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## Conserving brick by brick

By James Batchelor | March 10, 2007

WITH ALL THE alarms occurring over global warming, most people focus on cars as the leading source of heat-trapping carbon emissions and too-high energy consumption. They're wrong. It's buildings.

The consequences of building decisions last much longer: While cars are likely to be off the roads after 10 years, buildings last 50 years or more. Not to let the auto industry off the hook, but we should look harder at where we live and work.

The public has been tracking mileage ratings for cars for about 35 years. The surge in sales of hybrid cars, especially the Toyota Prius, provides a telling indicator of rising concern.

Yet today, buildings in the United States account for about 46 percent of emissions. The EPA finds that residential and commercial buildings account for about 40 percent of energy consumption. When industrial buildings are included, that figure rises to almost 50 percent. Electricity consumption is even more skewed toward buildings. More than three-quarters of electricity consumption takes place in buildings.

Unfortunately, approaches to design and code requirements fall far short of what is possible. The building sector provides an opportunity for substantial improvement.

The improvements are affordable. Their payback periods are relatively short, and they are essential elements in efforts to counteract the forces of climate change. The money saved in conservation returns to the economy. The money spent to achieve the savings is likely to go into goods and services, creating jobs.

Witness, for example, a South Boston-based non profit group (Artists for Humanity). Operating on a very tight budget, it built a building that reduced energy use by 76 percent compared with similar buildings designed simply to "meet the code." Another not-for-profit, the Codman Square Neighborhood Development Corporation, cut its energy use by 45 percent when it built its Erie-Ellington affordable housing in Dorchester.

In single-family home construction, strides are being made with the development of Energy Star Homes, with some exemplary buildings achieving an 80 percent reduction of what current energy codes allow.

As understanding grows, leadership is emerging. Mayor Thomas Menino recently announced a new section in Boston's zoning ordinance that will, when adopted, encourage energy conservation along with other aspects of sustainable and green design. The new ordinance is modeled after the LEED (Leadership in Energy and Environmental Design) standards that the US Green Building Council has authored.

But critics point out that in order to address the threat of climate change and reduce our dependence on oil, everyone, even the authors of LEED, must refocus their priorities.

At a conference next week in Boston, Ed Mazria, an architect and author based in Albuquerque, will challenge Boston to line up with other cities around the country that have committed to increasing energy conservation in new buildings (and renovations) to get down to 50 percent below typical, current energy consumption levels.

Mazria and his "Architecture 2030" challenge raise the ante over time -- increasing that standard every five years. Were those goals to be implemented, then in 25 years every newly built and renovated building would be carbon neutral. That outcome would provide a substantial weapon in the fight against global climate change.

Of course, there will be predictable hurdles for this proposal. Even as the early years' goals will seem plausible

to some builders, the progressively higher goals of subsequent years will seem out of reach to many.

Ultimately, bringing the construction sector into this climate struggle is imperative. It is useful to recall that, as nebulous and complex as matters of climate can seem, the depletion of the ozone layer seemed daunting when it came to everyone's attention in the 1980s. That problem has been redressed. Energy conservation and carbon reduction may be a tougher challenge than cutting out the use of certain chemicals in the solvents and refrigerants we use to protect the ozone layer. But the need is at least as great, and some means are within reach.

James Batchelor is president of Arrowstreet, the architects for Artists for Humanity EpiCenter in Boston. ■

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