Assessment of Impact of Building Alteration on Residential Rental Values in D/Line, Port Harcourt, Rivers State.

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ABSTRACT
Housing being a basic human need, that protects and acts as a form security from the weather, it is also used as a basis for societal recognition and prestige, hence the need for humans to own properties and constantly improve or alter their properties to meet their optimum need(s) to conform with modern trends. In view of this, this study is centered on the impact of building alterations in residential properties within the DLine axis of Port Harcourt, Rivers State. The study, was done by a structured field survey targeted on property owners, tenants and Estate Surveyors and valuers practicing within DLine. The Taro-Yamane formula was used to determine the sample size of 95 while the simple random method of sampling technique was used in the distribution of questionnaires to the various categories of respondents. The data obtained was analyzed by using statistical tools like table and percentages including bar chart, which contributed greatly to the findings of the study and appropriate recommendations has been made to solve the issues surrounding residential building alterations in DLine. The positive and negative impact of building alterations were identified and a conclusion drawn to remedy those impacts.

1.0 Introduction

Housing is one of the basic human needs that also protects and acts as a security as identified by Maslow (1943) and Max-Neef (1992) in the human theories of needs. However, changes in demographic and social needs of a growing family that requires more space or need for up-to-date façade or as an investment have resulted in many house owners opting for alteration works to the existing house. This involves internal and sideways extensions either horizontally and vertically or upwards with complicated construction activities. Even though the construction

activities are important to the existing building industry and house owner's needs, they must not compromise health, safety, its surrounding environment and such development should be sustainable..

A building may need to be altered at some point after it has been constructed during its in-use period. Building alteration could be carry out for a wide range of reason which include: Factors unforeseeable at the design stage e.g. new efficiency standard become possible, total or partial change of use e.g an office block converted into housing, change of ownership necessitating enlargement, extension, or other changes, failure of building components, changing technological possibilities, fashion and wear & tear.

Some common examples of building alterations include: extension, partial demolition, linking or separating spaces, making or closing opening, refurbishing an existing component or feature, renovating an existing component or feature, repairing an existing component or feature, maintenance and decoration.

Seeley (2012) provides that, alterations work on buildings may be instigated by: The building owner, the in occupation tenant (with the owner's permission), the local authority (e.g if it needs to take urgent action or has instigated compulsory purchase order), including the central government. (e.g changes in regulation). Building alteration can be complex and may involve higher design and construction fees than new building work. Appointing a designer or contractor to carry out the works may be on the basis of a firm that has successfully undertaken work in the past and is trusted by the client/building owners or by inviting firm to tender for the work in an invitation to tender (ITT). Ivor, (2002) stressed that, some building alteration work may required planning permission while some may be considered permitted development, for which planning

permission will not be required. The best way to determine whether a development is permitted or not is to refer to the local planning authority.

The general goal of building alteration or alteration project is to meet the facilities standards for new project. Renovation designs must satisfy the immediate occupancy needs and anticipate additional future changes. As they are remodeled, building systems should become more flexible and adaptable to changing occupancy needs. Building alteration are defined at three basic scales: refurbishment of an area within a building, such as a floor or a suite, major renovation of an entire structure and upgrade/restoration of historic structures.

In the first instance, the aim should be to satisfy the program requirements within the parameters and constraints of the existing systems. The smaller the area in comparison to the overall building, the fewer changes to existing systems should be attempted. Components, equipment and construction should match the existing as much as possible to facilitate building maintenance.

In the second case, the opportunity exists to approximate the standards and flexibility of a new building, within the limits of the existing space and structural capacity. Where a historic structure is to be altered, special documents will be provided by Department of General Service Administration (GSA) in ministry of urban development to help guide the design of the alteration. The most important of these is the Building Preservation Plan, which Identities zones of architectural importance, specific character defining elements that should be preserved, and standard to be employed.

