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Assessment of Maintenance Management Practices in Lagos and Ogun State Prisons of Nigeria

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Abstract

The prison buildings and facilities on ground are few, in deplorable state and not environmentally friendly compared to the population of its inmates thereby making life in the prisons, too degrading, brutal and dehumanising. Congestion has consequences on the inmates, the prison system and the society. The study assesses the operational state and the factors affecting the maintenance practices. In the course of the study, structured questionnaire were administered to investigate maintenance managers and users, the prison officials in Lagos and Ogun state. Hypotheses relevant to assessment of prison maintenance practices were postulated to ascertain the significant differences in physical condition of prison buildings and the significant factors affecting prison maintenance practices. Data collected were analysed using mean scores, spearman's rank correlation, and factor analysis. The study revealed that prison maintenance departments are short of staff and of low technical competences. There is a need to build more prison facilities especially for female inmates.

Keywords: Prisons, Maintenance management, Reformatory and Rehabilitation

Background to the Study

Maintenance has been defined and redefined. It is defined as the processes undertaken to preserve, protect, enhance and care for the buildings' fabrics and services after completion, in accordance with the prevailing standards to ensure that buildings perform their intended functions throughout their entire life span without drastically upsetting their basic features and uses (Lateef *et al* 2010). The primary function of prison is to keep in safe custody persons legally interred and attempt to reform them to become law abiding citizens of the free society. According to Agomah (2006) in his assessment of the Nigerian prison system, the system had failed in security, reformation, rehabilitation, re-integration and revenue generation.

Rather than being reformatory and rehabilitative, Nigeria's penal system is punitive, degrading and dehumanising; and leaves the prisoners with the least opportunity of re-entry into the society. Investigation further reveals that those who are lucky to come out alive find it exceedingly difficult to re-adjust to normal lives and eventually end up in crime. Nigerian prisons are notorious for their appalling conditions with many of the country's 40,000 inmates cramped into massively overcrowded and dilapidated cells in old prison buildings (BBC News 7th April, 2006 GMT 9:45UK).

By the late 1980s, the overcrowding rate of prison systems exceeded 200% with 58,000 inmates housed in a facility designed to accommodate 28,000 people. In some prisons, the situation was much worse. Most prisons have no toilet facilities. Water and medical facilities are severely limited. Food is inadequate and disease and malnutrition is rampant (The Library of Congress, 1991).

Statement of the Research Problem

Nigeria is one of the developing countries of the world, therefore poverty is still prevalent. This in turn leads to a high crime rate and subsequently produces more criminals. The prison facilities provided by the government are few compared to the population of inmates in custody. While trying to improve the state of the prisons and the welfare of in-mates, it is very important to note that any change that is anticipated can only function in a conducive environment. As such, the state of the building and its facilities ought to be improved, hence maintenance management of prisons is therefore paramount.

Prison maintenance engineers, as well as facility managers are expected to find new ways of improving the comfort, security, safety, energy consumption and cost effectiveness of the buildings they manage and operate. There is therefore a need to establish

and evaluate the key parameters affecting the implementation of maintenance management programmes.

Prison Buildings in Nigeria

One of the cardinal objectives of the prison system is to keep prisoners away from crime and other anti-social activities and give them directions that will enable them lead normal lives again. The idea is to employ the period of incarceration to impact on the offenders the need to be law-abiding (Prison of horror, 2000). Prisons are conceived as corrective institutions, structured to identify the peculiar problems of each inmate and devise means of guiding the individual out of the problem. In order to achieve these objectives however, the prison buildings constituting significant part of the assets of the prison must be adequately maintained. According to the latest edition of the Annual Abstract on statistics, in 1990, no fewer than 482 of the 13,036 offenders were found to have been convicted six times or more, 758 were found to have been convicted five times, 1,017, four times, 646 (641 men and five women), three times; 1,252 (1,237 men and 15 women), twice, 2,598 (2,572 men and 26 women); once while 10,417 were first offenders.

