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# The Gaia Institute

21 November 2006

Honorable James F. Gennaro  
Chair of the New York City Council Committee on Environmental Protection  
City Hall, New York, NY 10007

Honorable Thomas White, Jr.  
Chair of the New York City Council Committee on Economic Development  
City Hall, New York, NY 10007

Regarding: Oversight - Capitalizing on markets for “green” products/services by promoting “green” manufacturing and “green collar” jobs in New York City.

## Part I:

New York City can use its regulatory powers to help harness the huge power of local and regional markets to fuel the growth of businesses that incorporate its waste products. In her book *Biomimicry*, Janine Benyus looks to nature for clues as to how a truly sustainable business might operate. She describes ten rules followed by organisms in a mature eco-system:

1. Use waste as a resource
2. Diversify and cooperate to fully use the habitat
3. Gather and use energy efficiently
4. Optimize rather than maximize
5. Use materials sparingly
6. Don't fowl the nest
7. Don't draw down resources
8. Remain in balance with the biosphere
9. Run on information
10. Shop locally

With this framework, it is easy to see green manufacturing as sustainable business. Green manufacturing holds great promise in helping New York City achieve our common goals of economic prosperity and environmental sustainability. With the newly established Office of Recycling Outreach and Education in the Mayor's Office (operating within the Council on the Environment of New York City,) New York City is in a better position than ever to use wastes as resources. The City is aiming to increase recycling rates from 16% to 25% of the 12,000 tons of daily waste collected from homes, schools and city-owned buildings. Green manufacturing can be a great aid in meeting, and hopefully surpassing, that ambitious target.

*The work of The Gaia Institute couples ecological engineering and restoration with the integration of human communities in natural systems. While much environmental engineering has the worthy aim of minimizing harm, the Gaia Institute explores, through research and development, design and construction, how human activities and waste products can be treated to increase ecological productivity, biodiversity, environmental quality, and economic well being.*

Increasing our recyclable reuse in the local market has myriad benefits. Among them:

- Reduce distance recyclables need to travel, cutting down on transportation costs and carbon emissions.
- Reduce material cost burden on manufacturers, and perhaps allow green manufacturers to collect tipping fees.
- Increase meaningful jobs in recycling sector.
- Increase taxpayer confidence that recycling programs are worthwhile, thereby further increasing recycling rates.

Local Law 86 of 2005 requires LEED (Leadership in Energy and Environmental Design) Silver Certification on most City-Funded Building projects. Storage and Collection of Recyclables is a pre-requisite for any LEED project. Multiple credits may be achieved for a single product. Three credits are particularly relevant to green manufacturing in New York City:

- MR-3 Resource Reuse
- MR-4 Recycled Content
- MR-5 Local/Regional Materials

Obviously, it will be more economical for projects to achieve LEED certification if they can “kill more than one bird with one stone.”

Last week, the USGBC announced that any project achieving LEED Platinum, the highest level of certification, will have all fees refunded. This level of certification will certainly require considerable amounts of both recycled and local products. Version 3.0 of LEED for New Construction is due out next year. As LEED standards become more stringent, the market for recycled and/or locally manufactured products will grow.

Meanwhile, major American cities are constantly trying to outdo one another in the race to become the greenest city. Green products manufactured here can be exported to our surrounding cities. Last week, in Washington, DC, the City Council unanimously voted (in a preliminary measure) to require all developers – not just government developers, but all developers, public and private – to meet certain LEED standards within the next five years.<sup>1</sup> In Chicago, expedited permits and reduced permit fees are granted to developers promising to build green.<sup>2</sup>

Furthermore, reports highlighting significant economic and environmental benefits of green building are coming out on a regular basis:

- New Math: 5=\$0 “Green” Doesn’t Have To Cost More showcases five buildings that were built green on a conventional budgets.<sup>3</sup>
- Greening America's Schools: Costs and Benefits by Gregory Kats of Capital E finds that building green would save the average school \$100,000 annually, enough to hire two additional full-time teachers.<sup>4</sup>

Certainly, green manufacturing goes beyond supplying green buildings, but if the conservative construction industry is undergoing transformation, that is a promising indicator that other industries are transforming as well.

