

Green Library Initiatives in India

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1.0 Introduction

Green Library is the most recent concept in the modern library system. According to the Online Dictionary of Library and Information Science (ODLIS) (wikipedia.org/wiki/greenlibrary), a Green Library may be defined as: 'A library designed to minimize negative impact on the natural environment and maximize indoor environmental quality by means of careful site selection, use of natural construction materials and biodegradable products, conservation of resources (water, energy, paper), and responsible waste disposal (recycling, etc.)'. Libraries taking green measures in their lay-out and design create an impact on the users and at the same time generating interest and attraction towards libraries. Libraries have a big role towards environment. They must contribute towards sustainability and conservation of the environment and at the same time educate the people regarding current environmental issues so as to empower them to make a difference. Libraries have been constantly endeavoring to expand their scope and objective of providing better services to the users and thus improve the condition of mankind. As a centre of knowledge sharing and dissemination, Green Library is uniquely placed to educate people on the importance of sustainability. To build a sustainable library environment, it is important that librarians and libraries adapt, change, and incorporate green things in order to innovate and make the library eco-friendly. The role of the library is to serve its community (Antonelli, 2008). Communities need libraries and librarians to act as role models for sustainability by providing accurate information on all manner of green topics, from alternative building practices to renewable energy options (thegreenlibraryblog.blogspot.in). The two most important things for making healthy and prosperous sustainable libraries are economy and ecology. That is, the libraries can manage the use of resources and save money and time and they can keep the relationship between living things and their environment and can make eco-friendly environment (Kumar and Antoo, 2005). It's also the high time for the librarians to join the Green Library Movement and incorporate green in their libraries.

2.0 Importance of Green Library

In recent times, the concept of Green Library is spreading all around the world. It isn't only a matter of sustainable buildings, but it is also a library management issue. In order to survive the technologic challenge, many libraries around the globe are re-discussing their identity in order to live up to the challenge of our times and to clients' high expectations. By reducing paper waste energy inefficiency and promoting recycling of used material, Green Libraries are developing a new idea of the Library as a sustainable service. The libraries of today are undergoing major changes due to the digital challenge and developments in IT sector and many thoughts and words have been depleted on the prospect of libraries in the near future. However, what hasn't been pointed out enough and discussed about libraries role in conserving environment while engaging in new media and technologies is the new sphere of sustainability and library ecosystem. It is about driving and

moulding the role of libraries to a smarter one with more sustainable use of the knowledge that they have proudly produced and safeguarded until now and providing environment friendly library services to the users.

There are several reasons why libraries are adopting green features in their buildings and lay-out. First, the cost of constructing green buildings has become affordable (Antonelli, 2008). It is possible to plan a green Library within an affordable budget. Second, it is important to realize the value of energy resources that are finite and it falls on our part as well (libraries) along with the rest of the world to conserve and preserve these resources. Libraries continue with their mission to work for the betterment of mankind and to establish a new image of the library in the modern world. Libraries play a greater role in becoming the planet green, controlling the pollution and green house gases in environment. For some libraries, it is affordable to switch to a green architecture but for most of the libraries even today, especially in India, it is not that easy in terms of its cost and funding. However, an existing library building can even think of renovating their library and apply for a LEED certification through the LEED for Existing Buildings (LEED-EB) option. But for small libraries, even renovation is quite a difficult task; they can just take a simple step to refrain from using toxic chemical cleaners and adopt to environmentally friendly cleaning products.

As Green Libraries give pleasant atmosphere to the users, readers will be attracted towards the library. Libraries can serve for the information needs of the users as well as the present & future of the users by saving environment (Chakraborty, 2012):

3.0 Literature Review

The Green Library is a relatively new concept and hence literature on Green Library have been found to be limited. James and Suzanne (1991) in their paper on Green Library explained how to be environmentally friendly inside the library and how to introduce greenery in the library. Eagan (1991) discussed about sustainability and impact of noise pollution in the library. Smith (1991) in his article explained about the role of libraries in conserving the nature. Atton (1993) in his research paper talked about green librarianship in the U.S. Brown (2003) in his paper discussed about the trend of Green Libraries in traditional libraries. Neale (2008) in her paper 'Go Green' talked about the ways of greening the libraries. Naphade, Chani & Garg (2013) studied the Central Library building of IIT, Roorkee and suggested various ways of making it eco-friendly and green.

4.0 Objectives of the Paper

The purpose of this paper is to study the concept and the idea of Green Library thereby analyzing the importance of green libraries for sustainability and user attraction. It should also identify the major green library initiatives at the national level. The paper would attempt to recognize the standards for Green Libraries in India and the movement so far in the context of Indian libraries. Information has been mostly taken from Primary and Secondary Sources.

