

Universal Design in Open Spaces: A Case of Lagos Metropolitan Area, Nigeria

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ABSTRACT

The abstract discusses the concept of universal design, which emphasizes creating spaces accessible to all, irrespective of abilities or disabilities. However, in metropolitan Lagos, Nigeria, numerous public open spaces pose challenges for physically challenged individuals due to inadequacies in design solutions. This deficiency hampers their participation in public activities. The study focuses on devising lasting design solutions to address accessibility issues faced by the physically challenged in public spaces. Employing qualitative research methods, the investigation reveals barriers such as the absence of accessibility provisions, inappropriate access designs, and inflexible usability features. The findings underscore the necessity of eliminating these factors to facilitate the active involvement of the physically challenged in open spaces. Recommendations include government policies mandating architects and urban planners to incorporate specific accessibility designs for the disabled in various public spaces and the formulation of design regulations to ensure compliance in metropolitan Lagos, Nigeria.

Keywords: open spaces, universal design, accessibility

1. INTRODUCTION

Open spaces are designated areas intended to cater to the general public's needs. These facilities, utilized on a daily basis, are freely accessible to individuals of all ages, demographic backgrounds, and socio-economic statuses (Ayah et al., 2015). Examples of such spaces include churches/mosques, roads, libraries, markets, amphitheatres, museums, government offices, bus terminals, and more. These spaces contribute to the overall improvement of community quality of life (Achmad and Wahyani, 2016). This research, in outlining the research problem and the assumptions guiding the investigation, serves as a foundational study. Addressing the identified research gap, which builds upon previous and current knowledge of the subject, the study articulates the rationale and uniqueness of its approach by highlighting key contributions to

existing knowledge. It also sheds light on the challenges faced by individuals with physical disabilities in open spaces, emphasizing the need to prevent discrimination and exclusion of this demographic in the public realm. Recognizing the importance of inclusivity, the research recommends enduring design solutions and construction methods based on the findings and data analysis, with the aim of integrating the participation of the less privileged in the built environment.

2. BACKGROUND AND CONTEXT

The global emphasis on sustainable processes across various aspects of public life has become a significant priority, with a shift in focus from the contradictions between developments and environments to the pursuit of sustainability (Sholanke et al, 2019). Throughout history, people have consistently adapted and enhanced their physical surroundings to optimize functionality (Froyen, 2013). Consequently, design approaches have evolved from narrowly complying with codes that cater to specialized needs to more inclusive strategies accommodating everyone's requirements (Ostroff, 2011). One prominent model in this regard is Universal Design (UD), originating from the field of Architecture and emphasizing the creation of accessible and usable products and environments for all individuals without requiring adaptation or special design (Centre for Universal Design, 2008; McGuire, Scott, and Shaw, 2006).

The Government of Ireland (2005) defines Universal Design as an approach aimed at making products and the built environment accessible for everyone, especially People with Disabilities (PWDs). According to the Institute for Human-Centered Design (2016), Universal Design provides a framework for designing places, things, information, communication, and policies to be usable by the widest range of individuals under diverse conditions, without the need for specialized design. Implementing Universal Design in architecture enables PWDs to use buildings without retrofitting (Al-Azawei, Serenelli, and Lundqvist, 2016). The core message of Universal Design is that the needs of all potential users should be considered from the planning and design stages, benefiting everyone, particularly the physically challenged, when implemented. Its primary goals include accessibility, usability, and broadening user inclusivity instead of designing for an average user, a concept which, some argue, does not exist. The key operational principles are equal status, equal treatment, and equal merit (Sholanke et al., 2016).

The emergence of Universal Design did not happen in isolation; it evolved from barrier-free concepts, the accessibility movement, and adaptive technology, merging aesthetics into these considerations (Dion, 2004; Ostroff, 2007). Legislative measures accommodating PWDs and market-driven

responses to an aging population played crucial roles in its development (Centre for Universal Design, 2008; Story, Muller, and Mace, 1998). Universal Design opposes disability discrimination, rejecting unnecessary specialized solutions that segregate and discriminate against People with Disabilities or other user groups.

