Towards Housing Provision for Government Employees in Tanzania: An Overview of House Types

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Abstract

One of the major problems faced by many developing countries is the provision of shelter for its citizens, the majority of which are poor. Over the years this problem has been compounded by government policies, rapid rates of urbanization mainly due to natural increase and migration; and failure of housing delivery structures to meet housing demand. The current socio-economic conditions of most third world countries seem to suggest that this situation is not likely to improve unless some positive interventions are made. The focus of this paper is placed on types of housing for government employees especially members of Police Force in Tanzania. An attempt is made to address the problem within its context, highlighting problems in existing types of housing and problems faced by officers and their families living in these houses. Case study research strategy was used in the study and data collection tools were interviews, observation, and photographic registration. The findings have provided basis for information of the problem and potentials in terms of functional requirements and spatial qualities of existing government employee's house types. Major conclusion in this paper is that the provision of adequate shelter for the millions of people in the world, in this context shelter for government employees in Tanzania is considered to be very important. Adequate shelter means more than a roof over ones head, meaning adequate privacy, adequate security, structural stability and durability; adequate lighting and ventilation, adequate basic infrastructure, water, sanitation, waste management and adequate location with regards to work and basic facilities, all at affordable cost. Key recommendations given in this paper is consideration for construction of house types which are mult storey in order to assist in proper utilization of land, the government to ensure that all citizens have access to decent shelter, basic services, and maintenance to be of priority in order to have well functional buildings.

Keywords: House Types, Housing, Government Employees.

1. Introduction

One of the most important basic needs of human being is housing as it affects human health and being (Adeoye, 2016). Housing promotes physical, communal, economic and psychological gratification for occupants (Bondinuba, 2013). Housing problems need to be guided by comprehensive national settlement policies which view the shelter problems as part of the settlement system. National policies should also address the housing delivery system by enabling the markets to work, ensure access to land, mobilize financial resources needed for housing projects by the poor, ensure access to basic infrastructure and services and improve construction, maintenance and rehabilitation of houses to target groups. According to Nguluma, (2013) decent housing should provide good physical and mental health, personal development and fulfillment of life objectives. According to Bradley (2003:3), adequate shelter means more than a roof over one's head. Literature shows that housing is more than a mere shelter (Wahab, 1983; Ogedengbe, 2005; Oladapo, 2006). Therefore the issue of housing can be considered to be very complex. The context of paper is the Government built housing estates intended for government employees in urban areas. In Tanzania housing is being provided for some people living in urban areas for several decades. It is documented that immediately after the 2nd world war the Government housing estate for low income workers was relatively a new concept in Anglophone Africa. It is further documented that housing was provided for returning veterans and new urban laboring classes partly as social welfare measure and equally as a mean of securing a more urbanized workforce.

According to Adeoye, 2016 housing is considered essential for good life and is an important requirement for a satisfactory community. He further contends that "The quality of Housing in any neighborhood should be such that it satisfies minimum health standards and good living standards" (Adeoye, 2016:261). According to Habitat & ILO (1995:2), basic infrastructure either in terms of area or in the number of separate rooms is a common sign of inadequate housing.

The cyclical migration, imposed by short term contract working practiced up to that time by such urban employers as the mines of southern and central Africa, did not allow indigenous workers to settle in the towns. In the contract labour system, male workers were enticed to the urban areas, largely through the imposition of poll taxes which had to be paid only on cash. Then the accommodation introduced was barrack line areas epitomized by notorious hostels as experienced in South Africa. The existing land use structure of Dar es Salaam and house types in the city centre have been much influenced by early colonial planning. The German colonial administration ensured that all the land along the coast was acquired for government use. According to Kironde, (1994) several government houses, offices and quarters were constructed later.

Debate in the 1940s, in relation to the need for a more stable workforce possessed of some skills was the catalyst for allowing women and children to join their men folk in town. At that time, single roomed dwellings for men only were augmented by increasing numbers of dwellings suitable for small, nuclear family households in the states reserved for certain industries or open to any employer to place valuable skilled and semi skilled workers. At this time, in the case of South Africa, housing became a social welfare issues. It was realised that there was a need of improving housing conditions and providing for families as a means of achieving healthy and efficient workforce. Tipple (1990), argues that the main housing problem in the developing countries is that people cannot afford enough housing both at State and individual levels.

In Sub-Saharan Africa following independence of different countries, Tanzania inclusive there was an acceptance that urban life is open to anyone. For a brief period of time government housing became a means of expressing the desire for particular house forms and also as a political tool to demonstrate government care for its people. Single household villas of around $40m^2$ area, with 2 to 3 habitable rooms self contained services and plots of 200 – 300m2 became relatively common in sub-saharan Africa.

In Tanzania, some housing schemes have been constructed to meet particular needs for its employees even before independence. Most government employees are still living in these houses. The houses have not been undergoing maintenance so majority of them are of poor quality, and therefore a need for replacement and additional units to meet high demand by government employees.

2. Methodology

Empirical evidence for this paper comes from field studies conducted from government employees residential areas at Kilwa road - Kurasini, Oysterbay and Mtoni Kijichi, Dar es Salaam The major aim of the study was to identify the problems and potentials on existing housing of government employees and also to find out the existing house types and their spatial qualities and functions, therefore a multiple case has been considered as an appropriate strategy to explore in great detail variations among different house types.

Dar es Salaam was considered an appropriate area for the study because it is one among the rapidly urbanizing centers in the country as well as in the sub-saharan region. Given its social economic conditions more people are attracted to reside in the city. The population is growing rapidly indicating that more and more people will be residing in the city. Dar es Salaam is also having a large number of government employees compared to other areas in the country. The city therefore represents an interesting case with challenging exposition of the study phenomenon.

Kilwa road houses were selected as information rich due to diversity of house types which exist in this area. There are also old houses which were constructed during colonial period and new ones constructed at different intervals after independence.

Oysterbay area is also selected because of its different house types in the area. Mtoni Kijichi is selected on the basis that the government employees are occupying blocks of flats which were formally used by the National Bank of Commerce workers. Data collection methods employed included literature review, interviews, field observations and photographic registration.

3. Findings and Discussions

3.1 Layout of The Housing Schemes

The results from the three settlements, that is Oysterbay, Kilwa Road and Mtoni Kijichi have provided basis for information of the problem and potentials in terms of functional requirements and spatial qualities of existing government employee's accommodation. Unlike in Mtoni Kijichi housing where the layout seems to have facilitated the optimal utilization of outdoor space, those of Oysterbay and Kilwa Road have small units scattered all over the site, thereby providing vacant spaces that would otherwise be utilized for some functions such as playgrounds for children and adults, as well as other recreational facilities. Apart from the parade ground in Kilwa road housing estate, for instance, what appears to be a football ground used by both, adults and children, is informally provided close to the road behind the houses. This may endanger safety to both traffic and players.

