A Next Step for Sustainability: Green Libraries

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Abstract: Libraries are an everlasting learning centre for the people or to serve the community. Library is not only the place where people get answers to their questions but also the source of raising the awareness about environment issues. So library is stepping forward towards the green initiative to educate the citizens. This article represents green library standards such as LEED GRIHA which give assessment to the building and certify them as per criteria. Some of the examples of library building and green initiative taken up by the libraries is given with reference to green library principles. National and international initiative in support of the same. Librarians are not only contributing towards digitalization of library but also purifying quality of air, planting trees and leaving a healthy and happy life. It doesn't end here, to uphold such programs IFLA is also introduced green library award in 2016 which is good source of boosting and motivating the libraries for such work done. Some of the recommendation given in order to initiate the working of sustainable environment in Libraries.

Keywords: Green Library, Standard of Green Library, LEED GRIHA, ENSULIB,   Green Library Award, Green Librarianship, Recommendation

Introduction:

Environmental issues were not a cause for concern in past years. People were unaware of the serious implications of environmental degradation. Lack of awareness leads to more damage to the environment. So we are the only ones who will find solutions to overcome such problems that we have encountered."The green library movement emerged in the early 1990s and is gaining popularity in the field of the library and information science profession" [11] "Library professionals are also working to develop a library that minimizes electricity consumption, is energy efficient and environmentally friendly" [11] It is an initiative to go green for change. Green Library is one of the green practices in a library that will help the environment thrive."A green library is designed to minimize the negative impact on the natural environment and maximize the quality of the indoor environment through careful site selection, the use of natural building materials and biodegradable products, resource conservation (water, energy, paper) and responsible waste disposal (recycling, etc.). In new construction and library refurbishment, sustainability is increasingly achieved through LEED (Leadership in Energy and Environmental Design) certification, an assessment system developed and administered by the US Green Building Council (USGBC)" [10]

1. Component of green library to be considered

Selection of site location: When choosing a location for a library, the adjacent rivers, local farmland, and protected wetlands must all be taken into account.

Practice Conservation: Natural light not only help the reader but also reduce the electricity boils of the institutions. It conserves natural resources such as coal and reduces the emission of greenhouse gases such as CO_2, which would aid in the reduction of global warming.

Waste Management: One effective strategy for managing the waste is centralized waste collection in a library. The waste sorting workshop should be kept. Staff at UCC Library developed a plastic wave after collecting bottles for 8 days in 2018.

Indoor Environment: Proper ventilation allows for the free flow of fresh air inside. Thorough cleaning is strongly advised for improving air quality. Cleaning and dusting can be done with environmentally friendly dusting/cleaning detergents or equipment. The library and nearby radon free to be a realistic way to reduce indoor air pollution.

2. Literature review

2. **Literature review**: The environmental problem has risen at an unprecedented pace in recent decades. It is a major concern for today and tomorrow. In recent years, various authors have generated different papers in the same issues. Shah, Kumar and Shah (2015) have discussed the contribution of Green Libraries to academic institutions with examples such as Fayetteville Public library, Minneapolis (2004), the Seattle Central Library (2004), the Singapore National Library (2005), the Minneapolis Public Library (2006), and California University (2005) Thomas (2016) examined the national and international scenario in green libraries and discussed issues and techniques in going green. Bhattacharya (2017) he outlined the standards of green library and green library movement in India and also emphasis on intrinsic role of library in sustainable development and promotes its reinforcement. Bhagar(2018) recorded green libraries in India green initiatives, green library buildings, and green Library movements. Her paper represent sustainable library with two significant economic and ecological dimensions.Hauke(2019) highlights some of the excellent initiatives proposed to the 2016-2019 IFLA Green Library Competition

3. Objectives:

Here is some of the objective for the paper
- To raise the awareness among the people about sustainability.
- To promote library as a medium in going green
- To initiate different sources of green practice in library.
- To encourage the librarians to fulfill community's needs to green information.
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4. Standard of Green Library Initiatives

LEED: Leadership in Energy and Environmental Design (LEED) rating system which is developed by United States Green Building Council (USGBC) in the year 2000.It is the most widely used green building rating system in the world. It provides the framework to the new and existing building to implement the green strategies for building. It allows all types of building that certification through

which it will contribute towards eco friendly environment. LEED have set different criteria for healthy, highly efficient and cost saving eco friendly building. It will provide certification to those projects which will earn points based on green building strategies

Based on the point earned project will earn one of the four LEED Rating levels.

80+ points   Platinum

60-79 points   Gold

50-59 Points   Silver

40-49 Points   Certified

TERI: The energy and resources Institute is a nonprofit research organization which has been working towards eco friendly environment and taken up different initiative for the same.

