

## The Basic 10 of Green Construction – Part II

Last month's article was the first in a series designed to explain the basic components of good green home construction. We started with home orientation and design and discussed sealing the building envelope.

### **3—Proper and Thorough Insulation:**

Once a tight shell has been created by caulking and sealing all penetrations and building assembly connections, it's time to insulate. Upgrade to a spray-on insulation when possible. These products do a better job of filling the nooks and crannies and therefore achieve a higher level of insulation. Batt insulation is still a very popular product, but it can't hold a candle to the qualities of spray-on products.

Not only does whatever insulation you select need to be properly installed—no gaps, minimal compressions, and full coverage—it also must be installed thoroughly. For example, neglecting to insulate in areas such as between the tub and the exterior wall or between the fireplace and the exterior wall can reduce green points via a lower HERS score. (Not to mention the resulting higher energy bills for the homeowner.)

The Thermal Bypass Checklist Guide, published by the Environmental Protection Agency (EPA), is an excellent photographic road map to proper sealing and insulating. Take a look at, [http://www.energystar.gov/ia/partners/bldrs\\_lenders\\_raters/downloads/TBC\\_Guide\\_062507.pdf](http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/TBC_Guide_062507.pdf).

**4—Efficient HVAC Equipment:** If a home is thoroughly sealed and insulated, an efficient HVAC system can do its job well. Why does upgrading the HVAC system make more sense in a home with a tight building envelope? Think of a house as a picnic cooler. If the cooler has several holes in it, you still can keep food cold by continuing to add ice, but you'll get much better results—and use much less ice—if you patch the holes.

As you know, a tight building envelope can reduce required HVAC capacity. For example, one of the homes I'm green-certifying has been constructed with spray-foam insulation, a sealed attic, and all penetrations have been caulked. These steps contributed to reducing the required HVAC capacity from 7 to 4 tons, leaving money on the table the homeowner chose to put toward more efficient equipment. The improved SEER rating led to additional green points.

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