

## Green Initiatives for Libraries: An Environment for Next Generation

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**ABSTRACT:** Due to continuous use and easy availability of Information and Technology more libraries are evolving all over the world. They are providing numerous opportunities to us of quick retrieval of correct Information. Libraries have adopted advanced technology to cater to ardent information users. Hence a new revolution in the form of green libraries is emerging that is not only thought provoking but also needs to follow for long time sustainability in the library world. The need for green technology services to the users are also growing and becoming very essential day by day. Libraries are in good position in promoting environmental awareness. Libraries can lead to develop ecological sustainability practice, re-using of materials, reducing waste and toxic products and developing alternative technologies. Green Technology focuses on natural environment in rapidly growing world population. This technology paid great attention in organizations and libraries also are not exception from it. Library architecture must also go in par with the concept of green building, which has no adverse effect on its natural surroundings. This paper highlights green initiatives that may be possible in libraries. It also suggests possible issues, trends, challenges to be faced by future library and Institutions in developing countries. It is an attempt to discuss this new emerging thought along with the librarians role in making the libraries more greener for good and healthy environment.

**Keywords:** Green Library, Recycling Material, Future Library, Green Technology, Library Buildings.

### INTRODUCTION

Libraries are said to be started with the vedic era when to learn and collect the information on bhoj patra, stones and the clay tablets. Libraries grow well during medieval period, but their real development started with the introduction of the modern libraries during 19<sup>th</sup> and first half of 20<sup>th</sup> century. As a result digital libraries exist partially or in whole almost in every part of the world. ICT base library services has made possible to have information at the finger tips of the users and library staff. Rapid publication growth and never ending demand for goods and services are profound aspects of developing countries. These countries strive to meet their economical and democratic needs while they are struggling to sustain their natural resources. Scarcity of natural resources and drastic changes in climate around the world will influence the ways in which libraries serve their communities. The world keeps on changing and switching from one phase to another, traditional to Industrial to electronic. It is unfortunate that green library movement has not reached the critical mass two decades ago. On contrary libraries have not fully technologically been transformed. This might have

been a reason for not being interested in green library movement. Indian Libraries should initiate actions to go green library services. We need to develop sustainable environment so that coming generation could survive well and green libraries are one of the solution.

### GOING GREEN

On hearing green word, one thing quickly strikes in the mind is that weather the libraries which are green in colors. Green or sustainable libraries are the structure that is designed, built, renovated, operated, or reused in an ecological and resource efficient manner (Anonymous, 2008). The terms sustainability and green are frequently interchangeable with each other. Lending, the sharing of books and other media and also the sharing of other computers, the move from print to electronic resources, common space for learning and socializing, retaining cultural heritage, offering information and variety of materials about a responsible way of life' may constitute the green Libraries (Hauke *et al.*, 2013). Green library movement is comprised of the concepts of sustainability. Green Library is that which recycles, saves environment,

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shows examples of green values, and sustainability, has been designed ecologically sustainable and offer public space that is free of charge for everyone (Helsinki City Library, 2013). Going green, environmentalism, green washing and related terms such as global warming, conservation, and preservation. These all can be potential search terms in seeking more information (Wikipedia). Green technology concept embraces sustainability, cradle to cradle, design source, reduction, innovation, and viability. Sustainable practices ensure that present society meets its need without depleting and damaging natural resources. Current practices should not compromise the ability of future generations to fulfill their needs from natural resources. These practices are guaranteed to recycle and reduce pollution and waste. Green Information system is a system designed to minimize GHG (Green House Gas) emission throughout its lifecycle from content creation to distribution, access, use and disposal. Libraries engage novel technologies and substances to thrive in electronic era. As a result of which library activities disturb the stability of natural environment. Therefore libraries need to execute practices that utilize green technology. A green library may be a library that uses latest and cutting edge technology in designing a library building and providing services to its users in eco friendly environment. Libraries are in excellent position to both as an ecological operator and promoter of environmental awareness. This leads to develop ecological sustainability practices, re-using, of materials, reducing waste and toxic products, and developing alternative technologies. With respect to green technology, the concept Green Technology emerged and it encompasses the broad range of subjects from new energy generation techniques to the study of advanced materials to be used in our daily life. Like all other organizations and industries libraries are also compelled to contribute to sustain the capacity of natural environment. In this regard they adopt various practices and technologies in all their function. (Chowdhury, 2012) in his research paper described the development of Information services that can limit GHG emissions throughout the lifecycle of the generation, publication, organization, distribution, , access, use, and disposal, of Information.

