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Changing the way the world builds. People. Ideas. Integrity.

June 14, 2010 Issue # 24

Dear Jeffrey,

Any structure would do well under the "Drain Everything" approach (found in all of the [Builder's Guides](#)):

Drain the site  
Drain the ground  
Drain the building  
Drain the assembly  
Drain the opening  
Drain the component  
Drain the material

The behavior between sheathings and claddings demonstrates that reservoirs (Materials that store rainwater like sponges) used on the outside of homes are a problem. Once the reservoir gets wet, the stored water can migrate elsewhere and cause problems. You need a gap. Between the sheathings and claddings. Not in your understanding of how they work together. Please read Dr. Joe's feature article, "Mind the Gap, Eh!" below.

Registration is under way for our 2010 seminar: "Three R's: Repairs, Renovations, and Retrofits." A few housekeeping notes:

We have adjusted the date of our Chicago Seminar to September 21-22.

We are in the midst of renewing our Continuing Education affiliation with the organizations listed [here](#). So far, "The Three R's" is approved for:

16 AIA Learning Units (all HSW and SD)  
16 ACAC (formerly AIAQC) RC's  
8 BPI CEU's  
2 IICRC Credits  
RIA CEC's

Several more are in the works and we would still like to know if there is an organization or two that "The Three R's" is a good match to provide Continuing Education for. Let us know! In the meantime, see the note below the article for links to register for our courses..

To view a list of past newsletters, click [here](#) for our archives.

Happy reading!



Jeff Melvin

**Featured Article** by Joe Lstiburek, Ph.D., P.Eng., Fellow ASHRAE

## Mind the Gap, Eh!

Building Science Insight No. 038

Sheathing does more than deal with wind. Sometimes it doesn't even deal with that. It wasn't always that way. We didn't even used to have sheathing. We had a timber structural frame (or not, sometimes we just had rocks, or bricks, but you get the idea) and a cladding. The cladding kept the outside out - kind of - and the structure kept the building from falling down and blowing over - kind of.

A century or two ago we began to get boards as a sheathing whose function was more to provide intermediate support for a cladding than anything else, and then less than a century ago we got building papers that kept the wind out. The board sheathing evolved into plywood and we got the modern residential wall - a wood structural frame sheathed with plywood sheets, wrapped with building paper covered with a cladding.

This configuration took us through almost half a century - the last half of the 20th for those that don't quite know how to count them.

The key to the modern residential wall was the magic of the plywood. Plywood was and still is an amazing product, we continue to build furniture, houses, boats and planes out of it. We no longer build as many of these things out of plywood as we used to because plywood is being replaced by alternatives. This is most evident in housing where plywood is pretty much gone. In housing we see two alternatives - oriented strand board (OSB) and foam boards.[article continues]

**To read the entire feature article and find a downloadable PDF version, [here](#) to visit our web page.**



**Ubiquitous Sheathing**-A pretty familiar sight - a home completely sheathed with oriented strand board (OSB); "ruling the range..."



**Upstart?**-Fifty years as a sheathing but still considered an upstart. Extruded polystyrene (XPS) completely sheathing the structure - continuous thermal break. "Beginning show up on the range...confusing the cowboy builder and architect..."

## 2010 Building Science Seminars

We have revamped our Building Science Fundamentals Course to focus on the millions of existing homes in

line for energy-efficient repairs, renovations and retrofits. The new seminar is entitled: "The Three R's: Repairs, Renovations, and Retrofits" and will appear in the following cities:

[Westford, MA](#)

[Seattle, WA](#)

[Chicago, IL](#)

[Vancouver, British Columbia](#)

[Toronto, Ontario](#)

The complete agenda for the seminar can be found [here](#).

In addition, we will offer our traditional Building Science Expert's Session in December:

[Westford, MA](#)

### **Why You Should Come to Our Seminars**

- You want to be a Green (retrofitter, builder, architect, engineer, consultant, building code official, facility manager, building product manufacturer, government official) and you want to do Green right. After sixteen hours of classroom-style discussion with world-class building scientists you will be convinced that you are on the right track.
- You want to get our eyes on a picture of your building problem or a napkin diagram of your design or you want to have a simple 5-minute conversation with us about applying (insert article from our website here) to your particular building or design problem. Our seminars give you this kind of opportunity for one-on-one input from Dr. Joe and Dr. John.
- You want the best value for your organization's professional development and continuing education funds.

Come and network with the rest of the growing building science community. Register for one of our seminars now!

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**Building Science Corporation** specializes in building technology consulting. Our focus is preventing and resolving problems related to building design, construction and operation.

We are internationally recognized for our expertise in moisture dynamics, indoor air quality, and forensic (building failure) investigations. We are also on the leading edge of the design of sustainable communities and buildings.

We believe in promoting energy efficiency and environmental responsibility within the constraints of marketable and affordable building technology.

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