

## Green Libraries in India: A Status Report

Dr. Sachin Vaidya\*

### \* Librarian

SVT College of Home Science  
SNDT Women's University,  
Mumbai, Maharashtra, India

#### QR Code



**Abstract:** - *Libraries have been practising sustainability as the same library document is being referred to by many. Green is different from being sustainable; it is also different from carbon footprint. Talloires Declaration (1990) is the first official statement regarding environmental sustainability in higher education. The concept of green library is multi-faceted, comprising of (1) green buildings, (2) green operations and practices, (3) green programmes and services, (4) green information systems, (5) green collections and collection development. Indian Green Building Council offers services like developing new green building rating programmes, certification services, and green building training programmes. A number of libraries have taken initiatives towards being green. Anna Centenary Library, Chennai is Asia's first LEED (Leadership in Energy and Environmental Design) Gold Rated Library Building. Another Indian library worth mentioning in this regard is Karnataka University Library, Dharwad.*

**Keywords:** Green library, Environment friendly library, Carbon footprint, Sustainable library

## 1. Introduction

### 1.1. Movement

Green library movement emerged in early 1990s. The main concern of the green library movement is to reduce libraries' environmental impact. Libraries have been practising sustainability from the beginning. As many people refer the same document in the library or borrow the same to be taken out of the library, precious paper is saved thus reducing felling of trees.

## 1.2. Terminology

Kurbanoglu & Boustany (2014) have distinguished between being green and other concepts.

### 1.2.1. Green vs. sustainable

Being green: Taking environmental issues into account when making choices.

Being sustainable: Consume resources at a rate no faster than they can renew themselves, and

generate waste at a rate no faster than can be assimilated by the environment.

### 1.2.2. Green vs. carbon footprint

Green is: A system designed to minimize greenhouse gas emission throughout its lifecycle from content creation to distribution, access, use, and disposal.

Carbon footprint: The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>).

## 2. Talloires Declaration (TD)

Composed in 1990 at an international conference in Talloires, France, TD is the first official statement made by university presidents, chancellors, and rectors of a commitment to environmental sustainability in higher education. TD is a ten-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities. It has been signed by over 500 university leaders in over 50 countries. (Association of University Leaders for a Sustainable Future, 2015)

The 10 point action plan is as follows:

1. Increase awareness of environmentally sustainable development.
2. Create an institutional culture of sustainability.
3. Educate for environmentally responsible citizenship.
4. Foster environmental literacy for all.
5. Practise institutional ecology.

6. Involve all stakeholders.
7. Collaborate for interdisciplinary approaches.
8. Enhance capacity of primary and secondary schools.
9. Broaden service and outreach nationally and internationally.
10. Maintain the movement.

## 3. Concept of green library

Kurbanoglu & Boustany (2014) had explained the multi-faced concept of green library.

### 3.1. Green buildings

- A building is one of the heaviest consumers of natural resources and produces a significant portion of the greenhouse gas emissions.
- A green building:-
- is a structure that is designed, built, renovated, operated, or reused in an ecological and resource efficient manner.
- helps using finite energy resources prudently and reduce the carbon footprints of these buildings.
- uses electricity and water efficiently by:
  - installing solar or geothermal energy systems.
  - use of water-harvesting systems.
  - use of double-panel windows.
  - use of low flush and dual-flush.
- uses sustainable resources and materials, i.e.:

- use of building materials, furnishings, and fixtures with recycled content.
- use of refurbished materials and products.
- use of products (building materials, furniture and consumables) made from natural materials.

### 3.2. Green operations and practices

1. reusing or donating the items instead of disposing.
2. separating the waste and providing onsite recycling collection.
3. eliminating use of plastics.
4. reducing paper use and minimizing printing
5. routing print materials rather than making multiple copies.
6. setting copier / printer default to duplex.
7. reusing paper.
8. using recycled paper.
9. using electronic / digital communication.
10. using shared e-mail folders as searchable repositories for information and content.
11. using electronically completed / submitted forms.
12. using products / consumables with recyclable content.
13. procuring refurbished items when possible.
14. purchasing locally.
15. using environment friendly cleaning products instead of toxic chemical cleaners.
16. using stairs rather than elevators.

