

COMPARATIVE ANALYSIS OF PROPERTY MAINTENANCE IN PUBLIC AND PRIVATE INSTITUTIONS: LESSONS FROM A DEVELOPING COUNTRY

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Maintenance is critical to the longevity of buildings either in terms of their physical or economic lifespan. However, there is disparity between property maintenance attitudes in public and private institutions. Despite its relevance, property maintenance has received minimum attention across both public and private institutions. Institutions are mostly concerned with the core business of their organizations to the neglect of property maintenance functions which are incidental to the achievement of organizational goals. The main aim of this research is to assess property maintenance practices in both private and public institutions in Ghana.

The research relied on questionnaires, interviews and field observations to gather relevant data to support the research. The paper analysed the views of 314 respondents comprising questionnaires to building users as well as interviews with staff and Estate Managers of selected institutions namely Christian Service University College, D&D Academy, Kumasi Polytechnic, Kumasi Senior High School and Kotei Roman Catholic Basic School.

Data revealed that property maintenance in both institutions was ad hoc in nature and was not guided by any documented maintenance policy. Thus maintenance was mainly unplanned and corrective and undertaken upon occurrence or failure of a component or when it is deemed necessary. The results show that inadequate funds, inadequate staff to undertake maintenance activities, non-involvement of property managers at design stage, delayed-response to maintenance requests and general apathy towards maintenance are challenges to property maintenance.

The paper recommends that maintenance should be guided by a well-documented Maintenance Policy, which supports planned and preventive maintenance; a maintenance fund should be setup, and maintenance departments should be adequately staffed. It further recommends that property managers should be duly represented from inception to completion stages of construction.

Keywords: Comparative Analysis, Property Maintenance, Public Institution, Private Institution, Property Management

1.1 Introduction

The backlog of repair and maintenance work required to bring the country's stock of properties to acceptable standards continues to grow at an increasing rate. This is as a result of the little attention being given to maintenance activities in the built environment (Chanter and Swallow, 2008). Though ordinary 'wear and tear' in buildings cannot be avoided, when effective and efficient maintenance interventions are put in place, buildings and their components can stand the test of time to perform their intended functions (Shohet et al., 2002; Lavy and Shohet, 2004). Thus, taking cognizance of the economic life of every building, a building through good maintenance can continue to perform its functions effectively. Unfortunately this measure of enhancing the continuous functionality of buildings is often not utilized.

However, the increasing complexity of the construction industry coupled with social, economic, environmental and technological changes has resulted in the need for change of policies and practices to ensure functionality of the built environment for a sustainable built environment (Holm, 2003). In the move towards ensuring functionality of the built environment, property maintenance is one key concept that cannot be overlooked.

Well maintained properties enhance value and give a sense of comfort and safety to users. To this extent, where repair is not feasible, maintenance of buildings should be viewed to include replacement of components, fittings and elements of construction with modern materials to meet the current regulations and standard (Barrett and Baldry, 2009).

Despite the huge capital requirements of property development, and more especially of the fact that public sector properties constitute a considerable source of hoards of tax revenue (Hauer et al, 2000), public and private sector properties are in very dreadful conditions, with most of them either dilapidated or have been completely abandoned.

Properties in both private and public institutions are subject to various maintenance generators including environmental conditions, user activities and changing standards. This is however not always accompanied by remedial interventions to mitigate their effects. Deterioration in buildings deprives them of their ability to perform their required functions and hence the need for effective maintenance.

In most cases, institutions continue to expend resources in developing new properties to the neglect of maintaining the existing stock of properties. To worsen the situation, deteriorated properties that are, if maintained, capable of continuing to perform their intended functions, are sometimes completely abandoned in anticipation of new properties. Observing this phenomenon, Vonnegut (1990) asserts that "another flaw of the human character is that everybody wants to build but nobody wants to do maintenance".

Property maintenance has often been assumed to receive minimum attention from public institutions which suggests a disparity between property maintenance in public and private institutions. According to Thorncroft (1965), private estates will gener-

ally have contrasting aims and policies to those of a public authority and an individual will manage his estate on quite different lines to a large corporation. Contrary to this view, it goes without saying that like public institutions, not so much has been done by private institutions in terms of property maintenance and that property maintenance in private institutions is given attention. This paper sought to identify and compare maintenance practices in both private and public institutions so as to proffer recommendations to ensuring good property maintenance practice in Ghana. For this purpose, three public institutions and three private institutions in Ghana were chosen for the study.

Specifically, the paper sought to:

- Assess the current condition of properties in public and private institutions.
- Identify the maintenance practices in the selected institutions.
- Compare property maintenance in public and private institutions.
- Recommend practical ways of ensuring effective property maintenance in public and private institutions.

1.2 Methodology

The study employed both qualitative and quantitative research designs. Primary data was gathered through the use of survey questionnaires. The survey questionnaires comprised both closed and open-ended questions and were self-administered. The choice of this research instrument was appropriate as the study basically dealt with literates. The questionnaires were supplemented with unstructured interviews and personal unbiased physical observation. Secondary data on the other hand were from existing literature, statistical data, annual reports, maps, graphs, charts and photos collected from documented sources and electronic sources.

