



# Achieving Sustainability in Commercial Buildings in Nigeria: The FM Approach

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**Abstract:** People around the world are beginning to aspire to live and work in sustainable buildings (SBs), that is, buildings that are comfortable, healthy and have low impact on the environment. However, many buildings in Nigeria, particularly commercial buildings, are far from being comfortable and healthy. Many are in a state of deterioration due to poor design, unsustainable construction practices and mismanagement. Nigeria has a history of unsustainable building practices, mismanagement of buildings and poor maintenance culture with no consideration for its impact on the environment. FM is viewed as a practice, process and profession that can promote sustainability in Nigerian buildings. The purpose of this study is to determine the extent of sustainable facilities management (FM) practice in the management of commercial buildings in Nigeria and identify barriers to it, in order to develop a solution model that will proffer ways of overcoming these barriers and ultimately determine sustainable methods by which facility managers in Nigeria can effectively manage commercial properties. The study reviews FM functions in relation to BREEAM-NC UK, LEED-NC US, ISO Sustainability in Building Construction and BS Building Regulation PD 6501: Part 3: 1985 in order to identify sustainable FM functions in buildings. There is a need to investigate sustainable FM practice in the management of commercial buildings in Nigeria as commercial buildings are the economic powerhouse of the nation, serving the whole of the country in respect of imports and locally manufactured goods; and contributing more than 70% of the national economic output. This study is a work in progress and it presents a theoretical review on the extent of sustainable FM in developed countries, especially the United Kingdom (UK), and comparing it with the development of sustainable FM in developing countries and Nigeria in particular. The findings so far, identify commitment of senior management personnel, as a major driver to the course of sustainable FM and the three main barriers to sustainable FM practice in corporate organisations, as lack of training and tools, lack of relevant laws and regulation, and lack of knowledge and awareness. Nevertheless, there remains the urgent need to investigate barriers of sustainable FM practice in the management of commercial buildings in Nigeria.

**Keywords:** Sustainability, Sustainable Facilities Management, Nigeria

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## 1. Introduction

Sustainable development has been defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [1]. Sustainability is about leaving the environment in at least the same state by a generation and leaving it in a better state for newer generations to come [2]. It is the creation and maintenance of environments under which man and nature coexist [3].

The race towards sustainability has shown the role of

buildings as an agent of decay on the natural environment, bringing fresh challenges for building engineers to devise new ways of reducing the use of natural resources, making use of renewable materials and minimising waste. This has created the need for sustainable FM, which has been seen to be vital in the longest phase of the life-cycle of a building, where severe impact on the environment occurs [4, 5, 6].

Buildings are the main physical assets of any nation; they are created for providing shelter and enhancing people's quality of life [7]. If these buildings are not properly planned and maintained, they will become liabilities [8]. In the UK, from the year 2002, 50% of all annual construction activities

were exclusively for building maintenance [7]. However, this is not the case in Nigeria, where there is poor maintenance culture and values, resulting in deteriorations and eventual defects of various degrees [9, 10]. Commercial buildings in Nigeria have a record of poor performance operations, poor maintenance and mismanagement [11]. In the past two decades, the emphasis has been on the development of new infrastructure and properties, with little attention paid to the maintenance of the existing stock and the future maintenance needs of the proposed ones [12, 13]. These problems form the basis of this study. This paper argues that an integration of sustainable FM practice is required to promote the development and preservation of sustainable buildings with suitable environmental initiatives and practices within Nigeria.

## 2. Sustainable FM in Sustainable Building

This phase of the research study reviews existing literature on sustainable FM in developed countries in order to identify ways by which Nigerian FM professionals can adopt sustainable ways in the management of commercial buildings to achieve sustainability. The study also reviews existing literature on sustainable FM in Nigeria, so as to determine the extent of sustainable FM in Nigeria. An in-depth study of building assessment standards used in assessing a building's sustainable qualities was carried out, namely; the Building Research Establishment Environmental Assessment Method International New Construction (BREEAM-NC) UK, the Leadership in Energy & Environmental Design for New Construction (LEED-NC) US, the International Standard Organisation (ISO) Sustainability in Building Construction and the British Standards (BS) Building Regulation PD 6501: Part 3: 1985. The SB constituents stated by each document were identified and compared to each other, in order to produce a concerted list of SB constituents. The concerted list revealed FM functions in 7 of the 10 major categories in relation to SB constituents and these include: Management, Health and Wellbeing, Energy, Water, Materials, Waste Management and Pollution. The findings reveal FM functions lacking in 3 areas of SB constituents and these include Transport, Land use and Ecology, and Innovation.

## 3. Sustainable FM Practice in Developed Countries

Facilities management in the United States has been established for over 30 years [14] and the International Facility Management Association (IFMA) is the world's largest and most widely recognized international association for facilities management professionals, supporting more than 23,000 members in 85 countries [15]. The FM market spread to Europe with the establishment of Euro FM in 1990 and the British Institute of Facilities Management (BIFM) in 1993 [16]. In the UK, FM is one of the fastest growing

professions with a market worth of £106.3 billion and an anticipated annual growth of between 2% and 3% up to the year 2012 [17, 16].