In general, alteration in historically significant buildings should be designed contextually to blend with original materials, finishes and detailing and to ensure a uniform and innovating first

impression. When substantial repair or alteration are undertaken in significant and highly visible locations,

1.1 Problem Statement of the Study.

The general goal of building alteration projects is to meet the facilities standards for new projects. Renovation designs must satisfy the immediate occupancy needs and anticipate additional future changes.

Building are altered in the study area but the people concerned do not carry out an assessment/evaluation which will describe the physical conditions of building system, identifies variances from present codes and notes available capacity for structural, mechanical, electrical and communication system. Without proper and adequate assessment/evaluation before altering a building, the structure will be prone to building defects and the building will create some adverse physiological and psychological reactions to tenants and stakeholders of the property. A poorly designed and executed alteration works could inadvertently trigger problems, resulting to poor performance of building components. Where an existing building is to be altered, alteration works requires adequate planning, ingenuity and imagination. Without adequate and proper planning, alteration works on building, would result to the several problems which include: design deficiency, materials deficiency and labour/construction deficiency.

Finally, when residential buildings are altered, it rental value can be affected negatively if the alterations work is not properly executed. It is for the above analysis; this study is being carried out to examine the impact of building alteration on residential rental values in D/line Port Harcourt, Rivers State.

1.2 Background History of the Study Area

The D/Line area, which is a medium density area in Port Harcourt metropolis, was used as the study area. It is a major business and urban residential area of Port Harcourt, Rivers State. Its geographical coordinates are $4^0$48'8" North, $7^0$0'10" East.

There are Nursery, Primary and secondary schools operating within the D-line boundaries amongst which are; Government Girl Secondary School, Oromineke. Methodist Comprehensive High School, Niger Grammar School, Choakmah, Three Public Primary Schools and a Host of Other Private Schools (see fig. 1.1) below..

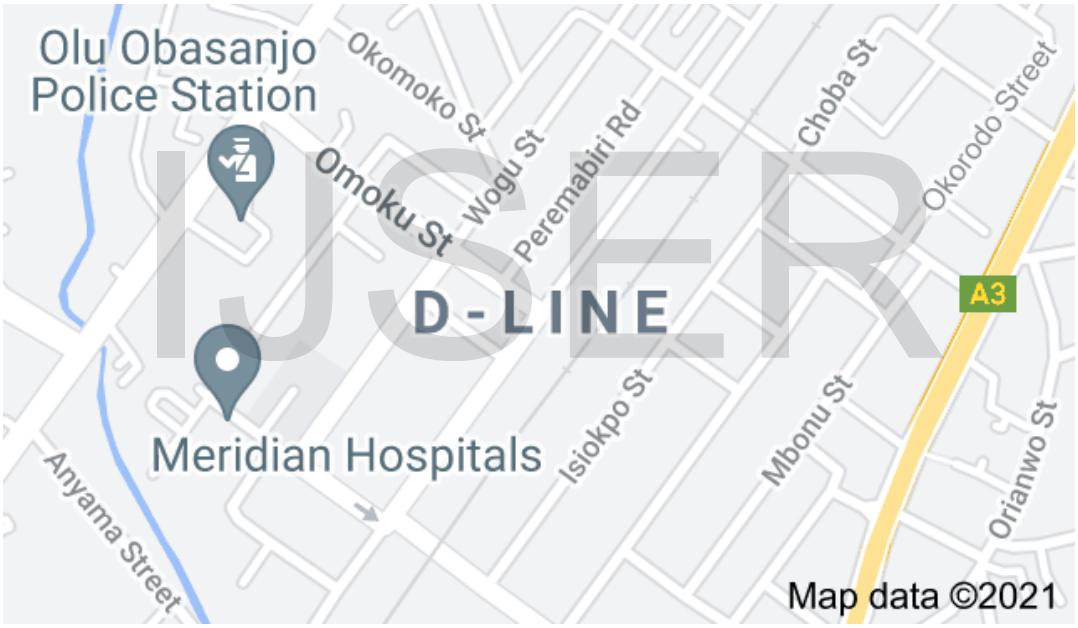

Fig. 1.1: Aerial View of D/Line, Port Harcourt

2.0 Literature Review

2.1 Impact of Building Alteration on Rental Value of Residential Properties.

Benson et al (1998) examined the impact of building alteration/renovation to ascertain their effects on rental value of residential property in Bellingham and Washington. The results indicate that, a well planned alteration works /renovation on residential building attract a