5.0 LEED Certification

LEED (Leadership in Energy and Environmental Design) certification is a rating system developed and administered by the U.S. Green Building Council (USGBC) to check and ensure sustainability while making

new buildings and renovations. LEED certification is the recognized standard for measuring sustainable criteria adopted while designing and constructing buildings. Acquiring LEED certification is the indication to reveal that the proposed building project is truly "green." According to Scherer, Jeffrey Allen (2014), "the LEED green building rating system - developed and administered by the U.S. Green Building Council, a Washington D.C.-based, nonprofit coalition of building industry leaders - is designed to promote design and construction practices that increase profitability while reducing the negative environmental impacts of buildings and improving occupant health and well-being". In U.S. it has become the national standard for commercial and institutional buildings, since 2000, when it was first introduced. LEED has now gained increased importance in the sense that it allows a builder with certain benchmarking standards as to how to proceed with and go for a green building. According to the criteria (green factors) met by the building projects, they are awarded with points, which are called LEED Points. As enumerated in the website of the U.S. Green Building Council, (in.usgbc.org/leed), the six credit categories for new building construction are sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation in design. There are currently six types of building certification under LEED including LEED for New Construction (LEED-NC), LEED for Commercial Interiors (LEED-CI), LEED for Core and Shell (LEED-CS), LEED for Existing Buildings (LEED-EB), LEED for Neighborhood Development (LEED-ND), and LEED for Homes (LEED-H). The LEED rating system is progressive with four levels of certification: Certified, Silver, Gold and Platinum. Each certification level has 32 categories of environmental design and energy concerns for a maximum point value of 69. Buildings must score a minimum number of points above "standard building" performance levels to qualify for certification. For example, a basic LEED-NC certified building must score at least 26 points in the six credit categories. To certify for a Silver rating, a building would require 33 points, for Gold 39 points, and for Platinum rating a minimum of 52 points. Platinum certification is difficult to achieve.

5.1 Benefits of LEED Certification

Going for a LEED certification while constructing buildings ensures that the proposed building is performing as per the predominant design and standards set. It includes a rigorous verification and commissioning process by the competent authority and proves one's environmental goals. As already mentioned above, the LEED rating system offers four criteria of certification, level-wise for new construction - Certified, Silver, Gold and Platinum - that correspond to the number of credits accrued in five green design categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality. Presently, LEED standards cover new commercial construction and major renovation projects, but criteria for developing standards for covering commercial "core & shell" construction, new home construction and neighborhood developments are under process and will soon come-up in the immediate future.

5.2 Ways to Achieve LEED Certification

The U.S. Green Building Council's LEED website: <http://in.usgbc.org/> provides information on the LEED Certification Process including checklists and reference guides, new commercial construction and major renovation projects (LEED-NC), existing building operations (LEED-EB) and commercial interiors projects (LEED-CI), core and shell projects (LEED-CS), homes (LEED-H), neighborhood Development (LEED-ND), list of LEED-certified projects, directory of LEED-accredited professionals, information on LEED training workshops, calendar of green building industry conferences, etc. There are five criteria of LEED like Building Design and Construction, Interior Design and Construction, Building Operations and Maintenance, Neighborhood Development and Homes and one has to choose which LEED rating system best suits his/her project. The applicant is required to register the said project to begin the LEED certification process, followed by submitting an application and then following the necessary formalities as enumerated by the U.S. Green Building Council.

Besides this, information about Green and Sustainable Libraries is also available in <http://greenlibraries.org/>, a website dedicated to documenting the greening of libraries in North America. This site contains a growing list of libraries that are constructing green buildings. It also contains a list of resources to help people make their libraries more green and sustainable. There are currently 42 green libraries listed in the directory web pages.

6.0 Green Library Prospects and Initiatives in India

India ranks third out of 899 projects on the list of top 10 countries in Leadership in Energy and Environmental Design, according to the latest US Green Building Council report 2018. Some of the green library initiatives are discussed below:

6.1 Initiatives in India

In India not much importance was given to greening of libraries until recently when we can find that Indian libraries have started giving importance to environmental issues and creating an eco-friendly environment in the premises of the library. Green thoughts and activities are coming up in the libraries where we can find that green gestures like use of natural materials and bio degradable products, conservation of resources, awareness about bio physical environment, gathering green information, dependency on sunlight in green design, greenery within the library, green collection resources, etc are gaining weightage towards creating a modern green library. The Perma Karpo Library located in Ladakh in Indian Himalayas has a sustainable and beautiful building which is a unique blend of eco-friendly design, applications of environmental science and local knowledge. Amongst the technologies and design solutions used on site are ventilated Trombe Walls, wool insulation, a mud roof, timber paneling and even solar panels on the roof. The LEED Gold Anna Centenary Library located in Kotturpuram, Chennai is another major initiative towards green movement. The Indian Green Building Council has conferred the prestigious LEED Gold Rating to this project for its green initiatives and activities. Besides this, Green initiatives and measures have been taken up by Madras University Library System, Calcutta University Library System, Delhi University Library System, Mumbai University Library System. The University Libraries buildings are converting into modern buildings known as

‘Knowledge Resource Centre’, which are on the concept of a ‘green’ building, providing open space learning environment and provisions for natural lights, natural air and other sustainable facilities (Chakraborty,2012).The green gestures that are being taken up in Calcutta University library are use of open space, green plants, great height, windows at the eastern wall,etc. which seems to be soothing as well as eco-friendly. The Jawaharlal Nehru library building of Mumbai University is situated among thick trees and plants with a reading space in a vast open area. They have also used heavy wooden antique furniture as an eco-friendly gesture. The Madras University library has adopted a lot of green measures in their library premises. Large windows, vast open space, sunshades, wide corridor for entry of natural air and wooden furniture have been employed to maintain an eco-friendly environment within the library building. The Delhi University library also maintains greenery within its premises. They have a broad opening for natural lights and plenty of plants and pots inside. Fire alarms, smoke alarms, extinguishers are abundantly seen inside the library with more use of eco-friendly materials.

