

Key Activity		Duration	Description of activity	Target Audience	Desired outcomes	Estimated budget	Additional notes	COVID-19 considerations	
1	Scoping and confirming current ESC	1 month min		All stakeholders					
	Format								Stakeholder outreach, community survey(s)
	Presenter/Facilitator								CEA/ local government
2	Communications	ongoing	Locally published, regionally specific, content on house-as-a-system approach, BCESC timelines, success stories, incentives, etc.	All stakeholders	Inform a broad cross-section of the local population about BCESC, its objectives, process and implementation.	Dependent on formats, frequency, and if content is created internally or not.	Templates available.		
	Format								Webpages, newsletters, media releases, social media posts
	Presenter/Facilitator								CEA/ local government
3	<b>Building Science Workshops &amp; Peer Sharing</b>								
3a	Building science fundamentals and holistic design - workshop (could be a series, delivered subregionally and/or a standalone).	1 day	<p>Full day sessions delivered by a building scientist. Integrate hands on element - whether through the construction or provision of wall assemblies.</p> <p>Note: this could be facilitated in a number of ways, whether through BCIT, Small Planet Supply or a building/envelope consultant. What is critical about the workshop are the following considerations:</p> <ul style="list-style-type: none"> <li>- that it is product agnostic; this should not be about selling a specific product, rather communicating the importance of holistic design and the home as a system</li> <li>- focus should be on the range of solutions available to achieve optimal energy performance</li> </ul>	Builders, contractors, etc.	Capacity building among industry and a greater level of comfort around the introduction of ESC and the options that result from that. A deeper understanding of the HOLISTIC approach required to ensure optimal performance and durable design.	Dependent on the building scientist, but suggest estimating about \$10K.	<p>Consider whether a public forum could be added in the evening. Also consider whether an on-site element could be added partnering with a builder willing to tell their story.</p> <p>Suggest for maximum engagement, do sub-regional workshops.</p> <p>Note that cost is partially covered by fees for the workshop. Encourage participation by multiple employees from the same company by offering lowered group-rates on tickets. Continuing Professional Development points can be arranged from BC Housing for this.</p>	<p>Consider content delivery by combination of remote instructor, with in-person local facilitators (energy advisor, CEA facilitator, etc), recording the event if possible. See an example of this type of mixed delivery at Castlegar's ESC video: <a href="https://castlegarconnects.ca/bc-energy-step-code/widgets/62745/videos/5793">https://castlegarconnects.ca/bc-energy-step-code/widgets/62745/videos/5793</a></p>	
	Format								In-person workshop
	Presenter/Facilitator								Building scientist/ local government



# Building A Legacy

Building local knowledge, opportunity, and capacity



Key Activity	Duration	Description of activity	Target Audience	Desired outcomes	Estimated budget	Additional notes	COVID-19 considerations
<b>3b Introduction to Integrating Ventilation and Mechanical Systems in High Performance Builds</b> Format: In-person workshop or webinar Presenter/Facilitator: HVAC specialist/ local government	1/2 day	A foundational overview of mechanical systems and ventilation for seamless integration into high performance builds. Design considerations, including safety, comfort and right-sizing your mechanical systems.	Builders, contractors, apprentice HVAC technicians, architects, designers.	Greater understanding of what is needed to plan and effectively design an appropriate, cost-effective, right-sized ventilation and mechanical system.	Dependent on the building scientist, but suggest estimating about \$4K.	As with all of the training, the presenter should be product agnostic and relay a message of holistic design and home as a system approach. Continuing Professional Development points can be arranged from BC Housing for this.	May be possible to host this as a webinar or with mixed delivery with local facilitators and remote presentation. In which case, the travel costs of the presenter would be excluded from the budget.
<b>3c Design details: Wall assemblies</b> Format: In-person workshop Presenter/Facilitator: Building scientist/ local government	1 day	Deeper dive into the wall assembly design options that support enhanced energy performance.	Builders, contractors, architects, designers, etc.	Deeper understanding of specific wall details required to optimize performance and minimize risk in the construction process.	Dependent on the building scientist, but suggest estimating about \$10K.	Design and construction of a regionally-available set of wall assemblies, demonstrating the various options, and their pros and cons, could be a worthwhile regional training investment, available for years to come. Resource: Wall Assembly Technical Booklet	
<b>3d Design details: Roof and below-grade assemblies</b> Format: In-person workshop Presenter/Facilitator: Building scientist/ local government	1 day	Deeper dive into the roof and below-grade assembly design options that support enhanced energy performance.	Builders, contractors, architects, designers, etc.	Deeper understanding of specific roof and below-grade details required to optimize performance and minimize risk in the construction process.	Dependent on the building scientist, but suggest estimating about \$10K.	Design and construction of a regionally-available set of roof and below-grade assemblies, demonstrating the various options, and their pros and cons, could be a worthwhile regional training investment, available for years to come. Note that cost is partially covered by fees for the workshop. Encourage participation by multiple employees from the same company by offering lowered group-rates on tickets. Continuing Professional Development points can be arranged from BC Housing for this. Resource: Roof Assembly Technical Booklet	



