2009

The Green Premium

Green Investing in U.S. Real Estate

Suria Mall, Petronas Towers[1]

Green buildings are sustainable structures that use energy efficiently and leave low carbon footprints. With increased focus on lowering energy use and carbon emissions, green buildings are touted as the wave of the future. Riding on government backing and public support, the trend towards green buildings represents a new class of smart and environmentally conscious real estate investments. In fact, recent surveys show that investors are willing to pay a premium for green properties over conventional ones. Of course, these premiums are accordingly justified since these sustainable structures bring numerable advantages to its owners from operational cost savings to health benefits. Yet, any investment must benefit the bottom line. In this report, we will explore and answer the pressing question: ***Does investing in green buildings really make money in the long run?***

Manhattist, Inc.

Favorable Regulations and Policies

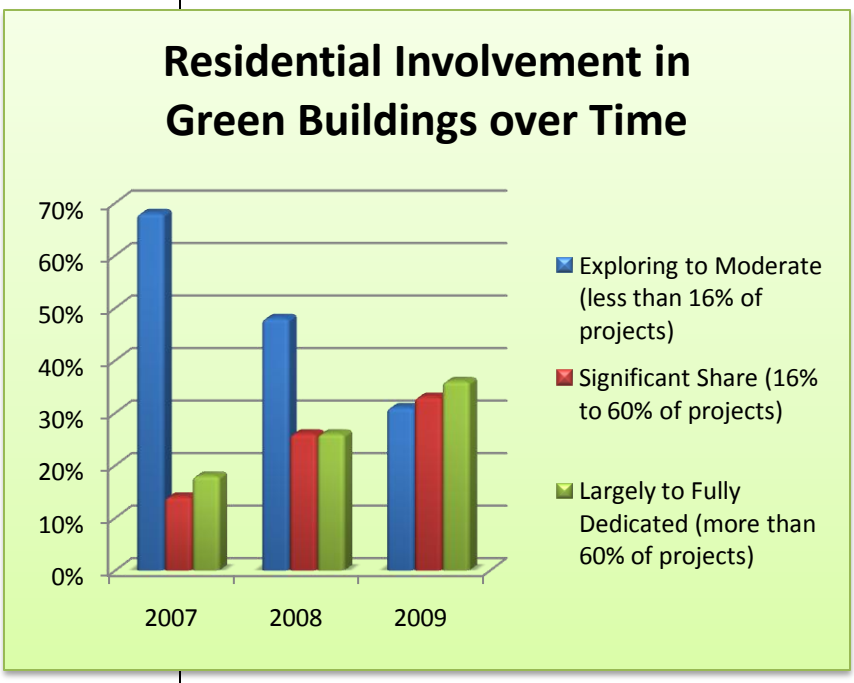
To understand green buildings, we must first recognize the current political and economic environment favorable to green developments. Global awareness and debate in climate change have fostered many initiatives to support efficient energy use and carbon emission reductions. In July of 2009, the G8 met at L'Aquila, Italy to discuss among many issues carbon emission reduction goals. The leaders at the summit supported the goal of reducing emissions in wealthy countries by 80 percent by 2050[2].

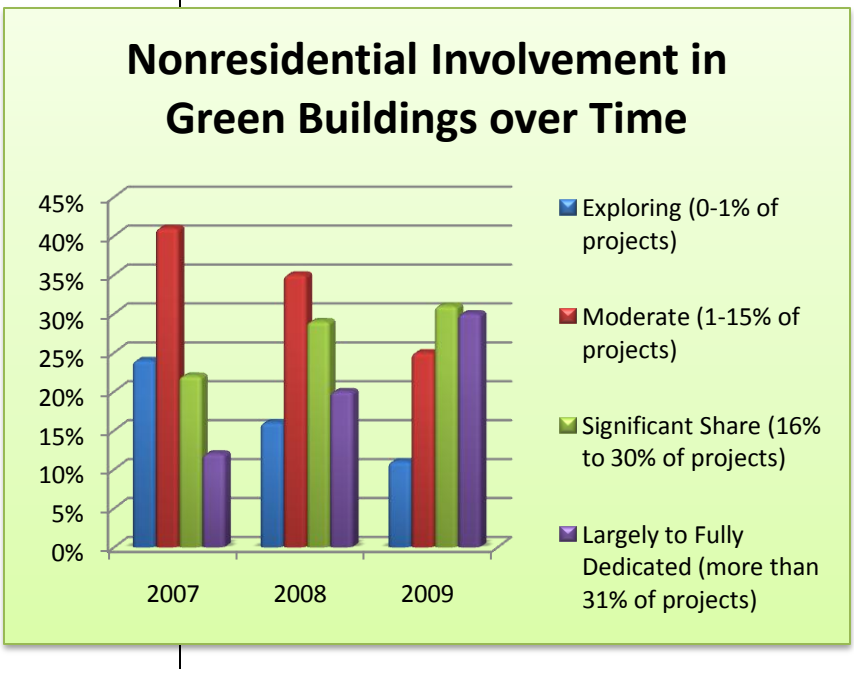
Leaders at the G8 Summit in L'Aquila, Italy[3]

