

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius – and a lot of courage – to move in the opposite direction." Albert Einstein

December 2010 Newsletter from Building Diagnostics

Welcome to the November newsletter. Perhaps I should call this the October/November/December issue since I never got one out the last two months. The return of rain to cause water problems and the cool weather triggering the heating systems made for a busy very couple of months. I think there will be a December supplement within a couple of weeks.

While I don't plan on getting into politics in any serious way and I certainly am not going to be endorsing anyone for office I do have a special political honesty award for this election cycle. I hereby do declare that for clarity of message and ability to stay on point no matter what the question, [Jimmy McMillan](#) wins the 1st (and last?) Bill Smith one issue candidate prize.

The prize consists, in it's entirety, of the preceding paragraph.

There are several topics this month, a lawsuit against LEED, a short vehicle review and to start, a different way to think about the cost of energy efficiency.

This Month's Topics: #1: Who cares about payback?

One of the things I do almost everyday is help people figure out simple payback on energy efficiency measures. And every time I do it I grit my teeth. We are taking something with strong benefits to our comfort and well being, to the economy and to society in general and measuring it with the narrowest tool we can find.

I've been trying out some different approaches to use in discussing the benefits of energy efficiency. A few are below and of course any suggestions would be welcomed and shared.

Of course there are the not so successful attempts too. I thought I was on to something when I tried a stock market analogy. It's not entirely bad, when you buy a stock you expect to make a profit but not 'til you sell it, like your house. You can buy stocks that cost more but pay dividends, I guess that's like investing in energy savings. But it still was too directly related to payback and I really wanted to get away from that. So on to the ones that worked better, although they still need work.

First the most obvious, comfort. We spend a lot of money to make ourselves comfortable. Most of that is closely related to our physical well being. We need to be warm and reasonably dry to live. So I think that it is fair to say that a building that triggers our cold response (shivering) is not fully meeting our survival needs. So what is the payback on not freezing to death? Is it more or less valuable than not dying of pneumonia?

To take this a bit further how long should our shelter keep us warm? If we can stay warm for 24 hours instead of 6 is that worth say a thousand dollars? How about ten thousand, or how much for 48 hours? I guess that if it's about 10° F and snowing a blizzard and you have

just lost your ability to add heat to your home you might value that feature more. That might be worth a lot more to you than saving a few hundred dollars per year on your energy costs.

I think the benefits to the economy should be fairly evident. We import most of our energy, so if we use less we keep more money in our own economy. The less we use the more viable renewables become and renewables can be and usually are local or at least regional.

So why isn't energy efficiency a basic need like shelter? What level of shelter do we decide is the right level of protection? We moved out of the trees and caves a very long time ago, should we take another step and have shelter that provides a survivable environment when we are not able to constantly add fuel to the fire?

None of these arguments are perfect and neither are they pithy. We all like short clear declarative statements to frame our viewpoints and these clearly need help in that direction. If you put some effort into it I'm sure that a lot of you could find ways to clarify my arguments and come up with your own. Let me know if you have any ideas on the subject, we need to expand our thinking on this a bit.

For now I'm trying to avoid, the few times I can, delivering a heavily ROI type of report. Most people still want it even when they say they understand the "beyond cost" benefits. I think that calculating heating and cooling loads is worthwhile but projecting usage on an individual building basis is a step down the slippery slope.

One of the ways I go about this is to ignore energy efficiency. I deal with building quality, with moisture, comfort, IAQ, temperature stability, safety and durability. If you really optimize a building for all those things energy efficiency becomes a happy byproduct. After we have gone through and made decisions about all these things I can announce that, by the way, you will also reduce your energy use.

I try to remember to use the phrase "reduce energy use" instead of save energy or save money. If you've done a good job selling the benefits of the other issues any financial benefits are merely icing. If you can only sell something based on the lowest cost doesn't that make you Walmart?

Topic #2: LEED gets sued

This is hardly news at this point, the lawsuit was filed on October 10th and the comments have been raging, often quite literally, since. The plaintiff, Henry Gifford, is a long time critic of LEED and wrote a piece (itself of questionable merit) a couple of years ago that looked at another study and determined that LEED buildings use 29% more energy than other buildings. The claims in the lawsuit are quite wide ranging including antitrust violations, wire fraud and RICO violations. The lawsuit is available in pdf format in several places, I'll direct you [here](#).

