

Historic Preservation and Sustainable Development

New Brunswick

June 6, 2008

Donovan D. Rypkema

Thank you.

Pamela Cunningham, founder of the Mount Vernon Ladies Association – the origin of historic preservation in America – it's her fault. As preservationists, we've been too damned polite. So I'm leaving that genteel perspective; this is not going to be a polite presentation.

There was a Broadway producer who told an aspiring playwright, "If you can't write your idea on the back of my business card, you don't have a clear idea."

So I'm going to begin by giving you this entire presentation at a length you can put on the back of your business card.

1. Sustainable development is crucial for economic competitiveness.
2. Sustainable development has more elements than just environmental responsibility
3. "Green buildings" and sustainable development are not synonyms.
4. Historic preservation is, in and of itself, sustainable development.
5. The EPA should be abolished

That's my presentation – everything else I say is just fill.

I'm fortunate that much of my work in the recent years has been international. What I've discovered is this: much of the world has begun to recognize the interrelationship between sustainable development and heritage conservation.

Much of the world, but much less so in the United States. Far too many advocates here far too narrowly define what constitutes sustainable development.

Here's an example.

In Boulder, Colorado, a homeowner in a local historic district applied to paint the windows on his house and approval was given that day. Two weeks later the Landmarks Commission learned that the historic windows had all been removed – a clear violation of the local ordinance – and had been replaced with new windows. This was done by a contractor who bills himself as "Boulder's greenest contractor."

The staff sent a letter directing that the original windows be retained and their condition documented. The contractor responded saying the greater energy efficiency of the new windows should outweigh regulations that apply in historic districts. A Commission

hearing upheld the staff position and the City Council supported the Commission's ruling.

Here's the next chapter – a reporter for an alternative newspaper decided to take matters into his own hands. He went to the house, picked up the historic windows, took a sledge hammer to them, took them to the dump and arranged to have a bulldozer run over them – civil disobedience for an 11 year old's mentality.

I'm telling the story to demonstrate our ignorance about what sustainable development really is.

From an environmental perspective:

1. The vast majority of heat loss in homes is through the attic or uninsulated walls, not windows.
2. Adding 3 1/2 inches of fiberglass insulation in the attic has three times the R factor impact as moving from the least energy efficient single pane window with no storm to the most energy efficient window.
3. Properly repaired historic windows have an R factor nearly indistinguishable from new, so-called, "weatherized" windows.
4. Regardless of claims about 30 year lives, thirty percent of the windows being replaced each year are less than 10 years old, and many only two years old.
5. One Indiana study showed the payback period through energy savings by replacing historic wood windows is 400 years.
6. The Boulder house was built over a hundred years ago, meaning those windows were built from hardwood timber from old growth forests. Environmentalists go nuts about cutting old growth forests, but what's the difference? Destroying those windows represents the destruction of the same scarce resource.
7. The diesel fuel used to power the bulldozer to run over the windows, in all likelihood consumed more fossil fuel that would be incrementally saved over the lifetime of the replacement windows.
8. Finally, the energy consumed in manufacturing vinyl is 40 times more than in producing wood. And if they were aluminum windows? 126 times more energy used.

The point is this: sustainable development is about, but it not only about, environmental sustainability. There is far more to sustainable development than green buildings.

- Repairing and rebuilding historic wood windows would mean the dollars were spent locally instead of at a distant window manufacturing plant. That's economic sustainability, also part of sustainable development.
- Maintaining the original fabric is maintaining the character of the neighborhood. That's cultural sustainability, also part of sustainable development.

Here's another example. In the *Washington Post* recently was an article about firms providing recycled materials to reincorporate into house construction. This, of course, received the adulation of environmentalists. The president of one of these firms was

quoted, “We have never cut down a tree to make our product. It’s all from 100 percent reclaimed wood.”

Now what could possibly be wrong with that? Here was the next paragraph. “...the wood averages 100 to 600 years old and comes from barns, ancient temples, buildings and schools around the world, including countries as far away as China.” So tearing down 600-year-old temples in China for some McMansion in northern Virginia is sustainable development? I beg to differ. And the excuse that “well, we didn’t tear down the temple, we just bought the wood” is no more legitimate than saying, “We didn’t kill the elephant; we just bought the ivory after it was already dead.”