In order to achieve the research objectives, the researchers employed non-probability sampling technique to carry out the study. Purposive sampling technique was used in selecting the institutions to be studied. The same sampling technique was used in collecting relevant data; the researchers, adhering to the research objectives of the study, selected respondents who could give such relevant data. The paper considered a sample size of three hundred and fourteen (314), comprising 150 residents/users of properties in three Public Institutions and another 150 residents/users of properties in three Private Institutions. In addition, fourteen (14) respondents were interviewed namely, the estate manager of Kumasi Polytechnic, estate manager of Christian Service University College, six staff each of Kumasi Senior High School, Joy Standard Senior High School, Kotei Roman Catholic Basic School and D&D Academy.

Both qualitative and quantitative data analysis techniques were employed in analyzing the data gathered from the survey. In the qualitative analysis, researchers observations and impressions were relied on whiles employing the highest form of objectivity. Quantitative data were analyzed to generate charts and tables using the Statistical Package for Social Scientist (SPSS), computer software used for statistical data analysis.

1.3 Scope of study

The study was limited to properties of selected private institutions namely, Christian Service University College, Joy Standard Senior High School and D&D Academy and public institutions namely, Kumasi Polytechnic, Kumasi Senior High School and Kotei Roman Catholic Basic School all of which are in the Kumasi Metropolis of the Ashanti Region of Ghana. It examined the maintenance condition of properties in the selected public and private institutions. The study also considered the general attitude towards maintenance by identifying and comparing the various maintenance practices and challenges in the selected institutions, and recommendations made thereon.

2.1 Concept of Property Maintenance

Any object that may lawfully be acquired or owned which may normally but not necessarily have value is referred to as property. According to Barlowe (1972), property is seen as the exclusive right of possessing, enjoying and disposing of a thing or the exclusive right to control an economic good. To this extent, property means more than physical tangible objects. It also includes the intangible rights of use and possession of an asset. Property can generally be seen as a thing or things that are owned or possessed by a person, a group of persons, institutions and /or government. However, property within the context of this paper will often be referring to the buildings owned by the institutions under consideration.

According to the British Standards Institute maintenance is defined as “works undertaken in order to keep or restore every facility i.e. every part of a building, site and concept to an acceptable standard” (BS 3811). From this definition, property maintenance involves keeping a building or any part of it, the object of which is to prevent or minimize defects from developing. It also means taking steps to ensure that the building or any part of it does not fail or malfunction. To maintain also means to restore. That is, to bring something back to its previous position. Restoring a building involves rectifying the defects in the building so that it can perform its required functions. That is, defects having already occurred and steps undertaken to correct them defines maintenance. Maintenance also entails the concept of acceptable standards. According to Wordsworth (2001) the maintenance acceptable concept is referred to as acceptability of the person who is paying for the work to the person receiving the benefit or to some outside body with the responsibility for enforcing minimum standards. The standard of a building will be deemed acceptable if it conforms to modern design and statutory principles and enables the building to perform its required functions satisfactorily. Acceptable standard is defined as one which sustains the utility and value of the facility. Maintenance therefore is all the necessary work done to preserve a building with its furnishes and fittings, so that it continues to provide the same or almost the same facilities, amenities and serves as it did when first built.

2.2 Types of maintenance

Various authors have attempted classifying maintenance into types, with each author's classification informed by how he perceives the concept, the idea he intends to communicate, as well as the objectives he seeks to achieve. Amidst various classifications the most referred to, is the BS3811 which identifies the following classes or types of maintenance:

PLANNED MAINTENANCE: is one that is organized and carried out with forethought. The execution of planned maintenance is always in response to the provisions or requirements of a predetermined plan. The maintenance is planned in terms of time, nature and scale.

UNPLANNED MAINTENANCE: These are work executed without forethought or planning. Works here are normally corrective in nature and it will include emergency work and this will be carried out in tandem with planned maintenance.

