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BUILDING MAINTENANCE SYSTEMS OF PUBLIC HEALTH INSTITUTIONS IN GHANA: A CASE STUDY OF LA GENERAL HOSPITAL – ACCRA

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Abstract
It is highly desirable but hardly feasible to produce buildings that are maintenance free although much can be done at the design stage to reduce the amount of subsequent maintenance works. The research aim was to examine the various maintenance systems in use at La General Hospital in Accra. Field surveys and administration of questionnaires were used to collect the data. Most of the building structures in the institution have outlived their service period. Corrective maintenance was found to be in use and was ineffective in ensuring prompt remedial works. The level of manpower required (skilled) was also lacking. In view of these findings and by way of recommendations, it was suggested that management should adopt a maintenance policy for effective use in the institution and the entire scheme of corrective maintenance be re-structured. Furthermore, training, seminars and workshops should be organised for estate/maintenance officers to update their knowledge with regard to effective maintenance practices.

Keywords: public health institutions, building maintenance systems, La General Hospital

INTRODUCTION

The mere sustenance of human life points to the fact that maintenance is of importance if there should be continued existence. Building maintenance has recently been a neglected field of technology, being regarded by many as a 'Cinderella' activity. There is little glamour in building maintenance; it is unlikely to attract very much attention and is frequently regarded as unproductive although many of the managerial and technical problems are more demanding of ingenuity and skill than those of new works, as declared by Seeley (1976), in his explanation of building maintenance.

Once there are structures, it will remain impossible to run or utilise them if maintenance is not practised. Maintenance on public buildings such as hospitals must be systematic and scheduled in order to save costs, lives and at the same time provide safety and comfort to occupants in the buildings. The level of maintenance of buildings in any country is invariable directly related to the strength of its economy. This is the only way by which meaning can be given to building construction and for that matter maintenance (Miles, 1978).

Many maintenance systems have evolved with time and user needs, which are abundantly clear in the survey undertaken at the La General Hospital in the Accra Metropolis The financial forecast and funding on the various maintenance systems available were determined to ascertain the level of manpower required for the maintenance systems already in place. This study focused on the relevance of the maintenance systems available vis-à-vis new systems that could be integrated into existing ones to provide a basis for the maintenance of buildings for the aforementioned purpose.

STATEMENT OF THE PROBLEM

Many building owners and institutions have neglected the desire and need for a comprehensive maintenance culture on their buildings. This may be through ignorance of the maintenance systems available or lack of appreciation of the need for maintenance. As a result of this, many institutions have placed a very low premium on the need to have consistent maintenance systems in place. This attitude has created a cause for concern. Most public health institutions have lost their architectural and aesthetic appearances and are fast deteriorating, leading to high cost of renovations thus making the occupants uncomfortable. At La General Hospital, the various systems in place were not effectively practised. Thus, it was imperative to ensure that the various maintenance systems put in place especially, in the institutions were very effective as far as cost and quality were concerned.

PURPOSE OF THE STUDY

This study examined the various maintenance systems in use at La General Hospital. The following specific objectives were used to achieve the aim of the study:

- To establish the various types of maintenance systems in use, their effectiveness;

- To establish the level of manpower required for maintenance systems and their sources of funding;
- To identify the types of institutional structures;
- To make recommendations on the appropriate maintenance system to use.

LITERATURE REVIEW

Building maintenance authorities, including professionals have sought to define maintenance within the scope of their work. This has given rise to many diverse definitions, all pointing to the fact that maintenance as it was brings about value, restoration and beauty. Lee (1987) defined maintenance as 'a combination of any action(s) carried out to retain an item in or restore it to an acceptance condition'. On the other hand, R.I.C.S. (1990) defines building maintenance in the context of work which is undertaken in order to keep, restore or improve every facility, that is, every part of a building, its services and surrounds to a currently acceptable standard, and to sustain the utility and value of the facility. A more refined definition from BS3811 states categorically that maintenance is 'work undertaken in order to keep or restore every facility, that is, every part of a site, building and its contents, to an acceptable standard' as indicated by Seeley, 1985.

