

Building Envelope Options for the BC Energy Step Code (Module 4)



9-12 hours to complete with review of content,
final test and review of downloadable materials

2 sections

Quizzes: 10 unlimited attempts

Exam: 100 questions each, one attempt

Passing mark on Exam = 70

COURSE DESCRIPTION

This course meets the **BC Energy Step Code Module 4: Building Envelope Options** mandatory training for builders as required by BC Housing (as of Oct 2022). This module covers a range of building envelope assemblies for roof, wall, and foundation, based on the “envelope first” approach to design and installation practices.

The training goals for this course are:

- Compare and contrast the performance, cost, constructability, compatibility, and future-readiness parameters at play in the design and construction of modern enclosure assemblies that are used in buildings meeting the BC Energy Step Code
- Plan the construction of enclosure assemblies, including aligning a diverse range of trades/subcontractors, managing supply chains, sequencing site work, and ensuring correct installation practices are used

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LEARNING OBJECTIVES

Section 1

- *Identify exterior wall assembly configurations that optimize cost, durability, thermal performance including reduced thermal bridging, and buildability in all climate zones in BC*
- *Develop basic strategies for constructing wall assemblies that use exterior insulation that are durable and buildable*
- *Manage key design and construction concerns for below-grade concrete assemblies with increased thermal performance including reduced thermal bridging, while using moisture control best practices*
- *Understand the typical correct sequence of exterior wall membrane installation that includes for airtightness and use of exterior insulation, and identify the parties in charge of each step in this sequence*
- *Understand the typical correct sequence of exterior insulation installation, and identify the parties in charge of each step in this sequence*
- *Understand the correct overall sequence of typical airtightness and insulation detailing, and identify the parties in charge of each step in this sequence*
- *Align cost and construction priorities across the project team and with the owner/client, including for a diverse group of trades/subcontractors with a varying understanding of enclosure assemblies*

Section 2

- *Determine core competencies needed by team members in the enclosure construction process and implement ways to train them considering diverse backgrounds and learning styles, especially Indigenous persons and those from equity seeking groups*
- *Summarize the factors that can lead to improper installation and poor quality control in building enclosure construction, and how they can be addressed during design and early stage construction*

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COURSE OUTLINE

Introduction

The Enclosure First Approach
Climate Zones
Successful Design
Value Optimization
Durability

Section 1: Envelope First

Assembly Configurations

Exterior Wall Assemblies
Moisture Considerations
Exterior Insulation
Air Barrier Systems
Vapour Barrier Systems
Below Grade Concrete Assemblies
Roof & Ceiling Assemblies

Framing Techniques
Structural Elements

Section 2: Planning and Costing

Priorities

Costing
Construction

Strategies and Sequencing

Exterior Wall Assemblies
Window & Door Placement
Air Barrier Systems

Integrated Design Process (IDP)

Planning

House types
Basement Types

Building Process & Specifications

Competency Development

Teams
Trades

Quality Control