But if we don’t yet get it in the United States, others do. There’s an international real estate consulting firm based in Great Britain – King Sturge – that has been at the forefront in broadening the concept of sustainable development. Their framework of sustainable development certainly includes environmental responsibility but also economic responsibility and social responsibility. I’m going to expand the third category into social and cultural responsibility.

They further identify these important nexus: for a community to be viable there needs to be a link between environmental responsibility and economic responsibility; for a community to be livable there needs to be a link between environmental responsibility and social responsibility; for a community to be equitable there needs to be a link between economic responsibility and social responsibility.

When we think about sustainable development in this broader context the role of historic preservation becomes all the more clear – and includes more than simply, “Does this building get a LEED gold certification” or “Is that development protecting snail darter habitat?”

Think of the simple area of solid waste disposal. Solid waste disposal is increasingly expensive both in dollars and in environmental impacts.

So I’ll put it in context for you. We all diligently recycle our Coke cans. It’s a pain in the neck, but we do it because it’s good for the environment. Here is a typical building in your downtown – 25 feet wide, 120 feet deep. Today we tear down one small building like this in a New Brunswick neighborhood. We have now wiped out the entire environmental benefit from the last 1,344,000 aluminum cans that were recycled. We’ve not only wasted an historic building, we’ve wasted weeks of diligent recycling by the people of this community. And that calculation only considers the impact on the landfill, not any of the other sustainable development calculations like the next on my list – embodied energy.

I hadn’t paid much attention to embodied energy, not until I saw oil hitting \$70 a barrel, and oil prices have doubled since then. *Embodied energy* is the total expenditure of energy involved in the creation of the building and its constituent materials. When we

throw away an historic building, we are simultaneously throwing away the embodied energy incorporated into that building.

The “green building” movement focuses on the annual energy use of a building. But energy embodied in the construction of a building is 15 to 30 times the annual energy use.

Razing historic buildings results in a triple hit on scarce resources. First, we are throwing away thousands of dollars of embodied energy. Second, we are replacing it with materials vastly more consumptive of energy. What are most historic houses built from? Brick, plaster, concrete and timber. What are among the least energy consumptive of materials? Brick, plaster, concrete and timber. What are major components of new buildings? Plastic, steel, vinyl and aluminum. What are among the most energy consumptive of materials? Plastic, steel, vinyl and aluminum. Third, recurring embodied energy savings increase dramatically as a building life stretches over fifty years. You’re a fool or a fraud if you say you are an environmentally conscious builder and yet are throwing away historic buildings, and their components.

Put it a different way – if you have a building that lasts 100 years, you could use 25% more energy every year and still have less lifetime energy use than a building that lasts 40 years. And a whole lot of buildings built today won’t last 40 years.

Construction debris constitutes a third of all waste generated in this country, and the EPA has projected that over 27% of existing buildings will be replaced between 2000 and 2030.

So you would think that the EPA would have two priorities: 1) make every effort to preserve the existing quality building stock; and 2) build buildings that have 80 and 100-year lives, as our historic buildings already have.

Instead, they are sponsoring a contest to design buildings that can be taken apart every couple of decades and reassembled. I’m all for reusing building materials when structures have to be demolished, but to design buildings to be taken apart like Legos is to consciously build in planned obsolescence, and planned obsolescence is the polar opposite of sustainable development.

My technical background is as a real estate appraiser. In the appraisal field, there is the concept of functional obsolescence. Functional obsolescence is when a building no longer meets the utility demands of the marketplace. Functional obsolescence is real, but for many developers, real estate owners, and architects the response to functional obsolescence is demolition. But the alternative response to functional obsolescence, the environmentally responsible response, is adaptive reuse. Functional obsolescence represents the loss of utility; adaptive reuse is the reinsertion of a new utility into an existing building.

