THE ROLE OF GREEN LIBRARY PRACTICES IN OUR LIBRARIES AND THE IMPACTS OF SUSTAINABLE DEVELOPMENT IN NIGERIA.

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Abstract

This paper gave a theoretical background of the role of green library practices in our libraries and the impacts of sustainable development in Nigeria, examining the concept of green library, the benefit of green buildings, the importance of green buildings in our environment, also noting the impacts that green building have in our community and outlining the challenges that green building initiative will bring to our community. This paper brings to light the things and activities librarians and other organizations should engage in to bring about a conducive environment. The paper also stressed the fact that awareness should be created in the area of green practices, and librarians should play the role of advocacy in the society preaching to the people the need to embrace eco-friendly practices that will bring about sustainable development in our society. This paper equally, highlights the profound impact of traditional library operations on the

environment and underscores the need for immediate and comprehensive action. Formulating and implementing information policies designed to bring about green practices which will act as essential guidelines for libraries and librarians to follow. The paper also outlined some challenges like limited awareness, funding constraints, and infrastructure limitations and many more exist, however, there are potential solutions that offers a pathway to surmount these obstacles. Thus, the paper suggested among others that, the Government of Nigeria should introduce environmentally friendly library structures, facilities, services, and embrace eco-friendly practices within the library in order to bring about sustainable development.

Keywords: green library, eco-friendly environment, sustainable practice, green building, global warming

Introduction

Green library building entails creating an environmentally sustainable and resource-efficient library that minimizes its environmental impacts while promoting eco-friendly practices. It incorporates principles of sustainable design, construction, operation, and maintenance of library resources. The goal is to make libraries more environmentally responsible while maintaining their role as information centers. Greening or going green is not totally a new concept; it has gained prominence over the years as a result of the global warming, challenge of climate change and increasing focus on environmental conservation. It encompasses building environmentally friendly library structures, facilities, services, and embracing eco-friendly practices within the library.

Most developed countries have completely embraced going green or green buildings in their institutions and in other areas of endeavor due to the timely awareness of the concepts and their health implications to lives and properties. According to David-West and Wali (2023), the "green" initiatives embrace and promotes stable environment and climate while in libraries it has to do with how facilities of libraries can be redesigned, replan for better utilization which will reduce the negative impact on the environment. This

implies that people want everything to be green to save the planet on which they live. Simply put, the concept of "green" deals with the environment and how it can be used to protect lives and properties from the effects of greenhouse gases and global warming. However, in Nigeria, the concept of greening seems to be a relatively new development in the field of library and information science. Librarians and even government have not really embraced the concept of green buildings and there is little or awareness. Nevertheless, the recognition of the positive impacts it can add to better the lives of people when implemented is something that will be worthwhile. Libraries are not only repositories of knowledge but are also important information resources for raising awareness about environmental concerns. Thus, green libraries educate the public about environmental issues through their collections, sustainable and environmentally friendly facilities and programmes, operations and even their strategies.

The term 'green' building is a building that, in its design, construction or operation, reduces or eliminates negative impacts and can create positive impacts on our climate and natural environment. That means a green building is a building that focuses on using environmentally friendly resources in carrying out all its operations that will cause little or harm to its occupants. Deuble and De-Dear (2012) also stated that green buildings, often defined as those featuring natural ventilation capabilities, i.e. low-energy or free-running buildings, are now at the forefront of building research and climate change mitigation scenarios. Chatterjee (2009) defined the "green building practice" as a process to create buildings and infrastructure in such a way that minimize the use of resources, reduce harmful effects on the ecology, and create better environments for occupants. Leilei (2021) noted that the 'green' of 'green building' does not mean the general sense of vertical greening roof garden; instead, it represents a concept or symbol that refers to a building that is harmless to the environment. It can make full use of environmental natural resources and is built without destroying the basic ecological balance of the environment. They can also be called sustainable development

buildings, ecological buildings, and natural buildings.

