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## **NEWSLETTER**

**On**

## **Green Technology in Library**



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### EDITORIAL



A 'Green Library' is a modern library, which plays an important role in environmental, economic and social sustainability. This newsletter discusses how to create green space in the library and how it inspire the librarian as well as the authority of the institutions for creating green space. The green library movement aims to creation of ecofriendly green space in library with consideration of energy conservation, aesthetic view, and environmental sustainability. It also puts forward various suggestions and methods for greening existing libraries and also discuss the need and importance of implementing green library concepts. Reduce, recycle and reuse are the three principles to be followed in making the libraries green. These can raise awareness and initiatives of 'going green' issues. The green library concept gaining popularity among library users and library professionals.

Thus this green library concept can act as a role model for sustainability and make our environment a better place to live in.

(Prof. Kausik Mondal)

### INSTRUCTIONS TO CONTRIBUTORS

EIACP Resource Partner on Environmental Biotechnology publishes two volumes (4 Nos.) of news letter in a year (ISSN: 0974 2476). The articles in the news letter are related to the thematic area of the ENVIS Resource Partner (see the website: <http://deskuenvi.nic.in>).

#### The format of the article as follows:

1. Font should be Times New Roman and font size to be 12 in 1.5 spacing with maximum of 4-5 typed pages.
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3. The exact position for the placement of the figures and tables should be marked in the manuscript.
4. The article should be below 10% plagiarized.

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### IN THIS ISSUE:

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EIACP PC RP on Environmental Biotechnology, University of Kalyani.

## Creating Green Space in the Library through the Sustainable use of Household Materials

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### Abstract

Libraries play an important role in our community. As concerns about environmental issues continue to rise, libraries are trying to become more eco-friendly and sustainable through 'green library movement'. This paper explores the concept of creating green space in libraries using various household materials. The article also discuss the importance of green and sustainable library, waste reduction and recycling practice, waste to wealth conversion with low cost techniques, selection of low-maintenance air purifying indoor plants inside the library to attract library users with a close to nature environment. The different ways in which libraries can reduce any adverse environmental impact and promote sustainability also focus in this article.

**Keywords:** Green Library, Environmental Protection, Sustainable Development, Waste to Wealth

### Introduction

Among the few certainties in life, like death and change, waste generation is the most prominent. Waste generation is an unfortunate reality of our modern society. From household trash to industrial waste, our daily activities produce a significant amount of refuse that harms the environment and depletes natural resources. To effectively manage the waste generated, a variety of scientific, sustainable, and environment-friendly initiatives have been implemented at both the state, national and international levels.

Information and Communication Technology (ICT) is constantly affecting and altering our lives more quickly. Today, as the world's population grows, the demand for all goods is rising quickly. We are using this ability to meet our insatiable demands, but this also raises some serious problems, such as waste production and pollution. As a result, keeping

'green' is necessary for our quickly changing environment to fulfil our societal obligation through sustainable development. The green space development has drawn more attention recently across almost all industries, including the library which has been observed through many initiatives. Libraries, which today act as access points to knowledge, have a special responsibility for not only advocating for sustainability but also setting an example for others to follow. Green components should be incorporated into the operations of today's libraries to maintain ecological balance, preserving the planet with its natural resources and systems along with every need of the users as well as the community.

The article describe on green library with the objective that, to inspire the librarian as well as the authority of the institutions for creating green space in the library, to identify the initiatives for providing a healthy and green environment and attracting more users to the library (fig.1). The plan for the creation of green space in the library with waste utilization, continuity, low maintenance, conservations strategies consideration of aesthetic view and ecofriendly environment also discussed in this article.



Fig 1: Green space in library

### What is a Green Library?

Sustainable or green libraries gained popularity in the field of the library and information science profession through the emergence of the green library movement in the early 1990s. Libraries or information resource centres are the centres of lifelong learning, creating awareness, educating users about different important or raising issues in the local community.

As per Oxford English Dictionary (1989) the term 'green' is defined as "of or supporting environmentalism" and 'sustainable' is defined as "forms of human economic activity and culture that do not lead to environmental degradation especially avoiding long-term depletion of natural resources".

According to the Online Dictionary for Library and Information Science (ODLIS), Green Library is defined as "A library designed to minimize the negative impact on the natural environment and maximize indoor environmental quality employing careful site selection, use of natural construction materials and biodegradable products, conservation of resources (water, energy, paper), and responsible waste disposal (recycling, etc.)". It also stated that in new construction and library renovation, sustainability is increasingly achieved through LEED certification, a rating system developed and administered by the U.S. Green Building Council (USGBC) as the library buildings are part of a large green building movement which concerns the site, water, energy, materials and indoor climate, innovation in design.