There are some valid and important issues raised in this suit and the [USGBC](#) (LEEDs parent organization, the United States Green Building Council) definitely has some weaknesses and some major blind spots. I myself am a frequent LEED critic and find the whole program bloated, bureaucratic and lacking real world validity. But even so I think this lawsuit is just a publicity stunt by someone who is acting like a spoiled child who isn't getting all the attention he thinks he deserves.

Henry Gifford is a guy who knows as much about large scale heating systems as anyone. I have seen him speak a few times over the years and he is bright, knowledgeable and holds some pretty strong opinions. All the more remarkable is that he gained this knowledge by running a heating service company. He spent many years as a grunt in the boiler rooms of NYC. You have to respect a person who is so into his work that he takes it to this level. He could have been a very successful, if anonymous, technician but on his own he learned the details and quirks of these ancient systems better than anyone else.

Unfortunately he has also developed a bit of a chip on his shoulder. He is not an engineer so he can't take credit for the systems he designs. That is a theme in his presentations. He has also elected not to get a LEED AP designation so he feels that he is further shut out of work on LEED projects. Now he has taken some true and valid criticisms of the LEED process, rolled it together with his own sense of dismissal by "the system" and turned it into a legal matter. It's too bad because there are some needed challenges to the USGBC contained in the lawsuit. They just get obscured by all the personality issues that are driving this effort.

The USGBC has taken some steps to improve LEED (when I'm referring to LEED in this context I am primarily talking about LEED for new construction which is aimed at the commercial new construction market) by including some post construction monitoring of energy use among other tweaks. The basic problems with LEED go beyond a few teaks in my opinion. I think the concept of a points driven rating system that is applied to buildings around the world is flawed. Perhaps flawed to the point that it may be doing little, if any, good.

My primary concern with LEED is that too often it is used not to measure the quality of a building but as a quality of the building. I think that leads to significant misapplication of time and resources of design team members. Time spent chasing points rather than perfecting the building is a sad thing to see.

But I am quickly digressing. I may take on LEED in more detail in the future, but this is about the current lawsuit. I am afraid that instead of being a legitimate look at the short comings of the system, this is an exercise in ego boosting. Just because you take on the biggest guy in town doesn't mean you are the best fighter. I'm afraid that Mr. Gifford will get enough notoriety to win him a few fans and leave the underlying issues to continue.

Topic #3: A van review

I get a lot of questions about my new van (well, new *last* December) so I thought a quick review of the good and bad points of the vehicle might be in order.

The van is a [Ford Transit Connect](#), a vehicle that has been sold in Europe for many years. Ford began importing them from Turkey in the summer of 2009. When I bought mine in late December about 4,000 had been sold nation wide. I assume that the sales have picked up since because I see them regularly on the road.

When I purchased mine the choices were a van and a wagon. The difference, the wagon had glass in the rear and side sliding doors standard and a second row of seats behind the driver. The trim level differences were and are fairly small. I ended up purchasing the wagon

because I wanted the glass and the stability control and it cost a lot more to get them on the van. A note, the glass in the back doors is only marginally useful because of the wide pillars where the doors meet. It is possible to lose a good sized vehicle in the center blind spot.

The basics, the TC (as Ford wants you to call it) is built on the Ford Focus platform, the major difference is that the TC has a much different rear suspension to handle the extra load. The engine is a 2.0 liter 4 cylinder gasoline unit with a 4 speed auto/overdrive transmission the only choice. There is now a conversion kit available for either compressed natural gas (CNG) or liquid propane (LPG). Fleet buyers have access to an all electric version, but it is only designed for city deliveries, no extensive highway use intended.

Payload is an impressive 1600 pounds and access is great. Between the double swing open rear doors and the two sliding side doors you can reach anything in the vehicle easily. The cargo area is only 6' so this is not a lumber hauling machine. It is 4.9' wide and 4.7' tall so there is a lot of room, even with the short length.

Enough specs, check the website above if you want more. How is the thing to drive and work out of? Is it the best thing to hit the shores since the Mayflower? (OK, that's possibly a bad comparison.)