Later this year, the parties to the United Nations Framework Convention on Climate Change (UNFCCC) will hold their latest round of negotiations to replace the Kyoto Protocol which expires in 2012. In Copenhagen, negotiators at these talks hope to continue on the momentum of the Kyoto Protocol and transition into another treaty to continue to reduce global carbon emissions. These international efforts highlight a long term trend toward efficient energy use and sustainability. This long term trend translates into new demand for energy efficient buildings and green homes.

In the United States, the American Recovery and Reinvestment Act of 2009, the latest government stimulus package, includes many initiatives to reduce energy use and cut carbon emissions. Parts of the nearly $ 789 billion package aims to spend $ 6.3 billion on investments in energy efficiency and $ 250 million to increase energy efficiency in low-income housing[4].

Moreover, the Waxman-Markey climate bill which was recently passed by the House aims to ensure that all states move to adopt stricter building standards, requiring residential and commercial structures that are at least 30 percent more efficient than before[5]. The federal government also seeks to provide abundant financial support in order to improve building efficiency. Once passed by the Senate, the Waxman-Markey climate bill will further drive demand for green buildings.





Source: McGraw-Hill[7]

Already, there is a clear trend towards green investing. The Wall Street Journal regularly showcases environmentally friendly and energy efficient green buildings and homes in its Life & Style section. A recent survey published by the AFIRE reports that:

"When asked to what extent a building's "green" attributes influenced their decision to purchase a property, 11 percent said 'significantly so,' and 60 percent said 'somewhat so.' In almost the exact same percentages, investors said that green attributes were worth a greater rental premium.6[9]

Not only are more investors demanding green properties, but the number of green building projects has also increased. According to McGraw-Hill, the number of residential builders largely dedicated to green buildings, with more than 60% of projects that are green, have increased from 18% in 2007 to 36% in 2009.

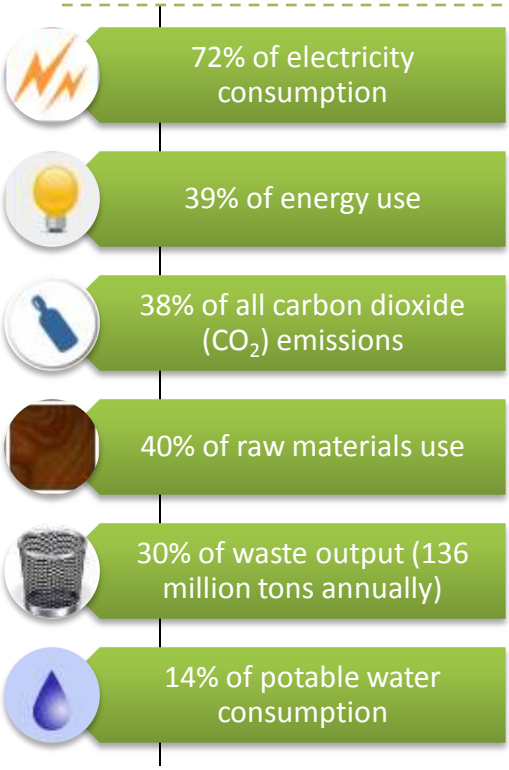
Never before has the drive towards green building investment been so great. With government support and the backing of public sentiment, green building investment exemplifies itself as an area of long term growth.

