THE MICHIGAN GREEN BUILDING MOVEMENT

By Jack Reynold "Reyn" Hendrickson

Air-assisted dual-flush toilets in the restrooms? Waterless urinals? Recyclable cork flooring? Green roofs? Geothermal systems? While these concepts may seem strange or even futuristic, they are just a few of the many elements of a sustainable building movement steadily rising nationwide.

There is growing demand for commercial properties that, as a result of environmentally conscious design techniques and products, offer both environmental and economic rewards to their owners and tenants. While *newly constructed* buildings are most often associated with this movement, new construction only accounts for part of the total investment in commercial property. Existing commercial buildings number some 4.5 million nationwide, and spending on their fixture & equipment replacements, plus remodeling, forms the higher fraction of the total. Thus, despite the current dearth of new construction in Michigan and elsewhere, there is abundant opportunity in *existing* buildings to reduce water consumption and use less fossil energy, while promoting employee health and convenience. Together these benefits of taking an existing building greener and greener can provide immediate positive cashflow and in addition dramatically enhance its sale value.

According to the U.S. Green Building Council, a D.C. non-profit organization dedicated to promoting sustainability in building development, maintenance, and operation, all structures account for 70% of electricity consumption, 39% of energy use, 39% of all carbon dioxide (CO_2) emissions, 40% of raw materials use, 30% of waste output (136 million tons annually), and 12% of water consumption.[1] Spending on utilities for buildings is fast approaching a half trillion dollars per year. If there were no alternative to flushing utility dollars down the drain at that rate, we would sigh and bear the increasingly heavier budgetary burdens. But there are choices allowing buildings to break free of their "futility bill" chains. Real estate professionals are increasingly touting the numerous benefits of sustainable building to clients looking to buy or lease. In 2003, the Massachusetts Technology Collaborative published a study entitled "Green Building Costs and Financial Benefits," authored by Gregory H. Kats, founder of Capital E, a national clean technology deployment and strategy firm, that specifically addresses the ample environmental and economic benefits associated with sustainable building. This report finds that retrofitting buildings cost-effectively can result in 30% less energy use than conventional buildings, 50% less water consumption, and (in the cases of remodels and new construction) involve 50% reduction in construction waste (shown in 17 of the 21 buildings studied). The result is a 5% reduction in these buildings' TOTAL annual operation and maintenance costs, and in addition, a 1% to 1.5% employee productivity

[1] Green Building Research, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1718 (last visited June 25, 2008).

gain from healthier indoor environments.[2] According to the report, the total net present monetary value (NPV) of these changes, based on a 20-year calculation, had a range of $48.87 to $67.31 *per square foot*, with increased worker productivity (rarely figured in by pure bean-counting) making up the largest dollar value amount.[3]

While there are numerous means by which building owners and developers can gain these economic and environmental benefits, common methods within the industry and which have been employed in Michigan include:

- Programmatic replacement of aging equipment with energy efficient appliances and fixtures
- Buying "green power"
- Using passive solar design during remodels & new builds
- Installing energy efficient HVAC (for heating and air conditioning) units, additional insulation and/or a white roof
- Using low-VOC paints, carpets, and adhesives
- Orienting and designing new buildings to optimize daylight
- Installing low-flow sinks and showers
- Installing dual-flush toilets and waterless urinals
- Creating permanent easements protecting access to sunlight, among other things.[4]

As a result of its commitment to sustainability and the use of these and other methods, Michigan, according to the U.S. Green Building Council, has "rank[ed] eighth for the number of environmentally friendly building projects it has on the drawing board. If the trend continues, Michigan could become a model state for green building activity."[5] Such a possibility is buttressed by the fact that the Michigan Department of Environmental Quality recently broke ground on its Bay City District Office, the state government's first Leadership in Energy and Environmental Design (LEED) Platinum Certified building.[6] LEED is a third-party certification program sponsored by the U.S. Green Building Council that is designed to provide a national benchmark for sustainable building design, construction, and operation.[7] With the number of excellent commercial properties available in the state and the rising movement towards sustainability both in the private and public sectors, Michigan is on the fast-track to becoming a national leader in environmentally conscious building and operation.

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[2] GREGORY H. KATS, MASS. TECH. COLLABORATIVE, GREEN BUILDING COSTS AND FINANCIAL BENEFITS (2003).
[3] *Id*.
[4] ZEB ACUFF ET AL., URBAN CATALYST ASSOCS., BUILDING GREEN FOR THE FUTURE: CASE STUDIES OF SUSTAINABLE DEVELOPMENT IN MICHIGAN (2005), http://es.epa.gov/ncer/p3/success/michigan.pdf.
[5] CAROLYN KELLY, MICHIGAN LAND USE INSTITUTE, GREEN GOALS "LEED" TO CALLS TO ENHANCE BUILDING RATING SYSTEM (2004), http://www.mlui.org/growthmanagement/fullarticle.asp?fileid=16735.
[6] Michigan Department of Environmental Quality, http://www.michigan.gov/deq/0,1607,7-135--194724--,00.html, (last visited June 25, 2008).
[7] U.S. Green Building Council, http://www.usgbc.org/DisplayPage.aspx?CategoryID=19 (last visited June 25, 2008).

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