BREEAM (Building Research Establishment Environmental Assessment Method) at the international level and GRIHA, IBBC (Indian Green Building Council) and LEED (Leadership in Energy and Environmental Design) adopted by the Govt. of India as a national rating system for green building reflecting the demand of creating eco-friendly space.

Therefore, green libraries are those that are sustainable or beneficial to the users and the environment both.

### **Importance and purpose of creating green space in the library**

Sustainably maintaining the library indoor climate is an important role of the librarian or the library professionals in the age of library 2.0 also. "Library 2.0" is the shorthand for a vast array of initiatives in all types of libraries to incorporate the tools for online collaboration into new ways to deliver effective library services. Moreover, the library which is a community-driven system should take a unique

part in the green moment with different small steps. Each library should incorporate green features into their buildings for several reasons both the health of library users and the planet's health. A few of these qualities include making an eco-friendly structure of library structure, use of eco-friendly technologies like natural, recycled, and locally available materials, making the building or arranging the library furniture and selecting the space for its different sections utilizing energy efficient light, optimizing cooling, proper ventilation /circulation of fresh air, waste reduction and recycling, planting air purifying plants appropriately both inside and outside the building, and use of environment-friendly technologies, etc.(fig.2)

Here in this study, an attempt has been taken to design a plan for creating green space in the library with a plantation of air-purifying, low-maintenance plants recommended by NASA (National Aeronautics and Space Administration) as described in Wolverton (1989) and creating plants pots using household waste materials to mitigate the impact of waste generation by utilizing innovative solutions that repurpose waste materials into beautiful, functional objects. Implementing this plan the external and internal ambience of the Library may add a personal, artful touch and also make a positive impact on the planet. Furthermore, repurposing materials in this way also inspires creativity and encourages others to be more mindful of the waste they generate and how they can utilize it sustainably, thereby promoting sustainability and raising awareness about the need to reduce waste.



**Fig 2:** Green library environment

## **Green library movement**

With increasing awareness of climate change, creation of green libraries has started becoming an important topic of discussion. The Green Library concept and movement towards environmental sustainability has started with gaining increasing popularity to attract library users (Antonelli, 2008; Meher and Parabhoi, 2017; Babare and Aute, 2018; Gupta, 2020; Sindhu, et. al., 2021; Mondal, 2021; Kulkarni, 2022). Sharma and Vaja (2020) discussed how the concept of 'Green Libraries' can help reduce the negative impact on the environment and all librarians should participate in taking up required actions to make their workplaces environment friendly. Purohit (2013) mentioned how making green libraries is reaching a tipping point and 'Going green' is grabbing attention of the librarians.

A library setup can help 'GO GREEN' movement in many ways. Carefully selecting the sites for creation of the libraries, choosing building materials that can help reduce waste, reducing use of air conditioners to improve indoor air quality, making green toilets and use of roof rain water harvesting to conserve water are some of the ways discussed by Shah, et. al. (2015). Focusing on improving air quality, carefully choosing the sites, and maintaining water and energy are also highlighted by Pagore and Chalukya (2022). Ghorbani (2018) raised the important question of motivating librarians to incentivize and help them commit to the creation of green libraries. They showed that half of the libraries they studied received less than 25 score for motivation with the minimum being 9, and maximum being 40. Sing and Dixit (2021) found that librarians are aware of the concept of green libraries, and stated that more help from government is required to make the Green Library movement prove to be helpful in attaining the sustainable development goals. Mahawariya (2020) discussed how the role of a modern era librarian is key to the creation and success of Green Library. Warnasooriya (2019) discussed that although research on the 'Green Concept' is popular, there is still a knowledge gap. She helps to fill in the knowledge by giving an overview on the green library concept in Sri

Lankan library system and reinforces the importance of research on the topic especially for countries like Sri Lanka which according to her is at 'infant stage' for such research.

In a recent work by David et. al.(2022) emphasized that besides using methods of rainwater recharging and reusing to maintain the goal of sustainability, greening the indoors of the libraries also help in creating mindfulness and helps create a positive impact on the library's image. Importance of choosing 'Green paints' to maintain a green library has been highlighted by Ingole and Kumari (2021) since components used in paints is a contributing factor to poor indoor air quality as they often transmit VOCS (Volatile Organic Compounds like benzene, toluene, etc. To reduce paper waste, Hafit and Abdullah (2017) mentioned the importance of converting services to online as much as possible.

Dongare (2022) studied the aspects of academic libraries in the state of Maharashtra and stated that besides a green building, green and eco-friendly functioning of the library should also be parameters included in measuring a green library. Bangar (2018) stated that librarians should be eager to update themselves on sustainability trends while creating awareness and space in the libraries that exemplify the Green practices. Tans (2017) showed how the Environmental Committee, Michigan State University Sustainability, and other operational departments on campus came together to collaborate on projects that helped to increase the recycling rates in the library, reduce energy use, and resulted in a 100 % landfill diversion rate for deaccessioned materials from the library collection. A pilot program was also started to collect compost from both public areas and office spaces. Besides highlighting how important it is for librarians to understand and help to create awareness in order to make the Green Library a success. Athulya and Thanuskodi (2022) also threw light on the enormous possibilities that libraries in India now have to collaborate with organisations such as IFLA, INELI, Bill & Melinda Gates Foundation and how fund raising methods in Indian libraries are still at its nascent stage.

