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Assessing Sustainable Practices in Facilities Management: The Case of Broll Ghana  
Limited

By

Senyo Yao Doamekpor (BSc. Hons. Building Technology)

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MASTER OF SCIENCE CONSTRUCTION MANAGEMENT

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## DECLARATION

I hereby declare that this submission is my own work towards the MSC Construction Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of another degree of the University, except where due acknowledgement has been made in the text.

**SENYO YAO DOAMEKPOR**

**(20402183)**

Student Name & ID

.....

Signature

.....

Date

Certified by:

.....

Supervisor

.....

Signature

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Date

.....

Head of Department

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Signature

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Date

## **ABSTRACT**

Over the years, awareness has increased on the negative effects that human activity has on the environment. It has become evident that human activities cannot continue as usual and it has become imperative that government and private organisations and individuals “meet their present needs without compromising the ability of future generations to meet their needs - a concept known as sustainability. There are few studies if any that assess whether or not the practice of facilities management in Ghana is sustainable and why. This study therefore explores how the principles of sustainability applied in the practice of facilities management in Ghana? The aim of this research was to assess how the concept of sustainability has been applied in the practice of facilities management in Ghana using the case of Broll Ghana Limited using. Grounded on literature, a questionnaire survey was conducted among facility officers of Broll Ghana who were purposively selected to for information pertaining to the study. The study concludes that although there are certain sustainable principles that are practiced with regard to Facilities management in Broll Ghana, it cannot be said that the practice is entirely sustainable due to a lack of knowledge of the concept and client influence on decision-making. Consequently, the study recommends that Broll Ghana Limited develops a sustainability agenda which should include knowledge and awareness creation amongst relevant stakeholders as well as training.

**Keywords:** Sustainable practice, facility management, framework, Broll Ghana

## TABLE OF CONTENT

DECLARATION.....	ii
ABSTRACT .....	iii
TABLE OF CONTENT .....	iv
LIST OF TABLES .....	vi
LIST OF FIGURES .....	vii
ACKNOWLEDGEMENTS .....	viii
DEDICATION .....	ix
<b>CHAPTER ONE.....</b>	<b>1</b>
<b>Introduction .....</b>	<b>1</b>
1.1 Background Information .....	1
1.2 Problem Statement .....	2
1.3 Research question.....	2
1.4 Aim.....	2
1.5 Objectives .....	2
1.6 Scope/delimitation.....	3
1.7 Research Design and Method.....	3
1.8 Significance of study .....	3
1.9 Structure of report .....	4
<b>CHAPTER TWO.....</b>	<b>5</b>
<b>Literature review .....</b>	<b>5</b>
2.1 Introduction .....	5
2.2 Origin and Definition of Sustainable Development .....	5
2.3 Facilities Management .....	10
2.3.1 The Core Competencies of Facility Management.....	10
2.3.2 The need for Facilities Management .....	11
2.4 Sustainable Facilities Management .....	12
2.5 Sustainability Assessment .....	15

<b>CHAPTER THREE .....</b>	<b>21</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>21</b>
3.1 Introduction .....	21
3.2 Research Method/Approach .....	21
3.3 Research Strategy .....	21
 <b>CHAPTER FOUR .....</b>	 <b>24</b>
<b>ANALYSIS AND DISCUSSION.....</b>	<b>24</b>
4.1 Introduction .....	24
4.2 Survey.....	24
Description of Sample characteristics .....	24
Knowledge of The concept of sustainability .....	26
4.3 Document review .....	27
4.3.1 The document contains the following: .....	27
4.4 Interviews .....	29
Discussion .....	34
4.5.1 Socio-ecological system integrity .....	34
4.5.2 Livelihood sufficiency and opportunity and intragenerational equity .....	34
4.5.3 Intergenerational equity.....	35
4.5.4 Resource maintenance and efficiency .....	36
4.5.5 Socio-economic civility and democratic governance.....	36
4.5.7 Immediate and long term integration .....	37
4.6 The factors that influence the application of sustainability in the practice of..	37
 <b>CHAPTER FIVE .....</b>	 <b>39</b>
<b>SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>39</b>
5.1Introduction.....	39
5.2 Research Conclusions and Contribution .....	39
5.3 Limitations and Recommendations for further research .....	40
5.4 Conclusions .....	41
<b>References .....</b>	<b>41</b>
<b>APPENDIX 1 .....</b>	<b>44</b>

## **LIST OF TABLES**

Table 4.1 Years of Employment .....	24
Table 4.2 Field of Study.....	26
Table 4.3 Summary of responses of Head of Facilities Management Department....	30
Table 4.4 Application of Principles in Facilities Management Responsibilities .....	33

## LIST OF FIGURES

Figure 2.1 The Pillars of Sustainability (Ledger, 2014).....	7
Figure 2.2 Venn diagram view of Sustainability (Giddings et al. 20016) .....	8
Figure 2.3 Nested view of Sustainability (Giddings et al. 2006) .....	8
Figure 2.4 Sustainability Principles (Gibson et al 2005) .....	9
Figure 2.5 Bellagio Principles Part 1 (Hardi and Zdan, 1997).....	19
Figure 2.6 Bellagio Principles Part 2 (Hardi & Zdan, 1997) .....	20
Figure 4.1 Membership of Professional Body .....	25
Figure 4.2 Level of Education.....	25

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## DEDICATION

*“A man with dreams needs a woman with vision. Her perspective, faith, and support will change his reality. If she doesn’t challenge you, she’s no good for you. ....”*  
*Source unknown.*

This thesis is dedicated to:

Our Lord and Saviour, Jesus Christ for granting me life and the needed strength  
throughout the course

And

Mrs Naa Adjeley Ashiboe-Mensah Doamekpor (my wife)

Thank you for the continuous support and patience.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background Information**

Over the years, awareness has increased on the negative effects that human activity has on the environment. It has become evident that human activities cannot continue as usual and it has become imperative that government and private organisations and individuals “meet their present needs without compromising the ability of future generations to meet their needs (Brundtland, 1987) – a concept known as sustainability.

The modern concept of sustainability has its origins with the United Nations 1972 Stockholm Conference where Ward and Dubos (1972) made a presentation on Sustainable development but the Brundtland report is credited with proliferating the concept.

Since then, the concept has gradually increased in awareness and is a key consideration in public and private organisations across the globe. Governments as well as the private sector are increasingly being pressed to act sustainably.

In Ghana, as well sustainability has become a relevant consideration in the building industry with major implications such as the launch of the Swiss-Ghana Sustainable Public Procurement Project and the construction of sustainable buildings such as Airport One Square and the World Bank Head office. Often in the application of sustainability principles in the building industry the focus is on the early life of the building (design and construction) as these stages in the life cycle offer the greatest opportunity for influence. However, it is also important that the stage of occupancy be taken into account as this represents the longest of the life cycle phases.

There is the need to assess whether the management of building facilities in Ghana during the occupancy stage is also underpinned by the concept of sustainability.

## **1.2 Problem Statement**

There are few studies if any that assess whether or not the practice of facilities management in Ghana is sustainable and why. A sustainability assessment like a performance appraisal will evaluate whether or not a set objective has been met and why – in this case whether an endeavour is sustainable or not and/or the extent.

In carrying out this assessment, the study uses the case of Broll Ghana Limited. Broll Ghana Limited is a property management company established in Ghana in 2006. It is arguably “the first company in Ghana to offer formalised approach to property management.” The services offered by the organisation include commercial broking, corporate real estate services, facilities management, property and project management, retail leasing and consulting, residential estate management, shopping centre management and valuation and advisory services. The organisation has received many awards and is affiliated with CBRE, a global real estate firm. In the light of its track record as a leading facilities management organisation in Ghana, it is selected as an important player in the industry worth studying.

