

E-planning Strategy for Building Plan Approval in Nigeria, Case Study of Ondo State

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Abstract: The pace and standard of development in the world today required an automated mode for faster and up to date means of getting things done. With the recent export of COVID 19 to the world, getting things done at people's comfort becomes necessity to ensure social distancing stipulated by policy makers. The problem of building plan approval has been a subject of unending officialdom in most developing world. This study was carried out to provide a mitigate measures for building plan approval processes in southwest, Nigeria using Ondo State as a case study. The study examined the current building plans approval processes practiced in the state Ministry of Physical Planning and Urban Development (MUPPUD), Akure. Random sampling method was used in selecting applicants using the number of plans approved between May to September 2019. It was observed that, it takes longer time for building plan to be approved and the client needed to visit the office to fast track the approval process. Despite the fact that applicants have access to internet facilities through the comfort of their own, none of the planning approval information is online to ensure speedy process. The study hereby focused on modernizing the process through the application of e planning in order to improve speedy approval processes, to facilitating planning activities among government officials and associates and to ensure shared centralized services that are accessible by all. With this, if all the recommendations are well address and implemented, the mode of building plan approval in the region will be quicker, easier and users friendly.

Keywords: Building Plan, Approval, E-planning, ICTs, Ministry

1. Introduction

Planning has had a complex relationship with Information and Communication Technologies (ICTs) for a long time. The introduction of ICTs in cities trends to be a turbulent and ad-hoc process, although several cities claimed to be technologically inclined [4]. Graphic and mapping tools, statistical data bases and visual simulations have frequently been used in urban planning practice. More recently, a set of new technologies, many of which have quickly entered every day or mundane use, has been developed independently of urban planning, such as community web environments social media platforms, and locative and mobile technologies. These technologies enable citizens to create and share data information about local issues and urban environment [15].

The onset of social networks, such as Facebook.com, Google+, and Twitter and the emergence of communication

applications for mobile phones, such as WhatsApp, have changed the way people communicate, particularly in countries with high Internet uptake. Likewise, these communication tools have the potential to shape urban planning now and in the near future. In particular, the requirement for public participation in planning processes could benefit from the engagement of people via social networks.

E-planning is the socio-cultural, ethical, and political practice in which people take part online and offline in the overlapping phases of the planning and decision-making cycle [13]. E-planning is the extensive use of information and communication and communication technologies in all phases of the urban planning process, within the framework of positive planning. It takes into consideration extended range of digital tools official, unofficial, expert, and mundane and address their use in the context of citizen participation in urban planning.

E-planning includes consideration on how to use ICTs for enhancing the participation processes [15]. However, the ways

the modes of participation are changing, as well as the administration and decision-making processes too. The emphasis tends to be on new tools and structures, as well as on the timing for participation. In addition, the overall complexity of e-planning seems to change the linear process and stable power relations of planning [13]. Public participation comprises multiple activities in which planners can have some discretion to choose among a number of modes of communication. Therefore, one can expect to identify a variety of uses and aspirations of e-planning in different contexts.

It is universally accepted that housing the most important for physical survival of man; the others being food and water [3]. Adequate shelter contributes to the attainment of physical and mental health of a nation and stimulates the social stability, work efficiency and development of the individual. Shelter, both in units or multiple forms, is a significant component of the physical form and structure of a community, while the human and family contents of the house is part of the very spirit of life and prosperity of the society [2]. Housing is the root of a healthy lifestyle and it is a major evidential resource of comfort for the human race [11]. This is because "residential satisfaction has been noted as one of the central components of individuals' general quality of life" [7].

