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GREEN LIBRARIES: MEANING, STANDARDS AND PRACTICES

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Abstract:

'Go Green' has become a buzz word in the 21st century. Recently libraries too have imbibed this phenomenon enormously. Green Library Movement, which is comprising of librarians, libraries, cities, towns, college and university campuses committed to greening libraries and reducing their environmental impact. Constructing a green library building using performance standards like Leadership in Energy and Environment Design (LEED) & Indian Green Building Council (IGBC) is a way some libraries both abroad and in India are choosing to become green and sustainable. Environmental challenges like energy depletion and climate change will influence the type of information resources and programs libraries will provide to their communities. The present paper focus on the concept of 'Go Green' in general and 'Green Libraries' in particular. The attempt is also made to give information on different standards being followed, existing green libraries, practices and initiatives globally and locally.

Key words: Go-Green, Green Libraries, LEED, IGBC, GRIHA

INTRODUCTION

'Go Green' and **'Sustainability'** are not the new concepts; they are the effort to save our mother earth. Recently due to the serious issues of global warming, depletion of natural resources and pollution in every walk of life, have led to attention from the world wide community. **Go Green** is nothing but a set of practices to lead more environment friendly and ecologically responsible decisions and lifestyles which will protect our environment and its natural resources for current and future generations. **Sustainability** on the other hand can be defined as the capacity to meet the needs of the present without compromising the ability of future generations to meet their own needs. It has economic, social and environmental aspect.

The Role of library in this worldwide phenomenon is enormous .Libraries are considered to be the place for lifelong learning, and provide users with the knowledge they need. Librarians can act as role model for sustainability by providing suitable and relevant information related to green issues and concerns by its collection and designing various programmes with the users. There is no better place to model best practices for sustainable designing for reduced energy consumption and as an educator for a whole range of new ideas than the library. Libraries apart from disseminating the idea of Go Green and sustainability can lead by an example by modifying or designing new buildings to meet this ever increasing necessity for society.

Objectives

The objectives of this paper are:

1. To understand the meaning and importance of green libraries
2. To list the different standards being followed for green libraries
3. To gain insight into Eco-Friendly Libraries both abroad and in India
4. To find out solutions to convert existing libraries into green libraries.

Research Methodology

This research paper work can be characterized as a theoretical concept. The methodological framework used in this article is based on previous research related to systems of innovation. The approach of the research is exploratory in nature, which constitutes a secondary source. Literature review includes green building and green library techniques from United States of America (USA), Japan, and India etc. The Literature survey was done using online computerized search engines like Google, Google scholar etc. The research is based on secondary data, which includes compilation of research articles. This Research paper is more of informative and suggestive in nature, many more studies and work need to be done by the individuals, institutions and organizations working for green libraries.

Why and how are Libraries becoming green?

WHY?

There are several reasons why libraries should build green or incorporate green features into their buildings;

1) Green library does not require any high budget allocation. It is now possible for libraries to build green buildings on conventional budgets.
2) Green libraries makes use of finite energy resources which is readily available and also fit into the library budgets. Here technology does not become a barrier.
3) The Maintenance of green libraries is also meagre as natural ventilation, aeration creates a good environment .There is no necessity for artificial creation and in turn use of extra energy for maintenance.
4) As Green libraries play a paramount role towards the welfare of mankind, this could be used as a part of the marketing strategy of the library as a socially responsible body which can have a big impact on the library's image.

HOW?

According to **Leadership in Energy and Environmental Design** (LEED) standard , the following things have to be born in mind and taken into consideration while creating green libraries .These are grouped in five categories ,namely :-

1. **Site Location:** This is the most important element in the green library. Selection of the site has a large impact on how ecologically friendly the library will be .LEED has given lots of guidelines for site selection process .The Library should be located in a heavily populated area and people should be able to reach the building via public transportation. There should be simple environmental parking lots with natural shading /Green Roofs to reduce the heat effect. Walking and biking are the green ways to travel so library can prepare attractive and comfortable walking and biking paths to get into the library.

2. **Water Conservation**: Libraries should plan efficient water conservation strategies like to capture and conserve rain water to be used in irrigation of landscape around the buildings. Urinals can be planned in such a way where waterless urinals may be used.

3. **Energy Efficiency**: According to LEED energy efficiency is the heaviest weighted of all the categories .With the advent of new technologies in the 21st century, it is quite possible to generate energy from the natural resources. Energy conservation can done through passive and active strategy. Passive strategies could be based on sun and wind energy. Active strategies include using more advanced technology driven strategies converting solar energy into energy resources and sensors readjust lighting.

4. **Building Materials**: The Building materials should be selected based on a.)The material should contribute to a less waste as possible like post-industrial and post-consumer recycled materials. b.) The material selected should not cause much damage to the natural environment. It should be possible to reuse and recycle.

5. **Indoor air quality:** Most Modern Buildings are temperature controlled and air-tight. The lack of ventilation make buildings expensive to cool, it also trap harmful toxins

which can do serious damage to people's respiratory system. Green buildings need to be designed in a way in which the air gets recycled and does not stay stagnant. A green library is not just about caring the external environment but also safeguarding the health and well-being of those who work in it.

Standards for Green Libraries:

There are lots of discussions, activities going on about 'Go Green' spearheaded by various councils operating from US and also in India.

USGBC Standard: The United States Green Building Council (USGBC), a non-profit organization from the United States developed LEED rating system in 2000 .It stands for **Leadership in Energy and Environmental Design (LEED),** an ecology-oriented building certification program which judge building's sustainability and certify them as Silver, Gold or platinum depending on 6 major components:

a) Site Location
b) Water Conservation
c) Energy Efficiency
d) Material and Resources
e) Indoor air quality
f) Innovation and design process

Chicago Illinois Standards: Chicago is one of the first cities to incorporate environmentally friendly practices into public buildings and developed its own standard. This standard is highly influenced by LEED Green Building Rating System.

