

Challenges of urban housing quality and its associations with neighbourhood environments: insights and experiences of Ibadan City, Nigeria

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Abstract

A survey of housing quality and neighbourhood environments of Ibadan City, Nigeria was conducted to evaluate the housing infrastructure and to identify those areas where there is a likelihood of future incidences of disease and epidemics. Based on existing demographic and land use characteristics, the city can be divided into high, medium and low-density zones. Penalty scoring, rather than positive scoring, was used to assess the conditions and quality of houses and the neighbourhood environment in each of the zones.

Houses in the high-density area have the worst property and environmental characteristics followed by houses in the medium-density area. Based on housing condition alone, approximately half of all the dwellings surveyed ($n = 172$) in the three zones are categorised as either sub-standard or unfit for human habitation. Based on neighbourhood environment, none of the high and medium-density housing areas and only one of the low-density areas attained the good-scoring grade. This is attributed in part to many residents being polygamists which means the houses are overcrowded with perhaps up to eight persons per room and to tenant abuse by internal conversion to increase the occupancy rate. More than half of the houses surveyed have at least or more major defect.

Recommendations include government directed infrastructure improvements; a regeneration-drive by private investors with possible displacement of residents from the high-density zone to new towns; a vigorous programme of housing and health education; enhanced collaboration between stakeholders to develop enforceable standards for existing housing stock and future builds.

Key words: Environmental health; housing infrastructure; overcrowding; Nigeria; public health; urban development.

Introduction

Housing is one of the most important basic necessities of mankind is known to tremendously affect human health and well-being. It is wisely acknowledged that adequate housing is essential for good life, is a key requirement for an efficient and satisfied labour force and the foundation of satisfactory community life. Furthermore, researchers have shown that housing can affect mental

and physical health, both positively and negatively (Fanning, 1967; Macpherson, 1979; Riaz, 1987). The study by Page (2002) established linkages between poor housing and its detrimental effects on health with particular emphasis on the mental health of residents. The same study also provides evidence to support the view that poor housing can exacerbate existing health problems. In the Nigerian situation, Oluwande, back in 1983, concluded that children's progress is stunted by damp, overcrowded, ill-ventilated and poorly lit accommodation.

Most Nigerian cities, with the exception of the newly developed Federal capital city of Abuja, have experienced decay in both housing and physical infrastructural facilities over the past few decades, possibly due to economic downturn in the nation. Unlike developed nations, the mortgage industry is still in its infancy in Nigeria with the real estate sector contributing less than one percent to the nation's GDP (Punch Newspapers, 5th September 2007). In a recent development, 25 slums in Port Harcourt have been earmarked for demolition and replacement with new housing units by the Rivers state government (*Guardian Newspapers*, 24th August, 2007). However this move is being strongly resisted by those affected. It appears that residents of slums are not always willing to relocate to less crowded accommodation. Similar problems occur in developed nations. For instance, only 5 per cent were ready to be re-housed into the London County Council's Becontree Estate under England's post-first world war street improvement or slum clearance scheme (Olechnowicz, 1997).

Residential land accounts for the largest proportion of total urban land uses in many African cities. The zoning regulations in many of these cities arbitrarily determines the quality of land supplied to the urban land market and not by the laws of supply and demand, which Egbu *et al.* (2006) found out fails to meet the demand. Normally, a property developer in a Nigerian city first has to secure a 'location permit' (land right) and then a development right (planning permission). This is a process that has been made very cumbersome by government bureaucrats who, it is claimed, use it to gain some personal financial advantage. Most housing developments are executed by private developers, taking the form of flats and rooming-accommodation, which are popularly called 'face me, I face you'. These account for between 60 and 80 percent of urban housing in Nigeria (Ogu and Ogbuozobe, 2001).

Egbu *et al.* (2007) devised a model for three Nigerian cities and concluded that properly monitored land use planning has a positive bandwagon effect on housing quality. The quality of a residential area not only mirrors the city development, planning and allocation mechanisms between socio-economic groups, but also shows the quality of life of the urbanites. The realisation of a decent home in a suitable living environment requires the availability of clean air, potable water, adequate shelter and other basic services and facilities.

