

Green Library Initiatives of Academic Colleges in Kerala for Sustainable Eco-Friendly Libraries

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Abstract: Libraries of today, not only follow the traditional functions but are also involved in modern technique and in maintaining environmentally friendly approaches by implementing standards for sustainability to serve mankind. Limiting the use of paper, electricity-saving, Rainwater recharging and reusing and consumption of natural resources are the ideal way to maintain a sustainable library. Greening the indoors of the library, creates mindfulness within the library ambiance, and above all will create a great impact on the library's image. The Greenery helps to maintain the serenity, calm and peaceful atmosphere for the users which may help the learners to be more attentive and tranquil.

Keywords: Green building, Green Library, LEED, IGBC, Green library initiatives, Green Library Movement, Sustainable library.

1. INTRODUCTION

Climate change has become a global issue. The whole world is trying to reduce greenhouse gas emissions and ozone depletion. Libraries too are taking part in this movement by transforming into green building & energy saving means known as sustainable libraries. Green buildings are being built in the US and the world in bringing the concept into the mainstream.

Library 2.0, with green design, is an emerging trend in designing the libraries of the 21st century. The Green Library is uniquely placed to educate people on the importance of sustainability and at the same time create interest and attract users to libraries during the academic period. The term Green Library means a library that is environmentally conscious, and practices improved library services both in academic and psychological terms. While the emerging concept of the green library or sustainable library in India has

to travel a long way to reshape the library buildings to meet the next generation's needs and expectations.

In India, Madras University Library, Karnataka University Library, Mumbai University Library and Anna Centenary Library are some examples of the Green Library initiatives by following Green building standards. Kerala also follows the sustainable building standards for example, Centre for Development Studies (CDS) Trivandrum, a school in Kottayam named 'Pallikudam' run by famous Malayalam writer, Aruntanti Roy's mother, are some of the buildings based on the Green initiative.

Mulford & Himmel, pointed that "libraries now have a chance, and even a responsibility, to lead in sustainability through modeling green practices in their own operations and facilities, and then providing services, collections, and programming to help communities establish and achieve their own green goals." [1]. This innovation is happening by building green library buildings, greening the existing library facilities, providing green library services, and embracing environmentally supportive and sustainable practices within the library. 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 surroundings on an eco-friendly environment.

1.2 Green Library Building

The US Green Building Council is a national non-profit organization founded in 1993; To promote "the design, construction, and operations of buildings that are environmentally responsible, profitable, & healthy place to live and work" [2]. The US-GBC is concerned

with educating the public about green buildings and creating a standard for measuring the greenness of a building. The paper attempt to recognize the awareness on the standards for Green libraries in Kerala, India under Indian Green Building Council (IGBC), & LEED-Leadership in Energy and Environment Design

1.3 Definition

The online Dictionary of Library and Information Science defines Green Libraries as: “A Library designed to minimize the negative impact on the natural environment and maximize indoor environment quality employing careful site selection, use of natural construction materials and biodegradable products, conservation of resources (water, energy, paper, responsible waste, disposal, Recycling, etc).”[3]

The term Green is closely related to sustainability. The Oxford Advanced Learner’s Dictionary (1996) describes the term “green” as “about or supporting environmentalism”[4](p. 521). The term “sustainable“ relates to “involving the use of natural products and energy in a way that doesn't harm the environment: sustainable that can continue or be continued for a long time of economic growth” (Oxford Advanced Learners Dictionary, 1996, p.1205)[5] Samkanth Deshmukh commented on Sustainable Library Design that “Contact with nature and sunlight penetration has been found to enhance emotional functioning. Positive emotions, in turn, are associated with creativity and cognitive “flow”, a state of high task engagement”[6]

2. REVIEW OF RELATED LITERATURE

The term ‘Green Library’ is emerging among librarianship recently with acceptance based on environmental protection. Antonelli(2008)⁷ observed how academic libraries can contribute to sustainability, along with the traditional library functions. The phrase “ Green Library” refers to a library building that is certified with all eco-friendly accepted standards. [7]. Meher, Puspanjali, and Lambodara Parabhoi (2017). have conducted a study highlighting the environmental conditions and their impact on society toward the eco-friendly earth, by following green library initiatives like the United Nations Development Programme, IGBC(Indian

Green building Council), and LEED (Leadership in Energy and Environmental Design).[8]

Brown. B. (2003) discusses the emerging trend of green libraries and proclaims that libraries were on the cutting edge of green design.[9] Hauke & Werner (2013) mentions how to improve the internal environment in terms of quality by conserving resources such as energy, water and paper and using natural and biodegradable products and construction materials.[10] Peters, Tom (2008) describes how libraries can reduce their computer's environmental impact and energy usage.[11]

According to Prasanth and Vasudevan (2019), having a healthy natural environment is essential for the quality of life and human survival.[12] Aulisio, G. J. (2013) that “we shift the trend and use the term “green library” to refer to any library that promotes sustainability through education, operations, and outreach.[13]

Sindhu, P.N., Abdul Gaffar, A., & Kumar, S.K.(2021), The study presented the green library construction and recognition to raise the awareness of the users, and also mentioned the role of librarians in enhancing the green library concept[14].

