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GREEN LIBRARY BUILDING: INDIAN AGENCIES AND STANDARDS

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Abstract:

Libraries are a platform for lifelong learning. Green library means not just a building it includes many services, facilities, infrastructures which helps in going green. Libraries have different types but the purpose of usage is the same. In India Asia's first LEED Gold rated Library building is Anna Central Library, Chennai. COVID-19 pandemic situations teach us to look backward for fundamental basic needs, and its application in day to day life. In this paper researchers cover the concept of green libraries and different Indian agencies and their standards for green building construction. Only nature can save us if we save it, eco-friendly practices help in saving nature. From an academic perspective there are many ways to live with nature and green libraries are one of them. Library has many aspects which can be reengineered with the green or eco-friendly library concept like library building, Collection, Infrastructure, operating procedure, facilities, current practices, costs, standards, IT Usage and environmental quality. This research covers the only conceptual framework of the green library and different Indian agencies and their standards for green building constructions. Green library services can save nature through minimizing the negative impact on the natural environment and maximize indoor environmental quality at the library.

Keywords: *Green Library, Eco-Friendly library, Sustainability, Eco-Friendly Practices, Go-Green, Green Library Standard.*

Introduction:

This research covers the only conceptual framework of the green library, different Indian agencies, Standards for going green. In India past some century, decades, years has many pandemic situations and that all situations proves that only natural things are the base of human life, COVID-19 pandemic situation is also one of them. Library has many aspects which can be reengineered with the green or eco-friendly library concept like library building, Collection, Infrastructure, operating procedure, facilities, current practices, costs, standards IT Usage and environmental quality. Green library services can save nature through minimizing the negative impact on the natural environment and maximize indoor environmental quality at the library.

The government of India and their organizations continuously focus on educational quality, evaluation, accreditation, up gradation for the better education like Ministry of Education,

University Grant Commission (UGC), National Assessment and Accreditation Council (NAAC), All India Council for Technical Education (AICTE)… etc. These all bodies continuously update their evaluation criteria's of academic institutions. From the last few years they have some evaluation metrics on green initiatives, green energy, green practices, green audit…etc. But in the concern library these metrics questions need to be more deep and specific for green initiatives. Today libraries are taking initiatives for green practices but there are no any questions in library criteria for accreditation. So such government organizations have taken many initiatives for going green, only they need to focus on the library and its green practices for user satisfaction. Green library means not just a building, it includes many services, facilities, infrastructures for the purpose of usage and user satisfaction.

What is Green Library (Definition):

International Federation of Library Associations (IFLA), green libraries are "The consideration of the role of humanity in climate change and the notion of sustainable development are core concerns of society, and consequently of libraries."

The Online Dictionary of Library and Information Science (ODLIS) define green library with Synonymous sustainable libraries "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.)."

New World Encyclopedia 'Green Library' "a library built with environmental concerns in mind. Green libraries are a part of the larger green building movement."

Indian Green Building Council (IGBC) "A green building is one which uses less water, optimizes energy efficiency, conserves natural resources, generates less waste and provides healthier spaces for occupants, as compared to a conventional building."

Some of all definition we can say that "The green library is the library which starts with normal sustainable initiatives, with a clear sustainability agenda for step by step going green. It aims to maximize use and reuse of natural resources for reducing negative impact on the natural environment and its quality".

Green Library Features:

Building construction is not a big task but built with natural resources (environmentally sustainable) it's the big matter. Use of recyclable and regionally available materials. In green library practice conservation of natural resources is essential (water, energy, paper…etc.). Along with all these features, green libraries should have proper regional tree greenery, suitable site, environment friendly technology, reflective roof and ground, insulating windows and a clear sustainability agenda for green libraries.

Objectives of the Paper:

1. To understand the concept of sustainability.
2. To list the Indian agencies and their work, standards for Sustainability.
3. To create an environmental awareness among LIS professionals.

Research Methodology:

This is a theoretical research article based on previous research, Indian agencies' websites and their standards of sustainable, and green building. It is based on secondary and tertiary literature sources. This is an exploratory approach to research. The Literature survey was done using online computerized search through google search engine.