significant increase on rental value of the property. The study of Colombo (2012) in hedonic housing prices model also revealed that, regular altering and renovating building leads to higher property value.

According to Omoogun (2006), the value of any building does not only depend on its structural conditions, equally important are measures for energy-efficient renovation.

Bello (2009) provides that, without renovation which is a common example of building alteration, the value of the building decreases over time. Also, Ibrahim (2011), provide, that if no improvement is made in a property for a long period of time after construction, this can have a detrimental effect on the substance of the building and thus on it rental value. The same applies if the property is not up to date in terms of energy or if a necessary modernization is not carried out. Olujimi (2009), stressed that, an energetic alteration works increases the rental value of building, he further state that, the energetic alteration of older building is a topic that does not only play a role for the sale of properties but also on the life cycle of the properties.

Olujimi (2009), opined that, apart from the energetic alteration of building, the renovation and modernization of the interior part of the residential building also play a major role when it comes to the value of the building. If alteration works are regularly carried out in addition to renovation measure, including regular painting of the interior walls the modernization of sanitaryrooms, floors, balcony or terrace are also useful measures with which one can influence the rental value of a residential building in a positive way. According to Dokmeci (2003) if all components belonging to the property are well altered and maintained regularly, including repaired, the value of the entire property is preserved.

Finally, the researcher also examine the impact of building alteration on residential rental value in D/line Port Harcourt, by comparing the rent of each class of residential properties before the

landlord carry out the alteration works on their building in the area and the rent of each class of residential property after the property owner have carry alteration works on their building in the area. The result show that the rental value of residential accommodation in the area before the alteration work was carried out do not appreciate over time (decreases) but the rental value of each class of residential accommodation after the alteration works was carried out appreciate over time (increases). That is to say successful and satisfactory building alteration/renovation works have positive impact on rental value of residential property.

2.2 Meaning of Building Alteration

Barry, N. (1999) opined that building alteration can be seen as; work intended to change the function or appearance of a building or structures

According to Ebsen and Ramboll (2009), said that building alteration refers to a limited construction project for an existing building that comprises the modification or replacement of one of a member of existing building systems or components.

They further stressed that, existing often undergo alterations during their life do change modify or improve their performance or the nature of their use. The Building Act identified the following common examples of building alteration to include:

i. Total or partial change of use

ii. Extensive

iii. Partial demolition.

iv. Linking or separating spaces

v. Making or closing openings

vi. Retrofitting a new component or feature

vii. Refurbishing and existing component or features.

viii. Renovating and existing component or feature

ix. Repainting an existing component or feature

x. Maintenance

xi. Decoration

Some building alterations may require planning permission, other building alterations may be considered permitted development's for which planning permission is not required. Examples of permitted developments include: certain enlargements or alterations to houses, construction of some sheds and fuel storage containers, certain perches, doors and windows, and so on.

The best way to determine whether a development is permitted or not is to ask the local planning authority. The building regulations may also apply to building alterations.

House alteration projects involve many activities such as preparation of basic design, demolition work, relocation and new installation of building structures and materials. For terrace housing, a new opening is required in order to convert small dwellings into larger units. Most of the time, walls or parts of walls have to be removed to accommodate the change in layout and building support systems to strengthen existing walls and floors. To suit the living patterns and densities of users, the house requires adequate circulation or a suitable access through proper rearrangement of spaces. Although the process is not as complicated as in multiple or highrise building constructions, the total work should be carried out without deteriorating the quality of life, living conditions and the environment.