THE CONCEPT OF BUILDING MAINTENANCE IN GHANA

Building maintenance as pertaining in Ghana is nothing so conspicuous to write home about, yet evidence has shown that it is imperative to the sustainability of socio-economic life of the country. Hitherto, most companies that owned estates took ad hoc measures in trying to maintain their properties. The attitude portrayed was held to be negligent in that buildings were usually allowed to deteriorate before maintenance was done. In this way, the costs of maintaining the buildings became unbearable as the repairs required exceeded the cost of putting up the buildings. According to Seeley (1985) leaving buildings to dilapidate is a general phenomenon as property owners frequently endeavour to keep maintenance expenditure to a minimum, ignoring or misunderstanding the adverse long-term effects of such a policy.

IMPORTANCE OF MAINTENANCE

The built environment expresses in the physical form, the complex social and economic factors which give structure and life to the society. The condition of a building is a reflection of public pride and the level of prosperity in the areas. It is also a reflection of social values and all the many influences (both past and present) which combine to give a community its unique character. A committee on Building Maintenance asserted that building maintenance was of great significance to the economy, not only because of the scale of expenditure involved, but also because of its importance to ensure that the nation's stock of buildings, as a factor of production and accommodation, was used as effectively as possible as indicated by Lee (1987) and Seeley (1985). Dilapidated building structures generally depict a decaying environment and mostly depress quality of life in the society. Maintenance decisions are mostly based on convenience and for a period, represent a series of ad hoc compromises between the immediate physical needs of the building and the availability of financial resources. The benefit to be derived from systematic maintenance is taken for granted and quite often, very little effort is done to rectify these problems. The element of the built environment accounts for about two-thirds of the capital stock of the nation. This does not only represent the wealth accumulated over the decades but is also a crucial factor in the production of new wealth. This production of the value and utility of the stock of buildings is thus essential to the total well-being of a nation.

In statistics released in the report entitled: State of Ghana's Economy and published by ISSER (1996), it is pointed out, for instance, that the Public Works Department has a programme to rehabilitate more than 21 963 Government buildings nationwide over a period of 20 years. In 1993, however, only 39 out of the 120 earmarked buildings could be rehabilitated, representing about 32.5% of the target. Out of 110 buildings earmarked on in 1994, only 50, representing 54.5%, could be rehabilitated. Thus, the level of maintenance of building structures does not at all appear to be desirable. The standard of maintenance achieved has an important influence on the quality of the built environment and there seems little doubt that society will continue to expect higher standards in new and existing buildings. Consequently, for many years to come, maintenance will remain a significant and important part of the work of the construction industry.

MAINTENANCE POLICY

Before an effective economic maintenance programme is prepared, the surveyor in consultation with the client and designer should agree and write down clearly a policy to govern the maintenance of the building by which the manager can operate.BS 3811 defines maintenance policy as 'a strategy within which decisions on maintenance are taken'. Alternatively, it may be defined as the ground rules for the allocation of resources (men, materials and money) between the alternative types of action that are available to management (Lee, 1987).

RESEARCH METHODOLOGY

Research instruments

A field survey was conducted in addition to the administering of questionnaires to the staff, namely management, doctors, nurses and paramedics. This was carried out between March 2011 and May 2011.The field-survey method was adopted because it was regarded as being the best way to obtain first-hand information on the type of maintenance systems/ systems in use, level of defects and remedies.

Study population

The study population was made up of 15 management staff of La General Hospital, 43 doctors, 123 nurses and 157 paramedics, and came to a total study population of 338.

Sample size

The sample size of 70 staff members, representing 20% out of a total study population of 338, was used by the researcher, as applied by Stoker (1998). Based on this, 8 management staff, 18 doctors, 20 nurses and 24 paramedics were employed in the research. Of the sample size, 28 were males, representing 40%, and 42 were females, representing 60%. The intention was to have a balance, but most male personnel were not available during the administration of the questionnaires.

Sampling technique

Purposive sampling technique was used to select 8 out of the 15 management staff. A similar technique was employed in the selection of the remaining category of staff members based on the views of various experts in the field.

Data presentation

Descriptive statistics was used to analyse the data collected. Results obtained were presented in the form of tables and bar charts to create a pictorial or graphical representation of data obtained from the study for easy understanding.

RESULTS AND DISCUSSIONS

The study identified four categories of personnel who responded to the questionnaires (Tables 1 and 2).

