

Alternative Solution Guide

Guide Overview

The purpose of this guide is to explain the City of Coquitlam's requirements and procedures relating to the **British Columbia Building Code (BCBC)** requirements for alternative solutions. Depending on the complexity and/or magnitude of the alternative solution under consideration, it may be addressed either through the formal process described in this guide, or directly by the Building Inspector through an informal process. Please contact the Building Permits Division for guidance as to which process applies in your circumstance.

What Is An Alternative Solution?

The provisions of the BCBC are not intended to limit the means and methods for designing and constructing a building that meets the community's standards for safety, health, accessibility for persons with disabilities, and fire protection of buildings and facilities. Where BCBC compliance cannot be achieved by complying with the acceptable solutions specified in the BCBC's Division B, the proponent may seek to achieve compliance through an alternative solution. An alternative solution incorporates into a building, materials, appliances, systems, equipment, methods of design and construction and/or processes not specifically described in the code or which vary from the specific requirements of the code if it can be shown that these alternatives are suitable on the basis of past performance, tests or technical evaluations.

If an alternative solution is proposed as a means to satisfy a requirement of the Code, BCBC Division A, Part 1, Clause 1.2.1.1.(1)(b) requires the alternative solution to achieve at least the minimum level of performance required by the BCBC's Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solution(s) that the alternative solution seeks to satisfy. Specifically, BCBC Sentence 1.2.1.1.(2) requires that the objectives and functional statements attributed to the acceptable solutions be the objectives and functional statements identified in Sections 3.10., 4.5., 5.10., 6.10., 7.2., 8.3., 9.38. and 10.4. Division B establishes the basis for the quantitative performance targets that alternative solutions must meet.

Further guidance regarding the nature of alternative solutions may be obtained by reference to BCBC Division B, Note A-1.2.1.1.(1)(b).

Proponents seeking acceptance of an alternative solution, must complete the Alternative Solution Application Form and submit a proposal, detailing sufficient evidence to demonstrate that the alternative solution will provide at least the level of performance required by the acceptable solution he/she seeks to replace. BCBC Division C, Part 2, Article 2.3.1.2. specifies the requirements for documentation of alternative solutions. In complying with Sentences 2.3.1.2.(3) and (5), particular care should be taken that the argument supporting the alternative solution not be reduced to an opinion, but that it provide adequate reasons for its acceptance.

What Is An Alternative Solution?

The proponent's proposal must explicitly address the relevant objectives and functional statements and must be comprehensive, logically presented by incorporating the following:

- A definition of the applicable code performance requirements by analysis of the code's requirements for the acceptable solution (i.e., define code performance requirements by addressing, for example in the case of a fire safety alternative solution, considerations of fuel load, fire scenarios, occupant load, firefighting access, fire spread mechanisms, etc. implicit in the code's acceptable solutions);
- A description of how these performance requirements are being compromised in the proposed design (i.e., define the code noncompliance issues in the same terms used to define code performance requirements); and
- A definition of the alternative solution in terms of the offsetting design measures that are being proposed (i.e., describe the design elements/systems that offset the code non-compliance and demonstrate how this substitution provides the level of performance required by the acceptable solution).

What Documents Are Required To Support An Alternative Solution?

An application should include supporting documents that the registered professional determines necessary to fully explain how the project will differ from BC Building Code requirements and how their proposals will meet or exceed the BC Building Code requirements. Include but not be limited to:

- Code compliance report and alternative solutions;
- Code compliance report must include information about the qualifications, experience, and background of the person or persons taking responsibility for the design;
- Citations shall include title, author and publication data including date of publication;
- Statement indicating that the alternative solution will provide a level of performance equal to or greater than that required by BCBC;
- Reduced drawings (floor plans, elevations, sections, etc.) that portray the extent of the alternative solution in its entirety, and its relationship to the remainder of the project (documents provided to the City under other permit or information processes will not be admitted);
- Supporting literature including articles, calculations; test results; and
- Specific design parameters required of subsequent design (e.g., special sprinkler wetting requirements that may not be specified in the standard literature).

What Is The Alternative Solution Process?

Alternative solutions should be submitted by the registered professional at the preliminary stages of a project. City acceptance of all required alternative solutions is generally a condition of building permit issuance.

An alternative solution proposal is assigned to the file manager for the Building Permit Application. The proposal is circulated to departments and divisions within the City for assessment and comment. Comments from the committee members are related to their particular expertise. The file manager assembles all comments and forwards them to the registered professional for the purposes of clarification or proposal amendment.