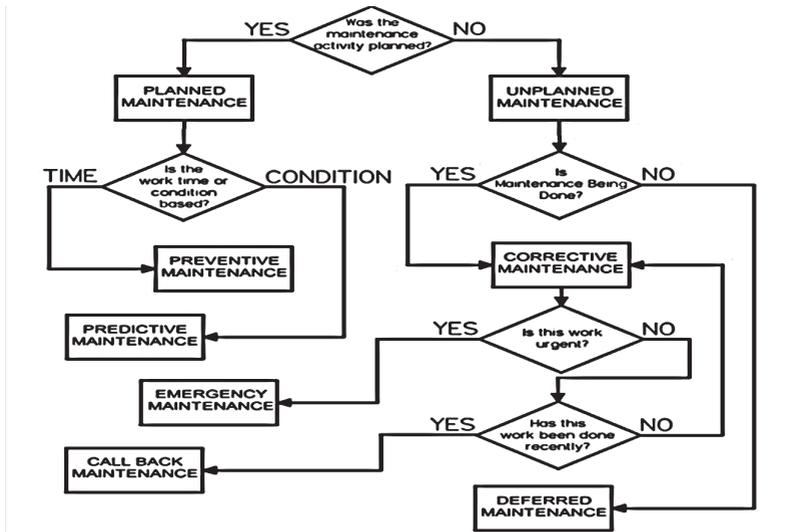
PREVENTIVE MAINTENANCE: is carried out at predetermined intervals or corresponding to prescribed criteria and intended to reduce the probability of failure or the performance degradation of an item. Preventive maintenance involves periodic adjustment, lubrication and inspection of mechanical or other equipment to ensure continuing working condition. It also involves de-silting of gutters and inspection of pipelines to avoid blockages.

CORRECTIVE MAINTENANCE: is carried out after a failure has occurred and intended to restore an item to a state in which it can perform its required function. This type of maintenance is sometimes referred to as reactive breakdown, failure based, run to failure or unplanned maintenance is the simplest type of classical maintenance policies where an item is used until it breaks/faults with the only activity centering on repair and servicing of the parts. Corrective maintenance is dangerous to adopt always and is basically an attempt to restore a function that have unnoticeably reached an unacceptable level. According to Lind and Muyingo (2012), corrective maintenance is justifiable when the impact of failure is rather small.

EMERGENCY MAINTENANCE: is maintenance which is necessary to undertake immediately to avoid serious consequences. They are mostly maintenance resulting from unexpected asset breakdowns and are difficult to schedule as compared to other maintenance types. The goal for any programmed maintenance program is to address 100% of the maintenance requirements for each building component. However, things break unexpectedly, a component fails early, or a preventive maintenance procedure proves to be inadequate. Under any of these conditions, maintenance and repair that has not been programmed is required (Stanford, 2013). Though not predictive, with good preventive maintenance, the frequency of emergency maintenance occurring can be reduced.

DEFERRED MAINTENANCE: is not carried out immediately after fault detection but is delayed in accordance with given maintenance rules.

Figure 2.1: Types of maintenance

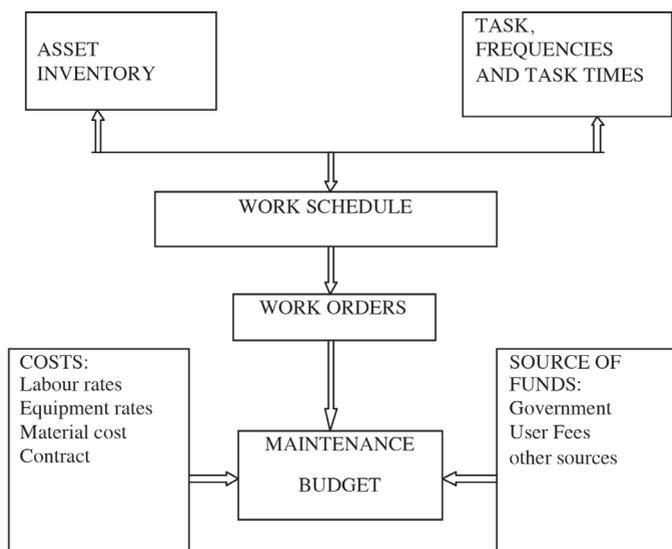


Source: Cruzan, 2009

From figure 2.1 there are basically two broad categories of maintenance giving rise to other types of maintenance. These two categories are planned and unplanned maintenance. Thus where the maintenance activity is carried out with forethought, it is planned maintenance. In the absence of such fore thinking regarding maintenance it is regarded as unplanned. When planned maintenance is time based it is regarded as preventive maintenance, otherwise if it is condition based such maintenance activities are regarded as predictive maintenance. An unplanned maintenance activity if undertaken is referred to as corrective maintenance. Where an unplanned maintenance activity arises but which is not undertaken, such maintenance is said to be deferred. Again, where a corrective maintenance activity is urgent and poses safety threats, if it is so carried out, it will be regarded as emergency maintenance. On the contrary, if the activity is not urgent but is undertaken, it becomes call back maintenance.

2.3 The Maintenance Management Process

Figure 2.2 illustrating the maintenance management process



The maintenance management process (source; TID-AM-01, 2000)

Maintenance management is a process requiring various tasks and resources to undertake such tasks. As illustrated in figure 2.2 the process involves various stages for its successful implementation:

INVENTORY: is a list of physical features (area, material, etc.) of capital assets that require maintenance. The types of data to be kept vary with the maintenance activity and the task required.

