Housing Supply for Low Income Urban Dwellers through Transformations: Case Study of Suntreso, Kumasi

Stephen E. Owusu, BA MSc MPhil
Martha A. Tamakloe BA MA
Department of Housing and Planning Research
Faculty of Environmental and Development Studies
University of Science and Technology, Kumasi,
Ghana

ABSTRACT

Studies and programmes on the supply of housing have generally focused on new developments by public institutions and formal private sector companies and individuals. The activities of individual house owners who continually add few rooms and facilities to existing houses and actually cater for the housing needs of low-income urban households tend to be ignored or, at best, down played. This paper, based on a preliminary study sponsored by the British Council, highlights the small scale, unco-ordinated and uncontrolled activities of housing suppliers at Suntreso, Kumasi. This supply of housing is through the alterations and extensions of existing units developed by the government. Transformation activities constitute an important source of supply of moderately priced housing in urban areas of Ghana and it is therefore necessary that efforts are made by city and development control authorities to prevent the occurrence of haphazard developments and the attendant health problems.

Keywords: low-income housing supply, transformation, Kumasi, Ghana

INTRODUCTION

Providing adequate housing, which the urban poor can afford, has been one of the major problems in Ghana; this is also true for most Third World Counties (TWCs). In Ghana, the government established the Gold Coast Housing Corporation which later became the State Housing Corporation (SHC) by an Act of Parliament in 1955 and reconstituted in 1961 with the responsibility of providing low cost housing for mainly low income urban dwellers. The Low Cost Housing Committee was established in the 1970s by the Acheampong regime to supplement the efforts of the State Housing Corporation.

An all embracing subsidized housing programme and policy for Ghana were not adopted by the colonial government till after the Second World War. Before then, there had been public housing programmes for the European public servants in special areas carefully selected in the main urban centres of Accra, Kumasi, Cape Coast and Sekondi-Takoradi. The ridge residential areas of Accra and Kumasi are some of the areas developed under the subsidized housing programmes.

In the pre-independence period, there was no conscious effort to incorporate into the public housing programmes strategies to house the low and moderate income households until it became a real necessity after the 1924 plague and the violent earthquake in 1939. As a result, housing estates were built in Accra in the 1940s. In Kumasi, the first government housing estate started in 1928/29, after the outbreak of plague in 1924. This resulted in the developments of the New Zone Estate[1]. In 1949, the Asawasi housing estate was developed. Government activity in estate housing intensified in Kumasi after these developments and this was because of the increasing influx of people from the rural areas as well as the large number resulting from natural population increase of the local population. It was partly in response of this that the State Housing Corporation developed the North and South Suntreso estates in the 1950s. Since then a number of housing estates including Kwadaso Estate, Patasi Estate, Chirapatre Estate and Ahinsan Estate have been developed in Kumasi. Most of these housing estates were meant to meet the needs of the low to moderate income households or groups.

PROJECT OBJECTIVES AND DATA BASE

The study on the "Transformation of Government Built Low Cost Housing as Generators of Shelter and Employment" investigates the extension and alterations being carried out by the occupants of government-built estates housing in Kumasi, and the contribution of that activity to the supply of housing to low-income households without demands for additional urban land. The study seeks to investigate the underlying factors for the transformations.

Stephen E. Owusu
Dept. of Housing & Planning Research
F.E.D.S.
UST, Kumasi,Ghana.

Martha A. Tamakloe
Dept. of Housing & Planning Research
F.E.D.S.
UST, Kumasi,Ghana.