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3e An Holistic Approach to Improving Air-Tightness	1 day	Full day session delivered by a building scientist. Integrate hands on element - whether through the provision of wall assemblies or group problem-solving session on real-world assemblies The workshop explores: A wide-range of solutions toward improving air tightness of the building envelope of wood, concrete, and steel framed buildings (including above grade and below grade assemblies), along with highlighting the advantages and disadvantages of each solution. Air barrier selection process with the focus on improving thermal comfort, energy efficiency, moisture management, and long-term performance. Effective air barrier detailing at the intersection between building envelope assemblies as well as around penetrations.	Builders, contractor, architects, designers, building officials, etc.	Integration of learnings from the foundational trainings on building science concepts, wall-roof-below grade assemblies, and creating a continuous air barrier at floor, wall, window and roof intersections.	Dependent on the building scientist, but suggest estimating about \$10K.	This workshop was the culminating presentation of the East Kootenay Building A Legacy ESC workshop series, targeted to participants who had attended foundational workshops previous to this one. Continuing Professional Development points can be arranged from BC Housing for this.	May be possible to host this as a webinar or with mixed delivery with local facilitators and remote presentation. In which case, the travel costs of the presenter would be excluded from the budget.
Format	In-person workshop						
Presenter/Facilitator	Building scientist/ local government						
3f "How to Work with An Energy Advisor": introduction to Integrated Design Process	Half-day	An indepth look at how the performance pathway requirements of energy modelling and final testing differs from the previously accepted "prescriptive pathway" and how to best engage an energy advisor to optimize your construction project from start to finish.	Builders/designers/architects	Understanding: what services an EA can provide, why its important to involve an EA at the design phase, understanding the specific information that an EA will require to effectively energy model at the start of the project, how to deal with a change of plan mid-construction to ensure ESC compliance at the end.		Note that cost is partially covered by fees for the workshop. Encourage participation by multiple employees from the same company by offering lowered group-rates on tickets. Continuing Professional Development points can be arranged from BC Housing for this.	
Format	In-person workshop or webinar						
Presenter/Facilitator	Energy advisor/local government						



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4a Building Official and Related Staff Training - Building science fundamentals - ESC metrics and compliance pathways - On-site mid-construction or blower door test	3 half days	This format has been delivered once greater familiarity and movement toward adoption has taken place. This would be open to building officials/planners only in order to build capacity and confidence around ESC.	Building officials, planners	Comfort around the process, compliance and metrics of ESC. Familiarity of the blower door process.	Building science workshop - Ideally leveraged with another event, adding a half-day focus session. Estimate \$3K  Compliance workshop - venue cost  Mid-construction blower door and house tour - \$2K	Should ideally take place prior to the ESC adoption so that there is a level of comfort around the compliance forms and process.	
Format	In-person, 3 part half-day workshops.						
Presenter/Facilitator	Three-part series: - Building scientist - Conference/ webinar with Zac May in attendance - Energy Advisor/ builder						
4b Compliance Workshop - abridged and focused for local government staff	1 hour	Though not a formal workshop Zac May from the Building Standards and Safety Branch has been supporting expanded knowledge and understanding around the BC Energy ESC, and specifically the compliance pathways and approaches for local governments. Once staff are more familiar with performance pathway, and ideally after participating in a mid-construction blower door test, a meeting could be arranged to discuss compliance options and how to move forward.	Building officials, planners	Clear understanding of compliance pathways.  Address limitations of compliance pathways, specifically 9.36.5 in order to ensure quality control.	Staff time	Ideally this takes place with all staff involved in ESC - building officials, planners, etc. to ensure consistent understanding.  Can be rather informal, but the important element is to ensure questions about compliance, when to issue occupancy, etc. are cleared up.	
Format	Webinar						
Presenter/Facilitator	Zac May/ local government						