TASK STATEMENT / FREQUENCY / TASK TIMES: a task statement is a detailed list of the generic maintenance tasks to be performed for a particular type of asset in conducting preventive or routine maintenance. Frequency refers to how often the maintenance tasks are performed, for example, daily, weekly or every five years. Task times indicate how long it will take to do such an amount of work. Each task statement relates to a specific type of maintenance activity appropriate for an asset. A component of an asset, such as a boiler in a building, may require maintenance checks weekly, monthly, quarterly, and/or annually. To prepare a set of tasks applicable to a particular asset, one should review the physical features of an asset to determine the maintenance tasks, task times and frequencies required. For emergency or reactive type work orders, the maintenance tasks and estimated task times will have to be assessed based upon the problem occurring.

WORK SCHEDULE: the work schedule lists all maintenance work to be done for the whole year for each asset. It can be used to identify work load peaks and valleys, i.e., where load balancing overtime and/or part-time help is needed. It also serves as a basis for preparing and issuing scheduled work orders and for preparing the maintenance budget.

WORK ORDERS: work orders provide information on what, where, when, how long and by whom maintenance is to be carried out. Work orders are prepared from inventory data (physical features) and task statements. Each work order lists tasks for the same frequency of work and for the same asset.

MAINTENANCE BUDGET: a maintenance budget is a cost projection based on the costs of labour, equipment, material and other items (such as contracts) required to do all work identified in the Work Schedule. After the costs are calculated for one work order, the process is repeated for the remaining work orders to get the total cost required to maintain the asset. The maintenance supervisor is responsible for monitoring the actual expenditures against the budget for the year. He or she is also responsible for its yearly update using forecast labour rates, and material and service contract costs. The updated budget would be used for determining the operation and maintenance costs of the physical assets.

2.4 The legal framework of property maintenance

In some jurisdictions maintenance is not merely an activity initiated to satisfy the needs and or requirements of property users. Apart from having to prolong the lifespan of buildings and also to give them a suitable appearance, maintenance is also carried out in conformity to legal requirements. The British system provides the statutory context within which activities relating to listed buildings, including maintenance, should operate. In England and Wales, the primary legislation that seeks to regulate maintenance is the Planning (Listed Building and Conservation Areas) Act 1990. The Act requires owners of listed buildings to seek permission (Listed Building Consent) for changes which 'would affect its character as a building of special architectural or historic interest' (c.7, Chapter II, paragraph 7). Such changes may, to a greater or lesser extent, include some maintenance works. Section 54 of the Act further enjoins Local authorities to serve an urgent works notice where they consider that the owner has allowed an unoccupied listed building to fall into a state that threatens the 'preservation' of the building.

Similarly, the United Kingdom Town and Country Planning Act 1990, sets out the planning powers that local authorities and the Secretary of State may use, though there is no specific reference to maintenance in this Act. However Section 215-219 of this Act enables local authorities to force a landowner to undertake remedial works to land (and by implication buildings) if the 'amenity is adversely affected by the condition of land in their area' This provision enables local authorities to force an owner to undertake maintenance or repairs or for the local authority to enter the land in

order to undertake the work and reclaim costs. There are no compulsory purchase powers available under this section. The Occupier's Liability Acts 1957 and 1984, the Disability Discrimination Act 1995, the Housing Acts 1985 and 1989, and the Defective Premises Act 1972 are some other Acts which by their provisions imposes the duty to maintain buildings to certain standards under the British system.

Dormant though, building maintenance in Ghana has a legal rooting in the provisions of various Acts or statutes. Section 12(1) of the National Building Regulations, 1996 provides as follows; "A District Planning Authority may, in respect of any building which has in its opinion fallen into a state of disrepair or neglect, and constitutes a safety or health hazard to the public, or for aesthetic purposes serve notice in writing upon the owner of such building requiring him to carry out such reasonable repairs or painting as may be specified in the notice and within such time as may be stated in the notice." By this provision maintenance of buildings takes a form such as that which will be described as a legal responsibility on the part of building owners. Similar provisions such as that in Section 23(1) of CAP 84 as well as Act 462, which seeks to abate nuisance and ensure public safety, are but few provisions giving legal backing to the need for building maintenance.

A flaw in the Ghanaian experience is the manner in which building maintenance is attached legal importance. Most of the laws that affect building maintenance merely make it more of a function of some local authority to bring or cause buildings to be brought into conformity with a plan without making it an obligation and providing standards for individuals to maintain buildings. Specifying required levels of maintenance, who can undertake building maintenance and how it should be done are absent in these provisions. In any case, a singular Act or statute to regulate building maintenance in the country would be a worthy course.

2.5. Maintenance Policy

A policy is a definite course or method of action selected from among alternatives and in the light of given conditions to guide and determine present and future decisions. Dunn (2003) defines a maintenance policy as a long-term plan, covering all aspects of maintenance management which sets the direction for maintenance management and contains firm action plans for achieving a desired future state for the maintenance function. It involves decisions as to the allocation of resources between the various types of maintenance that can be undertaken. In order to choose or develop an appropriate maintenance strategy the firm needs to determine the maintenance requirements of each asset in its operating context and then decide what resources are needed to fulfill those requirements. A maintenance policy should therefore be able to address the following.