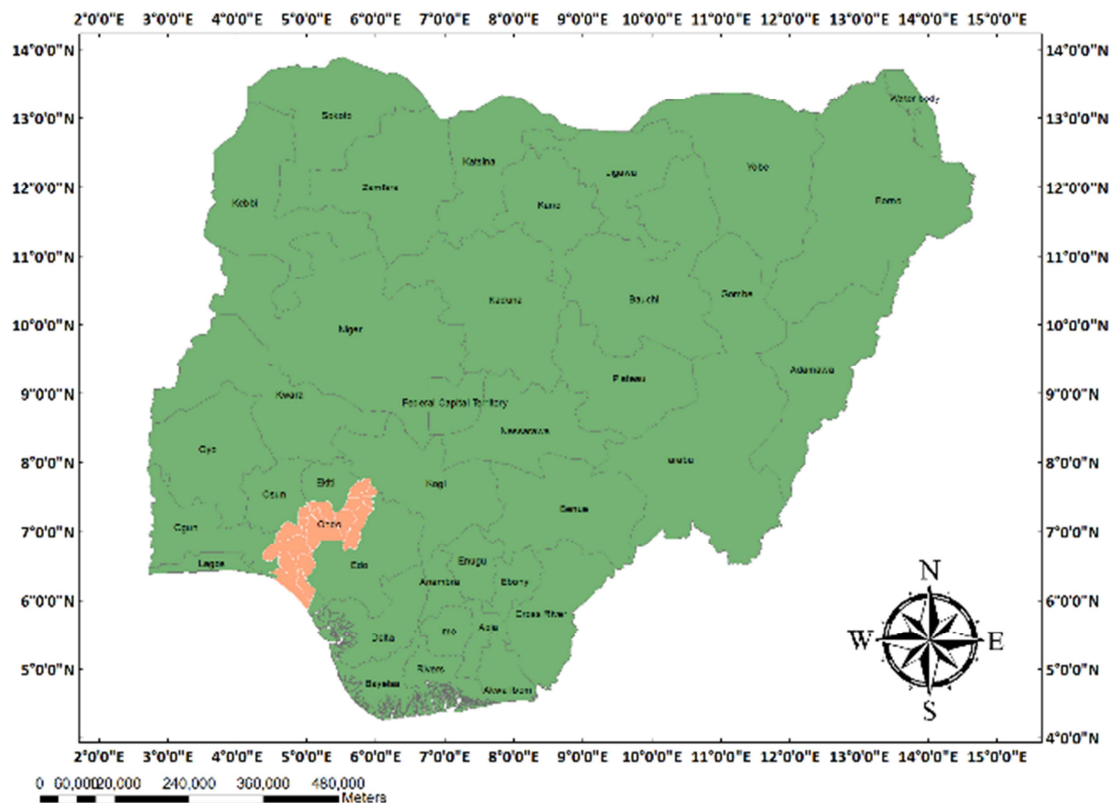
The building of a house involves several stages such as acquiring land, registration of the land (certificate of occupancy), architectural and engineering design of the house and obtaining Building Permit. This research is more interested in the adoption of e-planning strategy in building plan approval in planning ministries in Ondo State for speedy approval process.

2. Study Area

Ondo State is a state in Nigeria created on 3 February 1976 from the former Western State. It originally included what is now Ekiti State, which was split off in 1996. Akure is the state capital. Each Nigerian state has several ministerial offices representing the federal government. Ondo State borders Ekiti state to the north, Kogi State to the northeast, Edo State to the east, Delta State to the southeast, Ogun State to the southwest, and Osun State to the northwest.