The present study was aimed at investigating housing quality as well as the quality of the environment in which such houses are sited. This is pertinent in view of the increasing incidences of disease and epidemics in Ibadan confirmed by the studies of Sangodoyin and Coker (2005) and Aluko (2006).

The study area

Ibadan is situated in south-western Nigeria (3° 45" to 4° 00" E; 7° 15" to 7° 30" N). It has two distinct seasons; dry (October – March) and wet (April – September). Initially, the city began as a war camp (1829) and since the 1960s has grown to become the nation's largest urban centre. This is attributed to its location in the heart of the Yoruba ethnic territory and its close proximity to Lagos, Nigeria's economic nerve-centre and her immediate past federal capital.

The importance of the city was further acknowledged in Nigeria's post-independence era from 1960 onwards when it was made the capital of the western region, one of the three regions to which Nigeria was sub-divided at that time. Ibadan is currently the capital city of Oyo State and there has been agitation since 2006 for it to constitute a state on its own. It occupies a land area of 634.3 km² and has a population of ~3.5 million (Nigerian National Population Commission in 2006). The city is home to the University of Ibadan established in 1948, the first teaching hospital, the University College Hospital established in 1957 and the first television broadcast station in Africa, the Nigeria Television Authority which was set up in 1959. The presence of all these establishments, among others, has attracted many people to the city. Rapid population growth has posed great problems for urban management, employment, social infrastructural provision and liveability in Nigeria (Mabogunje, 1985) and has made the provision of quality housing a sizeable difficulty. It is against this background that this study has investigated the quality of housing and the

neighbourhood environment in the City. Ibadan is considered to be a typical Nigerian city and it is thus suggested that the findings and recommendations of this study may be relevant to other cities in the country and those of other developing countries in Africa.

Housing standards

The statutory standard of fitness was first introduced as a concept in the UK around 1919 and remains in use as the key legal standard for the assessment of housing conditions. Stewart (2002) identified the main defect of fitness standard as merely providing for a pass or fail checklist for some housing parameters. Part 1 of the UK Housing Act 2004 now provides for the Housing Health and Safety Rating System (HHSRS), a health and safety based system for local authorities to adopt as the basis for enforcement against poor housing conditions (ODPM, 2004).

Housing standards vary from one nation to another and also within a particular country; variations in climate, culture, degree of urbanisation, and socio-economic progress affect standards. The UNO (1969) stated that standards derive from a people's cultural level of attainment. It has been argued that standards should combine the best features of traditional practice with the economy and rationality of modern techniques.

The Nigeria's Federal Ministry of Housing and Environment has yet to come up with a definite housing standard for the country. However, in a study on Benin City, Onokerhoraye (1985) empirically classified housing standards in Nigeria into two categories: first, space standard, which defines housing intensity development in terms of plot sizes, number of buildings per unit area of land and occupancy sizes. The second relates to performance standard, which describes the quality of the environment. This approach is a modified form of the housing standard specified by the American Public Health Association (APHA) in 1945, 1946 and 1950. The APHA method minimises individual opinions so as to arrive at numerical values of the quality of housing that are comparable with results from other cities and can be reproduced in the same city by different evaluators using the same system. The APHA method, used in the present study, measures the quality of the dwelling units and the environment in which they are located. The method uses a system of penalty scoring rather than positive scoring, that is, the higher the arithmetic score of a condition being judged, the more substandard is the situation.

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Study Methodology

Permission was obtained from the Oyo State Ministry of Lands and Physical Planning, who supported the data collection team with staffing. The presence of these staff in their uniforms throughout the field survey, in most cases, enhanced the involvement and co-operation from the residents in many of the surveyed houses.

Based on existing demographic considerations and land use characteristics, Ibadan city (Figure 1.0) is divided into three major residential zones as follows:

High-density residential district

With a density of over 300 persons per hectare. Wards in this zone include Mapo, Oje, Beere, Inalende, Oke-Padi, Yemetu, Oniyanrin, Agbokajo.

Medium-density residential district

With a population density of 100 – 300 persons per hectare. Wards in this zone include Ojoo, Agbowo, Sango, Mokola, Ore-Meji, Oke-Bola, Oke-Ado, Molete, Challenge.

