

An evaluation of the physical conditions of on-campus students' hostel blocks in a public Nigerian university

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Abstract:

Ensuring that students' hostels are in best functional condition supports learning activities. Knowledge of the physical condition of hostel facilities is a key performance indicator of the maintenance strategies put in place by the building management department of the institution. This paper presents the current condition of on-campus students' hostel blocks in a typical public university in Nigeria. It is an aspect of ongoing research on the maintenance management of on-campus hostels at Nigerian universities. Data was generated through observations of the interior structural conditions of the students' rooms. Most (over 80%) of the students' bedroom in the hostels have major defects on the interior facades which are unfavourable for living and learning, a prime objective of providing and maintaining students' hostels on campus. The findings of the study revealed the deteriorated, unhealthy and unsafe condition of the male hostels. The study suggests a research into the maintenance management strategies of the existing on-campus hostels in the university, with an aim of identifying the factors inhibiting effective maintenance of the building that will align with the primary objective of which the providing the hostels on campus.

Keywords:

Building, hostel, maintenance, university

Introduction

On-campus hostels are custom-made residences for students on sites of educational institutions with a prime objective of providing a living-learning environment that will enable social interaction, notwithstanding the differences in home background of the students (Najib & Osman, 2011). In most Nigeria universities, it is a tradition to accommodate students in hostels provided on their campuses. These hostels are integral components of the various institutions' built asset. According to Araujo & Murray (2010) accommodation facilities on campus of academic institutions affords the students that reside in the available on-campus hostels security for their lives and properties. Secondly, the rental fees of the accommodations provided by the institutions are normally affordable for most students because the managements of such institutions are primarily interested in the welfare of their students, which will enable the students focus on their academic activities.

The conditions of buildings are key indicators of development and the quality of life in a community, because the prosperity, social values and behaviours are reflected in them (Akinsola *et al.*, 2012). Users / occupants of buildings may have simple or complex requirements, but the building is expected to meet most of these requirements (Idrus *et al.*, 2009), because, the well-being of buildings is not only important for their economic life expectancy but is even more important for the well-being of the occupants/users (Iyagba, 2005). In line with this, maintaining buildings is an optimum initiative and intervention for

preserving and supporting the values of the built environment and the citizens (Dann *et al.*, 2005; Idrus *et al.*, 2009).

Since the early 1990s, the management of the hostel buildings in public universities in Nigeria has become more complicated due to a continuous increase in the intake of students with every session (Akingbohunge & Akinluyi, 2012; Ojedokun *et al.*, 2012). This is despite an increase in the number of both public and private universities established to date. Deteriorating conditions in the physical conditions of students' hostels on the campuses of some institutions in Nigeria may be blamed for poor academic performance coupled with social problem such as student unrest, poor health poor academic and other negative behavioural patterns that are found in disadvantaged communities (Jolaoso *et al.*, 2012).

Literature Review

The buildings are fabricated structure composed of several discrete but interrelated components (McDuling, 2004; Adenuga, 2010). The building system derives its form and utility from two major components: the building shell and building services (Odediran *et al.*, 2012). The building shell includes all architectural and structural components comprising of all exterior coverings of the building (façade or envelope) that shield the interior from harsh weather, pollution, it also provides thermal and sound Insulations.

The basic function of a building is to provide structurally sound, safe and environmentally controlled places to accommodate various human functions (Idrus *et al.*, 2009; Adenuga, 2010; Abdul Lateef *et al.*, 2011; Waziri & Vanduhe, 2013). For the building to serve its designed function, it must meet certain qualities of durability, reliability, aesthetics with other occupants/user requirements (Abdul Lateef *et al.*, 2011). Changes in these qualities are inevitable and depend on the impact levels of operational and physical environmental factors (Abbott *et al.*, 2007). The impacts of these factors cause the building to deteriorate and threaten the ability of the incorporated facilities to retain functionality through their service lives (Waziri & Vanduhe, 2013). In addition, the building suffers performance loss and the objective of acquiring the facility is defeated (Straub, 2009).

Deterioration and defects in building components

A defect is any shortcoming in the functional performance, statutory or basic user requirements of a building that manifest itself within the structure, fabric, services or other parts of the built facility (Mohamad & Annuar, 2011). Therefore, a building component that fails to meet its accepted or set criteria for performance may be referred to as a defective component (Mydin, Ramli & Awang, 2012). Defects in a building component are in various forms (depending on the cause) and the severity of damage to the component. Minor, serious and critical are the three categories of which defects in a building element may be classified (Abbott *et al.*, 2007). The remedial action required to minimise the impact of any defect on the building performance is typically ranked according to a predetermined set of priorities for maintenance and the severity of damage caused by the defect.

The aggregate life span of the components of a building is a major determinant of its life expectancy (Adenuga *et al.*, 2010). The life span of each component depends largely on specification and installation on the construction phase; compatibility of the components with each other and with other materials; operation/use of the facilities and adequacy of maintenance standard complied. The performance of whole building depends on many

factors such as type of structure and incorporated services, environmental conditions and use of the facility (Chautan & Singh, 2012). All building components have to contend with performance loss through ageing, use, and external causes. Performance loss is measured in terms of defects ascertained (Straub, 2009). According to Talib *et al.* (2012), building performance is concerned with the extent to which the building facilitates or support use or occupancy; the extent to which it serves as a comfortable abode and support a better quality of life for the occupants and the building's fitness for designed. The quality of a building in the context of building performance is a measure of the quality of material used and workmanship of the initial construction and subsequent maintenance works; its operation and use (McDuling *et al.*, 2004).