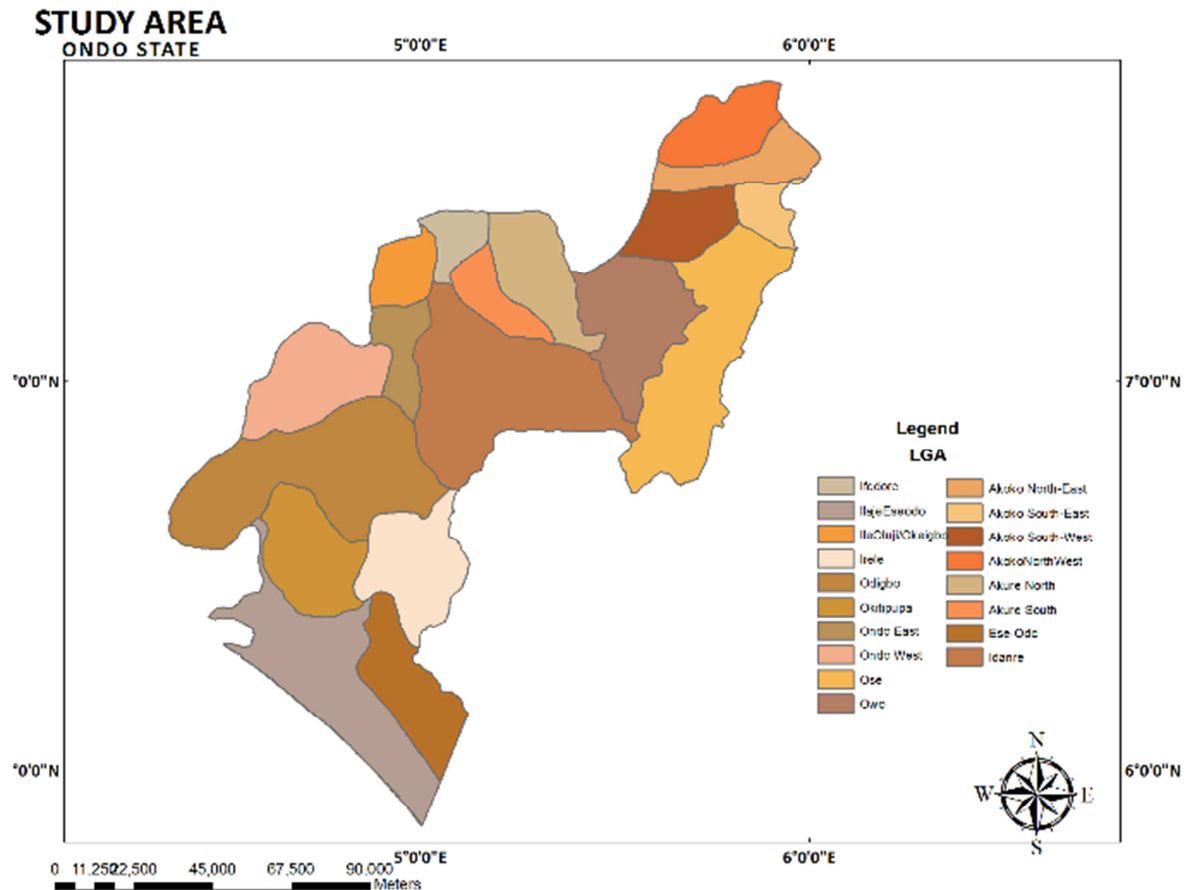
State with a coordinates $7^{\circ}10'N$ $5^{\circ}05'E$ which covers a land area of 14,793 square kilometers with its administrative capital at Akure. The population of the state as revealed by the census that was held in 2016 is 3,441,024. It is one of the 9 states of Niger-Delta because it is an oil producing state. The state consists of eighteen local government areas and blessed with rich ethnic composition largely from the Yorubas subgroups of Akoko, Akure, Ikale, Ikeja, Ilaje, Ondo and Owo people. Ijow minority (such as Apoi and Arogbo) and ilaje populations inhabit the coastal areas; while sizeable number of the Ondo State people who speak a variant of the Yoruba language similar to Ile-Ife dialect reside in Oke-Igbo.

The tropical climate of the study area is broadly of two seasons: rainy season (April – October) and dry season (November – March). The annual rainfall varies from 2,000mm in the southern areas to 1,150mm in the northern areas. The State enjoys luxuriant vegetation with high forest zone (rain forest) in the south and sub-savanna forest in the northern fringe. See figure 2.



Source: Author's field work survey, 2019

Figure 1. Map of Nigeria showing Ondo State.



Source: Author's field work survey, 2019

Figure 2. Map of Ondo State.

3. Literature Review

3.1. Building Approval Timeframe in Ondo State

Housing is a process which makes the act of dwelling possible. In effect, the term, housing includes the house itself and the total surrounding environment with its ancillary facilities and services. One of the processes in building a house is the Building Approval phase before a house is started [5]. This particular phase is marked by many challenges in Nigeria and particularly in Ondo State in the productivity of housing.

A delay in planning permission approval causes impediment, stoppage and hindrance which leads to uncertainty, risk and unsafe development [12].

The World Bank currently ranks Canada's (Toronto's) building permit process at 57th in the world, with site plan approval delays being a major factor in this low ranking [16]. Ondo State building approval process is unproductive and inhibits innovation. In recent years, regulatory delays have increased. Several earlier reports which are identified in this study have recommended improvements, but no real action has been taken. Building construction is complex, involving multiple stakeholders and many regulatory agencies. It is subject to an increasingly wide range of public policy

objectives, and Ondo State has yet to substantially modernize its building approval process.

