Inhabitants’ perspectives on the adequacy of the compound house in Ayigya, Kumasi, Ghana

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Abstract

This study aimed to test the adequacy of the compound house, a vernacular housing form in Ghana which has traditionally accommodated the low income population in order to judge it as an adequate low income housing alternative. The population growth, limited housing production, lack of basic facilities, services and infrastructure and the deterioration of the existing housing have left basic shelter out of the reach of the most low income households in Ghana. Single storey compound houses where most of the low income population in Ghana live are considered as old and dilapidated traditional housing to highlight the housing shortage in the country. In a typical Ghanaian city, they are situated outside the mixed use city centre alongside the grid-iron layout settlements of public built estates together with private elite homes. A research on the adequacy of the poorly serviced neighbourhoods of single storey compound houses was conducted in Ayigya, Kumasi, Ghana. Ayigya is a former village which became a part of the expanding Kumasi with the urban sprawl. Adequacy of the compound houses were evaluated and assessed on the criteria of the right to adequate housing: legal security of tenure, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location and the cultural adequacy with respect to inhabitants’ views. It is demonstrated that compound houses in Ayigya are generally inadequate both in quantity and quality for growing population and for changing demographics, values and family culture.

Keywords: Ghana, Kumasi, Compound House, Adequate Housing.

Introduction

Urbanization rate is highest in Africa (3.5%) though it is a common phenomenon to take place all over the world (RICS 2006). Governments of Sub-Saharan African Countries are challenged by providing housing and related infrastructure for the growing urban population especially for the low-income (Yeboah 2005). Urban growth in Ghana has gone beyond the capacity to provide adequate shelter for most of the population. Only 20% of the annual total housing need is produced by formal and informal housing sectors together. Deterioration of the existing housing stock caused by lack of maintenance adds up to the housing problem. Under-production of housing causing overcrowding, over loading of the already scarce services and use of non-habitable units mostly affect urban poor who usually occupy compound houses in Ghanaian cities (Konadu-Agyemang 2001; Afram & Korboe 2009).
The clusters of deteriorated poor houses suffer from unemployment, crime and poor health, therefore they are challenged economically. Adequate housing is one of the effective ways to alleviate poverty, since there is a strong correlation between improved housing conditions and poverty reduction whereas a house is the most expensive item in a household’s expenditure. Access to basic water and sanitation services would improve overall health, hygiene, livelihoods, psychological wellbeing and social interaction of the household members. Provision of adequate, suitable and equitable housing for all citizens is a major priority as well as a challenge for governments. In Ghana almost half of the population live in unsanitary conditions in inadequate housing without access to basic facilities like toilet, bathroom, kitchen and refuse facilities, particularly in urban areas (UN HABITAT 2010).

Mostly in developing countries more than one billion human beings live in unacceptable conditions of poverty without an adequate shelter. According to Habitat Agenda, adequate shelter should provide “adequate privacy and space, physical accessibility, adequate security, tenure security, constructional stability and durability, adequate lighting, heating and ventilation, adequate basic infrastructure, proper quality of environment and health-related factors, and an accessible location concerning work and basic facilities, all at an affordable cost” since it is ‘more than a roof over one's head’ (UN-HABITAT 1996, p.22). Adequacy should consider possible gradual development and be specified with the people in a specific context since it includes specific cultural, social, environmental and economic dimensions differing according to countries (UN-HABITAT 1996).

Compound house, the prevalent housing form occupied by the urban poor in Ghana with rooms opening to a central courtyard is basically a courtyard house. It has a simple form, therefore it is easy to build not requiring high technology and skilled craftsmanship. It is low-cost, therefore affordable for the low income, for simple construction and shared facilities. Simple form of the compound makes it easy to extend. Multi-habitation of the compound by owners, relatives and renters makes it possible to have communal life and mutual assistance (Afram & Korboe 2009).