Schaper, (2010), libraries that implement green practices are committed to pursuing innovation, to minimizing waste, and, where possible, to adopting and promoting environmentally sound processes throughout their organizations [15]

Trotter (2008) describes “how librarians could make their libraries greener.”¹⁸ featured in article “Going for Green”[18]

2.1 Objectives of study

1. To identify the academic libraries adopting green initiatives
2. To find out awareness among the Librarians on Green Library initiatives.
3. To find out the interest among the librarians in setting up Green Library.
4. To know the number of colleges adopting Green Library initiatives for protecting the environment.
5. To know the facilities to develop a green library.

2.3 Methodology

Data is collected through the Questionnaire method to analyze the Green Library Initiatives among the libraries in Kerala. The population of the study are the librarians of academic institutions. A Simple Random

Sampling technique is applied to find out the percentage.

2.4 Scope of the study

The scope of the study is limited to academic Libraries in Kerala. The librarians of academic libraries are taken randomly for analysis. The study could be taken up on the bigger geographical area to understand the Green Library Initiatives or Green buildings in the metros of India.

3. RELEVANCE OF GREEN LIBRARIES

The Environment (Protection) Act, 1986 (central act 29 of 1986 of India) emphasized the protection and improvement of the environment and the prevention of hazards to human beings, other living creatures, plants, and property.

Every individual on earth has a role to play in the sustainable development of the earth. The Green Library Movement is a newly evolving concept and is gaining popularity among library professionals. Librarians can also contribute to the library's sustainability and for Sustainable our Earth by forming clubs, associations on nature, etc.

The organizations or any institutions in India, aiming to work for an eco-friendly earth, must work in accordance with the standards put forward by IGBC and LEED. These standards are for the betterment of the Green environment. In fact, green libraries are designed to minimize the negative impact on the natural environment, which focuses on the maximum indoor quality environment with natural means.

3.1 Water Reuse

During the rainy season, treating the water run-off is good for vegetation, where water is a precious resource, considering the storage of water for landscaping, and flushing of toilets. This could be used instead of potable water for drinking. Water shortage also reminds us of water conservation and wise use of it.

3.2 Sun Lighting/ Daylight

Consuming natural resources like sunlight and natural ventilation is an ideal way for a sustainable library system. Nowadays it is an important method to apply these, in all libraries because of the scarcity of resources. Nature is being treated very badly without

any respect for it. Human beings are very ignorant about the fact that protecting nature is essential for the existence of human life on the earth.

Excessive Lighting during Night: The night hours of Library functioning, with excessive interior & exterior lighting, can be of great harm to birds and animals. As it will result in disturbing the nocturnal animal habitat surrounding the library building. This can pollute the Night sky to an orange sky

3.3 Air: The indoor environment should be free from toxic materials that cause cancer. DDT, Acrylic paints, naphthalene balls are a few of the toxic materials. Natural light & Air are good for health & heart. Swachh Bharat Abhiyan or Clean India Initiatives is the project of GOI for cleaner India. Therefore, Cleanliness in libraries is a must to ward off dust & termites. The accumulated newspapers in the library need to be stored away from the common area of movement as the ink in the print releases toluene, a harmful chemical; And stacking them in bulk increases the toxin inside the library.(Meattle & Aggarwal, 2018)[16]

3.5 Indoor plants that give fresh Air in the library

Researchers found out that some common houseplants absorb toxic agents such as benzene, formaldehyde, and trichloroethylene. Thus, planting Money plant, Snake plant, and Bamboo plants to remove indoor pollutants from the air we breathe is a good idea and brings an aesthetic look inside the library and at home, as none of the plants are toxic to humans or pests. (Meattle& Aggarwal, 2018).[17]

3.6 Noise Pollution The library must be away from playgrounds, and railway tracks to keep the serenity of the area for the readers. A calm serene place will attract the reader's mind. A noise level of 50dB below at medium speed is acceptable.

3.7 Use of Technology in Library - Computerization & Automation:

With the advent of technology, all libraries are automated with in-house library management systems. Thereby the use of paper can be reduced in the libraries in day-to-day work. The login and logout of the library in electronic devices could also be used instead of the

Gate register, a document of users entry and exit, theoretically reducing the use of paper.