- Promoting efficient use of resources

- Increasing access and uptake of sustainable inputs and practices

- Reducing the impact on environment and climate.

GRIHA: It was originally created by TERI as the national rating system for green buildings in India and was adopted by India's Ministry of New and Renewable Energy in 2007.It will assess the building and rate them on the degree of its Greenness. It is a huge success that it will going to conduct its 12 GRIHA summit 2020 which will be held on Dec 15th -16th and has a motto Rejuvenating Resilient Habitats.

 25-40   1 star

41-55   2 star

56-70   3 star

71- 85   4 star

86 or more   5 star

This is how griha a lot or rate the building.

 TERI's Green Rating for Integrated Habitat Assessment (GRIHA) and USGBC's LEED (Leadership in Energy and Environmental Design) have partnered to promote the best of global and Indian practices to ensure efficiency of design, construction and operation of high performance buildings.

IGBC: In the year 2001 the Indian Green Building Council (IGBC), part of the CII was created. The Council's approach 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"

The board is Dedicated, membership-oriented and consensus-oriented. The Council's activities include local chapters, including all building industry stakeholders including architects, developers, product suppliers, corporate companies, governments, academics and nodal bodies.

The board provides a broad array of services including the introduction of new initiatives for green building ranking, certification and green building education. In addition, the council is conducting its annual flagship Green Building Congress in green buildings.

ENSULIB performs environmental protection programs and tackles environmental threats such as climate change, as well as some of the sustainable development targets relevant to libraries. ENSULIB has introduced the idea of green librarianship, which refers to green information services that provide students with easy access to accurate and up-to-date environmental information.

ENSULIB also encourages librarians to empower their communities to be more environmentally friendly by presenting materials on green librarianship, giving voice to green librarians and library initiatives around the world, and hosting a discussion platform. The IFLA Green Library, which is presented each year, is an essential component of this work.

In 2016, the first Green Library Award was created.

IFLA has also introduced an initiative to recognise libraries that are promoting their services as green libraries and make people aware of the importance of living in an environmentally friendly climate. As a result, the first ever green library award was launched in 2016, and the winner of the 5th IFLA Green library award is Rangsit University Library in Thailand.

The IFLA Green Library Award's goals are as follows:

• To recognise the best Green Library proposal that expresses the library's dedication to environmental sustainability; and

• To raise awareness of libraries' social responsibility and leadership in environmental education. Participation is welcomed from all forms of libraries.

• To lend support to the global Green Library campaign, this is concerned with

Environmentally friendly buildings.

Information services and programming that are environmentally friendly

Capital and energy management

• To encourage the growth of Green Library policies on a local and global scale.

• Urge Green Libraries to consciously promote their programmes to a global audience.

5. Indian University

5.1 Karnatak University Dharwad:

The University embraced Gurukul's legacy and accelerated an initiatives project on green library with that frame of reference. Talking about the privileges of green library students can have group discussion in the fresh air and interact with the world. Various facilities are provided by institutions, on, such as Gurukul huts, drinking water and Broadband connectivity, etc. The University takes charge of the green library maintenance facilities provided by them..

Fig: 5.1 Karnatak University Dharwad Library

Sources: (https://www.kud.ac.in/content.aspx?module=amenities&page=library)

5.2 Anna Centenary Library:

 Anna Centenary Library located in Kotturpuram, accredited with gold rating from LEED, India's largest library in Asia perhaps one of the most environmentally sound. Special attention has been paid to choosing sustainable materials, more than 60 per cent of which are locally sourced and recyclable. Masterstroke of the architecture of the library is natural lighting as a wide window facing north and east to provide the best light possible. There are indeed skylights and an outdoor amphitheater on the roof. Within LED lights illuminate a massive indoor auditorium, cafeteria, and a wide variety of reading and study areas. It has a huge green roof. Waste water is being reused on the grounds in order to preserve it.

Fig: 5.2 ANNA CENTENARY LIBRARY

Sources: (https://lbb.in/chennai/anna-centenary-library-kotturpuram-chennai/)

5.3 Prema Karpo Library:

The Perma Karpo Library is part of the Druk White Lotus School in Ladakh. The   Library employs cutting-edge technology and construction solutions such as ventilated Trombe walls, wool insulation, a mud roof, timber panelling, and even rooftop solar panels. The materials used are readily available in the area, and people's experiences are used to demonstrate how information can be retained inside. Structure satisfies local needs while also conserving electricity and providing the best services possible. [8]

Fig: 5.3 Prema Karpo Library

Sources: (https://inhabitat.com/good-design-the-perma-karpo-library-by-arup/)

