



# Optimizing Bathroom and Toilet Design in Southwest Nigerian Homes: A Study of Space, Location, and User Experience

Research Article

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## Author Details

Ala A.A<sup>1\*</sup>, Onipe V.G<sup>2</sup>, Oyebiyi S.A<sup>3</sup>

1, 2, *Department of Architectural Technology, School of Environmental Studies, The Federal Polytechnic, Ado-Ekiti, Ekiti State.*

3 *Department of Building Technology, School of Environmental Studies, The Federal Polytechnic, Ado-Ekiti, Ekiti State.*

\***Corresponding author's email:** [onipe\\_vg@fedpolyado.edu.ng](mailto:onipe_vg@fedpolyado.edu.ng)

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## ABSTRACT

The arrangement of spaces in a residential apartment plays a very important role in the overall functionality of a building as it determines the quality of users' experience(s). "Before construction and occupancy, we design our buildings, but the building's design us afterwards". Goes a popular saying among construction consultants. This is rightly so as the nature and organisation of space can imply some sort of stressor, otherwise on the occupants. There are certain standards and prerequisites for the designs of lavatories in residential buildings, but research findings have shown that most clients' requirements, for the few who seek professional input, are not often in tandem with these conventional standards. The wrong location and sizes of lavatories, especially in residential buildings built for commercial purposes, are found to be done in haphazard ways, constituting psychological and social stress to the detriment of the occupants. This research, therefore, investigates the effects of these misplacements in terms of size and spatial allocation as well as location of toilets and bathrooms, considering medical, psychological and social consequences. the research adopted a mixed method approach; data were gathered from 144 (one hundred and forty-four) residents in the 6 (six) states across the Southwestern part of Nigeria using the Purposive Sampling method in a non-probability sample technique. Findings were analysed in percentiles and represented in tables and a pie chart using a Nominal Scale. The research concludes by making recommendations on how these anomalies are better addressed.

**Keywords:** Conveniences, Toilet, Bathroom, Residential, Tenants, Occupancy.

## **1 Introduction**

The location and sizes of toilets and bathrooms in a residential building are usually a thing of utmost concern and consideration in the design of residential buildings. Occupants of a house, as well as their family members, need a place to use as conveniences (urinate, defecate, take a bath, shave, get cleaned, as well as attend to sundry other personal needs as the case may arise). This is because its zoning within the residential space tangibly affects the level of comfort and luxury the user enjoys.

It is usually a place of privacy, except in the case of couples or little children, elderly or sick people who might require assistance in these areas. It is common practice to find that in places where the toilets and bathrooms are not shared, the space for toilets and bathrooms is often designed such that they share proximity with the bedrooms, except in the case of visitors' toilet, which is often located around the ante or living room area. Such bedrooms possessing a toilet and bathrooms attached closely to them are referred to as being en-suite.



However, in some residential buildings, especially those developed for large number of occupants or for commercial purposes within the area of focus for this study have been observed to often have their toilets and bathrooms detached from the other spaces and positioned in such a way that they are accessible by all. In some cases, such persons have queue up and wait their turn in order to utilise the facilities and the ones whereas anyone using it at a particular time is expected to be done within a stipulated time to give room for others who are waiting.

Similarly, some of these toilet and bathroom spaces are often built in ridiculous shapes and sizes.

Safe to note that, when a space that is designed for a toilet and bathroom becomes too small or too large, it poses some discomfort and health challenges to users as well as results in certain social and psychological dysfunctions which are further expatiated in this study.

### **1.1 The Development of Toilets and Bathrooms in South-West Nigeria**

With little trace to documented history, oral interviews reveal that, the historical antecedence of the development of toilet and bathroom spaces in south western Nigeria dating back to precolonial time till date, the majority of Nigerians especially those originating from the southwestern region were said to be typically farmers, hunters, fishermen, traders or people engaged in one handicraft or the other. These coupled with their cultural disposition and view towards human faeces as something that should not be close to the human dwelling area by any means fuelled the idea of majority going into the bush to relieve themselves whenever the need arises. There were however shacks and areas covered with corrugated zinc and curtained for entrance with are used as bathroom area. These practices still exist in some remote areas till date.