Defining Green Buildings

The history of sustainable buildings in the United States dates back centuries with practices such as using local and renewable materials. The oil shocks of the 1970s spurred significant research and activity to improve energy efficiency and to find renewable energy sources. This combined with the environmental movement beginning in the 1960s led to the earliest experiments with contemporary green building design[8]. These new designs put special emphasis on sustainability and efficient resource and energy use.

All sustainable buildings are not created equal. In fact, the term "green building" can be inappropriately used since these buildings are not part of a government regulated market. In general, green buildings are designed following a philosophy based on energy savings and reduced impact on the environment and human health. These buildings are designed from the beginning of its life cycle for sustainability. Renewable and reusable materials, efficient insulation and appliances, and the use of renewable energy sources are all features of a sustainable building. With these features, green buildings are able to meet current and future government energy efficiency guidelines.

In the United States alone, buildings account for:



Source: U.S. Green Building Council[10]

Though there are many standards for green certification, LEED (Leadership in Energy and Environmental Design) certification remains the gold standard in this field. The LEED certification system is developed by the U.S. Green Building Council (USGBC), an independent nonprofit rating agency with broad industry participation. Under this certification system, projects earn points by meeting performance standards for environmentally responsible site planning, energy conservation, water conservation, indoor air quality, and resource-efficient materials use[9].

Since 2000, USGBC has released performance criteria for new and existing buildings to quantify green building performance. This has carved out a market niche for green buildings, and companies and builders occupying or constructing such buildings are deemed to be "'socially responsible" by environmental pressure groups.

Green Buildings: An Investable Proposition

Conventional residential and commercial buildings have a profound impact on our natural environment, economy, health, and productivity. Conventional buildings also use large quantities of resources and energy.

On the other hand, a green building saves through lower operating costs over the life of the building. Though such buildings may cost more upfront to construct, this is not always or even in the majority of cases the norm. For example, a 2006 study by Davis Langdon analyzed the construction costs of 221 buildings—83 that were constructed with the goal of achieving LEED certification and 138 that did not have a goal of sustainable design. The study found that a majority of the buildings analyzed were able to achieve LEED certification without additional funding[11].

LEED	Registered Projects	Certified Projects
New Construction	9555	1420
Commercial Interiors	1757	397
Existing Buildings	2063	172
Core & Shell	2147	127
Neighborhood Development	230	12
Schools	534	2
Retail	107	20
Total	16393	2150

Source: USGBC[12]

A separate review by Davis Langdon of a wide range of studies by knowledgeable organizations found that the average construction cost premium required to achieve a moderate level of green features, equivalent to a Silver LEED certification, was only 1% to 2%. Additionally, the review also found that often half or more of the green projects in these studies had no increase in construction costs at all[13].

Operating savings and other cost savings can only be fully realized when they are incorporated at the project's conceptual design phase with the assistance of an integrated team of professionals[14]. Therefore, some of the most efficient green buildings are ones that are designed holistically using an integrated systems approach. However, green features integrated at any stage of construction can provide quantifiable economic savings and benefits.

Environmental Benefits

- Enhance and protect biodiversity and ecosystems
- Improve air and water quality
- Reduce waste streams
- Conserve and restore natural resources

Economic Benefits

- Reduce operating costs
- Create, expand, and shape markets for green product and services
- Improve occupant productivity
- Optimize life-cycle economic performance

Social Benefits

- Enhance occupant comfort and health
- Heighten aesthetic qualities
- Minimize strain on local infrastructure
- Improve overall quality of life

Source: EPA[15]

A recent study by the General Service Administration showed that green buildings yielded a 27% increase in occupant satisfaction compared to conventional buildings[16]. Some social benefits such as improving occupant health, comfort, productivity, reducing pollution and landfill waste are not easily quantified. Consequently, they are not adequately considered in cost analysis leading to an underestimate of benefits.

Green buildings enjoy:

- 45% less energy consumption
- 53% lower maintenance costs
- 39% less water use

Source: GSA[18]

However, there are aspects of green buildings that are easier to quantify. Operating savings cover areas such as energy use, maintenance, and water consumption. These factors all contribute positively to the overall value of green properties.