3.2 House Types

Different criteria are used to classify house types. Lawrence (1994) criteria for classification of house types was used. Through analysis of plans that were documented during the research it was possible to classify house types using two criteria, that of spatial organization of floor plans and building materials used.A total of 18 houses have been studied in the three visited housing estates. Some of the houses are distinct in one estate whereas others are common in more than one estate. By analysis of spatial organization of floor plans and building materials the following house types were discerned.

Type 1- Mexaport

Nomenclature of this house type is mainly due to the walling material, which is metal. The criterion of building materials for instance timber framed, brick or stones walls was used by Lawrence(1994). This criteria is not very relevant to the context of government employees houses because this type of house is constructed of metal and the house is assembled on top of a raised concrete slab. It is only found in Kilwa Road housing estate, among the other schemes. The house consists of six rooms separated from one another by a metal partition. The room accommodates multiple functions. Sleeping, sitting and receiving visitors may take place in one space. In some rooms, cooking is done inside but mostly for those using electric cookers, otherwise this activity takes place outside. Each room is meant for a single person, especially who has just started to work with the police force. This could mean that the houses are temporary to allow a person to settle in work place before being provided with a permanent housing. However, the houses appear to be "permanently temporary" by virtue of occupation for a long time. One room is used by one household. Toilets are detached from the houses and are shared between two mexaports.

Figure 1. House Type 1. Walls and partitions are of "metal sheets". A Room in this house type accommodates multiple functions and is occupied by one Household.

Type 2

This house type consists of a bedroom, sitting room, store, front verandah and an enclosed backyard. The building materials are concrete blocks for walling and corrugated iron sheets for roofing. In the course of the study it was learnt that the enclosed backyard could have been provided for outdoor domestic activities like cooking, washing dishes, laundry and chatting synonymous to the traditional Swahili courtyard. The space seems to be adaptive to a variety of functions such as cooking and sleeping depending on the requirement and choice of a particular user of the house. There are two toilets and two bathrooms shared between 16 houses occupied by 16 households and are located in one structure at the centre. The toilet is centrally located being surrounded by the 16 houses.

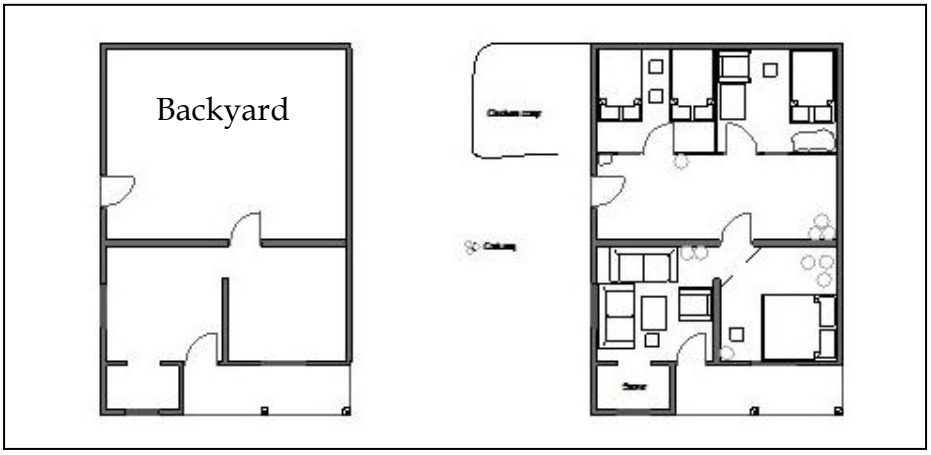

Figure 2. House type 2. The backyard has been used to accommodate two more rooms in this case

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Figure3. The toilet building is centrally located being surrounded by sixteen type 2 houses.

Type 3

This type is basically composed of two bedrooms, sitting room and a front verandah. A pit latrine that also serves as a bathroom is located outside. In some cases, this house type accommodates two households by introducing a door at the rear side and a partition at the sitting room (See figure 4 below). Cooking and washing activities are conducted outside as there is no provision for carrying out these activities.

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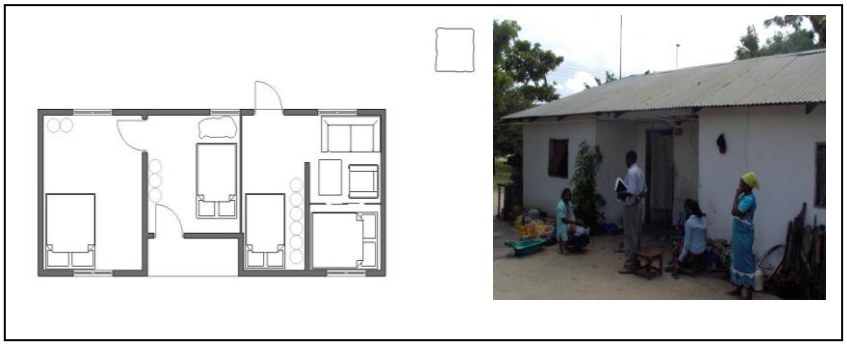

Figure 4. House type 3. Chipboard partition separates two families in this house type. Note the location of the toilet in relation to that of the house

Type 4

This is a one-room freestanding house made of cement-sand block wall and roofed with corrugated iron sheets. Toilets are informally built outside and in most cases are shared between several of these houses.

Like house type 1, the single room has to serve for sleeping, sitting and sometimes cooking. Lack of enough space to accommodate all functions has forced occupiers to carryout physical extensions outside the houses.

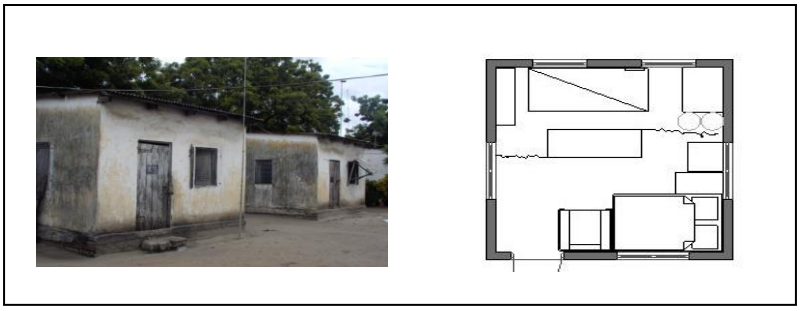

Figure 5. House type 4. Multiple activities take place in one room.