Table 1: Categories of personnel

Category of personnel	Frequency	Per cent (%)
Management	8	11.4
Doctors	18	25.7
Nurses	20	28.6
Paramedics	24	34.3
Total	70	100

Table 2: Status of personnel

Status	Frequency	Per cent (%)
Senior officers	52	74.3
Junior officers	18	25.7
Total	70	100

The majority of the respondents were paramedics, followed by nurses, doctors and management, respectively, and senior staff formed the majority of the personnel.

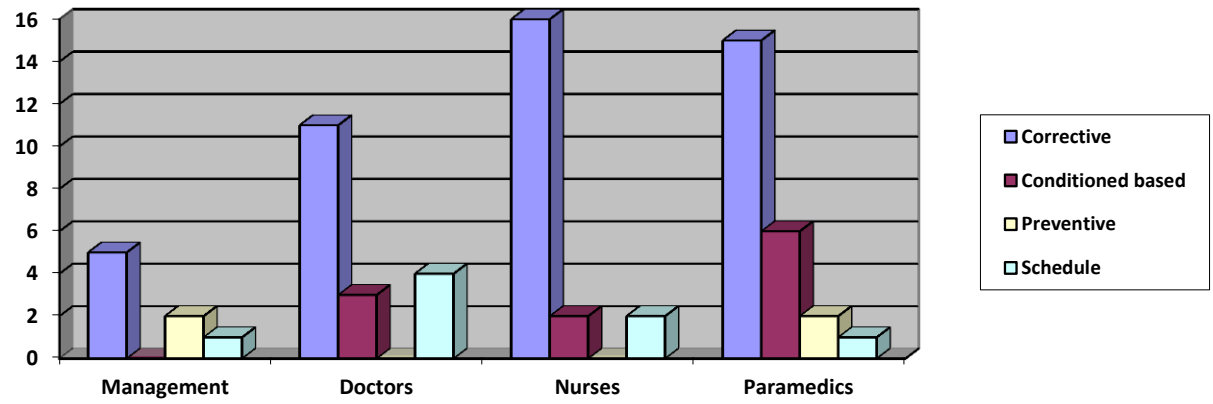

Figure 1: Form of building maintenance system

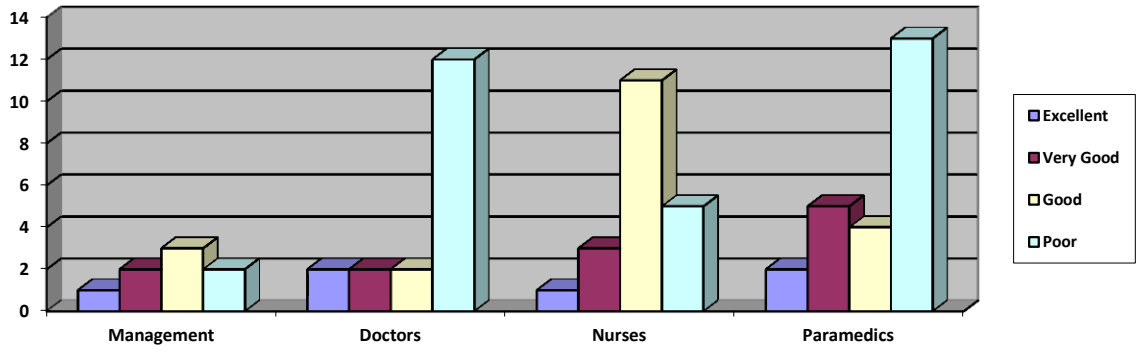

Figure 2: Current state of maintenance practice

Most of respondents were of the view that the hospital practised the corrective form of maintenance (Figure 1) and it was the only maintenance system practised at the hospital. Most of the respondents were management and nurses who rated the state of maintenance practice in the hospital as 'good'. Doctors and paramedics on the other hand rated the maintenance practice as 'poor'. The overall state of maintenance practised at the hospital was poor (Figure 2). The hospital buildings were used as offices, wards, laboratories, pharmacies, morgue and warehouses/stores. The purpose for which these buildings had been put up determined how frequently maintenance works were carried out on the buildings.