## **1.3 Research question**

How are the principles of sustainability applied in the practice of facilities management in Ghana?

## **1.4 Aim**

The aim of this research was to assess how the concept of sustainability has been applied in the practice of facilities management in Ghana using the case of Broll Ghana Limited.

## **1.5 Objectives**

1. To identify a guiding framework for sustainability assessment of Facilities Management;

2. To determine the compliance of sustainable practices at Broll Ghana using the framework; and
3. To determine the factors that influence the application of sustainability in the practice of facilities management at Broll Ghana.

### **1.6 Scope/delimitation**

The assessment will be limited to the facilities management services of Broll Ghana Limited in Accra

### **1.7 Research Design and Method**

A case study research design was used to assess how Broll Ghana Limited applies the concept of sustainability to its facilities management practices. This design is selected because of the need to study the phenomenon within its context.

### **1.8 Significance of study**

Sustainability is now significant factors when determining global business strategy. Increasingly recognising this, organisations are changing their values, whether by leading change or by reacting to meet their obligations. This is evidenced by a survey of a thousand CEOs from 43 countries by PricewaterhouseCoopers which indicated that 79% of these CEOs believe that sustainability is vital to the profitability of any company. Sustainable practices are profitable because they can reduce risk, make business and consumers more efficient, and advance them technologically while reducing environmental and social concerns. One of the areas that this responsibility is being focused within is the FM function. FM which is traditionally tasked with providing a facility fit for purpose is also evolving to incorporate a new environmental and sustainability focus. To meet this challenge there is a need to understand the technical issues involved, which can mean significant training opportunities and the development of more sustainability focused FM consultancies.

The study will provide a framework for conducting assessments and also provide recommendations on how to influence facilities management in Ghana towards more sustainable practices. With regards to research, a majority of sustainability assessment initiatives lack conceptual rigour and this research will seek to fill this gap by underpinning the assessment process with a strong conceptual framework.

## **1.9 Structure of report**

Chapter One Introduction provides an overview of the thesis and consists of the background to the study, problem and purpose statements, research aim and objectives, a summary of the research design and the outline of the thesis.

Chapter Two Literature Review presents a brief history and development of the concept of sustainability and an in-depth information on the current knowledge existing on the concept of sustainability assessment and procedures/method to carry out such an assessment

Chapter Three Research Method addresses the approach to the research, method of inquiry and data collection

Chapter Four Analysis and Discussion discusses the techniques used for analysis as well as the results obtained

Chapter Five Recommendations and Conclusions summarises the findings that emerge from the study and the significance as well as opportunities for future research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter begins with a brief introduction to sustainability development/ sustainability – its origins, popular definition of the concept. The chapter then describes the three pillars and the different ways in which their relationship is conceptualised. The discussion then turns to sustainability in Ghana and Sustainable Facilities Management. Following this is a brief description of the status of sustainability in Ghana especially with regard to policy, the review introduces the case (organisation) to be studied and then ends with the assessment of sustainability – measuring sustainability performance and the criteria for assessment; presenting a framework that will guide the assessment to be carried out of facilities management in Broll Ghana Limited.

#### **2.2 Origin and Definition of Sustainable Development**

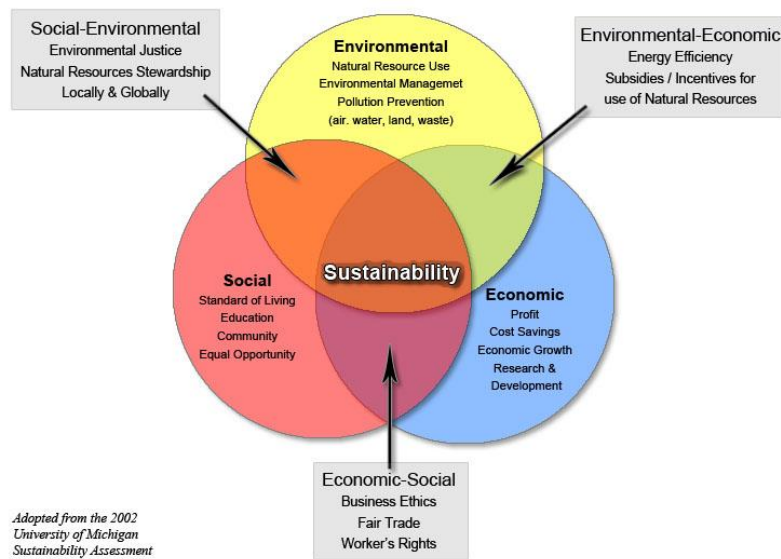
The term sustainable development developed in the 1970s in response to concerns about the increased consumption of resources by an ever-increasing growth in the human population especially in the light of the realisation of the finite nature of resources and the vulnerability of the environment. The need for advancement despite these concerns thus resulted in the United Nations 1972 Conference where Ward and Dubos, (1972) presented a paper on Sustainable development. The follow-up to this conference – the Brundtland report is what is often credited with originating the most widely cited definition of sustainable development. In this report, sustainable development is defined as “The development that meet the needs of the present without compromising the ability of future generations to meet their

own needs” (Brundtland, 1987)- a definition which has been criticised for its vagueness of meaning and interpretation and its prioritisation of human needs over the rest of life. Others in order to lean towards a more “objective” conceptualisation proposed or prefer the use of the concept “sustainability”.

Since the Brundtland report, the importance of sustainable development/sustainability has grown, challenging the traditional way of doing business and the interpretation of development (Poveda, 2011).

Sustainable development and sustainability have become widely accepted policy goals, but there is often a wide sometimes confusing range of definitions, goals, conditions and criteria related to the concepts (Giddings et al., 2002). An appreciation of underlying worldviews and outlooks provides a clearer understanding of the actual implementation of the concept of sustainable development/sustainability. Nevertheless, there is a general long term focus on future generations and the interrelations between socio-economic and environmental systems which translate into the need for current human activity to be circumspect in ensuring the preservation of these socio-economic and environmental systems (van Pelt, et al., 1990). Consequently, sustainability is also sometimes defined as the path to balance social, economic and environmental needs – a definition that highlights the independency, inter-relation/inter-connection and equality between society, economy and the environment (the three pillars of sustainability).

## *The Three Spheres of Sustainability*



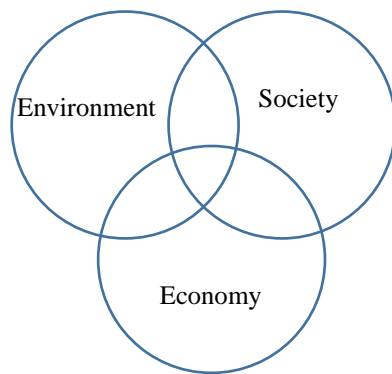
**Figure 2.1 The Pillars of Sustainability (Ledger, 2014)**

Although some researchers subscribe to the conception of sustainability on less or more pillars, identifying the pillars highlights the importance of several factors.

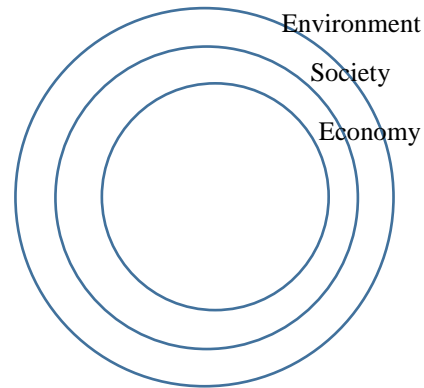
The three pillars/sectors of environment, economy and society are often depicted as three equal intersecting circles (Venn diagram) indicating the equality of the aspects under consideration. However, a more accurate presentation should be of the economy nested in society with the two nested in the environment showing the dependence of the economy on the society and the two dependent on the environment. (Diesendorf, 2000) Definition of sustainability (“sustainable development comprises types of economic and social development which protect and enhance the natural environment and social equity”) reflects this constraint that the environment puts on the types of economic and social development. Nevertheless, this abstraction has also been criticised for being over-simplified with various alternatives suggested that take into consideration diversity over time and space of the three aspects (Lozano, 2008).



