Green Libraries in India: An Overview

Machhindra S. Bangar *

* Assistant Librarian
Knowledge Resource Centre
SNDT Women's University,
Mumbai, Maharashtra, India

QR Code

Abstract: - *Green design is an emerging trend, defining the library of the 21st century. Green Library Movement which comprised of librarians, libraries, cities, towns, college and university campuses is committed to greening libraries and reducing eco-degradation. The paper highlights the conditions of green library, role of a librarian, features of green library, Initiatives in India. It is also give an overview of green library and role of modern librarian to make green library. Environmental challenges like energy depletion and climate change will influence the type of information resources and programs libraries will provide to their communities. The trend in India is not only growing in numbers but also extends across the country. The paper concludes that librarians have to be keen on updating themselves on sustainability trends in the field of librarianship and should provide awareness and create the space in the libraries to exemplify the Green practices.*

Keywords: Green Libraries, Green Library Movement, Library Initiative - India, Green buildings, University Libraries, India, Academic Institutions.

1. Introduction

The green library or sustainable library is a new concept and it is gaining popularity among the library professionals. Around the world the idea and behavior of creating green libraries is approaching a tipping point and transforming into a library movement by building green library buildings, by greening existing library facilities, providing green library services, and embracing environmentally supportive and sustainable practices within the library. The Green Library Movement has been in existence for over 20 years. The climate change issue became heavy on dependents specially people of around world. The word is very much concerned over global warming and its abuses so we want everything to be to save the planet. The interconnected topics of sustainability and green libraries have received a great deal of coverage in recent years in publications targeted toward World librarians.

The word Green has a great importance here for a healthy survives. Over the past few years there are increasing interest towards green revolution in every sector and library is one of them. The paper has discussed on various aspects of green libraries and national initiative.

2. Definitions

Oxford English Dictionary (2008)

The term "green" is defined as "pertaining to, or supporting environmentalism."

The term "sustainable" relates to forms of "human economic activity and culture that do not lead to environmental degradation, esp. avoiding the long-term depletion of natural resources"

Online Dictionary of Library and Information Science (ODLIS)

Define green library "green/sustainable libraries 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 like water, energy, paper, and responsible waste disposal recycling, etc."

3. Objectives

3.1 To analyse the importance of green libraries.

3.2 To know about Green Library initiatives in the India.

3.3 To understand about challenges for libraries to go Green.

3.4 To explain various techniques and methods for greening the library.

3.5 To promote green library movement.

4. Limitation of the Study

Green Library concept, in its entirety, is new in the field of Library & Information Science. This studyis done by collecting and collating information from websites and some renowned journals. It is observed that sufficient information related to Green Library is not available.

5. Review of related literature

This study I have referred some literature related to Green library and Green Library Movements. There have been many articles on green libraries. The earliest articles on green libraries appeared in the 1990s. February 1991 issue of The Wilson Library Bulletin had a special section on "Libraries and the Environment." LeRue and LeRue (1991) in that article, the LeRues explained in detail how to be environmentally supportive at home and in the library. Brown (2003) studied that the emerging trend of green libraries and proclaimed that libraries were on the cutting edge of green design. The Oregon Library Association dedicated that the entire winter 2007 issue of the "OLA Quarterly" to published on "Going Green: Libraries and Sustainability." Pinkowski (2007) in the article "Keeping Track of Green Libraries", discussed the Green Libraries concept. Neale (2008) in a paper "Go Green", explained how libraries can be more eco-friendly. Antonelli (2008) explained that the different web page and websites related to Green Library Building. Trotter (2008) in a paper entitled "Going for Green", discussed that the few green libraries and provided tips for green libraries. Sahavirta (2012) in the article revealed that

