

Sustainability and Landscapes: An Assessment of Landscape Designs in selected Anglican Churches in Ibadan

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ABSTRACT

It is quite paramount to understand the need and importance of sustainability and landscapes. In the designs and patterns of landscapes, approaches to identify and quantify landscape sustainability must be utilized. In religious environments including churches, landscapes differ, with varying adoptions of landscape elements. The aim of this study is to assess the sustainability of landscape designs in three selected Anglican churches in Ibadan. The methodology employed was qualitative approach, and data was collected from primary sources. The study revealed the levels of importance that have been placed on landscape design in these case studies for varying reasons. Hence it is recommended that there is a need for a rejuvenated sustainable landscape design strategy that would be incorporated from the beginning in the wholistic design of a church.

Keywords

Sustainability, Landscape, Church, Anglican, Assessment.

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Introduction

After the idea of sustainable development was adopted in the Brundtland Commission report released in October 1987, the sustainability of landscape and landscape development has been the focus of research (Palang, Sioni, Printsman, & Birkeland, 2017). Some decades ago, Antrop (2006) considered the concept of sustainable landscape a utopian concept because landscapes evolve over time and each human generation develops its own landscapes, so the concepts of landscape and sustainability are inconsistent.

Landscape has its origin of definition as a style of painting in the early sixteenth century, which later evolved in the seventeenth century as way or perspective of encountering and confronting the world. The definition continued to evolve and by the eighteenth century, landscape was defined as the perspective of land in a certain way, and practices to enhance or alter this perspective (Waldheim, 2016). Landscape patterns arise from the structure and arrangement of its fundamental elements and these patterns affect ecological processes, ecosystem functions, and human relations. There is no question that the increase in the human race population has boosted the need for high-quality multipurpose landscapes and generated an imperative demand for more realistic and relevant information to facilitate successful decision-making in this direction (Duarte, Santos, Cornelissen, Ribeiro, & Paglia, 2018). Landscape indicators are commonly used in research explaining landscape patterns and how they contribute to changes in land use / land cover, distribution of biodiversity, ecosystem systems and ecosystem functions (Uemaa, Mander, & Marja, 2013).

A landscape is sometimes described as a spatially heterogeneous region of no less than one interest factor. This minimal description highlights the main principle of heterogeneity. Landscape patterns are the product of the different mechanisms of interaction. Distinguishing between biotic and abiotic processes is important when designing landscape dynamics (Bolliger, Wagner, & Turner, 2007). In landscape ecology, landscape pattern refers to spatial

heterogeneity or landscape structure (Bolliger, Wagner, & Turner, 2007). The landscape structure refers to a network of fascinating branches close to the ecosystem created by the two mechanisms and act together as a geomorphological process at its basic boundary as well as the basic disruptions of the components (Gomeseria, 2020).

Concepts of Sustainability in Landscapes

Over the years, a measure of sustainability has been used to analyze various facets of human existence (Simon, Adeboye, & Fulani, 2013). Sustainability of landscapes has also been interpreted by a 'pillar approach,' taking into account different facets or factors of sustainability – ecological, social and economic (Palang, Sioni, Printsman, & Birkeland, 2017). The social aspect of sustainability typically applies to the recognition of landscape alterations in a particular environment, especially in tourist areas or other places where the landscape changes quickly. On the other hand, the economic aspect of sustainability is often related to ecological and social aspects, since changes in the environment frequently result from improved economic productivity or land value influencing human well-being and social acceptance of change (Soini & Birkeland, 2014). Sustainability's ecological, social and economic aspects typically regard the landscape predominantly as a physical body and as a design area or environment.

Dynamics of Landscapes in Spiritual Environments

Ethnographic accounts show common ideas that the human-dominated universe and the supernatural and spiritual dimensions converge, despite the diverse traditions and values of many civilizations around the globe. Therefore, this understanding gave birth to the philosophy of "spiritual landscape" or "sacred geography," that also comprises of powerful places, paths, waterbodies, gardens, mountains and other natural terrains. The theory of "spiritual landscapes" emphasizes the connection between spirituality and the particular location in the landscape (Allerton, 2009). There

is no mandatory identification of a spiritual landscape as 'religious.' It can also describe a burial site. Individuals may be engaged with spiritual landscapes in ritual exercises, or in a more contemporary way in the context of everyday life. The Christianity-inspired concepts of 'sacred places' and 'ancestor worship' indicated a positive approach and reflection toward an ancient, tribal, and other spiritual environment (Allerton, 2009).