This conceptualisation of sustainability as separate pillars is considered reductionist,



**Figure 2.2 Venn diagram view of Sustainability (Giddings et al. 20016**



**Figure 2.3 Nested view of Sustainability (Giddings et al. 2006)**

perpetuates fragmentation and allows for players to sometimes focus on certain aspects to the detriment of another (Gibson, 2006). This has encouraged a more principle based approach/principle based criteria for sustainability that consolidate the full range of considerations and reduces conflicts and trade-offs (Pope, et al., 2004). Various principles have been proposed but one set by (Gibson, et al., 2005) as described by (Gibson, 2006) is described in Figure 2.4. It is this set of principles that underlie the rest of the study and form the framework for the empirical portion of this study.

### Box 1. Core generic criteria for sustainability assessments

#### Socio-ecological system integrity

the requirement:

Build human–ecological relations to establish and maintain the long-term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human and ecological well-being depends.

illustrative implications:

- need to understand better the complex systemic implications of our own activities;
- need to reduce indirect and overall as well as direct and specific human threats to system integrity and life support viability.

#### Livelihood sufficiency and opportunity

the requirement:

Ensure that everyone and every community has enough for a decent life and that everyone has opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.

illustrative implications:

- need to ensure provision of key prerequisites for a decent life (which, typically, are not now enjoyed by those who have little or no access to basic resources and essential services, who have few if any satisfactory employment opportunities, who are especially vulnerable to disease, or who face physical or economic insecurity);
- need to appreciate the diversity, and ensure the involvement, of those whose needs are being addressed.

#### Intragenerational equity

the requirement:

Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, and so on) between the rich and the poor.

illustrative implications:

- need to build sustainable livelihoods for all, including practically available livelihood choices and the power to choose;
- need to emphasize less materially- and energy-intensive approaches to personal satisfactions among the advantaged, to permit material and energy sufficiency for all.

#### Intergenerational equity

the requirement:

Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.

illustrative implications:

- need to return current resource exploitation and other pressures on ecological systems and their functions to levels that are safely within the perpetual capacity of those systems to provide resources and services likely to be needed by future generations;
- need to build the integrity of socio-ecological systems, maintaining the diversity, accountability, broad engagement and other qualities required for long-term adaptive adjustment.

#### Resource maintenance and efficiency

the requirement:

Provide a larger base for ensuring sustainable livelihoods for all, while reducing threats to the long-term integrity of socio-ecological systems by reducing extractive damage, avoiding waste and cutting overall material and energy use per unit of benefit.

illustrative implications:

- need to do more with less (optimize production through decreasing material and energy inputs and cutting waste

outputs through product and process redesign throughout product lifecycles), to permit continued economic expansion where it is needed, with associated employment and wealth generation, while reducing demands on resource stocks and pressures on ecosystems;

- need to consider purposes and end uses, recognizing that efficiency gains are of no great value if the savings go to more advantages and more consumption by the already affluent.

#### Socio-ecological civility and democratic governance

the requirement:

Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision-making bodies to apply sustainability requirements through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary and personal decision-making practices.

illustrative implications:

- need governance structures capable of integrated responses to complex, intertwined and dynamic conditions;
- need to mobilize more participants, mechanisms and motivations, including producers, consumers, investors, lenders, insurers, employees, auditors, reporters
- need to strengthen individual and collective understanding of ecology and community, foster customary civility and ecological responsibility, and build civil capacity for effective involvement in collective decision-making.

#### Precaution and adaptation

the requirement:

Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise, and manage for adaptation.

illustrative implications:

- need to act on incomplete but suggestive information where social and ecological systems that are crucial for sustainability are at risk;
- need to design for surprise and adaptation, favouring diversity, flexibility and reversibility;
- need to prefer safe fail over fail-safe technologies;
- need to seek broadly comprehensible options rather than those that are dependent on specialized expertise;
- need to ensure the availability and practicality of back-up alternatives;
- need to establish mechanisms for effective monitoring and response.

#### Immediate and long term integration

the requirement:

Apply all principles of sustainability at once, seeking mutually supportive benefits and multiple gains.

considerations:

- integration is not the same as balancing;
- because greater efficiency, equity, ecological integrity and civility are all necessary for sustainability, then positive gains in all areas must be achieved;
- what happens in any one area affects what happens in all of the others;
- it is reasonable to expect, but not safe to assume, that positive steps in different areas will be mutually reinforcing.

illustrative implications:

- need positive steps in all areas, at least in general and at least in the long term;
- need to resist convenient immediate compromises unless they clearly promise an eventual gain.

Source: Gibson *et al* (2005)

**Figure 2.4 Sustainability Principles Gibson et al 2005**

## **2.3 Facilities Management**

Like the concept of sustainability, facilities management is always evolving and has varying definitions but one that is quite common is “an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organisation in order to create an environment that strongly supports the primary objectives of that organisation.” (Atkin and Brooks, 2009). An alternative definition by the European standard is “the integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary activities” (European Committee for Standardisation, 2006). The focus in the two definitions and other definitions in general is on the integrative and interdependent approach to achieve the goal of supporting an organisations (business) objectives (Atkin and Brooks, 2009).

Depending on the needs of a client organisation, facilities management may comprise essentially building maintenance, domestic services (cleaning and catering) and utilities supplies but may also extend to real estate management, financial management, change management, human resource management, health and safety and contract management. What this means is that the job of the facilities manager/FM organisation is multi-disciplinary and if properly carried out can immensely impact the performance of the client organisation (Alexander, 2003).

### **2.3.1 The Core Competencies of Facility Management**

Eleven core competencies emerged from the Global Job Task Analysis (GJTA) in 2009. In the analysis, facilities managers from 62 economies were included. These competencies are the most elaborate and up to date analysis ever conducted. According to the GJTA, the competencies include the following:

- Communication
- Emergency Preparedness and Business Continuity
- Environmental Stewardship and Sustainability
- Finance and Business
- Human Factors
- Leadership and Strategy
- Operations and Maintenance
- Project Management
- Quality
- Real Estate and Property Management
- Technology

### 2.3.2 The need for Facilities Management

- a. **Efficiency improvement:** Companies that outsource their services to service providers attain more efficiency because the facility management service providers are equipped with skilled personnel.
- b. **Cost Efficiency:** facilities management service providers often are able to offer services at a lower price allowing companies significant savings in cost.
- c. **Quality Assurance:** By quality assurance, firms obtain services from qualified personnel and experts who have obtained the needed training for the provision of such services.
- d. **Liabilities are reduced:** some liability is assumed by service facilities management companies in respect of the areas under service. This therefore leads to a total reduction in the liability.

- e. **Operations are streamlined:** Facility management companies provide 24-hour service support. Possible challenges likely to occur are can therefore be managed thereby preventing the likelihood of interrupting services.
- f. **Reduced stress:** The responsibility of staffing, interviewing, conducting performance reviews and other duties are outsourced to facility management companies. This therefore allows them to pay particular attention to revenue generation and productivity.

(International Facilities Management Association, 2016).