I find it comfortable to drive and visibility is good to the front and sides, the rearward visibility leaves a bit to be desired. I see that a backup camera is available now, probably a worthwhile investment. My wife finds the passengers seat comfortable. We drove it to Burlington Vt last year with no complaints. Caveat here, I do not drive "upwardly mobile" vehicles, so my expectation of comfort may be different than yours. The drivers position is a little snug but not claustrophobic. Most things can be reached or seen as needed, although the cup holder is too far back in the console for convenience.

You will not win any races. I am not noted as a lead foot (ignore the "drive fast" playlist on my Ipod) so I have no complaints. Hills are more of a challenge than they should be. The Europeans can purchase a diesel engine that has much higher torque and gets about 35 mpg. I was told that there is no intention to bring that to this country even though it meets the latest emission standards. My mileage so far averages out to 24.2 mpg. Hardly earth shattering but about the same as I would have gotten with a minivan. Interesting point is that there is little difference between in town and highway mileage. I guess the high profile makes that much of a difference.

Before I bought it I hit the message boards and found people who were familiar with the vehicle in Europe. It has been sold in it's present form for about 5-6 years so there were several people who were glad to share opinions. All rated it high for reliability and several even called it fun. One gentleman in Ireland who had driven both the diesel and gas versions said that the gas version would satisfy people who never driven the diesel.

Now a bit more on the driving experience. Maneuverability is excellent, the TC looks large but it fits into some very small spaces. Parallel parking is easy as with any short vehicle. I have a tendency to over estimate the width, the right side is closer than you think. The first couple of months I was parking a foot away from the curb.

For a tall vehicle it does well in winds. You will definitely notice them but I have never felt that I couldn't control it. In normal driving it is stable and calm. I don't have enough experience in snow and ice with it to make any real judgements on that score. I haven't had

to do an emergency stop and have only had to make a few swerving maneuvers which were not alarming.

All in all I like the TC. It is still a bit of a novelty so it gets noticed and elicits comments. The radio is adequate although the speakers (as in most small vehicles) leave a bit to be desired. Oh, the radio is a digital receiver which was a surprise to me. The display started telling me what was playing on the radio as well as the stations promotional blurb. The specs don't mention this at all.

If you are looking for a small vehicle that will carry lots of stuff, although slowly, the TC might be right. If you want to put signs on there are large prominent panels at the rear sides which should be quite visible. The platform has a good track record for reliability and it cost several thousand less than a minivan would have. The mileage leaves a bit to be desired although I couldn't find a vehicle that would carry all my stuff (the four blower door fans being the big space requirement) that would have done better. So I would count myself as quite satisfied but not head over heels.

Energy tips:

HO HO HO! Yes, it's Christmas time again. For many years I grumbled as my wife put lights on the tree and house. A few years ago I brought home three strings of LED lights and strung them on the porch. My wife looked at me like I had lost my mind. When I got out my watt meter normality resumed, I was checking energy use.

I plugged the three strings into the meter and measured a total of 13 watts, several watts less than the specs even. I was pleased and then I went to the Christmas tree with it's old mini lights. I don't know how many strings were on the tree but they totaled about 300 watts. Even my wife agreed that that was a lot of energy.

A few days later she came home with a bunch of white LED strings for the front of the house. I put them out, checked the wattage (about 20 as I recall) and all was good. Until the sun went down. The lights had a strange bluish white color that even I had to admit was horrid. Once again they came down and got returned but we had a very Scrooge worthy house, according to some in the family.

Eventually warm white versions showed up on the market and all was well again. For the past two years we have been 100% LED and of course I have been measuring. Last year our 20 strings had a total consumption of 19.2 kilowatt hours over a period of 45 days (my wife doesn't give up her Christmas lights easily). I know that it is still more usage but at least it isn't as much as the [show](#) my brother-in-law took us to a few years ago.

So as a reformed Scrooge I encourage you to get out and celebrate the holidays. Holiday lights serve to provide a little cheer during these short days and keeps us from going completely off the deep end. So if you want to decorate for the holidays just do it responsibly and please, please keep the music to a tolerable level.

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 next month.