commitment to green values may increase environmental sustainability and help libraries to take a new and visible role in changing society. Chakraborty (2013) presented a paper that reported a survey of some important libraries in the four metropolises (Kolkata, Mumbai, Delhi and Chennai) of India. Divya and Vijayakumar (2013) in the paper rightly pointed out that this is the right time for librarians to support green library movement. Binks et al (2014) looked at sustainability and its importance within a library, refurbishment of library buildings, greener work practices and public education initiatives. Shah, Kumar & Shah (2015) in their article they briefly narrated a few green libraries initiatives such as Fayetteville Public Library, Minneapolis (2004), Seattle Central Library (2004), National Library, Singapore (2005), Minneapolis Public Library (2006), and University of California (2005). Sornasundari & Sara (2016) explained the importance, elements, concepts and initiatives of Green libraries. Bhattacharya (2017) stated that the Green Library contributes towards maintaining the natural ecological balance in the environment and preserving the planet and its natural systems and resources. Meher & Parabhoi (2017) focused on the importance of green library in ongoing era and green library initiatives in India like Madras University Library, Karnataka university library Dharwad, Mumbai university library and Anna Centenary Library has been trying to make a successful green library.

6. How are libraries becoming green?

The library administration can check the user services, the library management to see what can be planned; a checklist is an easy way to identify what the library can do on an institutional level. A good checklist is a tool to identify the green potential for further steps to achieve a convincing green image. The aim of the library is to be part of an overall strategy. Create your own "eco-action plan" according to the aims of the whole organization. The impact for the library is to participate in wider programmes and thus be part of a green profile for the entire institution. There are various projects are under taken by various ministry of government of India to redirect the mode of change to a green India and also big companies in private sectors both nationally and internationally. The some aspect of a building's architecture makes its green architecture. The libraries have specific challenges to overall green building movement. The main goal of green building is to develop and use sustainable energy – efficient resources in construction, maintenance and over all life of the structure.

7. Green Library/building Elements

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. LEED-India promotes a whole building approach to sustainability by recognizing performance in the following **five key areas namely 1) site location, 2) water conservation, 3) energy efficiency, 4)**

materials, 5) indoor air quality, and a bonus category for innovation and design.

As per LEED- India, following green design elements:

7.1 Site Location: LEED provides guidelines for site selection. India has geographically varied conditions from vast deserts to high hill tops, planes and very vast coastal areas so one norm cannot fit throughout the country. Proper Site selection is very important elements for the library building. People should be able to reach the building via public transportation and the parking lots should give priority parking to those driving energy efficient automobiles. The heat island effect can be reduced by shading hard surfaces, putting them underground, or by implementing a vegetative roof. Libraries should be located in a densely populated area, near a number of other service related buildings.

7.2 Water conservation: There are so many ways for libraries to conserve water. Properly design plan for rainwater harvesting and it can use for toilets, bathrooms, irrigations, cleaning and for other things. Library can save lot of water for proper landscaping and greenery in and outside the library building. Waste water or storm water can be treated and re-used for irrigation purposes. Use automatic or sensor taps and dual flush toilets. Install waterless urinals, this can dramatically decrease water usage in bathrooms.

7.3 Energy conservation: Power is generated by sources such as solar, wind and hydro (water). Solar power generates power by converting sunlight into electricity. Wind turbines are usually installed on a tower and are better suited to rural or non-urban areas. In the LEED rating system it is the heaviest weighted of all the categories. Electricity can be generated using direct sun light by planting solar system on the roof top of library building. Use of Solar and Wind Power can be utilised inside the library and energy can be saved.

7.4 Building materials: The materials used in the construction of a building can improve the sustainability of the library by reducing the need for mechanical systems to improve the indoor environment quality. The primary responsibility in selecting materials for the library is to contribute as little waste as possible. Use of locally available material will save transport cost and fuel. Many modern building technologies have emerged which are more eco friendly and should be used in new library buildings. There are lots of standards and protocols in India and outside India to make a green building by using recyclable and environment sustained materials.

7.5 Indoor air quality: The lack of ventilation can not only make buildings expensive to cool, it also traps harmful toxins that can do serious damage to

people's respiratory systems. Least use of air conditioners will reduce emission of harmful gases responsible for holes in ozone layer and intern global warming. A green library is not just about taking care of the environment, it is about taking care of the health and well-being of those who work in it and patronize it. The benefits cover a spectrum from physically cleaner air to direct beneficial effects on psychological health, task performance, illness reduction, productivity, lower stress and negative feelings, reduce noise and contribute to fulfilling Indoor Environmental Quality (IEQ) Criteria.