Components of Sustainable Landscape patterns

- I. Soils, Compositing and Fertilizers
Choosing soil also depends on the crop that is sown. Indigenous plants are suited to the conditions of local soil most of the time. With the introduction of organic soil supplements, many non-native plants grow a healthier root system (Klett & Cummins, 2011).
- II. Irrigation
Sustainable landscaping involves the use of water efficiently while avoiding waste.
- III. Hardscape
Sustainable landscaping involves the utilization of recycled materials for the landscape. Examples include recycled bricks or damaged concrete utilized for the construction of retaining walls and walkways. Recycled plastics can also be used for fences and small-scale structures.
- IV. Plant and Turf Selection
It is very important to select the right types of plants to be situated in ideal spaces. Plants that are not suited to the local environment will need more energy and need more resources. Plants grown under inappropriate conditions, with respect to lighting, moisture and temperature, are prone to growth and pest issues. One principle of sustainable landscape refers to the restriction of the quantity of irrigated lawn to locations of heavy usage. It is important to select turf species that are adapted for a specific use and location (Klett & Cummins, 2011).
- V. Plants for shade
Deciduous plants can be utilized to create shade and cool the environment while allowing light to penetrate the area.
- VI. Slopes
Sustainable landscape involves an effectively graded site that would provide drainage away from permanent structures. It also involves the use of terraces, raised beds and planters for steel slopes to reduce the probability of erosion.
- VII. Landscape Lighting
Sustainable landscape has to do with the incorporation of light schemes into the landscape to create the desired atmosphere. Solar Garden Lights are a sustainable solution.

Methods and Materials

The methodology adopted a qualitative approach for this study. The instrument employed were observation schedule. Data was collected from primary sources. The study population consisted of the selected church buildings in the area of study. The data was collected from case studies conducted from a selection three prominent and recognized Anglican churches in Ibadan.

Findings and Discussions

The findings were based on the conceptual framework of this research and an observation guide was employed to assess the landscape sustainability present in areas of case study. The general landscape practice was assessed.

Sustainable Landscape Assessment in Cathedral of St. James the Great



Plate 3.1: Cathedral of St. James the Great

Source: Researcher’s field work

Table 3.11: Economic Sustainability Assessment of Cathedral of St. James, the Great, Ibadan

Environmental Sustainability Functions	Rating				
	Very poor	Poor	Average	Good	Very good
Sufficient size		●			
Waste and waste water management	●				
Provision of services such as food, water, timber, and fibre	●				
Promotion of services that deliver recreational, aesthetic, and spiritual values		●			

From the observation guide presented in the table 3.11 the environmental sustainability principle observed in the landscape practice of Cathedral of St. James, the Great, did not fully take into consideration the necessary functions of the environmental principle. The research has revealed an inadequate size of landscape. It was noted that most of the land is covered in coal tar which serves as the parking space, with a few highlights of green spaces. The land size covered in coal tar is far greater than the land size covered with greenery. The research also pointed out the absence of waste management systems and wastewater management systems. The waste generated on the site is disposed into trash cans,

which are later collected by a waste disposal company. The waste generated, does not go through any recycling process to aid environmental sustainability. The research also pointed out the fact the existing landscape lack provision of services such as provision of food, provision of water, provision of timber and provision of other resources. The existing Landscape practice promotes to some extent some services that deliver recreational and aesthetic values. The little pockets of greenery have added beauty and color to the environment. The large expanse of tarred land space has created an area that not only serves for parking purposes, but also for various recreational activities such as football, table tennis and other outdoor sporting activities. It can therefore be concluded that the existing landscape practice of Cathedral of St. James the Great did not adhere to the requirements of the principle and environmental sustainability. It is quite clear that very little attention was given to the environmental principle.

Table 3.12: Economic Sustainability Assessment of Cathedral of St. James, the Great, Ibadan

Economic sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Maintenance of attractive scenery			•		
Promotion of tourism		•			

Table 3.13: Social Sustainability Assessment of Cathedral of St. James, the Great, Ibadan

Social Sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Accessibility				•	
Relationship between users and landscape		•			
Social interaction		•			

From the observation guide presented in the table 3.12 the economic sustainability principle observed in the landscape practice appears not to be fully taken into consideration. The little landscape available is being maintained however the landscape is not sufficient enough to promote tourism. From the observation guide assessing the social principle or the existing landscape, it has been observed that there is non established relationship between the users and the landscape. This has also hindered social interactions between the users and accessibility of the users, which should be facilitated by landscape.