Resource allocation

Given the insatiable wants of an organization, the level of priority attached to each want, and constrained by scarcity of resources, building maintenance tends to most of the time compete on unfavorable terms for resource allocation. These resources

may be in terms of time, human resource and finance. The distribution of these resources among various sections of an organization constitutes a heddle for management, since each sector including maintenance issues, extends its relevance in the achievement of organizational goals. Overcoming such a heddle requires a clearly defined policy.

Performance requirements

To what extent performance of maintenance tasks is acceptable is a function of that which is specified by an organization's maintenance policy. Acceptable standards of maintenance need not only be related to technical standards, but also operational and financial ones such as response times and budgets. Thus, the maintenance policy should define required service levels and adhered to especially in contractual arrangements.

Execution of work

A policy will need to be formulated to indicate how maintenance work is to be executed. This will involve consideration of such factors as who executes the work, when and how it is executed, how it is supervised and the relation of the work with other activities in the organization.

Administrative activities

Consideration of work execution requires an assessment of the procedures necessary to administer maintenance operations, and this strikes at the heart of maintenance management. The type of maintenance department may or may not be a result of a carefully formulated policy, but will certainly be a reflection of the parent organisation's attitude to the maintenance of buildings. The increasing tendency towards a partnering and/or outsourced approach increases the demands on these administrative activities but more importantly changes their nature away from the operational towards one of monitoring and control.

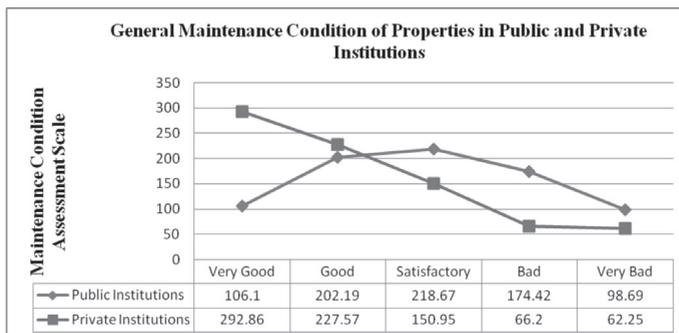
3.0 Results

This section reviews, presents and analyses the results of the data collected during the survey. Adhering to the research objectives, the data obtained from the survey was carefully presented and analyzed in a manner that will aid understanding. The analysis took the form of comparison between public institutions (Kumasi Polytechnic, Kumasi Senior High School and Kotei Roman Catholic Basic School) and private institutions (Christian Service University College, Joy Standard Senior High School and D&D Academy) In effect, the present state and condition of properties, the maintenance practices as well as challenges of property maintenance in the various institutions were analyzed. The analysis made use of tables, charts, percentages and averages to present and explain the data.

3.1. General maintenance condition of properties in public and private institutions

The paper assessed the maintenance condition of some key components of buildings in the various institutions. Respondents were accordingly asked to assess the maintenance condition of various building components and service namely the roof, walls, windows, doors, floors, painting, electricity, lighting, water supply and plumbing works, on a scale of very good, good, satisfactory, bad and very bad . The averages of responses for each component among public institutions were noted as well as the averages of responses for each component among private institutions. The percentage averages computed for each building component or service among public institutions and among private institutions were then summed to arrive at the cumulative percentage average under each assessment scale. Consequently the cumulative averages were used to assess the general maintenance condition of properties in public and private institutions. To form a basis for assessment, structures with components structurally sound with no defects and require only general maintenance and minor repair were those classified as very good. Those classified as being good are almost like that of being very good, only that there are few building systems failures, and allowing little or no interruption to daily use of the facilities .e.g. water, toilet, bathroom, electricity, kitchen etc. Components in satisfactory condition were characterized with slight deterioration and require some corrective maintenance and major repairs; some deferred maintenance exists. Building systems fail occasionally; causing some interruptions in daily use of the facilities. Those in bad condition had the following characteristics: highly deteriorated components and require corrective maintenance and emergency repairs, maintenance activities are deferred most times, and there is interruption in the daily use of facilities due to high building systems failure. To establish how good or bad the condition of a building or component was, the term “very” was used to introduce some kind of measure. Below is a graphical illustration of the general maintenance condition of properties in public and private institutions.

Figure 3.1: Assessment of the general maintenance condition of properties in public and private institutions (cumulative percentage averages).



Source: Field Survey, March 2014

Figure 3 shows the results of assessment of the general maintenance condition of properties in public and private institutions. From the figure 3 the distribution curve for general maintenance condition in private institutions is positively skewed. Thus, the frequent assessments in private institutions are clustered towards zero, while the tail points towards more positive figures on the X-axis. In contrast, public institutions had a near normal distribution curve. The implication is that private institutions are performing better in terms of property maintenance, compared to public institutions. Consequently, while the general maintenance conditions of properties in private institutions were assessed as being very good, that of public institutions were assessed by the majority views as being satisfactory.