But I've allowed my detour about functional obsolescence take me away from the EPA so I want to return there for a moment. Here is this federal agency that is supposed to be our country's lead entity for fostering sustainable development. In 2006, they issued their strategic plan, complete with goals, objectives, and measurements – 188 fact-filled pages. How many times was the phrase “sustainable development” mentioned? Exactly twice – both times in footnotes. Once because a document they cited had “sustainable development” in its title and the other because the database they referenced came from the UN's Division for Sustainable Development. How can you be the agency responsible for sustainable development when “sustainable development” never appears in your strategic plan?

By the way the number of times that “historic preservation” was mentioned? Zero.

Within the plan, the EPA has an element one construction and demolition debris. The objective is “Preserve Land” and the sub-objective is “Reduce Waste Generation and Increase Recycling.” But they have missed the obvious – when you preserve a historic building, you *are* preserving land. When you rehabilitate a historic building, you *are* reducing waste generation. When you reuse a historic building, you *are* increasing recycling. Historic preservation is the ultimate in recycling.

At most perhaps 10% of what the environmental movement does advances the cause of historic preservation. But 100% of what the preservation movement does advances the cause of the environment.

You cannot have sustainable development without a major role of historic preservation, period. It's about time preservationists start hammering at that until it is broadly understood and quit being polite about it.

The closest thing we have to a broad-based sustainable development movement is *Smart Growth*. There is no movement that enjoys more widespread support across political, ideological, and geographical boundaries than does *Smart Growth*. Democrats support it for environmental reasons, Republicans for fiscal reasons, big city mayors, rural county commissioner, there are Smart Growth supporters everywhere.

The Smart Growth movement has a clear statement of principles, and here it is:

- Create range of housing opportunities and choices
- Create walkable neighborhoods
- Encourage community and stakeholder collaboration
- Foster distinctive, attractive places with a Sense of Place
- Make development decisions predictable, fair, and cost effective
- Mix land uses
- Preserve open space, farmland, natural beauty and critical environmental areas
- Provide variety of transportation choices
- Strengthen and direct development toward existing communities
- Take advantage of compact built design.

But you know what? If a community did nothing but protect its historic neighborhoods it will have advanced every Smart Growth principle. Historic preservation IS Smart Growth. A Smart Growth approach that does not include historic preservation high on the agenda is stupid growth, period.

So I want to return to the premise with which I started. Green buildings are part of, but not a synonym for sustainable development. I'm glad that preservationists are trying to enlighten the green building people. A couple of years ago preceding the National Trust conference in Pittsburgh was held a National Summit on the greening of historic properties. This was a useful step forward.

But I am very concerned that in our rush to make nice with the green building people we will forget this is about sustainable development, not about green buildings. Here's this great report. Green buildings mentioned 53 times; sustainable development mentioned exactly zero times.

The big accomplishment of the U.S. Green Building Council is the development of the LEED certification system. In the pilot stage is a checklist for evaluating neighborhood development. 114 total possible points, including up to a gigantic 2 points if it's an historic building. But if you look at the individual line items in the checklist, at least 75% of the goals are automatically met if you rehabilitate an historic building. If we really need such a checklist, it ought to be 200 points and you start out with 75 points for being an historic building.

LEED certification is today being used as the club to demolish historic buildings. In downtown Lexington, Kentucky, a proposal is moving forward to build a 40-story hotel. To do this the developers want to tear down 14 historic structures built between 1826 and 1930. Preservations don't object to a new hotel but argue that the historic structures should be incorporated into the development. "Not possible" says the developer. But look at the site. The idea that this development couldn't be a mix of old and new suffers from a paucity of the imagination. Their stick to justify the demolition? "But we're going to be LEED certified." As a reward for destroying the history of Lexington, the developers are to be rewarded with \$80 million of Tax Increment Financing.

I'm not sure we need platinum plaques on pilasters. But if we do, they should be for sustainable development, not for green buildings. In fact, just such a checklist has been devised in Great Britain. Using the three elements of sustainable development, this scoring system includes "functional adaptability", "cultural importance", "cultural adaptability", "lovability", and embodied energy as well as energy consumption, ecological attributes, etc. This certainly includes green building criteria, but within a broader sustainable development context.

