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Original Article

Sustainable Environment And Green Building Design: Asian School Of Business Experience

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ABSTRACT

Demands for green edifices climb because of the environmental change, high carbon discharge rate, ozone layer depletion and other natural calamities. The main focus of this paper is provide for a review about the maintainable ecological building configuration and development in general and specially at Asian School of Business Campus placed at Technocity, Trivandrum, Kerala. Survey, Interview and direct observation are utilized for gathering the essential data. The study inferred that for the development of a green building, buy of material for green building is the most essential element .The Planning and outline of the building comes next real focused range for the development of a green building.

Keywords:

Green Building, Environment,Asian School of Business Campus,LEED Certification ,Trivandrum , Kerala .

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I. Introduction

In recent years the awareness about environment and green building is increased. Green building does not implies a green painted building however its a maintainable building. A Green building or feasible building essentially implies a building or a narrowing undertaking which is an earth mindful development .The main focus of this study is to provide an outline about the reasonable ecological building configuration and development of as a rule and especially at Asian School of Business Campus ,

Technocity,Trivandrum.Kerala.In 2012 Asian School of Business got the LEED gold rating confirmation for its green building construction. Environmental Protection Agency (EPA) defines green building as “the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from sitting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or ‘high performance’ building.”According to Wikipedia a green building is one which uses less water, optimizes energy efficiency, conserves natural resources, generates less waste and provides healthier spaces for occupants, as compared to a conventional building. McGraw Hill's Green Construction Outlook report(2008) defined green building as one built to LEED standards, an equivalent green building certification program, or one that incorporates numerous green building elements across five category areas: energy efficiency, water efficiency, resource efficiency, responsible site management and improved indoor air quality.

Check Points Of A Green Building

For making a green building the following areas should be checked .

Design -The design parts includes the planning, estimation, budgeting, layout,drawing, interior and exterior layout structural designs etc
Resources -Available low cost resources and its sustainability
Construction -Construction platform and land area
Operational cost -It includes the material cost labour cost ,licensee fees etc
Maintenance cost -Identify the annual maintenance cost and replacement cost
Renovation aspects -For further expansion and rearrangement
Future Demolition of building and its impact to the environment

The constriction of a green building is the combined efforts of the building design team includes the architects, the engineers, and the client of that particular project(s).The Green Building design mainly checked four major factors of a building and its surrounding environment .

Economic factors
Utility aspects
Durability of materials
Comfort for its users

Advantages Of Green Building

Some of the advantages of green building as listed below :

Efficiently using energy
Minimal usage water, and other resources
Protecting occupant health and
Improving employee productivity
Reducing waste, pollution
Prevent environmental degradation

Need For Green Building Designs

The positive development and advancement of a social order has to a great extent depends on nature. Green building is key due to the persistent abuse of our natural resources . We have enough assets for everybody now and later on yet not for our insatiable. Green building is great future financing and it give high remunerates for the present and impending eras. A few needs are rundown here.

Preservation of flora and fauna
For the long term sustainability of land area
To avoid air and water pollution
Tax Benefits for Green Buildings
Green buildings improve productivity
Save trees and water
Reduced construction and maintenance costs

Green Building Rating Systems In India.

There are two primary Rating systems in India.

Green Rating for Integrated Habitat Assessment (GRIHA)
Indian Green Building Council (IGBC)

Green Rating for Integrated Habitat Assessment (GRIHA)

GRIHA is a green building rating tool and it evaluates the environmental

performance of a building over its entire life cycle.The rating system, based on energy , environmental principles,practices and emerging concepts, both national and international.ADaRSH,(Association for Development and Research of Sustainable Habitats) is to promote development of buildings and habitats in India through GRIHA.The office located at Energy and Resources Institute (TERI), Delhi.

Indian Green Building Council (IGBC) :

Indian Green Building Council (IGBC) was formed by the Confederation of Indian Industry (CII) in 2001. IGBC is a non profit research institution having its offices in CII-Sohrabji Godrej Green Business Centre,Hyderabad .Indian Green Building Council (IGBC) has licensed the LEED Green Building Standard from the U.S. Green Building Council (USGBC),Washington.

Leed Certification Levels

Certification Levels	Points Required
LEED Certified	26-32
LEED Silver	33-38
LEED Gold	39-51
LEED Platinum	52-69

Asian School Of Business

Asian School of Business,Trivandrum in short and celebrated as ASB is an AICTE endorsed business school offering world class level management education and training for graduates and management development programs for working experts in management and technology. The principle point of ASB is to make skillful and dynamic new administration experts in the changing business environment. The school was established in 2005. ASB spotted at Technocity close to the central station of the Central Reserve Police Force (CRPF), on the edge of the city of Trivandrum,kerala.Technocity is the fourth phase of development of Technopark,Trivandrum.ASB presently has exchange programs with University of Kansas School of Business ,USA and tie-ups with Institute of Organization and Management in Industry (ORGMASZ) of Warsaw in Poland. ASB campus had designed by the CPG Consultants, Singapore and Jones Lang Lasalle was the advisor. In 2012 the campus got the LEED gold rating under the Leadership in Energy and Environmental Design (LEED) India rating framework for its new development. ASB accomplished 39 points for its reasonable surroundings and green building development.