Continuous densification and extension activity in compound houses often result in deterioration. Increased room occupancy rates have the potential danger to cause disease outbreaks. Shared use of facilities, a result of multi-habitation, is often problematic causing overloading and forcing inhabitants to use public facilities. The communal life, overcrowding and shared facilities result in privacy problems in compounds (RICS 2006). Despite problems arising out of the overall housing situation in the country, but not inherent to its architectural qualities, compound house might be reconsidered as a low-income housing option. Its architectural form, building process, and the life style it encourages have potentials to be improved to provide adequate housing for the low-income (Afram & Korboe 2009). It is important to study compound houses in order to improve them spatially and technically and define the policy environment to enable their provision as an adequate low-income housing option. Adequate shelter definition of Habitat Agenda and criteria of the right to adequate housing is utilised to assess the adequacy of the compound house in this study. The right to adequate housing is an article of the Covenant of United Nations High Commissioner for Human Rights (UNHCHR 1991) to stress social, economic, cultural, climatic and ecological determinants of housing adequacy. Certain aspects of the right to adequate housing are as follows:

**Legal security of tenure:** As the first criterion of right to adequate housing, legal security of tenure means protection of individuals or groups in terms of land and residential property by an agreement defined in a legal or legislative framework. This agreement must provide protection against arbitrary eviction or expropriation. Tenure security is crucial for human dignity as well as for sustainable urban development. It assures the long term security of the house, thus it is an essential component of right to adequate housing. A household has a secure tenure when they are protected from eviction from their land, excluding exceptional circumstances and only on a known and agreed legal process.

**Availability of services, materials, facilities and infrastructure:** This criterion implies that adequate housing must provide the essential requirements concerning health and well being of the inhabitants. Adequate housing must meet the basic needs of the community, therefore the Committee on Economic, Social and Cultural Rights states that it must provide safe drinking water, energy for
cooking, heating and lighting as well as sanitation, washing facilities, storage for food, refuse disposal, drainage systems and emergency services. Water supply, sanitation, garbage collection, electricity supply, road construction, rainwater drainage and street lighting are essentials of adequate housing in terms of availability of services, materials, facilities and infrastructure.

**Affordability:** the attainment of other basic needs should not be threatened or compromised by the cost of housing, provision of housing subsidies and housing finance options by state parties for those unable to obtain affordable housing. Affordability requirement of the adequate housing signifies financial costs related to housing should be at a level that does not threaten or forsake satisfaction of other basic needs of the individual or the household. Housing expenses should not leave a constrained budget for other basic needs like utilities, food, clothing, transportation and health care. Adequate housing should be provided for low-income groups that need assistance and subsidies. The monthly average cost of housing should not exceed approximately one-third of total monthly income, even though there might be exceptional cases.

**Habitability:** Habitability criterion of right to adequate housing signifies that a house must provide adequate space for the inhabitants as well as protection from weather conditions, health threats, structural hazards and diseases. Adequate housing must be constructed with materials that provide protection and comfort for occupants. Housing must also provide adequate space for occupants, thus overcrowding should be prevented ensuring comfort and health for inhabitants.

**Accessibility:** Accessibility of adequate housing signifies that disadvantaged groups must have complete and permanent access to adequate housing. Disadvantaged groups are defined as “elderly, children, the physically disabled, the terminally ill, HIV-positive individuals, persons with persistent medical problems, the mentally ill, victims of natural disasters, persons living in disaster-prone areas and other vulnerable groups”, who should be ensured a degree of priority considering housing rights. Law and policy on housing should consider the special housing needs of these groups.

At this point it is important to note that within the scope of this study the concept of ‘accessibility’ refers to that of the low income groups among the disadvantaged groups listed in the definition since the research area is a predominantly low income settlement. Members of other disadvantaged groups might be included in this broader group, but they are neglected for the focus of the study.

**Location:** The Committee on Economic, Social and Cultural Rights, states that adequate housing must be in a location which is convenient to access to employment opportunities, health-care services, schools, child-care centres and other public facilities in both urban and rural settlements. Transportation to these facilities can put excessive costs to the budgets of low-income households. At the same time, housing should not be built on polluted sites or close to pollution sources which threaten the health of the inhabitants, therefore adequate housing should not be built on or near environmental hazards, including garbage dumps and other such hazardous sites.

**Cultural adequacy:** The significance of housing in the lives of individuals and communities necessitate that housing must be culturally adequate, so that the construction, the building materials, and the policies connected to these must express the cultural identity of the occupants (UNHCHR 1991, UN-HABITAT 2003b).

In Global Strategy for Shelter to the Year 2000 (GSS), enabling shelter strategies to involve all potential actors including the government, the private sector, NGOs and Community-Based Organizations (CBO) are stressed for providing adequate shelter for all. These actors are to act at the level where they can be most effective to produce and improve of shelter. The focus of the strategy is the low income groups, though a comprehensive strategy to respect the housing needs of all income groups is emphasized. In many developing countries, majority of the existing housing has been built by the low-income inhabitants themselves, a trend assumed to last in the future due to the incapacity of the governments in housing provision. Efforts of people who are individually or collectively
producing housing need to be supported by regularization and upgrading schemes in many countries. A comprehensive land use policy need to be implemented to promote self-built housing (UNCHS 1990). Compound houses in Ayigya, Kumasi, are examples of self-built housing in Ghana. Since they present a solution for the low-income to access housing, their provision in an enabling approach should be considered. Production and extension, actors, finance, building materials involved have to be identified to put forward such an approach rationally.