Low-density residential district

With less than 100 persons per hectare and encompasses such wards as Bodija, Basorun, Iyaganku, Jericho, Akobo, Ashi, Idi-Ishin, Total Garden.

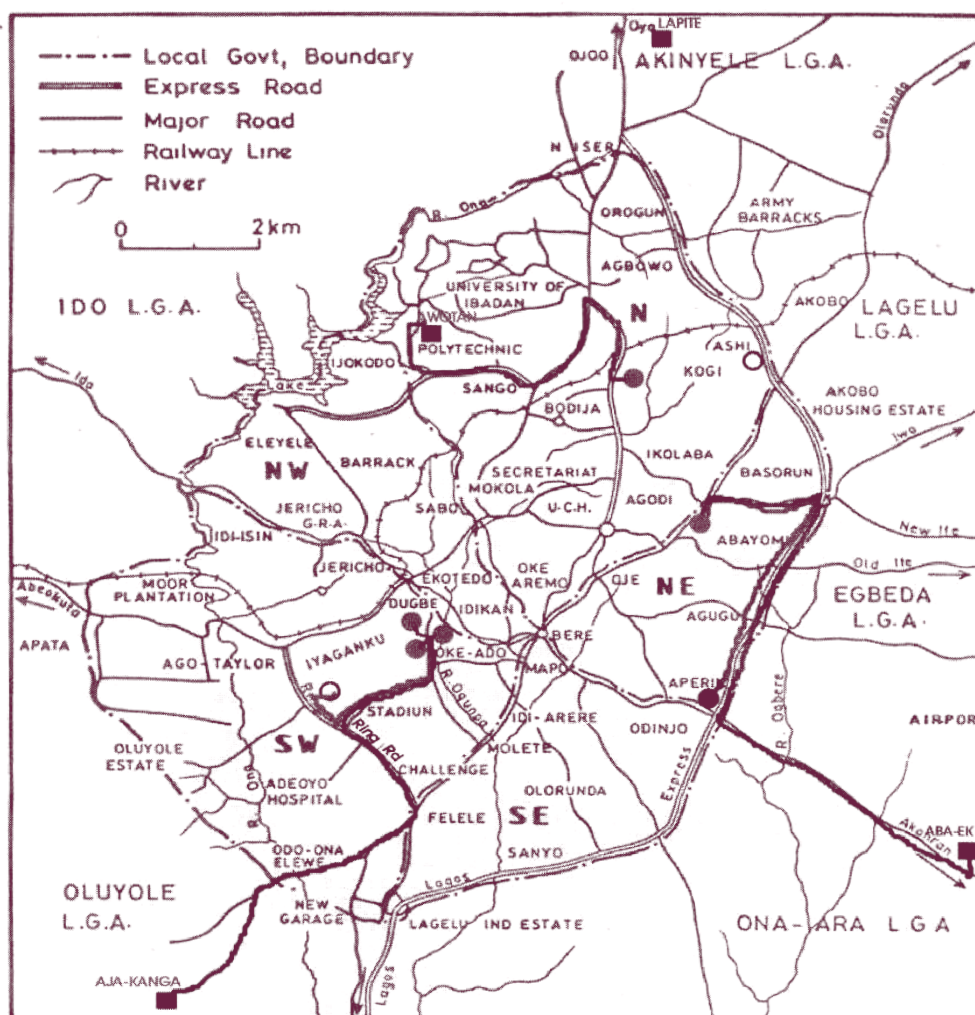


Figure 1.0
Map of Ibadan showing the wards in the surveyed zones

Table 1.0
Total number of
houses surveyed in
each of the three
Residential Zones of
Ibadan

Wards in each zone	Number of houses surveyed		
	High-density zone	Medium-density zone	Low-density zone
Mapo	7	–	–
Oje	9	–	–
Beere	10	–	–
Inalende	10	–	–
Ojoo	–	20	–
Agbowo	–	24	–
Sango	–	17	–
Mokola	–	22	–
Bodija	–	–	14
Basorun	–	–	13
Iyaganku	–	–	13
Jericho	–	–	13
Total	36	83	53

Based on ethical considerations, residents in each of the three zones were initially visited to seek their voluntary cooperation with the study team. The greatest co-operation was obtained in the medium-density zone where many residents occupy the houses on a rented basis. The majority of the houses in the low-density zones are owner-occupied and some of those approached declined to participate. The least co-operation was given to the study in the high-density zone. In this zone, houses are passed down from one generation to the next by inheritance and are largely owner-occupied. However, houses surveyed in the high (n = 36), medium (n = 83) and low-density (n = 53) zones are considered to be representative of the general situation in the zones (Table 1.0).