Maintenance practices

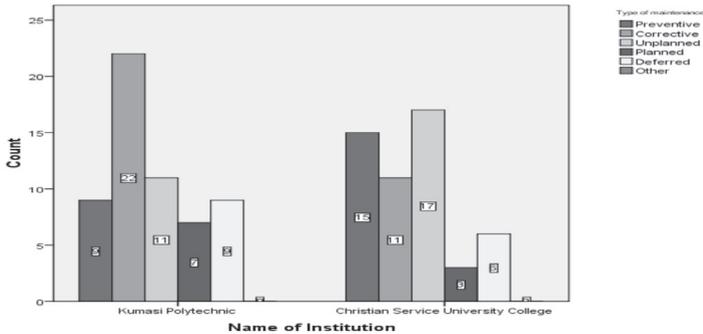
By practices, this section examined in relation to the data collected, the type of maintenance undertaken in public and private institutions, the main maintenance activities carried out in the institutions, the maintenance policy of the institutions, how maintenance is funded as well as property insurance in the institutions surveyed.

Type of maintenance undertaken

Interactions with and questionnaires answered by occupants and users of buildings in all institutions gave a fair idea of the types of maintenance practices carried out by the institutions. Data gathered from all institutions (private and public alike) suggest that maintenance is mostly unplanned, corrective and reactive. Corrective maintenance is dangerous since it is an attempt to restore a function that had unnoticeably reached an unacceptable level and it is only justifiable when the impact of failure is rather small. In Kumasi Polytechnic, 15.5% of respondents indicated Preventive maintenance as the type of maintenance undertaken in by the institution; 38%, 18.9% 12.1% and 15.5% indicated corrective maintenance, unplanned maintenance, planned maintenance and deferred maintenance respectively. See figure 3.2.

The survey in Christian Service University College revealed the following figures: 28.8% of the respondents see maintenance as being preventive; 21.2% corrective maintenance; 32.7% unplanned maintenance; 5.8% and 11.5% Deferred maintenance practices. In the absence of an estate department/unit, interviews with the administration of Joy Standard Senior High School, Kumasi Senior High School, D&D Academy and Kotei Catholic Basic School also pointed to the fact that maintenance in these institutions was mostly unplanned and was carried out as and when a problem was reported or on a need basis.

Figure 4 showing types of maintenance undertaken in each institution (K-polv and CSUC)

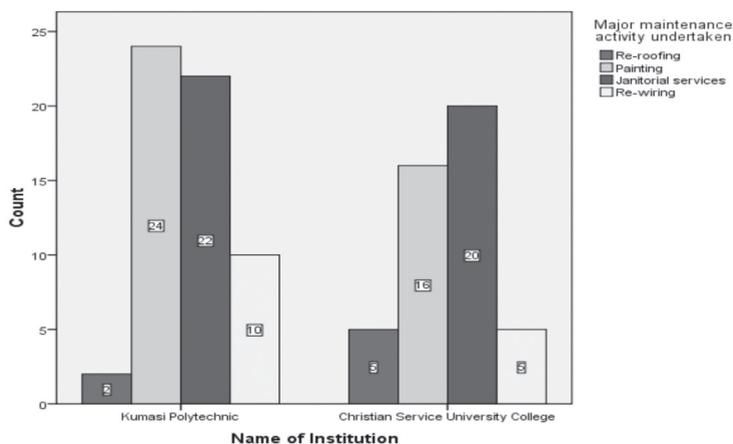


Source: field survey, March 2014

Maintenance activities undertaken

For all the institutions surveyed, maintenance activities undertaken included re-roofing, painting, rewiring and janitorial services. Response from both questionnaires and interviews indicated that apart from janitorial services which were undertaken on daily basis, the other maintenance activities were undertaken as and when necessary. From the survey both public and private institutions undertake more of janitorial services and painting with minimum rewiring and re-roofing. In Kumasi Polytechnic 24 out of 52 respondents representing 41.38% indicated that the institution undertake re-painting, 22 respondents representing 37.93% indicated that the institution provides janitorial services, 10 respondents representing 17.24% stated that rewiring was undertaken and 2 respondents representing 3.45% did indicate that re-roofing was undertaken. Christian Service University College on the other hand recorded a 38.46%, 30.77%, 9.62% and 9.62% response for janitorial services, repainting, rewiring and re-roofing respectively. See figure 3.3 below. In Joy Standard and Kumasi Senior High School, D&D Academy and Kotei Roman Catholic Basic School, maintenance activities were mainly limited to janitorial services and replacement of faulty electrical sockets, bulbs, faulty taps and leaking plumbs, faulty door lockers and broken louvers.