**Housing in Ayigya, Kumasi**

Traditionally, local chiefs control the land in former villages like Ayigya, prevent squatting. Unlike most developing countries lack of squatting as a housing option for the low income in Ghana, consequently causes densification of the existing housing stock which is already deteriorated (Van Donkelaar & Van der Laan 1994). Half of the population in Kumasi are housed in single storey compound houses while one quarter are housed in the multi storey compound houses, leaving the rest to be accommodated in villas, government-built housing or employer housing. Majority of Kumasi’s population (almost 75%) occupy just one room. High population density, inadequate or non-existent services and poor maintenance of the existing houses all contribute to the severity of housing problem in Kumasi (Tipple 1987; Sinai 2001). Increasing homelessness and increased room occupancy rates picture a housing situation which is related to the poverty. Ashanthenes living in old, dilapidated traditional housing (compounds) are particularly poor and vulnerable (Devas & Korboe 2000).

In today’s Kumasi, unfortunately, the situation of services in the study *The Housing Situation in Kumasi: A Case Study of Atonsu/Agogo* by Van Donkelaar & Van der Laan (1994) is still relevant. Puddles on most of the roads, constantly filled with water are breeding places for mosquitoes. Lack of a proper drainage system make rain damaged roads function as drains causing erosion and stench. Majority of houses have electric supply, despite it is irregular. Most houses do not have a piped water system and sanitation is very poor. In some parts of Kumasi, 24 households share one tap, and 31 households share a toilet. (Van Donkelaar & Van der Laan 1994). It is also unfortunate that Tipple’s 1987 findings are still relevant. Main water pipes are often damaged due to poor maintenance because of erosion on the roads, which is crucial since water supply is the most important service in a city, whereas provision of a proper piped system is a major improvement in health and a reduction in mortality (Tipple 1987).

**Housing policy in Ghana**

Overall housing situation in Ghana is a reflection of unrealistic rent control, outdated building codes, high cost and limited supply of building materials and building lots, lack of an efficient housing finance system, incomes which stayed low relative to inflation rates and poor economy of the country (Konadu-Agyemang 2001) Main legislations to regulate land uses in cities in Ghana are outdated and unrealistic since they were based on the British system from 1932. These high standard legislations to define planning schemes, layouts, plot sizes and zoning, as well as building regulations and procedures for building permits and the building materials to be used for housing construction restrain housing production. The shortage and high price of main building materials add up to the problem leaving the housing prices beyond reach of even better off groups (Konadu-Agyemang 2001; Van Donkelaar & Van der Laan 1994).

Both statutory and customary law processes have to be followed for land acquisition and land registration, obtaining a development permit for the land and then obtaining a building permit although they do not usually work efficiently in practice, making the overall procedure long and

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1 Member of Ashanti tribe
arduous as a major constraint in housing production (Van Donkelaar & Van der Laan 1994). Another constraint in the housing production is the lack of a well regulated land market. Government controlled and managed land is far from meeting the demands moreover chiefs’ and family elders’ control of the land designates any person who is not a member of the controlling family a stranger with no right of land acquisition. The dissolving of the traditional system causes land speculation. (Konadu-Agyemang 2001). The low-income have difficulties to access land through both formal and informal systems since no affordable plots are delivered by any of them. Lack of affordable plots makes informal additions to existing houses the only housing supply available for the low-income, which are usually made for rental purposes or providing houses for relatives, although there is little space for extensions and they cause infrastructure problems in constricted streets (RICS 2006).