Brown Green Standard :California Governor Jerry Brown discussed the emerging trend of green libraries and proclaimed that the libraries were on the cutting edge of Green design.New or renovated state buildings over 10,000 sq.feet will have to reach the U.S. Green Building Council's LEED Silver Certification or higher ,as well as incorporate clean energy generation.

IGBC Indian Green Building Council Standard: In 2001 Confederation of Indian Industry (CII) formed IGBC with a vision to enable a sustainable build environment for all. IGBC has licensed the **LEED Green Building standard from the U.S. Green Building Council** and in collaboration developed Gold rating system to promote green buildings in India.

Green Rating for Integrated Habitat Assessment (GRIHA): TERI (The Energy and Resources Institute, New Delhi) is another organization that is in forefront of the green building movement in India .It was TERI who predicted the need for development of an indigenous tool for rating of green building in India which led to the foundation of **GRIHA .Later this Rating system was adapted by the Government of India, Ministry of New and Renewable Energy. GRIHA has been developed as a rating system which is suitable for all kinds of buildings in different climatic zones of the country.** There are also a number of educational campuses and mixed use township developments seeking GRIHA certification for the projects. GRIHA Council has launched GRIHA LD (Large Developments) for design and evaluation tool for large developments including campuses, townships, SEZs etc.

Green Libraries: Global and National Initiatives

Fayetteville Public Library (set up in 2004), USA: This is the first building in Arkansas to go for LEED and achieved silver 2006.It has adopted many green techniques. They have green roof with alternative roofing material which has made the temperature to be in optimal level. The reading room and circulation counter are placed in angle to sunlight exposure.

Scattle Central Library (set up in 2004), USA: As per the standards of Green Concept, this library is situated in a densely populated urban areas which is well-connected to public transport. Rain water is collected over roof and used for irrigation. Triple glazed glass are being used here to reduce heat in the library.

Minneapolis Public Library (set up in 2006), USA: Again here the Roof tops are planted with the vegetation to suit the harsh climate of Minnesota .This Roof tops have helped in reducing rainwater runoff, heat and cooling load.

University of California ,Merced Kolligan library (set up in 2005) ,USA : This library was awarded LEED's Certificate in 2007 for its green initiatives like using 37% of recycled content with 66% of ceiling titles with recycled content which include telephone books ,newspaper etc. About 30% of the materials used for the construction of the building was manufactured locally.

BIBLIO-Centrum ,Helsinki :This Library is built with an elongated shape .Its opening is directed towards south in order to get natural heating during winter .It has green roof tops for fresh air and solar panels to reduce the heat. It is designed to be an icon for Helsinki that will serve as the city's central library while anchoring and uniting its prestigious surroundings

Kanazawa, Japan: This is a new library in Kanazawa, it serves a community centre for the local people. It has around 6000 small circular windows which serves as a smart cooling and heating system. There is a well exposure to sunlight and natural ventilation.

National Library (set up in 2005) Singapore: This library has been called the greenest building on the planet. It is designed with Light shelves through which light filter into the library without having any harsh effects.

Anna Centenary Library: This building is constructed as a state of the art library building by Department of Public libraries, **Tamil Nadu State Government** .**This library is considered to be the largest and Greenest library in Asia .It is also the first library in Asia to get GOLD Rating by the Indian Green Building Council (IGBC) in recognition of its energy efficient design.**

The library building complex consists of the library building (G+8) and an auditorium (G+1) to accommodate over 1000 readers at a time and 1.5 million books .The Library block is located at an angle that allows000000000000 for maximum daylight and natural ventilation. The Façade has Saint-Gobain Nano which is a high performance solar control and terminal insulation glass. The interiors are finished with eco-friendly, locally available, recycled furniture and curios. Common spaces like the lobby and atrium host interactive nodes where both permanent and temporary displays disseminate information on a variety of topics.

Solutions for the Existing Libraries to GO GREEN:

The existing libraries can also implement eco-friendly measures in their day-to-day routines like:

1. Management of waste by using most modern waste segregation and recycling practices like waste can be turned into vermi-compost which can be used to increase the green cover in the surrounding area like Orchid Ecotel in Mumbai is the best example of waste management.
2. Use of CFL lights instead of tube lights with proper maintenance can minimize expenses.
3. Rain water harvesting pits can be created to store water and then it can be used for gardening.
4. Use of Maximum Natural light and wind can save electricity.
5. Digitization of rare books etc. can be done to save paper.
6. Use of e-books and journals to save paper and place.
7. Eco friendly pesticides can be used at the time of pest-control.
8. Use of eco-friendly paints on the wall to reflect more light
9. Eco friendly material can be used for stacking purpose.
10. Turning off of lights and Fans in the library when not required.
11. Using network printer instead of personal printers.
12. Installing a new server and running multiple servers on one server box.
13. Re-fill toner cartridges instead of buying new.
14. Putting computers in sleep mode when in not use.

In India the pace of green movement in general and in libraries is slow. Statutory Bodies like UGC, AICTE etc. can play a major role by making it mandatory for colleges to incorporate green features in their buildings and libraries. Universities too should make all the efforts to transform whenever possible libraries into green libraries.

Conclusion

The Library is to serve its community .The Libraries must respond to this increasing focus on Green Movement and should act as role models for sustainability by providing suitable and relevant information related to green issues and concerns. Librarians should encourage and support the movement of green libraries and help communities to understand green and sustainable concepts. More and More eco-friendly solutions should be implemented to make our mother earth a better place to live in.

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