## **2.4 Sustainable Facilities Management**

Owing to the potential impact of facilities management on an organisation's performance, facilities management has become an important business discipline which is evidenced by the increase in facilities management property organisations in the world. Nevertheless, Facilities management is a comparatively young profession with the challenge to secure its future and gain a reputation as a credible discipline and profession (Alexander, 2003). One way that this can be done is to hinge on the potential contribution of facilities management to achieving sustainability agenda. This potential has been adequately documented by the likes of (Shah, 2007). Wood(2006) also highlights immense opportunity the existing building stock has with regards to sustainable practices in the operational phase (e.g. only 5% of generated energy is used in the construction stage whilst 45% is used in order to power and operate the buildings (CIOB, 2004) – a fact that further emphasises key role of Facilities managers. For instance, efficient management of facilities can have significant influence on profitability, productivity, employee wellbeing, energy management, waste management (Elmualim et al., 2012). All of which are issues

related to sustainability. Furthermore, Facilities management is well poised to influence individuals and organisations that they work with towards the sustainability agenda. This relationship between facilities management and sustainability is what has culminated in the concept of Sustainable Facilities Management – the application and practice of sustainability to facilities management (Elmualim et al., 2012).

In Ghana, Facilities Management is still in its infancy but gaining acceptance. The market has seen entrants both local and international over the past few years and companies as listed by (Broll Ghana Limited, 2016). Include Broll Ghana Limited, Express Property, Silver Star Property Management, Assenta Property, Y Kummey, UT Properties, Taysec Facility Management, Blue Rose Facilities Limited, FM 24 JHI/Zenprop (from South Africa), Westsport/Rand Merchant Bank (from South Africa), Sunda Real Estate Company from China and Kingdom Hotel Investment Group (from Saudi Arabia). Broll Ghana Limited has often emerged as one of the leaders in the market of facilities management evidenced by the facilities management related awards received over the years (Broll Ghana Limited, 2016).

Broll Ghana Limited is a property management company established in Ghana in 2006. It is arguably “the first company in Ghana to offer formalised approach to property management” as a response to the upsurge in investment in commercial property development. The organisation provides services such as commercial broking, corporate real estate services, facilities management, property and project management, retail leasing and consulting, residential estate management, shopping centre management and valuation and advisory services (Broll Ghana Limited, 2016).

The objectives of Broll include the following:

- To fill the gap of lack of regular maintenance in the Ghanaian Real Estate environment.
- To harness the ability of people to own properties through the application of property management techniques.
- To take the burden of the cost of property management off the shoulders of corporate organisations.
- To free corporate bodies to limit their attention to their core business activities.
- To free resources - human and financial – mainly to ensure that productivity is improved.

At present, Broll Ghana provides facilities management services on Premier Tower, Heritage Tower, Ridge Tower, Trust Tower, Round House, Okofoh House and SSNIT Office Complex at Takoradi. Broll Ghana also manages the Accra, West Hills, Junction, Achimota and A & C malls; University of Ghana Hostels as well as other residential properties amongst others. The entire portfolio of the company though largely in Accra is quite large for a company that has been operating in the country for just about ten years.

The vision for the Company is to be a leader in providing property services and set the pace in the property market of Ghana. Thus, to serve the client's best interests and deliver quality services (Broll Ghana, 2011). For a company with this track record as well as its status in the country, it is a case worth studying in terms of its pursuit of the sustainability agenda.

(Diesendorf, 2000) encourages such study of sustainability in organisations (he refers to them as corporations) because he argues that they contribute to the sustainability

or unsustainability of a society owing to the impact they have on the natural environment, their workforces and society at large. The choices of raw materials and suppliers, land use, manufacturing process, employment practices and the like all have sustainability related consequences. Furthermore, there are several business reasons for a corporation to choose to become sustainable or promote sustainability:

- Reduce the possibility of disputes and customer boycotts as a result of misconceived poor practices.
- Reduction in production costs through efficient use of resources and turning of waste into resources
- Gaining market advantage through differentiation of products and services
- Harnessing consumer loyalty through immediate response to changing trends for better sustainable practice.

Hence, the vision of Broll to be pacesetters may hinge on the organisation being sustainable. As part of this agenda, progress towards sustainability within the organisation needs to be assessed. The aim is to establish the existing level of understanding and application of sustainable knowledge and practice within the facilities management profession in Ghana by looking at the case of Broll.

## **2.5 Sustainability Assessment**

Assessment of sustainability is imperative for making progress towards sustainable development – assessments are designed to present the current status of affairs; measuring whether some progress has been made or not. This is key to planning and decision making with regard to understanding the impact of existing policies in order to direct the establishment of new policies towards sustainability (Sors, 2001) . (Poveda, 2011) describes the measurement process as one in which variables related



to sustainable development are identified and data collected and analysed with technically appropriate methods whilst assessment comprises the comparison of performance with/against a standard for a criterion or a number of criteria. In order to attain the maximum benefits, any assessment amongst other things should be holistic (Brandon and Lombardi, 2011), the decision criteria should be well defined and the process must be comprehensive.

Measuring sustainability is relatively new and so there is a lack of commonly accepted or mandated standard. Also, by virtue of the complex nature of the concept of sustainability, adequately developing a measure that covers the broad spectrum and multi-faceted nature of sustainability is challenging. Additionally, the measurement requires looking beyond the boundaries of a single company (Fiksel et al., 1999).

Nevertheless, a diversity of approaches have been suggested to assess progress towards sustainability (Sors, 2001). One such approach is the use of indicators.

Indicators help construct a picture of the state of our environment on which we can base intelligent decisions – they provide relevant information about the current and possible future developments and so are important if we want to assess how we are as an individual or society.

There is considerable literature on sustainability indicators in the light of their value in monitoring progress and motivating action towards sustainability (Diesendorf, 2000). Indicators often used are of varied schemes – single indicators such as GDP, aggregate indexes such as Ecological Footprint or ad-hoc indicators which are often a more or less extensive list of indicators. However, there is a general awareness of the shortcomings of such indicators in assessing sustainability and a systems

approach in the search for indicators is suggested by (Bossel, 1999) that reflect the inter-relatedness of the economy, society and environment. The systems approach minimises the danger of overlooking essential areas or overemphasising others (Bossel, 1999).

Such sustainability indicators should be:

- Significant – should be able to evaluate sustainability in the long and short terms
- Relevant – should be able to incorporate the peculiarities of local conditions in highlighting the aspects and problems of sustainability
- Measurable – measures should be consistent over time, comparable and based on easily available information
- Understandable – should be simple, clear, unambiguous and understandable to non-experts in the field
- Sensitive – should be able to respond to changes in social, environmental and economic conditions
- Coherent – should be significant on their own and as part of a set of indicators
- Synthetic – should be capable of synthesising a large quantity of information in a single numeric value
- Scientifically valid – underscored by a conceptually sound framework
- Reproducible – calculating or measuring the indicators should easily be replicable
- Disaggregateable – should have the ability to be broken down to cater for smaller territories, social groups etc.

- Convenient – should be fairly easy to carry out measurements frequently with minimal use of resources
- Timely for decision-making (Diesendorf, 2000; Sors, 2001).

A set of indicators either selected from a pre-defined list (e.g. Global Urban Indicators Database by UN Centre for Human Settlements), “tailor-made” for a specific context or a blend of the two approaches may be used for an assessment. The set of indicators may be made up of any number depending on the intended use though numbers between twenty and fifty are suggested as useful.