Ghana’s shelter strategy (1993) derived from the multi actor housing provision stressed improving the quality of shelter and human settlements, the accessibility of shelter programmes for the poor, encouraging rental housing and promoting orderly growth with infrastructure in place. In spite of admitting that previous policies have been inefficient in solving the housing problem of the poor the new strategy relied on the old institutions for implementation and followed the inefficient lines of previous policies (Tipple & Korboe 1998). Shelter strategy ignored multi-habitation possibilities a feature of low-income accommodation in Ghana. Moreover it referred rather expensive and sometimes imported building materials ignoring traditional materials. Yeboah (2005) argued that the poor in Sub-Saharan Africa used a combination of traditional and modern materials in building, so neglecting the use of local traditional materials was problematic. Most importantly the informal housing provision, especially the efforts of the poor to house them-selves was disregarded in the shelter strategy (Yeboah 2005). Shelter strategy, even though prescribing a less leading role to the government, resulted in the production of houses for the middle class by the private sector, sustained by profit motive (Afram 2007). Current housing policy in Ghana which promoted single family houses through finance mechanisms, and an easier building permit process for villa type houses although they cost more and accommodate less people. Traditional low-income housing options like compound houses are ignored adding up to the housing shortage in the country (Sinai 2001).

The state of the current housing policy in Ghana, and its reflections on the housing situation requires mechanisms to make housing affordable for the low income people. These mechanisms should respect efforts of the poor to build their own houses easing the challenges that the poor face in building their own houses like lack of legal security of tenure, the absence of financing mechanisms and cost of building materials. The possible policy implications derived from these challenges necessitate an enabling role for the government in the multi-actor housing provision (Yeboah 2005).

**Compound houses in Ghana**

For Tipple the housing situation in Kumasi is a compound and non-compound duality. Government built houses comprised about 20% of the houses in Kumasi, but they only generated the 7% of the total rooms in the city. Compound houses built by local materials and techniques by relatively low-income households supplied the most rooms in the city (Tipple 1987; Tipple & Korboe 1998).

Single storey compounds are often almost square structures with sides about 30 meters long with ten to sixteen rooms organized around a courtyard on three sides with verandas in the courtyard (Figure 3). The main entrance to a compound is often from the side streets in the form of a door that can be locked at night for security. On the fourth side, usually there is one bathroom and one kitchen shared by all the households in a compound. Single-storey compound houses are usually built with traditional materials, often with rammed earth built in courses (‘swish’ or ‘atakame’) and few with sandcrete blocks. Doors and louvered windows of compound houses are manufactured locally (Tipple 1987).
In Ghana, cooking outdoors is usually preferable because preparation and cooking of traditional food is a long process that can be arduous in high indoor temperatures and humidity, but it can sometimes be disturbed by weather conditions. In a compound house kitchen is a semi-closed room, open on one side to the courtyard normally without water supply or drainage system. Half of the compound houses originally had kitchens which were converted into sleeping spaces or they are used as storage spaces due to climatic conditions. Apart from the rooms and the kitchen a compound usually contains an unfitted bathroom and a toilet, basically an urination cubicle with a drainage hole. Normally a person uses a bucket to take a bath. The presence of a kitchen or a bathroom does not mean that the house has water supply, which if exists is usually only one water tap shared by all households (Tipple 1987; Afram & Korboe 2009). Compound house inhabitants mostly use public toilets and the bush for defecation. Public facilities, especially public toilets are usually inadequate in number, located far from the house and in poor condition that they are inconvenient to use and cause health threats (Tipple 1987; Afram & Korboe 2009).

In compounds a mix of owners, rent paying tenants and rent-free tenants who are the members of the owners’ extended family are housed. Multi-habitation is a characteristic feature of the compound houses which results in sharing facilities, where most compound houses lack basic services and facilities. Three tenure groups in compound houses often live in similar housing conditions, where they share the facilities like kitchen and bathroom, and occupy similar space, majority of them occupying just one room (Van Donkelaar & Van der Laan 1994).

Multi-habitation provides mutual assistance and social harmony for the low income inhabitants with the traditional communal life it encourages, but has obvious problems like overcrowding, lack of privacy and poor service facilities (Afram & Korbor 2009). It provides rooms for the owner’s household, rent-free rooms for relatives, and rooms for renters as a cheaper way to house people in line with cultural and social preferences and responsibilities (RICS 2006), implying cultural adequacy. Besides problems connected to multi-habitation, compound house neighbourhoods present more cooperation and harmony among households when compared to the neighbourhoods with other forms of housing. Multi-habitation also provides a passive security system since most of the time, there are people in the house to watch the houses in case of fire or robbery. The entrance to a compound house can be locked for security, creating a safe and secure area where children play and are looked after while women share the housework. Shared services and utility spaces lower the cost of construction for each compound further decreasing the costs of the infrastructure since the density in compound house neighbourhoods is high (Afram & Korboe; Sinai 2001).