Review of Literature:

The researchers have referred to online literature, related to green concept, Indian green library building, sustainability certification systems, government and private organizations who make efforts for sustainability. Varatharajan & Chandrashekara, (2007) "The consideration of humanity's role in climate change and the sustainable development nation are core concerns of society, and consequently of libraries". George J. (2013) "a green library does not necessarily entail a green building, but it does involve a green mission". Bangar, M. S. (2018) "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". Tseng, S. (2008) "innovative design and unique architecture and furniture has created a trend for new design concepts in Taiwan; it increases the number of library visits; it increases the visibility of the library and changes the stereotype of the library in the public's mind". Trotter, D. W. (2008) through her article "Going for Green" has discussed three environmentally friendly libraries and offered tips on how librarians can make libraries greener. Shah, Leena., Kumar, Sudhir., & Shah, Mukesh Kumar (2015) Green Libraries in Academic Institutions: need of the hour in this research they explain the term Green and special challenges met by libraries to be Green. Aulisio, Antonelli, M. (2008) in her article titled, "The Green Library Movement: An overview of green library literature and actions from 1979 to the future of green libraries' 'observed some websites to explain green library concepts, given conceptual framework. Provided detailed information about green library movement and courses. Suggest sustainable standards should be followed by society. Apart from this all literature reviews many government and private organizations who take initiatives for sustainable India.

Indian organizations and standards for 'Green', sustainable libraries building:

In India many government and private organizations are taking initiatives for sustainable development. India has green building certification agencies that work not only in India but also abroad. These agencies have certain processes, criteria's for sustainability assessment and provide certificates to applied organizations. The Indian ministry and its many departments are aggressively working on sustainability (Climate change, Energy efficiency, Renewable energy, Biotechnology… etc.).

A. GRIHA (Green Rating for Integrated Habitat Assessment):

'GRIHA is a rating tool that helps people assess the performance of their building against certain nationally acceptable benchmarks. It evaluates the environmental performance of a building holistically over its entire life cycle, thereby providing a definitive standard for what constitutes a 'green building'. It attempts to minimize a building's resource

consumption, waste generation, and overall ecological impact. It has certain nationally acceptable limits / benchmarks for certification. GRIHA works with the Vision "We, at GRIHA Council, stand for credibility, integrity and inclusiveness, while upholding Indian ethos for future-ready and sustainable habitat". Its tool has been adopted by the Ministry of New and Renewable Energy. This tool, by its qualitative and quantitative assessment criteria, is able to 'rate' a building on the degree of its 'greenness'. GRIHA attempts to quantify aspects such as energy consumption, waste generation, renewable energy adoption, etc. so as to manage, control and reduce the same to the best possible extent.

This system has been developed to help 'design and evaluate' new inception stages buildings. A building is assessed based on its predicted performance over its entire life cycle – inception through operation. GRIHA has three stages for evaluation: 1. Pre-construction stage, 2. Building planning and construction stages, 3. Building operation and maintenance stage. All new constructions with built up area more than 2500 m^2 are eligible for GRIHA rating process.

Rating Process:

1. Online registration: GRIHA has an online registration process through its website.
2. Submission of documents: all criteria and their proper documentation.
3. Preliminary evaluation: all criteria documentation must be complete in all aspects.
4. Final evaluation: Once the GRIHA project team addresses the criteria queries team, final evaluation is carried out.

GRIHA has 11 sections and 29+1 Criterion for green building rating system. Total rating points are 100 but innovation is an additional part and it has 5 points to total evaluation points are 100+5. Sections as follows...

1. Sustainable Site Planning (Green Infrastructure, Low Impact Design, Design to Mitigate UHIE).
2. Construction Management (Air and Soil Pollution Control, Top Soil Preservation, Construction Management Practices)
3. Energy Efficiency (Energy Optimization, Renewable Energy Utilization, Low ODP and GWP Materials)
4. Occupant Comfort (Visual Comfort, Thermal and Acoustic Comfort, Maintaining Good IAQ)
5. Water Management (Water Demand Reduction, Wastewater Treatment, Rainwater Management)
6. Solid Waste Management (Waste Management-Post Occupancy, Organic Waste Treatment On-Site)
7. Sustainable Building Materials (Utilization of Alternative Materials in Building, Reduction in GWP through Life Cycle Assessment, Alternative Materials for External Site Development)
8. Life Cycle Costing (Life Cycle Cost Analysis)
9. Socio-Economic Strategies (safety and Sanitation for Construction Workers, Universal Accessibility, Dedicated Facilities for Service Staff , Positive Social Impact)
10. Performance Metering and Monitoring (Commissioning for Final Rating, Smart Metering and Monitoring, Operation and Maintenance Protocol)

11. Innovation (Innovation)

B. Indian Green building Council (IGBC)

India has IGBC as an oldest and premier body for green building rating programmes, certification services and green building training programmes. IGBC rates green building under following levels: Certified, Silver, Gold and Platinum. To meet the growing demand of trained professionals, IGBC has launched the Green Education Program.