3.2. Problem and Prospect of Residential Buildings Plan Approval

Electronic permitting is a set of computer-based tools and services that automate and streamline the building permit process. The intent of electronic permitting is to reduce permitting time, improve customer service and staff efficiency, enhance quality, and make operating funds more productive. An electronic permitting system typically replaces traditional paper and file-card systems. It can be as simple as a single software tool for tracking permits and inspections or it may contain a broad array of task-specific tools for plan review, permitting, inspections, inspection scheduling, project tracking, fee calculation and collection, workflow management, customer communications through web-based customer services, telephone-based voice response services and inter- and intra-departmental communication and management.

Electronic permitting has evolved since the early 1980s, when innovative building departments had to create their own software on mainframe computers. Today, software vendors provide building departments of all sizes and needs with off-the-shelf components that can be customized. The future of electronic permitting varies from place to place. For a

jurisdiction emerging from paper records, the future means obtaining whatever electronic tools will help serve its customers better. For a jurisdiction with an electronic permitting system in place, the future may equip inspectors with portable computing devices for recording and uploading reports to a database or a project tracker that automatically updates information and contacts utilities to schedule hookups. For a rapidly expanding jurisdiction without a technology infrastructure, the future can mean contracting a vendor to provide and operate an electronic permitting system through an Internet portal from a secure offsite network.

3.3. The Delay Paradigm of Planning Approvals Process

A delay in planning permission approval causes impediment, stoppage and hindrance which leads to uncertainty, risk and unsafe development [12]. For instance, in Ghana there are over fifty bureaucratic procedures that applicants have to follow [13]. It is critical for real estate developers to hasten the planning approval process because in real estate development 'time is money' [8]. Hence, applicants/developers become impatient most of the time at the slow process and arguably avoidable delays. In this situation the regulations offer an applicant options which suggests that; "Where a person submits an application for a building permit, the District Planning Authority shall notify him within seven (7) days of the receipt of the application and shall within a period of 3 months thereafter notify the applicant whether the application is granted or refused". An applicant not informed of the grant or refusal of the application may after the expiry of the 3 months commence development on the basis that application is acceptable to the District Planning Authority - LI 1630 Sec. 8 (1,2)."

Legitimately an applicant has the right to commence the developmental project after 3 months under the umbrella of the Act as stated above. However, in practice when applicants commence a project in accordance with statutory standards the local authority will serve a notice. The Stop Work Order Notice in Ghana consists of nothing but a red painted sign "X" [1] aptly describes it as "an inscription that building inspectors use to warn land developers of the unlawfulness of their project". The key question however is how a developer will be convinced that the red 'X' appearing on the wall overnight was from municipal building inspector since it has no authentication seal? Consequently, developers barely value the message that the 'X' notice (sign) symbolizes. As a result, many developers will have their structures demolished long after the hated 'X' notice sign. Technically, a stop work notice needs to specify particular infringements and at least remind and reecho the law violated, the offense committed and the penalty and fines associated with non-compliance. In contrast with the Ghanaian model, a good example of a stop work order is the Chicago Stop Work Order. The Chicago 'Stop Work Order Notice' dispatches the following legal layout and warning;

"Pursuance to section (13-12-080) of the Municipal Code of Chicago, it is hereby ordered that all construction work cease immediately at (Premises Address) for violations of the

following section(s) of the Chicago Building Code: Municipal Code Section (13-13-035). (Descriptions) Demo/ plans or permits. Any person continuing such work in violation of this order shall be prosecuted to the fullest extent of the law. Penalties can include incarceration up and fines up to \$5,000 for each offense" (Chicago Building Code)"

Delays in any part of the planning and construction phases have negative impacts on the overall development process [9]. The challenges with the building approval timelines which have been highlighted in this section not only frustrate builders, but can also increase construction costs. For example, official municipal plans and municipal zoning by-laws dictate what development is allowed and where it is permitted to be built. However, if a proposed development is not compliant with the existing official plan and zoning, there may be a lengthy process to get an official plan amendment, and/or zoning amendment. Challenges also surround site plan control approval, subdivision control, other applicable law, and the delays that they cause in obtaining approval from municipal planning staff. Depending on the type and size of a project, obtaining municipal planning approval can take upwards of 2 years, which can increase overall construction costs. E-planning is the approach designed to follow Best Practices. It is expected to reduce delays and open up the approval process so that the client is properly informed at all stages. It can result to increase in numbers of applications and reduction in the time it takes.

