



What is a Green Building?

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A sustainable building, also known as a green building, is a structure that is designed, built, renovated, operated or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water and other resources more efficiently; and reducing the overall impact on the environment.

The green building approach applies a project lifecycle cost analysis for determining the appropriate upfront expenditure. This analytical method calculates costs over the useful life of the asset.

These and other cost savings can only be fully realised when they are incorporated during the project's conceptual design phase with the assistance of an integrated team of professionals. The integrated systems approach ensures that the building is designed as one system rather than a collection of standalone systems. A green building may cost more upfront, but saves through lower operating costs over the life of the building. [1]

A high performance green building is an efficient building. Savings in energy costs between 20% and 50% are common through integrated planning, site orientation, energy-saving technologies, onsite renewable energy-producing technologies, light-reflective materials, natural daylight and ventilation, and downsized HVAC and other equipment.

Buildings that are energy efficient and environmentally friendly in other ways respond to the growing need to reduce the use of fossil fuels

and to conserve our environment. Worldwide, the request for sustainable or green buildings is growing rapidly as governments and businesses wish to see a more sustainable building industry. In Malaysia, the push for more sustainable buildings is supported by the government, while the private sector is moving towards building more green buildings. Working in a green building sends a strong message to customers and employees that the company cares for the environment and wishes to contribute to a more sustainable world for future generations to enjoy. [2]

One of the proven advantages of building green is marketplace differentiation - for buildings, services and products. Many companies also want to demonstrate their commitment to initiatives that simultaneously benefit the environment, the community and the bottom line. A high performance green building is one of the most tangible expressions of that commitment and an extremely effective tool for educating tenants, employees and shareholders about corporate values and sustainability.

The looming obsolescence of non green buildings is powering strong interest in going green. Major super funds, trusts and listed property vehicles are realising that meeting corporate sustainability objectives, for themselves or their tenants, is a long term 'value add' for their asset.

Obsolescence means that non green buildings will decrease in value. The market has struggled to calculate the value of green buildings, because green building benefits such as longer lifespan, reduced replacement and lower operating costs are not easily

expressed when accounting methods use depreciation only. Valuers, still asked to value in accordance with accounting standards, struggle to accurately value green buildings.

The move away from financial modelling that focuses on payback (capital cost reduction) towards lifecycle costing (energy efficiency, employee productivity, etc) is revealing a more accurate picture. There is now sufficient evidence in the market to suggest that green buildings are more valuable. [3]

BENEFITS OF GREEN BUILDINGS

Given the scenario, the business case for a green building is very compelling. Over the past two years, a number of reports have been published on the benefits of green building based on case studies. In 2006, the Australian green building council came out with a report entitled 'The Dollars and Sense of Green Buildings'; while a Canadian report identified the following opportunities/benefits for developers and building owners. [4]

i) **Capital Cost Savings**

Optimising building environmental systems to interact synergistically can lead to substantial savings in capital costs. For example, downsizing HVAC systems through energy efficient design not only produces savings in ductwork, but by reducing the requirement for bulky mechanical equipment, more floor space can be made available for leasing.

ii) **Enhanced Value**

An American BOMA (Building Owners and Managers Association) study showed that green

buildings have an enhanced ability to rent or sell space based on their superior indoor environment. It should be noted that this has not been financially proven in countries like Australia due to the fact that most green buildings have not been tenanted for more than a year, as well as the issue of the industry being reticent to sharing post occupancy reviews.

iii) Compressed Schedule

An integrated team approach to design (as required when using LEED) results in fewer design conflicts and subsequent change orders. American studies have shown that projects are routinely coming in on time and ahead of schedule.

iv) Improved Marketability

Building green creates a distinct product in the marketplace, which can be integrated with a corporate image and used to market the property to attract and retain employees. Certification schemes such as LEED in the US are useful marketing tools since they help verify and substantiate green claims.

v) Improved Public Profile and Community Relations

Building green demonstrates environmental responsibility. For example, in the US, this improved image has shown to have accelerated the approval process when dealing with zoning requests and environmental assessments.

vi) Publicity

Green buildings can generate media interest and publicity. The increased marketing potential of a superior building can recapture the additional capital cost associated with a green building through faster leasing and reduced costs for promotional advertising.

vii) Operational Cost Savings

Reduced lighting loads, high efficiency appliances, increased insulation, passive solar heating, passive ventilation, water conservation measures and commissioning that uncovers and corrects inefficiencies all lead to savings in operational costs. These cost savings can be

used to market the project to prospective clients and tenants.

viii) Reduced Liability Risk

In the US, the insurance industry is becoming increasingly aware of lawsuits associated with building sickness and other indoor air quality issues, resulting in rising insurance costs and mould exclusion clauses. Some industry experts are predicting that insurance companies will start linking lower premiums to green buildings.

ix) Future Proofing

Green buildings use less water and energy than conventional buildings, thereby providing a buffer against future increases in water and energy services costs and protecting against services shortages – another benefit that can be marketed to customers.

x) Higher Building Valuations

Reducing operating costs, capturing lease premiums and building more competitive, future proofed projects, provide a basis for higher valuations.

Overall, the successful construction of green facilities will undoubtedly produce benefits for the customers, employees, shareholders and the community. Costs can be lowered, efficiency and productivity increased as well as healthier environments can be created in which people can live and work. ■

REFERENCES

- [1] California Integrated Waste Management Board, 'Green Building Basics', article on the web, the full text can be read at: <http://www.ciwmb.ca.gov/greenbuilding/Basics.htm>
- [2] USGBC, 'Making the Business Case for High Performance Buildings', A report by the U.S. Green Building Council
- [3] Davis Langdon, 'Cost and Benefit of Achieving Green Buildings', Second in a series of reports by Davis Langdon's Insights into Sustainability
- [4] Cole (Dr Raymond) 'Why Build Green: 10 Questions Answered', <http://www.gvrd.bc.ca/buildsmart/pdfs/whybldgrntenkeyquest.pdf>



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