IGBC, part of the Confederation of Indian Industry (CII) was formed in the year 2001. 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 complete many projects from various parts of India and abroad. Residential, commercial, industrial, healthcare, educational, campus, data centre, etc. are the areas of IGBC certification. The council organizes Green Building Congress, its annual flagship event on green buildings. IGBC is very closely working with Government agencies (Central and State) to promote the green building movement in the country. Some of the Central and State Government agencies have given recognition to IGBCs' Green Rating Systems. Like The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of Maharashtra, Government of Gujarat, Government of Andhra Pradesh, Government of Uttar Pradesh, Government of West Bengal, Government of Kerala…etc.

Indian Green building Council (IGBC) has vast areas for assessment, it touches nearly all aspects of daily human life. Areas are the IGBC Green New buildings, IGBC Green Existing Buildings, IGBC Green Home, IGBC Green Residential Societies, IGBC Green Affordable Housing, IGBC Green Healthcare Facilities, and Green Schools and so on.

C. The Tata Energy Research Institute (TERI)

Mr. Darbari Seth established TERI - the Tata Energy Research Institute - in 1974. Vision of the TERI is 'Creating Innovative Solutions for a Sustainable Future'. Over the last to five decades of its journey, TERI has emerged as one of the world's pre-eminent think tanks and research institutions in the field of energy, climate change and sustainability. Today TERI has a global presence with many centres in India and abroad. They believe that resource efficiency and waste management are the keys to smart, sustainable and inclusive development. It is an independent, multi-dimensional organization, with capabilities in research, policy, consultancy and implementation. They are innovators and agents of change in the energy, environment, climate change and sustainability space, having pioneered conversations and action in these areas for over four-five decades. They have rigorous, relevant, and objective research towards improved decision making in the areas of climate change, energy efficiency, renewable energy, biotechnology, and social transformation. TERI mission is 'to usher transitions to a cleaner and sustainable future through the conservation and efficient use of energy and other resources, and innovative ways of minimizing and reusing waste'.

D. Furthermore some major initiatives:

In India, the Ministry of environment, forest and climate change have started

some programs to make it sustainable, many Indian private organizations like Infosys, IKEA, Tata Motors and foreign organizations like Adobe, Google, Microsoft, Nestle, Philips…etc. are playing a lead role in different aspects of sustainability.

1. Karnataka university library Dharwad: The library started working in 1950. It is an eco-friendly library which is established in the centre of the campus and provides all facilities and open study space for the student. It includes sitting, supply of drinking water, Wi-Fi connectivity and other facilities with congenial natural environment for the study. This system is a blend of heritage and modern aesthetics with all facilities, including scope for group discussions in the silence of the green space.
2. Anna Centenary Library (ACL): The Government of Tamilnadu situated at Kotturpuram, Chennai established a library in 2010 with the aim of green library building. The buildings occupy an area of 8 acres and cost of the building is 172 crore. The library is well equipped with modern technology and proper use of light, air and wood. This is one of the reputed green libraries, which is assessed by LEED (Leadership in Energy and Environmental Design) and rated with gold certification. It is Asia's first LEED Gold rated Library building.
3. Other green library initiatives in India: Mumbai University Library-Maharashtra, Delhi University Library, Calcutta University Library Kolkata, NIT Library-Silchar, Perma Karpo Library-Ladakh… etc. The above listed libraries are working with sustainable factors which helps in smoothly running the library and reducing the stress on natural resources.

Conclusion:

Green library and implementation of 'green' initiatives in all areas is the need of the era. Library building, place, collection arrangement, proper greenery, space, water, sitting arrangement, Wi-Fi, proper use of light, air, wood, waste management are basic things for smoothly running the library and reducing the stress on natural resources. Government ministries and many private organizations which work at national and international level are working for sustainability. Asia's first LEED Gold rated Library building is "Anna Central Library", located at Chennai, India. Indian private organizations like Infosys, IKEA, Tata Motors... etc. are playing a lead role in different aspects of sustainability. As a librarian we also need to understand the concept of a green library and update ourselves for green practices in the library.

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