At present, Nigeria has 148 prisons and about 83 satellite prisons, 10 prison farms and nine cottage industries for the training of inmates. The actual capacity of the Nigerian prisons is about 33,348 but the prison currently holds 47,000 inmates. In May 1999, the prison population was 40,899. Of this number 21,579 (52.8%) were awaiting trial prisoners. In a more recent statistics of the Nigerian Prison Service (November 2000) the inmate population was put at 47,000 with awaiting trials constituting 24,953 (59%) of this figure. The greatest problem facing Nigerian Prisons today is population explosion and non-conducive environment as a result of lack of maintenance of available structures and resources.

Prison Buildings Maintenance

Crips (1984) defines maintenance as "The regular inspection of all parts of a building and the execution of work necessary to keep the structure, finishes and fittings in a proper and acceptable state of repair, including decoration, both internally and externally". In this definition, what constitutes a proper and

acceptable state of repair is subjective and is defined from the individual's perspective. According to UNCH (2003) Maintenance is defined as a set of activities or procedures conducted to return or keep an infrastructure system in a fully-functioning or operational condition. Seeley (1976), BSI (1984), Chanter & Swallow (1996), Horner, El-Haram & Munns (1997), Chew, Tan & Kang (2004) and Buys & Nkado (2006) further define maintenance as work undertaken in order to keep, restore or improve every facility, its services and surroundings to a currently acceptable standard and to sustain the utility and value of the facility.

The aim of maintenance is to preserve a building and its content in its initial state as far as practicable, so that it effectively serves its purpose and enhances value (Oyefeko, 2001). According to Seeley (1992), the main purposes of maintaining any buildings to protect health and safety of occupants and public at large, to retain value of buildings, to present good appearance, to ensure the safety of users and general public within the building and its surroundings, to maintain services - heating, lighting, fire systems in prison buildings, to carry out adequate cleaning of the building surroundings and to prevent significantly the deterioration of the building fabric- these are also applicable to prison buildings.

Maintenance management seeks to plan, control, coordinate and organize maintenance activities focusing on efficient allocation and utilization of resources in order to improve the value of a building. It is the procedure and process used to achieve effectiveness (increase user satisfaction) and efficiency (with optimum resource) in service (Lateef *et al*, 2010).

Improvement to prison building should be part of the strategic plan and there should be a planned preventive maintenance scheme in place (PRAWA, 2000). Amount of prisons building maintenance work could be reduced by improved method of design, specification, construction and effective maintenance.

Factors Affecting Prison Maintenance Management

In general, there is paucity of literature of prison maintenance management. However, factors affecting maintenance management broadly has been identified by Udia (1989), Adenuga, Odusami & Faremi (2006) to

include general apathy, ignorance and disregard of maintenance work, poor funding of prison maintenance unit, lack of skilled manpower to undertake work especially in prison buildings designed and constructed by expatriates.

Design problems: These types of problems are usually hard to solve as it may involve complete reconstruction of element of the building or large sections of it. This may be avoided or reduced by involving at the design stages professional experts, including highly competent and experienced maintenance manager.

Attitudinal problems: The attitude of the public toward public prison buildings, to say the least, is negative and generally retrogressive.

Problems emanating from Political Decision: Certain obsolete equipment and project designs are imported owing to the preponderance of undue political influence or consideration on what should have been purely technical decisions.

Other factors influencing prison maintenance practices include;

1. Ignorance or basic physical and chemical properties of materials: One of the major causes of building deterioration and other unsatisfactory features of many buildings is bad understanding of the nature and behaviour of materials (Lee, 1987).

2. Usage of new materials with insufficient information: Most times, these materials are relatively untested and with inadequate guarantees. The use of such materials can mean a never-ending cause of maintenance problems (Mahmoud, 1994).

3. Faulty design: Faulty design includes all defects caused during the early stage of design, particularly in the structural design. An example of this is when the designer ignores the spacing for contraction and expansion movement. Such movement causes cracking of the structure which will result in fractures in pipes or joints (Ikwan, 1996).