#### **WHAT CAN BE DONE FOR GREEN LIBRARY BUILDING?**

(Sahavirta, 2013) mentions that creating a visible green image for the library is an important part of the environmental work. Therefore it should be achieved

for making the environment sustainable. If we are going to establish a new library building all the point to make the libraries sustainable must be kept in mind just from starting. (Hauke & Werner 2013) mention that with a new library building, the facades, the building climate, ventilation, heating, and cooling, the lighting, the interior fitting, Green Information, and communication technology are all features that you can point for green libraries for several years. (Antoneil, 2008) says that this innovation could happen through green library buildings, greening existing library facilities, Green library services, and implementing environmental friendly and sustainable practices. According to Brown (2003) the following activities are incorporated in to green library design: a) community collaboration to maintain public support, b) pairing natural light with electrical lighting, to cut down energy costs. ) Using green and renewable materials like wood, linoleum, bamboo and cork, d) Putting green roofs, e) Raised floor system, f) encouraging natural ventilation through adequately put and wide window, g) using renewal energy, h) maintaining indoor environmental quality.

#### **GREEN LIBRARY BUILDING STANDARDS**

Indian libraries started to have the provisions for natural lights as much as possible, energy saving, bulbs in library premises, provision of natural air, emphasis on cleanliness, hygiene toilets, dustbin at appropriate places, proper disposal policies for weeding library materials or equipments (Chakraborty, 2013). There are available standards and specifications, which must be given due respect. LEED (Leadership in Energy and Environmental Design) is a performance standard (<http://www.leed.net>), which allow building planner or owner to choose certain benchmark numbers without prescribing specific measures and encourages global adoption of sustainable green buildings. LEED is certification system which was developed by U.S. Green Building Council. Building a green library encompasses everything from choice of building materials are basically red bricks, cement, iron bars and rock metals, Six criteria of US Green recommends sustainable sites, water, efficiency, energy and atmosphere, materials, and resources, indoor environmental quality and innovation in design. Importantly, site selection for the building has substantial impact on how green a library is going to be. Based on appropriate guidelines, proper consideration should be given to the construction process and its effect on ecological surroundings. Erosion, population, density, accessible

via public transportation and construction materials are some of the important elements in putting up a green library building (LEED, 2005). (Yudelson 2007) mentions that there are currently six types of building certification under LEED including:

- LEED-NC (for New Construction)
- LEED- CI (for Commercial Interiors)
- LEED -CS (for core and shell)
- LEED-ND (for Neighborhood Development)
- LEED-EB (for existing buildings)
- LEED-H (for Homes)

Many libraries at National & International levels have achieved this certification such as Clinto Presidential Library in Arkansas, Perma Karpo Library, Laddakh, and National Library of Kolkata that is yet to be completed. IFLA also provides library building guidelines for the purpose of making green and sustainable library. Indian standard specification for library furniture and fittings (1978) also can be consulted for building and designing furniture for Indian Library system.

#### INITIATIVE TO GREEN

The movement for green Library was started by United States in the early 19990s, when the libraries, Librarians, cities, towns, College and University campuses have committed to greening libraries and reducing their environmental impact. Now many countries all over the world have been enjoying the benefits of green libraries but in India a very few attempts have been made to develop sustainable library buildings. A survey made of four university libraries (Calcutta University Library, Mumbai University Library, Madras University Library, Delhi University Library) by Chakraborty (2013) reveals that although measures were taken care off a long time ago at their establishment time but some suggestions also need to be adopted to solve the problems in current environment.

- According to the definition given by California integrated waste management board for a green or sustainable building is a structure that is designed build, renovated, operated, or reused in an ecological an resource efficient manner (California Integrated, as cited by Antoneil 2008) he further states that green buildings are measured according to LEED System.
- (Rousseau 2008) suggests a simple step forward to make libraries green to quit using

toxic chemical cleaners that are hazardous to human and natural environment. (Antonelli 2008) says that these hazardous chemicals can be replaced with less toxic and plant based liquids that emit fewer fumes.