Compound house does not require the use of reinforced concrete framing and expensive qualified workmanship allowing owners build or extend compounds by themselves lowering the construction costs, thus contributing to affordability and accessibility. The possibility to extend the compounds is very important since land and services are extremely expensive. A single storey compound house usually grows through an incremental process as new rooms are added as long as there is funding and completed rooms are occupied as new rooms are being constructed. Incremental building makes the
construction feasible where funding might not be certain or stable. It also helps to obtain small credits for building materials and craftsmanship allocated by the suppliers to the builders who are known to them (Afram & Korboe 2009).

Compound house with its pure architectural form has a clear hierarchy of spaces from the private bedrooms, to the semi-private veranda, semi-public courtyard and finally public side alley of the main street. Courtyards intentionally open to alleys rather than main streets to enhance their privacy. Clear hierarchy of spaces is an architectural quality which allows easy transformation. Space hierarchy, as a merit also makes it possible for different activities to take place at different locations other than rooms. Courtyard or verandas are be used for cooking, dining, drying clothes, storage and even for sleeping on humid and breezeless nights. A level of privacy for the inhabitants is provided by performing these activities within the semi-public space of the courtyard. Although entrance to the rooms of a compound is from the yard, some rooms have additional access directly to the street. Veranda, a transitional space back at the time when the compound house was occupied by one family is a partitioned semi-private space in today’s urban compounds used for less public activities of a household (Afram & Korboe 2009).

Compound houses are suitable for hot climate. The courtyard of a compound house has multiple uses making it a space to develop and nurture relations among households. Social integration created by the shared use of the courtyard makes it possible to keep open all the windows and doors facing the courtyard improving the climatic conditions of the compound. Almost every compound house have some form of income generating activity by one or more households, where the room, the veranda, the yard and the street can be used for such an activity. Income generating activities makes the adaptability of compounds crucial. Replacing a window with a door on the facade of the house changes the use of a room from domestic to commercial, without disturbing the inhabitants living in the adjacent rooms. The simple plan organisation, with a direct access for each unit to the courtyard, makes it possible for sub-divisions or new divisions without obstructing the other units (Afram & Korboe 2009).

Most households occupy only one bedroom, where the sleeping space is shared by parents, children and other nonfamily members creating serious privacy problems. Furthermore shared facilities which are already insufficient are overloaded with overcrowding (Afram & Korboe 2009). Earth walls of compound houses can be damaged easily with the waste water finding its course on the streets due to lack of proper drainage systems (Sinai 2001).

It is argued that versatility and utilitarian qualities of compound houses are not acknowledged by academics and policy makers although they constitute the prevalent housing form to accommodate urban poor (Afram & Korboe 2009). Furthermore they are devalued by young African households who preferred a modern life associated with western style housing since they represented a traditional way of life (RICS 2006).

Research findings

The research was carried on in Ayigya, a suburb of Kumasi, the second largest city of Ghana, and the capital of the Ashanti region. Population of Kumasi was 1,170,270 in the 2000 Population Census, but to 1,889,934 for the year 2009 (Kumasi Metropolitan Assembly 2006) (Figure 2).
A qualitative household survey on a community (neighbourhood) level, linked to the compound house with reference to aspects of the right to adequate housing formed the core of the research. Household survey is used to get perceptions, aspirations and needs of the inhabitants on the compound to examine its capacity to satisfy the key issues of right to adequate housing. The research aimed to define a spatial and technical improvement process for the compound house as to satisfy the criteria of the right to adequate housing and describe the policy environment to enable its provision as an adequate low income housing option. The research was designed as a case study, exploring the current situation of ‘the compound house’ in Ayigya conducting two household surveys: a general survey to gather basic socio-economic data and general data on housing and household characteristics, and a compound specific household survey to gather inhabitants’ views regarding the criteria of the right to adequate housing. In-depth interviews were conducted to the key informants from academia, the local government and to the traditional authority, while observations were documented by a transect walk. It is demonstrated that compound houses in Ayigya had varying compliance in relation to the criteria of the right to adequate housing although some evaluation was complicated due to the conflicting and contradicting views of the people concerned and reflections in the literature.

**Legal security of tenure**

Most of the compound households had a perceived security of tenure owing to customary land rights although majority did not have statutory titles. Only a small proportion of tenants and rent-free tenants, constituting 9% of the whole households reported eviction threat from landlords making legal security of tenure a rather satisfactory aspect of the compound houses in Ayigya. Tenure security was ensured mostly by customary rights related to land and housing.

