

GREEN LIBRARIES: NEED OF 21ST CENTURY

Sapna, Assistant Professor

Department of Library and Information Science
Central University of Haryana, Mahendergarh
E-mail Sapna@cuh.ac.in

Saurabh Kaushik, Student

Department of Library and Information Science
Central University of Haryana, Mahendergarh

Pawan Kumar Saini, Assistant Professor

Department of Library and Information Science
Central University of Haryana, Mahendergarh
[E-mail Pawansaini@cuh.ac.in](mailto:Pawansaini@cuh.ac.in)

Abstract

Globally evolution of green libraries is moving ahead and transforming the libraries into the green libraries by building green library buildings. It also emphasis on the greening of the existing library facilities, dissemination of green services and promotes the environmentally supportive practices in the library. Economy and Ecology are the two most important things to make a library healthy and prosperous. The main aim of this paper is to analyze the importance of green libraries, to identify the standards for the green libraries, major green library initiatives and techniques and methods for greening of the library.

Keywords: Green Libraries, Indian Green Building Council, Academic Institutions, and Initiatives LEED- India

1.0 Introduction:-

Now a days Environmental protection is a current issue all over the world, thus we need everything to be GREEN to achieve sustainable development. Libraries are not far behind in green environment movement. Libraries are taking good initiatives in this context. There are numerous green library activities in everywhere throughout the world. A Green Library is a library build with environmental concerns in mind. Green libraries are part of green building movement. Green libraries are being assembled everywhere throughout the world, alongside library 2.0, green plan is a rising pattern, characterizing the library of the 21st century. The green library consist of several components such as green building, green operations and practices, green programs and services, green information systems and green collections. Green Library concerns with conservation of natural resources for the future, living in a carbon-neutral way, and meeting the needs of the users. Now a days Libraries should incorporate green features into their buildings because the cost of constructing green buildings has become affordable and we can use energy sources prudently (Antonelli, 2008).

The major advantage of Green Libraries is they can serve for the information needs of the users as well as will be helpful for saving environmental resources for future generation.

2.0 Definition of Green Library

The Online Dictionary of Library and Information Science (ODLIS) defines green/sustainable libraries as a library designed to minimize negative impact on the environment and maximize indoor environment by use of careful site selection, use of natural construction materials and biodegradable products, conservation of natural resources like water, energy, paper, and responsible waste disposal recycling, etc. In the construction and in renovation of the

library, LEED (leadership in energy and environmental design) have designed a rating system for the green libraries administered by U.S. Green Building Council (USGBC). Green library refers to a library that contributes towards maintaining the natural ecological balance in the environment and preserving the planet and its natural systems and resources. Indian Green Building Council (IGBC) defines the green term as “A green building is the building which use less water, optimum electricity, preserve natural resources and provide a healthy space for the users as compare to the traditional building”.

3.0 Review of the literature

Shah, Leena, et.al in their research found that Green buildings are not only saving money in terms of energy but also in terms of health, productivity and morale of employees. Green library initiative is a new concept in India and is in infant stage. Another study performed by Vijayalakshmi revealed that Libraries can take good initiative to inspire people, individuals to work towards environment protection. Libraries are in an excellent position to be both an ecological operator and promoter of environmental awareness. Kurbanoglu, Serap and Boustany, Joumana found that the concept of green information literacy will be helpful for the environment preservation and pave the way for further research. Malode, Amit V in his research found that Libraries needs to be built flexible, in order to make space for future expansions in size and in wiring capabilities. Library buildings fall under nonrecurring type and should be designed for long term basis investments made to benefit the community so when designing them architects need to be looking for a greater life span. Suresh, P.K and K.D, Antoo in their research paper revealed that Librarians should act as role models for sustainability and greener environment by providing suitable and relevant information related to green issues and its concerns. Jankowska and Marcum In their comprehensive literature review identified four major areas of environmental and sustainable issues in the library literature: “1. Sustainability of scholarship and collections; 2. Green library operations and practices; 3. Green library buildings; and 4. Measuring and improving sustainability”(Jankowska and Marcum, 2010).