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<sup>1</sup> D.C. Moves to Become Pioneer In Forcing 'Green' Construction, Washington Post, November 15, 2006, <http://www.washingtonpost.com/wp-dyn/content/article/2006/11/15/AR2006111501624.html>

<sup>2</sup> Permit Program Speeds Greening of Chicago, [http://midwest.construction.com/features/archive/0611\\_feature2.asp](http://midwest.construction.com/features/archive/0611_feature2.asp)

<sup>3</sup> New Math: 5=\$0 “Green” Doesn’t Have To Cost More, [www.usgbc.org/ShowFile.aspx?DocumentID=1430](http://www.usgbc.org/ShowFile.aspx?DocumentID=1430)

<sup>4</sup> Greening America's Schools: Costs and Benefits by Gregory Kats, Sponsored by American Federation of Teachers, American Institute of Architects, American Lung Association, Federation of American Scientists, and US Green Building Council, October 2006, <http://www.cap-e.com/ewebeditpro/items/O59F9819.pdf>

## Part II:

The Gaia Institute, a 501(c)3 non-profit corporation, has recently begun a social venture, marketing GaiaSoil for Green Roofs, a patented ultra lightweight green roof growing medium, comprised mainly of recycled expanded polystyrene (commonly referred to as Styrofoam) mixed with finished compost. These ingredients are both waste products that contribute significantly to the urban waste stream. Under LEED, GaiaSoil simultaneously qualifies for recycled material and local material credits.

Green roofs provide many economic and environmental benefits, including:

- Reduced heating and cooling costs
- Longer roof life
- Reduced Urban Heat Island Effect
- Reduced stormwater runoff and Combined Sewer Overflow (CSO)
- Reduced air pollution
- Increased biodiversity

(The Gaia Institute is working with a group of five NYU Wagner students to deliver a cost/benefit analysis of Green Roofs in New York City. This project should be completed by May 2007.)

We see New York City as our most promising market. However, we are currently manufacturing in Dutchess County. A major reason for choosing this location is economic. Rent on a farm in Dutchess County is far lower than rent in New York City, and labor costs are lower as well.

However, if the economics were more favorable, we would almost certainly open a manufacturing facility in New York City. Immediately, the cost of GaiaSoil for Green Roofs would go down, as our transportation costs declined. The cost/benefits analysis of green roofs would immediately shift further in favor of green roofs.

The city would benefit from all the aforementioned benefits of green roofs. The city would benefit as more and more expanded polystyrene and organic wastes were pulled from the waste stream and reused locally, and reduced waste hauling and tipping fees far outside New York City. The Gaia Institute would generate additional revenue that would allow us to do a lot more of the valuable work that we do on stormwater runoff reduction, CSO reduction, wetlands remediation, and so forth, all of which has a tremendous benefit to the City.

As John Muir pointed out “Tug on anything at all and you'll find it connected to everything else in the universe.” Roofers and landscapers alike would see increased job potential, creating more jobs in New York City. More green roofs could lead to increased opportunities in urban nurseries and urban agriculture, sold at a premium at local green markets and restaurants, reducing the amount of miles required to bring us our food. A greener city would increase the City's quality-of-life ratings and bring more young creative people to the City. And recycling our city's wastes locally will boost taxpayer faith in the city's recycling program, thereby motivating them to recycle more.

By fostering a green economy in New York City, we can be an exemplary model for economic growth and environmental protection to the rest of the country and the rest of the world. As the great Senegalese environmentalist Baba Dioum remarked, “In the end we will conserve only what we love. We will love only what we understand. We will understand only what we are taught.”

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