

# News & Features



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## Envelopes First



### Increase your energy efficiency without adding huge costs

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For [bchydro.com](http://bchydro.com)

With the new BC Building Code expected to increase its emphasis on energy efficiency, you may be thinking about how to keep up. But if that includes worrying about major new costs, think again.

"People tend to think that getting to Energuide 80 will cost them thousands of dollars," says Doug Overholt, BC Hydro's Power Smart New Home Program Representative. "But we're finding with the last round of code requirements, many builders are closer to achieving EG80 than they think."

Building code amendments now require high efficiency furnaces (in gas homes), R-20 wall insulation, and energy-efficient windows. With those changes, Overholt says there's a good chance the homes you're building could already qualify for Power Smart incentives. If not, the key is to tighten up the envelope.

"That's not a hard job, or very expensive, if builders commit to it," Overholt says. "You don't need to add a lot of high-tech equipment to your homes. Many builders find that just improving the envelope side of their construction process is enough to get them where they want to be."

To help you get started, here are some ways to put "Envelopes First."

#### 1. Choose better insulating materials

##### *Spray foam and ICF*

The least expensive way to improve the energy performance in your homes is to upgrade insulation and stop leaks. "If you want to go that extra step, products such as insulated concrete forms and spray foam insulation are becoming more widely used," says Overholt. "A lot of builders only use spray foam in hard to reach places, and insulated concrete forms are currently a specialty mostly

used by custom builders. But they're worth using more often: they provide superior insulation levels with reduced air leakage."

#### *Blue board or pink board*

"A lot of air leaks through the joist headers between the first floor and the crawl space or basement," says Overholt. "Typically, the approach to insulating in this space is to shove in batt insulation and then seal it with a piece of plastic and caulking." However, he says this system will droop and leak air over time, causing the home to lose heat. Instead, Overholt recommends using an extruded insulation board product (blue board or pink board) often used for outside basement walls or under slabs.

"Seal the edges with spray foam insulation or latex caulking – it's quick and not messy. You can achieve a huge improvement in air leakage just by using improved materials and techniques."

### **2. Get used to new testing tools**

To improve your envelopes, start using the tools that help you check your own work. Here are two that are key:

#### *Blower door testing*

A blower door test is a diagnostic tool conducted by a Certified Energy Advisor. "This is a pre-drywall test you should use on your first home or show home," says Overholt. "It will identify common leakage points so you can correct any systemic issues before you build the rest of your homes."

"It's likely that blower door tests will become mandatory under the B.C. Building Code at some point," says Overholt. "So it's worth finding out how they work, and seeing how efficient your building construction is now, so you can start working with your crews if you need to improve."

#### *Infrared photography*

Also called thermography, the use of an infrared camera allows you to see exactly where warm air is leaking from your homes. If you like to "see it to believe it," this is a great tool to use. Again, this is best used at the pre-drywall stage in your first home so you can remedy any issues before continuing your build.

### **3. Keep Learning**

With the market a bit quieter, it's a great time to invest in learning and improving your practice – before new Code changes catch you flat-footed. One place to go are the "Building Smart" seminars offered by the Homeowner Protection Office of BC Housing. Also check out the Home Builders section of Natural Resources Canada's Energy-Efficient New Homes website. Finally, keep on top of the incentives you can access through Power Smart's New Home Program. You can keep up with the new Code, and apply for rebates too.

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