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EDITORIAL

Building Regulation, Quality Assurance Practice and Road Infrastructural Design and Maintenance

Welcome to the Nineteenth Volume Issue 1 of the Africa Habitat Review-Journal of the Faculty of Built Environment and Design. In this issue there are diverse contributions on issues relating building regulations, quality assurance in construction industry, maintenance of roads, costing and design of bridges, safety and health in construction sites and participatory approaches in slum upgrading programmes.

The article on *Deployment of Minimum Standard Strictures in the Kenya Building Regulations: A Reflection* examines how the strictures has been reflected in the Kenyan building code and relates it to the fundamental philosophy underlying the code. It uses inductive logics and content analysis of collected data. The study found out that the minimum standards in the building regulations is a protective act. The study recommends an imposition of minimum standards in the regulation process to compel the builders, and by extension the broader society, to commit resources to attain them.

A Framework for Enhancing Quality Assurance Practices of Building Contractors is an article on assessing the extent to which contractors apply quality assurance practices and thereafter develop a framework to enhance quality assurance practices of building contractors in Kenya. Ten quality assurance practices were identified from literature review and their importance ranked by respondents through a questionnaire survey. The level and frequency of application of the practices was assessed using relative importance index. The most important practices were process control, management responsibility and, inspection and testing. The least ranked were internal quality audits, and control of inspection, measuring and test equipment. The most frequently applied practices were process control, inspection and testing, and purchase control. The least frequently applied practices were training, internal quality audits, and control of equipment. The article recommends the enhancing of quality assurance practices of building contractors through the use of ISO 9001 standards and Force Field Analysis.

The article on *Performance Based Routine Maintenance Contracting for Low Volume Sealed Roads* evaluates the level and extent of maintenance planning and implementation on improved projects, and also the effectiveness of the embedded performance-based maintenance contracts in ensuring that prioritisation for maintenance was enhanced, and that acceptable service levels were maintained during the period the contracts were in effect, and drawing the lessons learnt. An overall assessment of the investment in maintenance of completed projects under the Roads 2000 program was carried out, from the time the initial projects were handed over for maintenance, up until when the phase two projects were completed and handed over. Correlation was drawn between the previous efforts in maintenance prior to introduction of performance-based maintenance contracting, and thereafter. It was observed that performance-based contracts had an overall effect of increasing the road lengths that were maintained, and also led to an increase on the level of prioritisation for maintenance. There was an observed increase on the budgetary allocation per unit length of road per year with the introduction of performance-based routine maintenance. The article recommends the monitoring of set service levels needs to be improved during the management of performance-based contracts.

The *Mainstreaming Participatory Approaches in Slum Upgrading Programmes: A Case Study of Soweto East Project in Kibera; Nairobi* is an article on the relationship between effective stake-holder engagement and /or participatory approaches on sustainability of slum upgrading using

Soweto East in Kibera. Data was obtained largely through a review of reports and literature. The results of the study indicated that there was low level of participation by the affected residents and other stakeholders. This led to mistrusts and misconceptions and consequently poor design and mixed results on the overall project success. It thus concluded that there is need for robust community engagement especially in slum upgrading; ensuring that slum upgrading pro-jects integrate livelihood and beneficiary economic activities for inclusive and sustainable de-velopment. In addition, the article recommends an engagement processes that is based on genu-ine collaboration to foster trust and desire for success between the various stakeholders.

This article on *Impact of Institutional Frameworks on Safety and Health in Construction Sites: Enhancing Safe Practices in Nairobi* examines the effectiveness of regulatory institutions in enforcing compliance with safety and health practices on Kenyan construction sites. Prior evi-dence, largely anecdotal, indicated suboptimal performance by these institutions, a claim yet to be substantiated empirically. The study surveyed 889 registered construction sites in Nairobi. A random sample of 210 sites were chosen using simple random and convenience sampling for comprehensive quantitative and qualitative analyses. Data was gathered through structured questionnaires and observation checklists, with a response rate of 78.4%. Findings indicate that regulatory institutions significantly influence adherence to safety and health practices, albeit with a compliance rate of only 62%. It is concluded that safety and health regulation compli-ance at Kenyan construction sites is inadequate. Inefficiencies within regulatory bodies are identified as a key factor in this shortfall. The study advocates for a policy overhaul by the regu-latory institutions to align with and effectively address the present safety and health realities in Kenya's construction sector.

Evaluation of Roads 2000 Program in Kenya is an article that examines the maintenance levels on low volume sealed roads, and come up with recommendations to be adopted on the current and similar problems in the future. Performance assessment was undertaken by carrying out sur-face condition surveys on sampled roads under the Roads 2000 program. It was determined that the priority for maintenance of completed low volume roads was normally affected by the sur-rounding poor network, and therefore, adequate maintenance was not routine. Review of per-formance of the low volume roads showed that whereas the improved roads were having great impact on the recipient populace, the lack of adequate maintenance was in most cases lead to early failure of the completed roads, and inadequate drainage was a leading factor in the uncon-trolled deterioration of these roads. Further, the study found that some roads with low servicea-bility index of below 2.5 required rehabilitation and timely corrective work. The study recom-mends that a proper and all-round conditional assessment followed by timely, suitable and effi-cient maintenance regimes, to ensure the roads meet their design lives and continue serving the area population.

The article on *Cost and load effect comparisons between reinforced concrete integral and non-integral bridge using experimental and analytical examinations* examines the cost dif-ferences between the integral and non-integral bridge of the same length and height using ana-lytical and experimental investigations. Modelling, analysis, design, detailing and costing of 15m,20m, 22.5m and 25m single span reinforced concrete girder integral bridge and 15m,20m, 22.5m and 25m single span reinforced concrete girder non integral bridge were done. The ex-perimental program included six reinforced concrete bridge models three integral bridge mod-els; namely, a) 1000mm length, 600mm high and 95mm thick b)1250mm length,600mm high and 105mm thick c) 1500mm length,600mm high and 120mm thick and three additional non-integral bridge model of the same sizes and reinforcements. Analytical examinations were made for six integral bridges and six non-integral bridges for verifications. The experimental results reveals that the MIDS CIVIL finite element software is in agreement with the results obtained within +/-10% and recommended to be used in the design. The priced bill of quantities based on the

design reveals that the decrease of cost by 19.1% to 20.0% for integral bridge as compared to non-integral bridges with the same length and height. The article recommends that planners and engineers embrace integral design and construction by reviewing the road design handbook, which specifies that integral design must take precedence over non-integral concepts to save costs.

Analyzing Challenges Impacting the Performance of Serviced Offices in Nairobi County, Kenya is title of a paper focussing on understanding the challenges to enhance property management strategies. Through a descriptive research design targeting 24 serviced offices in Westlands, Nairobi County, the study identified significant obstacles, including government policies, economic conditions, billing strategies, and infrastructure deficiencies. The paper recommends creation of a more favourable regulatory environment with tax incentives, improving electricity supply reliability, and implementing robust management systems to address billing and occupancy uncertainties.

Lastly, the article on *To Assess the Impact of COVID -19 in the Delivery of Professional Courses in the Faculty of Built Environment and Design*. A case study of the University of Nairobi discusses the pandemic effects on higher education instructors within the realm of the professional courses. Using qualitative research methods, the study analysed 20 questionnaires administered to instructors in the Faculty of Built Environment and Design (FBED), University of Nairobi (UoN). The key finding indicates that the Covid-19 has changed the way the instructors deliver their courses and undertake students' supervision. The paper recommends need for continuous improvement in the delivery of technical courses through incremental adoption of emerging technologies in the learning space.

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