3.4. Residential Building Plans Approval

The building & land plan approval process relates to the issue of permission for the construction of buildings based on specific set of rules and regulations. As per the relevant provisions of the State Municipality Acts, any person desirous of undertaking a construction activity (fresh construction as well as modifications to existing structures) is required to obtain prior sanction from the relevant local body before embarking on the same. The building plan approval is envisaged to facilitate quick processing and disposal of building plan permissions, standardization of building fee & other charges, automation of the technical scrutiny, effective monitoring of file processing.

3.5. E-planning Application for Approval Process

Computer methods and tools have been used in urban planning for nearly half a century. The nature, type, purpose and ubiquity of their use has changed over time as a result of changes in planning theory and practice and dramatic increases in computing power and sophistication of software [6].

A vast array of computing applications, both planning specific and generic, are now routinely used by planning authorities all over the world. Planning methods and related computer applications can be placed in two broad categories: "generic" and "(strategic) planning specific". The examples of generic tools are mapping, databases, spreadsheets, scheduling software and in more recent times internet-based

data collection or delivery of services. The generic tools are widely (but not necessarily exclusively) used for day to day planning including development assessment. The planning (process) specific tools are closely associated with collaborative strategic planning. They often involve participatory dialogue and visioning, preparation of alternative courses of action, visualization and evaluation of alternatives, finding common ground among stakeholders, and generating consensus on local development. The use of generic computer tools to increase general efficiency and to facilitate development assessment is strongly supported by the NSW state planning. Planning reforms being pursued in NSW are very actively promoting e-Development-Assessment (electronic lodgment, tracking and assessment of development applications) [10]. Use of other generic computer applications to facilitate, expedite and standardize routine day today planning is actively being pursued.

However, the reforms have not advocated the incorporation of any planning-specific tools to engage stakeholders in collaborative strategic policy making. Computer aided policy-making used for visioning, visualizing and assessing alternatives [16] is not part of the planning reform agenda in Australia in general and in NSW specifically. According to reform documents in NSW [10] electronic planning is used around the world and Australia to improve customer service, deliver simple experience for users (developers) and to make it easier for business to find out where to invest.

In 2014 the NSW state planning agency (NSW Planning and Environment) introduced a spat of “e-Planning” tools to develop a smart NSW and smart Sydney [14]. A quick appraisal of the tools demonstrates that they are mere office efficiency enhancing and client (developer) assistance automation mechanisms. List of this tools are application tracking Electronic Housing Code, Interactive Buildings and planning viewer.

4. Methodology

In this study the officials in charge of the planning approval were interviewed and the people that engage in the process and are picked at random from the population based on the total number of building plan approved in month of between May – September. This is to ensure that the current sample information on the total number of plan approved between these periods was 277 as presented in Table 1.

Table 1. *Approved Building Plan in MPPUD between May to September 2019.*

S/N	Month	Number of Building Approved
1	May	73
2	June	45
3	July	60
4	August	50
5	September	49
Total		277

Source: Field Survey, 2019

The sample frame for the study was Two Hundred and

Seventy-seven (277) this was derived from the total number of building plan approval in the Ministry from May to September, 2019. 50% of the sample was selected in order to ensure accurate information for predicting ePlanning application for building plan approval processing in Ondo State. The sample size for this study is 138. These numbers were interviewed and information on the study was gotten. Random sampling technique will be used to select the applicants that submit development applications for questionnaire administration. This technique was adopted to give every applicant an equal chance of being picked in order to meet the aim and objective of the study. Hence, One Hundred and Thirty-eight (138) questionnaires which is fifty percent (50%) of the sample frame were administered to applicant of building plan approval in the Ministry. Interviews were held with the official in the Ministry to know the existing process of building plan approval as well as the timeframe of building approval in Ondo State.

5. Findings and Discussion

5.1. Sex Composition

Table 2 below reveals that ninety-eight (98) respondents were male which about 71% of the sample size is while forty (40) respondents were female which was about 29%. In any region sex determine the relative potential of land use. The majority of those interviewed was male and could be ascertained to the fact that the male has more access to land and request for building plan approval than the female counterparts, particularly in the south western region of Nigeria.