4. Poor quality control: Quality control is the process used to control, inspect, test and record procurement, fabrication and installation in conformity with the contract documents. During the construction and

maintenance stages, quality control programme should be set out. It is used to control, inspect and test record of activities in accordance with the contract requirements and construction procedures. A facility monitored by effective quality control program has fewer defects and therefore requires less maintenance than a facility where no quality control program has been considered. Quality control is vital to ensure that the components required are maintained in accordance with the basic requirements of the contract documents (Mohmoud, 1994).

5. Non-availability of skilled or educated Labour:

The need for skilled and educated labour for maintenance work cannot be over-emphasized. The employment of educated labour with the requisite skills will assist to improve the quality of work, minimise cost and reduce work time span. Labour education ranges from none to advanced degrees. Training, which is a form of education, also ranges from zero (many labours have been put on the job with no preparation whatsoever) to very extensive courses involving orientation, classroom training and on-the-job training. Educated labour can easily perceive the transmitted information or instruction and easily build a relationship with others (Shear, 1983). The right tools are armed with the right men to do the job mean the job will be performed properly and adequately.

6. Lack of local productivity standards and specification:

The specification and standards are documents that clearly and accurately describe the essential technical requirements for materials, which consequently determine if performance requirements have been met. Standard and specification documents are extremely important to building maintenance as they constitute a schedule of instructions to the contractor and prescribe the materials and workmanship required. Projects and facilities are to be constructed in accordance with standard and specifications. Having a uniform specification and standard will ease the construction process as well as maintenance work (Seeley, 1987).

Mushumbusi (1999) also pinpoints some performance constraints affecting maintenance management practices. They include:

1. Constraints on resources: Problem of balancing the scarce resources available with the uncompromising demands in maintaining prison buildings is a big challenge. These resources have to be allocated judiciously so that optimum results are obtained.

2. Lack of a clear policy: A good policy defines the scope of the maintenance problem, the standards to be achieved, and the intended methods to carry out the maintenance work. It is not enough to have a clear understanding of the scope of the problem and standards to be achieved but having efficient property information system capable of detailed description and analysis of the stock of buildings, and of defining the amount of maintenance backlog and its estimated cost. Hence, its ability to realistically budget and programme the maintenance work.

3. Funding constraints: Most of the Prisons have low funding from government for development and maintenance of existing structures. The little available source of funding is sometimes not exhausted probably due to lack of a clear policy in forecasting short and long term maintenance requirements. Constraints in funds result from unrealistic budgets for maintenance activities to start with and worse still, funds released are less than those requested.

4. Shortage of Manpower: Lack of adequate professional manpower for collection and processing the maintenance information required for planning, implementation and monitoring purpose contributes to the poor building records, poor detailed structural surveys of property, inadequate inspection of maintenance cycles, insufficient formation of planned maintenance programs and feedback from maintenance work carried out.

Method of Data Analysis

The research covered prison buildings in Lagos and Ogun States in Nigeria namely; Kirikiri Maximum Prison, Kirikiri Medium Prison, Kirikiri Female Prison Apapa, Ikoyi Prison, Badagry Prison in Lagos state and Ijebu ode, Ilaro Prison and Abeokuta Prison in Ogun State

The total number of prisons in Lagos and Ogun State was nine. Eight prisons were visited in order to have a comprehensive study. Two categories of questionnaires were designed for this study and were directed to

the maintenance staff and the users of these prison buildings respectively. The users included the administrative staff, prison wardens, cleaners, and other people involved in the day-to-day running of the prison except the inmates.

Hence, a total of 10 questionnaires were sent out to each of the eight selected prisons, out of which four of the questionnaires were directed to the maintenance staff and six questionnaires were directed to the users of each of the eight prison buildings respectively. Thus a total of 80 questionnaires were sent out to the eight selected prisons of which a total of 78 questionnaires were completed and collected.

The data collected was analysed using both descriptive statistic and inferential statistics as applicable. Descriptive statistics such as mean scores and frequencies were used to establish if there were any patterns in the data. Inferential statistics such as factor analysis, spears man correlation and non-parametric test (Kendall's test of concordance) were used to determine differences between and/or within variables.