Type 5

House type 5 consists of a bedroom, sitting room, kitchen and a front verandah. It is constructed by concrete blocks as walling materials and mangalow tiles as roofing materials. A door is provided for direct access to the bedroom from outside. A kitchen is accessed through the sitting room. Consistent with many of the other house types there is no specific provision for toilets in this house. Users opt to build pit latrines outside their houses. The house is small for occupation by a family (with children).

Figure 6. House type 5. Note that the window is very small restricting cross ventilation.

Type 6

"Mansard Roofed House"

Apart from having two bedrooms, sitting room, kitchen and store, this house type has a mansard roof. The roof type makes the house distinct from other house types.

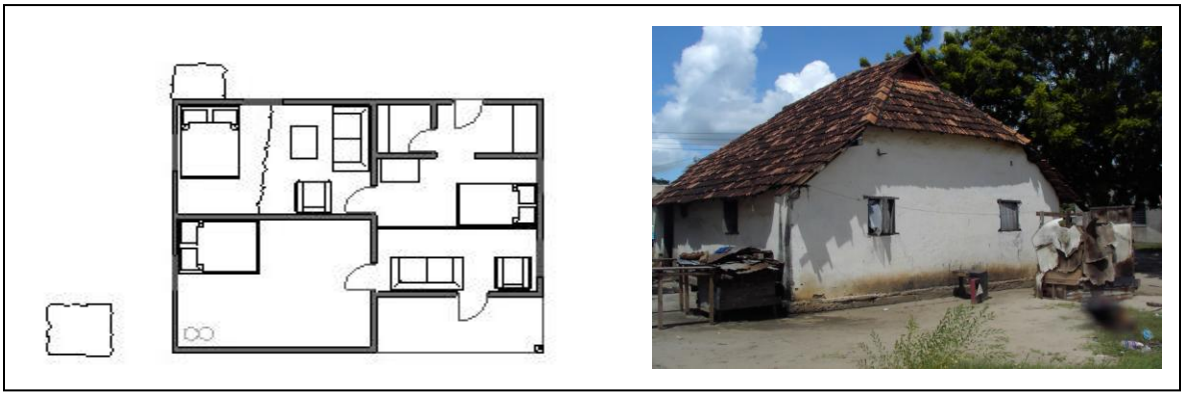

Figure 7. Mansard roofed house type with modified interior. A chipboard partition wall in the sitting room separates two families. These types of houses have deteriorated beyond repair. They have very small windows, which are inefficient for ventilation and enough light in the room.

Type 7

This is one of the 50 flats in each of the two L-shaped five-storey blocks. The blocks are found in Kilwa road housing estate. A typical flat consists of two bedrooms, sitting room, toilet, kitchen and a balcony. The balcony can be regarded as an outward extension of the kitchen as it accommodates activities such as washing, cooking and storage. It is also used for drying of clothes. It was learnt that these flats were built for families. However, bachelors also occupy the houses in such a way that one person lives in one room and share the rest of the spaces with other occupiers of the flat.

Figure 8. Typical layout of a compact flat in an L-shaped block seen in the picture.

Type 8

A flat having three bedrooms, a sitting room, a kitchen, a combined toilet and shower and a store in three I-shaped blocks in Kilwa road and/or one block in Oysterbay housing estate constitutes house type 8. Each block has a total of 18 apartments. In Kilwa road housing estate, the three blocks were occupied in 1990. In the course of the study it was observed that the original plan of the flats that had been designed by a Korean firm was significantly modified during construction of the blocks while the general profile remains the same. In some flats, modifications have led to change of use from kitchen space into a bedroom and the store becoming a kitchen after reducing the size of the toilet. With this rearrangement, it has become possible for four bachelors to occupy a room each and share a sitting room, kitchen and toilet.

Figure 10. Typical flat in the I-shaped block in Kilwa road housing estate after modification in which a store was changed into a kitchen. The sitting room plays a role as common space from which all other spaces in the apartment are accessed. Note that in this apartment three bachelors have a bedroom each and share a kitchen, toilet and the sitting room as their lobby.

Another form of disparity from the original design of an apartment in this block involves rearrangement of a staircase, which led to reduction of number of bedrooms from 3 to 2.

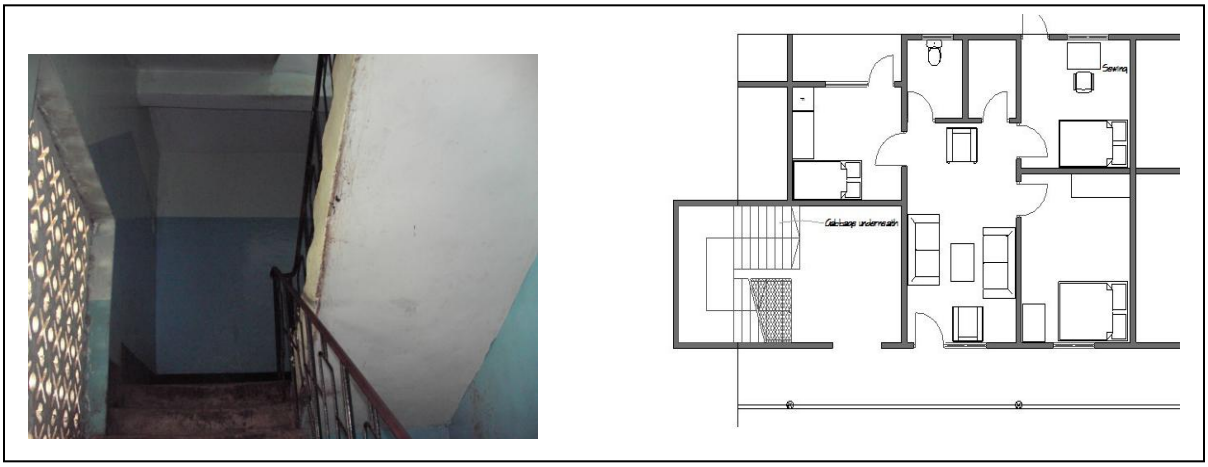

Figure 11. A reorganized staircase adjacent to a typical apartment in I-shaped block in Kilwa road housing estate

Figure 12. General outlook of the I-shaped block of apartments in Kilwa road housing estate

Type 9

This house type is available in both Kilwa road and Oysterbay. Four units of this type form a row-housing block. A unit consists of one bedroom, sitting room, kitchen, store, front verandah and an enclosed front yard. Two blocks of 8 units each share toilets and bathrooms located about 6 meters away.