17. re-filling toner cartridges rather than buying new.
18. recycling toner cartridges and choosing 'green' inks.
19. having ever-other light off where possible.
20. installing energy-efficient lighting.
21. using motion sensors.
22. shutting down computers when the library is closed to the public.
23. using LCD monitors.
24. using natural lighting and ventilation.
25. choosing and using ISI compliant computer components.
26. consolidating servers in large institutions.
27. having old computers repaired.
28. finding reputable recyclers of e-waste.

### 3.3. Green programmes and services

- collecting and promoting materials with environmental themes.
- providing resources and information on green living and environmental issues.
- organizing educational outreach programmes and workshops on adopting green practices
  - growing food.
  - alternative medicines.
  - food security.
  - recycling.
- unusual and creative services
  - creating community gardens to educate patrons about successful gardening practices.

- maintaining tool-lending (for gardening).
- serving as depository for local seeds.
- lending watt meters to be checked out by users to measure at home or office how much electricity an electronic appliance consumes (in use or not in use).

### **3.4. Green information systems**

#### **3.4.1. Use of ICT**

Information systems and services make extensive use of Information and Communication Technology (ICT). Increased use of ICT has a significant impact on energy consumption and greenhouse gas emission.

#### **3.4.2. Key enablers of green information system**

- standardization in processes and practices.
- sharing resources (cloud computing).
- reusing content and tools.
- green user behavior with regards to energy usage, business practices, and lifestyle.

### **3.5. Green collections and collection development**

#### **3.5.1. Selection**

Selection is about building up collections on environmental issues (green computing, organic gardening, energy conservation, etc.).

#### **3.5.2. De-selection**

De-selection is weeding of outdated or worn library materials. Green de-selection is about recycling and reusing weeded materials.

#### **3.5.3. Material format: print versus electronic**

Environmental impact (carbon footprint) of both the formats (print and electronic) is a matter of debate; there are contradicting opinions about their environment-friendliness. Both have positive and negative impacts.

- Environmental impact of print sources
  - harvesting trees.
  - producing paper.
  - publishing and transporting published materials.
  - use of recycled paper.
- Environmental impact of electronic sources
  - storage and distribution of data (electricity used in user end and data centres).
  - e-waste disposal.
  - toxic clean-up (lead, mercury, cadmium).
  - multiplying digital copies (forwarding, creating several copies).
  - increased paper use (printing digital material).

### **4. Green library initiatives abroad**

Shah, Kumar & Shah (2015) have listed a few green library initiatives abroad.

#### **4.1. Fayetteville Public Library, Minneapolis (2004)**

It had green roofing and reduced air temperature by 20 degrees celsius, saving energy cost. Roof water was harvested for landscaping and irrigation, further reducing energy cost by 75%.

Natural lights had been used for public areas. Trees were re-harvested.

#### **4.2. Seattle Central Library (2004)**

It was located in dense public area to reduce cost of transportation. 40,000 gallons (151600 litres) tank from roof water harvesting to irrigate the landscape. Use of triple glazed glasses reduced heat saving energy.

#### **4.3. National Library, Singapore (2005)**

It was known as greenest building on the planet. It used light shelves allowing light to filter into the library. Sensors used to dim or brighten the lights for maximum comforts.

#### **4.4. Minneapolis Public Library (2006)**

It had 18,560 square feet green roofs in the downtown city reducing rainwater runoff heating and cooling load.

#### **4.5. University of California (2005)**

It had 1,80,000 square feet glass and concrete building. It saved 42% water and 50% energy due to its green library initiatives.

#### **4.6. Other libraries:**

- Scottsdale's Arabian Library – Arizona
- Villanueva Public Library –Columbia
- Vennesla Library – Norway
- Central Public Library – Singapore
- Delft University of Technology Library – the Netherlands
- King Fahad National Library – Saudi Arabia
- Cambridge Public Library – USA

## **5. Indian Green Building Council (IGBC)**

### **5.1. Foundation and vision**

IGBC, part of Confederation of Indian Industry (CII), was formed in the year 2001. Its vision 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." (Indian Green Building Council, 2015b)

### **5.2. Services**

IGBC offers a wide array of services which include developing new green building rating programmes, certification services, and green building training programmes. It organizes Green Building Congress, its annual flagship event on green buildings.