Table 2. *Sex Composition of Respondent.*

S/N	Sex	Number of respondent	Percent (%)
1	Male	98	71
2	Female	40	29
Total		138	100

Source: Field Survey, 2019

5.2. Average Timeframe for Approval Process

Table 3 below reveals the average time that took respondent to process applications involving residential housing approvals. That is, time that it took an applicant to obtain approval. It was obtained that out of the 138 respondents 23% respondent indicated that approvals take 3 to 20 days to be approved, 21% indicated that it took them 21 to 30 days to get there building plan approved, 4% indicated that it took more than three (3) month and 44% of the respondent believed that it normally takes them between one (1) and three (3) month. Based on field interview made, it was discovered that the relationship between the applicant and the planning officials sometimes tends to determine the ease of approval process. Based on the analysis below it can be deduced that majority got their building plan approved between the time range of one to three month which is reasonable to some people while not reasonable for others.

Table 3. Average Timeframe for Approval Process.

S/N	Timeframe	Frequency	Percent (%)
1	3-20 days	32	23
2	21-30 days	40	29
3	1-3 months	61	44
4	More than 3 months	5	4
	Total	138	100

Source: Field Survey, 2019

Results indicated that majority of client that seek building plan approval in planning ministries do go to the area offices to check the status and progress of approval. From Table 4 60% respondent do go to the planning area offices to check their approval status while 2% Request update from officials them, 30% choose others which include giving professional like architect and practicing planners to do the tracking for then and 8% make phone call to the area offices in confirm the status of their application.

Table 4. Status tracking of different stages of building plan approval.

S/N	Timeframe	Frequency	Percent (%)
1	Visiting area offices	83	60
2	Request update from officials	3	2
3	Phone call	41	30
4	Others	11	8
	Total	138	100

Source: Field Survey, 2019

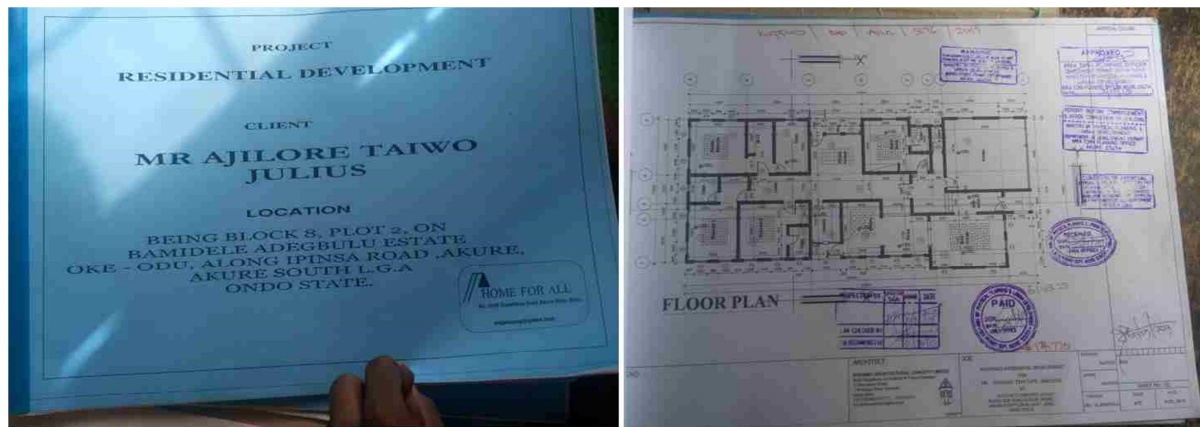
5.3. Existing Building Plan Approval Process

Findings from the interview session that was held with the officials in charge of building plan approval in the ministry reveals that some requirement that must be met before the approval of a building plan. Among those requirements are four copies of architectural drawings that comprises of the title

of the drawings, location plan site plan, ground floor plan, roof plan for elevation of the building that is front elevation, right elevation, left side elevation and back elevation, sections structural detail and two copies of survey plan, Location Plan and Analysis Report Form (LOPA form), task clearance, development level and government receipt which is the amount payed into the government purse during plan approval process. This payment charge is determined by the use of building which include residential, commercial, industrial, institutional, religion etc. After this payment has been made then the site will be inspected to confirm if the site exists or not, to determine whether such site is on government acquisition or private land, ascertain whether the proposed development conform to the adjoining land use, to determine whether the area is prone to any kind of physical constraint and to ascertain whether what is represented on the paper tally with what is on ground. After all this requirement is being satisfy the approval can now be approved.