Analysis of the Operational State of Building Elements and the Services in Prison Buildings in Ogun and Lagos State, Nigeria

The first objective of this study is to examine the operational state of prison buildings in Ogun and Lagos, Nigeria. The operational state of prison buildings depends on the physical and functional conditions of all the building elements, the services and the immediate environment of the buildings. The state of the prison building stock is examined in terms of building structure and fabric, services, aesthetics and the surroundings. Maintenance officers and the users of the prison buildings were asked to rank the physical conditions and the state of dwellings in terms of the thirty attributes mentioned below using (1) Very Bad (2) Bad (3) Average (4) Good (5) Very Good.

Hypothesis 1: There is no significant difference in the operational state of prison's buildings between Lagos and Ogun State prisons, Nigeria.

Table 1: Physical Conditions of buildings as Perceived by Maintenance Officers and Users of Prison Buildings in Ogun and Lagos, Nigeria

Building elements/services	Lagos Mean	Prisons Overall Rank	Ogun Mean	Prisons Overall Rank
Windows	4.128	1	2.769	14
Security	3.500	2	3.629	1
Level of cleanliness	3.280	3	3.192	3
Sanitation of the environment	3.191	4	3.444	2
Doors	3.125	5	2.961	9
Air circulation	3.065	6	3.080	6
Water supply	3.064	7	2.814	13
Human traffic control	3.047	8	3.115	5
Clean water supply	2.979	9	3.038	7
Internal partitions	2.778	10	2.640	19
Indoor air quality	2.771	11	3.000	8
Block walls	2.720	12	3.115	4
Noise protection	2.705	13	2.653	18
Waste water disposal	2.696	14	2.920	10
Beams & columns	2.689	15	2.692	17
Ceilings	2.617	16	2.851	11
Roof structure	2.612	17	2.769	15
Garbage disposal	2.609	18	2.307	25
Floor slabs	2.583	19	2.571	22
Fire protection	2.543	20	2.814	12
Electricity supply (lighting)	2.531	21	2.625	21
Sanitary fittings	2.5	22	2.739	16
Internal painting	2.447	23	2.192	27
Drains	2.42	24	2.346	24
Floor/ wall tiles	2.354	25	2.260	26
External painting	2.292	26	2.481	23
Cooling systems	2.292	26	2.629	20
Telecommunication systems	2.114	28	2.083	29
Nettings	2.083	29	2.192	28

The result in Table 1 indicates that the prison building fabrics i.e. block walls, roof structure, internal partitions, slabs, columns and beams are below average in performance as perceived by the maintenance staff and

users of Lagos and Ogun State prisons. Security is rated average in performance in the Lagos and Ogun State prisons. Windows were rated highest to be in very good condition in Lagos prisons. Other elements in the prison

building such as electrical, fire protection, sanitary fittings, and garbage disposal were rated below average in both states. The result of the study revealed that the positioning of the buildings and other services within the prison's environment in Ogun and Lagos State, created sufficient air circulation for efficient performance. Indoor air-quality (humidity control), clean water supply, human traffic control, sanitation were rated better by respondents groups, mean score and t-test analysis were employed. Mean score of Lagos is 2.7362 while that of Ogun is 2.7436, t-cal; 0.129 and t-table; 1.699 with $p > 0.05$. The correlation coefficient of the paired samples of both is 0.706 signifying a strong relationship between the maintenance staff responses and the users in Ogun and Lagos prisons. Since t-cal < t-table and $p > 0.05$ and the mean score of both prisons are close, it shows that there is no significant difference in the rating of the operational state of the building elements and services by the maintenance staff and the users of the prison buildings in Ogun and Lagos, Nigeria.

Analysis of the Factors Affecting Maintenance Management Practices Carried Out on Prison Buildings in Lagos and Ogun State

The second objective is to find out the factors affecting maintenance management practices carried out on prison buildings in the study area.

Hypothesis 2: None of the factors affecting maintenance management practices carried out on prison buildings is more significant than the other.

Table 2 shows the ranking of 20 factors affecting maintenance management of prison buildings. Nine factors; inadequate training and development of personnel, no long term arrangement made for the supply of essential parts for replacement, insufficient fund for maintenance job, natural deterioration due to age and environment, lack of discernable maintenance culture in the country,

the maintenance staff and users in Ogun State prisons than Lagos. Services such as telecommunication systems, external painting, cooling systems, Drains and Netting were both rated very low among others by both the maintenance staff and users of prison buildings in Lagos and Ogun State, Nigeria.