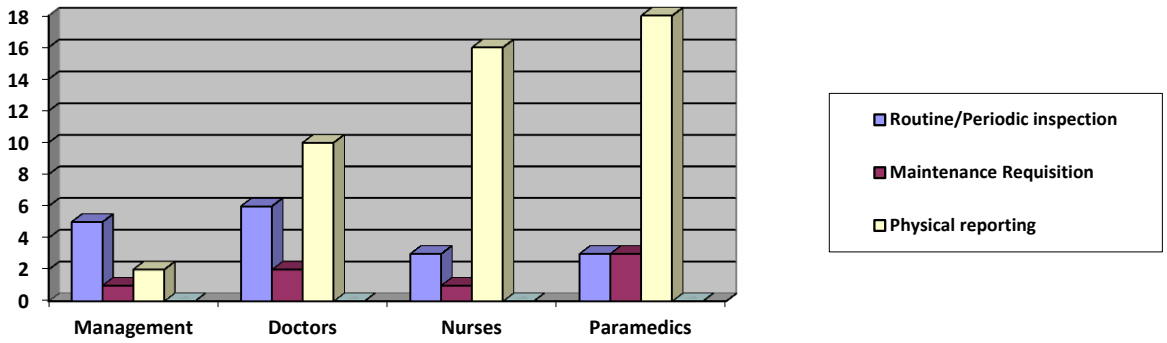

Figure 3: How faults are detected on buildings

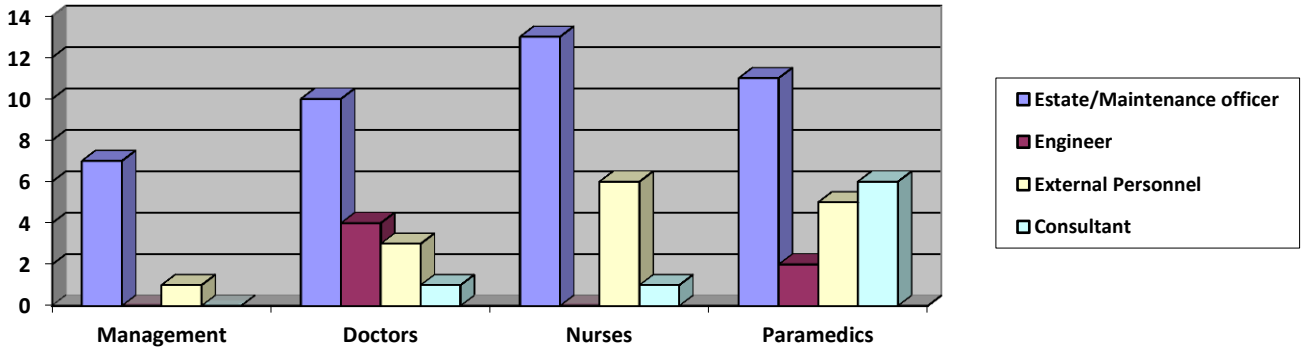

Figure 4: Supervision of maintenance works

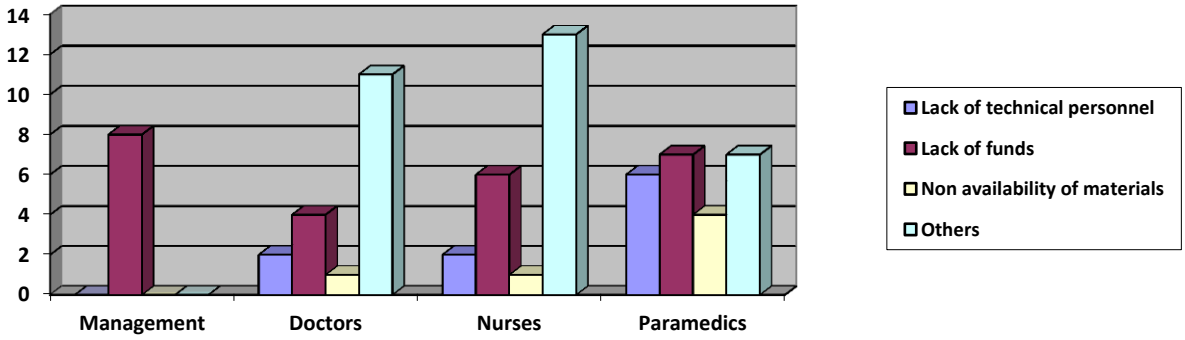

Figure 5: Causes of delays in maintenance works

Faults on buildings (physical problems) were mostly detected by visual inspection and by periodic inspections designed to detect damage, and faults are reported to the Estate Department of the hospital (Figure 3). The repairs were undertaken mostly within a period of one month. Supervision of maintenance works was mostly done by the officers at the Estate/Maintenance Department (Figure