4.0 Standards for Green Library

4.1 Indian Green building Council (IGBC):

Indian Green Building Council create the possibility for Green Library Building construction which otherwise would have been a dream in India. Indian Green Buildings Council (IGBC) was established in the year 2001 to promote and rate Green buildings in India. There are about 2190 registered buildings, 398 rated buildings and also 1082 IGBC aggregated professionals that are working to promote green buildings in the country. 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".

An important development in the growth of green building movement in India is the launch of the following IGBC Green Building Rating Systems:

1. IGBC Green New Buildings
2. IGBC Green Existing Buildings
3. IGBC Green Homes
4. IGBC Green Residential Societies
5. IGBC Green Interiors
6. IGBC Green Healthcare
7. IGBC Green Schools
8. IGBC Green Factory Buildings
9. IGBC Green Data Center
10. IGBC Green Campus
11. IGBC Green Villages
12. IGBC Green Townships
13. IGBC Green Cities
14. IGBC Green SEZs
15. IGBC Green Landscapes
16. IGBC Green Mass Rapid Transit System

17. Government Incentives to IGBC Projects
18. IGBC Green Existing Mass Rapid Transit System

4.2 IGBC Green New Buildings rating system is broadly classified into two types:

1. **Owner-occupied buildings:** These are the buildings wherein 51% or more of the building's built-up area is occupied by the owner.
2. **Tenant-occupied buildings:** This type includes, wherein 51% or more of the building's built-up area is occupied by the tenants.

Certification Levels:

Certification Level	Owner-occupied Buildings	Tenant-occupied Buildings	Recognition
Certified	40-49	40-49	Best Practices
Silver	50-59	50-59	Outstanding Performance
Gold	60-74	60-74	National Excellence
Platinum	75-100	75-100	Global Leadership

(Source: Indian Green Building Council)

4.3 Leadership in Energy and Environmental Design (LEED-India):

Leadership in Energy and Environmental Design (LEED- India) green building rating system is a globally accepted norm for the design, construction of the green building and operation of high performance 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 (This construction will be rated as Certified)

41-50 points (It will be awarded as Silver in ratings)

51-60 points (It will be treated as Gold)

61-80 points (It is the highest rating provided by LEED and termed as Platinum)

LEED-India promotes a whole building approach to sustainability by recognizing performance in the following five key areas namely

- Site location
- Water conservation
- Energy efficiency
- Building materials
- Indoor air quality

And a bonus category for innovation and design. LEED also uses various categories to evaluate the buildings sustainability through Design Elements.

5.0 Site Location

Location of the site has a large effect on how ecologically and environmental friendly the library will be. What will be the impact of construction on the local environment, will there be any erosion or degradation? Also, the library

should be located in a central area, near a number of other service related buildings. People should be able to reach the building easily.

5.1 Water conservation

Reduce potable water use by considering alternative water sources (e.g. Rainwater, storm water and air conditioner condensate) for custodial uses and toilet flushing, planting native and adaptable vegetation reduces the need for irrigation.

5.2 Energy conservation

Energy efficiency is considered to be the most important category in becoming sustainable. In the LEED rating system it is the most weighted of all the categories. On site renewable energy systems for example solar, wind, and geothermal, provide an uninterrupted supply of energy.

5.3 Building materials

The primary responsibility in selecting materials for the library is to contribute as little waste as possible. It is the responsibility to choose the material that least damages the natural environment. Reusing and recycling are becoming increasingly necessary in the future. Another material option is to use quickly renewable materials such as bamboo in place of wood whenever possible. The widening availability of green building materials, along with the development of non-profit watchdog groups are two important factors in the greening of 21st-century library buildings.

5.4 Indoor air quality

Along with energy inefficiency, air quality has been another issue for the green buildings. Because most modern buildings are air temperature controlled or we can say that air conditioned, they are designed to be airtight. The lack of ventilation will make buildings expensive to cool, it also traps germs that can do serious damage to user's nervous systems.

6.0 Green Library Initiatives in India

6.1 Anna Centenary library (Chennai's Green Library):

It is Asia's First Leed Gold Rated Library Building Situated in Chennai. Anna centenary library building is constructed by Department of public libraries, Tamil Nadu State Government as a state of art library building. The project achieved the prestigious LEED Gold rating given by Indian Green Building Council under New Construction rating. This building consumes 30% less energy and 20% less potable water consumption without affecting the indoor condition.