Figure 13. Layout of house type 9.The enclosed front yard provides space for activities such as washing and drying of clothes, cooking and resting

Type 10

House type 10 consists of one bedroom, a sitting room, kitchen and an enclosed front yard. Toilet and bathroom are within the compound and share a wall with those of the other house. The front yard gives a possibility of extension such as addition of habitable spaces. However, the enclosing wall does not give the impression of frontage. Instead, it appears as backyard to the house much as it would appear the initial intention was to provide for privacy

Figure 14. House type 10. The enclosing wall at the front yard is used as part of enclosure for an extended room. The entrance is not articulated enough to give an impression of frontage

Type 11

A unit of two bedrooms, sitting room, kitchen, toilet, bathroom forms part of a semi-detached house. It can be found at Oysterbay housing estate. There is a chimney at the kitchen, which seems to be unnecessary as cooking activity using soot-based fuel is normally done outside.

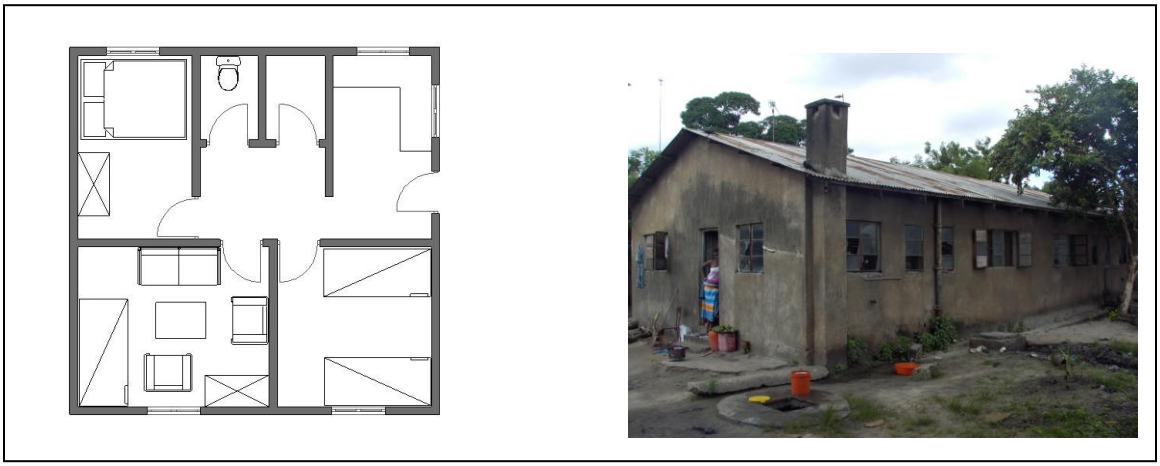

Figure 15. House type 11. The house does not have a clearly defined frontage. Note the chimney at the corner of the house.

Type 12

House type 12 located at Oysterbay consists of two bedrooms, sitting room, kitchen, toilet and shower room, front and rear verandahs. A combination of four of these units makes a block. The house is roofed by asbestos sheets.

Figure16. House type 12 at Oyster bay housing yard.

Type 13

The house made by concrete blocks and roofed by asbestos sheets is part of three units making a linear block in Oysterbay. It is composed of three bedrooms, kitchen, toilet, bathroom and an enclosed backyard. The backyard is effectively used for activities such as washing and drying of clothes, and cooking especially when charcoal stove is used. The kitchen has a chimney and a recessed wall. It has no direct access from outside. It is accessed through a lobby that connects all the other rooms.

House type 13

Figure17. Recessed walls at each kitchen in the block are articulated by application of a different color thereby breaking the monotony of a linear organization

Type 14

This is a unit in one of the two semi-detached houses that can be found in Oysterbay. It has two bedrooms, sitting room, kitchen, toilet, bathroom and a front verandah. The house is made of concrete blocks as walling materials and roofed with corrugated iron sheets.

Figure 18. A unit in a semi-detached house at Oysterbay Housing estate.

Type 15

House type 15 is among the three units built for high-rank police officers in the Oysterbay Housing estate. It is composed of two bedrooms, a sitting room, kitchen and store, bathroom combined with toilet and a front verandah. The front verandah is, however, modified to provide for an additional space by enclosing it with perforated blocks and wire gauzed window. The kitchen and toilet facilities are accessed from outside at what was formerly the rear side which is now a front side.

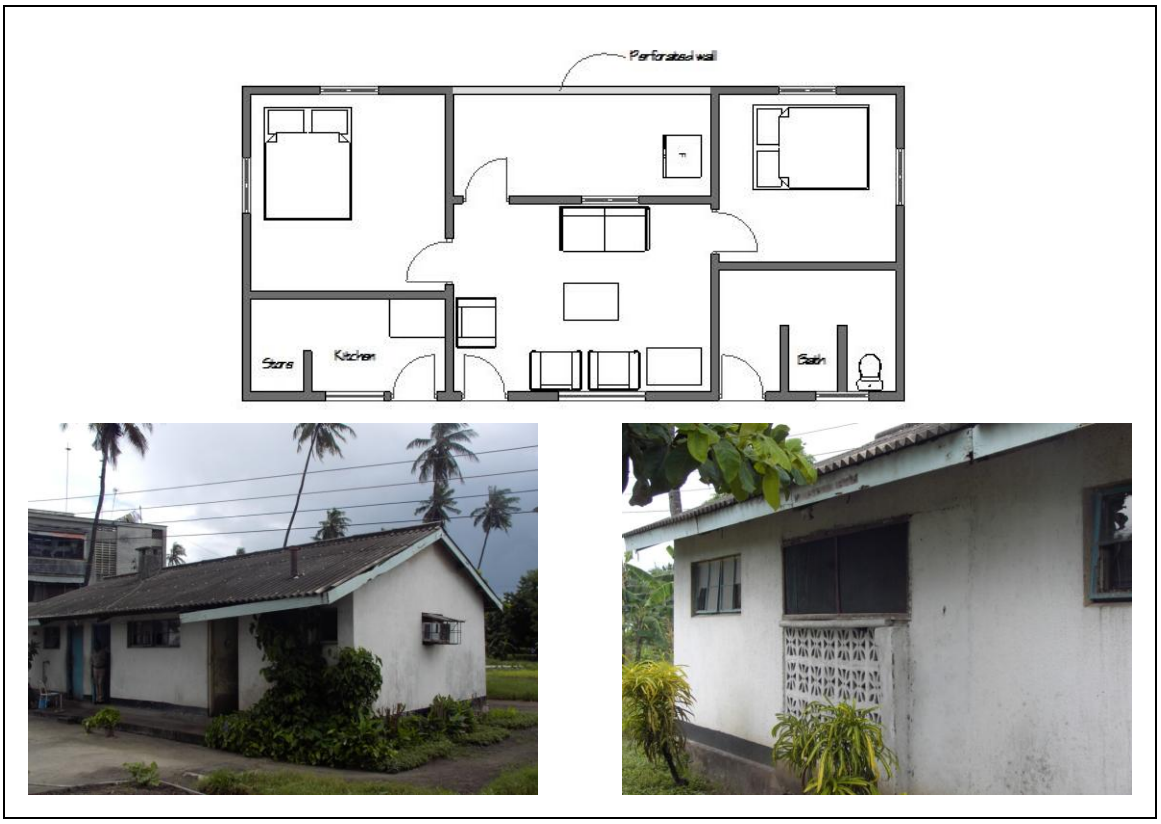

Figure 19. House type 15 for Oysterbay housing estate. It has a spacious outdoor space.

