Green Entrepreneur in the Sustainable Construction Sector and with Reference to Social and Environmental Concerns

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ABSTRACT

The aspects of life within our ecological world that one driven not only by the possibility of making a profit but also by environmental and social concerns are sustained by the construction sector, thus contributing to improving the quality of human life. Social businesses are promising techniques by which to promote sustainable development, social as well as environmental goals like health care, housing for the poor, safe drinking water, renewable energy and more. As the social business in construction sector should be "done with joy", the closely related phenomenon of social entrepreneurship often grows out of such efforts. Green entrepreneur understands social risks and the social impacts of business operations and implementation of sustainable business strategies, innovative business models and financial mechanisms for social impact. As the Identified human benefits include life satisfaction, improved work, improved cognitive performance, improved health outcomes, and reduced stress, stakeholders like Green Entrepreneur, and Ecopreneurial companies move to the conservation looking at the impact on society and environment, beyond energy saving. This paper also provides an overview of the human and environmental benefits beyond energy saving of sustainable design.

Keywords: Construction sector, Sustainability, Goals, Social Entrepreneurship, Social and Environmental Benefits.

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INTRODUCTION

On natural resources are concerned by the construction and have a wide range of environmental and social impact. The key driver behind the sustainable design movement is these environmental concerns. The built environment makes a significant contribution to environmental degradation. Buildings including construction, operations, and deconstruction impacts, use approximately 15 percent of the world's freshwater resources, 40 percent of the world's energy and produce approximately 30 percent of the world's greenhouse gas emissions. The forecast by the analyst during the period 2016-2020 for the global market was growth at the Compound Annual Growth Rate (CAGR) of 9.6 percent. In fact, energy efficiency reductions in the construction and operation of buildings offers one of the single most significant opportunities to reduce man's impact on climate change.

Carbon dioxide (CO_2) is one of the most significant fuels released into the atmosphere. Most of the energy used globally is from fossil fuels like coal, oil, natural gas. These gasses emit infrared

radiation, contributing to global warming and climate change which pose a serious threat. Hence government across the world has committed to reduce the emissions of greenhouse gasses and increase energy production that is renewable. The increase in CO_2 emission was mainly caused due to consumption of energy which is the primary demand of the building sector.

Major milestone in the mission of greening planet earth was unveiled at the COP21 in Paris (2015) by the green building councils around the world to ensure reduction of greenhouse gasses emissions. It was also ensured by the green building council that the construction industry plays its part in limiting global warming to 2 degrees.

The use of a technique by startup companies and other entrepreneurs to develop, fund and implement the solution to social, cultural and environment issues is known as social entrepreneur. This concept may be applied to a variety of organizations with different sizes, aims, and beliefs. For-profit entrepreneurs typically measure performance using business metrics like profit, revenues and increases in stock prices, but social entrepreneurs are either non-profits or blend for-profit goals by generating a positive "return to society" and therefore must use different metrics. Social entrepreneurship typically attempts to further broad social, cultural, and the environmental goals (Table1) often associated with the voluntary sector in areas such as poverty alleviation, health care and community development.

Table:1 Comparison between Business Vs. Green Entrepreneurs

Area	Business	Green Entrepreneurs
Goal	Capture a market securely	Fill a market gap; change the world
Objective	Build a business; earn profits	Create sustainable solutions for social change
Profit motive	Maximize shareholder value; profit as an end	Advance social aims; profit as a means to financial sustainability
Risk	Basic business risk	Basic business risk plus social aspect
Growth	Competitive for one company	Collaborative for societal impact
Link to social problem	Indirect	Direct
Feedback	Established consumer and market information sources	Need to be creative in obtaining market responses
Competition	Win for one business over others in a market	Exists because no one else adequately solving problem; win for society
Capital	Benefit from robust financial and managerial services	Contend with unpredictable and fragmented financing

Source: CISO IBSG, 2011

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GOALS OF SUSTAINABLE CONSTRUCTION

The basic goal of green building is attractive, comfortable, affordable shelter that does no harm to the Earth in its manufacture, or its use or disposal. This overarching goal is driven by four further goals:

1. Reducing impacts on the Earth from constructing buildings and their materials
2. Reducing impacts which arise during occupancy
3. Reducing the impact of the structure at the end of its life
4. Human benefits like psychological well being, reduced stress and improved cognitive performance

TRIPLE BOTTOM-LINE BENEFITS

Green building is an approach and not a simple development trend, to building best suited to the demands of its time, whose importance and relevance continue to increase. The benefits of green building are manifold, and may be categorized along three fronts (Table2): environmental benefits (Emissions Reduction, Water Conservation, Storm water Management, Temperature Moderation and Waste Reduction), economic, and social benefits (Improved Health, Healthier Lifestyles, and Recreation).