6.2 Karnataka University Library, Dharwad:

By following the traditional system of education the Karnatak University launched a project on Green Library. The concept is to provide a congenial natural environment for the study. It is established in the center of the campus and provides all facilities to students for study. The main facilities include sitting, supply of drinking water and Wi-Fi connectivity. It is more pleasurable to read in atmosphere surrounded by lush green trees and colourful flowers. The system is a blend of heritage including scope for group discussions in the silence of the green space.

6.3 The Perma Karpo Library:

It is part of the Drunk White Lotus School, located in the Indian Himalayas. The innovative architecture of the school has won several international design awards, including the 2002 World Architecture Awards for Best Education Building, Best Building in Asia, and joint winner for Best Green Building.

6.4 Calcutta University Library:

The library is using various green measures such as Use of eco-friendly open space and pot plants. For library furniture bio-degradable and environment-friendly Wood is mostly used. Open space is provided for reading.

6.5 Mumbai University Library:

Mumbai University Library was established in 1857. The University Library is located in a Heritage Building with a height of 280 feet. It has environment-friendly architecture. In the library building Sun light comes through the wide windows.

6.6 Delhi University Library:

The building is naturally cool and with access natural lights. The library has pot plants in different locations both as a decorative as well as a green measure. 'Desert Coolers' is being used to prevent the excessive heat in library building (Chakra borty, 2013).

7.0 Techniques and Methods for Greening the Library

Some of the techniques used for the greening of the library. These techniques may include Material, Energy and Waste Management. Following techniques can be adopted for the green library.

- Usage of Eco-friendly lighting system which will help for saving electricity and costs.
- Strategically placement of the window that will help in providing natural light in the buildings.
- Use of soft pads on the feet of the chairs to reduce the noise.
- Use of geothermal heaters.
- Replacement of outdated appliances.
- Use of computerized catalogue.
- Promotion of roof vegetation

7.1 Energy

- Using star rated products in the building
- Using of fans instead of the overusing of A/C
- Encourage of employee's car pool.
- Use of motion and light sensors.

7.2 Waste Management

- Recycling of the computers
- Discard weeded books.
- Cleanliness on the shelves.

8.0 Conclusion

Green Buildings can play important role in the environmental protection. Green image is going to be good for the libraries and should use their way of going green to promote a powerful green image towards their patrons. Library professionals can play an important role for sustainability of the green library by providing suitable and relevant information related to green issues and concerns. For the upcoming generation, it can be a better steps to assurance of future sustainable development of libraries. The idea of "Green" or "Sustainable" approach is useful for preserve

natural resources that are essential for our survival. Overall, the development and operation of Green building advances a sound situation for the Library clients and helps to promote sustainable Library development.

9.0 References

1. Aulisio, G. J. (2013). Green libraries are more than just buildings. *Electronic Green Journal*, 1(35).
2. Antonelli, M. (2008). The green library movement: an overview and beyond. *Electronic green journal*, 1(27).
3. Chakraborty, S. (2013). Going green or not: realities of the Indian metropolis libraries.
4. Green Library. Retrieved from <https://www.kud.ac.in/content.aspxmodule=amenities&page=library> on 12th July 2017
5. IGBC. Retrieved from <https://igbc.in/igbc/> on 14 th July 2017
6. IGBC Green New Buildings. Retrieved from <https://igbc.in/igbc/redirectHtml.htm?redVal=showGreenNewBuildingsnosign> on 2nd July 2017.
7. Jankowska, M. A. (2010). Sustainability Challenge for Academic Libraries: Planning for the Future. *College and Research Libraries*, 160-169.
8. Kurbanoglu, S. a. (2014). From Green Libraries to Green Information. *Research Gate*, 47-58. doi:10.1007/978-3-319-14136-7_6
9. Malode, A. V. (2014). Green Library: An overview. 'Research Journey' *International Multidisciplinary E-Research Journal*, 1(4), 13-17.
10. New World Encyclopedia. (n.d.). Retrieved July 11, 2017, from http://www.newworldencyclopedia.org/entry/Green_library