However, the colonial and post-colonial era saw these natives adopting the European style of design and construction of toilets and bathrooms in both isolated and en-suited fashion. Currently the prevalent practice is almost at per with what is globally obtainable. With residential buildings designed such that toilets and bathrooms are en-suited to their respective bedrooms save for situations where single rooms are built in terrace forms and their toilets, bathrooms as well as kitchen is located.

### **1.2 Focus of Study**

There several issues arising as a result from the use of toilets and bathrooms some of them pose serious concerns to health and safety, sadly many people have passed on as a result of accidents or discomforts arising from the nature, location or use of their toilets and bathrooms. Some of these accidents and discomforts related to the nature and use of conveniences includes but not limited to;

- i. Slipping and falling from slippery floor
- ii. Foul Odour
- iii. Tears and Cuts from broken toilet wares
- iv. Digestive and excretory stress
- v. Physical stress
- vi. Socio-psychological anomalies
- vii. Health complications arising from holding in urine or faeces

However, this study mainly focuses on dangers arising from wrong location or sizes of toilets and bathrooms



## **2 Literature Review**

### **2.1 From Neolithic to Modern Times**

It is unclear who first invented the flush toilet. Although archaeological excavations in northwest India have revealed 4000-year-old drainage systems which might have been toilets, it is not clear whether this is genuinely the case. However, the honour of producing the first toilet goes either to the Scots (in a Neolithic settlement dating back to 3000 BC) or to the Greeks who constructed the Palace of Knossos (in 1700 BC) with large earthenware pans connected to a flushing water supply.

### **2.2 Roman Times**

By 315 AD, Rome had 144 public toilets. The Romans treated going to the toilet as a social event. They met friends, exchanged views, caught up on the news and wiped themselves with a piece of sponge fixed to a short wooden handle. This was then rinsed in a water channel, which ran in front of the toilet, and reused. It has been suggested that this practice spawned the phrase "getting hold of the wrong end of the stick".

### **2.3 Medieval Times**

In medieval England, people used "potties" and threw waste into the streets. The wealthy used "garderobes" suspended over moats, while peasants used communal privies.

### **2.4 Victorian & Edwardian Times**

The population growth in Britain led to inadequate toilet facilities, causing sewage to spill into streets and rivers. This led to water-borne diseases like cholera. The government eventually built a sewer system in London.

### **2.5 Modern Times**

The flush toilet was invented in 1596, but didn't become widespread until the 19th century. Modern toilets have evolved with advancements in technology, including low-flush toilets and vacuum toilets.

## **3 Methodology**

The research method adopted here is a mixed method. 144 (one hundred and forty-four) questionnaires with both open and closed-ended questions were evenly administered to residents (mostly tenants) in Oyo, Osun, Ondo, Ekiti, Ogun and Lagos State using a purposive sampling method in a non-probability sampling technique. Data was analysed using quantitative data analysis methods, presenting results in a Pie Chart, a graph and tables. Results were shown in figures and percentages for clarity.

Desk Review Research Approach by reviewing relevant archival materials (literature) relating to the subject matter – Effects of the Location and Sizes of Toilets and Bathrooms in Residential Buildings in Southwest Nigeria. Secondary data were also obtained from online journals, textbooks and a review of literature on the standard recommendations for the designs of toilets and bathrooms vis-à-vis their location, sizes and uses.

## **4 Findings and Discussions**

### **4.1 The Standard for Sizes and Locations of Toilets and Bathrooms in Residential Buildings (Minimum Requirement)**

The design of toilets and bathrooms is quite special and intriguing, because of their location, position, sizes and the shapes they are made to assume. Sometimes their sizes and location do not follow standards as well, this is particularly so in the designs of residential buildings with commercial intents. Most designers (Architects) concentrate on other



functional spaces, while conceptualising a residential building, they only include or attach the toilet and bathroom space to other functional spaces (e.g., Bedroom, Guest Bedroom and Anteroom) that have been created as an afterthought in their designing process.

## Size

Fasi Ur Rahman (2016), according to the construction encyclopaedia, the minimum acceptable standard for the design of toilets and bathrooms in residential buildings are as given below.