3.2 Sustainable Landscape assessment in All Souls Church Ibadan



Plate 3.2: All Souls, Parish

Source: Researcher’s field work

Table 3.21: Environmental Sustainability Assessment of All Souls Church, Ibadan

Environmental Sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Sufficient size			•		
Waste and waste water management	•				
Provision of services such as food, water, timber, and fibre	•				
Promotion of services that deliver recreational, aesthetic, and spiritual values			•		

From the discussion and the observation guide presented in table 3.21, the environmental sustainability principle observed in the landscape practices of All Souls Church, suggests that the design of the landscape did not completely factor in the ecological aspects and requirements of landscape practices. There was sufficient land size for the adequate provision of landscape practices, however the research showed that the continuous development on that particular site, led to diminishing landscape practices. Therefore, some existing landscape elements had to be

removed in order to create space for new building developments. There is an absence of waste and wastewater management in place. There is no system of recycling waste generated and wastewater. The waste generated on the site would usually be carted away by a waste management company. The existing landscape Has no provision for services such as food, water, timber and fibre, thereby failing fulfil part of the requirements necessary for the promotion of human well-being as specified by the Millennium ecosystem assessment (2005). The existing landscape practice, to some extent has promoted services that deliver recreational, aesthetic and spiritual values. However, it is important to note that as a result of the development of new buildings in the site, the landscape practice has diminished. This has therefore led to the decrease in recreational aesthetic and spiritual activities that were once promoted by the landscape practice.

It can therefore be concluded that in the aspect of environmental sustainability principle, the landscape practices in All Souls Church is poor. A reason for this unattained requirement maybe as a result of urbanisation occurring within the site and leading to a depreciating landscape practice

Table 3.22: Economic Sustainability Assessment of AllSouls Church, Ibadan

Economic sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Maintenance of attractive scenery			•		
Promotion of tourism		•			

From the research carried out, it is evident that the economic sustainability principle has been affected by the development of new buildings on the site. The little landscape practice which remains is being maintained and preserved. The existing landscape practice is not enough to promote tourism.

Table 3.23: Social Sustainability Assessment of All Souls Church, Ibadan

Social Sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Accessibility			•		
Relationship between users and landscape		•			
Social interaction		•			

From the table 3.23, the social sustainability principle observed in the landscape practice of All Souls Church suggests there is a very poor relationship between the users of the church and the landscape and this has also led to poor social interaction promoted by the diminishing landscape practice.

3.3 Sustainable Landscape assessment in All Saints, Church Ibadan

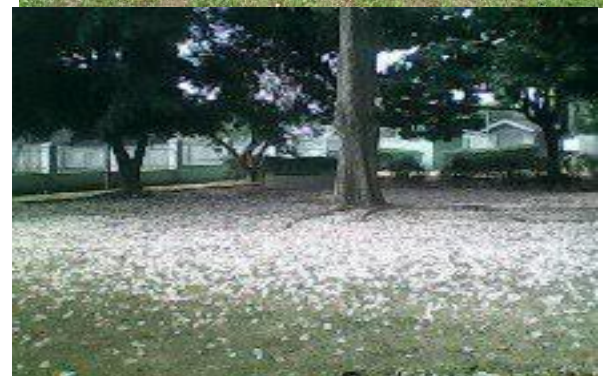


Plate 3.3: All Saints Church, Jericho

Source: Researcher’s field work

Table 3.31 Environmental Sustainability Assessment of All Saints Church, Ibadan

Environmental Sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Functions					
Sufficient size				•	
Waste and waste water management	•				
Provision of services such as food, water, timber, and fibre	•				
Promotion of services that deliver recreational, aesthetic, and spiritual values				•	

From the observation guide presented in table 3.31, the environmental sustainability principle observed in the landscape practices of All Saints Church, suggests that the design of the landscape did not totally factor in the ecological aspects and requirements of landscape. The size of the available landscape was sufficient with good amount of land size to allow for a well-tended landscape in which various activities can take place. There was an absence of waste and wastewater management systems in place. There was no water recycling system in place. Wastewater such as surface runoff and stormwater were not recycled and converted into other uses. The existing landscape failed to provide services such as food, water, timber and fibre which are part of the functions that fulfill the environmental sustainability principle of landscape; however, the landscape

has not failed to promote services that render recreational, aesthetic and spiritual values.

