Any change, even a change for the better, is always accompanied by drawbacks and discomforts.

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February 2011 Newsletter from Building Diagnostics

Welcome to the February newsletter. I think this will be an interesting year, but as the quote I chose for the lead hints, that doesn't mean that all will be positive. In fact my guess is that this year will see challenges in energy efficiency/renewables with a strong conflict between rising energy costs and the poor economy resulting in wildly differing agendas from our political leaders. We will probably be faced with a period where if anything is to get done we will have to find our own way. And funding.

If I were a betting type I would place high odds that many of the sources of funding that have developed over the past few years will be cut back or eliminated. The challenges we will have to deal with are going to be far reaching. Creativity, persistence and a bit of old fashioned politicking will all be needed to keep things going. I am strangely optimistic about the upcoming period, We are a community of resourceful people and there is nothing like a strong challenge to bring out the best in clever folks.

I have to take a minute and define bookmobile. I was a bit surprised at the number of people who asked, they are still around. Bookmobile: A small public library on wheels. Contrary to the one comment I got, the bookmobile from my youth was not a horse drawn wagon, although they did exist in the past. For those of us who grew up in places with exiguous libraries the bookmobile was a source of reading material that enabled us to read about things and places beyond our experience. Thank a librarian today. And read a book.

This month, a realistic newsletter schedule, Better Buildings by Design 2011, and an interestingly delicate research commission.

This Month’s Topics: #1: What's up with the newsletter, again?

Instead of apologizing for the schedule I am changing it. The new schedule is whenever it comes out, it comes out; much like the unofficial schedule that has existed 'til now.

A major factor is that I'm facing an uncertain travel schedule. There are several people in the family who are having aging related issues. Because of the distances involved I am anticipating that there may be times when I will be gone for days at a time, it has happened already.

Those of you who have known me for a while will remember that I went through this 10 – 12 years ago with my parents so I know that it can be time consuming, and they were much nearer.

While I'm off topic I would like to urge you to remember that navigating the medical

delivery world is especially tough for elders. Doctors talk very fast and leave the room to go to the next patient, often leaving patients slightly confused and uncertain. If you have elderly friends or family who seem to be having difficulties understanding their medical care try to visit the doctor with them. It can be very comforting to have someone to help them understand and remember what gets said.

Being an advocate for someone can be just as important. We can do wonderful and amazing things with our medicines and technology, but even the most well meaning health care workers have precious little time to deliver the care part. Patients can get swept up in the health machine, sometimes it's good to have someone to step in and stop the conveyor.

Back to the newsletter. I am going to be prepared to grab my computer next time so at least I will have that with me to work with. My goal is to still get at least twelve newsletters out per year, the time distribution may not be consistent. I'm toying with the idea of starting my blog up again. I was getting a few hits and some responses and the short form is more compatible with remote publishing.

Topic #2: 2011 BBbD

Vermont felt a bit more normal this year, cold and windy and some snow on the trip up. The past couple of years were an aberration, we could walk up and down Church Street and enjoy the window shopping. This year the wind blew off the lake and imparted the proper chill.

I walked into the keynote and discovered the speaker was the gentleman we had just had breakfast with. I knew Skip Hayden of Canmet who was also at the table but although the name Bill Reed was familiar I didn't make the connection. Once the presentation began it came back to me.

I hadn't met Mr. Reed before but I have read some articles by and about him and his regenerative design concept. His talk was informative and inspirational as these things are supposed to be, but it also went that step further to be a bit intriguing. His work reminds me of a better realized approach to what we were trying to do a decade ago with the Minimum Impact Development Partnership. I suggest visiting the resources page on his website for some fascinating reading.

The session that turned out to be the most interesting? Let me paste in the description below and then I'll get into how it could have been a great session but why it was only almost great.

As of this writing I don't have the presentation slides from Efficiency Vermont so I won't attempt to give an accurate picture of the words that were spoken. The important parts were the philosophy and implications.

> **Low-Energy Design in the Northeast: How Low Can You Get?**
> *Kohta Ueno, Building Science Corporation;*
> *Marc Rosenbaum, PE, South Mountain Company*
> Presenters Marc Rosenbaum and John Straube will discuss their ideas, recommendations, and priorities for designing and building very low energy buildings, such as Passivhaus and net-zero energy homes, in the cold climates of the Northeast. How should designers and builders prioritize air sealing, ventilation, windows, renewable energy, and mechanical system choices? After Marc and John each present a short overview, they will open up the floor for questions.

First, this was meant to be a discussion between John Straube and Marc Rosenbaum over different approaches to building. Marc has been a proponent of the Passivhaus while John Straube has been known to criticize Passivhaus and promote the Building Science Corp. approach to net zero buildings. Mr. Straube was unable to make the conference so Kohta Ueno of BSC filled in.

I think some people were expecting a raging war of words given the discussions I heard in the halls. I only know Marc a bit and I don't know either John Straube or Kohta Ueno but the idea of a verbal steel cage match wasn't coalescing in my head. As it turned out it was two reasonable people agreeing that there might not be a single answer to what makes a highly efficient building. That may sound anticlimactic but it was an engaging session.

Kohta started with the type of analysis that we have come to expect from BSC, thorough and well presented. There was a very interesting bit about the benefits of high performance windows that I need to follow up on. And of course there were references to payback (or was it ROI?) and you all know how I feel about that! Some of the charts did dig deeper, well beyond simple payback, and are useful enough that you should all take a look at his slides.

My usual disclaimer; the people who prepared and presented the material are very generous in posting them without major restrictions. Please follow their guidelines for use, it's only polite.