While the Universal Design concept aims to meet the needs of everyone, proponents acknowledge the impracticality of achieving this goal fully. Trost (2005) and McGuire et al. (2006) argue against the belief that Universal Design can eliminate all boundaries, citing the acknowledgment by Ronald Mace, the pioneer of Universal Design, that the term "universal" is unfortunate as complete universality is unattainable. Mace suggests that continual improvement can enhance general usability, emphasizing that Universal Design is a process, not an outcome (National Disability Authority, 2014). Therefore, the pursuit of a fully universal solution should be discarded in favour of using Universal Design as a guiding principle for designers to strive for more usable solutions over time.

3. RESEARCH AIM AND OBJECTIVES

The primary goal of this study is to improve the implementation of universal design principles in open spaces within metropolitan Lagos State, Nigeria.

To attain this objective, the research will focus on the following goals:

- i. Utilizing both secondary and primary sources to gather information on disability design.
- ii. Ensuring proper anthropometric design of open spaces.
- iii. Conducting a reconnaissance survey of public open spaces.
- iv. Identifying architectural design shortcomings that affect individuals with physical challenges in open spaces.

4. EXPECTED CONTRIBUTION TO KNOWLEDGE

The study aims to explore the dynamic nature of human existence and emphasize the importance of embracing and enhancing personal experiences, particularly in relation to disabilities. The objectives include:

- Understanding the significance of proper anthropometrics in designing public open spaces for people with disabilities (PWDs).
- Finding effective ways to integrate individuals with physical challenges into society through functional architectural designs.
- Identifying improved and more considerate environments for the disabled, incorporating features like high-level ramps and street furniture in places like bus terminals, markets, and public walkways.
- Serving as a valuable research tool for architects, urban planners, and other

professionals in the built environment.

- Working towards the elimination of discrimination against people with disabilities in public spaces.
- Providing guiding principles for the design and construction of public open spaces.

5. PROBLEM TO BE ADDRESSED

This study focuses on the integration of the physically challenged in Lagos metropolis, shedding light on the existing problems faced in open spaces. The lack of attention to the design for the physically challenged in the field of architecture is indeed a significant issue, contributing to social misconceptions and hindering the active participation of the less privileged in public activities.

This paper identified impediments to more considerate environments for the disabled, such as architectural design failures in pedestrian walkways, inadequate floor levels for the physically challenged, inaccessible ramp designs, and the absence of street furniture; the study also highlighted crucial aspects that need immediate attention. Addressing these issues is essential for creating an inclusive and accessible urban environment.

To enhance the integration of the physically challenged in Lagos metropolis, here are some suggestions and considerations:

a. Inclusive Design Principles:

- Advocate for the incorporation of universal design principles in architectural practices, ensuring that public spaces are accessible to everyone, regardless of physical abilities.
- Encourage architects and urban planners to adopt inclusive design standards and guidelines, considering the diverse needs of the population.

b. Collaboration with Stakeholders:

- Collaborate with local authorities, disability advocacy groups, and community organizations to gather insights into the specific challenges faced by the physically challenged in open spaces.
- Involve the physically challenged individuals themselves in the design process to ensure that their unique perspectives and requirements are taken into account.

c. Educational Campaigns:

- Raise awareness about the importance of inclusive design through

educational campaigns targeting architects, urban planners, and the general public.

- Highlight the social and economic benefits of creating accessible public spaces, emphasizing the positive impact on the overall well-being and productivity of the physically challenged population.

d. **Policy Advocacy:**

- Advocate for the development and enforcement of policies that mandate inclusive design practices in public spaces.
- Work with government agencies to integrate accessibility standards into urban planning and building codes.

e. **Sustainability Integration:**

- Emphasize the integration of sustainability aspects in the decision-making framework. This could include environmentally friendly materials, energy-efficient design, and green infrastructure.
- Consider the long-term environmental impact of design choices to create a more sustainable and resilient urban environment.

f. **Community Engagement:**

- Engage with local communities to understand their unique needs and preferences. This can help tailor designs to the specific context of Lagos metropolis.
- Foster a sense of community ownership and pride in public spaces, encouraging collective efforts to maintain and enhance accessibility features.