Thus, a research gap is identified, as work on creating green libraries by sustainable use of recycled materials, along with proposing a preliminary budget plan has not been conducted yet.

### Methodology and design green library

A number of renovation/ modification has been framed to create a green space in the library using household waste materials as plant pots and other decorations and planting low-maintenance, low-cost air purifying plants recommended by NASA.

We can reduce paper waste not only by converting as many services as possible to online, but also by contributing to making the indoors 'green' by reusing the waste papers. Used papers can be reused in decorating the library indoors. Old magazines, newspapers, and any other form of discarded paper can be placed under the glass tops of the tables in the library. This will not just reduce paper waste but also create a unique aesthetic for the library.

Design a plan for introducing green space in library considering different issues like site selection, selection of waste materials, its use, a clear idea about the outcomes, required fresh items to make the waste materials worthy, selection of plants, creating a team for execution of the plan.

Some ideas of utilization of waste to wealth are,

- ✓ Making a boundary of the tree bases with the discarded plastic bottle, small step gardens in front of the library with damaged tyres.
- ✓ Arrangement of stationeries like knife, glue, acrylic colours, coir, paint colour, paint brush, and other decorative items using different discarded materials.
- ✓ Arrangement of low-cost, low-maintenance air purifying plants in indoor blank spaces of library like, Aloe vera, Spider plant, Peace lily, Snake plant, Philodendron, different types dracaena, Money plants, Areca palm etc using different discarded pots.

To generate awareness and inspiring library employees and users, organising different

activities like, workshops or competitions for creating plant pots from household waste materials, plant donation ceremony in the library and collecting feedback from the users of the library etc. may be adopted.

The following images are the examples of developing green space and creating natural aesthetic environment in library with various sustainable waste utilization techniques (fig. 3 a-f).



Fig. 3(a): Library Catalogue drawers

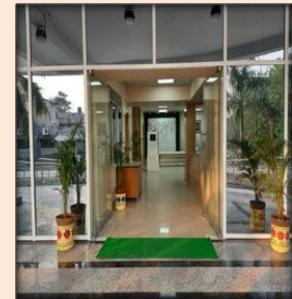


Fig. 3(b): Library Hall way



Fig. 3(c): Outside the library

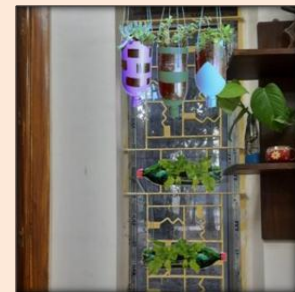


Fig. 3(d): Library windows



Fig. 3(e): Library garden space



Fig. 3(f): Library interior Decor

### Conclusion

Presently, one of the most important issues is to protect our environment. Different projects have been taken by various planning authorities in India as well as West Bengal for sustainable environment and to create a green India.. The library and the librarian both play an important role in the development of

society in many ways. Green library or green space in the library creating close to nature environment and gives a pleasant atmosphere to its users which will be able to attract more users to the library. Librarians meet the information need of the users by providing the right information at the right time to the right user, in this context librarians as ecological operators should take initiative for serving the environment by creating green space as a small step in the library with minimum budget or voluntary/ collaborative initiative for setting an example in the society, inspiring users, other library professionals, individuals to do something for protecting environment our mother earth.

