



e-Maintenance Framework for Strategic Asset Management in Tertiary Institutions

Adedeji Afolabi¹(✉), Ibukun Afolabi², Emmanuel Eshofonie³,
and Faith Akinbo¹

¹ Department of Building Technology, Covenant University, Ota, Nigeria
adedeji.afolabi@covenantuniversity.edu.ng

² Department of Computer and Information Sciences,
Covenant University, Ota, Nigeria

³ Centre for Systems and Information Services,
Covenant University, Ota, Nigeria

Abstract. Tertiary institutions require buildings such as its senate building, classrooms, laboratories, administrative rooms, hostels and other offices in order to function. Providing and maintaining these buildings require a lot of planning and capital investment. The study examined the prospects of using e-Maintenance platform for strategic asset management in tertiary institutions. This study noted that adequate maintenance of the building infrastructural base of tertiary institutions is crucial for sustainability in the face of dwindling funds in the education sector. In order to automate the e-Maintenance process for strategic maintenance of the institution's building maintenance, a use case diagram, system block diagram, sequence diagram and activity diagram were designed and presented in this study. Three (3) main users are essential in the sequence of operation of the e-Maintenance platform. These users represent the building occupants, the facility manager and the management personnel; for effective oversight and performance monitoring. The methodology of this research includes using the combination of HTML, CSS and the C-Sharp programming language for the interface design and server side scripting while MySQL was the database platform used for storing and retrieving the data used for the application. In conclusion, the study developed an e-Maintenance framework for strategic asset management in tertiary institutions.

Keywords: Asset management · Automation · Construction industry · e-Maintenance · Web-based systems

1 Introduction

Tertiary institutions require buildings such as its senate building, classrooms, laboratories, administrative rooms, hostels and other offices in order to function. Providing and maintaining these buildings require a lot of planning and capital investment. The dwindling funds available to tertiary institutions means that adequate attention is given to the available infrastructure within the university, as providing new ones may become difficult. The asset gathered by the tertiary institutions need to be strategically managed over the years through proper maintenance to ensure they are continually attractive and