Type 16

There are three types of blocks of flats at Kijichi housing Estate that were formerly used as housing and hostel for staff and students of the National Bank of Commerce before they were allocated to the police force. House type 16 characterizes a single room unit that had initially been a student's room in one of the two similar 4-storey blocks each consisting of 72 rooms in two wings. It is accessed from a common gallery and has a balcony at its rear side. Common laundry, toilets and bathrooms are provided in each wing of a block.

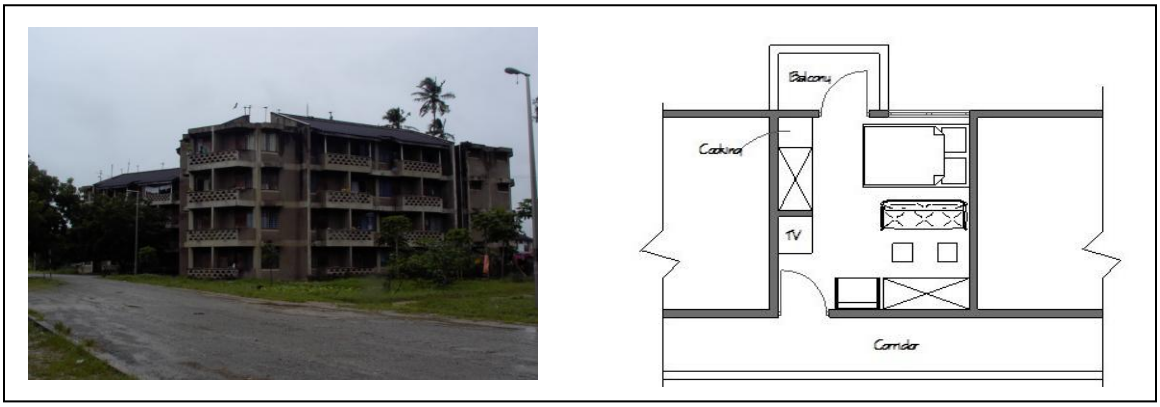

Figure 20. House type 16. A block of flats in which one-room unit at Kijichi housing Esatate is found.

Type 17

There are four units of this house type that are available at a corner of a block in which house type 16 is found. The unit consists of two bedrooms, sitting room, kitchen, store, toilet and bathroom. It has three balconies located at the sitting room, the kitchen and one of the two bedrooms. When the block was used as hostel, students' warden used one of the units. At the moment camp leader who foresees daily issues in that block occupies the unit.

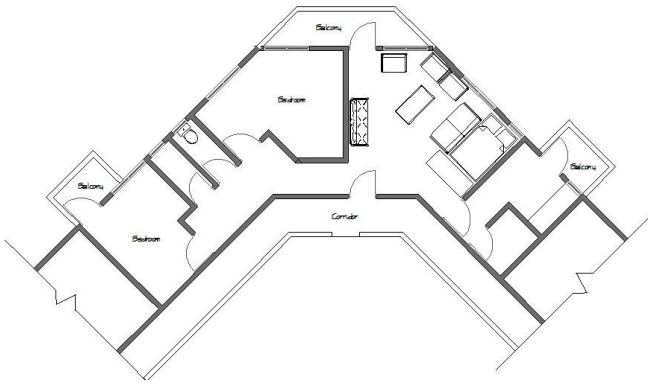

Figure 21. House type 17. The house is located at the corner in single-rooms block of flats at Kijichi Housing Estate.

Type 18.

This makes one of a total of 54 apartments in nine blocks at Mtoni Kijichi housing Estate. A block consists of two storeys of three flats. A unit is composed of one bedroom, sitting room, toilet, bathroom and a kitchen. Since the unit is having only one bedroom, it becomes difficult for a family to be conveniently accommodated. A sitting room in this case acquires multiple uses.

Figure 22. House type 18. Layout of a one-bedroom apartment and elevation at Kijichi housing Estate

3.3 Space Use

The main issues that are associated with use of space in the visited housing schemes include size of space allocated for a particular function and the spatial relationships between several functions. The paper has generally established that most of the houses lack enough space and there is an inconvenient spatial organization.

Cooking

Cooking is a very important activity that requires a comfortable environment with reasonable hygienic provision. It is our observation that the cooking activity takes place inside and outside houses depending on space availability and type of cooker used. Even in single room houses, in which there is no specific provision for a kitchen, cooking activity has been observed to take place inside the houses only when an electric cooker or kerosene stove are used. In most of the visited houses, cooking is done outside using charcoal stoves and to some extent firewood. In this case the activity is subjected to dust and other sorts of contaminations and unhygienic conditions, especially at sunny and rainy times.

Within the interior spaces, cooking is usually conducted in sitting room or a bedroom where kitchen space is not provided. In blocks of flats it may also take place at a balcony or gallery or even under a staircase. Washing of utensils and cooking are activities that have a very close relationship. In some of the visited houses, water supply is unreliable and/or plumbing systems have deteriorated. In circumstances, the function of a kitchen as a formal space for cooking and washing of utensils becomes obsolete. Dwellers, as observed in one house in Kilwa road housing estate, may opt to cook outside their houses.

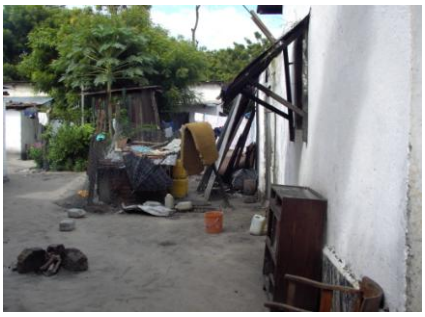

Figure 23(a). Example of firewood cooking place outside a house at Kilwa road. At the front of the cooking space is a cage for chicken and ducks.