Given the complexity of carrying out sustainability assessments, developing and using a clear framework is important for guiding the process. The Bellagio Principles, one such framework, is a set of guidelines for the practical assessment of progress towards sustainable development. (Bossel, 1999) These principles were developed from the vast range of work related to sustainability assessment and are expected to provide guidance on the development and design of the entire assessment process. The principles are applicable to assessment activities of community groups, non-government organisations, corporations, national governments and international institutions (Hardi and Zdan, 1997). The purpose of Bellagio Principles is to help in developing:

- Content – the questions that should be answered in the assessments
- Process – the method in which the assessments should be carried out
- Scope – the temporal, geographical and thematic range of assessments
- Impact – the way to maximise the impact that assessments have on policy

(Rubik and von Raggamby, 2012).

The Bellagio Principles are outlined in Figure 3 & 4 but a comprehensive discussion of each principle and its application in real life cases can be found in (Hardi & Zdan, 1997).

management in Ghana using the case of Broll Ghana Limited.

<p><b>Bellagio Principles- Guidelines for Practical Assessment of Progress Toward Sustainable Development</b></p> <p><b>1. GUIDING VISION AND GOALS</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• be guided by a clear vision of sustainable development and goals that define that vision</li> </ul> <p><b>2. HOLISITC PERSPECTIVE</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• include review of the whole system as well as its parts;</li> <li>• consider the well-being of social, ecological and economic subsystems, their state as well as the direction and rate of change of the state, of their component parts, and the interaction between parts;</li> <li>• consider both positive and negative consequences of human activity in a way that reflects the costs and benefits for human and ecological systems, both in monetary and non-monetary terms.</li> </ul> <p><b>3. ESSENTIAL ELEMENTS</b> Assessment of progress towards sustainable development should:</p> <ul style="list-style-type: none"> <li>• consider equity and disparity within the current population and between present and future generations, dealing with such concerns as resource use, overconsumption and poverty, human rights, and access to services, as appropriate;</li> <li>• consider the ecological conditions on which life depends;</li> <li>• consider economic development and other non-market activities that contribute to human and social well-being.</li> </ul> <p><b>4. ADEQUATE SCOPE</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• adopt a time horizon long enough to capture both human and ecosystem scales, this responding to current short-term decision-making needs as well as those of future generations;</li> <li>• define the space of study large enough to include not only local but also long distance impacts on people and ecosystems;</li> <li>• build on historic and current conditions to anticipate future conditions: where we want to go, where we could go.</li> </ul> <p><b>5. PRACTICAL FOCUS</b> Assessment of progress toward sustainable development should be based on:</p> <ul style="list-style-type: none"> <li>• an explicit set of categories or an organising framework that links vision and goals to indicators and assessment criteria;</li> <li>• a limited number of key issues for analysis;</li> <li>• a limited number of indicators or indicator combinations to provide a clearer signal of progress;</li> <li>• standardising measurement wherever possible to permit comparison;</li> <li>• comparing indicator values to targets, reference values, ranges, thresholds or direction of trends, as appropriate.</li> </ul> <p><b>6. OPENESS</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• make the methods and data that are used accessible to all;</li> <li>• make explicit all judgements, assumptions and uncertainties in data and interpretations.</li> </ul> <p><b>7. EFFECTIVE COMMUNICATION</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• be designed to address the needs of the audience and set of users;</li> <li>• draw from indicators and other tools that are stimulating and serve to engage decision-makers; aim, from the outset, for simplicity in structure and use of clear and plain language.</li> </ul> <p><b>8. BROAD PARTICIPATION</b> Assessment of progress toward sustainable development should:</p> <ul style="list-style-type: none"> <li>• obtain broad representation of key grassroots, professional, technical and social groups, including youth, women and indigenous people to ensure recognition of diverse and changing values;</li> </ul>
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**Figure 2.5 Bellagio Principles Part 1 (Hardi and Zdan, 1997)**

These principles are the guiding framework that were used to develop and carry out this assessment of progress towards sustainability in the practice of facilities

- ensure the participation of decision-makers to secure a firm link to adopted policies and resulting action.
9. ONGOING ASSESSMENT
- Assessment of progress toward sustainable development should:
- develop a capacity for repeated measurement to determine trends;
  - be iterative, adaptive and responsive to change and uncertainty because systems are complex and change frequently;
  - adjust goals, frameworks and indicators as new insights are gained;
  - promote development of collective learning and feedback to decision-making.
10. INSTITUTIONAL CAPACITY
- continuity of assigning responsibility and providing ongoing support in the decision-making process;
  - providing institutional capacity for data collection, maintenance and documentation;
  - supporting development of local assessment capacity.

**Figure 2.6 Bellagio Principles Part 2 (Hardi & Zdan, 1997)**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the approach to the study, strategy as well as the details of the data collection techniques used for the research which is a holistic case study of the practice of sustainability in facilities management by Broll Ghana Limited

#### **3.2 Research Method/Approach**

The approach selected in this research is qualitative because the study is oriented towards more of discovery of the progress towards sustainability in Broll and also tries to emphasize depth and detail of inquiry rather than generalisation.

#### **3.3 Research Strategy**

The choice of the research strategy was guided by the overall approach/method of research adopted and the aims and objectives. A descriptive case study strategy was chosen because of the particular area/concept of study. In sustainability assessment, Hardi and Zdan (1997) suggest that conceptual and technical issues should be considered within the context of the delicate value-driven processes of real, day-to-day decision making so that insights may feed into decision-making and the process of assessment and decision-making can enhance technical and public enquiry. Consequently, the strategy that best allows for the study of the phenomenon within its context i.e. the case study was selected. This strategy is also consistent with a qualitative approach, the type of research question (how and why type) as well as the focus on the contemporary events in the study (Yin, 2009)

The case study strategy is made up of the following components:

- Case study questions – The question of interest studied in the case was “How are the principles of sustainability applied in the practice of facilities management in Ghana?”
- Units of analysis – in this study the “case” is Broll Ghana Limited and the study followed an embedded single case study design. It is expected that although a single case is selected it is important enough to offer relevant lessons and or conclusions. Broll as described in Chapter two is one of many facilities management companies in Ghana which has been recognised as a leader in the market. The target group were Facility Officers in Broll.
- Use of theory – in the study, the principles of sustainability as espoused by Gibson et al (2005) was used as a framework to guide data collection.
- Data collection and analysis – data was collected using multiple techniques: semi-structured interviews, a document review and a survey.

The interviewees and documents reviewed were selected based on their relevance to the conceptual questions of interest as well as availability.

Two persons, the head of the facilities department and a senior facilities officer with in-depth knowledge of the concept of sustainability were interviewed. The choice of these persons was informed by their ability to give in-depth insight into the activities and processes of the Facilities Management Department of Broll and their availability.

The current strategic plan of the organisation was reviewed since it is a key document that outlines the strategic direction of the company and also because it is from the common broad strategies outlined in the document that each Department (including Facilities Department) develops its own short

and medium term objectives and the major activities to be undertaken to achieve its objectives.

A survey was also conducted to investigate the knowledge of facilities management officers on the concept of sustainability. The survey was conducted via emails sent to a total of thirty (30) relevant persons in the Department. The population of interest was the entire employed number of facilities officers within the FM department who totalled thirty (30) in all. Given the few number involved, the entire population was targeted for the survey. The survey instrument was prepared specifically for this study.

The data from the interviews and document review were analysed using thematic content analysis whilst the survey was analysed using statistical techniques outlined in the data analysis chapter.



## **CHAPTER FOUR**

### **DATA ANALYSIS AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents details of the analysis and results obtained from the data collected from documents, interviews, observation and surveys.

#### **4.2 Survey**

The key objective of the survey was to assess the level of knowledge of the concept of sustainability amongst the Facilities managers at Broll Ghana limited.

The survey was administered to thirty (30) facilities officers in the organisation. Out of this number only eleven (11) responded even after two reminders and phone calls were made to encourage respondents to fill out the questionnaire that was sent.