Additionally, studies show that green buildings have higher future capital value, reduced risk of obsolescence, less need for refurbishment in the future, higher demand from institutional investors, and lower tenant turnover[17].

Yet, these are not the only benefits. Investors should pay attention to the key benefits of green buildings in the areas of building values, occupancy rates, and rental values.

The Hard Numbers

Green properties enjoy higher building values, greater occupancy rates, and higher rental rates. These benefits all contribute to a higher total return on investment for a green building.

According to a 2008 McGraw-Hill Report, key trends in the European and U.S. Construction Marketplace show[19]:

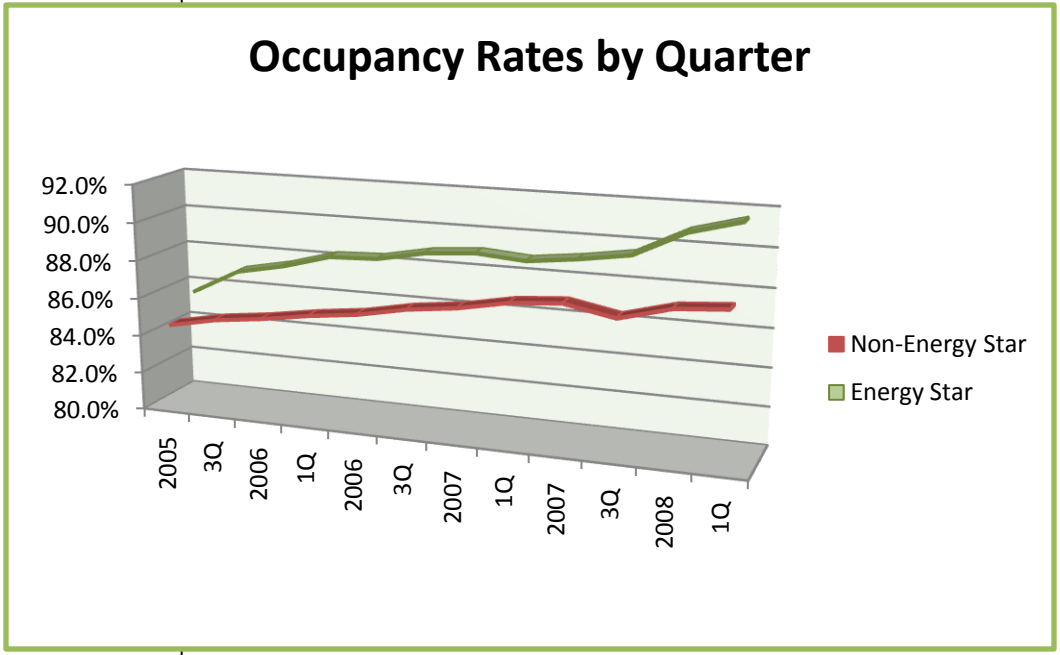
- 8 to 9% lower operating costs for green buildings on average
- 7.5% higher building values
- 3.5% greater occupancy ratio
- 6.6% total return on investment