Unfortunately, several studies have shown that these requirements are not followed up thoroughly in related building or safety regulations especially when concerning the public. Yet, human beings need to be the centre of concerns for sustainable development as according to Principle 1 of the Rio Declaration on Environment and Development (1992). They are entitled to

a healthy and productive life in harmony with nature that relates to social, economic and environmental pillars of sustainable development.

2.3 Concept of property

Udechukwu (2006) viewed property as a legal concept encompassing all the interest right and benefit related to its ownership. Also, scholars in the social sciences see property as a bundle of rights. They also provide that property is not a relationship between people and things but property is a relationship between people with regard to things. Again, Graham (2005) in the encyclopedia of philosophy referred to property as any physical or tangible entity that is owned by a person or jointly owned by of group of persons. The real estate experts see property as the right to the assets, not the assets themselves, i.e. rights that are defined by a country's legal system, custom and culture. Ifediora (1993) stressed that property is the highest right a man can have to anything such as the right which one has to land, or tenements, goods or chattels which does not depend on another's courtesy.

2.4 Concept of Residential Property

Fidelis (2004) viewed residential properties as those used as dwelling accommodation by man. Ivor (1980) observed that properties (buildings) vary in shape, height and design. Millington (1975) opined that the value of any property depends on location, position, and the physical characteristics. However, Udechukwu (2000) classified residential properties to include: batchers, tenement buildings, bungalows, flats, duplex maissonnettes and terrace houses.

3.0 Methodology

The study adopted a descriptive survey method of research design, in an attempt to empirically discuss the impact of building alteration on residential rental value in D/line Port Harcourt.

According to Mugenda (2003) a descriptive survey design describes the facts and characteristics of a given population or area of interest.

A simple questionnaire was designed and administered to property owners/Tenants, Property Developer and Town Planners and Estate Surveyors and Valuers. Face to face interview questions were as well design for the study

The sampling method adopted for this study is the simple random sampling technique. This method of sampling technique was preferred to other method because it is free from bias.

The sample size is referred to as a subset of population. It serves as the representation of the whole population under study.

To determine the sample size, the Taro-Yamane formula is used since the sample size is Unknown. The formular is stated as:

$$n = \frac{N}{1+N(e)^2}$$

Where n = sample size

N = The population

e = Level of significance

Usually 0.05 (5%)

1 = Unit constant

Therefore to calculate the sample size, the level of significance is given as 5%, population = 125

$$n = \frac{N}{1+N(e)^2} = \frac{125}{1+125(0.05)^2} = \frac{125}{1+125(0.0025)}$$

$$= \frac{125}{1+0.3125} = \frac{125}{1.3125} = \underline{95}$$

Therefore, the sample sizes for this study is 95 covering all the categories of respondents mentioned in the population of the study

4.0 Data Analysis

4.1 Building alteration impact on residential rental value

Table: 1 Analysis of if building alternation impact on residential rental value

S/N	Options	Frequency	%
1	Yes	50	77
2	No	15	23
	Total	**65**	**100%**

Source: Field survey, 2022

Table 1 above shows that, 50 respondents representing 77% said (Yes), that building alternation has a great impact on residential rental values while 15 respondents representing 23% said (No), based on the respondents responses, it can be concluded that building alternation have impact rental value of residential property.

4.2 Reasons for carrying out alteration works on your building

Table 2: Analysis of reasons for carrying out alternation works on building.

S/N	Reasons	Frequency	%
1	Partial change of use	10	15.4
2	Fashion	10	15.4
3	Wear & tear	15	2.3
4	Failure of building components	10	15.4
5	Factor unforeseeable at the design stage	10	15.4
6	Changing technological possibilities	10	15.4
	Total	**65**	**100%**

Source: Field survey, 2021

The analysis on table 2 above shows that, 10 respondents representing 15.4% are of the view that the reasons for carrying out alternation works on their building is because of partial change of use, fashion, failure of building components, factor unforeseeable at the design stage and changing technological possibilities while15 respondents representing 23% said that the reason for carrying out building alternation works in the area is wear & tear. Based on the above analysis, it simply means that building alternation is carry out in the area for various reasons.