Figure 5 showing major maintenance activities undertaken in each institution



Source: field survey, March 2014

Maintenance policy

A maintenance policy is necessary for the direction and allocation of resources (including human and financial resources) to maintenance tasks. In both public and private institutions surveyed, no such policy existed to guide the maintenance functions in the institutions. Without a documented maintenance policy, it was obvious that a greater percentage of maintenance was carried out upon request or where such maintenance issues have become apparent as a result of system or component failures. By this practice, there will be no standards by which an item should be repaired or replaced. Without a policy, chances exist for either allocating resources to maintenance activities which has minimum impact or non-allocation of resources to maintenance activities which could have significant negative consequences if deferred.

Funding of maintenance

Maintenance, whether major, minor or routine requires a substantial amount of capital for its execution. The researchers' survey indicated that funding of maintenance relies either on internal or externally generated funds. Interviews conducted pointed out that whereas Kumasi Polytechnic depends on both externally (government subventions) and internally generated funds to undertake maintenance, Christian Service University College on the other hand relies solely on internally generated funds for maintenance. In the other four institutions, the trend was that private institutions relied on internally generated funds to carry out maintenance while the public institutions relied on government subventions and the district assembly to fund maintenance. Both public and private institutions complained of the inadequacy of such funds considering the huge capital requirements of undertaking maintenance. For instance in Kumasi Polytechnic the annual amount spent on maintenance averaged

approximately Gh¢80,000.00 whiles maintenance expenditure at Christian Service University College averaged Gh¢17,098.46 as at 2013

Property insurance

Various disasters are associated with the construction and use of buildings. This includes fire outbreaks, earthquakes, flood as well as constructional negligence which sometimes result in the collapse of buildings. To this extent, the researchers sought to know how the properties in public and private institutions were hedged against the occurrence of such disaster. Response to the interview schedules in both Kumasi Polytechnic and Christian service University College indicated that the buildings were insured against fire and other allied perils. Christian Service University College for instance had its properties insured by Enterprise Insurance. However, properties in joy standard and Kumasi senior high school, D&D Academy and Kotei Roman Catholic Basic School were not covered by any insurance policy.

Inspection of properties

Fundamental to good maintenance practice is inspection. Inspection of properties helps identify and rectify maintenance issues before they worsen with time. It was common practice in all institutions surveyed that properties were inspected. However, the intervals within which such inspections were done were what constituted the difference between individual institutions and between public and private institutions. Whiles time intervals for inspection of properties in private institutions were relatively closer, inspection in public institutions were done within lengthy intervals. In Kumasi polytechnic, Kumasi Senior High and Kotei Roman Catholic Basic School, properties were inspected annually, upon request and semi-annually respectively. On the contrary, properties were inspected quarterly, upon request and daily in Christian Service University College, Joy Standard and D&D Academy respectively.

3.4. Challenges to property maintenance

The paper sought the views of respondents on some of the challenges of property maintenance in their respective institutions. Across all institutions, the respondents indicated the following as being challenges to property maintenance.

- a. Non-involvement of property managers from inception to completion stages of the construction process. Property managers mostly not represented in the design and construction of buildings. Their services are only engaged after a facility is completed. This mostly deprives institutions of the expert advice of property managers on the management implications certain designs and the use of certain materials in construction. According to Seeley (1987) it is at the design stage that the maintenance burden can be positively influenced for better or for worse. Unfortunately property managers are exempted from the design team of most construction projects.
- b. Inadequate funds: The successful planning and execution of maintenance work is not without cost implications, yet the availability of funds to carry out maintainan-

ce within stipulated time frames continue to inhibit maintenance initiatives. The inadequacy and unavailability of funds for maintenance was a major challenge to maintenance in both private and public institutions. Not even public institutions which depended on both internal and external sources of funding spared inadequate funding as a cause of poor maintenance. With only internally generated funds to rely on, the issue of inadequate funds was even more crucial in private institutions.

- c. Bureaucracy: When the planning, execution and management of maintenance is fraught with over-complicated or obstructive procedures, it has the potential of turning initially minor maintenance problems into major ones. Indication in both public and private institutions was that the processes involved in getting approval of funds for maintenance is quite cumbersome and sometimes leading to deferred maintenance. This was however more pronounced in public institutions than the private institutions.
- d. Delayed response to maintenance request: deferred maintenance is as a result of failure to respond to maintenance issues as they come up. This practice which was found to exist in both institutions can generate serious maintenance problems if not checked. Respondents indicated that even though maintenance issues were reported for redress, it took considerably lengthy periods to have them resolved. In the many cases, issues which were minor now become major maintenance issues, requiring huge capital sums to rectify.
- e. Inadequate staff: effective maintenance management has got to do with the identification of maintenance task, the personnel to undertake the task and its cost implications. However, from the researchers' survey, majority of responses pointed to the fact that the personnel to man the maintenance and estates department were inadequate. In the worse cases some institutions neither have a property manager nor maintenance unit to execute maintenance functions. In the case of Kumasi Polytechnic and Christian Service University College which had estate departments, each institution comprised at most two estate managers and at most two electricians, plumbers and carpenters. These numbers, considering the size of the institutions and the various maintenance activities associated with their operation as institutions, are inadequate.