By addressing these aspects, this study can contribute to the development of a more inclusive and sustainable urban environment in Lagos metropolis, ensuring that the physically challenged are active participants in public life.

6. RESEARCH GAP

Numerous international studies have investigated strategies for creating sustainable designs that cater to the needs of individuals with physical disabilities. The importance of designing for accessibility is underscored in "An Essential Guide for Public Buildings" by RIBA Enterprises, which emphasizes the pursuit of good practice. Notably, some recommendations within this guide surpass the specifications outlined in the British standard. However, research conducted in Nigeria indicates a disparity between the accessibility and usability provisions for people with disabilities (PWDs) and those for able-bodied individuals. Several studies (Sholanke et al., 2018; Ibem et al., 2017; Sholanke et al., 2016; Soyingbe et al., 2016; Maclean, 2014) found

that public buildings in Nigeria often lack adequate facilities for PWDs, with 257 of the buildings investigated reported as inaccessible.

Furthermore, Sholanke et al. (2016) highlighted the absence of suitable access provisions for the physically challenged in engaging with public open spaces in Nigeria. Despite the global recognition of disability as a human rights issue, with discrimination considered a loss of civic and human rights, challenges persist. Many countries, including Nigeria, have enacted disability laws and planning regulations to integrate PWDs into mainstream society, yet Ibem et al. (2016) observed a poor response to achieving basic accessibility requirements in public open spaces, particularly in the southwestern part of Nigeria.

Amusat (2009) cited the World Health Organization's estimate that approximately 20% of Nigeria's population, or 19 million people, live with disabilities. Okoli (2010) argued for the need to harness the potential of PWDs by removing barriers in open spaces to facilitate their contribution to national development. Consequently, this study aims to investigate specific design elements in open public spaces in the southwestern part of Nigeria that may hinder accessibility and usability. The focus is on identifying solutions to improve access for individuals with mobility impairments, promoting their social inclusion in mainstream society.

The research concentrates on the southwestern part of the country, with Lagos State chosen as the study area due to its urban nature and the absence of inclusive design for the physically challenged in open spaces. The primary research question guiding the study is: What are the required design solutions for PWDs in the study area to integrate them into public activities, enabling their full participation and functionality?

7. RESEARCH METHODOLOGY

The Centre for Innovation in Research and Teaching (2018) asserts that qualitative research methods are employed when the research problem revolves around examining, understanding, and describing a phenomenon. Given that the objective of the study was to scrutinize, unfold, and describe an existing situation, qualitative research methods were deemed appropriate and were consequently adopted. According to Yin (2009), case study research can take on exploratory, explanatory, or descriptive forms and is particularly useful in addressing "how" and "why" questions, especially in situations where the researcher has limited control over events and the focus is on the present rather than historical aspects. Case studies may involve single or multiple sites, providing researchers with the opportunity to explore and understand issues under investigation and devise potential solutions (Stewart, 2013).

As a result, the research will employ a multiple sites case study research

approach, allowing for the examination of a diverse range of open spaces to ensure the obtained data is comprehensive and robust. Subsequently, two open spaces will be randomly selected from each neighborhood using a simple random sampling method. The data collected for the research will primarily originate from primary sources. Observation will be the main data-gathering method, aiming to identify design solutions that deviate from Universal Design parameters, encompassing Universal Design principles and accessible design requirements.