Data was collected from each zone by trained survey team members using two specially designed inspection forms namely: (i) a housing quality survey form (HQSF) and (ii) an environmental survey form (ESF). The former measures the quality of the dwelling unit while the latter was used to appraise the neighbourhood environment. The HQSF has three components – facilities, maintenance and occupancy. The maximum ascribable dwelling score in any surveyed house is 600 broken down into: facilities – 360, maintenance – 120 and occupancy – 120 (APHA, 1946).

The HQSF form captures basic deficiencies with respect to water supply, means of sewage disposal, toilet facilities,

bathing facilities, electricity supply, ventilation facilities, safety, susceptibility to weather and degree of occupancy. Houses were classified into five groups: Good (0–29); Acceptable (30–59); Borderline (60–89); Substandard (90–119); Unfit (120 or above). (APHA, 1946).

Six items were examined in each surveyed house using the ESF. The maximum environmental score of 368 (APHA, 1950) is shared among the six items as follows: Land crowding – 70; Non-residential land areas – 72; Hazards and nuisances from transportation system – 64; Hazards and nuisances from natural causes – 60; Inadequate utilities and sanitation – 54; Inadequate basic community facilities – 48.

Similarly, the class of each surveyed house was determined using the environmental score as below: Good (0–19); Acceptable (20–39); Borderline (40–59); Substandard (60–79); Unfit (80 or above) (APHA, 1950).

Results and Discussion

Quality of the dwellings

The results of the HQSFs administered in the three residential zones are presented in Table 2.0. These show that none of the 36 houses surveyed in the high-density zone satisfied the conditions required for good housing.

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Percentage of houses surveyed achieving a particular score				
House classification	High-density (n = 36)	Medium-density (n = 83)	Low-density (n = 53)	Total percentage
A – good (0 – 29)	0.0	9.6	15.1	9.3
B – Acceptance (30 – 59)	5.6	28.9	47.2	29.7
C – Borderline (60 – 89)	2.8	10.9	24.5	13.4
D – Substandard (90 – 119)	19.4	25.3	7.5	18.6
E – Unfit (120 or >)	72.2	25.3	5.7	29.0
Total	100.0	100.0	100.0	100.0

Table 2.0
Classification of houses in Ibadan considering the HQSF only

About 72% (26 homes) of the houses surveyed are classified as unfit for human habitation. The occupancy rate in some cases is up to eight persons per room. Most rooms are not more than 9.3m² (100ft²) in area. Generally, residents of this zone are accustomed to having a minimum of four children per couple. However, this is exacerbated because it is customary for the man to have more than one wife, which may result in more than 10 children being fathered by him. This part of the city constitutes the inner core region occupied by the city's indigenous early settlers who have a deep emotional attachment to the area. The houses are in most cases very old and dilapidated. Some of them were built well over a hundred years ago, according to the history volunteered to the survey team. They are generally one-storey buildings with interlocking compound structures with little or no drainage plan.

The team met with resistance in the high-density zone, in some cases, because some residents felt the presence of staff from the Oyo State Ministry of Lands and Physical Planning indicated that the Government would soon demolish their houses. The same line of thinking, coupled with the general low literacy level in this zone, probably explains the lowest number (compared to the other two zones) of house owners willing to have their houses surveyed. In contrast, some of those who did agree to participate in the survey later confessed that their involvement was because they thought the Government was trying to assist them to improve their dwellings. Dwellings in this zone generally lack potable water, toilet facility, bathing facility, solid waste disposal facility and electricity supply.

