

Having trouble viewing this email? [Click here](#)

You're receiving this email because of your relationship with Building Science Corporation. Please [confirm](#) your continued interest in receiving email from us.

You may [unsubscribe](#) if you no longer wish to receive our emails.

information consulting bookstore seminars

# building science.com e-news

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

February 23, 2009 Issue # 11

Dear Jeffrey,

These days [everyone](#) is talking about sacrifices we have to make. Some are voluntary, some are not.

Segue into our featured article this month below: "Capillarity-Small Sacrifices" and see that buildings have to sacrifice something too. Joseph Lstiburek discusses capillarity, damage to buildings, and how to retrofit old buildings to meet the challenges of climate change and energy security by using old world technology.

Also, check out our first seminar of the year (below the article). It's a one-day Advanced Hygrothermal Modeling event in March.

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

Happy reading!



Jeff Melvin  
Editor, buildingscience.com e-news

[Forward buildingscience.com e-news to a friend!](#)

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

## Capillarity - Small Sacrifices

Building Science Insight No. 11

Water causes enough trouble by itself, but when we add salt we go to a whole different level, especially where porous materials are concerned. What is the deal with porous materials? Simple, porous materials are capable of wicking water large distances due to capillary suction (1). And when water can move large distances only bad things can happen.

Some of the tiniest pores can be found in wood, concrete, mortar and brick. Guess what we like to build out of? Yup, wood, concrete, mortar and brick. The theoretical limit of capillary rise in concrete is about 10 kilometers-and folks that is not a typo-it really is about 10 kilometers or about 6 miles. Concrete sucks big time. In wood it is about 400 feet-the height limit trees can grow to is set by the size of the capillary pores in wood. Ever wonder how leaves get water? When you go into a forest and listen very carefully you don't hear any pumps pumping water upwards a couple of hundred feet do you? Capillary suction is powerful stuff. When you add salt to the water the power becomes explosive-literally as we shall see.

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

## Advanced Hygrothermal Modeling Workshop - Westford, MA

Chris Schumacher and John Straube will host a one-day seminar on advanced hygrothermal modeling in Westford, MA on March 26.

The seminar will address issues such as material property and weather data sources, selecting interior temperature and moisture conditions, and the role of 2-D and 3-D effects on results of lower dimension. Recommendations for successful and useful hygrothermal modelling will be made.

More information about this seminar and online registration can be found [here](#).

## New on buildingscience.com . . .

### **BSD-112: Building Science for Strawbale Buildings**

*by John Straube, Ph.D., P.Eng.*

This digest will begin with a brief description of the system and materials, review moisture problems in buildings, and summarize how moisture control should be dealt with in strawbale buildings. Click [here](#) to read this article.

### **BSD-113: Ground Source Heat Pumps ("Geothermal") for Residential Heating and Cooling: Carbon Emissions and Efficiency**

*by John Straube, Ph.D., P.Eng.*

There has been a recent surge of interest in Ground Source Heat Pump (GSHP or "geothermal" or GeoExchange™) systems for residential projects. Outrageous claims and misunderstandings about how they work are common. This digest provides some basic information and definitions, offers advice on how to compare the carbon emissions, and defines the climate regions and operating conditions for which GSHP systems are best suited. Click [here](#) to read this article.

### **BSI-015: Top Ten Dumb Things To Do In the South**

*by Joseph Lstiburek, Ph.D., P.Eng., Fellow ASHRAE*

A reprint of Joseph Lstiburek's classic list of building practices not recommended for hot-humid climates. This list was first posted on Building Science Corporation's website in 1997. Click [here](#) to read this article.

**Sign Up For This Newsletter!**

## About BSC

**Building Science Corporation** is a Boston based architecture and building science consulting firm with clients throughout North America.

**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.

Read More About Us: [www.buildingscience.com](http://www.buildingscience.com)



You are receiving this newsletter either because you have requested it or because of your relationship with Building Science Corporation.

To opt out any time from receiving this newsletter, click on the "unsubscribe" link below. Otherwise, to ensure that you continue to receive this newsletter, please add [newsletter@buildingscience.com](mailto:newsletter@buildingscience.com) to your address book now.

Your privacy matters to us.  
We are not going to sell, rent, lend or share your information with others.

Copyright © 2008 Building Science Corporation, All rights reserved

You may reproduce this article by including this copyright.

#### [Forward email](#)

✉ [SafeUnsubscribe®](#)

This email was sent to [jeff@buildingscience.com](mailto:jeff@buildingscience.com) by [newsletter@buildingscience.com](mailto:newsletter@buildingscience.com).  
[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



Building Science Corporation | 30 Forest St | Somerville | MA | 02143