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A Study of Building Renewal of Commercial Buildings in Selected Towns in Kenya

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Abstract: *The deterioration of buildings hampers the ability to adequately perform their intended functions. The purpose of the study was to investigate the extent of building renewal in commercial buildings in selected towns in Kenya which included Meru, Embu, Nyeri, Nakuru and Eldoret. The specific focus was to assess the current extent of building renewal of commercial buildings, reasons for non-renewal of buildings, analyse the building renewal policy and the practice of renewal of buildings in Kenya The study targeted 85,500 buildings in the selected major town in Kenya, 15 500 building owners, 60 000 occupants and 10 000 building experts. Simple random sampling was used to sample, 69 commercial buildings in the selected towns. Owners of the selected buildings were purposively selected. Convenient sampling was used to select building occupants while building experts were selected using snowball sampling technique. The study respondents were 303 comprising 56 owners of buildings, 210 occupants of buildings and 37 building experts. The instruments for data collection were questionnaire for occupants, interview schedule for building owners and observation checklist. The instruments were piloted with 2 occupants 1 building owners and 1 building expert accounting for 1% representation of the sample. The reliability of the questionnaire was tested using split half formula. Quantitative data were cleaned, coded and analysed using SPSS version 21. Qualitative data was discussed thematically. The results were presented in frequency tables and graphs. The study established that conditions of commercial buildings in the selected towns were fairly good. The study established that there was no clear policy on building renewal in Kenya. Demand from users, user generated problems, social environmental considerations among others were found to be the factors influencing decision to undertake renewal. The study indicated that there is need for occupants to request for building renewal from building owners, Government needs to legislate a building renewal policy, periodic inspection of building among others are necessary measures that need to be put in place for adoption of renewal of buildings policy. The study recommends that periodic inspection of buildings be done to maintain their condition. Further, the study recommends putting up of proper regulation of building renewal by the government to guide building owners in carrying out renewal.*

Key Words: *Building renewal,Commercial buildings, Obsolescence*

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I. Introduction

A building fabric is referred to as an "environmental envelope" because it is the means by which the natural or external environment may be modified to produce a satisfactory internal environment for man to live in. The objectives of building renewal according to Alner and Fellows (1990) are to ensure that buildings and their associated services are in a safe condition, ensure that the buildings are fit for use, ensure that the condition of the building meets all statutory requirements, maintain the value of the physical assets of the building stock and maintain the quality of the building. The primary aim of maintaining a building and its environment is to ensure that the building continues to serve the purpose for which it was intended, yield optimum return and ensure safety, health and comfort in its usage Seeley (2005) The advantages of investing in building renewal have been long recognized at more local, community levels (SECO, 2007).In reconstruction efforts, repairing and retrofitting a house may make more sense than demolishing and rebuilding it given the fact that land for constructing new buildings is becoming scarce.

Building renewal is a major activity in most countries. Any reduction in resources applied to building renewal will have a visible effect on the economy (Ahmad and Culp, 2006). Over the years, selected towns in Kenya have witnessed rapid growth of housing construction. The number of modern houses increases and more houses are being constructed. As a result, more renewal work is required in order to cope with this type of construction (BCIS, 2010). Due to the growth of housing with the lack of building standards, more renewal, rehabilitation, and renovation work have become necessary to ensure the serviceability and safety of the

constructed houses. In addition, the existing houses need to be sustained as long as possible. Therefore, ways must be found to reduce the renewal cost works due to ageing of the buildings while keeping the same quality.

In Kenya, commercial buildings consist of both dwelling (residential accommodation) and non-dwelling (office accommodation). Both residential buildings as well as office buildings are prone to defects due to their permanent and lengthy usage. All elements of buildings deteriorate at a greater or lesser rate dependent on materials and methods of construction, environmental conditions and the use of the buildings (Seeley, 2005). According to Seeley (2005), neglect of renewal has accumulative results with rapidly increasing deterioration of the fabric and finishes of a building accompanied by harmful effects on the contents and occupants. The study by Cukovic-Ignjatovicetal (2006) presents alternative enlargement or extension of buildings. Authors note that there are requirements of energy optimization that cannot be treated separately because they would not be economically viable. When combined with the extension of property, they become more attractive to users.