6.2 Standards and Prospects for Green Libraries in India

6.2.1 GRIHA and IGBC

To assess the Indian standards for green libraries/buildings we have GRIHA and IGBC as national rating systems in India. GRIHA has been introduced by the Government of India as national rating system. Due to the Indian agro-climatic condition and different types of buildings in India, GRIHA has been accepted as a national rating system for all climatic zones of the country and applicable to all types of buildings. To promote the concept of Green Buildings in India (www.igbc.in) the Indian Green Building Council (IGBC) was formed in the year 2001 initially as a part of the Confederation of Indian Industry (CII) to promote and rate Green buildings in India. Under this, there are about 2190 registered buildings, 398 rated buildings and also 1082 IGBC aggregated professionals. The vision of the council is, "To enable a sustainable built environment for all and facilitate India to be one of the global leaders in the sustainable built environment by 2025". IGBC has nine different green rating programs to suit all types of buildings in India-IGBC Green New Buildings, IGBC Green Existing Buildings, IGBC Green Homes, IGBC Green Schools, IGBC Green Factory Buildings, IGBC Green Townships, IGBC Green SEZs, IGBC Green Landscapes, IGBC Green Mass Rapid Transit System and LEED. Libraries intending to go green should follow the guidelines laid down under IGBC Green New Buildings (owner occupied) Rating System. The council offers a wide array of services which include developing new green building rating programmes, certification services and green building training programmes. The council also organizes Green Building Congress, its annual flagship event on green buildings. The council is committee-based, member-driven and consensus-focused. All the stakeholders of construction industry comprising of architects, developers, product manufacturers, corporate, Government, academia and nodal agencies participate in the council activities through local chapters. The council also closely works with several State Governments, Central Government, World Green Building Council, bilateral multi-lateral agencies in promoting green building concepts in the country.

6.2.2 Leadership in Energy and Environmental Design (LEED-India)

USGBC has also established a LEED hub in India to further accelerate the adoption of LEED in India. According to Suresh and Antoo (2012),^{the} LEED hub is a local technical, market, certification and customer support center for LEED project teams. The LEED hub adds significant capacity in the market, encouraging even greater adoption of green standards across more populations in the region. Helping project teams successfully navigate the design, construction and operations of buildings to achieve the requirements of LEED certification, the LEED Hub also delineates the local strategies for business development and brand advocacy. Over the years, the Indian Green Building Council (IGBC) has been instrumental in mobilizing the green building movement in India and helping establish LEED as a key driver for market transformation. USGBC remains grateful to IGBC's early support of LEED India and its ongoing leadership in India. USGBC and IGBC continue their collaboration in advancing the uptake of green buildings in India. LEED India projects registered with IGBC till June 2014 would be certified by IGBC. LEED projects in India registered after June 2014 would be certified by the Green Building Certification Institute (GBCI). These efforts are in line with their goal to handle certification of LEED buildings across the globe, by one agency. Leadership in Energy and Environmental Design (LEED- India) green building rating system is a nationally and internationally accepted benchmark for the design, construction and operation of high performance green buildings. There are four certification levels (Certified, Silver, Gold, Platinum) awarded according to achievement as evaluated by points using the LEED scorecard. LEED rate on 100 points and certify the buildings on the following criteria :

25-40 points as Certified.

41-50 points as Silver.

51-60 points as Gold.

61-80 points as Platinum.

LEED-India analyses the performance in the following five key areas namely 1) site location, 2) water conservation, 3) energy efficiency, 4) materials, 5) indoor air quality to promote a building approach to the potential builders and also throws light on other categories of innovation and design. LEED also uses various categories to judge the buildings sustainability through Design Elements.

7.0 Conclusion

The notion of a Green Library is gaining momentum at a high speed and some concrete steps have already been taken up at the national level. The creation of green libraries is still a new concept in the context of modern library services and open space learning. Still a lot of endeavors and attempts are required on the part of librarians, libraries, college, university, parent institutions, etc. to be committed to greening libraries and reducing their environmental impact. Going for a Green Library with the specific standards as set by IGBC in India with a LEED certification will really influence the quality of services libraries will provide to their users. The present study shows that like other developing countries people in India have started gaining awareness about green buildings and the Government too has started taking steps in this direction but still

more things need to be done. By saving the valuable natural resources, sustaining environment and indulging in green thoughts and activities, the libraries can definitely take some collective steps in going green and becoming eco-friendly.

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