Overall, the existing landscape at All Saints Church, has fulfilled only 50% of the environmental sustainability principle of landscape practices. It was discovered through research, that the main aim of the existing landscape was for aesthetics, spiritual, and recreational purposes.

Table 3.32: Economic Sustainability Assessment of All

Economic sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Maintenance of attractive scenery				●	
Promotion of tourism			●		

Saints Church, Ibadan

From the discussion and the observation guide presented in the table 3.32, the economic sustainability principle observed in the landscape practices of All Saints Church, suggests that the design of the landscape took into consideration the economic aspect of landscape practices. The existing landscape practice involves the maintenance and preservation of attractive scenery and to some extent the Promotion of tourism. It was noted from research carried out that the presence of a well-maintained landscape has gradually led to an increase of worshippers and visitors to the church.

Therefore, it can be concluded that the existing landscape practice at All Saints Church, has fulfilled, beyond average, the economic sustainability principle of landscape practices which involves preserving and maintaining landscapes to promote tourism and recreation.

Table 3.33: Social Sustainability Assessment of All Saints Church, Ibadan

Social Sustainability	Rating				
	Very poor	Poor	Average	Good	Very good
Accessibility				●	
Relationship between users and landscape					●
Social interaction					●

From the discussion and the observation guide presented in the table 3.33, the social sustainability principle observed in the landscape practices of All Saints Church, suggests that the design of the landscape took into consideration the social aspect of landscape practices. The existing landscape has helped to facilitate a relationship between the uses and the landscape. It was noted that frequent meetings and fellowships were held in the existing gardens. It was also observed that the current landscape practices helped to enhance and facilitate social interactions between various age groups of worshippers.

Hence, it can be concluded that the design of the existing landscape at All Saints Church took into consideration the social sustainability principle of landscape practices that deals with the facilitation of daily contact, enjoyable discovery, social engagement and aesthetic appreciation.

Conclusion and Recommendation

The study concluded that there is a divide between landscape and sustainability in the design of landscapes in the Anglican church architecture. This is either as a result of limited space, rapid development or ignorance to the importance of landscape patterns and structure. It has however been proven that landscape designs are important aspect of spirituality in religious or spiritual settings. It is important to have well integrated landscape designs that also convey sustainability concepts as a link for spiritual enhancement, and psychological wellness of the users. (Aderonmu & Gbotosho , 2020). It is therefore recommended that sustainable landscape designs and strategies should be incorporated from the beginning and preliminaries in the wholistic design of a church.

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References

- [1] Aderonmu , P. A., & Gbotosho , J. (2020). Assessment of Landscape Impact on Worship: A Focus on Worshippers Perception. *ICESW 2020*.
- [2] Allerton, C. (2009). Introduction to Spritual Landscapes of Southeast Asia.
- [3] Antrop, M. (2006). Sustainable landscapes: Contradiction, fiction or utopia? *Landscape and Urban Planning*.
- [4] Bolliger, J., Wagner, H., & Turner, M. (2007). Identifying and Quantifying Landscape Patterns in Space and Time.
- [5] Duarte, G., Santos, P., Cornelissen, T., Ribeiro, M., & Paglia, A. (2018). The effects of landscape patterns on ecosystem services: meta-analyses of landscape services. *Landscape Ecology*.

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- [6] Gomeseria, R. (2020). LANDSCAPE STRUCTURE AND ELEMENTS, AN EXAMPLE. *Environment and Natural Resources Management Articles Personal Journal*.
- [7] Klett, J. E., & Cummins, A. (2011). Sustainable Landscaping.
- [8] Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-being: Health Synthesis*. Washington, DC: Washington, DC: Island Press.
- [9] Palang, H., Sioni, K., Printsman, A., & Birkeland, I. (2017). Landscape and cultural sustainability. *Norwegian Journal of Geography*.
- [10] Simon, R. F., Adeboye, A. B., & Fulani, O. (2013). Achieving healthy environmental sustainability in Ota housing core. *Health, Safety and Environment*.
- [11] Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum*.
- [12] Uuemaa, E., Mander, Ü., & Marja, R. (2013). Trends in the use of landscape spatial metrics as landscape indicators: a review. *Ecological Indicators*.
- [13] Waldheim, C. (2016). *Landscape as Urbanism: A General Theory*. New Jersey: Princeton University Press.