6. International Libraries

6.1 World first Green Library for kids in Singapore

The Central Public Library opened the world's first green library for children, in 2013 and said to be My Tree House. The library was established jointly by City Development Limited and the National Library Board. It is intended to foster children in learning and caring for the world to explore and challenge their curiosity. The architecture of the library included energy-efficient LED lighting, upgraded bookshelves and sustainable tapestries. The tree house structure of the library is constructed from the more than 3,000 recycled, explicitly recycled plastic bottles. There are 45,000 books in the library, out of which 30% covers the environmental themes plants, ecology, water supplies, recycling and climate change. Children can learn about the environment issues through 'knowledge tree' which is a shadow play wall and children can interact with it to learn about the environment and energy conservation. Library conduct different activities such as story telling sessions and workshops, theme based programmes. It also organize library tour through which they will raise the awareness of Go green.

Fig: 6.1 Central Public Library Singapore (Children Library)
Sources: http://www.asiagreenbuildings.com/5169/singapore-my-tree-house-the-worlds-1st-green-library-for-kids/

6.2 Rangsit University Library

Environmental conservation has been main concern of Rangsit University Library since 2004 when there was energy crisis in Thailand. In that particular movement university has announced energy conservation policy. As per green library standard library has also separate the litters as general waste, recycle waste and hazardous waste. Not only this library has increased more green areas around the library building in order to filter the dust and carbon monoxide. The library has also created green corner for the user. University supports the good and healthy university environment policy and also reduces the expenditure especially on energy electricity water fuel.

Fig: 6.2 Rangsit University Library
Sources: (https://www.ifla.org/node/92963)

6.3 **Tu Delft Library**

The TU Delft library is more than just a collection of books. The University campus is surrounded by lawns, flowers, and trees, providing an informal setting for students and professors to meet. The library's construction is very unusual, with a greenroof and cone house that has four levels of typical study space linked by a helical stair. It provides daylight to the internal reading room via the glazed roof. The library makes use of underwater storage, which aids in cooling. Depending on the season, energy is used in unique ways. The building is claimed to be energy efficient and has three critical green elements such as a greenroof, cold storage, and environment facades. [5]

Fig: 6.3 Tu Delft Library
Sources: (https://inhabitat.com/mecanoos-tu-delft-library-crowned-with-a-massive-green-roof/)

7. **Library can undergo following Activities**

- Inform and Educate staff and students in order to encourage and foster best practices.

- Raise the level of environment consciousness among the staff.

- In order to minimize carbon emissions, student can ride electronic bikes or rikshaws to libraries and departments.

- Disseminate knowledge and suggestions about the applications.

- Making environmental recommendations to the profession.

- Promote cooperation, collaboration, and the exchange of information and ideas about sustainable practices among library staff from across the country.

- From librarian to student to their relative and friends one should take the initiative of taking the chain of sustainable environment practice.

- Reuse and recycle should be a priority on campus, as Lviv Regional Children's Library in Lviv, Ukraine has done. Children are taught by librarians to think environmentally, to care for natural resources, to minimize waste, to understand garbage sorting and recycling, and to share their information with family and friends. "Garbage Hero" first aired in May of 2016. The project achieves the goals of sustainable development by providing clean water and sanitation, building a "eco-friendly city," and using resources responsibly.

- It is the responsibility of teachers as well as librarian that student must follow and accept the green library revolution and initiate planting greenery at the library.

- Annually green library activities must be conducted in order to aware the students through workshops, contest, quiz, exhibition of books on urban gardening.

- Test the library and surrounding area radon free as it is a naturally occurring radioactive element formed by the disintegration of radium which can bring serious health implications. It is known to cause a problem in children. Testing for radon and ensuring the library and surrounding are randon free qualifies as a practical method of reducing indoor air pollution.

- to provide facilities for watching environmental videos or presentations, create opportunities for children to be interested in ecology such as poster contests or poetry readings, resource selection based on organic and green agriculture and energy conservation, create library and book reading links and a collection of popular websites for environmental issues.

- To practice sustainability the campus should facilitates storage of low emission and energy efficient vehicles example electric rickshaws

- Going paperless is one the green methodology which is helpful for the surrounding to maintaining the sustainability.

- Charges for the dues should be taken online which will help the library to go paperless.

8. Conclusion:

Green library is not limited green building but along with that librarian need to make sure to follow up certain green library criteria which are equally important to make a contribution from library side for sustainable environment. Library is considered to be a universe of knowledge and how this knowledge is transformed into sustainability process which leads to environment friendly atmosphere. Incorporation of green practices will not only make the patrons to be responsible for their practice indeed they will be able to raise the awareness about sustainability and green practices. There are many other ways through which one could implement the principles of green library practice such as by planting trees which will help to reduce the stress, indoor gardening help to improve the quality of air, eco corner in the library etc.

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