

Making the AEC case for 'green'

Thomas Friedman said it best in his latest bestselling book "Hot, Flat and Crowded": "America has a problem ... and the world has a problem."

"America's problem is that it has lost its way in recent years ... bad habits have weakened our society's ability and willingness to take on big challenges." Furthermore, he states, "The world also has a problem: It is getting hot, flat and crowded. In particular, the convergence of hot, flat and crowded is tightening energy supplies, intensifying the extinction of plants and animals, deepening energy poverty, strengthening petro-dictatorship and accelerating climate change."

Grim words, without hope, for those who would say "It is out of my hands" or "There is nothing I can do" or "I can't understand it." Paralysis is the result.

It is important to continuously point out, bickering and finger pointing aside, as we discover the true cost of energy and assign appropriate costs to that energy that energy costs *will* rise. Also, on a global scale, as the middle classes in emerging countries aspire to higher standards of living, the global demand for energy (and all resources) will rise, forcing dramatic increases in the cost of energy for all. We can't drill or mine or pipeline our way out of this one! Energy costs will surely rise by double digits annually for years to come.

Those of us in the architecture/engineering/construction community enjoy the privilege of knowledge through trade publications, continuing education and industry product channels, and so hopefully we understand that our industry is changing rapidly. The question is, can we as an industry or sector be catalytic or are we part of the quagmire of "same old, same old"?

As a major component of American industry, the Architecture,

Engineering and Construction (AEC) community has a great opportunity to seize the moment and take a commanding role in what Friedman calls "the task of creating the tools, systems, energy sources and ethics that will allow the planet to grow in cleaner more sustainable ways." One of the best ways is to embrace the U.S. Green Building Council's LEED rating system as the way we view all projects and assignments. The USGBC is a national organization that has created a progressive rating system for new and existing buildings of all types. Every LEED credit in the rating system concerns itself with essentially one of three things: reduction, reuse and recycling.

Breakell Inc. knows firsthand, having built the first LEED-certified building in the Roanoke Valley, that doing something differently is not the path of least resistance. We at Breakell Inc. have gone on to successfully construct the Blacksburg Motor Co., a LEED Platinum building candidate, for the Town of Blacksburg. This was not easy either, but as we stair-step our way toward higher and higher performance buildings, it gets easier and we note the following:

- The relationship between the owner, the designer and the contractor becomes much more collaborative.
- The individuals on the project team are more engaged – teamwork is a good thing! The result is a high-quality product for the owner. Also the construction team learns by doing the best practices in design and construction.
- The value to the owner at



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ribbon-cutting is greatly enhanced. The public perception is universal: Green buildings are good!

- The building owners and the building inhabitants, enjoying a healthier and more efficient building, take to and from work every day an improved outlook and a better appreciation of what a sustainable and healthy building means.
- The owner knows by virtue of detailed energy modeling done before construction, and verification afterward, that he has made a wise investment in energy-saving technologies and can take comfort in the fact that his investment has afforded a hedge against the inevitable future energy cost increases. Also, worker productivity gains (well documented in healthy buildings) contribute in subtle ways to the bottom line.

The new LEED 2009 rating system has placed greater emphasis on energy reduction and continuous energy performance reporting with strengthened credits for energy reduction, measurement and verification and, in some cases, continuous commissioning. These credits will push designers to include highly customizable and transparent energy monitoring systems in new and existing buildings. At Breakell Inc. we have installed such a system – building energy data collection, storage and reporting – so that it is accessible via the Web and is available for management, employees and visitors to see on a real-time basis. Buildings should be able to communicate their energy usage and history, enabling the building owner to discover energy waste and to allow for fine-tuning of all energy systems. If you can't measure it, you can't control it! After working

with ourselves and clients, we have discovered that the best return on investment comes from increased awareness and changed habits, so to this end we have embraced energy audits, building energy modeling and energy reporting as must-haves in design-build work. As Friedman says, this is the intersection of ET (energy technology) and IT (information technology). What's next? A LEED Platinum building for downtown Roanoke and a Net Zero Energy building – stay tuned!

America's energy problem and the world's hot, flat and crowded problem can be solved and it can be solved by Americans. (Remember us? We put a man on the moon!) How can we in the AEC community be part of the solution?

Building owners: Demand excellence in energy efficiency.

Architects and engineers: Become advocates and demonstrate return on investment for your innovative offerings so that owners can make intelligent choices.

Governments: Continue to provide incentives and lead by example in all that you do and build.

Contractors and subcontractors: Go back to school, understand LEED, Energy Star, etc. You cannot survive with last-decade attitudes and technology. Become an advocate – don't be an order-taker.

The question remains: Can we as an industry be catalytic or are we part of the quagmire of "same old, same old"? What is your answer?

(Stan Breakell is CEO of Breakell Inc. General Contractors which in addition to commercial and industrial construction has an Energy Management division and an IT division and is a Microsoft Gold Certified Partner. Breakell is an Energy Star Partner and an Earthcraft Certified Builder and presently has 8 LEED APs on staff.)