Developed countries, particularly in Europe, have applied research focus to sustainable FM, although this is arguably still in its infancy. A case study in Finland showed that relatively light changes to FM service processes achieved extensive environmental benefits. In the case study building, they found that FM had direct or indirect (operational) influence on 82% of the green building certification (LEED) points achieved by the building [18]. However, even in developed countries, it seems that action towards sustainable facilities management is, at times, minimal. The term sustainable FM is unknown in Denmark but there may be greater awareness in the UK and other countries [19].

Facilities managers have a great role to play in advancing the sustainability agenda in the built environment through the practice of sustainable FM [20]. In the UK, the concept of sustainable FM has developed and grown in parallel with the all-embracing theory of sustainable development and the growing appreciation for climate change [18]. According to the study carried out by Elmualim (2008) facilities managers are now aligning their practice with the sustainability agenda along its three strands, economic, environmental and social [17]. However, they are constrained by time, lack of knowledge of the basic information necessary to implement sustainability policies and lack of senior management commitment to the sustainability agenda.

The main driver for sustainable FM in the UK is the formulation of legislation [18]. These pieces of legislation, make organisations conform to stipulated regulations and, in the process, drive the compliance of sustainable practices by facilities managers [19]. These laws incorporate sustainable policies that involve waste management, recycling, energy management, carbon footprint and health and safety [16].

In other developed countries, such as Japan, New Zealand, Hong Kong, Singapore and South Africa, FM has been successfully developed and established. It is recognised in these countries as an activity that can achieve more effective management of buildings, its services and associated workforce, in support of the strategic objectives of an organisation [20]. FM in Australia is one of the fast growing industries with an annual turnover of more than AUD\$60 billion [16].

## 4. Sustainable FM in Nigeria

In developing countries such as Malaysia, the development of FM started in the second half of the 1990s. Now Malaysia has put great focus and emphasis on the development of FM particularly in the public sector [21]. In Uganda, a study was carried out in order to project the growth of FM, which concluded that the FM industry in Uganda, though not officially recognised, exists in a capacity to grow steadily in line with the economy [22].

Sustainability in terms of environmental impact of various industries, especially the oil and petrochemical industry in

Nigeria, has been well documented, [23-26]. However, sustainability in FM, in the country is yet to be embraced, as its growth has been slow, awareness is low and also there is little literature on the subject [27]. Literature that is available tends to focus on environmental issues in sustainability [28, 27], with little focus on the economic and social aspects. Sustainable FM in the management of public buildings in Nigeria and the development of a sustainable approach to corporate FM in Nigeria are existing literature on sustainable FM [27, 29]. [27] emphasised environmental sustainability in their study involving the use of questionnaires and interviews of FM professionals, regarding key themes including environmental awareness, performance of ecologically sustainable development activities and strategic management. Their results showed that FM only minimally addresses sustainability in Nigeria.

A comparative study of sustainable FM in the UK and Nigeria was carried out and it was found that the top three barriers to sustainable practice in Nigeria are lack of regulations or legislation; lack of sustainable policies and lack of awareness [9]. They proposed a framework for embedding sustainable FM in public buildings in Nigeria, based on six phases: (1) public awareness; (2) training and education; (3) creating legislation; (4) public organisations developing written sustainability policies; (5) incorporating sustainable practices in the management of public buildings and; (6) enforcing regulations/legislation.

A study was also carried out on assessing the level of commitment and barriers to sustainable FM practice by facilities managers within corporate organisations in Nigeria. This study revealed the three main barriers to sustainable FM practice. These are lack of training and tools, lack of relevant laws and regulation, and lack of knowledge and awareness. The study also identified the commitment of senior management personnel, as a major driver to the course of sustainable FM within organisations in Nigeria [29]. A similar study on sustainable FM was carried out in relation to the management of solid waste in the Nigerian built environment with particular emphasis on the healthcare facilities [30]. Nevertheless, there remains the urgent need to investigate barriers of sustainable FM practice in the management of commercial buildings in Nigeria. Commercial buildings, being the economic powerhouse of the nation, serving the whole of the country in respect of imports and locally manufactured goods; contributing more than 70% of the national economic output [31].

## 5. Conclusion

Though action towards sustainable FM practice in the developed countries is at times minimal, FM practitioners in these countries are achieving sustainable FM in relation to SB. They do this by carrying out their functions in relation to SB constituents. Barriers to sustainable FM within corporate organisations in Nigeria have been identified; however, there remains the need to identify barriers to sustainable FM practice in the management of commercial buildings. The

extent of sustainable FM in commercial buildings in Nigeria has not yet been determined. However, the findings so far, identify commitment of senior management personnel, as a major driver to the course of sustainable FM. This study is a work in progress and therefore, continuous effort will be made to determine the extent of sustainable practices in the management of commercial buildings and identify barriers to sustainable FM in commercial buildings in Nigeria. However, there remains the need for them to incorporate sustainable practices in the areas of Transport, Land use and Ecology, and Innovation in relations to SB.

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