Generally in Kumasi, eviction threat existed only for houses that were built on water courses, main roads and land reserved for public facilities but this did not apply to Ayigya, where compound houses were built on secondary roads. Though, it is important to note that, some rent-free tenants, who were the members of owners’ extended family reported disturbance from the new owners after the death of the actual owner which contradicted the social convention of the culture to give owners the responsibility to accommodate the members of the extended family. Although legal security of tenure is more or less a satisfactory in compound houses in Ayigya, it is important to take preventive measures to avoid the issue from becoming a problem. Housing rights by both statutory and customary laws should be made clear to the inhabitants and documents to prove security of tenure
should be provided. Capacity building in the community and formation of a CBO might facilitate the legal process. Tenancy rights of the rent free tenants should be clearly defined in the housing policy as well as procedure to follow in case of unavoidable evictions and measures to protect and compensate evictees.

**Availability of services, materials, facilities and infrastructure**

Availability of water supply, cooking energy and electricity services, building materials, kitchen, bathroom and toilet facilities, and drainage and refuse disposal infrastructure in compound houses in Ayigya present a major challenge. Compounds have important deficiencies in terms of availability of services, materials, facilities and infrastructure. A considerable level of dissatisfaction for water supply, use of charcoal, deterioration of building materials due to poor maintenance, shared use of facilities, lack of proper facilities, obligation to use public toilets, lack of proper drainage system and malfunctioning of refuse dumps confirm that, the problems in this aspect of the housing condition as diagnosed by previous studies by Tipple (1987), Van Donkelaar & Van der Laan (1994), and Konadu-Agyemang (2001) are still valid and even more severe.

Chart 1. Main source of drinking water

Source: Author’s household surveys. July 2010

Improving water supply in Ayigya requires the expansion of the piped water distribution as well as maintenance and repairing of the existing pipes and connections. LPG use instead of charcoal has to be encouraged and enforced. Quality of the electricity supply has to be improved. Separate electricity meters should be encouraged to make low income population living in compounds benefit from the subsidized tariffs. Deteriorated and old building materials need serious maintenance such as replacement, renovation and rehabilitation. Facilities like kitchens, bathrooms and toilets have to be maintained properly and improved. Once LPG use is encouraged, it will be easier to provide households with private kitchenettes. Traditional shared kitchens could be kept available solely for the communal preparation of traditional foods, limiting the use of charcoal for such activities.

Chart 2. Type of kitchen

Chart 3. Type of bathroom

Chart 4. Type of toilet

Source: Author’s household surveys. July 2010
Condition of public toilets has to be improved while a more advanced system of drainage than open gutters has to be installed. Condition of the roads has to be improved. Problems of the refuse disposal should be solved until a more advanced system is introduced.

A comprehensive upgrading programme is needed to improve the compounds regarding services, materials, facilities and infrastructure. Community directed to CBOs can be a driving force to facilitate implementation of the programme. Raising awareness while explaining that use of LPG could be more economic than charcoal after initial costs of acquiring the LPG cylinder, stove and subscription are met might be helpful. Promoting LPG might require intermediate systems, like the use of both in the transition period, which might help to reduce negative effects of use of charcoal. Reduction of the initial costs of LPG cylinder, stove or the payment for subscription and/or possibility to pay in instalments should be provided as measures to encourage LPG use.

Community workshops could include short term basic educations on installation and repair of the water pipes, closed gutters, simple building techniques and the use of building materials. After the capacity building, upgrading programme can be implemented on a community-help basis with the assistance and technical guidance of the University, under the supervision of Kumasi Metropolitan Assembly (KMA). Community participation can be organized by the chiefs, local leaders and the assembly men. Improvement of water supply should have a priority in the upgrading programme since it has implications on general wellbeing of people for health, productivity and cleanliness. Water provision and related infrastructure could be subsidized, and community participation should be facilitated in the expansion of the system with participation of the private sector, under supervision of
the related department of KMA. Standards for the electricity supply have to be defined to improve the quality as well as measures to promote the use of separate meters to make the low income compound house inhabitants benefit from the subsidized tariffs. This would also help to ease the conflicts and tension about the payment of common bills, which is one of the most common problems about the shared services.

Roofing and walling materials and windows and doors of most compound houses need renovation or repair. Subsidized provision of basic, most common, easily and locally available and affordable building materials should be promoted. Micro finance schemes specifically designed for compound houses should be introduced. Improvements to be conducted on facilities of the compounds also should be included in the microfinance schemes. Creating a working drainage system should also be a priority in settlements like Ayigya. Community could be organized to install drains contributing by provision of the materials and labour on a communal basis and to build proper roads under the supervision of the related department of KMA coordination and technical assistance. KMA could then be responsible for the maintenance of the infrastructure since initial costs are shared by the community. The programme could be implemented on a road to road basis.