The general heights of toilets and bathrooms should be above 2100mm

- i. in a situation where the WC and Bathrooms are separate:
  - Bathroom (separate): 1200mm X 1800mm
  - WC (separate): 1200mm X 1200mm
- ii. in a situation where the WC and Bathrooms are combined:
  - WC and Bathroom (combined): 1800mm X 2400mm

## Location

In the design of residential buildings, it has been established, as taught in the schools of architecture all around the world, that toilets and bathrooms should be attached to each bedroom for easy access. However, it is not so uncommon to find situations where there are interjectory lobbies or other spaces like a Walk-In-Closet.

Residential buildings designed for commercial purposes may, however, take a different shape depending on the building type. In the case of Flats, duplexes, detached home buildings, Luxury apartments, Semi-Detached flats, Semi-detached duplexes, Terrace Flats, Terrace self-contained or Studio apartments. We often find that the toilets and bathrooms are combined and attached to the bedrooms as expected under standard conditions.

However, in the case of Row houses or Terrace single rooms, where buildings are designed in such a way that rooms are arranged in a row with the toilets and bathrooms isolated to a corner within the site premises. In most cases of this nature, there seems to be no particular location suitable enough to be regarded as a standard arrangement as the externalised nature of these toilets and bathrooms constitutes stress, security and safety risks when occupants need to use the toilets or bathrooms at night.

Factors responsible for wrong sizes and location of toilets and bathrooms

- i. Lack of planning/design
- ii. Beliefs and Culture
- iii. Profit maximisation
- iv. Involvement of quacks and non-professionals

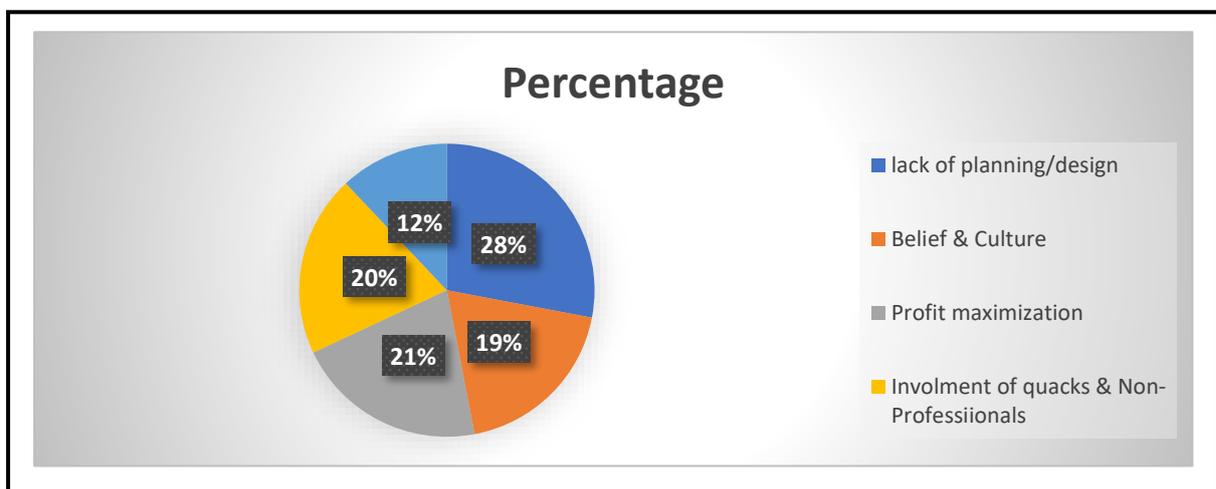
Based on findings from this research, the above factors were found to be responsible for the wrong sizes and location of toilets and bathrooms, and they exist in the following proportion.