4.3 Rent paid on different class of residential property- before alternation work from 2017-2021

Table 3 Analysis of rent paid on different class of residential property- before alternation work

S/N	Residential Property Types	Rental Value Per Annum				
		2017	2018	2019	2020	2021
1	Single room tenement	60,000	60,000	65,000	65,000	70,000
2	Single room en-suit	110,000	130,000	140,000	140,000	150,000
3	One bedroom Flat	250,000	250,000	300,000	300,000	350,000
4	Two bed room Flat	400,000	450,000	450,000	450,000	500,000
5	Three bed room Flat	600,000	650,000	650,000	650,000	700,000

Source**:** Field survey, 2021

The result of table 3 above clearly shows rent of each class of residential properties before the landlord carry out alternation works on their building. As it can be seen on the table above, the rent of each class of residential properties do not really appreciate over time. This could be as a result of certain structural factors or variables affecting the properties.

4.4 Rent on different class of residential property- after alternation work. 2017 – 2021

Tables 4: Analysis of rent on different class of residential property- after alternation work.

S/N	Residential Property Types	Rental Value Per Annum				
		2017	**2018**	**2019**	**2020**	**2021**
a.	Single room tenement	65,000	65,000	70,000	70,000	75,000
b.	Single room en-suite	130,000	150,000	160,000	160.000	180,000
c.	One bedroom flat	300,000	330,000	350,000	350,000	400,000
d.	Two bedroom flat	400,000	450,000	500,000	500,000	600,000
e.	Three bedroom flat	700,000	750,000	800,000	800,000	850,000

Source: Field survey, 2020

Table 4 above, it is very clear that, the rent of each class of residential properties appreciate over time after property owners carry out series of alternation work on their building. This is an indication that, renovating an existing building and maintaining it, increases it rental values.

Necessary requirement in the building code before carryout building alternation

4.5 Analysis of Responses Obtained from Tenants in the Area.

4.5.1 Use to which building in the area altered to

Table 5 Analysis of use to which building in the area is altered to

S/N	Responses	Frequency	%
1	Residential use	25	39
2	Commercial use	35	54
3	Institutional use	5	8
a.	Agricultural use	Nil	0

		65	100%

Source: Field Survey, 2021

Table 5 above, 25 respondents representing 39% are of the opinion that, building in the Area are alter to residential land use. Also, 35 respondents representing 54%. Say that building in the area commercial land use.

Finally, 5 respondents representing 8% are of the view that it building in the area are alter to institutional land use, based on these above analysis, it simplify mean that many residential building/structure in the study area are converted to commercial uses .

4.5.2 Structural conditions of the residential properties in the Study Area

Table 6: Analysis of structural conditions of properties in the area

S/N	Options	Frequency	%
1	Good	10	15
2	Poor	25	39
3	Functioning	15	23
4	Satisfactory	15	23
5	Others Specify	Nil	
	Total	**65**	**100%**

Source: Field Survey, 2021

Table 6 shows that, 10 respondents representing 15% are of the opinion that, the structural conditions of the building is good. Also, 25 respondents representing 39% said that the structural condition of the building is poor. Finally, 15 respondents representing 23% are of the view that, the structural condition of residential properties in the area is satisfactory and functioning. Based on the above analysis, it means that most properties in the area need renovation and maintenance.

4.5.3 Analysis of Responses from Town Planners and Estate Surveyors and Valuers

Table 7: Analysis of common examples of building alteration in the area.