Questions were asked from the officials in the ministry on the timeframe of building plan approval. According to them, building plan application can take two to three weeks for approval and cannot be more than 3 months else the owner of the application has the right to sue the ministry to court for delay in approval.

Interview question were asked from the officials in the ministry on the existence of online platform for building plan approval and other planning related activities in the ministry. The answer to the question asked was that there is no online platform for building plan approval in planning ministries in Ondo State that the building plan approval process is done manually in paper format. She added, the only platform online is for display of information, contact address of the ministry and nothing more.



Source: Field Survey, 2019

Figure 3. Sample of manually approved building plan.

6. Recommendation and Conclusion

6.1. Advance Planning Approval Model

The Government and management in Ministry of Physical

Planning and Urban Development in Ondo State should have an advance means to get the client that seek to approve their building plan updated regarding the status of their approval. This can be done by upgrading the current online platform for contact details to a dynamic and interactive website which can even serve as a platform for tracking application status and a

database for clients and application information and can also serve as an Application Programming Interface (API) for mobile app which can also be developed for various approval activities.

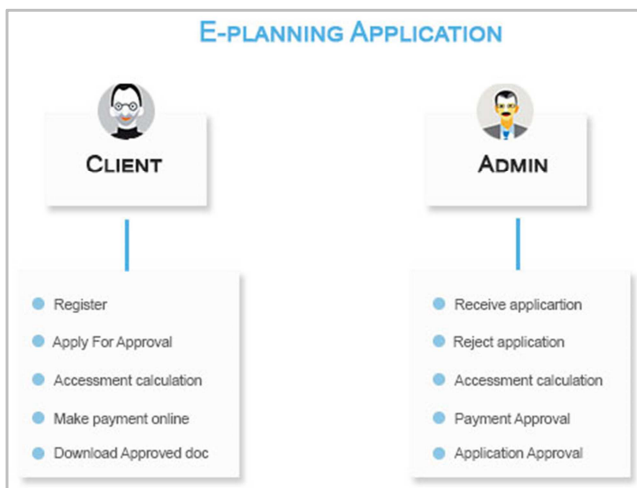
Ondo State government payment gateway should be made accessible to the general public in order to make payment for building plan approval and other revenue payment online themselves without any middle man (bankers).

6.2. Citizen Education and Awareness

The citizens need to be educated on the workings of the modified land registration and building approval processes. More qualified full time staff, are required to be employed and trained for efficiency to keep pace with the expansion of the city. The management and directors in the planning ministries should be current and make sure that their system is up-to-date with planning system of developed countries.

6.3. E-planning Application for Building Plan Approval

The aim of this study is to develop an e-planning application for building plan approval in Ondo State in order to enhance speedy approval processes. The web application is a platform with several functionalities which support the submission of working drawing for approval, assessment calculator, online payment gateways, the tracking of the status of building plan approval online even from the comfort of home, download of approved and unapproved working drawings. Figure 4 shows essential functionalities of e-planning application.



Source: Field Survey, 2019

Figure 4. Planning application essential functionality.

6.4. Conclusion

With the rise in the use internet it was expected that ePlanning application could overcome the manually submission in paper format which tend to reduces the effectiveness of building approval in planning ministry and ensure that client that seek for approval of their building plan can do that with ease as well as tracking approval status even

at the comfort of their home without them migrating to planning offices to check.

Consequently, this study focused on modernizing the process through the application of e-planning in order to improve speedy approval processes, to facilitating planning activities among government officials and associates and to ensure shared centralized services that are accessible by all. This study addresses the current system by, first, identifying the problems and issues that exist with the current process, access the current trend of engagement of client that seek for approval with internet and making recommendations to address those issues.

If all the recommendations are well address and implemented, the mode of building plan approval in Ondo State will be quicker, easier and users friendly. The Government, stakeholders, private individual and developers need to ensure the computerization of building plan approval for sustainable housing development.

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