



Green buildings in recession times: Managing priorities

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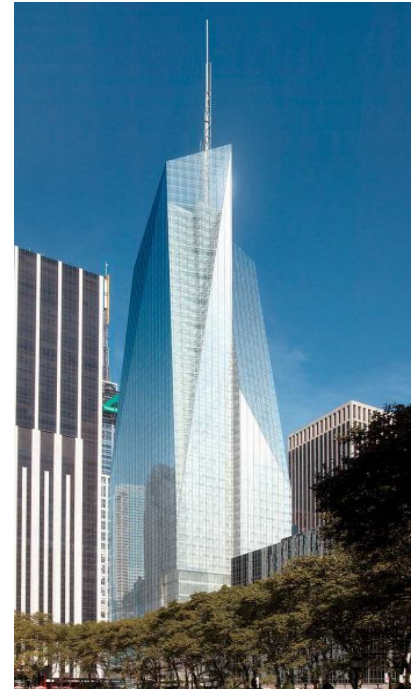
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Bank of America's One Bryant Park, NY

Green buildings ebb slightly in recession, but sentiment remains strong

Tight economic times have a way of recalibrating priorities. Although the economic weight of the recession has caused a retreat in sentiment for green building in design and construction professionals, the majority still promote building sustainably to their respective clients, helping to stoke a growing global green building industry. Most of them claim to endorse green building practices in their projects. But regardless of this small retreat in practice, getting a majority of green new developments of office and commercial buildings to be pro-green is a healthy achievement.

What about green certification?

The trend of seeking green certification has not weathered the storm quite as well as the architecture community has been divided on the merits of the certification process for some time now. Some claim that it only serves as a checklist of values that fails to promote a creative, evolving use of sustainability in the design process. But on the other hand, it provides the industry with a publicly familiar way to ratify and display a greener mission to the populace. The point being establishing a clear framework agreeable to most.

Even with green building support undoubtedly rising over the course of the last decade, cost forever remains a factor especially when national rates for new construction remain low. To many, green certification is viewed as only an added cost. Admittedly, the process entails fees and a notable number of man hours spent on paperwork.

Unsurprisingly, saving energy and operating costs stood as the number one reason for



incorporating sustainability into new building projects with the overwhelming majority of developers reporting that they are more likely to introduce energy saving components into projects in 2013. One of the least important reasons for green construction were apparently achieving higher rents and increasing tenant productivity. Commercially oriented projects can value worker productivity much more than residential ones; it served as one of the main reasons for Bank of America to construct a greener workplace in their headquarters, dubbed the greener skyscraper in the world, at One Bryant Park (see below).

With only so many consumers educated in the merits of sustainability, let alone the numerous ways that it can be implemented, industry professionals are responsible for helping to bestow that education in their customers to fill out the demand. The fact that most of the industry is actively pitching that direction to potential clients marks a good sign for the years of economic rebound ahead. While it is nice to have LEED certified buildings, as long as they are designed and built sustainably, we are accomplishing the real goals.

BOA's One Bryant Park new headquarter in a nutshell

It tops out at 1200 feet, making it the second tallest building in the city beneath the Empire State Building. In its 2.1 million square feet, the building seeks to become the greenest skyscraper in the city, and possibly the globe, being the first building of its height to earn a LEED Platinum rating from the US Green Building Council.

- **Density and Communication links**

There are few concepts more inherently sustainable than density. Placed in the heart of midtown, the decision to build higher with more square feet anchors the project in efficiency from the start. Its location places the building on the same block as two subway stations, now linked beneath the tower, with access to 17 subway lines. Utilizing one of the best mass transit systems in the country is essential to supporting more transit growth in our nation and steering the populace away from car usage.

- **Dealing with Water and Waste Water**

The building collects every drop of rainwater that falls on its site, nearly 48 inches per year. A series of collection tanks distributed throughout the floors can store over 329,000 gallons of water that is used for irrigating plants and flushing the building's toilets. But it does not end there. Greywater treatment on the site takes water from the building and treats it for use in the cooling towers that returns water back to the atmosphere in the form of vapour—essentially completing a cycle back to nature. The architects helped to cut the building's water usage by half employing low-flow lavatory sinks and waterless urinals.

- **Managing Energy needs**

The building also stands as a prime example of how our cities can move towards a decentralised energy grid. The tower proves to be perhaps the best example to date of



tapping into onsite generation. A 4.6-megawatt, natural gas-fired cogeneration plant provides two thirds of the buildings electrical demand and is expected to reach 77% efficiency (zero transmission.) The usage of the energy is also maximised to provide the least amount of stress on the surrounding grid. At night, while demand in the building is low, the power will be used to make ice in 44 storage tanks in the basement of the building. During the day, this ice is allowed to melt and used to cool the air of the building, drastically lowering its energy consumption during peak hours.

One way to tackle energy savings is by incorporating efficient fixtures for workplace illumination. One Bryant Park chose to tap into more daylight for workspaces, evident by its clear exterior. By using baked frit to reflect light outside of the main vision plane, each floor has floor to ceiling glass that allows light to penetrate deeper into spaces and minimizing the need interior lighting and providing views of the city.

- **Air Quality – both inside and outside the building**

When it comes to air quality, the building pushes the envelope again to deliver fresh air to the entire building that is filtered of 95% of particulates. Even more commendable is that the air that leaves the building will thus be notably cleaner than the air that goes in, rendering the structure as a public air filter for midtown. When the air does reach building occupants, it comes through an underfloor air system—a pressurized air plenum beneath removable floor tiles, that brings tempered air closer to occupied space rather than originating from the ceiling.

- **Sustainability and Recycling**

Sustainability is a cyclical concept knowing that there is no finality to the life of any process or product. Rather it is merely the prelude to another use or stage of existence. In order to minimize the impact of new construction it is vital to use materials that decrease the net lifecycle costs of the project including the material that comes in and the waste that goes out. One Bryant Park managed to surpass its goal of recycling 75% of its construction waste to end at 83%. Additionally, with materials such as concrete with blast furnace slag and 60% recycled steel, the building contains 35% recycled content.

- **Sustainability and Employee Productivity**

In two industries where cost is always paramount, New York development and corporate banking, it may seem counterintuitive that this team placed so much time and equity in making sure that their building embraced green qualities. Moreover, the fact that a financial institution was convinced that sustainable systems would prove profitable investments is a boon to the movement as a whole.

So how did that work exactly? Yes, saving water and energy also saves money but the payback on such systems takes time and is likely not large enough to be considered a revenue



stream. What turned heads was looking at how work conditions affected the productivity of employees. While the figures for environmental productivity are constantly debated, consider only 1% of a common working day: 5 minutes. The firm estimated that by getting the 1% increase in productivity of the workers in One Bryant Park would yield \$10 million every year (a number clearly visible on the balance sheet.)

In many ways this development stands as what will hopefully become a new standard in high-rise, urban development. Like any successful ecology, all parts of the building process must be in concert in order to create a product of such caliber. From client, to tenant, to designers and builders, all components of creation and use were necessary to reach such an outcome.

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*"Pursue something so important that even if you fail, the world is better-off
with you having tried."*

Tim O'Reilly