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5	Experiential Learning: Site-Based Training (BuildSmart Tailgate Meetings)	2 hours	A peer learning opportunity on the 'home turf' of builders. The intent of this workshop is to provide an on-site learning opportunity for builders AND their trades/contractors. The session should run 1-2 hours, and require that the general contractor and their whole crew, including sub-trades, be on site. An energy advisor is hired to run a mid-construction (pre-drywall) blower-door test (no modeling or other analytics required) and walk through the process of modeling/testing, etc.  A tour of the house takes place to identify the common weak areas for air tightness and the build team is there to identify and possibly address any leakage immediately.	Builders, sub-trades, on-site crew	On-site VERY tangible training opportunity to identify locations of common air leakage.  A better understanding of the low-cost opportunities to improve air tightness  A better understanding of ESC, and the required process for performance pathway.  An opportunity to empower trades/contractors - they play an important role in achieving air tightness.	Approximately \$500-1000/Tailgate, depending on where the Energy Advisor travels from.	Could be piloted anytime (as long as a builder were willing and ready!) and then available for fall, when most homes will be at a state of mid-construction. See CEA's Tailgate video demonstration to see how these sessions could run: <a href="https://www.youtube.com/watch?v=H1KCaX3_LLo&amp;list=PLlbW7jHE7jWIFDmoxJrWaybY5UqpYM68z&amp;index=12">https://www.youtube.com/watch?v=H1KCaX3_LLo&amp;list=PLlbW7jHE7jWIFDmoxJrWaybY5UqpYM68z&amp;index=12</a>	
	Format							
	Presenter/Facilitator	Energy advisor/ local government						
6	Building Envelope Assemblies		The intent of this activity is to create tangible, "hands-on" learning tools such as portable full-scale wall, roof and basement assemblies or mock-ups for use in building science workshops, building official training, and public showcases	All stakeholders, but especially builders, trades and building officials	Present t a wide range of basic code-built to high-performance design and construction. Demonstrate that no one assembly is the "correct" one as there are pros and cons of each which are dependent on a myriad of other factors such as location, climate, materials availability, budget, etc. Hands-on learning, that emphasizes a house-as-a-system approach and building science principles.	Approximately \$1000 per assembly. May be less depending on who designs and builds them. Consider shipping costs in your budget if applicable.	Consider where these will be stored, if partnership with a local college may be possible for shared use of the learning props. Consider including budget to purchase a utility trailer that would serve to both transport and store these units. See the assemblies technical booklets for detailed descriptions of possible assemblies and their pros and cons.	Difficult to enjoy the full benefit of these units until in-person events are permitted again. Possible to have a professional videographer film these during instruction, as BCIT is now doing in their High Performance Lab.
	Format							
	Presenter/Facilitator	Building scientist consultant						



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7a	Supportive Industry and Public Training: Real Estate Energy Efficiency Program	Half-day	This is a template approach to Realtor training. This could be replicated as is, or a more locally designed approach taken, with finished home walk through, blower door test and engagement with the energy advisor and builder. This would also address opportunities for existing homes.	Real estate professionals	Ability to talk with clients about the benefits of energy performance, and energy modeling (e.g. quantifiable impacts of good design and construction).	\$1,000 - \$5,000 depending on facilitator, venue and whether it was run through the REEEP program or locally.	Suggest that depending on the willingness of the builders, there could be a scenario where real estate professionals could be invited to a BuildSmart Tailgate Meeting	The BC Real Estate Association ( <a href="https://www.bcrea.bc.ca/">https://www.bcrea.bc.ca/</a> ) is developing ESC training for their members, with an expected drop date of Spring 2021. This training is likely to include a virtual home tour. Contact Marianne Brimell for more information.
	Format							
	Presenter/Facilitator							
7b	Supportive Industry and Public Training: Public Showcases	~2 hours	Work with local builders to identify a home that is at or near completion to host a public open house to showcase some of the energy performance elements. Ideally a demonstration blower door can be done. In our experience - having the assemblies has also helped in public showcases.	Public, Realtors, industry partners, builders, trades	Familiarity of public with energy performance and the benefits to the home	Depending on facilitator - but for EA/ blower door, allocate \$500. Catering, etc. would be extra.	This type of event has been previously added on to a builder workshop, to take advantage of the presence of all the experts (building scientist, energy advisor, etc.). It could also be hosted at the same venue as the workshop, though would lack the 'open house' type feel that an on-site event would provide	
	Format							
	Presenter/Facilitator							



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Key Activity		Duration	Description of activity	Target Audience	Desired outcomes	Estimated budget	Additional notes	COVID-19 considerations
8a	Case studies - existing new builds		Work with builders that have recently completed a new home to perform a blower door test for air tightness. Ideally identify a builder that has not done anything unique from a 'standard build' to demonstrate that the current approach to construction in the region is reaching or achieving a lower step of the ESC.	Building industry	Promote a better understanding of the implications of ESC, addressing concerns that it will a) increase costs and b) require new approaches to construction. This is true of upper steps, but achieving Steps 1-3 is not a leap for most builders. This exercise will confirm that and provide more confidence.	Could be done as a basic blower door test and small write up - cost would be the Energy Advisor (max \$500 including travel). No modeling in this case.	Templates available.	
	Format	Case study - written and photos						
	Presenter/Facilitator							
8b	Case studies - under construction		Identify builders that are doing energy modeling, and follow the progress, including a mid-construction blower door test, to follow the process, costs and performance of the build.	Building industry, public	Demonstrate the approach taken and incremental cost (if any) of achieving mid-steps of the ESC. Provides transparency on how to get there.	Depends on the communications tools (video vs. photos)	Templates available.	
	Format	Case study - could be visual or video						
	Presenter/Facilitator							
9	Big Picture Thinking: Leveraging		Tell the story of your program and what you envision.	Councils, Funders	Demonstrate progress, share feedback, and pivot your ESC program to fit the needs of your community and region.	2 to 3 days, in-kind time for writing/tracking	Examples available. Prioritize and ask for feedback from your participants. Build your program on that feedback.	
	Format	Proposals, budgets, reports						
	Presenter/Facilitator	Local government, CEA						