#### **Description of Sample characteristics**

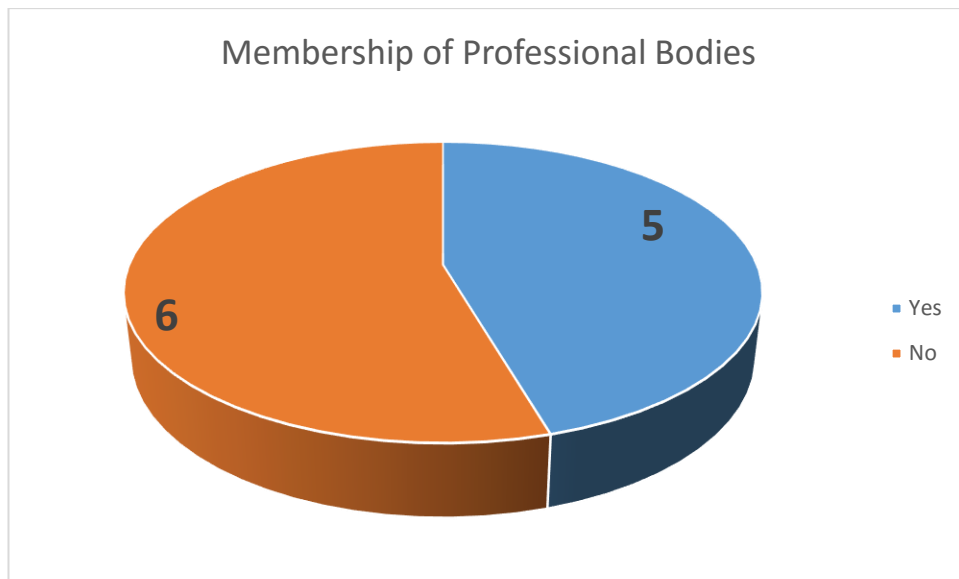
This section gives a brief summary of the characteristics of the final sample that was used in the analysis of the data. In all eleven cases were used in the data analysis.

The characteristics of the respondents are captured in the figures and tables below:

**Table 4.1 Years of Employment**

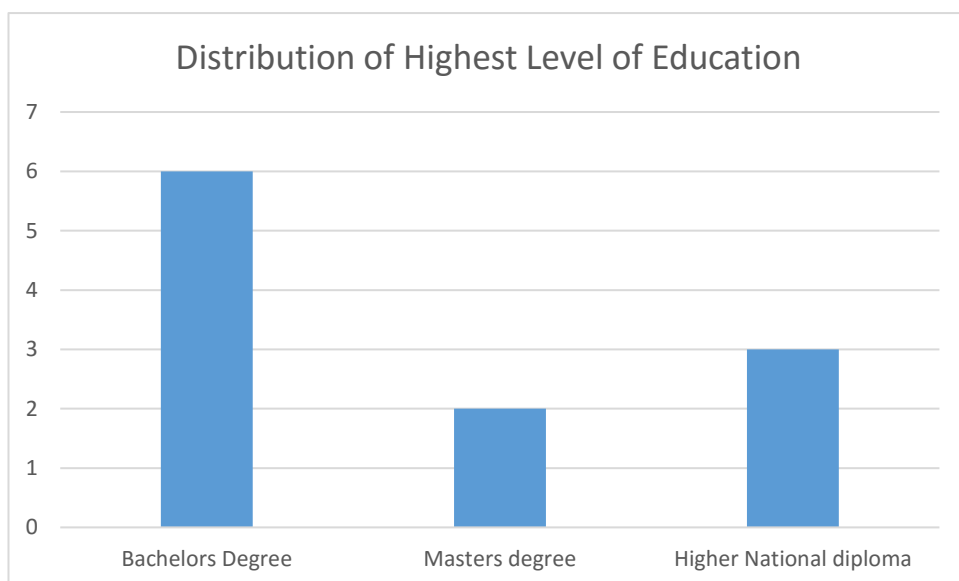
	Number of years as a facilities officer	Number of years as a at Broll
Mean	3.545	3.05
Mode	2	2
Median	2	2.5
Standard deviation	2.544	1.707
Maximum	9	6
Minimum	1	1

One average most employees had spent approximately three (3) years working with Broll and also as Facilities managers.



**Figure 4.1 Membership of Professional Body**

From the results, it was noticed that most of the respondents do not belong to any professional body. Out of the 11 respondents, 6 did not belong to any professional group.



**Figure 4.2 Level of Education**

From the results, it was noticed that the highest educational level of the respondents was a bachelor's degree. Out of the 11 respondents, 6 have a bachelor's degree as their highest level of education.

**Table 4.2 Field of Study**

Fields of Study	Number of Persons
Building Technology	3
Real Estate Management	1
Land Economy	2
Marketing	1
Procurement and supply chain management	1
Mechanical Engineer	2

The fields of education varied widely but most respondents had a bachelor's degree.

### **Knowledge of the concept of sustainability**

All the respondents indicated that they had heard about the term sustainability however in explaining the term, only one respondent made reference to themes that are directly relevant to the concept of sustainability as defined – “*using environmentally friendly things and being efficiently about the things used*”. It must be noted however that the above quoted explanation provided only captures the environmental dimension of sustainability.

All other respondents explained the concept using themes that coincided with its literal meaning “*The ability to be maintained at a certain rate or level*” (Oxford English dictionary, 2016). Hence words such as maintenance, continuity, endure and the like were evident in responses.

This lack of knowledge of the concept is not surprising given that most respondents do not belong to a professional institution. It is at gathering of such institutions that knowledge transfer and continuous professional development occurs.

It is also noted that the individual with some knowledge of sustainability has a Master's Degree in construction project management – a course which often contains some subject or mention of the subject of sustainability and is a member of a professional institution.

### **4.3 Document review**

The document review aspect of the research revealed a key organisational document – Broll Strategic Plan to assess the extent to which the principles of sustainability were captured.

The plan outlines the key strategic direction of the company over the period between 2013 and 2017. It is from these common broad strategies that each Department has cascaded its own short and medium term objectives and the major activities to be undertaken to achieve its objectives and the time frame in which to achieve them.

#### **4.3.1 The document contains the following:**

- Background information outlining the organisation's mission, vision core values, services and clientele
- A strategic analysis of key stakeholders, what they contribute to the firm and what the firm contributes to its stakeholders as well as requirements for their continued support
- An analysis of the strengths, weaknesses, opportunities and threats which culminated in the identification and prioritisation of
- Key strategic areas/issues that are to inform the direction of the company for the period under consideration with relevant details that will guide the attainment of these strategic areas.

The application of sustainability principles

Broll Ghana Limited although a private company is a partnership between two Ghanaian companies (SSNIT - The Social Security and National Insurance Trust and SIC insurance company limited) and a South African one. SSNIT (the largest non-bank financial institution in the country) is a statutory public Trust charged with the administration of Ghana's Basic National Social Security Pension Scheme. The Pension Scheme administered by SSNIT has a registered membership of over 1,269,673 million with over 165,624 pensioners. SIC is the nation's largest general insurer and a listed public limited liability company with over 14,000 shareholders. By virtue of the partners of the company and the nature of the parent companies, the principle of Livelihood sufficiency and opportunity (everyone having enough for a decent life) is evident. The success of Broll indirectly enhances the ability for example of SSNIT achieving its mission of providing income security for workers in Ghana through excellent business practices and its primary responsibility to replace part of lost income of Ghanaian workers or their dependants due to Old Age, Invalidity, or loss of life.

