



*Business Decision Making
on Green Buildings,
An Overview*

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Global Climate Change, indiscriminate exploitation of earth resources and thoughtless assault on the environment is costing the earth dearly. Since the 1990's the awareness and the consciousness of the gravity of the situation has propelled Green Concepts in order to mitigate and control damage. Many communities are making a sustained effort in this direction.

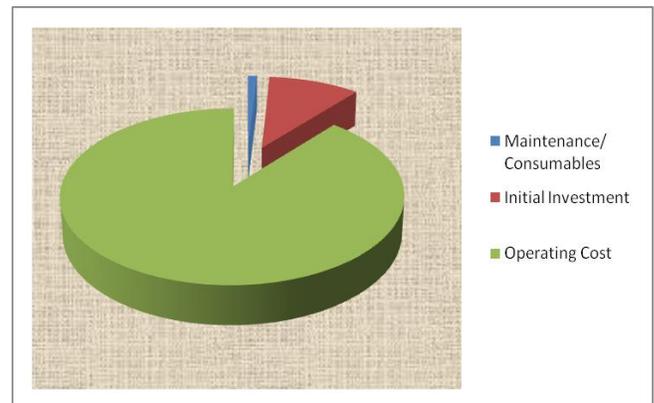
However adopting green building practices is relatively a new concept to the building industry in India. There are various reasons which dissuade decision makers from adopting green concepts within building design, construction and operation. The main causes being lack of awareness on the possible environmental impacts, the cost factor and easy availability of integrated green design services, green products and technologies.

The barriers to green buildings are not exclusively technology or procedure oriented. Financial, business planning, and economic factors are important considerations for owners or investors. The long- and short-term financial impact of sustainable decisions must be better understood. The market needs effective tools to support valuation and business decision making.

The separation between capital and operating expenses makes it difficult to fund long-term improvements in building performance. Often financial analysis takes into account short time spans, which are always not the correct form of analysis as long-term benefits of green building are discounted. This can discourage investment in high-quality, long-lived materials, products, and systems that are more sustainable than cheaper options.

The Life cycle costing analysis for Air Conditioning systems is a good example. In the Life cycle analysis, operating cost

constitutes around 89%, initial investment around 10% and maintenance & consumables 1%. Adopting a high performance system with water cooled chillers can be more expensive. However the operating costs are far lesser resulting in considerable savings.



It is therefore important to look at the incremental cost in relation to the life cycle cost. Over the life cycle of a building, the operating cost would work out to 80-85 % while the incremental cost which is a one-time cost is only about 8-10 %.

A clear understanding of the benefits of sustainable design and tools for designing, financing and implementing sustainable construction practices are critical to the success of green buildings. Without consistent and reliable documentation of the benefits in financial terms, it is difficult for many building owners to commit to appropriate high performance buildings. In order to ensure adoption of sustainable technologies, designs and approaches in building design and construction, it is necessary to provide owners, designers and builders with the best tools to facilitate analysis of options and effective decision making.

Most analysis currently carried out to calculate the value of green buildings is not accurate as the approach to study the cost of

green in most cases is based on assumptions, green building benefits such as longer lifespan, reduced operating costs are not easily expressed and benefits such as excellent daylighting, improved productivity cannot be valued. Thus such findings cannot be used as a predictive tool for individual projects.

The need of the hour is a coherent and concerted effort by both the Government and Private sector towards redefining the building industry's decision making on green buildings by providing high quality data enabling automatic comparisons and benchmarking in terms of climate and geographical space.

Provide enabling tools for decision making and policy development through a better understanding of sustainable features would converge into improved design process to give designers immediate evaluations of different design scenarios.

These efforts will address the economics and financial attributes of sustainable design. Sustainable design compiled with financial data will effectively project patterns of value and risk of investment in green buildings.

Creamline Dairy Corporate Office Building – An Analysis on Green features, Increased Initial Investment and Estimated Savings



A preliminary analysis has been carried out to ascertain the relationship between initial investment and the long term savings. The approach used in this study is by adding the cost of individual green features, comparing the building to itself without the green features. The operating costs of green/sustainable products are compared against the conventional alternative. Based on this approach the project, to achieve a moderate level of sustainability (LEED Silver) has spent around 20% more on the initial investment.

Creamline Dairy Corporate Office Ltd's new Corporate office Building in Hyderabad has been awarded the Silver Rating by the Indian Green Building Council under the (Leadership in Energy & Environmental Design) LEED India Rating. The office complex has a built up area of around 25,000 Sq.ft.

Some of the green features incorporated in the building are: low flow flush and flow fixtures, landscape water efficiency through use of captured rain water, 17% energy savings through use of fly ash blocks, high performance glazing & efficient air conditioning system, use of materials with recycled content, more than 95% of construction waste was sent for recycling or reused within site, use of low VOC paints, adhesives, carpets and more than 75% of the building uses daylight.

Green Features with increased investments	Percentage increase in cost when compared without green features	Estimated Savings in operating expenses over a period of 8 years when compared to a conventional building
Air Conditioning	4%	20%
High Performance Glass	12%	18%
Low flow water fixtures	2%	9%
Rain Water Harvesting	1%	4%
Low VOC Paints, adhesives, sealants & carpet	3%	-
Materials with Recycled Content	1%	-

This analysis is carried out only to give a broad indication of the likely impact of sustainable goals for a project. The above

study is an indicative case to establish the interaction between planning and design decisions and long term cost benefits.

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About the Author: Samhita.M is a LEED AP & IGBC AP with over five years of experience in green building consultancy, steering green building rating programmes from inception through the process for final certification for various building types.