Cranbrook Chamber of Commerce 6th Annual BC Energy Step Code Training
In partnership with FortisBC – Building Better Communities

Training delivered by BCIT
Course Outline
Program Title: Get Ready to Build to Step 4: Airtightness and Insulation Strategies for the East Kootenay Climate

Session 1: Get Ready to Build Step 4: Airtightness and Insulation Strategies for the East Kootenay Climate
Format: 1-day, in-person, hands-on workshop (8 hours)
Location: Cranbrook, B.C.

Course Description
This one-day, hands-on training session is designed for builders, designers, architects, and engineers in the Elk Valley and Cranbrook-Kimberley corridor who are delivering or planning high-performance Step 4 buildings under the BC Energy Step Code.

Participants will deepen their understanding of airtightness detailing and exterior insulation strategies that enable Step 4 performance in the East Kootenay cold, dry climate zone.

The course will review local climate data, discuss minimum effective R-values needed to meet Step 4 targets, and explore real-world strategies for achieving those values efficiently and reliably.

Through a mix of focused presentations, group activities analyzing the LEEP wall mock-ups, and hands-on exploration of modern membranes, tapes, and insulation products, participants will leave with the technical insight and practical confidence needed to deliver consistent Step 4 results in the East Kootenay.

Target Audience
- Residential and small commercial builders focused on building to Step 4 or even Step 5 construction
- Architects, designers, and engineers working on high-performance building envelopes
- Energy advisors and consultants supporting Step Code compliance and testing

- Professionals in the Cranbrook – Kimberley corridor and Elk Valley region seeking advanced, locally grounded building science training

Learning Outcomes

1. Interpret East Kootenay climate data and use it to determine appropriate effective R-values for Step 4 assemblies.
2. Explain the building science principles underlying airtightness, thermal bridging, and moisture management.
3. Evaluate and compare LEEP wall mock-ups, identifying strategies that best suit local construction practices and climate conditions.
4. Gain hands-on familiarity with high-performance membranes, tapes, and exterior insulation materials.
5. Apply lessons from local Step 4 projects to their own designs and building processes.

Instructional Methods

- Short presentations introducing Step Code targets, local R-value calculations, and building science concepts
- Group-based evaluation of mock-ups representing LEEP wall systems
- Guided demonstrations and hands-on trials with membranes, sealants, and insulation
- products
- Peer discussion and reflection on lessons learned
- Case study analysis of East Kootenay Step 4 projects

Schedule (One-Day Outline)

8:30 – 9:00 — Welcome & Context: Introductions, overview of Step 4 requirements and climate zone for East Kootenay.

9:00 – 10:00 — Climate and Code: Review East Kootenay climate data and R-value targets for Step 4; key airtightness and insulation considerations.

10:15 – 12:00 — Group Evaluation: LEEP Wall Systems: Using Mock-ups, groups assess different wall systems for airtightness continuity, insulation performance, and constructability.

12:45 – 2:15 — Hands-On Demonstrations: Participants handle and test membranes, tapes, and insulation products; compare applications and sequencing.

2:15 – 3:15 — Local Case Studies: Deep dive into local Step 4 projects, highlighting tested airtightness results, insulation strategies, and lessons learned.

3:30 – 4:30 — Applied Learning: Action Planning: Participants develop an action plan for meeting or exceeding Step 4 through building envelope best practices in their own projects.

4:30 – 5:00 — Reflection & Wrap-Up: Key takeaways, peer feedback, and next learning opportunities.

Learning Resources

- LEEP NZE Wall Guide (Natural Resources Canada)
- BC Energy Step Code Builder Guides and Metrics
- BCIT High-Performance Building Lab resources
- East Kootenay-specific climate and R-value data - Local Step 4 project case studies and test data

Facilities and Materials

- Access to mock-ups of LEEP wall assemblies
- Air barrier and insulation product samples for hands-on evaluation
- Tables and workspace for materials demonstration
- Projector/slides for presentations
- Worksheets and evaluation templates

Session 2: High-Performance Retrofits: Translating Step 4 Concepts to Existing Homes
Format: Online webinar (3 hours, live, instructor-led)
Timing: To be scheduled approximately 4–6 weeks after Session 1

Course Description
This advanced follow-up session builds on the concepts introduced in the in-person Step 4 workshop and applies them to the unique challenges of retrofitting existing buildings for higher energy performance.

Participants will examine how airtightness, insulation continuity, and moisture control strategies differ when working with existing assemblies. Using examples from local

East Kootenay renovation projects and current BC retrofit incentive programs, the session explores practical pathways for achieving Step Code-equivalent performance in retrofit contexts.

The webinar combines short presentations with case-study discussions, digital detail reviews, and participant Q&A.

Learning Outcomes

1. Identify the key differences between new-build Step 4 assemblies and retrofit envelope upgrades.
2. Analyze how airtightness detailing must adapt to irregular existing conditions, penetrations, and sequencing constraints.
3. Evaluate retrofit insulation strategies (interior, exterior, hybrid) for moisture safety and constructability in East Kootenay's cold, dry climate.
4. Reference effective R-values and heat-loss targets appropriate for retrofit performance goals.
5. Recognize current programs, rebates, and testing requirements supporting high performance retrofits in B.C.

Schedule (3-Hour Webinar)

0:00 – 0:15 hr — Introduction & Recap: Link between new construction Step 4 principles and retrofit goals.
0:15 – 1:00 hr — Building Science for Retrofits: Moisture, airtightness, and thermal bridging challenges unique to existing walls.
1:15 – 2:15 hr — Retrofit Strategies & Case Studies: Compare interior/exterior insulation methods; review local examples and lessons learned.
2:15 – 2:50 hr — Detailing & Sequencing: Approaches for window transitions, air barrier continuity, and vapor control in retrofits.
2:50 – 3:00 hr — Wrap-Up: Key takeaways, next steps, and resources.