4. ANALYSIS OF THE STUDY

This study mainly aims to find out the Green Library Initiatives followed by Academic Libraries in Kerala. Significance of the findings are given below

4.1 Table 1 Awareness of the concept of Green Library among Librarians

Awareness of Green Library	Responses	Percentage
Yes	49	87.5%
No	7	12.5%
Total	56	100%

From Table 1 It is observed that out of randomly selected respondents,49(87.5%) are familiar with the 'Green library' concept. Only 7(12.5%) respondents are not aware of this concept.

4.2 Table 2 Sources from where the concept Green Library learned

Sources from GL learned	No of Responses	percentage
Books	7	12.5%
Journals	16	28.57%
Seminars	10	17.85%
Colleagues	10	17.85%
Friend's Circle	9	16.07%
Through this Questionnaire	2	3.57%

From Table No. 2, it is observed that the majority of the respondents come across the word Green Library from the journal articles i.e. 16(28.57%). 10(17.07%) of each of the respondents have heard from the discussion with colleagues and from seminars.

4.3 Table 3 Library that follows Green Library building Standards

Green Library building	No of responses	percentage
Yes	27	48.22%
No	22	39.28%

Maybe	7	12.5%
Total	56	100%

It is found that 27(48.22%) of the total respondents agreed that their library building is following the green Library building standards, whereas the 22(39.28 %) are not following. 12.5% have opted maybe following green library standards to some extent.

4.4 Table 4 Transform the present Library to Green Library standards

Willingness to transform to green Library Standards	No of Responses	Percentage
Yes	50	89.28%
No	6	10.72%
Total	56	100%

It is observed that 89.28% of the respondents were willing to transfer to Green Libraries, on the other hand, 10.72% were not.

4.5 Table 5 Library automated to save paper management

Automated Library	No of responses	Percentage
Yes	41	73.22%
No	15	26.78%
Total	56	100%

Among the respondents, 73.22% follow an automated library. But 26.20% are yet to automate their libraries.

4.6 Table 6 Library automated with login/log-out to reduce paper consumption

Login/Log-out	No of Responses	Percentage
Yes	38	67.86%
No	18	32.14%
Total	56	100%

It is observed that 67.86% of automated libraries are using the automated log-in and log-out system to reduce paper usage. The remaining 32.14% are following the register system.

4.7 Table 7 Eco-friendly measures in libraries

Eco-friendly measures	No of responses	Percentage
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Plastic-free/waste bins	30	53.57%
Noise-control	9	16.07%
Use of print document	12	21.42%
Use of PDF document	36	64.28%
Solar Panels	19	33.92%
Water control	17	30.35%
Garden Library	15	26.78%
Air, Natural light	26	46.42%

It is observed that many libraries follow eco-friendly approaches. without their knowledge on the green library standards. 64.28% of respondents used PDF for sending documents. 53.57% of libraries use bins to collect organic waste & inorganic waste, and 46.42 % of respondents are utilizing natural resources like natural air & light in their libraries.

4.8 Table 8 Library Air-Conditioned to curb Noise pollution

Air-Conditioned to curb Noise pollution	No of responses	Percentage
Yes	13	23.22%
No	43	76.78%
Total	56	100%

It is observed that, out of the total responses, 76.78% of libraries are not Air Conditioned and are using natural resources and the Library is situated away from noise. Only 23.22% are air-conditioned in their library, to control noise and control humidity.

5. FINDINGS, SUGGESTIONS, AND CONCLUSION

From this study it is evident that the majority of the librarians in Kerala are aware of the green library concept. They are very much interested in thinking innovatively and are willing to transform the existing library atmosphere into a green and eco-friendly environment. They are knowingly or unknowingly following the eco-friendly steps in library management and utilizing the natural resources like sunlight and fresh air in the library. Financial constraints are the major factor discouraging them

from fully transferring to a green library building as per the national standards put forward by the IGBC and LEED.

The concept “Green Library” is an appreciating project for sustainable development of any building. It's impossible to implement the project with an immediate effect. As the concept is at an emerging stage, more technological & environmental awareness is needed among the people to put the concept into being. Convincing the top-level management is also a major task for building a new green library, as the libraries are already housed in the present building. Energy saving methods in the library building are of great help like rooftop solar paneling, rooftop gardening, water harvesting/recharging for cultivation or collection in ponds, tanks and bunds. Keeping bins for collecting biodegradable materials which could be converted to fertilizers, manure, compost, biogas etc. for further use in plantations in institutions. Librarians can form clubs/Forum on Greening the environment like the Nature club, Enviro Club to give awareness & educate the students, who in turn will educate their community. There is a club among the librarians in the whatsapp group on AWCF (Air Water Conservation Forum) an environmental group to impart knowledge about conservation and utilization of resources for the existence of mankind.

On the basis of our study, we highly recommend the State Government for the serious initiation of green protocols by enacting a law itself; which will be a justice to the Environmental theme of 2022 “Only one Earth”. The government's plastic free state from July 2022 has made a revolution, thus slowly the green building protocol will also come to be some day.

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