Objectives

The objectives of the study are listed below :

To determine the level of satisfaction among the users of a green building
To know the major areas should be concentrated for a green building construction
To identify the problems faced for the constriction of a green building
To find the major features of the green building of ASB

Scope Of The Study

The scope of the study is limited to Asian School of Business Campus , Technocity,Pallipuram Trivandum,Kerala in the period of 2011-2013 only .

Literature Review

Retzlaff (2009) discussed the concept of green buildings and building assessment systems and to identify and explore the major themes in the literature as they relate to

planning. Six themes are identified: scope, weighting, subjectivity, rigor, adaptation, and life cycle analysis.The discussion concludes that planning needs to take a more assertive role in green buildings .Sparkling (2012) done a study with an objective to determine the key cost justifications of LEED certification and to ascertain the level of satisfaction of owners as to the value of LEED. The study comprises 30 LEED-certified buildings that are owner occupied .Participants mentioned that cost savings associated with energy and water use reduction as incentives to pursue LEED certification. Lúcio and Assed (2013) presented an application of sustainability concepts to building projects, practices, methodology and tools for evaluating existing buildings in the State of Rio de Janeiro, Brazil. Study utilizes the application of analytic hierarchy process (AHP). Application of this type of modeling is a system for sustainability assessment and evaluation of environmental aspects and socioeconomic perspectives of existing buildings.Niroumand et.al (2013) investigated the building evaluation and its role for achieving sustainable development using existing researches and found that there is a relationship between existing researches, results, methods and their questions.

Methodology

Strutured Questionnaire ,interview and direct observation are used for collecting the data .Printed questionnaire prepared and distributed .The sample population includes students,faculties,non teaching staffs construction laboures and general public. A total of 100 questionnaires send and 86 of them were returned .The final analysis done on the basis of 86 questionnaire.

Data Analysis

Table -1 Questionnaire distribution pattern

Sl.No	Respondents	Frequency	Percentage
1	Students	40	46.51
2	Faculties	10	11.63
3	Non- Teaching staffs	9	10.47
4	Project Construction members	15	17.44
5	Public	12	13.95
	Total	**86**	**100**

The questionnaires were among the students,faculties,non-teaching staffs , Project Construction members and the general public. Table-1 give the exact figures of the questionnaire distribution. Students and faculties (58.14 percentage of the total respondents) are the main users of the green building of ASB. Project Construction members includes a sample population of civil engineers,electrical engineers,electrical supervisors, site supervisors,technicians,laborers etc of the ASB green building project.

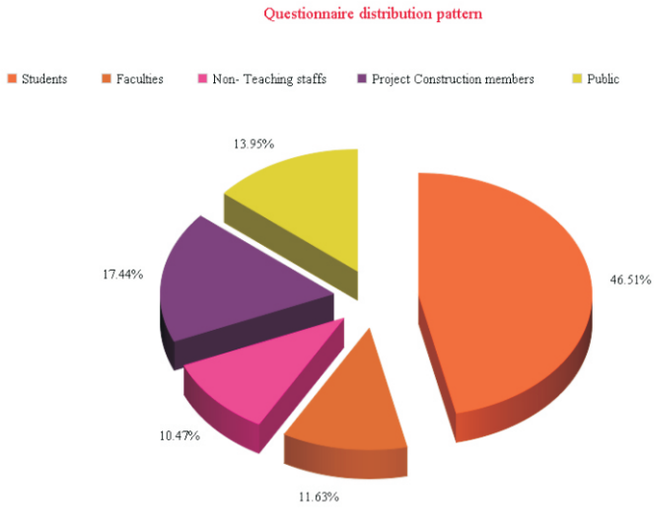

Table -2 : Level of satisfaction among the users of the green building of ASB

Sl.No	Level of satisfaction	Frequency	Percentage
1	Very Satisfied	69	80.23
2	Satisfied	10	11.63
3	Need improvements	5	5.81
4	Not Satisfied	2	2.33
	Total	**86**	**100**

Table-2 clearly reveals that majority of the users (80.23 percentage) of the green building of ASB are very satisfied about the green building construction.5.81 percentage suggested need improvements and 2.33 percentage (2out of 86 respondents) were not satsfied.The data tabulated in table -2 are charted in a pie digram for clarification.