## References

- Antonelli, M. (2008). The green library movement: An overview and beyond. *Electronic Green Journal*, 1(27).
- Athulya, S., & Thanuskodi, S. (2022). Sustainable development of libraries: Some possibilities. *Specialusis Ugdymas*, 1(43), 7332–7344.
- Babare, A. A., & Aute, G. P. (2018). Green Library: An overview. *An International Peer Reviewed Bilingual E-Journal of Library and Information Science*, 218-221.
- Bangar, M. S. (2018). Green libraries in India: An overview. *National Conference on Transforming Libraries into Knowledge Resource Centres*, 222–230.
- David, S., Ramachandran, S., Pillai, M., & Franklin, J. (2022). Green library initiatives of academic colleges in Kerala for sustainable eco-friendly libraries. *International Journal of Innovative Research in Technology*, 9, 844–849.
- Dongare, M. (2022). Present status of green library aspects and its implementation in academic libraries of Maharashtra. *International Journal of Research in Library Science*, 8(2), 99. <https://doi.org/10.26761/ijrls.8.2.2022.1538>.
- Ghorbani, M. (2017). Designing a green library evaluation checklist. *Library and Archives of IR of Iran*, 1–21.
- Gupta, S. (2020). Green library: A strategic approach to environmental sustainability. *International Journal of Information Studies and Libraries*, 5(2).
- Hafit, A. binti, Abdullah, C. Z., et al. (2017). Implementation of green technology in library: A proposed framework. *International Journal of Academic Research in Business and Social Sciences*, 7(12), 507–514.
- Ingole, A., & Kumari, S. (2021). Green Library: Concept, Sustainable Development, Features, Importance, Standards and Overview in Indian Scenario. *International Journal of Creative Research Thoughts*, 9, 374–386.
- Kulkarni, P. P. (2022). Green library: Concept, features and elements. *Journal of Emerging Technologies and Innovative Research*, 5, 1456–1460.
- Mahawariya, K. (2020). Transforming modern era libraries into green library: A study. *Journal of Indian Library Association*, 55(2), 1–7.
- Meher, P., & Parabhoi, L. (2017). Green library: An overview, issues with special reference to indian libraries. *International Journal of Digital Library Services*, 7(2), 62–69.
- Mondal, H. (2021). An overviews of green library: A step towards sustainable world (pp. 15–34).
- Pagore, R., & Chalukya, B. V. (2022). Green library: An overview. *IP Indian Journal of Library Science and Information Technology*, 7(1), 36–39. <https://doi.org/10.18231/j.ijlsit.2022.007>
- Purohit, S. (2013). Green library: A new concept of library. *International Conference on Entrepreneurial Approaches to Librarianship*, 26–28.
- Shah, L., Kumar, S., & Shah, M. K. (2015). Green libraries in academic institutions: Need of the hour. *International Journal of Research-Granthaalayah*, 3(9), 1–5.
- Sharma, P. V. K., & Vaja, B. L. (2020). The development of concept of green library in the college education system & its implication: A system review. *International Journal of Advanced Academic Studies*, 2 (2)D, 258–261.
- Sindhu, P., Gaffar, A., & Kumar, S. K. (2021). The green library initiative in Indian perspective: A study. *Library Philosophy and Practice*, 1–10.
- Singh, M., & Dixit, S. (2021). Sustainable strategies towards green libraries: A study of state university libraries of Lucknow, Uttar Pradesh. *Library Philosophy and Practice*, Moscow, ID, 1–19.
- Tans, E. D. (2017). Sustainable academic libraries: A campus partnership at michigan state university. *Handbook of Theory and Practice of Sustainable Development in Higher Education: Volume 3*, 89–100.
- Warnasooriya, T. (2019). A new vision to LIS field: An overview of green library concept. *Pusthakala Vidya*, 9.
- Wolverton, B. C., Johnson, A., & Bounds, K. (1989). Interior landscape plants for indoor air pollution abatement.

<b>FORTHCOMING EVENTS</b>		
<b>Event</b>	<b>Date</b>	<b>Place &amp; Correspondence</b>
4 <sup>th</sup> International Conference on Environmental, Agricultural, Chemical & Biological Sciences (ICEABS 2023)	13-14 <sup>th</sup> May, 2023	Tamilnadu, India <a href="https://www.helpbiotech.co.in/2023/02/4th-international-conference-on.html">https://www.helpbiotech.co.in/2023/02/4th-international-conference-on.html</a>
World Congress on Industrial Biotechnology (WCIB)	1 <sup>st</sup> June, 2023	Genoa, Italy <a href="http://conferencefora.org/Conference/43576/WCIB/">http://conferencefora.org/Conference/43576/WCIB/</a>
International Conference on Environment, Agriculture and Biotechnology (ICEABT)	24 <sup>th</sup> June, 2023	Bangalore, India <a href="http://academicsconference.com/Conference/34039/ICEABT/">http://academicsconference.com/Conference/34039/ICEABT/</a>
International Conference on Environmental Science and Biotechnology (ICESB)	25 <sup>th</sup> June, 2023	Brighton, United Kingdom <a href="http://scienceplus.us/Conference/26089/ICESB/">http://scienceplus.us/Conference/26089/ICESB/</a>
International Conference on Environment, Agriculture and Biotechnology (ICEABT)	29 <sup>th</sup> June, 2023	Roorkee, Uttarakhand, India <a href="http://academicsconference.com/Conference/31905/ICEABT/">http://academicsconference.com/Conference/31905/ICEABT/</a>
9 <sup>th</sup> International Conference on Environmental and Ecology. <i>Theme:</i> Emerging Trends in Environmental Biology, Biotechnological Approach and Sustainability	22, 23 & 24 June 2023	The University of Burdwan, West Bengal, India <a href="https://www.icee.net.in/">https://www.icee.net.in/</a>

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