8. RESULT AND DISCUSSION

Utilizing the qualitative approach in this research, it was observed that the failure to adhere to national building codes in the design of public spaces resulted in challenges that hindered the inclusion of Persons with Disabilities (PWDs) in open areas. The identified barriers are outlined as follows:

- a. **Absence of a combination of ramps and walkways:** In nearly all markets in Lagos, open spaces were not strategically planned and designed with a combination of ramps and walkways leading to the entrance levels of both open and closed shops. Such features are essential to assist People with Disabilities (PWDs) in navigating neighborhood markets, shopping malls, and other public spaces as part of their daily interaction with the built environment. The entrance levels of approximately 90% of both open and closed shops were observed to be elevated compared to the road level, lacking consideration for the involvement and participation of PWDs within neighborhood markets. Hence, there is a crucial need for well-defined ramps with accompanying walkways connecting to the entrance levels of all open buildings.
- b. **Absence of designated off-street parking bays:** Accessible parking is a vital consideration in all neighborhood markets in Lagos State, especially as cars represent the primary mode of transportation for some disabled individuals. The provision of parking bays, including additional transfer space, is essential to facilitate the ease of getting in and out of cars for those with reduced mobility. The level of provision should be determined by various factors such as the location and use of the building. In instances where on-site parking is unavailable, maintaining a record of nearby accessible bays is considered good practice. Alternatively, engaging with the local authority for the provision of on-street parking is recommended.
- c. **Improper planning of the market area:** Many prominent market areas in Lagos State lack well-planned designs, and even those that are well-planned often neglect the incorporation of PWDs into the designs. Pedestrian roads leading to individual shops and kiosks should be clearly defined. Additionally, measures should be implemented to prevent sellers and hawkers from littering the roads with their goods.

Plate 1: Popular Oshodi Market in Lagos



Source: Online Boombuzz, 2020

Plate 2: Obalande Bus Terminal



Source: Alamy Photos 2016

Plate 3: Popular Balogun Street, Lagos



Source: Village Reporter, 2021

Plates 4 and 5: Oshodi neighbourhood market in Lagos



Plate 4



Plate 5

The images displayed above, featuring a Popular Market, Bus Terminal, and Street in Lagos, illustrate the challenges faced by individuals with physical disabilities in accessing these communities.

9. CONCLUSION AND RECOMMENDATIONS

As per the National Building Code, specifically in Section 2 that deals with Interpretations, Definitions, and Abbreviations, the term "Public Building", concerning the design requirements for physically challenged individuals, refers to buildings open to the public, such as assembly halls, theatres, places of worship, etc. The design considerations for these buildings are expected to include facilities catering to the needs of physically challenged persons. Public

spaces are intended for diverse purposes and all segments of the population, encompassing both physically challenged and able-bodied individuals. It is imperative that individuals with disabilities are not denied access to open spaces. Therefore, the built environment must adhere rigorously to the guidelines, ensuring the inclusion of physically challenged individuals in both building and open space design and construction.

Based on the findings of the research, the following recommendations are proposed:

- a. Architects and urban planners should diligently incorporate the stipulations of national building codes and regulations into the design phase of architectural drawings for public spaces. Additionally, further studies should be conducted to assess the level of compliance with Universal Design standards in building development regulations in Nigeria.
- b. Regulatory bodies responsible for approvals should be established to ensure strict adherence to Universal Design standards. These bodies can be formed through government initiatives and collaboration with professional organizations.
- c. The absence of design aids and street furniture in open spaces, such as markets, amphitheaters, civic buildings, etc., to facilitate the inclusion of people with disabilities is noted. Therefore, all architectural designs should undergo scrutiny by designated professionals before development permits are granted.
- d. The diagram below outlines a common method for planning open spaces for people with disability (P.W.D).