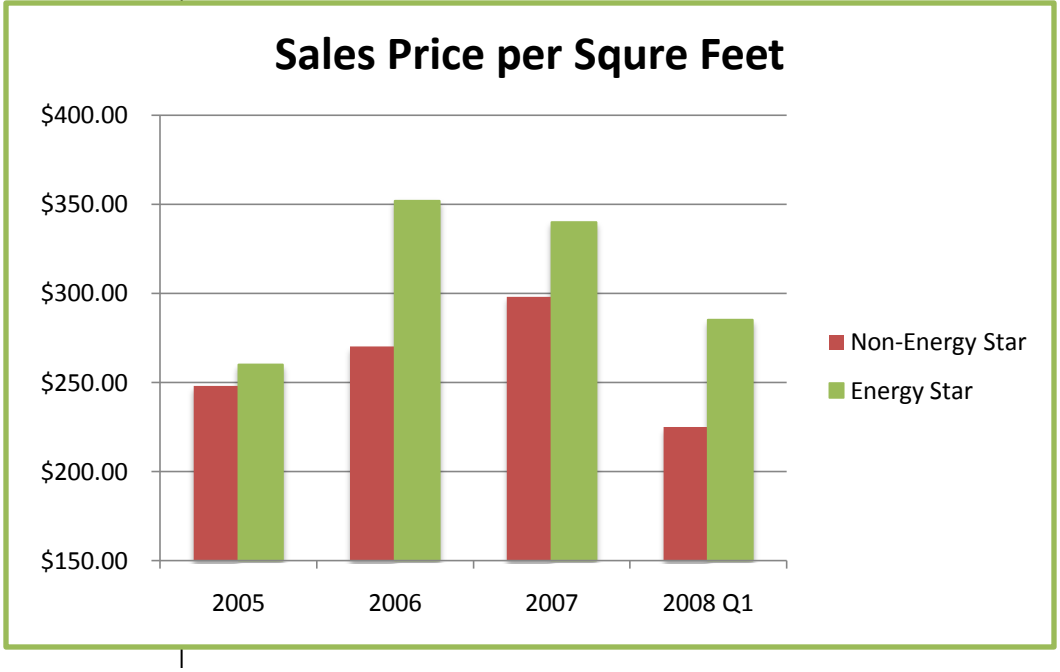
A working report produced by the University of California, Berkeley's Fischer Center for Real Estate and Urban Economics shows just how profitable green buildings can be. Green buildings average a sale price of $289 per square feet compared to $249 per square feet of conventional buildings. Green rental properties also enjoy a rent premium of $3 per square feet and an increase in occupancy rate by 8%.

	Rental Sample		Sales Sample	
Sample Size	**Green Buildings 694**	**Control Buildings 7,488**	**Green Buildings 199**	**Control Buildings 1,617**
Asking Rent (dollars/ft^2)	29.84 (12.98)	28.14 (15.60)	-	-
Effective Rent (dollars/ft^2)	26.83 (13.00)	23.51 (16.11)	-	-
Sales Price (dollars/ft^2)	-	-	289.22 (165.70)	248.89 (255.49)
Size (thousands ft^2)	324.08 (288.92)	218.69 (293.67)	358.33 (287.86)	159.12 (257.50)
Occupancy Rate (percent)	89.12 (12.76)	81.35 (22.73)	-	-

Comparison of Green-Rated Buildings and Nearby Control Buildings (Standard Deviations in Parenthesis)
Source: U.C. Berkeley[20]

In a separate study conducted by the University of San Diego, researchers found a positive trend in rental occupancy rates for green buildings. This study used the Energy Star rating, another rating for energy efficient sustainable buildings.





Source: USGBC[23]

Between 2005 and 2008, green buildings increased their occupancy rate by 5.5% as opposed to only a 3.5% increase of conventional buildings[21].

The same study also corroborates the fact that sustainable buildings enjoy higher sale prices. Moreover, despite the economic downturn, these buildings have fared the crisis better than conventional buildings. Green buildings only declined in value by 19% since 2007 as opposed to the 32% decline in value of conventional buildings[22]. Thus, not only is investing green buildings more profitable, but it can also be less volatile.

Obstacles

Despite all of the innovations and benefits in green buildings, going green is still not easy for most developers and real estate investors. A recent survey conducted by Turner Construction Company asked executives to rate the significance of eight issues in potentially discouraging the construction of green buildings. Two issues relating to the cost of green construction – perceived higher initial costs and the financial disconnect between initial costs and long-term operating costs as well as the length of the payback period – were each rated as extremely or very significant obstacles by half of the executives[24].

Four Times Square[25]

Financial drivers tend to be not well understood, thus expected payback period may be too long for investor's preferred rate of return. This is an indication of the fact that many investors incorrectly believe that green construction is significantly more expensive than traditional building methods, when in fact it can often be achieved with little or no cost premium as explained in the previous sections.

Education is also an issue. Almost half of the executives said that a lack of awareness of the benefits that green buildings provide was an important obstacle that potentially discourages investment in green construction. New construction project teams often promote building designs that are energy efficient, but do not always provide an estimate of the completed and commissioned building's expected energy to owners and investors.

Moreover, investors are reluctant to consider investing "green" because they believe the marketplace is not interested. However, those investors willing to take the risk have found a very responsive audience. Take, for instance, the Four Times Square commercial structure in New York City. The developer and builder of this 48 story, 1.6-million-square-feet green giant committed to an environmentally responsible design. This building includes high-energy efficiency features, indoor air quality, sustainable materials and responsible construction, operations and maintenance[26]. As a result, Four Times Square commands top dollar from its willing occupants and is 100 percent occupied.