In the case of the medium-density residential district, the range of values for the dwellings surveyed is 9.6% for houses whose condition can be regarded to be good and 28.9% for those classified as acceptable. However, about a quarter (25.3%) of the houses were classified as unfit for human habitation. This part of the city is fairly heterogeneous in terms of the socio-economic status of the residents, age of buildings and availability of social infrastructure. Some of the houses, which are two-storey, do not have proper stairways to facilitate movement between floors. Consequently, some respondents reported injuries sustained from falls, particularly by young children, but no deaths.

The results show that nearly half (47.2%) of the surveyed houses in the low-density residential districts qualify as acceptable, with only 15.1% assessed as good. Houses in this zone are relatively modern in the main and better equipped. Generally, top civil servants, and other middle to high income people occupy them. However, that said, some houses (5.7%) are classified as unfit. It is noteworthy that some of these houses are in the government-owned Bodija estate, where there has been tenant abuse by conversion to increase the occupancy rate, up to six persons per room. Formerly, some of these houses were officially allocated to government workers who have subsequently hired out (sub-let) part of them for pecuniary gains. It is also noteworthy that this is not an unusual practice because a study of house sharing and problems of occupation density in Abuja, Nigeria, Ikejiofor (1998) observed high incidences of sharing to new tenants even amongst middle-income households.

Table 3.0
Classification of
houses in Ibadan
considering the ESF
scores only

Percentage of houses surveyed achieving a particular score				
House classification	High-density (n = 36)	Medium-density (n = 83)	Low-density (n = 53)	Total percentage
A – good (0 – 19)	0.0	0.0	1.9	0.6
B – Acceptance (20 – 39)	2.8	21.7	24.5	18.6
C – Borderline (40 – 59)	5.6	24.1	24.5	20.3
D – Substandard (60 – 79)	16.6	24.1	34.0	25.6
E – Unfit (80 or >)	75.0	30.1	15.1	34.9
Total	100.0	100.0	100.0	100.0

There is no sound maintenance culture in place in any of the three survey zones supporting the findings of studies by Ayininuola and Olalusi (2004) and Mijinyawa *et al.* (2007). This is a notable contributing factor for the downturn in housing quality.

Quality of neighbourhood environments

Table 3.0 summarises the results of the ESFs. None of the houses surveyed in both the high-density and medium-density zones met the requirements of being classified as good, from the neighbourhood environment perspective. Furthermore, only one of the fifty-three houses surveyed in the low-density zone satisfied the survey requirements. This gives an average of a negligible 0.6% of surveyed houses being well sited painting a gloomy picture of the City. One of the main contributors to this is the high floor-to-area-ratio (FAR) of many of the houses, even in the low-density zone. While the high-density wards are generally noted for overcrowding and congestion, the low-density zone in a bid to maximise the usually expensive land, generally, tends to exceed the maximum FAR value of 0.4, recommended for houses in the middle-income areas of sub-sahara Africa (Njoh, 1995 and 1999).

In a similar study of Ibadan, Arimah and Adeagbo (2000) noted that 83% of developments in middle-income neighbourhoods contravene some aspects of planning legislation. In many of the surveyed houses, particularly in the high and medium-density zones, even the basic zoning of having houses sited a minimum setback distance from the road was not complied with. Many houses in both of

these zones have no external drainage, which is always a major concern when there is a torrential downpour. Moreover, almost all houses in the high-density zone have no provision for disposing of solid waste, which is usually dumped into any nearby stream or river. This issue has been highlighted by Sangodoyin and Essien (1996) who identified the haphazard dumping of wastes into the Ogunpa stream (which traverses the majority of the wards covered by the high-density residential district) as one of the factors responsible for the disastrous flood incidences (in 1980 and 1988), together with associated disease and epidemics. The Federal Government of Nigeria, in co-operation with Oyo State Government, in the past few years has embarked on a re-channelisation project of Ogunpa stream. It is hoped that this will halt any future flooding of houses in the high-density zone.