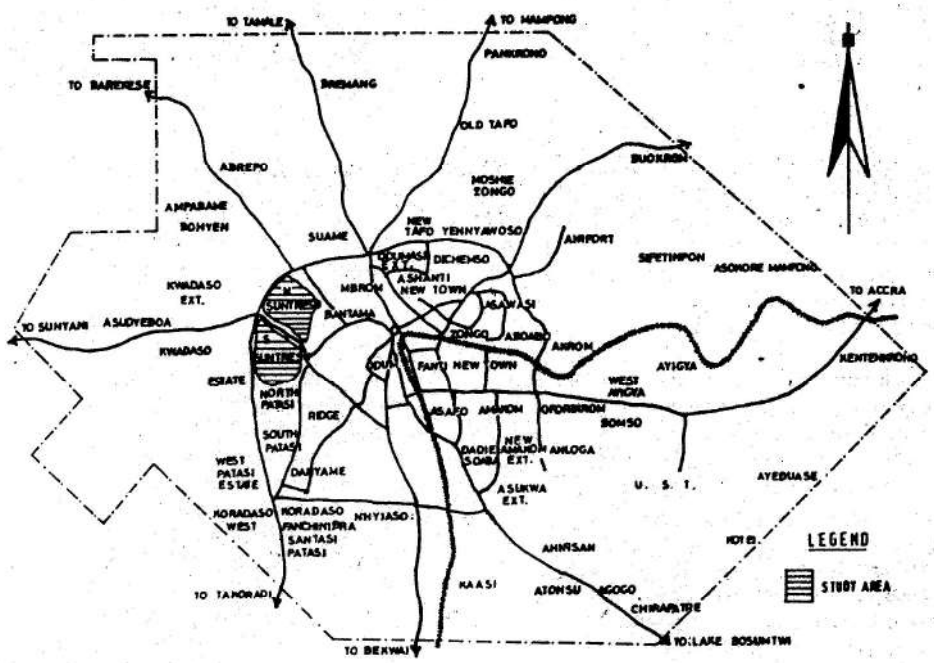

FIG. 1: THE POSITION OF NORTH AND SOUTH SUNTRESO, KUMASI

The pilot study was carried out in North and South Suntreso Estates, Kumasi, (Fig. 1) in December 1991 and January 1992. Kumasi, which is the second largest town in Ghana, has a population of 590,000.

During the survey of North and South Suntreso, heads of households of the owners (in their absence, the caretakers) and renters or roomers (tenants) were interviewed in a random sample of 120 housing units. Roomers are defined as the people who rented rooms (which can be one or two rooms or chamber and hall) and shared facilities with other households [2]. For the survey, a household is defined as "a person or group of persons who live together in a house or compound, share the same house-keeping arrangements and are catered for as unit" [3]. The sampling unit is the house.

HOUSE TYPES BUILT AT SUNTRESO

The North and South Suntreso Housing Estates were developed from 1949 to 1956. Initially, the number of units built by the Housing Corporation in North Suntreso was 747, and 425 units were developed in South Suntreso [4]. In North Suntreso, the housing units were mostly one- and two-room terrace units with detached kitchens about 12 metres from the main buildings. Toilets and bathrooms were in most cases communal facilities. In South Suntreso, two and three-room semi-detached units were the predominant house types built, and each unit has its own toiler and bathroom. The Corporation built a few detached two-storey units along the northern boundary of South Suntreso, and these are among the latest houses that it has built in the area.

When the South and North Suntreso estates were established, the concept was to build small dwellings. The approach to design was to provide the very basic that could meet the requirements of the occupants.

CHANGE IN STATUS: FROM TENANTS TO HOUSE OWNERS

The North and South Suntreso Housing estates were built as rental units for labourers, artisans and clerks [5] in government employment. The rental amount (which was based on the type of housing unit) was determined by S.H.C., and the tenants paid the monthly rent in advance. The tenancy agreement [6] which the Corporation entered into with the tenants covers following:

a. Pay all local authority rates, taxes, water and electricity charges or other outgoing in respect of the property.

b. Keep the property, including all fixtures and fittings in good tenable order and repair.
c. Not to make any alteration or addition to the property without the permission in writing of the Corporation.
d. Use the property as a private dwelling house only.
e. Not to assign, underlet or sublet the property without the permission in writing of the Corporation.
f. Not to keep at the property any guinea fowl, goat, sheep, pigs or beast of burden.
g. Not to create any nuisance or annoyance to other tenants or occupiers of adjoining houses.
h. Permit the Corporation's representatives at any reasonable time to enter and inspect the property.

Due to policy shift on tenure, especially because the Corporation was encountering problems of maintenance and with cost recovery objective as the basis, the units were sold to the public through hire purchase arrangement. The tenants had the first option to purchase them. Many took advantage of the offer to own the property. By mid-1970, State Housing Corporation had sold out most of its rental units.

Since they were sold by S.H.C., the ownership of some of the housing units have changed through resale and inheritance. In December 1991, it was found out that approximately 55.4% of the sampled owners purchased their units directly from the State Housing Corporation, 29.7% inherited their units, while 13.5% purchased theirs from private individuals. It should be noted, however, that the sale of private houses is not a common feature on the Ghanaian housing market. Once built or purchased from a government agency, a house gradually becomes a family property through inheritance, in which case the head of family assumes the final authority. It is difficult to mobilize finance for house building in Ghana and owners therefore prefer keeping them for their children and extended family to selling.

SCALE OF THE ALTERATIONS AND EXTENSIONS

The scale of development in North and South Suntreso is a result of a combination of positive economic changes in the lives of the owners, and the need to adequately cater for the needs of family members as well as other factors like stable residence in Kumasi, ownership of the dwelling unit, enough space around the original house, opportunity to rent, and attitude of local authorities.