Policy options regarding availability of the services, materials, facilities and infrastructure require enablement compound house inhabitants, innovative and targeted subsidies and finance for all of the aspects of the criteria, multiple actors participation supervised by the government. The improvement in services, materials, facilities and infrastructure would eventually contribute to improve the habitability of the compound houses. Multi-actor committee, with the participation of the chiefs, the assemblymen, community leaders and other representatives could be responsible for monitoring the implementation.

**Affordability**

Although cost of housing, the second most common reason to live in Ayigya implied affordability, most households, especially tenants spent more than half of their income on housing related expenses. Affordability of the compounds was confirmed by academicians, local government officials and the traditional authority although each group had their reservations.

Chart 7. Reason for living in Ayigya with respect to tenure status

![Chart 7](source: Author’s household surveys, July 2010)

Chart 8. Affordability with respect to tenure status

![Chart 8](source: Author’s household surveys. July 2010)
It is argued that affordability of the compounds as a positive aspect came with the compromises on other features like shared services which might be problematic. Affordability improvements require abolishing outdated and ineffective regulations on land acquisition and development as well as on housing design and construction, simplifying the processes to obtain permits to start building a house. Provision of smaller serviced plots than the current regulation permits might lower the costs for potential home owners. On these smaller plots smaller compound houses with fewer rooms could be built lowering the construction costs, reducing overloading of the services and facilities and decrease the tension related to sharing them. Communal ownership for the house and the land should be explored as innovative tenure systems to improve the affordability of the already multi-habited compounds. Incentives to encourage the private sector to provide rental compound houses for the low income are needed.

Local building materials, use of which, are prohibited in urban areas have to be encouraged both for building new compounds and extending the existing ones. This is a viable policy since it is stated that under proper maintenance traditional materials like swish, adobe, mud and bamboo are very durable and resistant. Incremental development to construct houses in pre-planned phases should be considered to enable owners to build in smaller and cheaper phases, reducing the time lag between the investment and occupation.

**Habitability**

Overcrowding as the most significant habitability problem causes privacy problems and overloading of services and facilities. Extreme levels of occupancy rates point out to a serious incapacity of the compounds.

Dissatisfaction with services, materials, facilities and infrastructure and habitability problems lead to housing adjustment decisions like improving and/or moving. Densification and congestion of the existing houses result from the general housing shortage in the city severely affects the low income inhabitants of rather affordable and accessible compounds. The number of the rooms per family, need to be increased significantly in Ayigya to solve overcrowding and withdraw occupancy rates to the acceptable standards. Affordable low income housing schemes which make it possible to transform compound units into self-contained units in time need to be promoted to improve the habitability for the whole city of Kumasi. Layout of the compound house is suitable for this kind of incremental development, already being practised by converting verandas to kitchens or rooms. A pre-designed extension process might be facilitated to satisfy user preferences by technical assistance. The incremental development should enable the occupation of the initial rooms while the next rooms are constructed. Services and facilities should be made available at the early stages of construction and occupation. Multi storey compounds or construction of second floors as vertical might also help to cope with overcrowding, though there are cost implications due to high standard technology, building materials and workmanship.

Abolishing regulations that hinder housing provision without helping to achieve evident improvement in services, safety and health, would encourage more low income people to build houses. Comprehending the determinants of moving or improving as housing adjustment decisions is needed to formulate related policy options with legitimate targets. Implication of residential mobility asks for provision of affordable housing and sites and services programmes while for improving, other policy
options like upgrading and the provision of credit for home improvement might be more viable. There is a significant and almost equal preference for residential mobility and improvement in. Improving housing conditions requires encouraging housing adjustments by reducing the costs of both moving and improving. Shifting government focus from promoting single family houses to the traditional compound houses would help to channel same amount of funds to accommodate more people. Financial mechanisms to encourage building and extending the compounds help to increase the habitability. If more households could occupy more than one room in a compound, many households in Ghana would have better living conditions.

**Accessibility**

Accessibility of the compound houses by disadvantaged groups in the society is relatively high since they are the type of housing to accommodate the low income mostly. Incidences of inaccessibility were rather low (6%) affecting rent free occupants.