Figure 23(b). Example of a kitchen space with an electric cooker inside a house at Oysterbay Housing estate. Absence of a store in the kitchen together with unreliability of water supply makes the kitchen space congested with buckets of water.

Storage

It is important for a house to have storage space for household effects. According to the study, this crucial space seems to have been ignored, the consequence of which is the use of other functional spaces for storage thereby reducing the amount of usable area for the initially intended function.

In the visited flats, storage occupies spaces such as balconies and galleries. The effects stored in this case include water containers and cooking utensils.

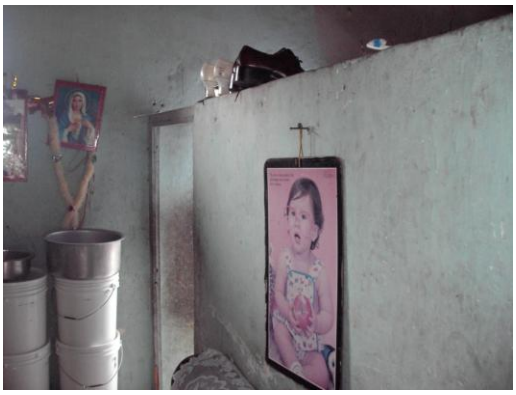

Figure 24. Household effects are stored at the gallery in blocks of apartments or in a habitable room such as a sitting room in single storey buildings. The photos above illustrate the use of a gallery in I-shaped block and a sitting room in house type 2 for storage of water containers and cooking utensils.

Sleeping Arrangements

Sleeping is one of vital needs a house has to provide under any circumstance. Health, safety, security as well as demographic and moral aspects can greatly influence the performance of a space for sleeping. Dwellers have employed various alternatives to cater for the sleeping amenities depending on the family size and gender aspects. Use of double deckers has been a common alternative among the visited houses. Boys would share the lower bed whereas girls use the upper bed in houses having only two bedrooms. Other options include little children sharing a room with parents and some children sleeping in a neighbour's room where a house may have vacancy.

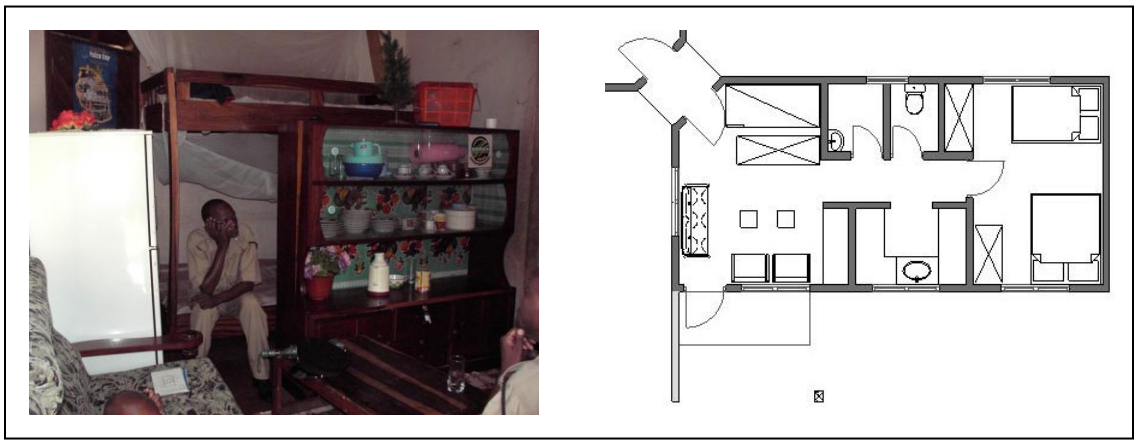

Figure 25. A flat at Kijichi housing Estate occupied by a family of 7 people; 5 males and 2 females; A sitting room has double deckers that four boys use. Two parents and a small girl share the parents bedroom.

An example of sleeping arrangement was studied in one of the flats at Kilwa road whereby 3 males and 2 female occupy one flat in an L-shaped block. Considering that flat has only two bedrooms, children of opposite sex sleep together whereas a visitor sleeps in sitting room. Although the interviewed lady of the house thinks that it is unavoidable at the moment for her children of opposite sex to share a room in addressing the immediate accommodation problem, she contends that such a circumstance has a moral connotation especially in raising up her children. Physical extension of some houses has also contributed in a move to alleviate the accommodation problem.

Ablution

Facilities for ablution include toilets and spaces for bathing. These facilities require privacy and hygienic conditions. With the exception of blocks of flats in which toilets and bathrooms are either shared or private for each apartment, most of the visited houses have toilets that are located far away from the houses and are shared by a large number of people. As earlier illustrated in figure 3, sixteen houses would share two toilets and two bathrooms for both males and females. This situation has proved inconvenient to the users. In this regard, some dwellers have decided to build their own toilets, mostly pit latrines, closer to their houses. These facilities have mostly been constructed by inferior building materials like corrugated iron sheets, wooden hardboards and boxes that do not provide secure enclosure and are subject to destruction even under slightly harsh conditions.

Figure 26. Pit latrines closer to the houses. Note the poor walling materials for the latrines.

3.4Physical state of the Houses

All the flats visited in Mtoni Kijichi and some houses in Oysterbay housing estate can be declared to be in good condition by virtue of the extent of repair of various building elements such as walls, floors and roofs. In this case some of the buildings require minimal repair to make them functional efficiently and appear aesthetically pleasing. Moreover, some flats have broken building services that have consequently made some spaces out of function.

A kitchen in one of the visited apartments in Kilwa road housing estate, for instance, is no longer functional, as there is leakage from a sewage pipe through the ceiling in the upper floor. This appears to be a minor problem, as the kitchen would be normally functioning if the leakage problem is rectified.

Figure 27. An abandoned kitchen as a result of a leaking sewage pipe through a ceiling in a flat at the Kilwa Road Housing Estate.

On the other hand, most of the visited houses, especially in Kilwa road housing estate, have been dilapidated beyond repair. Maintenance to these buildings seems to have been a forgotten phenomenon. They appear to be too old and do not meet the current functional needs in terms of privacy, health requirements (enough light and ventilation in the house) and poor spatial qualities. Around 300 units in Kilwa road are in a state which calls for demolition.

Figure 28. Dilapidated roof structure covering materials as well as ceiling board as observed in one of the visited houses at the Kilwa Road Housing Estate.