The identification of stakeholders, what they contribute to the firm and vice versa reflects an appreciation of the impact the company has on society and the impact of society on the company. However, this appreciation is limited in scope in that the company focuses on direct stakeholders to the exclusion of the larger community in which it operates. There is an absence of analysis on whether or not the company has positive or negative influence/impact on the communities in which it manages its facilities, a concern under the principle of intragenerational equity (which is the requirement to ensure that sufficiency and effective choices are pursued for all).

The key strategies identified in the plan are:

- Human resource capacity and development (Goal: Maintain optimum staff levels and a high level of competency in all functional areas)
- Business development (Goal: Achieve sustained growth in portfolio ahead of competition)
- Organisation development (Goal: Achieve organizational sustainability)
- Organisational image (Goal: Build and sustain a positive corporate image)
- Technology (Goal: Apply state-of-the-art technology to all processes to enhance service delivery)
- Service delivery capacity (Goal: Improve the organization's capability to deliver services in a manner that is second to none)

The strategies outlined in the plan are largely economically driven and more related to the principle of resource maintenance and efficiency. However, the strategy for human resource capacity development although economically motivated, is evidence of the principle of livelihood sufficiency and opportunity.

#### **4.4 Interviews**

With regard to the interview, the following persons were interviewed:

- Head of Facilities Management Department
- Senior Facilities officer

The interviews were transcribed and together with the strategic plan were analysed manually using thematic analysis to decipher themes that were related to the eight sustainability principles identified by Gibson et al (2005). The key questions of interest with regard to each principle as well as the results of the analysis are captured in discussion session.

Head of the facilities management department

**Table 4.3 Summary of responses of Head of Facilities Management Department**

Area of Questioning	Summary of Response
What the Facilities Management Department's Role	Maintenance of the facility to prevent physical obsolescence and ensure its continued ability to generated value and or the quiet enjoyment of clients. This involves cleaning, security, landscaping electrical and mechanical installation maintenance and the like.
Knowledge of Sustainability	The interviewee was not aware of the concept except its English definition. However, once it was explained he could readily relate to the concept and even went ahead to provide applications especially in relation to building i.e. green buildings
Is sustainability a key objective of Broll Ghana?	The interviewee admitted that sustainability is not an objective explicitly espoused or articulated by Broll. However, he did emphasise that sustainability is key to the sustenance of the business of facilities management because of the core aim of ensuring maintenance and efficient use of resources to ensure the ability of the facility to support business or facilitate social well being
Challenges to implementation of sustainability especially in the management of facilities and Steps to encourage sustainability	The major challenge identified by the interviewee was the influence of the client in dictating the management of the facility in the light of him/her being the economic power house. He also spoke on the absence of regulation and incentives to encourage behavioural change

## **Interview of Senior Facilities Officer**

Knowledge - the Facilities manager interviewed was very knowledgeable in the concept of sustainability. This knowledge had been acquired recently during a master's programme with a course on sustainable construction. In explaining the concept, he made adequate reference to the three dimensions and the relationship between dimensions. In his opinion he felt that although there were certain practices that could be considered sustainable, the practice of facilities management had not truly applied the principles of sustainability comprehensively and holistically in Broll. This he said was largely due to a lack of awareness of the concept.

Job requirements - The job requirements for managing a property often include the following responsibilities:

- Ensure the continuous supply of all services - water, electricity, external cleaning, refuse and sewerage removal, security
- building inspections
- Employ and effectively supervise the on-site employees assigned to the property, including if applicable, caretakers, internal cleaning and security staffs
- Draw up a detailed maintenance plan
- Air-conditioning maintenance and management
- Firefighting and safety equipment maintenance and management
- Plumbing installations, maintenance and management
- Lift maintenance and management and purchase of consumables
- Communal Janitorial services
- Waste management



- Generator set maintenance and management and purchase of Consumables
- Security, Health and safety including Enforcement of Health and Safety Standards and Security Regulations /Standards
- Lighting and electrical systems maintenance and management
- Fire Fighting equipment, its maintenance and management
- Garden Maintenance
- Swimming Pool Maintenance
- Fumigation of the Premises
- The collection of Service Charges
- Drawing up Service Level Agreements

The interviewee was asked to describe how sustainability could be applied in the conduct of the above responsibilities and if they were being applied by Broll in the management of its facilities. Excerpts from his responses are provided in Table 4.2.

**Table 4.4 Application of Principles in Facilities Management Responsibilities**

<b>Principle</b>	<b>Job responsibility</b>	<b>Possible application</b>	<b>Actual Application in Broll</b>
Economic	Ensure the continuous supply of all services - water, electricity	In the supply of services such as water and electricity, a practical application of a sustainability principle involves the judicious use of the resources. Monitoring, energy audits and use of energy efficient appliances	In managing the current facility however, energy audits and monitoring is not done and so avenues for more efficient use of services are not identified. Furthermore, appliances, fixtures and fittings are already installed in the facility prior to the engagement of the FM. Hence although the opportunity exists, it is not utilised.
Environment	Waste management	Waste if not managed properly can easily contaminate the environment. Sustainable waste collection tries to reduce the generation of waste, encourage recycling and reuse of waste.	Currently, the form of waste management in the facility is the collection of waste by private waste collectors. Waste recycling and reuse is not done. The waste generate is neither sorted nor segregated and is mostly taken to dump sites.
Social	General maintenance services e.g. cleaning and gardening	These services offer the opportunity to create healthy and safe environments that encourage the wellbeing of occupants and their ability to carry out their work or enjoy the facility	In the management, the facility this is a key objective which is actively pursued especially for the homeowners or occupiers. Issues like security, cleaning, fumigation of premises (to keep away insects and disease causing organisms) and the like is of prime concern. These social related services are however for the access and enjoyment of occupiers of the facilities
Socio-economic	Employment of service providers	This is also a key avenue for influence with regard to issues of sustainability. This duty can be exploited to ensure the creation of job opportunities and provision of decent pays and benefits	In the management of each facility, various persons are employed to carryout various services. Even with the residential facilities, a minimum of ten persons is required not counting the indirect creation of jobs through the use of service providers. Hence even the residential facilities division employs well over 100 persons not counting the direct employees of Broll.

## **Discussion**

In the assessment of the application of each principle, key questions of interest were asked to illicit findings.

### **4.5.1 Socio-ecological system integrity**

*Key question: Do activities conform to environmental standards defined by statutory regulations in the country?*

In the strategic plan, reference is made to the need to adhere to all statutory regulations which is likely to include regulations related to the environment as regulated by the Environmental Protection Agency (EPA) although this is not specifically mentioned. However, in the interview with the HOF, he did mention specifically the regular supervision and requirements to adhere to EPA standards. Adherence to this principle is to a large extent motivated by statutory requirements of the country.

### **4.5.2 Livelihood sufficiency and opportunity and intragenerational equity**

*Key questions: Is there provision of decent pay conditions of service (economic security) for persons (Facility officers, service providers, handymen etc.) employed in the management of facilities?*

*Do employees work under reliable and safe conditions (e.g. availability of toilet facilities, safety gear and equipment)?*

*Are pay scales and benefits equal across all direct and indirect employees involved in the management of the facilities?*

The management of facilities creates employment avenues there by offering opportunity for people to earn money for a decent life and access basic amenities. Creating reasonable conditions of service for employees in order to encourage retention is a strategy in Broll's strategic plan - *“Reduce staff attrition rate and subsequently maintain the rate at the barest minimum through application of welfare packages and improved staff conditions.”*

Employees directly employed by Broll Ghana Limited are often better paid than those employed by the service providers (e.g. cleaners, handymen etc.). Broll employees also have access to other benefits related to accessing health services (private health insurance) and have a pension scheme they subscribe to and the like. This is often not the case for other employees involved in managing facilities but are actually employed by the facilities they serve rather than directly by Broll (e.g. cleaners and handymen).

