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Greening the Richardson Complex

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Greening the Richardson Complex

Abstract

One of the Platform's planks calls on Buffalo to meet the commitment it made under the U.S. Mayors Climate Protection Agreement to reduce its carbon emissions. Buildings are the single largest source of carbon emissions in Buffalo, due to the carbon released in the processes of heating them, cooling them, and providing them with electricity. The renovation of a large, old complex such as the Richardson Complex offers an important opportunity to reduce carbon emissions and aid in the "greening" of our city. PPG proposes that the redevelopment of the Richardson Complex be guided by very high standards for environmental responsibility, particularly in the areas of energy use and water management. By making the complex as green as possible, the Corporation will serve three important goals: (1) protecting the environment; (2) reducing operating costs; and (3) making the Complex an educational resource on the importance and feasibility of green redevelopment.

Keywords

Buffalo, Environment, Buildings and Housing, Report, PPG, PDF

Partnership for the Public Good

February 25, 2008

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Dear Ms. Pellegrino Faix:

I am writing on behalf of the Partnership for the Public Good (PPG), a new collaboration dedicated to revitalizing Buffalo through research and advocacy. Over thirty organizations have endorsed PPG's 2008 Platform, which focuses on a vision of sustainable economic development for a "cleaner, greener, more prosperous" region.¹

One of the Platform's planks calls on Buffalo to meet the commitment it made under the U.S. Mayors Climate Protection Agreement to reduce its carbon emissions. Buildings are the single largest source of carbon emissions in Buffalo, due to the carbon released in the processes of heating them, cooling them, and providing them with electricity. The renovation of a large, old complex such as the Richardson Complex offers an important opportunity to reduce carbon emissions and aid in the "greening" of our city.

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Energy Usage

Buildings are the most important source of pollution in the United States, accounting for nearly half of our greenhouse gas emissions.² Reducing the energy used by our buildings is vital in limiting global warming.

¹ For more information about PPG, including the complete Platform and a list of endorsing organizations, please visit <http://ppg-buffalo.wikispaces.com>.

² The U.S., with only 5% of the world's population, accounts for 25% of global greenhouse gas emissions.

In the absence of prompt and radical steps to reduce carbon emissions, global warming will spiral out of control. Buffalo, for example, will experience roughly 48 days over 90 degrees each year by 2100 (up from the current average of 3 days per year). Our days over 100 degrees will go from zero to 14. The type of coastal flood that currently hits New York State once per century will occur once per decade. Sea levels will rise between 10 inches and 2 feet.³

Buffalo and New York State will be hard hit by global warming, but in more vulnerable areas of the globe, the effects will be much worse. According to the latest report from the United Nations, up to 600 million more people will face malnutrition, up to 1.8 billion more will face water stress, and up to 332 million more will be displaced by flooding and storms.⁴

If we are to avoid these effects, we must make drastic changes to business as usual, particularly when it comes to how we build, rehabilitate, and operate our buildings. Government and non-profit entities, dedicated not to short-term profit but to the long-term public good, bear a particular responsibility and have a particular opportunity to lead the way.

The good news is that weatherization, energy efficient rehabilitation and alternative energy sources save money at the same time they reduce pollution. A variety of studies have shown that for a small upfront investment, developers can reap substantial savings from green design techniques.⁵ The University at Buffalo estimates that it saves over \$9 million per year in operating costs due to energy efficiency measures it has undertaken, led by its UB Green office.⁶

Because of its size, the Richardson Complex also has great potential for alternative energy sources such as geothermal heat/cooling (used locally in the Church/Asbury Hall renovation), solar power, solar hot water heating, and co-generation (combined, on-site generation of heat and electricity). Through the use of these and other techniques, the Complex could become Buffalo's first "zero emissions" development and achieve international recognition not only for its preservation of architecture's past but for its leadership toward architecture's future.

Water Management

Every year, millions of gallons of raw sewage flow into Buffalo's waterways. Why? Because Buffalo, like most older cities, has a combined sewer system which must handle both rainwater and sewage. Even a moderate rain or snow is enough to

³ Union of Concerned Scientists, "New York: Confronting Climate Change in the U.S. Northeast" (2007), www.climatechoices.org.

⁴ United Nations Development Programme Human Development Report (2007), <http://hdr.undp.org/en>

⁵ See, for example, Davis Langdon, "Cost of Green Revisited" (2007), <http://www.davislangdon.com/USA/Research/ResearchFinder/2007-The-Cost-of-Green-Revisited> and California Sustainable Building Task Force, "The Costs and Financial Benefits of Green Buildings" (2003), www.usgbc.org/Docs/News/News477.pdf

⁶ <http://wings.buffalo.edu/ubgreen/content/aboutus/page1.html#ec>

overtax the capacity of our sewage treatment plant; as a result, roughly 68 times per year, the system overflows, sending raw sewage directly into our rivers and lake.⁷

These discharges violate the nation's Clean Water Act; as a result, the EPA is demanding a set of very expensive changes to our sewer system. The most efficient and inexpensive way to come into compliance and improve our water quality is not with huge new infrastructure projects but with a wide array of initiatives to limit the amount of rainwater that flows into our sewage system.

At a big campus like the Richardson Project, there is ample room for rainwater diversion projects, such as rain gardens, that can dramatically reduce the amount of water routed into our sewers. Rainwater can be captured and used as a resource rather than treated like waste.⁸

As a complement to these rainwater strategies, the Richardson Complex can institute water conservation techniques such as low-flow faucets and toilets and waterless urinals that reduce fresh water consumption, wastewater discharge and operating costs.

Other Green Measures

I have highlighted just a few of the measures that would make the Complex green. The Corporation can take many other steps, from planting native plants to using non-toxic paints and cleaning materials, to make the Complex a healthier and more productive campus. One key strategy is to make the Complex pedestrian and bike-friendly and well-integrated with the surrounding neighborhood. For a good review of other environmental considerations and strategies, an excellent local resource is Walter Simpson's article, "A Facility Manager's Guide to Green Building Design."⁹ Other resources can be found in two web sites <http://green-cities.wikispaces.com> and <http://green-housing-buffalo.wikispaces.com>.

I would greatly appreciate it if you could meet with members of the PPG steering committee to discuss these concepts and let us know what steps the Richardson Center Corporation is taking or envisions to make the Complex green. Please call me so we can set up a meeting. Thank you.

⁷ City of Buffalo Comprehensive Plan, Section 1.6.10 "Sewer System."

⁸ For a wide array of cost-effective measures, see Christopher Kloss "Rooftops to Rivers" (2006), <http://www.nrdc.org/water/pollution/rooftops/rooftops.pdf>, and Mike Plumb, "Sustainable Raindrops," http://www.riverkeeper.org/campaign.php/pollution/we_are_doing/986

⁹ Available at http://wings.buffalo.edu/ubgreen/content/programs/greendesign/guide_greendesign.html.