What Is The Alternative Solution Process?

Complex or difficult alternative solutions may require a committee meeting sometimes with the proponent's involvement. This process could entail a number of iterations. It is the proponent's responsibility to plan and schedule the alternative solution process within the context of the project's time-line.

The City will endeavor to assist and facilitate the alternative solution process, but may, in the end, reject a proposal if it feels the proposal fails to demonstrate an alternative solution. Throughout this process City comments and observations shall be understood as constructive, and shall not be construed as permissive. There are no interim or preliminary decisions, and the alternative solution will stand or fall in its final form entirely on its own merits. Strict code compliance is the fallback requirement for all alternative solutions.

The City may consider an independent professional review of the alternative solution in order to assist in making the final decision. Should independent engineering review become necessary to satisfy the City regarding the viability of a proposal, the costs of such a review will be borne by the proponent.

Upon completion of the City's review of an alternative solution the proponent will be notified. The City will countersign Alternative Solution Sign-Off Form attesting to the alternative solution's acceptance or rejection.

The alternative solution process is not completed until the registered professional provides written assurance to the City that the alternative solution has been installed in a manner satisfactory to the registered professional and in compliance with the accepted alternative solution. An occupancy certificate will not be issued until this process is completed.

Note:

1. In the event of disagreement, the City's decision is final.
2. Alternative solutions applied for after issuance of building permit which arise, for example, to correct faulty design or construction, may not be considered by the City.
3. Any applications for additional new Alternative Solution(s) review(s) received prior to acceptance of the original application and/or any recheck of Alternative Solution(s) currently under review are subject to applicable fees.
4. A review of submissions that precede a building permit application may not be reviewed immediately and the City's response may be withheld until the building permit application is submitted.
5. All Alternative Solution Reports and Information Sheets shall bear the professional seal and signature of the registered professional responsible for their preparation and submission.
6. Minutes of meetings with the City prepared by the proponent will not form a part of the record and may not be appended to an alternative solution as supporting documentation.
7. Full code analyses and consolidated Code requirement documents are often prepared to facilitate the work of other consultants to the project. They do not form part of the alternative solution and will not be formally reviewed by the City under the alternative solution process. Code analyses incorporated into an alternative solution submission should be limited to only those code issued germane to the alternative solution under consideration.

How Do You Prepare For An Alternative Solution Application?

Unless otherwise agreed to by the Manager Building Permits of the City of Coquitlam, submissions shall be prepared and digitally sealed with an encrypted seal by a registered professional consultant with experience in the discipline to which the alternative solution pertains (e.g., expertise in fire protection systems where the fire and life safety provisions of the BCBC are being addressed, structural expertise where the structural provisions of the code are being addressed), a thorough understanding of the BCBC, and a demonstrable history of dealing with alternative solutions (Equivalents under previous codes). All communications relating to the alternative solution will be addressed to this registered professional.

How Do You Secure Your Documents?

- Documents and drawings must be set to high resolution, legible, and submitted in PDF format;
- PDF files must be flattened to a single layer and file size reduced;
- All PDF documents and drawings must be unsecured and not password protected;
- Any documents required to be sealed by registered professionals must be digitally sealed with an encrypted seal (Notarius software). Wet seals or photocopied seals and signatures will not be accepted;
- All submitted permit application documents and drawings including Letters of Assurance that are sealed and signed by professional engineers require the Permit to Practice Number as per EGBC guidelines; and
- Do not enable the “Certify” check box under “Advanced Options” in the signature dialogue box when applying digital signature with the ConsignO software suite. This will prevent the City from applying subsequent stamps, comments, extracting, inserting, and securing the building permit application for issuance.

How Do You Apply For An Alternative Solution Application?

Applications for alternative solutions must be submitted **digitally** to: qfile.coquitlam.ca/altsolution and include the following:

- Completed Alternative Solution Application Form and Sign-Off Form; incorporating an undertaking for field review by the registered professional;
- Completed Alternative Solution Agent Authorization Form;
- Code Compliance Report, include alternative solution(s) and supporting documents; and
- Payment of application fee (review of the alternative solution will not begin until payment is received).

What Are The Fees For An Alternative Solution Application?

Refer to the **Fees and Charges Bylaw Schedule “D”**.

What Are The Timelines?

The initial review will take about four to six weeks, but may take longer depending on the volume of applications in queue, the number and complexity of the proposed alternative solutions contained in the application, and whether we need additional information, clarification, or a revised submission from the registered professional. Further reviews will vary in length based on the extent of revisions, and completeness of the application documents.

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