This principle of sustainability is one which is of key importance to Broll and actively applied to enhance the standard of living of its employees. These conditions are however are not equal across board. The clients often dictate the conditions of service for employee employed by a particular facility for facilities management services since clients are directly responsible for paying for these benefits. Although Broll tries to negotiate fair conditions of services, the final say lies with the clients they serve.

#### **4.5.3 Intergenerational equity**

This principle has a long-term outlook focussed on assessing whether current practices create Sustainable/enduring value for future generations. This principle was

overlooked in this assessment because an adequate assessment ideally requires more of a longitudinal study.

#### **4.5.4 Resource maintenance and efficiency**

*Key question: is there waste management, efficient use of resources – particularly energy and water in the management of facilities?*

Water use in managing the facilities e.g. cleaning is less monitored and controlled than electricity. Electricity is often prepaid and the equivalent monetary value of power used is immediately observed hence serves as a high incentive for ensuring efficiency in its use. Furthermore, utility rates for power are higher than for water. Aside waste collection, no efforts are made to reduce waste, reuse or recycle waste.

#### **4.5.5 Socio-economic civility and democratic governance**

*Key question: Is Decision-making with regard to managing facilities participatory, transparent and all-inclusive especially when it comes to issues related to sustainability (people affected must have the right to participate in decision-making)?*

The ultimate decision-making units in the management of facilities are the homeowners. Nevertheless, the facilities managers are often engaged and relied upon to provide advisory services. Sometimes some facilities provide avenues for occupiers or residents to contribute to decision-making through the organisation of residential meetings. Consequently, decisions on sustainable ways of doing things is largely dictated by the Homeowners.

#### **4.5.6 Precaution and adaptation**

Key question: *Is there Prior evaluation of activities to show their likely impact on sustainability as a basis for decision-making?*

No such evaluation or assessment is done since sustainability is often not a concept that is considered at all as a basis for decision-making

#### **4.5.7 Immediate and long term integration**

Key questions: *Are all the seven other principles applied at once in FM at Broll?*

*Is equal importance given to all the principles of sustainability?*

Although there are certain sustainable principles that are practiced with regard to Facilities management in Broll Ghana, it cannot be said that the practice is entirely sustainable and the application of the principles are often minimal or rudimentary.

#### **4.6 The factors that influence the application of sustainability in the practice of facilities management at Broll Ghana**

The minimal application of the principles of sustainability in facilities management at Broll is largely a lack of knowledge and awareness of the concept of sustainability. This is evident from the survey and interview responses with regard to knowledge of the concept. Following from this lack of knowledge is the lack of a sustainability agenda underpinning the vision, mission, core values and strategies of the firm as a whole. In order to adequately apply the principles of sustainability, they must be totally embedded in the fabric of the organisation and foundational to all its activities.

Another major hindrance is the major influence the Clients/ homeowners have in the management of their facilities. Even in instances where opportunities have been present for the application of one principle or the other, clients have often vetoed the decisions in favour of purely economic benefits to themselves. The HOF in his interview provided instances (World Bank Head Office) where clients who drove the sustainability agenda encouraged the application of the principles even in the management of their facilities.

In an environment where clients are largely driven by economic gains, statutory regulations and incentives can prove to be reliable means of coercing clients into pursuing a sustainability agenda. The lack of statutory regulations and incentives is another hindrance to the practice of sustainable facilities management

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents conclusions and recommendations on the results from the study. The contributions that the study makes as well as limitations of the study are provided.

#### **5.2 Research Conclusions and Contribution**

The main aim of the study was to assess how the concept of sustainability has been applied in the practice of facilities management in Ghana using the case of Broll Ghana Limited. From the study, it can be concluded that although there are certain sustainable principles that are practiced with regard to Facilities management in Broll Ghana, it cannot be said that the practice is entirely sustainable. This conclusion is in the light of the dictates of the principle of immediate and long term integration which requires that all the other seven principles by Gibson need to be applied “at once, seeking mutually supportive benefits and multiple gains” without compromising individual principles. However, there is a dominance of economic considerations in decision making which is typical of most businesses (Morrison-Saunders and Hodgson, 2009). Beyond economic benefits, people are beginning to show interest in how companies operate and treat their employees. Furthermore, there is no explicit or overt acknowledgement or pursuit of sustainability as a concept in the practice of sustainable Facilities management in Broll Ghana Limited. In fact, very few personnel even had knowledge of the concept of sustainability.



This study makes contributions to both theory and practice. Theoretically, few studies in Ghana have studied sustainability using an overarching framework as done using the Gibson principles in this study. Furthermore, few studies if any have specifically looked at the application of sustainability principles in the practice of facilities management in Ghana. Practically, this report can form the basis for guiding decision making in Broll specifically and other like organisations as to how to practically and comprehensively apply the concept of sustainability to the practice of facilities management in Ghana.

### **5.3 Limitations and Recommendations for further research**

Sustainability considerations are comprehensive and require that case and context specific considerations are identified in developing assessment criteria. The study employed desk study - looked at documentary sources to guide the formulation of specific considerations which were kept as simple and concise as possible given the limitations of time. It is therefore recommended that further studies may build upon this one by including more indicators that expand the assessment criteria. Also, experts can be used in the development of such case and context specific assessment criteria.

The study also was limited to assessing whether a particular principle has been applied in some way or not without specifically looking at the extent of application.

Practical challenges such as availability of data and confidentiality of information as well as privacy also limited the depth to which certain aspects of the various principles could be studied.

It is recommended that Broll Ghana Limited develops a sustainability agenda which should include knowledge and awareness creation amongst relevant stakeholders as well as training. This agenda should be securely woven into the key objectives of the company. Taking a close view of the reasons for the application of sustainable FM, excess costs can be reduced and substantial cost savings can be made via the establishment and application of strong and effective energy-management policies.

#### **5.4 Conclusions**

The concept of sustainability has gradually increased in awareness and is a key consideration in public and private organisations across the globe hence any company like Broll Ghana Limited that seeks to be competitive globally needs to align itself with such key considerations that underpinned the work of globally competitive organisations.

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## **APPENDIX 1**

### **QUESTIONNAIRE**

#### **ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT**

Kindly answer the following questions (maximum of 11) without making reference to other materials outside of the questionnaire

1. Have you heard the term sustainability?

Yes (   )

No (   )

#### **ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT**

2. How did you come to know about sustainability?

3. What does the term sustainability mean to you?

#### **ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT**

4. What does your job entail as a facilities officer/manager?

#### **ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT**

Sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. An organisation that acts sustainably conducts its activities in a manner that integrates/balances environmental, social and economic concerns.

5. In your opinion, is sustainability a key objective within your organisation

Yes (   )

No (   )

I do not know

6. From the above definition, is sustainability applicable to the work you do as a  
Facilities Officer/Manager

Yes (   )

No (   )

I do not know

#### ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT

7. How does sustainability feature in your everyday activities as a facilities manager?

(Provide examples)

#### ASSESSING SUSTAINABLE PRACTICES IN FACILITIES MANAGEMENT

8. Please indicate how long (in years) you have worked as a facilities officer/manager

9. Please indicate how long (in years) you have worked with Broll Ghana Limited

10. Are you a member of a professional body/bodies?

Yes (   )

No (   )

11. Please provide your all educational qualifications (Include programme of study and year of qualification)

e.g. MSC Procurement 2006, BSC Building Technology 2002 etc.

Please provide your email address (a summary of the results of the survey will be sent to you)

THANK YOU!!