Over the years, there has been increasing abandonment of building projects and infrastructural facilities which has led to the dilapidation, degradation and deterioration of these building structures within the Kenyan contemporary urban metropolis (Onibokun, 1974). In virtually all the towns and city centres in Kenya, buildings and infrastructural facilities are gradually and systematically decaying, dilapidating and deteriorating with reduced or no degree of renewal. From a normal visual perception in the urban metropolis, it can be noted that majority of the constructed buildings have not undergone renewal (Roth, 2005).

A proportion of existing commercial buildings in Kenya have the problem of partial obsolescence and building renewal is an important measure to improve the quality of life and use of these buildings. Improving the use of existing buildings through renewal reduces the need for new buildings and thereby decreases the need for new urban land, thus, contributing to sustainability (Lee, Zhao and Augenbroe, 2011). The basic premise of renewal is to improve and prolong the useful life of buildings in a form of retrofitting, avoiding new constructions and thereby reducing the generation of waste, saving natural and financial resources, energy and urban land (Mills, 2009). The existing old commercial buildings in urban centres in Kenya pose a serious health risk to its inhabitants (Kenya National Bureau of Statistics, 2010). Concerns have particularly been raised on the safety of such buildings (Mwaniki, 1997). The Kenya building regulations are outdated and out of focus with the current realities for renewal thus the existing building regulation in Kenya has not adequately solved the issues of building's safety and land scarcity in towns.

Many Kenyan commercial buildings have not seen any significant renewal since they were constructed. This has resulted in such buildings being in a dilapidated state with some being abandoned. Some commercial buildings in selected towns in Kenya have cracks on the walls, rotten wooden members, leaking roofs and missing louver blades, faded paint. This lack of renewal by the owners and occupants of these facilities often leads to reduced lifespan of these buildings which invariably defeat the purpose for which they were put up. It is against this background that this study has been conceived to investigate the extent of building renewal in commercial buildings in selected towns in Kenya.

The purpose of this study was to investigate the extent of building renewal in commercial buildings in selected towns in Kenya.The following objectives guided this study:

i) To assess the current condition of commercial buildings in some selected towns in Kenya.
ii) To determine if there are any gaps in policy as far as building renewal of commercial buildings in Kenya is concerned.
iii) To determine the factors influencing decision to undertake building renewal in selected towns in Kenya.
iv) To investigate measures needed to be put in place for the adoption of policy on renewal of buildings in Kenya.

II. Methodology

The study adopted across-sectional study research method.The research design enabled the researcher to gain an in-depth understanding of the building renewal policies and practices and how it impacts on the lifespan of these buildings and the life of the occupants as well as their aesthetic value. Both quantitative and qualitative approaches were employed in the study. The researcher studied commercial buildings across selected towns in Kenya which included: Meru, Nakuru, Eldoret, Nyeri and Embu.These towns were selected because of their tremendous growth over the past year which makes them to be among the fastest growing agricultural, commercial and industrial towns in Kenya with an average growth rate of 7-8% per annum (Okalebo, 2009).

Simple random sampling was used to select the five towns from a cluster of 47 selected towns in every county in Kenya for the study.Thus the study location provided the appropriate ground for collecting the information required for this study. This study targeted a total of 15 500 commercial buildings in the following selected towns: Meru, Nakuru, Eldoret, Nyeri and Embu. The accessible population was 85,000 subjects

comprising 15,500 building owners, 60 000 occupants and 10,000 building experts. Simple random sampling was used to sample 69 commercial buildings which comprised 14 in Meru, 12 in Nakuru, 12 in Eldoret, 14 in Embu and 12 in Nyeri.

Simple random sampling was used to select owners of the selected buildings whileconvenient sampling was used to select building occupants while building experts were selected using snowball sampling technique. The experts were 9 in Meru, 7 in Nakuru, 7 in Eldoret, 7 in Embu, and 7 in Nyeri.The study respondents were 303 comprising 56 owners of buildings, 210 occupants of buildings and 37 building experts. Table 1 shows the distribution of the sample while Table 2 shows the sample of buildings in the selected towns.