Investment by the Oyo state government has recently paid to renovate the ancient and historic Mapo Hall in the city centre, located in the middle of the high-density zone. However, the appalling state of the immediate neighbourhood environment, coupled with the poor transport network, means the project has had a minimal impact and has taken the shine off the beauty and essence of the renovation exercise. To have a noticeable impact, based on this example, it is apparent that there is a need for widespread improvements to housing and the infrastructure, which will probably require investment from the private-sector.

Of all the houses surveyed, 60.5% are either sub-standard or unfit considering their neighbourhood

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environment. Collectively, less than 40% achieve at least a borderline classification requirement. These findings follow the evidence of Egbu *et al.* (2007) who identified a chronic shortage of land in African cities as one of the primary factors responsible for overcrowding. This means that basic community recreational facilities have no place to be built and are practically non-existent in the high-density and medium-density zones. In the low-density Bodija area, the survey team found that a site reserved for recreation had been taken over by a notable community leader, who regularly rents it out for party receptions. The generally increasing poverty level in the city seems to have created new and competing pressures on urban space, largely due to the increase in informal sector business and trading, much of which occurs in the street or on undeveloped land.

The classification of houses based on the dwelling scores was considered to have a fundamental relationship with the environmental scores as shown in our regression analysis (Figure 2.0). The percentage of houses surveyed achieving a particular score in high density dwelling (HDD) area was selected as the independent variable while the scores in the high density environment (HDE), medium density environment (MDE) and low density environment (LDE) were the dependent variables. The derived equations for

HDE is linear while others follow the second degree polynomial with the coefficient of determination (R^2) of 99%, 51% and 69% which is a measure of the goodness of fit of the models.

Conclusions and recommendations

- Nearly half (47.6%) of the houses surveyed in Ibadan are either sub-standard or unfit for human occupation.
- Nearly three out of every five houses (60.5%) surveyed has one defect or another with respect to the neighbourhood environment.
- Houses located in the more recently-developed areas of the city (low-density zone) tend to fare best compared to those in the high and medium-density zones from perspectives of both housing conditions and neighbourhood environment.
- The inner core region, occupied by early settlers in the city, presents the worst scenario with respect to both quality of dwelling and neighbourhood environment.
- The quality of housing and neighbourhood environment reduces as the degree of density or level of crowdedness increases.

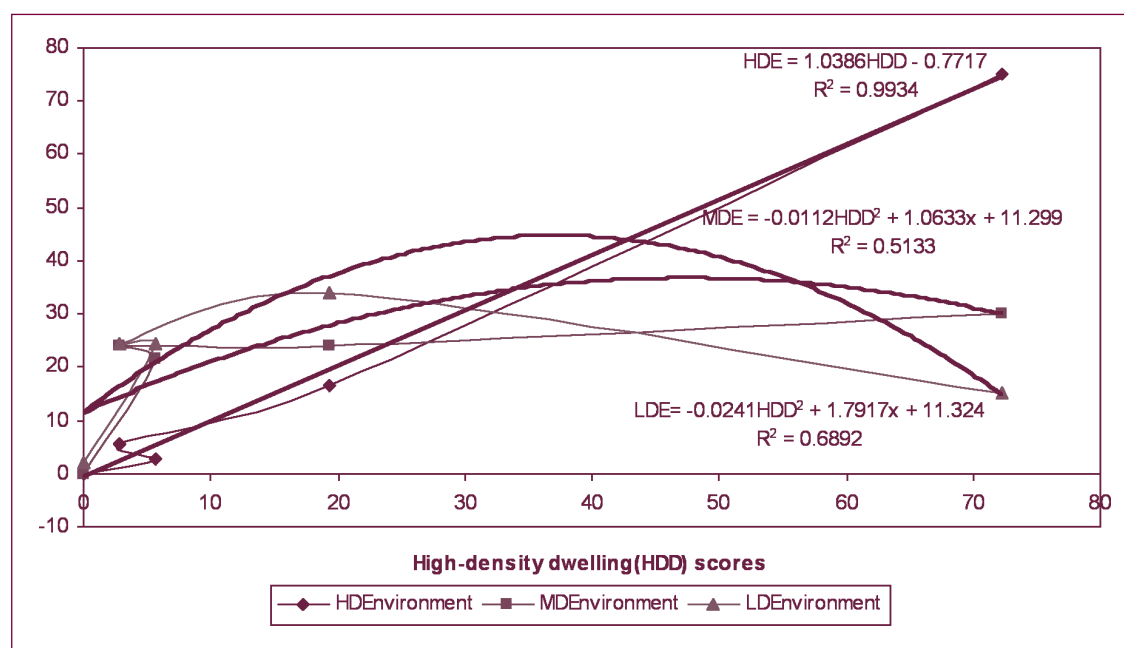


Figure 2.0
Comparison of % of houses surveyed achieving a particular score in dwelling and environment