**Table 1:** Table showing factors responsible for the wrong sizes and location of toilets and bathrooms in residential homes across the 6 (six) southwestern states in Nigeria. As captured through questionnaires administered to 144 samples

STATE	LACK OF PLANNING	BELIEFS & CULTURE	PROFIT MAXIMIZATION	INVOLVEMENTS OF QUACKS	CONVERSION OF BUILDINGS	TOTAL
OYO	7	4	5	4	4	24
OSUN	7	4	4	6	3	24
ONDO	6	2	5	7	4	24
EKITI	7	6	7	3	1	24
OGUN	5	7	3	6	3	24
LAGOS	8	5	6	3	2	24
	40	28	30	29	17	144

**Table 2:** Table showing percentages of respondent's thoughts on the causes of the wrong sizes and location of toilets and bathrooms in residential homes across 6 (six) southwestern states in Nigeria

S/N	CAUSES	PERCENTAGE
1.	Lack of Planning	28
2.	Beliefs & Culture	19
3.	Profit Maximization	21
4.	Involvements of Quacks	20
5.	Conversion of Buildings	12
		100



**Figure 1:** Pie Chart showing factors responsible for wrong sizes and location of toilets and bathrooms in residential buildings in Southwestern Nigeria. In percentages of a sample population totalling 144 (One Hundred and Forty-Four)

As shown in the table above, findings reveal that:



#### **4.2 Lack of Planning/Design (28%)**

This factor accounts for 28% of these occurrences. This is the largest percentile in the group, which implies that a lot of clients and developers in this demography delve into building development without planning or obtaining relevant design and pre-construction documents. Thereby skipping the process of getting advice rightly as well as obtaining designs that suits and optimizes the size and nature of their sites in relation to planning regulations prevalent in such areas.

#### **4.3 Profit Maximization Design (21%)**

This account for 21% in this group, and it describes the situation where some clients/developers are more focused on maximizing profit to the detriment of other consideration. These set of people negate every professional guide and injunction, they even go to the extent of using overpowering influence on the builders or supervisors to alter design, specifications, building process and methods including building materials. The major interest of the clients with such orientation is to achieve as many numbers of lettable rooms as possible regardless of the conditions in which the end users are subjected to.

The goal here is to build at the least cost yet generate as many rooms as possible for letting and generating marginal profit.

#### **4.4 Involvement of Quacks and Non-Professionals (20%)**

At 20% this represents the menace of quacks and non-professionals handling both designs and construction supervision, advising their ignorant clientele wrongly thereby resulting in hazardous situations for the occupants.

#### **4.5 Beliefs and Culture (19%)**

The belief that the toilet space is a dirty and unpleasant part of the building that must be isolated and treated separately from other parts of the building has existed in Nigeria as a nation from prehistoric times. At the advent of residential bungalows, many residential buildings, both for family use and commercial purposes, were still found with detached toilets and bathrooms, with some having nothing more than wooden stanchions wrapped with corrugated zinc materials and curtain-covered entrances. This culture has yet to find its way of influence, even in buildings of the present age, within the southwestern region of Nigeria. With special references to terrace single rooms, many developers are reluctant to have as much number of toilets and bathrooms as complement the bedrooms and interjecting the living area. They believe it is safer and more hygienic to have them detached and isolated.

#### **4.6 Conversion of Building (12%)**

In areas where the demand for single rooms for rent is high, it is not uncommon to find landlords converting their school building blocks, event halls, and shops. etc. into single-room residential apartments. Following the intricacies of these conversions, it becomes inevitable to find situations where spaces or toilets and bathrooms cannot be realised within the regenerated spaces, hence the need to erect an isolated external structure to serve as a toilet and bathroom for the occupants

#### **4.7 The Negative Effects of Wrong Sizes and Location of Toilets and Bathrooms**

When toilet and bathroom sizes are too small or too large about their functions vis-à-vis the number or size of users, they pose certain challenges that have effects on the occupants' comfort, health, safety and general wellbeing. These unpleasant situations include, but are not limited to, health hazards, physical, emotional and psychological pain and trauma as well as social dysfunction in people.



## 5 Recommendation

1. Building regulation bodies should see to it that standards regarding the design and construction of toilets and bathrooms are adhered to the letter.
2. Occupants should take it upon themselves to ensure that the houses they let are provided with good toilet and bathroom facilities
3. The general public should be educated in the subject matter as it affects their lives and well-being.
4. Clients and developers should be made to understand how building to design and standard conditions is more profitable in the long run as compared to other cheap alternatives.

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