Table1: The Distribution of the Sample

Respondents	Target population		Calculation of sample size	Sample size
	buildings	respondents		
Building owners	15500	15,500	$\frac{15500}{85500} x 382$	69 buildings and owners
Building occupants	-	60,000	$\frac{60\,000}{85500} x 382$	268
Building experts	-	10,000	$\frac{10\,000}{85500} x 382$	45
Total	15500	85,500		382

Source: Ministry of Housing and Urban Development, 2014

Table 2: Sample of buildings Studied

Table2: Sampled Buildings

Town	Population	Sample
Meru	3000	13
Nakuru	3500	16
Eldoret	4000	18
Embu	2200	10
Nyeri	2800	12
Total	**15,500**	**69**

Source: Municipal Council Records for the Selected Towns

Data collecting techniques included questionnaires, interviews and actual physical observation of the status of the buildings. The open ended questions formed the qualitative aspect of this study. The research questionnaires and interview guide were piloted with 4 respondents comprising two (2) occupants, one (1) building owner and one (1) building expert in Chuka town located in Meru South Sub-County in Tharaka-Nithi County. The pilot respondents were selected using simple random sampling. Cronbach' alpha method of reliability testing was employed to test the reliability of the questionnaires. A reliability coefficient of 0.72 with questionnaires for occupants was obtained. Thus, the instrument was deemed reliable for data collection.

III. Results And Discussions

The researcher visited and observed commercial buildings in the study area. The data presented in Table 3 indicates the number of commercial buildings that the researcher was able to observe during the study.

Table 3: Number of Commercial Buildings Targeted and Observed

Town	Number of commercial buildings targeted	Number of commercial buildings observed
Meru	14	14
Nakuru	13	12
Eldoret	14	12
Embu	14	14
Nyeri	14	12
Total	69	64

Source: Research data

3.1 Current Condition of Commercial Buildings

Objective one sought to assess the current condition of commercial buildings in some selected towns in Kenya. Building occupants were asked to rate the current condition of commercial buildings. The responses obtained are shown in Table 4.

Table 4: Rating of the Current Condition of Building Elements

Building elements	Responses (n = 303)					
	Excellent	Good	Fair	Poor	Very Poor	Mean
Roof	120 (40%)	89 (29%)	94 (31%)	0	0	4.08
Walls	87 (29%)	92 (30%)	97 (32%)	27 (9%)	0	3.78
Painting	45 (15%)	83 (27%)	124 (41%)	46 (15%)	5 (2%)	3.39
Windows	156 (51%)	101 (33%)	46 (15%)	0	0	4.36
Doors	160 (53%)	123 (41%)	20 (6%)	0	0	4.46
Electrical installations	67 (22%)	74 (24%)	112 (37%)	50 (17%)	0	3.52
Plumbing	45 (15%)	160 (53%)	29 (10%)	51 (17%)	18 (6%)	3.54
Drainage	48 (16%)	130 (43%)	40 (13%)	47 (16%)	38 (12%)	3.34
Overall rating						**3.66**

Results in Table 4 show that the condition of the building elements surveyed (roof, floor, walls, painting, windows, doors, electrical installations, plumbing and drainage systems) were rated as being good. This information was useful in projecting the need for building renewal of commercial buildings as those that were in a poor condition or showed signs of severe deterioration would indicate need for repairs or corrective maintenance. Buildings in poor conditions in selected towns in Kenya have been a threat to human life.

3.2 Gaps in Building Renewal Policy

The second objective sought to determine if there were any gaps in policy as far as building renewal of commercial buildings in Kenya was concerned. Commercial building occupants, owners and building experts were asked to indicate whether they were aware of any Government policy on building renewal. Table 5 shows responses obtained.

Table 5: Responses to Awareness of Existence of Renewal Policy in Kenya

Responses	Yes (%)	No (%)	Not sure (%)
Building Occupants (n = 210)	0	2	98
Building Owners (n = 56)	0	80	20
Building Experts (n = 37)	0	82	17

From the study, 98% building occupants were not sure about the existence of a building renewal policy in Kenya. The results further show that 80% building owners reported that there was no such policy while 20% said that they were not sure whether a building renewal policy existed in Kenya. Of the 37 building experts who took part in the study, 82% of them indicated that Kenya did not have a building renewal policy in place while 17% were not sure.The results lead to the conclusion that there is no building renewal policy in Kenya. Consequently, there may be need to create such a policy that would hitherto provide guidelines for building renewal and consequences for non- compliance.

3.3 Factors Influencing Decision to Undertake Building Renewal

The third study objective sought to determine factors influencing decision to undertake building renewal of commercial buildings in selected towns in Kenya.Building occupants, owners and experts were asked to give reasons that would necessitate building renewal of commercial buildings in towns. Table 6 summarizes the results obtained.