- Since housing affects the state of health of people, the quality of life of the majority of the people living in the residences sampled in Ibadan is suspect. The high-density zone has been particularly noted for high incidence of typhoid, cholera, dysentery, infectious hepatitis and guinea worm (Sangodoyin, 1995). The recommendation of Coker and Olutoge (2006) in a previous study on prevention of guinea worm infection, that new sources of potable water be developed might be pertinent here.
- The general lack of environmental infrastructures such as roads, drains, sanitation waste disposal and recreational facilities is an issue that will require governmental and institutional intervention. The majority of the urban poor living in the surveyed houses can least afford the provision of these. Moreover, there is a need to raise the level of personal hygiene, particularly of the people living in the high-density zone. We, therefore, recommend a vigorous health education programme, possibly through the mass media and other locally accessible fora, for all the residents in the city.
- The general lack of a sound maintenance culture among residents needs to be addressed.
- There is a need for all stakeholders to collaborate towards enforceable standards for houses already built and future builds. There is certainly a necessity for a complete rethink that will go some way towards guaranteeing the sustainable development of the city.
- There is a dire need to consider a general demolition of some of the houses in the high-density zone with the aim of regeneration of the zone. The displaced people could be resettled in the sub-urban new Ajoda Town (under construction), which more than ever should be quickly completed.
- The land in the high-density zone is worth far more than the houses, as the zone largely constitutes the city centre. We, therefore, recommend a Marshall Plan for Ibadan, which will be private-sector-driven. Multinational companies and other mega corporations can have their offices sited in this zone. They may do it as part of their social responsibilities to a zone populated largely by the poorest of the poor. Of course this will also entail a general reconstruction of infrastructure in the area.
- Vigorous public enlightenment via various media is

be required to overcome the likely protests of those to be relocated from the high-density zone due to their well-known deep emotional and cultural attachment to the area.

- A media campaign against polygamy coupled with incentives to families opting for a maximum of three children may also be useful.

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References

- Aluko M A O** (2006). Illness: causes and their meaning among the Yoruba, In: Falola, T. and Heaton, M.M.(Eds). *Traditional and Modern Health Systems in Nigeria*, Africa World Press, Trenton, NJ, pp 399-410.
- American Public Health Association (APHA)** (1945). An appraisal method for measuring the quality of housing: a yardstick for health officers, housing officials and planners. Part I: Nature and uses of the method. Committee on the Hygiene of Housing, APHA, New York.
- American Public Health Association (APHA)** (1946). An appraisal method for measuring the quality of housing: a yardstick for health officers, housing officials and planners. Part II: Appraisal of Dwelling Conditions. Committee on the Hygiene of Housing, APHA, New York.
- American Public Health Association (APHA)** (1950). An appraisal method for measuring the quality of housing: a yardstick for health officers, housing officials and planners. Part III: Appraisal of Neighbourhood Environment. Committee on the Hygiene of Housing, APHA, New York.
- Arimah B and Adeagb D** (2000). Compliance with urban development and planning regulations in Ibadan, Nigeria, *Habitat International*, 24, 279 – 294.
- Ayininuola G M and Olalusi O O** (2004). Assessment of building failures in Nigeria: Lagos and Ibadan case

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study. *African Journal of Science and Technology*, Vol 5, No.1, 73-78.

Coker A O and Olutoge F A (2006). Combating the guinea worm scourge in Nigeria: An Engineering approach in: Falola, T and Heaton, M M (Eds.). *Traditional and Modern Health Systems in Nigeria*, Africa World Press, Trenton, NJ, pp. 417 – 427.