Research Methodology

This paper is part of an on-going research on the maintenance management systems of on-campus students' hostels at Nigerian universities. The paper aimed at addressing one of the objectives of the parent research work which is to examine the current condition of on-campus hostel buildings at selected universities in Nigeria. This paper is based on the results of a pilot survey carried out to test the condition assessment instrument developed to generate data the objective afore mention of the main research work that is still in its developmental stage. This research employed the qualitative method that is rooted in the phenomenological paradigm. It integrates a literature review and a case study. The literature review provides an understanding of the building component, function and performance requirements. The case study approach of the qualitative method was adopted because it is appropriate for in-depth study of a case or cases. Sources of data for the literature search include relevant periodicals, conference papers, textbooks, dissertations and theses from research institutions, with the aid of library reference services. Data for the case study was generated through physical observations of the interior structural elements of the hostel rooms. A condition evaluation form was prepared for this exercise guided by a building condition evaluation manual (Bergeson & Bigelow, 1992).

The elements were inspected and the current condition was rated on a five point scale. The components with no sign of defect and their appearance is as new were rated "5 - excellent". The value "4 - satisfactory" was assigned to components that show negligible signs of defects that may not constitute any form of discomfort to the student occupants in the room. An average value "3 - fair" was assigned to any component observed to exhibit defects such as worn-out finishing, minor defects such as cracks or dampness that are not related to structural defects, but require uplift for aesthetic purpose and comfort for the occupants. All components with early signs of major defects such as structural cracks, water seepage, leakages that require urgent maintenance works to save the structure were regarded as poor and rated "2". The least rate "1-unsuitable" was assigned to rooms with critical defects in the components evaluated. The components in this category include those with major structural defects that have reached an advanced stage, as a result of which the room is completely unsafe for occupants.

An Overview of the case study area

The university used as a case study of this research paper is a typical Federal university that has already been selected as one of the universities that will be studied in the main ongoing research mentioned in the previous section. The institution operates two campuses within the

same city, barely 14kilometers between the two campuses. As integral part of the university’s built assets, are hostel buildings for both male and female students on each campus. The majority of the students reside on and around the main campus because most academic departments have been relocated to the main campus. This paper assessed only the two hostel blocks for the male students on the main campus because the primary purpose of the exercise is for a trial survey of the research instrument that would be used a PhD research work in progress. The researchers’ choice of the male hostels is for proximity and easily accessible for the pilot survey exercise. The university used as case study is a fully owned by the Federal Government of Nigeria (FGN). It is a university of Technology established in 1983 and located in the North central geopolitical of Nigeria. The objective of its establishment alongside 6 others across the country is for human capital development that will boost the science and technology sector in the country to meet world standards.

Findings and discussions

The study presented in this paper aimed at evaluating the conditions of the interior facades of the bedrooms in two hostel blocks on the campus of a public university in Nigeria. Ceilings, walls and floors in 164 students’ rooms were evaluated. The hostel buildings are identical storey blocks located adjacent to each other. There are 82 shared bedrooms on three floors in each block. The floor designs are corridor types with common bathrooms and toilets located on one end of the corridor on each floor; kitchens and laundry rooms at opposite ends of the corridors. For the purpose of this paper, survey result of only the ceilings, floors and walls in each room is presented based on physical inspection with the aid of prepared survey forms for each of the elements which has been described in section 3. Table 1 presents the result of the condition evaluation of the three elements afore mentioned. Physical inspection of all the bedroom spaces of the two hostel blocks was carried out and the rating is presented in percentages in the table.

The result of the evaluation revealed that none of the three components in all the bedrooms inspected were rated “5-excellent” and only 9% of the rooms had floors that were rated “4-satisfactory. However, only 12% of the rooms were rated “1-unsuitable” and categorised as unsafe for occupants due to the severity of deteriorated components observed. Ceilings in 60% of the rooms, examined are rated “2-Poor” signifying that the ceilings have major structural defects such as, sagging panels, evident signs of leakage from roofs which is not a conducive living learning accommodation for a student occupant. Substantial percentages (64%) of both the floors and walls in the rooms are in a fairly (rated 3-fair) habitable condition to accommodate students.

Table 1: Condition rating of building components

Components	Percentage of rooms					Total
	Excellent.....	4	3	2	1	
Ceilings	0	0	16	60	24	100
Floors	0	9	64	21	6	100
Walls	0	0	64	29	7	100

Conclusions and Further Research

Most of the students’ bedroom in the hostels has major defects on the interior facades which are unfavourable for living and learning, a prime objective of providing and maintaining

students' hostels on campus. The findings of the study revealed the deteriorated, unhealthy and unsafe condition of the male hostels, which confirms and clarifies an aspect of the research problem of the parent study that aims at providing a base level understanding of maintenance management systems of on-campus hostel buildings at Nigerian universities. The study suggests a research into the maintenance management strategies of the existing on-campus hostels in the university, with an aim of identifying the factors inhibiting effective maintenance of the building that will align with the primary objective of which the providing the hostels on campus.

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