The above underscores the need for continued education about both the financial and non-financial benefits of green construction. These obstacles notwithstanding, 75% of commercial real estate executives in the Turner survey suggest current credit market conditions are not likely to affect plans to build green buildings[27]. Given the current economic environment and some perceived obstacles to sustainable construction, the benefits remain significant. As such, there should be continued interest in green buildings, benefiting both owners and occupants.

Where to Invest?

With so much evidence in support of green buildings, investors may want to know where the best investment opportunities are. Below are the ten leading metro areas for sustainable buildings in the United States. Not surprisingly, these are also some of the most populous cities in America.

	Metro Area	# of Buildings	Square Feet	Percentage of Total
1	Los Angeles	100	26,167,038	13.3%
2	Houston	46	21,101,378	10.8%
3	Washington DC	61	19,796,646	10.1%
4	New York	11	12,328,784	6.3%
5	San Francisco	30	11,862,367	6.0%
6	Minneapolis/St Paul	20	11,381,738	5.8%
7	Denver	34	10,285,745	5.2%
8	Seattle/Puget Sound	16	7,616,710	3.9%
9	Chicago	13	6,326,489	3.2%
10	Dallas/Fort Worth	20	6,058,892	3.1%

Source: University of San Diego[28]

The top five states for green buildings are as follows:

	State	# of Buildings	Square Feet	Percentage of Total
1	California	219	51,952,382	26.5%
2	Texas	91	27,942,442	14.2%
3	New York	13	12,580,084	6.4%
4	Minnesota	20	11,381,738	5.8%
5	Colorado	39	11,244,380	5.7%

Source: University of San Diego[29]

Featured Green Developments

Project Name:	The Verdesian[30]
Owner:	Albanese Organization, Inc.
City:	New York
LEED Rating:	Platinum
Type:	Residential

Summary:

The Verdesian provides many important green features and benefits. There is a year-round central air-filtration system that removes 85% of particulates, providing each apartment with fresh and filtered air and seasonally controlled humidity. A continuous exhaust in every kitchen and bathroom provides better indoor air quality. These features are paired with continuous monitoring to ensure maximum environmental quality.

The high performance exterior wall system includes a vapor and air barrier to minimize random air-infiltration, and well-insulated residences help residents stay cooler in summer and warmer in winter. As a result of these features, the Verdesian's design is 40% more energy efficient than building codes requires. Digital, programmable thermostats are installed in every residence to allow year-round comfort and to enable residents to save on utility bills. Each residence unit uses Energy Star appliances, high-efficiency lighting fixtures, master residence light switches and highly insulated windows. The use of a centrally filtered water system with secondary filtration at refrigerator dispensers provides clean water for a healthier living.

Project Name:	The Solaire at 20 River Terrace[31]
Owner:	River Terrace Associates, LLC
City:	New York
LEED Rating:	Gold
Type:	Residential

Summary:

The Solaire at 20 River Terrace is a 27-story, 293-unit, glass-and-brick residential tower in Battery Park City. This project is a planned residential and commercial neighborhood built on a landfill directly adjacent to the site of the former World Trade Center. It is the first building designed in accordance with new environmental guidelines instituted in 2000 by the Battery Park City Authority (BPCA), the government entity that has overseen the development of Battery Park City since 1969.

20 River Terrace was developed as a rental building and the developers were the intended long-term owner and operator. As a result, they were very interested in life-cycle costs, overall performance, and operational issues. Energy Security was of special importance to the building. Placement of the photovoltaic cells on the building takes advantage of the intensity and position of the sun in the summer months. During a blackout, building ventilation is provided by operable windows, and lighting is provided by day lighting as well as battery-powered emergency lighting. The use of glazing with a low solar heat gain coefficient maintains relative humidity levels between 30% and 60% and provides occupants with the means to control temperature in their area.

Project Name:	The Helena[32]
Owner:	Sidney Fetner Associates
City:	New York
LEED Rating:	Gold
Type:	Residential

Summary:

The Helena is a large-scale 38-story residential rental building in Manhattan. Designed to target young professionals, the Helena includes 580 studio, 1-bedroom, and 2-bedroom apartments, most with river views. The building includes 80% market-rate housing, 20% affordable housing, and retail space is provided at ground level.