An enabling approach with involvement of both formal and informal private sectors in housing provision would increase the accessibility of the low income population to housing in general. Government, private sector, NGOs, CBOs, community itself and the individual builders should have their roles within the approach. The efforts of the low income community and builders are significantly important in this sense since as their labour can be converted to assets through self-help, self-build, extended family-help, or community-help as Yeboah (2005) recommends. Measures taken to assure affordability consequently increase the accessibility of the low income groups to housing. Community savings and micro finance schemes to obtain plots to build also increase the accessibility to adequate housing.

**Location**

Location of some compounds in Ayigya is problematic regarding proximity to public facilities, transportation stops and more significantly to employment opportunities. In addition, proximity to perceived pollution sources that are open gutters, public toilets and refuse dumps is problematic. Location of the compound houses in Ayigya can be improved by policies that promote social infrastructure, create employment opportunities, develop transportation network and reduce pollution sources. Community participation to improve services, materials, facilities and infrastructure might be very relevant to have a better settlement free from pollution sources.

Chart 11. Location of the house with respect to facilities

![Chart 11](source: Author’s household surveys. July 2010)

**Cultural adequacy**

Different perceptions, aspirations and needs make cultural adequacy of the compounds a complicated issue. Even though changing norms of the culture, like nuclear families becoming dominant over extended families make the cultural adequacy of the compound houses questionable, there are implications of cultural adequacy for a considerable proportion of the inhabitants. Compounds are
favourable for most of the Muslim households with the communal life they offer signifying a connection between religion and cultural adequacy.

Chart 12. Cultural adequacy of the compound house with respect to religion

![Chart 12](chart12.jpg)

Source: Author’s household surveys, July 2010

Chart 13: Reason for living in Ayigya house with respect to religion

![Chart 13](chart13.jpg)

Source: Author’s household surveys, July 2010

Different views on cultural adequacy of the compounds have different implications on spatial and technical improvements and designing policy options. Providing enough habitable space to ensure privacy is a priority in strengthening cultural adequacy through spatial improvements. Bathrooms and toilets for separate sexes would also improve cultural adequacy if desired by users, which might be crucial for Muslim households. Redesigning compounds into self-contained units to provide more privacy is essential in this sense, which would be easier when problems with services, facilities and infrastructure are solved. Quality of the common spaces like courtyards and kitchens need to be improved to make it possible for the households to enjoy the communal life the compounds offer. Compound houses need to be adapted to the demographic changes in the culture. Smaller compounds might satisfy the increasing demand for nuclear families and more individualistic life styles. The unavoidable need to rent out rooms in a compound to households other than the members of the extended family, as in the present day Ayigya, requires provision of facilities reserved for their use, since shared use of facilities can be troublesome.

New forms of housing which fit into new perceptions of acceptable housing in urban life should be designed with advantages of compounds like flexibility, low-cost, suitability for outdoor cooking and multi-habitation. Compounds will continue to be the housing options for the migrants who would depend on the extended family for coping with the difficult urban life in spite of the tendency among the compound house inhabitants to prefer modern self-contained units.
Conclusions and recommendations

Research has demonstrated that compounds in Ayigya are generally inadequate both in quantity and quality for growing population and for changing demographics, values and family culture. Quality of the existing compound houses need to be improved and affordable new compounds need to be built to improve the overall housing situation in Ayigya. Policies and strategies to promote affordable housing need to be formulated and implemented with co-operation of the government, private sector, NGOs and the community in the city of Kumasi.

This research tested findings of the previous studies on housing conditions in other neighbourhoods of Kumasi, mostly verifying and consolidating them, and contributed to the discussion on describing the instances contradicting them. Findings of the research would probably apply not only to Ayigya, but to most single storey compound house neighbourhoods in Ghana, though severity of the problems might differ according to settlements. The validity of this research depends on its ability to inspire new studies and to give insights for actual implementations on both physical improvements and policy options since otherwise it is a basic evaluation and assessment of the existing situation of a vernacular form of housing.

The essence of formulating better improvement and policy options is to grasp the perceptions, aspirations and needs people involved. Without the participation of the community any attempt to change the situation for better might fail. Besides, this information need to be updated since the needs could be more severe and urgent in the present day when compared to past contradicting expectations, and change in perceptions and aspirations could be deeper than they are anticipated in the literature. It is hoped that revealing the inhabitants' perspectives on compound houses would contribute to a change in the government approach, with innovative solutions to the housing problem of the low income, respecting existing forms of housing provision, local architecture and community participation.

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