- Natural illumination, curtains, to filter direct sunlight, solar panels and bamboo wood flooring, are some of the library's green feature (Los Angeles public library 2005). Library building should accommodate day light and natural ventilation to curtail energy consumption at large. Lights and water taps can be reduced to conserve power and water. Windows must be placed on appropriate direction, and they should focus on reducing noise pollution created by AC, power generators, defective door et by continuous management and maintenance.
- Being aware of and using bio-pesticides and green chemicals need education and training to maximize its effects (Gupta and Dikshit, 2010). Library management needs to carry out propaganda and campaign to escalate the awareness among users and general public in the areas of responsible waste disposal and environmentally friendly practices. Keeping poster in every corner of library, circulation leaflets, conducting seminars, workshops, and reward for eco-friendly staff could be administered to increase the awareness f green library movement and sustain the sustainable practices.
- Libraries uses plenty of wastes, especially paper materials including electronic wastes, leftover food, plastic material are expelled everyday in libraries. Hence waste must be disposed in such a manner to recycle them so that natural environment is kept safe.
- Library Architecture should abide by guidelines to stand both extreme weather conditions, so that they will not waste water during dry weather, while harvesting rainwater in times of precipitation.
- Using renewal energy systems have become popular. There are cost effective and reduce green house effect in the natural environment. These are basically solar power and wind turbines. Libraries that are located coastal area can be better utilizing the wind power to generate green energy.

## GOING GREEN: CHALLENGES FOR LIBRARIES:

Although green library movement and sustainable practices is realized across the world but still there are some challenges to be dealt with.

- Though cost of constructing green building has become affordable to other entities, libraries will face issues in meeting green goals as they are subject to stringent budget cuts especially when reengineering, or re constructing library structures one cannot forget the cost associated with it.
- Green practices in sustainable manner require considerable degree of expertise or competency from general management to ordinary level of maintenance throughout library functions. It is likely to expect lack of awareness in green technology and among the employees who have been recruited with traditional knowledge and skills.
- Attitudinal barriers play significant role in slowing down the sustainable practices in libraries. There are possibilities to convince the administration who would otherwise object the idea executing green library practices due to their unawareness. A well laid plan for green library building will remove resistance to change.

## ROLE OF LIBRARIANS

Libraries have always been a key contributor to community learning efforts and it is appropriate that they take a leadership role in sustainability movement on campus (Miller, 2010) he further adds that unlike other buildings, libraries have specific needs and unusual challenges in the fight to become greener however librarian can help to overcome the situation in making a sustainable in present environment.

Saario and Oja (2012) has suggested following ways for making sustainable library:

- Information must be distributed and established by bringing out best practices and introducing them to wider use and environmental guide and work methods that motivate people to participate.
- An individual employee must be supported in implementing sustainability through commitment. An environmental training, tips for best practices and instructions on how to measure success and encouragement are essential.

- Indicators and monitoring methods should be developed for sustainable libraries.
- Library can also encourage sustainability internally.
- Customer communication should receive more attention because libraries have considerable opportunities to improve their customer environmental awareness through communication and environmental education as well as acting as an example.
- The intrinsic role of library in sustainable development should be emphasized more. 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.

Agashe 2013 has assigned following roles to a librarian in making Green Libraries:

- The green librarian role is most extraordinary here called eco-librarian who has to handle the budgets to support the organizations.
- The resources should be provided on site help to the people to locate library materials and many documents and organizations that are oriented toward a helpful future.
- There are two most important things- Economy and Ecology for making healthy and prosperous sustainable libraries. Librarian has to keep in mind essentially.

## CONCLUSION

ICT is available at very cheap cost but at faster speed. That is why we are moving towards more and more digital libraries. The days are not far away when paperless society will be a reality. But to manage the harm, bringing an environmental awareness for green libraries are is an important factor. Libraries are irreplaceable organs of communities, thus their image in society matters. This can be earned through green library practices. Many techniques are being employed safeguard ecological environment. It is a fighting with technological advancements. Rapid development in technological and Industrial sectors exert ample amount of toxic by product and waste. That destroys the natural environment and human life. Green technology is revolutionary concept to ensure the organizations stand by mandated guideline given by environmental authority. Although librarians face some challenges to pollution free nature but they ought to implement activities of green

technology at least in slow but steady pace. Library man power needs to be trained and appraised for the required level of skills in green technology. Although there has not been any standard or criteria for making green libraries however buildings and machineries do have construction guidelines and ISO standards to comply with sustainability of natural environment. This may be difficult at institutions every time renovation or expansion to the library but sustainable approaches can improve environmental impact of the building. Hauke & Werner (2013) rightly mention that there are lot of ideas and realized projects from all over the world on how to green the library building, Management, and services. But there is “a need of attention for a meeting point between the principles for environmental studies and library studies in modern library management process” (Ephraim, 2003), and also need is that the technology used should be durable, recyclable, re-usable, long lasting, as far as possible based on indigenous materials as suggested by chakraborty 2013. Hence this the time when librarians should not only choose the methods for green libraries but also make the public aware about the green libraries for sustaining in the year future.

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