Concept of Sustainability and Green library Initiatives in Library Building

The concept of sustainability and green initiatives in library building refers to the integration of environmentally friendly practices and principles into the operations, policies, and services of these libraries (International Federation of Library Associations and Institutions (IFLA), cited in (Okoye, Peter and David, 2024). It involves adopting strategies that minimize the ecological footprint of libraries while actively promoting sustainable development and environmental conservation. This integration of environmentally friendly practices and principles aims to promote sustainable development and conservation within academic libraries, thus emphasizing the goal of minimizing their ecological footprint in libraries and information centers. Reiterating this point, (Okoye, Peter and David, 2024) emphasized that, integrating sustainable practices and adopting green initiatives are pivotal steps towards reducing the significant environmental impact caused by traditional library operations. Recognizing the pressing need to address these environmental concerns, academic libraries in Nigeria, like their global counterparts, are revisiting their operational strategies in running their libraries (Emmanuel and Okojie, 2022). This shift toward sustainability involves multifaceted approaches, such as reducing paper consumption, embracing digital archives, and prioritizing electronic resources in collection development. Upgrading infrastructure to minimize energy usage, integrating renewable energy sources, and implementing energy-efficient technologies are pivotal steps in the right direction. The integration of recycling programs, the adoption of eco-friendly materials, and the responsible disposal of outdated resources are vital for mitigating the environmental impact within the library buildings landscape (Okpidi-Urhibo, 2023). Having identified the usefulness of green buildings in our environment and the right approaches and strategies in integrating and implementing these initiatives, our common goal as information professionals is creating awareness by advocating to library staff, students, and faculty members about green library building

initiatives and also cultivating a culture of environmental sustainability within our libraries. Supporting the above view Oyelude & Alabi, cited in Emmanuel and Okojie (2022) observed that the level of awareness on greening among librarians is to a large extent still very low hence there is a need to sensitize librarians on greening libraries so that librarians in Nigeria can conform to the global trend in promoting a sustainable environment, mindful of the fact that results are not attainable until the subject matter is known through awareness. In the same vein, the National Open University of Nigeria (2022) opined that libraries are not only repositories of knowledge but are also important information resources for raising awareness about environmental concerns. Green libraries educate the public about environmental issues through their collections, sustainable and environmentally friendly facilities and programmes.

Transitioning toward a greener future in Nigerian libraries through the implementation of information policies is crucial not only for reducing their environmental impact but also for setting an example for societal change within the Nigerian context. Hence, libraries that have been seen as passive and traditionally known in the past as centers for knowledge and learning, are no longer seen as a custodian of books but the gate way to a myriad of information sources. Thus, in recent years, there has been a notable shift towards recognizing their potential in promoting sustainability and environmentally conscious behaviors and practices. Affirming this view, Hasan, and Panda, (2023) noted that the significance of sustainable library operations lies in their capacity to contribute to environmental conservation, reduce carbon emissions, and encourage communities to adopt eco-friendly practices. Due to their substantial physical infrastructure and resource consumption, libraries have a significant environmental impact, and by implementing sustainable practices, libraries can reduce their ecological footprint, conserve energy and water, minimize waste generation, and foster environmental literacy that is, creating awareness on the relevance of environmental sustainability.

Green library practices play a crucial role in promoting environmental sustainability within libraries, some of these roles include:

- Reducing Environmental Impact: Green library uses energy-efficient lightening's, water-saving systems, and eco-friendly material which help reduce the carbon footprint in library operations.
- Promoting Environmental Awareness: Libraries and librarians can educate the public about sustainability using green themed programs, workshops, seminars and curated collections on environmental topics.
- Encouraging sustainable resource use: Through practices like recycling, reusing materials, and digitizing resources, minimize waste and conserve natural resources.
- Providing a healthy Environment: Green libraries often use non-toxic materials and ensure good air quality, creating healthier spaces for users and staff of the library.
- Setting an Example: Libraries and librarians carry out this role by adopting and showcasing sustainable practices. Libraries serve as role models for other organizations and even the communities they serve.