4). Delays in carrying out maintenance works was largely due to lack of funds and commitment on the part of management to include it in their annual budget and provision for maintenance works to be carried out. Others also noted that management were unable to solicit funds for maintenance works as the hospital had to run on a low budget as shown in Figure 5.

The hospital relied mostly on internally generated funds through services rendered by National Health Insurance Scheme (NHIS) operators or beneficiaries. The challenge here was the difficulty and delay in receiving the remittances from NHIS secretariat to run the hospital effectively.

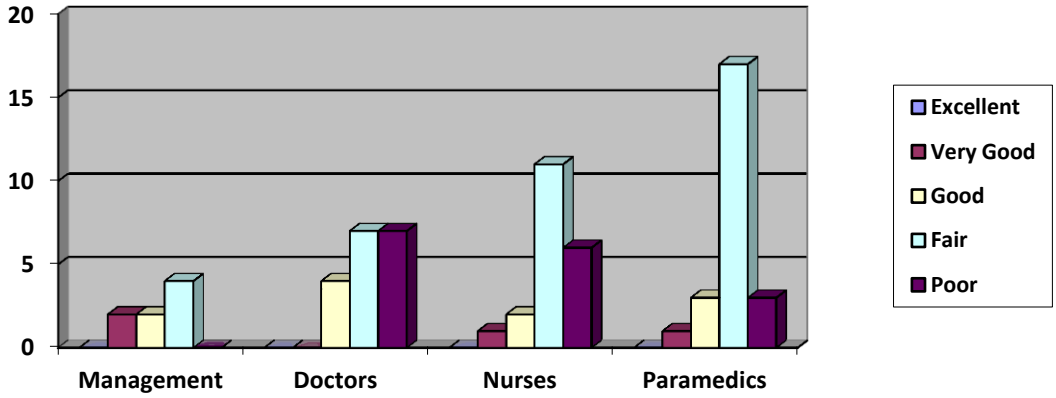

Figure 6: Overall performance of maintenance activities carried out in the hospital

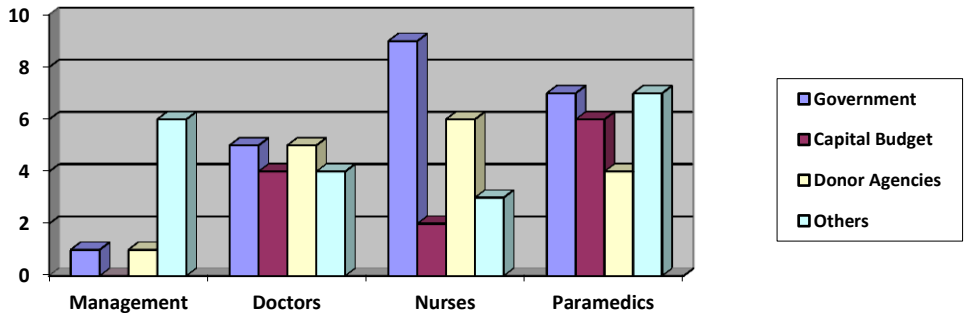

Figure 7: Sources of funds for various maintenance activities

The overall performance of maintenance activities was rated 'fair' (Figure 6). Internally generated funds were used to carry out maintenance works, while other sources of funds for maintenance activities came from government and donor agencies (Figure 7).

The level of funding for maintenance activities was insufficient and the manpower required for maintenance systems was also inadequate. Most of the respondents were of the view that the maintenance systems practised at the hospital should be changed to ensure effective maintenance practice.