To further verify the differences in the ranking of the operational state of the prison building elements and services by both unavailability of fund to procure spare parts, use of poor quality components and materials, inadequate maintenance of plants/ equipment for maintenance operations and lack of skilled personnel in maintenance department among others were highly ranked. Factors that are lowly ranked are inflation of cost of maintenance by the operatives, no effective maintenance due to lack of training, persistent breakdown through indiscipline and ignorance of the building users, complexities of design and non-involvement of maintenance experts during design stage and frequent shortage of materials and spare parts due to absence of efficient inventory system.

Spearman's rank correlation coefficient test of agreements among factors was estimated at 0.671 while correlation was significant at the 0.01 level of significance. This implied that there was a strong agreement among the respondents on the factors responsible for poor maintenance management of prison buildings.

Factor analysis technique was used to derive a cluster of relationship. Nine factors were found to be appropriate for factor analysis. The value of Bartlett test of sphericity 56.256 and associated significance level small ($p = 0.000$). The correlation matrix showed that all variable had significant correlation at the 0.01 level of significance. The value of the KMO MSA 0.571, was satisfactory for factor analysis. The result of one-sample T test indicated t calculated as 51.842 and t tabulated as 1.729 at 0.05 level of significance. This indicated that some of the factors affecting the maintenance management practices carried out on prison buildings were more significant than one another.

Table 2: Factors Affecting Maintenance Practices

Components	Cumulative % Variance	Eigen value of Variance %	Success factors	Factor Loading
Component 1	84.048	5.209	Inadequate training and development of personnel	3.39
			No long term arrangements made for supply of essential parts for replacement	3.34
			Insufficient fund for maintenance job	3.32
			Natural deterioration due to age and environment	3.25
			Lack of discernable maintenance culture in the country	3.25
			Unavailability of fund to procure spare parts	3.19
			Use of poor quality components and materials	3.11
			Inadequate maintenance of plants & equipment for maintenance operations	3.04
			Lack of skilled personnel in maintenance departments	3.03
Component 2	78.839	6.616	Lack of successful maintenance programme by the maintenance department	2.97
			Level of technology & environment condition	2.92
			No adoption of appropriate maintenance system for building maintenance	2.92
Component 3	72.222	7.484	Absence of maintenance programmes	2.87
			Attitude of users and misuse of facilities	2.85
Component 4	64.738	9.155	Lack of skilled manpower to carry out maintenance work	2.79
			Inflation of the cost of maintenance by the operatives	2.77
Component 5	55.584	9.798	No effective maintenance due to due to lack of training	2.71
			Persistent breakdown through indiscipline and ignorance of the building users	2.69
Component 6	45.786	45.786	Complex of design and non involvement of maintenance experts during design stage	2.61
			Frequent shortage of materials and spare parts due to absence of efficient inventory system	2.56

Summary of findings

The result of the study indicated that there were no significant differences in the physical conditions of the prison buildings in Lagos and Ogun states. The mean scores of building elements of both prisons were very close with correlation coefficient of 0.706 signifying a very high relationship between the responses from both prisons. Therefore, it was concluded that there was no significant difference in the operational state of prison buildings in Lagos and Ogun states.

Also, out of the twenty factors tested for the study, nine factors were highly ranked by respondents to be the most significant factors affecting the maintenance management practices in prison buildings in the study areas.

Conclusion

The study revealed that the operational state of prison buildings in Lagos and Ogun State was average. Some building elements were identified to be in good physical condition. For better performance, a proactive rather than reactive approach should be adopted for effective maintenance practices.

The factors affecting maintenance management practices in prison buildings were tested to ascertain the significance of each of these factors. Nine factors were considered to be the most significant factors that affect the maintenance management practices. These factors were inadequate training and development of personnel, no long term arrangements made for the supply of essential parts for replacement, insufficient fund for maintenance jobs, natural deterioration due to age and environment, lack of discernable maintenance culture in the country, unavailability of fund to procure spare parts, use of poor quality components and materials, inadequate maintenance of facility plant and equipment for maintenance operations and lack of skilled personnel in maintenance department among others.