Green life building refers to environmentally sustainable construction that minimizes negative impacts on the environment while promoting energy efficiency, resource conservation and a healthier living or working space. Green life building incorporates eco-friendly materials, renewable energy sources, water conservation systems, and efficient waste management. The integration of environmentally friendly practices and principles in libraries according to Okoye, Peter and David, (2024) aims to promote sustainable development and conservation within academic libraries, they emphasize the goal of minimizing their ecological footprint in libraries. Furthermore, Green libraries involve adopting strategies that will minimize the ecological footprint of libraries while actively promoting sustainable development and environmental conservation. This integration of environmentally friendly practices and principles aims to promote sustainable development and conservation within academic libraries, thus emphasizing the goal of

minimizing their ecological footprint in the library. In a related view, International Federation of Library Associations and Institutions (IFLA) (2019) observed that sustainability in academic libraries encompasses various aspects, including but not limited to the following;

- **Operations:** Sustainable practices in library operations involve implementing strategies to reduce energy consumption, water usage, and waste generation. This can include using energy-efficient lighting systems, installing motion sensors to control lighting and temperature, and optimizing heating, ventilation, and air conditioning (HVAC) systems for efficiency. Libraries may also adopt renewable energy sources such as solar panels or geothermal systems to power their facilities. Water conservation measures can be implemented, such as low-flow fixtures and rainwater harvesting. Waste management strategies may include recycling programs, composting, and reducing the use of single-use materials.

- **Facilities:** Another important aspect is designing and constructing library facilities with sustainability in mind. This can involve using environmentally friendly building materials, maximizing natural lighting and ventilation, and incorporating green spaces or rooftop gardens. Building certifications such as LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method) can be pursued to ensure that the construction and design align with sustainable standards.

- **Collection Development:** Libraries can promote sustainability through their collection development policies. This may involve prioritizing acquiring digital resources over print materials when feasible, reducing the overall demand for paper and other physical resources. Libraries can also focus on acquiring materials related to sustainability, climate change, renewable energy, and ecological conservation to support research and education in these areas.

- **Information Technology:** Implementing sustainable library information

technology (IT) infrastructure practices is crucial. This can include adopting energy-efficient servers, virtualizing systems to optimize resource usage, and consolidating hardware to reduce energy consumption. Libraries can also encourage using digital resources, e-books, and online databases, reducing the need for physical materials and associated transportation.

- **Outreach and Education:** Academic libraries can play a vital role in promoting sustainability through outreach and education. They can organize workshops, seminars, or lectures on sustainability-related topics, inviting experts to speak and engage with the academic community. Libraries can also collaborate with campus sustainability initiatives, student organizations, or local environmental groups to raise awareness and organize events focused on sustainable practices.

- **Collaboration and Advocacy:** Libraries can collaborate with other institutions, organizations, and stakeholders to advocate for sustainability initiatives within and beyond the academic community. They can participate in sustainability networks, sign sustainability pledges, and share best practices with other libraries. By actively engaging in sustainability advocacy, libraries can contribute to broader societal efforts to address environmental challenges.

Relevance of a Green Life Building

Green building is a high-quality building in the whole life cycle, which saves resources, protects the environment, reduces pollution, provides people with healthy, applicable and efficient use of space, and maximizes the harmony between man and nature. Green buildings preserve precious natural resources and improve our quality of life. The benefit of green building includes environmental, economic and social benefits. The most vital benefit of green buildings is that they help reduce pollution. Facilities are responsible for a significant portion of air pollution, and by using materials and designs that limit emissions, green buildings can make a big difference. Green buildings also tend to be more energy-efficient than traditional structures

because they use less electricity and generating fewer greenhouse gases. With the reduction in the use of energy, this can have a significant impact on climate change. In addition to helping the environment, green buildings also offer many benefits for the people who occupy them as the spaces are more comfortable and healthier, with improved air quality and natural light. Mondal (2021) highlighted the significance of green libraries and the efforts of leading organizations towards an eco-friendly Earth. Enang, and Kolawole, (2024) emphasizing the relevance of green library, observed that through the integration of sustainable practices into their design and operations, green libraries are supporting environmental conservation and community well-being while also fostering eco-friendly surroundings. Green libraries in the world and Nigeria in particular, will bring about environmental conservation, save costs, aid health and well-being, and contribute to sustainable development goals.

