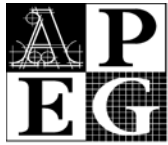
Although the Points of Principle refer to the BEP program designation, which is currently suspended, in the absence of any other formal direction from either AIBC or APEGBC, a reasonable practicing engineer working in the building envelope field should follow the intent of these guidelines. In the absence of the BEP designation, engineers must rely solely on Article 2 of the Code of Ethics to govern their involvement in a building envelope consulting role for projects (*Undertake and accept responsibility for professional assignments only when qualified by training or experience*). The following are these *Points of Principle*:

#### ***“New Construction Projects***

- 1. The architect of record shall have overall responsibility for the design and field review of the building envelope, reflecting the wide range of issues that must be considered in addition to Part 5 requirements. The architect of record (and only the architect) must sign the Schedules B-1, B-2 and C-B for building envelope components.*
- 2. The architect of record will prepare an integrated set of construction documents for the building envelope.*
- 3. Where a Building Envelope Professional (BEP) is required by the authority having jurisdiction with respect to Part 5 aspects of the building envelope, the BEP must sign Schedules D and C-D for the Part 5 aspects of the building envelope (Schedules D-1 and D-2 in the City of Vancouver).*
- 4. The BEP may be either an architect or a professional engineer and shall provide support to the architect of record through design review and enhanced field reviews for Part 5 aspects of the building envelope as described in the Building Envelope Professional – Guidelines for Professional Practice.*

#### ***Building Envelope Rehabilitation Projects***

- 1. An architect (or professional engineer as permitted under the “Memorandum of Agreement between AIBC and APEGBC” –for some industrial projects) shall undertake a preliminary review of the rehabilitation program for all building envelope rehabilitation projects prior to building permit application, for the purpose of identifying issues beyond the scope of Part 5 and the need for further work by any architects or professional engineers.*
- 2. The registered professional who is taking overall responsibility for the design and field review of the building envelope (prime building envelope registered professional) will prepare an integrated set of construction documents for a building envelope rehabilitation project.*
- 3. The prime building envelope registered professional may be either an architect or a BEP. The prime building envelope registered professional must sign Schedules B-1, B-2 and C-B for building envelope components.*

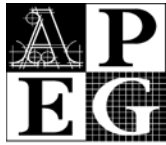


4. *Where a BEP is required by the authority having jurisdiction with respect to Part 5 aspects of the building envelope, the BEP must sign Schedules D and C-D for the Part 5 aspects of the building envelope (Schedules D-1 and D-2 in the City of Vancouver).*
5. *The BEP may be either an architect or a professional engineer. The BEP will provide support to the prime building envelope registered professional through design review and enhanced field reviews for Part 5 aspects of the building envelope as described in the Building Envelope Professional – Guidelines for Professional Practice.*
6. *One individual could be both the prime building envelope registered professional and the BEP.”*

The Points of Principle clarify the issue of which professional prepares the construction documents. This was previously being handled in an inconsistent manner by various professionals. For new construction the architect of record must prepare an integrated set of construction documents. For building envelope rehabilitation projects, a set of integrated set of construction documents needs to be prepared by either the architect of record, if one is involved with the project, or the BEP engineer who is taking overall responsibility for the design and field review of the building envelope. It is generally not acceptable to have two separate drawing and specification packages that document the intent for elements of the building envelope.

For building envelope rehabilitation projects a key change to current practices for many engineers is the introduction of a requirement for an initial review of the project by an Architect. This has been done in recognition of the fact that many projects may need professionals other than an engineer BEP involved in a project. Architects, rather than BEP engineers customarily evaluate these needs for new construction projects and therefore they are generally in a better position to do so on an informed basis for envelope rehabilitation projects. This requirement was also adopted because of growing concern that the aesthetics of buildings were being compromised in building envelope rehabilitation projects.

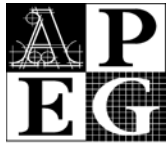
Table 1 and Table 2 summarize the roles of architects and engineers with respect to the building envelope on typical projects.



