# DOVETAIL COMMENTARY

## Green Building Can Do Better – A lot better

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The growth of green building is great news for society as well as for those specific individuals who benefit from living in a home designed with both their needs and the environment in mind.

Yet:
- IF green building is going to be the focus of future construction activities, and
- IF the US government is going to provide incentives that facilitate the development and expansion of this market, and
- IF we are going to consider this a major component of our overall sustainable strategy for the future,
- THEN it is critical that those practices we emphasize truly have the impact we are seeking.

In several critical areas this has NOT been the case over the past thirty years.

During the energy crisis of the mid 1970's citizens were reminded to a) turn down their thermostats, b) turn off the light when leaving a room and c) increase the amount of insulation in walls, attics, and around critical areas like water heaters. Sound familiar? In addition, initiatives were begun to increase the energy efficiency of autos and appliances. Again, sound familiar? But what has been the actual net impact of these activities on energy consumption?

According to the Energy Information Administration of the US Department of Energy, since the mid 1970's emphasis on energy efficiency…

- Total energy consumption (measured in Btu's) is up about 50%,
- Coal consumption (measured in short tons) has doubled,
- Electrical consumption (measured in kilowatt-hours) has doubled, and
- Oil consumption for transportation has doubled.

The common argument is that "it's a good thing we made all those improvements, or the situation would have been much worse." Is that really true though? The real answer is we just don't know, because we did do them and we do have the result we have. ***However, what is clear is that addressing energy consumption through energy efficiency efforts has resulted in the fact that we use more energy today than ever before, both in total and on a per person basis.*** As a simple very visible housing example, prior to the mid 1970's the most common electrical entry panel in the U.S. was a 60 Amp service. Today it is at least 200 Amp!

A review of the impact of recycling shows a similar story. The volume of materials recycled has grown dramatically over the past few decades as have the critical markets for those recycled materials. But considering plastic water bottles specifically, in 1997 we used about 3.5 billion water bottles in the U.S., and 31% or about 1 billion were recycled. This means about 2.5 billion

plastic water bottles were making their way to landfills. Ten years later the recycling of water bottles had increased to the point that almost 6.0 billion water bottles are being recycled annually. Unfortunately, usage of water bottles had grown to almost 27 billion bottles! This means over 20 BILLION bottles are finding their way into landfills or on waysides somewhere. So the amount being thrown away is growing faster than the amount being recycled!

If this problem is examined from a consumer behavior point of view there appears to be a pervasive assumption that things offered for sale are environmentally acceptable, probably recyclable, and certainly don't present a problem (otherwise they wouldn't be on the market) . This, of course, simply isn't true.

So, it might be said that one of the unintended consequences of recycling is that people appear willing to buy more recyclable materials (e.g. plastics) because they can justify their behaviors on some misty belief that "it is all getting recycled anyway." Similarly, people appear willing to continue poor energy consumption patterns based on a misperception that somehow higher energy efficiency justifies that behavior.

*It is absolutely clear that mitigation-based approaches such as recycling and energy efficiency are ineffective in changing overall consumption patterns.* Thus, if green building programs are really going to deliver what they promise – dramatically decrease the environmental impacts of building construction and operation – they need to promote measurably reduced consumption of materials, energy and water rather than rewarding systems that simply minimize increases in poor behavior. One simple approach would be to award points on a more holistic approach based on absolute inputs rather than rewarding the details. Such a performance-based system would reward points based on clearly measurable objectives, e.g. the total kilowatts of electricity or volume of water used rather than the kind of light bulb or toilet installed.

To be successful, green building programs need to be accountable for actual changes in the behavior patterns of the population related to buildings. From the *accompanying article about the carbon footprint of the U.S.* it can be seen that there are some real low hanging fruit - meaning that there are many countries with higher standards of living that engage in behaviors that use less energy and have fewer impacts on the environment, and can act as models for success. IF, we can hold ourselves accountable with the aid of green building guidelines, then the result could be buildings more in synch with their environment and dominantly self-sufficient with local resources. The result would be real change, and we won't be looking back in another thirty years saying, "well sure it's bad, but it could have been so much worse," …again.

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