Components of a Green Life Building

Green building components refer to the various elements that make a structure
environmentally friendly. It includes everything from the materials used in construction to how it operates. Utilizing green building components can have some benefits, both for the environment and for the people who occupy the space. World Green Building Council (2022) opined that there are a number of components and elements which can make a building 'green'. These include:

- Efficient use of energy, water and other resources
- Use of renewable energy, such as solar energy
- Pollution and waste reduction measures, and the enabling of re-use and recycling.
- Good indoor environmental air quality
- Use of materials that are non-toxic, ethical and sustainable

- Consideration of the environment in design, construction and operation
- Consideration of the quality of life of occupants in design, construction and operation
- A design that enables adaptation to a changing environment

The components of a green building are categorized into seven to make a building more efficient and environmentally friendly:

- **Aluminum weather-resistant insulated access panel -** It is essential to use an aluminum weather-resistant insulated access panel to create a tight seal that will keep the inside of your building comfortable and dry. Aluminum panels help regulate indoor temperature and prevent moisture and pests from entering.
- **Energy-efficient windows -** Windows are one of the most significant sources of heat loss in a home, so it is essential to choose windows that will help keep the heat inside. There are many different types of energy-efficient windows on the market, so the choice that fits your style and budget should be selected and budget.
- **Green roofs -** Green roofs have become more popular because they help insulate a home and reduce the amount of heat lost through the roof. They also help reduce storm water runoff and provide additional living space for plants and animals.
- **Solar power -** This is a renewable energy source that heats and cools a home and provides electricity. Solar power is becoming increasingly affordable, and it is a great way to reduce your carbon footprint.
- **Water conservation –** There are various ways to assist in conserving water in your home, include installing reduced showerheads and toilets, collecting rainwater in barrels, and xeriscaping your landscaping. Water conservation is important because it helps reduce the amount of water in a home, saving money on your water bill.
- **Recycling -** This is an excellent way to minimize the amount of waste generated in the home. It is also a great way to re-use materials. There are many different recycling programs, so you can find one that works

for your family.

- **Landscaping -** This can help reduce the amount of heat absorbed by a home, and it can also allow cooling of the air around a house. Trees and shrubs can provide shade and windbreaks, and they can also help filter pollutants.

The benefit of green life building

The benefits of green libraries can be summarized thus; maximizing the effects of natural sunlight and natural air flow; green libraries are thoughtfully designed while taking into account site selection to structural design, energy use, materials used and human health. Green libraries seek to reduce the use of water and energy by designing the building to maximize the use of natural and renewable resources. They also integrate actual plants into the building design, preferably with drought resistant and/or native vegetation.

Another benefit of a green library is in the maintenance of high standards of indoor air quality to help ensure the health of the people who inhabit the building. Modern architecture are using the latest technologies to construct modern buildings, including libraries as energy-efficient or eco-friendly buildings so that buildings do not harm the natural environment. The notion is for such buildings, including libraries to be able to preserve the environment. A green library is therefore, designed to minimize the negative impact on the natural environment and maximize indoor environmental quality by means of careful site selection, the use of natural construction materials and biodegradable products, conservation of resources and responsible waste disposal.

Key features of green life building

- **Sustainable building design:** The use of eco friendly materials and

renewable energy sources e.g solar panels, energy efficient lighting and appliances and incorporation of natural lighting and ventilation to reduce energy consumption.

- **Waste reduction:** Recycling programs for paper, plastics, and other materials, and encouraging digital resources to minimize paper use
- **Water conservation:** Installation of water-saving fixtures, and the use of rainwater harvesting systems.
- **Green spaces:** Inclusion of gardens, rooftop greenery, or indoor plants to improve air quality and aesthetics, and outdoors spaces designed for reading or community events.
- **Educational role:** Promoting awareness of environmental issues through workshops, displays and programs. Providing resources on sustainability and eco-conscious living.
- **Community engagement:** Hosting events that encourage green practices, such as recycling drives or tree planting.

Challenges of Green Library Initiative in Nigeria

Implementing the Green Library Initiative in Nigeria, like any other country, can come with its own set of challenges. Okoye, Peter and David, (2024) outlined some of the key challenges associated with implementing the Green Library Initiative in Nigeria are as follows:

- **Limited Awareness and Understanding:** The dearth of familiarity with "green libraries" among Nigerian library staff, patrons, and administrators is a major obstacle (Ojedokun & Oyelude, 2017). Many may not be familiar with sustainable practices or the potential benefits of implementing green initiatives in libraries.
- **Funding Constraints:** Insufficient funding is a significant challenge for implementing the Green Library Initiative in Nigeria (Abiolu & Okere, 2012). Due to financial constraints, libraries may be unable to purchase environmentally friendly materials, install sustainable infrastructure, or upgrade to energy efficient technology. Unfortunately, the lack of funds prevents the implementation of sustainable practices, leading to a never

-ending cycle of inefficiency and environmental damage caused by using old systems and materials. Inadequate funding prevents libraries from launching vital green initiatives, undermining sustainability efforts and preventing them from taking the lead in sustainability in their communities.