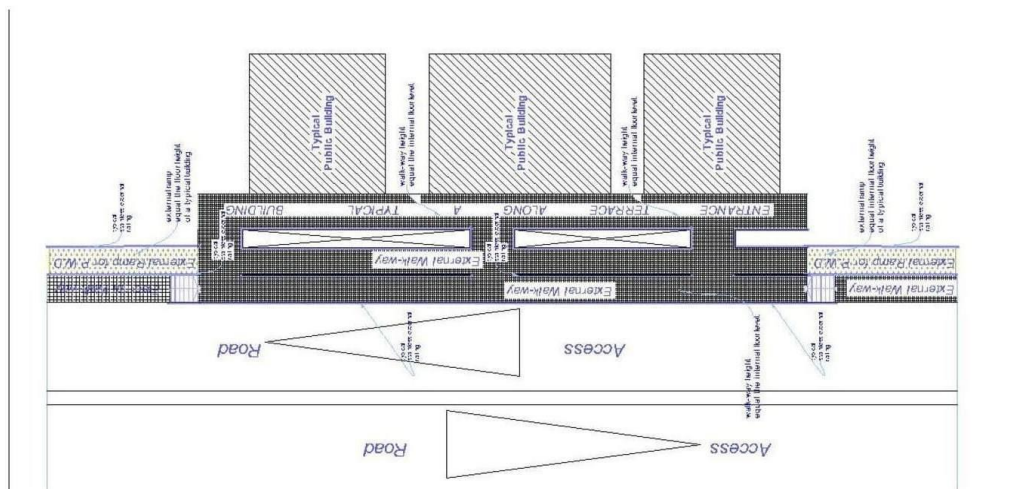


Diagram 1: Suggested Floor Plan

Source: Author's Field Survey, 2024

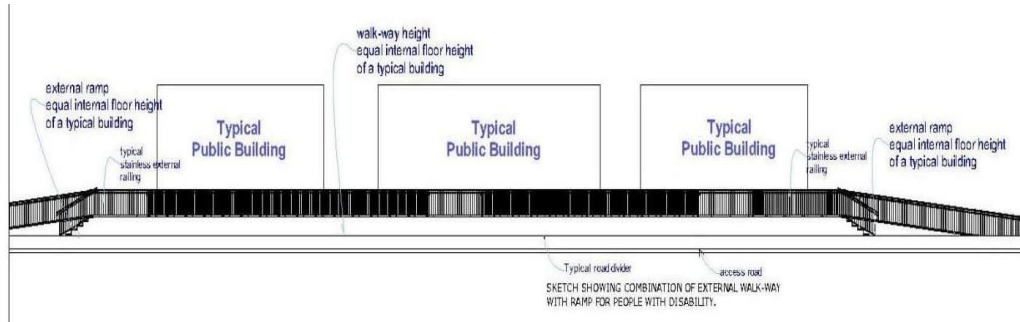


Diagram 2: Suggested Elevation

Source: Author's Field Survey, 2024

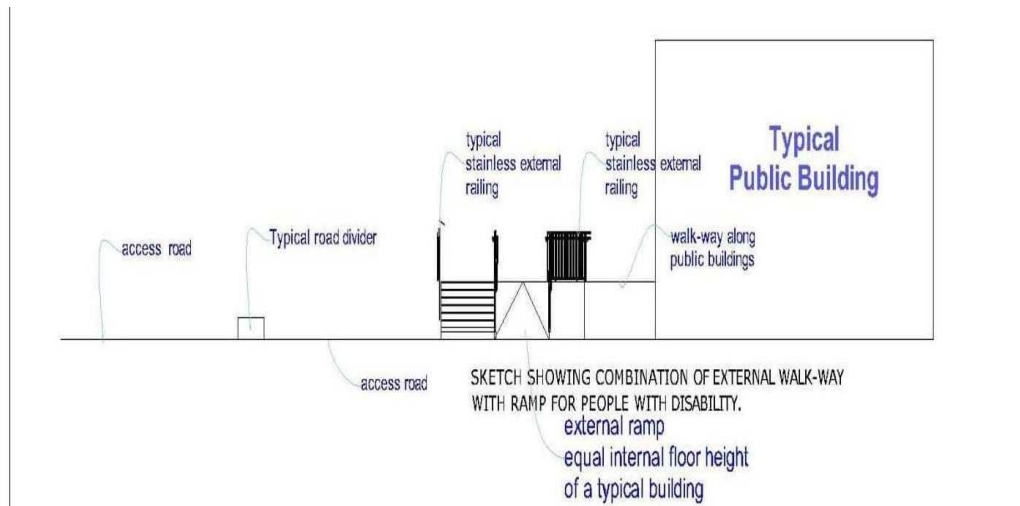


Diagram 3: Suggested Elevation

Source: Author's Field Survey, 2024

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