Egbu A, Antwi A and Olomolaiye P (2006). An economic assessment of the institution of land use planning in the cities of sub-Saharan Africa. RICS Research paper series, Volume 6, No. 9, pp.1-36.

Egbu A U, Olomolaiye P and Gameson R (2007). A quantitative model for assessing the impact of land use planning on urban housing development in Nigeria. *IDPR*, 29 (2), 215 – 239.

Fanning D M (1967). Families in flats. *British Medical Journal*, 18, 382 – 386.

Guardian Newspaper (2007) Rivers to demolish PH shanties, plans 6,000 houses, 24th August.

Ikejiofor U (1998). Access to land, development control and low-income housing in Abuja, Nigeria: policy and bureaucracy. *Planning Practice and Research*, 13, 229 – 309.

Mabogunje A L (1985). Towards an urban policy in Nigeria. In : Onibokun, P. (ed.) *Housing in Nigeria: A book of Readings*, NISER, Ibadan, Nigeria, pp.19 – 35.

Macpherson R (1979). Housing and Health: Some Basic Principles. In: Marrison, H. S and Lea, J. P. (eds.), *Housing in Third World Countries: Perspectives on policy and practice*, Macmillan, London, pp. 67 -73.

Mijinyawa Y, Adesogan S O and Ogunkoya O G (2007). A survey of roof failures in Oyo state of Nigeria. *Journal of Building Appraisal*, Vol. 3, No.1, 52-58.

Njoh A (1995). Building and Urban Land Use Controls in developing countries: A Critical Appraisal of the Kumba (Cameroun) Zoning Ordinance. *Third World Planning Review*, Vol. 17, 3, 337 – 356.

Njoh A (1999). *Urban Planning, Housing and Spatial Structures in sub-Saharan Africa: Nature, Impact and Development Implications of Exogenous Forces*. Ashgate Publishing, Aldershot, England.

Office of the Deputy Prime Minister (ODPM) (2004). *Housing Health and Safety Rating System Guidance (Version 2)* London, ODPM. Available online at www.communities.gov.uk [Accessed 16/08/07].

Ogu V I and Ogbuozogbe J E (2001). Housing policy in Nigeria: towards enablement of private housing development, *Habitat International*, 25, 473 – 492.

Olechnowicz A (1997). *Working-class housing in England between the wars: The Becontree Estate*, Oxford University Press.

Oluwande P A (1983). *Guide to Tropical Environmental Health Engineering*, NISER, Ibadan, Nigeria.

Onokerhoraye A G (1985). *Benin, a Traditional African City in Transition*, Ahmadu Bello University Press, Zaria, Nigeria.

Page A (2002). Poor Housing and Mental Health in the United Kingdom: Changing the focus for intervention. *Journal of Environmental Health Research*, 1, (1), 31 – 40.

Punch Newspaper (2007). Mortgage industry in Nigeria is still in its infancy, 5th September.

Riaz H (1987). Singapore children in high rise flats. *Ekistics* 272, 374 – 375.

Sangodoyin A Y (1995). Assessment of the adequacy of a water treatment process by in-plant monitoring. *International Journal of Environmental studies*, 48, 257 – 262.

Sangodoyin A Y and Coker A O (2005). Case study evaluation of health-care solid waste and pollution aspects in Ibadan, Nigeria. *Journal of Applied Science, Engineering and Technology*, Vol. 5, Nos.1&2, 27-32.

Sangodoyin A Y and Essien O E (1996). Effect of Urbanization, Waste and Disposal and Hydrological Factors on Flooding of Ogunpa stream in Nigeria. *Discovery and Innovations*, 8 (I), 11 – 19.

Stewart J (2002). The Housing Health and Safety Rating System – a new method of assessing housing standards reviewed. *Journal of Environmental Health Research*, 1, (2), 35 – 41.

Tribune Newspaper (2007). Affordable housing scheme: Ogun State example, 4th September.

Turner J F C (1972). Housing issues and the standards question. *Ekistics*, 216, 318 – 321.

United Nations Organisation (UNO). Centre for Housing Building and Planning (1969): Methods for establishing targets and standards for housing and environmental development, *Ekistics*, 27, 3 – 14.