- **Infrastructure Limitations:** Many libraries in Nigeria may not have the necessary infrastructure to support green initiatives, such as energy-efficient buildings, access to renewable energy sources, or appropriate waste management systems (Ogunsola, 2019).

- **Limited Access to Technology:** It is still difficult for many people in Nigeria to gain access to the Internet and other digital resources (Owolabi & Ogunbode, 2020). Implementing digital solutions and promoting electronic resources as part of green initiatives may be hindered by limited internet connectivity, inadequate access to computers or devices, and low digital literacy rates.

- **Cultural Factors and Mind-set:** The execution of environmentally friendly projects can be hindered by cultural and mental factors. Prioritizing environmental conservation may necessitate addressing and changing traditional practices and attitudes toward sustainability. This may require awareness campaigns, education, and community engagement.

- **Legal and Policy Structure:** The absence of clear policies and regulatory frameworks specific to green initiatives in libraries can hinder progress (Okedeji, 2018). The lack of guidelines, incentives, or enforcement mechanisms may make it challenging for libraries to prioritize sustainability and incorporate green practices into their operations.

- **Resistance to Change:** A significant number of individuals adhere to conventional customs and exhibit resistance towards any alterations. Implementing new, sustainable policies often requires a shift in mindset, which may face resistance from individuals comfortable with established norms and practices.

- **Maintenance and Technical Expertise:** Green initiatives in Nigeria can be tough because of the need for continuous maintenance and technical

expertise. (Ojedokun et al.,2015). Libraries may lack the necessary technical skills or resources to effectively maintain and operate energy-efficient technologies or sustainable infrastructure.

Addressing these challenges requires concerted efforts from various stakeholders, including library associations, government bodies, funding agencies, and educational institutions. It is crucial to raise awareness, provide training and capacity-building programs, allocate adequate funding, and develop supportive policies and guidelines to overcome these challenges and successfully implement the Green Library Initiative in Nigeria.

Conclusion

The journey towards sustainability and green initiatives in academic libraries within Nigeria stands as a critical imperative, given the environmental challenges of our time. This paper highlights the profound impact of traditional library operations on the environment and underscores the need for immediate and comprehensive action. Formulating and implementing information policies designed for a greener future emerge as essential guideposts for these libraries. While challenges like limited awareness, funding constraints, and infrastructure limitations exist, potential solutions offer a pathway to surmount these obstacles. Education, advocacy, infrastructure development, policy enhancements, capacity building, and community engagement support this transformation. Achieving a more sustainable and environmentally conscious academic library landscape in Nigeria requires collaborative efforts from stakeholders, government bodies, library associations, and the wider community. Embracing these changes will reduce the ecological footprint of these institutions and serve as a beacon for broader societal change, fostering a more environmentally responsible academic community within Nigeria and contributing to global sustainability goals.

As drivers for sustainable development and environmental care, green libraries are essential to the establishment of environmentally conscious reading places in Nigeria. By incorporating green practices into the layout and management of libraries, these establishments serve to both improve the reading experience and support larger conservation initiatives for the environment. Notwithstanding obstacles like low knowledge and financial limitations, green libraries have a big potential impact on Nigeria's library industry. Through collaborations, teaching, and advocacy, green libraries may surmount these challenges and encourage communities to adopt sustainable practices. Green libraries serve as shining examples of creativity, teamwork, and environmental leadership as Nigeria works to solve environmental issues and achieve sustainable development goals. They also leave a long-lasting legacy of resilience, inclusivity, and stewardship.

Suggestions

Government of Nigeria should introduce environmentally friendly library structures, facilities, services, and embrace eco-friendly practices within the library.

Heads of institutions, heads of libraries and librarians should create awareness for the need to implement green library initiative in our libraries.

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