S/N	Options	Frequency	%
1	Maintenance work	10	15.4
2	Decoration work	10	15.4
3	Repairing an existing component	10	15.4
4	Partial demolition	10	15.4
5	Extension	10	15.4
6	Partial Change of use	15	23
	Total	**65**	**100%**

Source: Field Survey, 2021

Table 7 shows that, 10 respondents representing 15.4% are of the opinion that, the common examples building alteration in the area are maintenance work, decoration work, repairing an existing component of the building, partial demolition, and extension while 15 respondents representing 23% said that, the common example of building alteration in the area are partial change of use. This indicates that, different categories of building alteration works are going on in the area.

4.5.4 An assessment/Evaluation before altering building in the area

Table 8: Analysis of the Landlord Assessment/Evaluation before altering building in the area.

S/N	Options	Frequency	%
1	No	60	92
2	Yes	5	8
	Total	**65**	**100%**

Source: Field Survey, 2021

Table 8, shows that, 60 respondents representing 92% choose (No), which mean that, property owners in the area do not carry out assessment/evaluation before altering building in the area while 5 respondents representing 8% choose (Yes) which mean that, Landlord in the area carryout an assessment/evaluation before altering their building in the area. The implication is that, altering a building without proper assessment/evaluation will affect the sustainable performance of the building.

4.5.6 Analysis of Responses Obtained from Property Developers.

4.5.6.1 Permission from planning authority to carry out building alteration works on property

Table 9: Analysis of Developers permission from Planning Authority before carrying out building alteration works

S/N	Responses	Frequency	%
1	Yes	25	38.5%
2	No	40	61.5%
	Total	**65**	**100%**

Source: Filed survey, 2020

The result on the table 9 above shows that 25 respondents representing 38.5% said (yes), that property developers in the area seek permission from Planning Authority before carrying out building alteration works or property development in the area while 40 respondents representing 61.5% said (No). This simply means that, property developers in the area, do not always seek permission from Planning Authority, before carrying out building alteration/renovation in the area.

4.5.6.2 Impact of building alteration on rental values of residential properties

Table 10: Analysis of impact of building alteration on rental values of residential properties

S/N	Options	Frequency	%

1.	Negative impact	15	23.1
2.	Positive impact	50	76.9
3.	Others specify_____	Nil	0
	Total	**65**	**100%**

Table 10 above shows that, 15 respondents representing 23.1% are of the opinion that, building alteration have negative impact on rental values of residential properties, if not properly executed while, 50 respondents representing 76.9% are of the view that, a properly executed building alteration works have positive impacts on the rental values of residential properties. Based on the above analysis, it is obvious that building alteration have positive impacts on residential rental values to a great extent.

4.7 Factors that affect property value

Table 11: Analysis of the factors that affect property values

S/N	Responses	Frequency	%
1	Structural Factors	20	31
2	Neighbourhood Factor	10	15
3	Locational Factor	20	31
4	Environmental Variables	10	15
5	Time-related attributes	5	8
	Total	**65**	**100%**

Sources: Field Survey, 2021

Table 11 above shows that, 20 respondents representing 31% are of the opinion that the factors that affect in property values in the area are structural factors and Locational factors, Also, 10 respondents representing 15% are of the view that it is Neighbourhood factors and Environmental variables that affect property value. Finally, 5 respondents representing 8% said

that, the factors that affect property value are time-related attributes. The above analyses indicate that, real properties are generally affected by various factors and variables.

5. 0 Discussion of Findings

From table 4.6, the percentage of the total respondents who were in affirmative as to whether building alteration has a great impact on residential rental values in D/line Port Harcourt is 77% while those in the contrary view is 23%.The larger respondents believed that, building alteration works has positive impact on residential rental value, especially when rent receive by the property owners in the area before and after carrying out alteration works on the building are compared together.

The study found out that, there are reasons for carrying out alteration works on building in the area, which include ;(a) partial change of use (b) fashion (c) wear and tear (d) failure of building components (e) Factors unforeseeable at the design stage (f) Changing technological possibilities on the building components.