### **5.3. Functioning**

IGBC is committee-based, member-driven and consensus-focused. All the stakeholders of the construction industry comprising of architects, developers, product manufacturers, corporate, government, academia, and nodal agencies participate in the Council activities through chapters. IGBC also closely works with several state governments, central government, World Green Building Council and bilateral and multi-lateral agencies in promoting green building concepts in the country.

### **5.4. Definition of green building**

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.

## 6. Green building movement in India

The green building movement in India was triggered off when CII-Sohrabji Godrej Green Business Building in Hyderabad was awarded with the first and the prestigious platinum rated green building rating in India. Since then, green building movement in India had gained tremendous impetus over the years.

With a modest beginning of 20,000 square feet green built-up area in the country in the year 2003, as on 27<sup>th</sup> November 2017 more than 4,363 green buildings projects are coming up, with a footprint of over 4.71 billion square feet, registered with IGBC, out of which 1257 green building projects are certified and fully functional in India. This growth has been possible with the participation of all stakeholders in the green building movement.

Today all types of buildings are going the green way – government, IT parks, residential, banks, airports, convention centres, institutions, hospitals, hotels, factories, SEZs, townships, schools, metros, etc. (Indian Green Building Council, 2015a)

## 7. The role of green librarian

According to Meher & Parabhoi (2017), a green librarian can play his / her role as follows:

- 7.1. S/he should always make efforts to promote green library movements by using different online tools like social media.
- 7.2. S/he should be constantly willing to work under the eco-library system and identify those

people who are willing to work in this environment.

- 7.3. S/he can promote green library tools, techniques to encourage others.
- 7.4. S/he can encourage other librarians towards green library by discussion, seminar, and conferences.
- 7.5. Her / his role is most dynamic; s/he is also called as eco librarian because s/he has to handle the budgets to support the organizations.
- 7.6. Green library should use wooden furniture and material because these are bio degradable materials.
- 7.7. Green library can use wool brick instead of burnt brick.
- 7.8. Solar tiles or panel can be used for roof.
- 7.9. Paper insulation is also an ultimate trick to make environment friendly building. It is made from newspaper and cardboard which are recyclable. Also it protects wall from fire and insects.
- 7.10. Green library should use more and more bamboo by replacing steel.
- 7.11. Rooftop planting can be a good idea.
- 7.12. Reading room, children's reading room, story, novel, entertainment purpose books, maps, atlases, gazette, encyclopaedias, new arrivals, newspaper, magazine, OPAC should be in ground floor of the library.
- 7.13. Book shelves should not exceed 110 cm in height.
- 7.14. Arrangements of library should be made by considering physically handicapped patrons.

7.15. There must be a parking lot for the patrons and staff to smoothly run the library.

## 8. Green libraries in India

Meher & Parabhoi (2017) have reviewed green libraries in India as follows:

### 8.1. Karnataka University Library, Dharwad

The Library (functional since 1950) is eco-friendly library. It provides open green space to the students for group discussions, study, etc. The open space (with thatched / tiled roof) is also provided with the facility of Wi-Fi internet connectivity.

### 8.2. University of Mumbai Library, Mumbai

The Fort Library of University of Mumbai was established in 1880. The Library makes use of wood to the maximum extent. Large size of windows allows ventilation and penetration of sunlight in reading hall. The Library uses wood as stack material.

### 8.3. University of Madras Library, Chennai

The Library was built in 1907. The Library uses wood material in stack areas, reference hall, and periodical section reading hall. The windows are big and wide, thus allowing sunlight and fresh air inside.

### 8.4. Anna Centenary Library, Chennai

The Library was established in 2010 by Government of Tamil Nadu. It is spread over eight acres of land. It is well equipped with modern technology, and proper use of light, air, and wood. It has used solar central thermal insulation glasses, green roof, etc. It is Asia's first LEED (Leadership in Energy and Environmental Design) Gold Rated Library Building.

## 8.5. Other libraries

- University of Calcutta Library, Kolkata
- University of Delhi Library, New Delhi
- Perma Karpo Library, Ladakh

## Conclusion

The concept of green buildings is catching up in India. However, libraries are one of the last priorities in this regard. Many libraries have implemented the concept of green libraries in part. With the exception of Anna Centenary Library (Chennai), there is hardly any library in India which can be termed as 100% green library from the beginning.

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