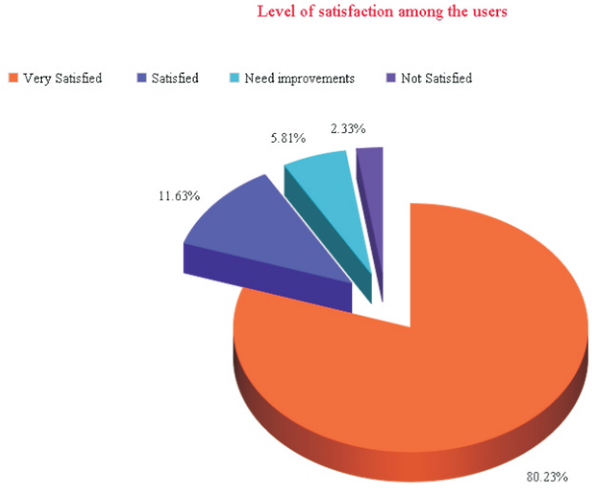

Table -3 : Major areas considered for a green building [as per project construction members opinion]

Sl.No	Major	Frequency	Percentage
1	Purchase of material	6	40
2	Planning and Design	4	26.67
3	Construction of building	3	20
4	Maintenance	2	13.33
	Total	**15**	**100**

According to the opinions of the 15 respondents of the project construction members; purchase of material for green building is the most important factor .The Planning and design comes in the next major concentrated area for the construction of a green building. Three respondents suggested the construction part have an importance for making a sustainable environment and green building whereas two respondents pointed the importance of maintenance of the building the most important factor for a sustainable green building.

Problems faced at the time of a green building construction

As per the opinion of various site engineers,construction supervisors and construction laborers the following problems and issues faced at the time of the green building construction .

1. New materials and methods for constriction
2. Number of labourer for a particular job is limited in Kerala
3. Sloped area and Multiple layered land
4. Problem of soil erosion and sedimentation
5. Cost cutting parameters
6. Time constraints
7. Conservation of natural resources

Some Of The Features Found In Study At Asb Green Building

Intelligent lighting management system
CISCO controlled Building management system
Motion sensors for energy savings
Acoustically designed Classrooms
Special space and way for physically challenged people
Eco friendly gardens, water features and landscaping
Maximum ventilation and full utilization of day lights
Fire protecting materials
Fire detecting sensors and alarms
Landscape irrigation -recycled water is used.
Special care was taken to ensure that the local water streams
Solid waste generated recycling
Eco friendly Greeny amphi theatre
Use of automatic locking system-access control system
Auto controlled Boom barrier
Use of solar energy
Indoor air quality
Heat control through Dolapur wall sand stones
Minimal usage of wood
Contemporary and ergonomic furniture designs
Human censored water supply system
Sliding partion for arranging the space according to the need

Manual and Automatic water purification system
Heat Reflective Roof and wall paintings
Centralised air conditioning system

Conclusion

Due to the climate change, high carbon emission rate, ozone layer depletion and other natural calamities the demand for green building and awareness about environment increased in recent years .The study concluded that for the construction of a green building, purchase of material for green building is the most important factor .The Planning and design of the building comes next major concentrated area for the construction of a green building. Majority of the users of the building are very satisfied about the construction of ASB.

Reference

1.ASB, Business School, Kerala, India. (n.d.)Retrieved February 17, 2014, from http://asbindia.in/about-us.php
2.Environmental Protection Agency, Green building, available at http://www.epa.gov/greenbuilding/pubs/about.htm
3.Green Rating for Integrated Habitat Assessment. (n.d.). GRIHA. Retrieved February 17,2014 from http://www.grihaindia.org/index.php?option=com_content&view=article&id=73
4.Green Construction Outlook Report (2008) .McGraw Hill ,California
5.Indian Green Building Council. (n.d.) Retrieved February 17, 2014, from http://www.igbc.in/site/igbc/testigbc.jsp?desc=22968&event=22869
6.Lúcio, Villarinho Rosa and Assed, Naked Haddad(2013) Building Sustainability Assessment throughout Multicriteria Decision Making, Journal of Construction Engineering, doi:10.1155/2013/578671
7.Niroumand, Hamed et.al (2013) Building Evaluation based on Sustainable Development using Questionnaire System ,Procedia - Social and Behavioral Sciences,89(10),454–460
8.Retzlaff,Rebecca C. (2009) Green Buildings and Building Assessment Systems
9.A New Area of Interest for Planners,Journal of Planning Literature, 24(1), 3-21
10.Sparkling, Anthony E. (2012) Cost justifications for investing in LEED projects,
11.McNair Scholars Research Joural ,4(1)
12.Yan ,Ji and Stellios Plainiotis (2006): Design for Sustainability. Beijing: China Architecture and Building,70-104

Picture-1 : Leed India Gold Emblem at Asian School of Business,TechnocityTrivandrum

Picture-2: Certificate of Leed India Gold