It was the first point in his last slide: `*Any building is a set of allocation of a limited set of resources—financial, societal, etc.*' that reminded me that I will never resolve my own conflict between dislike of payback as a metric and my dislike of overpaying for anything.

So now I was into philosophy, which of course is a good starting point for Marc's section of the session. One of the things I have always enjoyed about Marc is that he makes it clear that the underlying philosophy of what we do is at least as important as how we do it. He can dig into the weeds with the best, but I don't recall an instance of him neglecting the why part of the equation.

I don't have Marc's slides as of this writing, so any "mis-rememberin'" is on me. As I recall he ran through some design points, much as Kohta had, focusing on passivhaus principles. The two talked back and forth about particular design points, not contentiously but just sharing ideas and reasoning. The things I remember as important were Marc's comment about one benefit from passivhaus being an expanded group of people who know how to build super efficient buildings. The other important point (to me) was that Marc was willing to concede that there are imperfections in the passivhaus system. In other words he doesn't see it as a religion, which some proponents seem to. It is simply a set of guidelines.

A significant amount of time was left for Q&A and this was the part that fascinated me. What Kohta and Marc had presented was, to my mind, largely about philosophy and some really minor differences thereof. The questions were mostly about technical details. How do you get to R-60 in such and such a structure? What is the best piece of equipment to do 'X'?

My favorite was a question about the superiority of geodesic domes for minimizing heat loss from air flow over the surface. I had a momentary flashback to the early 70's, then Marc handled the question by pointing out that if you have an R-40 wall the theoretical (R-0.1?) gain wasn't a major player. Reminder, keep your toes at least pointed toward reality.

What was I disappointed in? The quick retreat to the technical. Most of us in this business

tend to lean toward the nuts and bolts. Flashing details, spreadsheets and R values are comforting and safe. Determining the value to society of those things is not.

We definitely need to get the details right. But the good news is we have a pantry full of ingredients that we can put together to create good buildings. It would be nice to continue to expand that pantry but we don't need to starve at this point.

The real challenge is to spread the why, the philosophy. We go to conferences like BBbD for the technical, and it is so important to make sure we understand the things we do. We need to know what ingredients combine well and which don't. But we still need to get people to consume what we make. There is a reason that most restaurants don't put recipes on their menu. I'll order deep dish apple pie with tender crust, but flour, salt, water, apples, sugar etc baked at 375 for 45 minutes? Probably not.

Maybe there should be more instruction at these conferences about the why. Who else but us, this small community of building geeks, is going to spread the word. If we aren't able communicate to the world beyond our customers and ourselves we will soon run out of customers. That's not sustainable.

Topic #3: The wonders of misc.

Just a few items that I wanted to put out there. I recently got an oddly interesting request. A client who is planning a major rehab/deep energy retrofit handed me a thick folder of information and asked if I could do a little additional research and "clarify" a few points. The question is the relative environmental impact of choosing, ahem, bathroom tissue or a bidet. My first reaction was to feel a bit like Marv Throneberry in the old Miller Lite ads, "I don't know why they asked me to do this". But given a budget big enough to do some work, although probably less than I really need, I have agreed to take a shot. The papers that were given as a starting point are somewhat vague. I hope that there has been some good work done, although my task is to focus on a specific community, which helps. If I come up with any startling conclusions you will hear about it.

Speaking of flashbacks to the 70's. I have a foolish idea to deal once and for all with my rubble foundation. Rather than the implements of destruction suggested by a structural engineer (Note, if you want to give a structural engineer ulcers ask them to help with a building rehab on a rubble foundation.) I need to reinforce and insulate as well as deal with the water. I could go the spray foam route but that is so common, where's the fun in that?

I have the water details figured out. Even the tricky part in the corner where the ledge protrudes in. The big thing is the huge irregular stones and the need to minimize further intrusion into the floor space because of the mechanical equipment needs.

My plan was to first pour concrete to create a fairly regular surface, add rigid insulation and parge it for fire protection. But being greedy I would prefer something with better insulating performance than regular concrete. My concept is to grind up styrofoam packaging to use as aggregate in the concrete. This is done with manufactured styrofoam pellets. You can buy blocks and wall sections from an outfit in the southwest.

Since the concrete will not be structural I'm not concerned about strength. My question is how do I grind the styrofoam? I have considered a leaf shredder or a string trimmer, but

neither seems ideal. I'm looking for ideas, I need to get the pieces down to 1 – 1 1/2" max sounds right. Remember, If I wasn't doing stupid things like this I'd end up as a bank robber or some other productive member of society.

Blatantly Commercial Content:

I do have to justify the time spent on this effort, so I am charging myself an exorbitant fee to sponsor this newsletter. I get one ad per newsletter and free coffee refills in the kitchen.

Business update: I continue to do a mix of residential and commercial energy consulting work; I'm looking for more of both. Please visit my website, http://www.buildingdiagnosticsnh.com/ for information on my capabilities and background.

I'm still always on the lookout for a good stinker of a building. Actually when someone calls and says "My building smells bad" I really get interested. So whether a bad smell or just too much energy use, give me a call.

Closing thoughts:

As mentioned above, I need feedback for this little venture to succeed. I would like to include notices for events that relate to energy, the environment and community building, so if you have any announcements please send them in to newsletters@buildingdiagnosticsnh.com. I also welcome rebuttals and amplifications for anything I write.

Please forward this to anyone who you think would like it, if you don't like it use the email address above to unsubscribe.

Thank you, I'll see you soon.