Table 1 showing staffing of estate departments in K-polv & CSUC

Kumasi Polytechnic		Christian Service University College	
Personnel	No. of personnel	Personnel	No. of personnel
Senior Estate Officer	1	Senior Estate Officer	1
Assistant Estate Officer	1	Assistant Estate Officer	1
Carpenters	3	Carpenter	1
Plumbers	2	Plumber	1
Electricians	3	Electrician	1
Mansions	2	Cleaners	9
Welder	1		
Air conditioner technicians	2		
Total	15	Total	14

Source: Field Survey, May 2014

- f. General apathy towards maintenance: the mother cause of little or non-maintenance of properties is lack of appreciation of the need to undertake maintenance. This habit reflects in the amount of time, resources and efforts devoted to property maintenance. The study revealed that, while private institutions are hesitant to commit funds to property maintenance which they perceive as been secondary to their core business, public institutions lack that sense of ownership towards public property. For most public properties, the notion is that whatever belongs to the state or public belongs to no one. This notion transcends into property maintenance practices in public institutions, plunging many public properties into a state of disrepair.
- g. Closely related to general apathy towards maintenance was also the issue of top management failing to appreciate the need for property maintenance. This according to the estate manager in Kumasi Polytechnic has led to lack of cooperation between the estate department and top management on issues of budgetary allocations. Given limited resources, other concerns are given priority over property maintenance.

4.1. Conclusion

After a careful assessment of property maintenance in all six institutions, the researchers came to the conclusion that the inadequacy of property maintenance practice in Ghana does not discriminate between public and private institutions. However, data points to the fact that private institutions are doing better in terms of property maintenance than public institutions. In arriving at this conclusion, the major parameters considered were the maintenance condition of the properties and the main-

tenance practices in the two institutions surveyed. This notwithstanding, property maintenance in both institutions is plagued by its reactive nature, nonexistence of maintenance policy, apathy towards maintenance, inadequate staff, inadequate funds as well as institutional bureaucracies. This calls for the need for policy reform and practice to improve the generality of property maintenance in Ghanaian institutions.

The study concludes with the some recommendations which are directed at helping solve the maintenance problems in the country. It is the researchers' hope that these recommendations, if implemented, will contribute significantly to property maintenance in both private and public institutions in Ghana.

5.2. Recommendations

- I. Most institutions in Ghana (public and private alike) do not attach the importance that property maintenance deserves. Many institutions do not recognize even the need to engage professionals in property maintenance. Before now, maintenance was a secondary issue for most organizations and was usually a part of the duties of line managers rather than a completely separate unit of professionals. This perception about maintenance has not been eroded from the minds of many and even where professionals are retained to see to maintenance, cooperation with top management becomes a problem. The researchers recommend public education on property maintenance and formulation of public policies to that effect.
- II. To ensure effective property maintenance, it should be guided by a carefully drafted maintenance policy. The maintenance policy guides both present and future maintenance decisions. It answers the questions of what, who, how and when maintenance is undertaken. The advantage is that it eliminates unnecessary maintenance expenditure where the issues requiring such expenditure are not emergency issues. Also, once the policy sets out when, how and who undertakes maintenance, it makes the work of the people tasked with maintenance much easier and prevents confusion of incoming officers. In view of the numerous benefits of having a maintenance policy, the researchers recommend that such is put in place to guide property maintenance in Ghanaian public and private institutions.
- III. The researchers further recommend that public and private institutions should adopt more of preventive and planned maintenance rather than unplanned and corrective maintenance. This will ensure an early detection and redress of maintenance needs before they occur and worsen with time. It will also save extra expenditure resulting from the culmination of minor problems into major maintenance problems. Though planned and or preventive maintenance may not work perfectly amidst emergency cases and lack of funds, it is imperative that maintenance is always planned and where need be, supported by a reasonable amount of corrective maintenance. The reverse, where majority of maintenance is corrective may sound cheap in the short term, but have serious implications in the long term.

- IV. Public and private institutions should ensure that their maintenance/estate department is adequately staffed with the requisite manpower and that employees have appropriate training to competently and safely undertake and complete the maintenance tasks expected of them.
- V. The researchers recommend as a solution to problems of access to funds for maintenance, the setting up of a maintenance fund into which periodic sums are paid to take care of property maintenance in both private and public institutions. Such fund should be independent and managed separately from all institutional finances.
- VI. There is the need for institution of a maintenance awards scheme for public and private institutions at the National, Regional and District levels to award institutions that have effectively ensured maintenance of their buildings. This will demand that taskforce from the Ministry of Water Resources Works and Housing and other relevant Ministries periodically inspect the condition of building components various institutions.
- VII. The genesis of maintenance problems starts from design and choice of construction materials. It is therefore recommended that public and private institutions engage the advice of maintenance professionals including maintenance managers, facilities managers and estate managers on the maintenance implications of some designs and construction materials. Thus these professionals should be made part of the construction process right from design through to handing over and management.

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