Table 6: Factors Necessitating Building Renewal

Factors necessitating building renewal	Responses (n = 303)					
	SA	A	UD	D	SD	Mean
Age of the building	65 (21%)	109 (36%)	40 (13%)	40 (13%)	49 (16%)	3.33
Lack of Renewal culture	0	0	57 (19%)	207 (68%)	39 (13%)	2.06
Demand from users	204 (67%)	97 (32%)	0	2 (1%)	0	4.66
Social and environmental considerations	198 (65%)	67 (22%)	30 (10%)	8 (3%)	0	4.50
User generated problems	198 (65%)	67(4)	30 (10%)	8 (3%)	0	4.50
Poor building design	12 (4%)	23 (8%)	34 (11%)	127 (42%)	107 (35%)	2.03
Change of technology	67 (22%)	89 (29%)	13 (4%)	78 (26%)	56 (18%)	3.10
Physical and ecological factors	66 (22%)	86 (28%)	46 (15%)	51 (17%)	54 (18%)	3.43
Overall Mean						**3.45**

From the survey statistics shown in Table 4.14, it can be seen that the most significant factors influencing the decision to undertake building renewal were; Age of the building (mean 3.33), demand from users (mean 4.66), user generated problems (mean 4.50), change of technology (mean 3.10) and physical and ecological factors (mean 3.43).

From the findings of the study it was concluded that factors influencing the decision to undertake building renewal of commercial buildings in Kenya included age of the building, demand from users, social and environmental considerations, user generated problems, change of technology and physical and ecological factors.

3.4Measures for the Adoption of Policy on Renewal of Buildings

The fourth objective sought to find out measures to needed to be put in place for the adoption of policy on renewal of buildings in Kenya. The results obtained are shown in Table 7.

Table 7: Measures for the Adoption of Policy on Renewal of Buildings

Measures	Responses (n=303)					
	SA	A	UD	D	SD	Mean
Periodic inspection of buildings	129 (42%)	94 (31%)	32 (11%)	27 (9%)	21 (7%)	3.93
Government regulation of building renewal	118 (39%)	103 (34%)	12 (4%)	30 (10%)	40 (13%)	3.76
Occupants reporting to Government regulator	12 (4%)	17 (6%)	59 (19%)	115 (38%)	100 (33%)	2.10
Occupants requesting for renewal from owners	178 (59%)	56 (18%)	10 (3%)	34 (11%)	25 (8%)	4.08
Building owners obliged to carry out renewal	108 (36%)	113 (37%)	15 (5%)	29 (10%)	38 (12%)	3.74
Overall Mean						**3.52**

The results in Table 7, it is evident that most of the respondents suggested a number of measures that can be adopted to address the building renewal problems in selected towns in Kenya among which included; periodic inspection of buildings (mean 3.93), Government regulation of building renewal (mean 3.76), Occupants requesting for renewal from building owners (4.08) and building owners to carry out renewal on their own volition (3.74). The results therefore imply that periodic inspection of buildings, proper regulation of building renewal by the government and occupants requesting for renewal from building owners as well as

building owners fulfilling their obligation to carry out renewal of commercial buildings renewal would be appropriate measures.

IV. Conclusions

From the findings obtained in this study the following conclusions were drawn according to research questions.

i) That the current condition of commercial buildings in some selected towns in Kenya was good though more maintenance and renewal was needed to make them excellent to meet the ever changing needs of the customers.
ii) That there was no clear policy on building renewal in Kenya as the existing building code addressed areas of health and safety but silent on building renewal guidelines.
iii) That demand from users, user generated problems, social environmental considerations, age of the building, physical and ecological factors among others were found to be the factors influencing decision to undertake renewal.
iv) That periodic inspection of buildings, proper regulation of building renewal by the government and occupants requesting for renewal from building owners as well as building owners fulfilling their obligation to carry out renewal, the problems facing building renewal in commercial centres in Kenya would be mitigated.

V. Recommendations

The researcher makes the following recommendations based on the study findings:

i) That the current condition of commercial buildings in some selected towns in Kenya needs maintenance and renewal in order for them to meet the ever changing needs of the customers.
ii) That a clear policy on building renewal in Kenya be developed and integrated in the existing building policy framework to guide the town's growth and development to ensure customer satisfaction. This would provide a common integrated approach for coordinated sectoral and special development for improved and sustainable housing development in commercial centres in Kenya.
iii) That to improve the extent to which building renewal is practiced in Kenya, periodic inspection of buildings, proper regulation of building renewal by the Government and occupants requesting for renewal from building owners as well as building owners fulfilling their obligation to carry out renewal, be advocated.

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