4.0 Theoretical framework for classification and analysis of house types

For the purpose of this paper it is important to sort out on how to classify house types for government employees. Ways of classifying the referred house types have been reviewed. There are different ways of classifying house types. According to Leupen (1997:62) the notion type entered into architectural discourse based on a fact that type is used as a classifying tool. Lang (1987:62) states that "Typologies, generic solutions and prototypes are used to help clarify the nature of the problem during the intelligence phase, as a basis for generating solutions during the design phase and as a yard stick for comparison during the choice of praxis". Lawrence (1994) states that by an analysis of architectural plans followed by site visits it is possible to classify house types. Rossi, (1975) defines the type as "a concept which describes a group of objects characterised by the same formal structures". Lawrence further provides several criteria that could be used for house type classification. These criteria include: Stylistic conventions related to the composition of building facades (e.g., classical, neo-gothic, modern). These criteria account for the explicit professional knowledge of an architect and a builder, which is frequently recorded in pattern books or other professional publications. There is rarely any consideration of the point of view of lay people.

- Socio-economic variables related to the income and professional status of the inhabitants (e.g., working class or middle class, blue-or white-collar workers). People in all walks of life are generally aware of their position in society when it is defined according to these criteria.
- The number, size, layout of dwelling units on each floor level of residential buildings (e.g., two or three rooms, although floor plan or only one façade with fenestration). These criteria are frequently used by architects, property owners, and estate agents to classify and assess urban house types.
- The layout and construction of the buildings (e.g., timber framed, brick or stone walled) which is not only used by professionals to interpret the nature of physical boundaries (for example, walls, fenestrations, door openings), but also by lay people to attribute social values to residential buildings.
- The spatial organisation of the floor plan in relation to the means of access from the public realm of the street to the private realm of each dwelling unit (for instance, passing through a private outdoor space, a shared external space, and/or an internal space (Lawrence, 1994:276).

Lawrence's criteria are good but based on his experience from apartment blocks in Europe. His criteria can be useful for the purpose of this paper with some modifications. In the present paper the last criterion is considered more central in classifying house types. Although these criteria were applied in industrialized countries they are regarded as relevant in non-industrialized countries. The documented plans during the fieldwork have been analysed and classified. Particular attention is given to the spatial layout of these houses. This kind of analysis is, therefore only informative about spatial characteristics of the house. This is the main concern of the present paper where the issue is to examine different house types and whether they could be adapted to meet the developmental aspects of house design such as thermal comfort, adequate light in the house and good sanitary facilities.

According to Habraken (1998) house types constitutes a vast and overgrowing field. He contends that house types can be described by observing patterns and systems depending on the aim of the study. He further urges that type can be described at different levels. Type as an analytical tool is one of the theoretical ideas that have been discussed in this paper as a method for analysing and classifying house types. The typological analysis of residential buildings carried out by Lawrence (1994), preceded studies of the relationship between the functions ascribed to spaces and their relative position including the interface between the private domain of each tenement and the shared collective spaces, providing access from each tenement to the public domain of the street.

Lawrence gives five criteria for the classification of house types. His criteria for classification provide a base on which different house types have been classified in this paper. In the present paper, the classificatory criteria of the number of rooms, layout, spatial organisation and number of floors plays an important role in classifying house types. Application of these variables were carried out with some modification. Lawrence used spatial organisation of the floor plan in relation to the means of access from the public realm of the street to the private realm of each dwelling. This criterion was employed in the present paper although the public realm in this context is not well defined by streets. In many sections of the police houses the indoor-outdoor inter-phase is defined by indoor and semi-public open spaces and footpaths, providing accessibility to individual dwelling units. This should be considered as a modification of Lawrence's application of this criterion, whereby streets have been considered as the major domains of the public realm. Another classification criterion is that of the socio-economic variable related to income and social status as in working class or middle class. This criterion again is less relevant in government employees houses. This situation limits further the use of this criterion. For example, one finds a police of higher rank living next to the police of lower rank. There is no clear demarcation between houses for low rank and higher rank. types in studied areas..

The criterion of building materials for instance timber framed, brick or stone walled was also used by Lawrence. This criterion is less relevant in the context of police houses where most houses are constructed with concrete blocks. According to Lawrence the stylistic criterion accounts for the professional knowledge of architect and builder, which is frequently recorded in pattern books. While this criterion could be useful for the classification of house types in industrialized countries, it is less relevant to non-industrialized countries, especially police houses. The houses in these settlements are constructed to solve accommodation problems. The kind of facades like classical, neo-gothic criteria are less relevant in classifying house types in this context.

Given the conditions prevailing in government employees houses a total adoption of the theoretical premise put forward by Lawrence becomes limited in classifying house types. According to Jiboye (2014) the shapes of the house plans can result to some basic types.

5.0 Conclusions and Recommendations

5.1Conclusions

This paper has empirically demonstrated that the problems of accommodation faced by government employees are overwhelming. A majority of employees are living in dilapidated houses, some of them sharing little space available, improper use of space, for example cooking in sleeping and sitting rooms. This has resulted into poor living conditions and spatial qualities. Taking the experience gained through the study of these houses, it is worth examining the house types with qualities that can be adopted for improved living in the future. Two major factors can guide the adoption of better house types in terms of meeting the developmental demands in house design. These are health and comfort. It is a fact that urban areas are densifying as a result of socio- economic and spatial development, including the concentration of urban activities. More people prefer to live in cities than in rural areas. Therefore, the future designers of house types should take cognisance that most people in non industrialised countries will be living in cities and similary increasing number of government employees. This raises an important question regarding housing density. A compact layout is not only desirable but also more economic as compared to single storey sprawled housing that is often expensive particularly in terms of infrastructure provision. It is considered that the understanding of house types in this paper provides knowledge for architects and planners on the existing and emerging house types for government employees like police men. This provides a challenge on how best to design and manage the built environment for future housing for government employees.

The three case studies executed in Dar es Salaam, namely Mtoni Kijichi, Oysterbay and Kilwa road provide a basis for recommendations on whether some of the houses should be demolished or not and also design approaches which effectively optimize land and infrastructure available on the site.

In a situation where accommodation problem for a big number of government employees is to be solved adoption of block of flats of 3 to 4 storeys are considered appropriate. The containment of optimum utilization of land is considered a key strategy towards provisioning of houses that will solve to large extent problems of accommodation and at the same time improvement of the quality of life of government employees.

This paper recommends demolition of dilapidated houses and adoption of house form and types that can accommodate a big number of government employees and at the same time maintain spatial qualities. Importance of having data base of all government employees housing estates & maintenance programme is also considered important.