Table: 2 Benefits of sustainable construction

Economical	Social	Environmental
Lower operational cost	Improve Occupants Comfort and Health	Emission reduction
Lower maintenance	Psychological well being	Water conservation
Higher sale and rental value	Reduce stress	Stormed water management
Lower churn cost	Improved cognitive performance	Reduced Volumes of Solid Waste
Lower construction and design cost	Increased productivity and attendance	Protect the Ecosystem Protect existing natural spaces
Quicker sales	Minimizes Strain on Local Infrastructure	Improve Air and Water Quality
Ability to secure finance	Create an Aesthetically Pleasing Environment	Temperature Control
Rapid return investment	Reduce Sick building syndrome	Reduce energy consumption
Reduce energy consumption	Good sleep	Acceptable outdoor and indoor noise levels
Annual water cost saving	Good day light, thermal comfort, air quality	Reduce use of high-energy material in interiors
Improve attendance and improve productivity	Occupant safety and security	Reduce material use and use low-impact materials
Decreased use of natural resources	Lower greenhouse gas emissions and air pollution Better worker retention and recruitment	Conserve and restore natural resources

THE IMPACT OF BUILDINGS

1. Environmental Impact

According to the U.S. Environmental Protection Agency and the US Green Building Council (USGBC), construction and operation of the buildings results in the following consumption of resources: 72 percent of electricity resources; 39 percent of total energy used; 17 percent fresh water flows; raw materials, as well, construction and operation of all buildings results in the following generation of waste materials: 25%-40% of municipal solid waste; 50 percent of chlorofluorocarbons (CFC); 35% of CO_2 emission; Other air emissions and water discharge. The most significant being CO_2 emissions due to construction activity.

2. Social impact

It is generally recognized that buildings consume large amount of water, wood, energy and natural resources used in the economy. Green buildings provide a potential promising to help address a way of challenges facing globally, such as rising incidence of allergies and asthma; the health and productivity of workers; the effect of the sick building syndrome.

ENVIRONMENTAL AND SOCIAL BENEFITS OF SUSTAINABLE CONSTRUCTION

What is required of the Sustainable building requires that engineers and contractors along with the co architects create with the environment focusing on quality of environmental quality, development of the site, conservation of water renewable energy and sustainable materials.

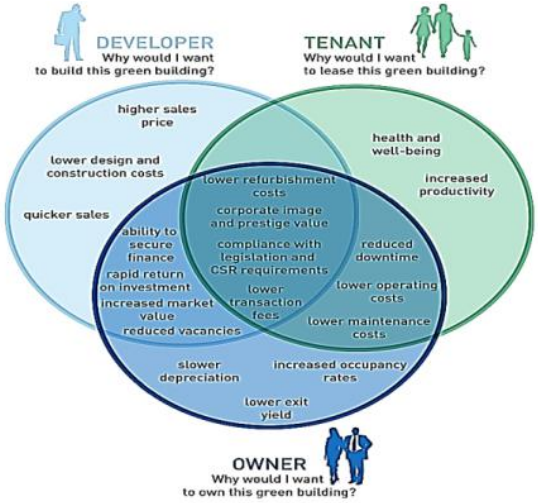

Figure:1 Multiple benefits of sustainable buildings

Green design not only helps reduce energy, water, and Heating, Ventilation and Air Conditioning (HVAC) costs significantly but also helps in cutting down on emission released into the ozone. We can generally categorize the benefits of sustainable building in the following ways, i.e., social, economic and environmental benefits.

1. Environmental Benefits

The whole purpose behind the sustainable building is to preserve our environment and avoid the depletion of the earth's natural resources. When sustainable substitutions are made throughout each phase of the project's development it allows us to: a)Protect the Ecosystem, b) Reduce

Emissions, c) Improve Air and Water Quality, d) Conserve Water resources e) Reduce Waste Streams, f)Conserve and Restore Natural Resource, g) Waste Reduction, h) Temperature Control, i)Reduce energy consumption, j) Protect existing natural spaces, k) Reduced Volumes of Solid Waste, l) Reduce material use and use low-impact materials, m) Reduce use of high-energy material in interiors and n) Acceptable outdoor and indoor noise levels.

2. Social benefits

The environmental and economic benefits of green buildings are well known for the social benefits of green buildings are often ignored. The main benefits of building green are included the following:

a) Improve Occupants Comfort and Health, b) Create an Aesthetically Pleasing Environment, c)Minimizes Strain on Local Infrastructure, d) Increases Occupants Overall Morale, e) Better health of building occupants –reduce Sick building syndrome, Reduce Allergy and asthma symptom, Reduce Transmission of infectious diseases, f) Improved comfort, satisfaction, and well-being of building occupants like daylight, thermal comfort, air quality, g) Occupant safety and security, h) Lower greenhouse gas emissions and air pollution, i) Improve attendance and improve worker productivity, j) Psychosocial well-being like overall satisfaction and good sleep, k) Better worker retention and recruitment; Lower cost of dealing with complaints; Decreased risk, liability, and insurance rates; Greater building longevity and better resale value.

CONCLUSION

This paper concludes that the built environment is without doubt, a major contributor to global greenhouse emissions and has a larger impact on the natural resource and human health. The uptake of sustainable construction concepts and techniques is largely focused on eco-efficiency and healthy living. It should be noted that simply reducing negative impacts by a certain percentage is not going to solve the global environmental problems; though it can certainly help if it becomes standard practice by many stakeholders like Green Entrepreneur and Ecopreneurial companies. This includes moving towards true sustainability by utilizing holistic measures. The array of practices and techniques to reduce and eliminate the impacts of building on the environment and human health is brought together by green buildings.

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