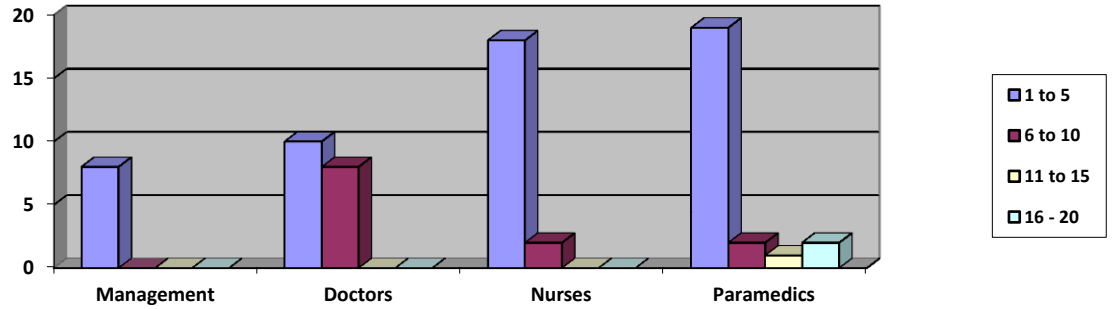

Figure 8: Number of people engaged in maintenance works

The total number of personnel engaged in maintenance works ranged from 1 – 5 which was inadequate for the Maintenance Department tasked with implementing preventative and corrective maintenance programmes (Figure 8). This development has led to their inability to meet the maintenance demands of the hospital.

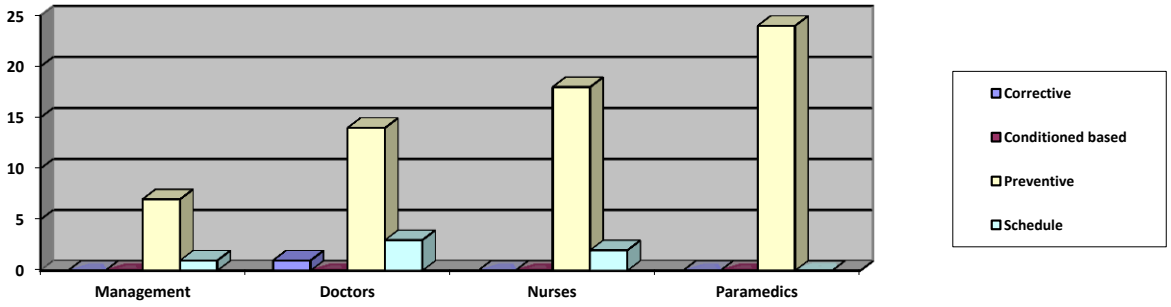

Figure 9: Recommended maintenance system for the hospital

Based on the information shown in Figure 9, preventative maintenance was recommended by a majority of respondents as being the best maintenance policy/systems for the hospital, despite the corrective maintenance being practised.

CONCLUSIONS

Four types of maintenance systems, namely corrective, adaptive, perfective and preventative, are being practised at the hospital, and it was established that corrective maintenance has dominated the other three types of maintenance systems in use. Contracts on maintenance works were awarded to people outside the department due to the limited number of personnel at the Estate/Maintenance Department of the hospital. The nature of buildings and their usage to a large extent determined the period and pace at which maintenance works were carried out. Attention was given to structures used as theatres, mortuary, outpatient department (OPD) because of the importance that is attached to these functions by management. Funds also posed a great challenge to the hospital and an internally generated fund (IGF) was the only source of funding available to run the hospital. Although the government of Ghana renders support, the money is inadequate, and this reality compelled management to rely on donor agencies for support.

RECOMMENDATIONS

- Management should place much importance on effective maintenance practices regardless of the purpose for which buildings or structures are being used. Maintenance should not be limited to sections of structures.
- It is appropriate for a hospital, like La General Hospital to a adopt preventative maintenance system as a policy because it makes planning of maintenance works much easier; saves costs; and allows for flexibility in the adjustment of maintenance periodicity.
- Management should also make budgetary allocation for maintenance works that may arise, whilst managing the little financial support they receive from government and donor agencies.
- Training, seminars and workshops should be organised for officers employed in the Estate/Maintenance Department to update their knowledge and skills with regard to effective maintenance practices.
- Recruitment of personnel with requisite knowledge and skills is required to fill the gaps created in the Estate/Maintenance Department and to meet the demands of hospital repairs and maintenance and more investigations should be carried out with a larger scope than was used in this study to confirm some of the findings.

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