Low-rise, single storey character of houses is one of the limitations for increased density. The low-rise single storey houses make it expensive for government to provide infrastructure in terms of roads, water connection and electricity together with maintenance and also leads to uneconomic use of land. Since the scheme is houses for government employees the idea of building multi-storey houses say 4 storeys is worth taking into consideration in order to address the problems caused by low-rise characters of housing.

Despite the cultural differences between government employees what is coming out from this paper are some similarities on desirable house types that provide a basis towards addressing optimal densities, while maintaining acceptable spatial qualities. It seems plausible to consider the applicability of 3-4 stores building height within the context of police force housing.

One of the main factors influencing consumption of land is density, which is the most indicator and design parameters in the field of housing and human settlement planning. It is argued that there is no “perfect density” that is acceptable across cultures and countries; what people see and feel depend on their own background and to some extent on the layout, building form and use of the area.

A general agreement is that higher densities have advantages of efficient utilization of land, lively neighborhood life and increased surveillance in the use of spaces. However, if higher densities are not guided inevitably neighborhoods are faced with problems of congestion, overloaded infrastructure, poor spatial qualities and urban inefficiency. Important question in the context of this study is what house types can make provision for higher densities and still facilitate good spatial qualities and fit for life styles of police men and women.

5.2 Recommendations

The Tanzania Development vision (2025) enunciate five basic issues which include, high quality livelihood, peace, stability and unity; good governance, a well educated and learning society and competitive economy capable of producing sustainable growth and shared benefits. Of direct relation with housing conditions of majority of Tanzanians and more specific to accommodation problems of police officers is the quality of livelihood.

Poor quality of houses is one of the indicators of poverty highlighted in the National Poverty Reduction Strategy. The strategy shows that in 1995 about 70% of the population in Dar es Salaam lived in squatter settlements, the same rate 70% applied for southern parts of Tanzania.

In decent housing for all as one of the strategy for poverty eradication, the government underscores the need to support its citizens, in this context men and women in order for them to get access to decent shelter. There is, therefore, a great need towards operational zing recommendations raised in the eradication strategy.

In view of the grown number of government employees especially in Dar es Salaam the containment of the accommodation problem will need to be addressed by a number of flexible and genuine approaches that span from planning to actual implementation. It embraces change in attitudes towards acknowledging the fact that all government employees have same basic needs when it comes to accommodation problems. Therefore, building houses which do not meet basic needs just because they are meant for government employees of lower rank is considered improper. In view of these prerequisites the following are recommended.

- **Construction of new housing scheme at Kilwa Road housing estate**

About 300 units were found to be in very bad condition thus ought to be demolished. Most of these houses were built during the colonial era before 1961 and they have not undergone any maintenance; even the type of design is not suitable for the climatic conditions of Dar es Salaam. Design provisioning for the circulation of air in houses for all categories of people is to advocate promotion of healthy living. Provision of designs which solve the problem of ventilation and circulation of air is considered to be of paramount importance. The findings from Kilwa Road housing estate show that there is poor ventilation in the houses due to provisioning of very small windows. It is, therefore, recommended that there is a need to include proper orientation and arrangement of houses to allow air circulation and cross ventilation. The organization of site plan should be in such a way that there is enough distance between the houses for wind to reach every house. There must be a provision for planting trees to provide shade for outdoor activities like resting.

- **Potential for multi-storey houses (optimum land utilization**)

It is recommended that in order to solve accommodation problem for police officers there is an urgent need to build flats of 3 to 4 storeys. This action will assist in proper utilization of land and housing more of government employees. The later undertaking will also lead into achievement of green spaces and better outdoor qualities.

- **Existence of affordable finance for provisioning of Government employees accommodation**

The future of the development of human settlements sector is to ensure that all Tanzanians have access to adequate housing and a sustainable good living environment. Adequacy in this regard includes privacy, space, security, lighting, and ventilation. The responsibility of the Government is to ensure that all citizens have access to decent shelter, basic services and opportunities for employment. This may be achieved through coordinated efforts for the provision of finance for housing development.

It is recommended that Government has to use local resources to sustain and facilitate alleviation of accommodation problems for government employees. Financial institutions like Parastatal Pension Fund, National Social Security Fund and National Banks should be encouraged to finance housing delivery for Government employees.

- **Participation**

The conception of housing design for government employees should result in a range of different alternative of housing type that suit the targeted group. Involvement of users in the housing process at every level of design will lead into successful housing project. This means the authorities concerned should discuss exhaustively the scheme with the government employees who will be the eventual users of the planned housing to capture their views about preferences and needs.

To encourage participation in proposed housing schemes, the proposal should be presented and displayed for comments in a number of selected centers of government employees' offices. This procedure will give the intended beneficiaries the possibility to comment and incorporate their views in the final design.

- **Improvement of cooking space**

Findings from this study show that cooking is carried out in rooms used for sleeping, corridors or sitting room. On few cases where there was provision for a kitchen, it was only a small room, without outdoor verandah. Mostly the type of stoves used is charcoal. There is also no provision of chimney. Taking into account the , foregoing findings absence of chimney or non utilization thereof is regarded inconvenient to the users and a health hazard. The design of kitchens should be in such a way that it will make it easy for the preparation and cooking of food to take place, so users choice and needs should determine the type of kitchen to be designed.

- **Improvement of space for personal hygiene**

Space for personal hygiene includes toilets and bathing facilities. Most of the toilets found in this study are pit latrines which are not in very good condition. Some of them are constructed with temporary building materials and also many of them are not roofed. There is a need for improved pit latrine. The Tanzania Building Regulations stipulate that pit latrines shall be provided with a sufficient opening for light and ventilation. The floor of a pit latrine must be of non absorbent material, and a fall or inclination towards entrance door. Improvement of toilets is considered an important design task so the design of toilets should take into account health issues.

- **Maintenance**

In order to have a well functional building, regular maintenance, attending to defects while they are still minor is the most cost-effective strategy for providing well functional houses and a strategy to reduce operating costs. Houses not maintained will cease to fulfill their intended usage. (A good example is seen in Kilwa road housing recently built block of Flats, by Koreans. In the referred settlement the kitchen space has already been abandoned because of leakage of sewage water from upper floor. Wear and tear set in immediately after houses had been constructed. It is recommended that proper program for maintenance of government employees houses should be put in place. Shortage of funds is often cited as the underlying reason for poor maintenance. Indeed funds are required for maintenance to take effect. However sustainable good maintenance results can be achieved with very limited budget if maintenance work is planned in a systematic approach with well defined priorities. Poor maintenance results from lack of consciousness and knowledge among decision makers, technical staff and the users of the houses. Preventive measures ought to be effected on regular intervals, condition based–maintenance need to be done when deemed necessary through regular inspection of buildings.

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