**TABLE 1 – NEW CONSTRUCTION PROJECTS (OR RENOVATION PROJECTS WHERE THE PRIMARY REASON FOR THE PROJECT IS NOT BUILDING ENVELOPE REHABILITATION)  
PROFESSIONAL ROLES AND RESPONSIBILITIES**

<b>CONSULTANT WITH PRIMARY RESPONSIBILITY FOR BUILDING ENVELOPE</b>	Architect of Record
<b>BUILDING ENVELOPE PROFESSIONAL</b>	BEP required for all buildings which fall within the scope of Part 5. BEP could be a separate architect or engineer who is accredited as a BEP or could be the Architect of Record if accredited as a BEP.
<b>PRELIMINARY REVIEW BY ARCHITECT</b>	Separate preliminary review is not required since review will be undertaken by the Architect of Record as part of their basic services.
<b>LETTERS OF ASSURANCE</b>	Architect of Record must sign Schedules B-1, B-2 and C-B for building envelope components. BEP must sign Schedules D and C-D.
<b>CONSTRUCTION DOCUMENTS</b>	Architect of Record must prepare an integrated set of construction documents. Separate construction documents may not be prepared by the BEP.

**Note: Roles clarify building envelope responsibilities in addition to basic services.**



**TABLE 2 – BUILDING ENVELOPE REHABILITATION PROJECTS  
PROFESSIONAL ROLES AND RESPONSIBILITIES**

	ALTERNATE SCENARIOS			
	1	2	3	4
<b>PRIME BUILDING ENVELOPE CONSULTANT</b>	BEP Engineer	Architect of Record (not accredited as a BEP)		Architect of Record (accredited as a BEP)
<b>PRELIMINARY REVIEW BY ARCHITECT</b>	Architect* required to undertake preliminary review for the purpose of identifying issues beyond the scope of Part 5 and the need for further work by other consultants.	Review will be undertaken by the Architect of Record as part of their basic services.		
<b>BUILDING ENVELOPE PROFESSIONAL</b>	BEP required for all buildings which fall within the scope of Part 5. Same engineer who is the BEP must be the Prime Building Envelope Consultant	BEP required for all buildings which fall within the scope of Part 5. <b>BEP is a separate architect</b> who is accredited as a BEP.	BEP required for all buildings which fall within the scope of Part 5. <b>BEP is a separate engineer</b> who is accredited as a BEP.	BEP required for all buildings which fall within the scope of Part 5. <b>BEP is Architect of Record</b> who is accredited as a BEP.
<b>LETTERS OF ASSURANCE</b>	BEP Engineer must sign Schedules B-1, B-2 and C-B. BEP Engineer must also sign Schedules D and C-D. May also be need for other consultants depending on specifics of project and as identified through preliminary review by architect.	Architect of Record must sign Schedules B-1, B-2 and C-B. <b>BEP Architect</b> must sign Schedules D and C-D. May also be need for other consultants depending on specifics of project.	Architect of Record must sign Schedules B-1, B-2 and C-B. <b>BEP Engineer</b> must sign Schedules D and C-D. May also be need for other consultants depending on specifics of project.	Architect of Record must sign Schedules B-1, B-2 and C-B. <b>Architect of record as BEP</b> must also sign Schedules D and C-D. May also be need for other consultants depending on specifics of project.
<b>CONSTRUCTION DOCUMENTS</b>	BEP Engineer must prepare construction documents.	Architect of Record must prepare construction documents.		

**Notes: Roles for various scenarios clarify building envelope responsibilities in addition to basic services. Architect of Record refers to the rehabilitation project, not the original building construction project.**

\* Architect (or professional engineer as permitted under the “Memorandum of Agreement between AIBC and APEGBC”).

This article is intended to be a general discussion on the building envelope roles and responsibilities. For additional information, please contact the Association of Professional Engineers and Geoscientists of British Columbia.