The study as revealed in table 3 and 4reveals the rent of each class of residential properties before the landlord carryout alteration works on their building in the area and the rent of each class of residential properties after the property owners has carryout alteration works on their building in the area. The result on table 3 shows that, the rental value of residential accommodation in the area before the alteration works was carried out do not appreciate over time but the result on table 4 shows that the rental value of each class of residential accommodation in the area appreciate over time (increase in value). This is an indication that renovating and existing building and maintaining its component parts increases it rental values.

Table 5 the study revealed that, residential buildings in the area are mostly alter to commercial uses. This means that, commercial activities are much in the area. This is an indication that residential property can be converted to different uses, especially commercial use.

From the result on table 6, the percentage of the total number of respondents who said that the structural condition of residential properties in the area is good is 15%. Also, 39% of the respondents said the structural conditions of properties in the area are poor. Finally, 23% of the respondents said that the structural condition of the residential properties in the area is functioning and satisfactory. The larger respondents agreed that, the structural condition of the properties in the area is poor. The implication is that, this can go a long way affecting tenants satisfaction and at the same time affecting the rental value of the properties.

From the result on table 11, the percentage of the total number of the respondents who are of the view that structural factors and locational factors are factors that affects property values in the area is 31%. Also, 15% of the respondents said that, neighborhood factors and environmental variables are the factors that affect property values in the area. Finally, 8% of the respondents said it is time – related attributes. The implication is that, real properties are generally affected by various variables and factors of which, locational factors and structural factors is on the highest, follow by neighbourhood factors and environmental variables including time-related attributes.

Table 7 reveals that, there are common examples of building alteration in D/line Port Harcourt. The research identified the examples to include; maintenance works, decoration work, repairing an existing component, partial demolition, extension and renovating an existing component or features. The study clearly shows that, different alteration works are ongoing in the area.

Finally table 8 shows the percentage of the total respondents who said "No" as to whether landlord carry out an assessment/evaluation before altering building in the area is 92% while those with contrary view is 8%. The larger respondents strongly believed that, landlord in the area do not carry out an assessment/evaluation before altering their building. The implication is that, altering an existing building without carrying out risk assessment study/evaluation will affect the life cycle of the building, when once the life cycle of the building is affected; the value of such building or property started depreciating over time.

6.0 Conclusion

This research study has carefully examined the impact of building alteration on residential rental values in D/line Port Harcourt. It has provided some useful insights to understand the effects not only to property owners but also to the tenants and surrounding areas. Lack of proper construction processes and procedures in building alteration works may often bring problems to the building (properties) and surrounding area thus affecting the natural environment, health and quality of life. When once the natural environment is affected, real estate property is affected as well. These issues are often raised as problems of uncontrolled development of building alteration projects.

Appropriate recommendations have also been made to solve the identified problems of the study. It is therefore, believed that these recommendations would be implemented accordingly by all concerned.

7.0 Recommendations

Based on the findings of this study, the following recommendations are made:

It is important that problems and issues of property extension or even renovation works is understood to ensure each construction project complies with the safety standard.

There should also, some form of risk management which is required to minimize or control the potential problems arising unforeseen alteration works and the occupation during works.

Building alteration should be done properly by considering all the necessary requirements in the building regulation. A properly done building alteration is the best way of adding value not only to the property but also creating the least impact on the neighbouring property and on the street scene.

Before altering any building in the area, there should be a proper planning, assessment/evaluation and working methods without compromising social, economy, environment and health aspects to achieve a successful sustainable development.

It is also recommend that, there should a careful planning and implementation beginning from the design stage, selection of materials, working equipment, area and method of construction.

Proper owners should engage the services of professional such as Architects, Estate Surveyors, Quantity surveyors and builders to design and manage their properties; also professionals should be employed in the building industry based on job schedule. Houses should be designed by architects subject to approval by the ministry of land and Housing, this will encourage developers to adhere to approved building plan.

Development control: From foundation to roofing, the development should be monitored and controlled at every stage by the relevant development authority

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