Cities around the country are racing to see who can adopt "green building" ordinances fastest. Such centers of environmental activism as San Francisco, Berkeley, and Santa Fe are leading the way. And what are they doing? Encouraging central vacuum systems, back draft dampers, bicycle racks and waterless toilets. That's fine, I guess, but misses the larger

picture. Santa Fe, one of the most important historic cities in America, has adopted a 110-page “Sustainable Santa Fe” document. Historic preservation in that initiative? Not even mentioned.

Meanwhile, Dubuque, Iowa, is far ahead of any of those places. It is in the process of designating its warehouse district as a pilot project for a comprehensive Energy Efficiency Zone. Dubuque has as a basic principle: the adaptive reuse of those warehouse structures is key for energy conservation for Iowa’s future. I’m telling you, the model for real sustainable development is not going to be San Francisco, Santa Fe or Berkley, but Dubuque, Iowa.

Here’s my latest example of myopic idiocy of environmental groups. The Nature Conservancy is building a new headquarters in Indianapolis. Their director says, “We’re an international conservation organization. If anyone should be walking the walk of sustainability it should be The Nature Conservancy.”

I couldn’t agree more. So what is their version of “walking the walk?” – tearing down a hundred year old industrial warehouse to build a LEED certified suburbanesque green gizmo building. Why? “Oh, it’s deteriorated beyond saving and would be too expensive” they say, when in fact engineering reports says that is not the case.

I’m not being exactly fair. They are going to be reusing the building: by grinding up the bricks and using them for the walkway in their “conservation” garden. The Nature Conservancy is outright mendacious claiming to be walking the walk of sustainable development.

Environmentalists cheer when used tires are incorporated into asphalt shingles and recycled newspapers become part of fiberboard. But when we reuse an historic building, we’re recycling the whole thing.

If I still haven’t convinced you that the green building approach is insufficient, let me offer this last bit of evidence. Wal-Mart has begun a big environmental initiative. Now I’m not a Wal-Mart basher, and I think they should be commended for this activity.

But let’s say Wal-Mart is so successful, that they are able to build a Super Center that uses no external energy at all – the ultimate green building. But here’s where the building is going to be built.

In just 15 days, the extra fuel used to get to the Wal-Mart, wipes out the entire savings for the entire year, even if the building itself consumed no energy at all. A huge success as a green building. A huge failure as sustainable development.

The whole purpose of sustainable development is to keep that which is important, which is valuable, which is significant. The very definition of sustainable development is “...the ability to meet our own needs without prejudicing the ability of future generations to meet their own needs.” We need to use our cities, our cultural resources, and our memories in such a way that they are available for future generations to use as well.

Historic preservation makes cities viable, makes cities livable, makes cities equitable.

I particularly appreciate that the broadened concept of sustainable development is made up of responsibilities – environmental responsibility, economic responsibility, social responsibility.

Since this is an election year, I have a recommendation to Obama and McCain – abolish the Environmental Protection Agency. Abolish the EPA and establish the Department of Sustainable Development. Then perhaps we can begin to have a rational, comprehensive national policy.

In the election, every candidate is supported by dozens of advocacy movements. Most of them are “rights” movements: animal rights, abortion rights, right to life, right to die, states rights, gun rights, gay rights, property rights, women’s rights, and on and on. And I’m for all of those things – rights are good. But any claim for rights that is not balanced with responsibilities removes the civility from civilization, and gives us an entitlement mentality as a nation of mere consumers of public services rather than a nation of citizens. A consumer has rights; a citizen has responsibilities that accompany those rights. Historic preservation is a responsibility movement rather than rights movement. It is a movement that urges us toward the responsibility of stewardship, not merely the right of ownership. Stewardship of our historic built environment, certainly, but stewardship of the meaning and memory of our communities manifested in those buildings as well.

Sustainability requires stewardship. There can be no sustainable development without a central role for historic preservation. The EPA, the Green Building Council, the Nature Conservancy and far too many environmental activists just haven't figured that out yet.

But that’s what many of you are doing today, and future generations will thank you for it tomorrow.

Thank you very much.

© Donovan D. Rypkema, 2008
PlaceEconomics
1785 Massachusetts Avenue, NW
Washington, DC 20036
202-588-6258
DRypkema@PlaceEconomics.com