Furthermore, staff of the maintenance department should be adequate and more experienced in order to increase productivity. More prisons should be built for inmates in order to avoid overcrowding in the few ones available. Also, users of the prison buildings should be enlightened on how to effectively and efficiently utilise the building structure.

References

- Adenuga, O. A., Odusami, K. T. and Faremi, J. O. (2006). Assessment of Factors affecting Maintenance Management of Public Hospital buildings in Lagos State, Nigeria, University of Lagos. A paper delivered at the construction and building research conference of the RICS in Georgia Tech, Atlanta USA, 6th - 7th September, 2007.
- Agomoh, U. & Ogbozor, E. (2006); Post Colonial Reform of Nigerian Prisons: Issues and Challenges PRAWA/Nigeria. A paper presented at the 11th International Conference on Penal Abolition (ICOPA X1), Held in Tasmania, Australia, February 9-11, 2006.
- British Standards Institute (1984). Glossary of maintenance management. Terms in terotechnology. *BS 3811*, London.
- Buyis, F. & Nkado, R. (2006). A benchmarking model for maintenance management systems in South African tertiary educational institutions. Proceedings of COBRA 2006 Research Conference, RICS, London.
- Chew, M. Y. L., Tan, S. S. & Kang, K. H. (2004). Building maintainability – Review of state of the Art. *Journal of Architectural Engineering*, 10 (3), 80-87.
- Chanter, B. and Swallow, P. (1996). *Building Maintenance Management*. Oxford: Blackwell Science.
- Crips, D. J. (1984). Building maintenance: A client's viewpoint in Harlow, P. A. (ed.) *Managing building maintenance*. London: CIOB.
- HMSO (1972). Report of the Committee on Building Maintenance. Department of the Environment, UK.
- Horner, R. M. W., El-Haram, M. A. & Munns, A. K. (1997). Building Maintenance Strategy: A new management approach. *Journal of Quality in Maintenance Engineering*, 3 (4), 273-280.
- Ikwan, M., Hag, A. & Burney, F. (1996). Maintenance management Saudi. *Journal of King Saudi University*, 4, 67-80.
- Last, A. The Notorious Jails of Nigeria: BBC News, Lagos. Available at <http://news.bbc.co.uk/2/hi/africa/4880592.stm>
- Lee, R. (1992). *Building maintenance*. London: BSP Professional books
- Library of Congress Country Studies & the CIA World Factbook (1991); Nigeria

- Crime and Punishment. Available at http://www.photius.com/countries/nigeria/national_security/nigeria_national_security_crime_and_punishment.html
- Mahmoud, T. (1994). Assessment of problems facing the maintenance of Saudi Arabia. Unpublished master thesis. KFUPM, Dhahran, Saudi Arabia.
- Mushumbusi, M. Z. (1999). Maintenance management for built environment in developing countries. CIB W55 & W65 Joint Triennial Symposium. Customer satisfaction: A focus for research & practice.
- Naoum, S. G. (1998). Dissertation research and writing for construction students. Oxford: Worth Heinemann.
- Oyefeko, S. (1999). Strategic approach to maintenance management practice. Presented at Nigeria Institute of Building.
- Patton, J. D. (1988). Maintainability and maintenance management. North Carolina, USA.
- Seeley, H. (1976). Building Maintenance. Macmillan Press Ltd, London.
- Seeley, I. M. (1987). Building Maintenance. 3rd ed. London: Macmillan Press Limited.
- Shear, M. (1983). Building Maintenance Management. Virginia: Reston Publisher.
- Udia, C. (1989). Building Maintenance: A catalyst to Economic Development. *The Estate Surveyor and Valuer*, 8 (1), 26-27.
- UNCHS (Habitat). (2003). Maintenance of infrastructure and its financing and cost recovery in developing countries. Retrieved December 16, 2003, from <http://www.unchs.org/english/maiten/2.htm>