The Helena also features a 13.1-kW array of building-integrated photovoltaic, which provides a two-year green power contract for 50% of its purchased energy. Other financing mechanisms include green building tax credits and affordable housing tax credits in its equity structure. Private bank and insurance companies provide additional financing

The client felt that all of these measures were justified financially by the increased interest from potential tenants. The apartment was designed to protect the health of its occupants with a ventilation strategy that includes high filtration of the air supply, trickle vents in each operable window for cold-weather ventilation, and a pressurized treatment of hallways to prevent the migration of contaminated air between apartments. Energy savings can be measured statistically while the benefits that contribute to a healthier living environment cannot be measured with dollar values.

Conclusion

There is no question that the green building sector is poised for growth. Yet, investors need to fully understand these structures and systems before acting. The key environmental, economic, and social benefits provided by these buildings have pushed green buildings into the mainstream. These trends will also ensure the growth of this sector.

Despite popular belief, green buildings are not necessarily more expensive than conventional ones. Moreover, investors can expect not only sustainable buildings with little upfront costs over conventional buildings but also continued savings over the life cycle of the building. Green buildings demand higher sale premiums, greater rent revenues, and higher occupancy rates when compared to conventional buildings. There is ample evidence in support of the long term positive return on investment of sustainable buildings over conventional ones. It is no surprise then that demand for green buildings remains an area of growth.

Manhattist Inc.

Manhattist is a real estate firm that serves to fulfill the growing demand for luxury properties in the world's most cosmopolitan cities, with Manhattan as our area of expertise. As such, we serve only specific cities that are concentrated with development on properties that provide an investment environment where risks are moderate and generous returns are almost always the case.

Manhattan presents a large variety of properties that are guaranteed to enhance your capital while indulging in "privileged-living". With the city's vibrant metropolis vibe and a demographic that consists of a great portion of the world's elitists, without a doubt, it is the haven for "regality" and "equity".

That's why we believe in providing our distinguished clients with a world class service that allows you to vision and enjoy the benefit of investing in what we call: "Manhattist" properties.

Whether it is Manhattan, or comparable global cities such as Shanghai, Tokyo and London, we expose all aspects of luxury real estate investing that include purchase, sale, management, and financing.

Be regal. Get equity. Explore Manhattist.

For more information and research, please visit Manhattist at: www.manhattist.com

Manhattist, Inc
230 Park Avenue, 10th Fl.
New York, NY 10036

This report has been prepared solely for information purposes. The information on which this report is based has been obtained from sources we believe to be reliable.

This report was written and assembled by:

Burt Chen, Ho-Joon Koh, Ebenezer Sampene, and Leixin Zhao

Please direct all questions and feedback to:

Lzhao@manhattist.com

References

1. View outside Suria Mall, Petronas Towers. (n.d.). *Sanyam Studios*. Retrieved from http://www.flickr.com/photos/sanyam/2154525064/
2. G8 climate goals not credible: Brazil official. (2009, July 9). *Reuters*. Retrieved from http://www.reuters.com/article/GCA-GreenBusiness/ idUSTRE5683WP20090709
3. G8 Summit support for clean energy economies. (n.d.). *The Examiner*. Retrieved from http://www.examiner.com/ x-8178-Phoenix-Green-Business Examiner~y2009m7d9-G8-Summit-support-for-clean-energy-economies
4. Summary: American Recovery and Reinvestment. (2009, February 13). *Committee on Appropriations*. Retrieved from http://appropriations.house.gov/pdf/ PressSummary02-13-09.pdf
5. Buhayar, N. (n.d.). Green Buildings Get Boost in Cap-and-Trade Bill. *The Wall Street Journal*. Retrieved July 1, 2009, from http://blogs.wsj.com/environmentalcapital/2009/07/01/green-buildings-get-boost-in-cap-and-trade-bill/
6. *17th Annual AFIRE Foreign Investment Survey: Substantial Up-Tick in Foreign Real Estate Investment Expected in 2009. Strong Signals for US*. (2009). Retrieved from AFIRE Web site: http://www.afire.org/foreign_data/index.shtm
7. Promoting Energy Efficiency in the Nation's Buildings. (2009, March 18). *Austin Texas Real Estate Blog*. Retrieved from http://www.joecline.com/blog/2009/03/18/daily-real-estate-links-promoting-efficiency-green-statistics/
8. *Green Building*. (n.d.). Retrieved July 17, 2009, from EPA Web site: http://www.epa.gov/greenbuilding/pubs/about.htm
9. *Taking the Lead on Green Building*. (n.d.). Retrieved July 17, 2009, from National Association of Realtors Web site: http://www.realtor.org/smart_growth.nsf/Pages/greenrealtor?OpenDocument
10. *Green Building Research.* (n.d.). Retrieved July 17, 2009, from U.S. Green Building Council Web site: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1718
11. "Cost and Benefit of achieving Green Buildings" Davis Langdon https://www.usgbc.org/ShowFile.aspx?DocumentID=2583
12. "Green Building Facts" (December 2008) U.S. Green Building Council http://homeinnova.yourkwagent.com/atj/user/AdditionalGetAction.do?pageId=136737
13. "Cost and Benefit of achieving Green Buildings" Davis Langdon https://www.usgbc.org/ShowFile.aspx?DocumentID=2583
14. *Green Building Basics*. (n.d.). Retrieved July 17, 2009, from California Integrated Waste Management Board Web site: http://www.ciwmb.ca.gov/ GREENBUILDING/Basics.htm
15. *Why Build Green?* (n.d.). Retrieved July 17, 2009, from EPA Web site: http://www.epa.gov/greenbuilding/pubs/whybuild.htm
16. Kevin Kampschroer, "Benefits of Green Buildings on Costs, the Environment and Jobs". (July 16, 2009). U.S. General Services Administration http://www.gsa.gov/Portal/gsa/ep/contentView.do?pageTypeId=8199&channelId=-24821&P=S&contentId=28312&contentType=GSA_BASIC
17. "Cost and Benefit of achieving Green Buildings" Davis Langdon https://www.usgbc.org/ShowFile.aspx?DocumentID=2583
18. Kevin Kampschroer, "Benefits of Green Buildings on Costs, the Environment and Jobs". (July 16, 2009). U.S. General Services Administration http://www.gsa.gov/Portal/gsa/ep/contentView.do?pageTypeId=8199&channelId=-24821&P=S&contentId=28312&contentType=GSA_BASIC
19. Ibid.
20. "Program on Housing and Urban Policy" (January 2009). Institute of Business and Economic Researchhttp://urbanpolicy.berkeley.edu/pdf/EKQ_green_buildings_JMQ_010609.pdf
21. Norm Miller, Jay Spivey and Andy Florance, "Does Green Pay Off?" (July 12, 2008). http://www.usgbc.org/ShowFile.aspx?DocumentID=5537
22. Ibid.
23. Ibid.
24. Turner Construction Company. (2008, December 20). Turner 2008 Green Building Market Barometer. Retrieved August 2009 from Turner: http://www.turnerconstruction.com/greenbuildings
25. The Best Buildings in New York City in 2008. (2008, February 29). *Traveling Board*. Retrieved from http://travellingboard.net/sightseeings/the-best-buildings-in-new-york-city-in-2008/
26. Green Buildings New York. (2008, November 18). Green Building Survey. Retrieved August 5, 2009 from Buildings NY: www.buildingsny.com/.../Turner_Green_Bldg_Survey_Release.pdf
27. Turner Construction Company. (2008, December 20). Turner 2008 Green Building Market Barometer. Retrieved August 2009 from Turner: http://www.turnerconstruction.com/greenbuildings
28. Norm Miller, Jay Spivey and Andy Florance, "Does Green Pay Off?" (July 12, 2008). http://www.usgbc.org/ShowFile.aspx?DocumentID=5537
29. Ibid.
30. The Verdesian. (n.d.). The Verdesian. Retrieved August 5, 2009 from http://www.verdesian.com/
31. The Solaire. (n.d.). The Solaire. Retrieved August 5, 2009 from http://www.thesolaire.com/
32. The Helena. (n.d.). The Helena. Retrieved August 5, 2009 from http://www.thehelena.com/