8. Standards for Green Libraries

Bhattacharya (2017) suggested following Green Libraries Standards

8.1. 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.

8.2. 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.

8.3. 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.

8.4 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'.

9. The Role of Green Librarian

Librarian should always make efforts to promote green library movements by using different online tools like social media. The green librarian's role is most dynamic he is also called as eco librarian because he has to handle the budgets to support the organizations. These are two most important things- Economy and Ecology for making healthy and prosperous sustainable libraries. Librarian has to keep in mind essentially. Library activities in itself ecological which deserves to be highlighted more. However, the role of the library in promoting social sustainability needs to be reinforced.

10. Major Green Library Initiatives in India

Name of the Library	Place	Features
Anna-Centenary Library	Chennai	Library block at angle that allows maximum daylight and eco-friendly
Karnataka University Library	Dharward	No books shelves, chairs or tables but benches are installed under the trees so that students can sit and read the books taken from the university library.
Delhi University Library	Delhi	The olden days building is naturally cool and pleasant with broad opening for natural lights. Windows are large and too many accelerating both fresh air and sunlight. Cleanliness is next to godliness.
Culcutta University Library	Culcutta	The great height, vast open areas, thick walls, windows all through the eastern wall are some green gestures that are in built in this heritage
		structure as well as nurtured even today by the present library leadership.
Madras University Library	Madras	The existing library building is built in a symmetrical mixture of Indian and British architectural style. Windows are large and too many accelerating both fresh air and sunlight.
Mumbai University Library	Mumbai	The University Library and Rajabai Clock Tower above it are located in a Heritage Building with a height of 280 feet. The architecture itself makes it more environment-friendly as it boasts than the recent low-height, less-width, non-thick walls. Calina campus library also provide wood as stack-material and/or providing ample space for the users.
NIT, Library Silchar	Assam	The initiatives for Greening the library

		taken by NIT, Silchar is probably the first of its kind in the entire North East Region of India. The New Library Building under construction is designed according to LEED certification system of U.S which can be the role model for developing green libraries in Barak Valley.
Perma Karpo Library	Ladahk	Solar panels, surrounded by white lotus garden, innovative technologies.

11. Green Library Movement in India

Indian libraries started to have provisions for natural lights as much as possible, energy saving bulbs in the reading rooms and other places within library premises, provision of natural air, emphasis on cleanliness, hygienic toilets, adequate provision of waste bins at appropriate places, proper disposal policies for weeded library materials / equipments etc. In Kerala COSTFORD (Centre of Science and Technology for Rural Development) a non- profit organization established in 1985 focuses on development of housing and made significant gains in providing alternative philosophy and technologies in order to take major responsibility in improving Green Library Movement in India. TERI has been in the forefront of the green building movement in India. The organization has assisted the first USGBC rated green building in India, namely the CII - Godrej Green Business Centre way back in 2001, to get the coveted platinum rating. TERI has constructed its buildings, in Gurgaon, Bangalore and Mukteshwar which includes resource- and energy-efficient, demonstrating the sustainable implementation of green practices.

12. Suggestions

12.1 Libraries can use a variety of tools to popularize the 'green concept' and educate their patrons about the features of their green buildings. These include in-library displays, publications, and library programs relevant on 'going green'.

12.2 UGC should make it mandate for all colleges and Universities to get the approval to go for Green Libraries and also green buildings.

12.3 Government should take steps to promote green libraries through award and financial aid to maintain such libraries.

12.4 Libraries can arrange strategic thinking and planning sessions to ensure sustainability.

12.5 Government/Universities should make all the efforts to transform Libraries into Green buildings/Libraries, wherever it is possible.

13. Conclusion

The time is ripe for librarians to support and continue to grow the Green Library Movement.

The vicious effects of Global Warming have already been shockingly felt including escalation in greenhouse gases, glacier retreat, and changes in the timings of seasonal events, changes in agricultural productivity and many more. Green image is a good image for the libraries and should use their way of going green to promote a powerful green image towards their stake holders and users. The librarians should take some decisions to make green library. The paper concludes that librarians have to be keen on updating themselves on sustainability trends in the field of librarianship and should provide awareness and create the space in the libraries to exemplify the Green practices.

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