In both North and South Suntreso it is common to find medium to large scale extensions (i.e. 3 and more rooms) to the original housing units. About 62 per cent of the total number of 120 houses surveyed have 3 or more additional rooms (Table 1). South Suntreso, which was originally built for middle income households, registered a very high level of development in terms of ground floor area and height of extensions. Typical examples of houses with "Small", "Medium", and "Large" scale extensions in the area are house numbers SS11 and P34 in North Suntreso and house number B13

Table 1: Number of Rooms Added to the Original Housing Units in Suntreso

Number of Rooms Added to Original House	Housing Units	
	Number	Percentage
None	13	10.9
1	15	12.5
2	17	14.3
3	15	12.5
4	15	12.5
5	6	5.0
6	9	7.5
7	7	5.8
8	4	3.3
9	4	3.3
10	4	3.3
11	2	1.7
12	4	3.3
13	1	0.8
14	2	1.7
22	1	0.8
24	1	0.8
Total	120	100.0

in South Suntreso (Fig.2 to 4). Due to the medium to large scale transformation activities in the South Suntreso, the additions to bedroom spaces is more there than in North Suntreso. A count in 22 houses indicates that a total of 148 bedrooms have been added to original number of about 55 rooms in the South Suntreso. On the average, there has been an increase (about twice) of the original number of accommodation spaces in the houses that have undergone transformation.

In the study areas, the extension activity has resulted in increased facilities for some of the occupants as it was found that some of the houses have one additional domestic facilities of either a kitchen, bathroom or toilet (Table 2). However, there are numerous cases where the addition of extra rooms has not been accompanied by more domestic facilities. More than half of the number of the extended houses in North Suntreso have no additional toilet, bath room nor kitchen. This occurrence may indicate the absence of professional personnel involvement in the transformation activity; such professionals could have influenced the owners on the need for adequate facilities, especially toilet and bathrooms, to match the number of persons in the houses. It appears that most of the house owners were only interested in additional bedrooms.

Two main trends were identified in the developments; namely, the first is internal arrangement or alteration where some of the walls are knocked down to create more rooms, and the second is the addition of rooms and other facilities from new foundations on the available land. Also, the alteration works on the original building exhibited two phases. The first is the conversion of verandahs and store spaces into sleeping rooms as household size increases, and secondly with a minimal demolition to add new walls to create more rooms for sleeping purposes. Except in the case of a few houses (about 4%) which have been converted into large two-storey buildings, all the extensions are one storey as the original units built by the SHC. As shown in the drawings of the ground floor plans (Fig.2 to 4), a greater number of the transformation activities are extensions linking the original houses.

The level of development was not indicated nor directed by the State Housing Corporation (SHC) as there is no regulation controlling the owners on the type of extension that they should undertake. Information obtained from the S.H.C. and the Town and Country Planning Department, both in Kumasi, indicate that all the designs submitted by the owners were accepted by the authorities (SHC).

An analysis of 26 housing units was made in an attempt at quantifying the room spaces in the extensions as a proportion of the total ground floor space less circulation space. The result is that the values for bedrooms and living rooms are higher than those for kitchen, store, toilet and bath-shower. The bedroom spaces take up percentages ranging between 40 and 80. The importance of bedrooms for the owners of the estate houses is seen in the high percentage values obtained for such rooms. The size of spaces for toilet and bath/shower and living room space remain unchanged where such facilities have not been converted to other more important uses, such as sleeping spaces; so that when viewed in relation to the entire house after extension, the percentage values for the facilities have declined. The elimination of the store in most of the units creates an impression that the occupants regard it as a more important space for sleeping than just for the storage of boxes and other household items. The kitchen is retained in most of the houses. The living room is also maintained to serve as a meeting point between the public and the occupants.

Whatever criteria the owners might have applied in determining the number of rooms to be added, it is likely that they were influenced by the need to provide more sleeping spaces for their own households and those of family members. The disproportionately very high in-

Table 2: Type and Number of Domestic Facilities Added By The Owners (for 44 Houses that were Measured) in Suntreso

Type of Facilities	Number Added	OWNERS WHO HAVE ADDED IN				Total	
		North Suntreso		South Suntreso			
		No.	%	No.	%	No.	%
Toilet	None	15	68.2	8	36.4	23	52.2
	1	6	27.3	10	45.5	16	36.4
	2	1	4.3	4	18.1	5	11.4
Bathroom	None	13	59.1	9	40.9	22	50.0
	1	8	36.4	10	45.5	18	40.9
	2	1	4.5	3	13.6	4	9.1
Kitchen	None	13	59.1	11	50.0	24	54.5
	1	3	36. 4	11	50.0	19	43.2
	2	0	0. 0	0	0.0	0	0.0
	3	1	4.5	0	0.0	1	2.3

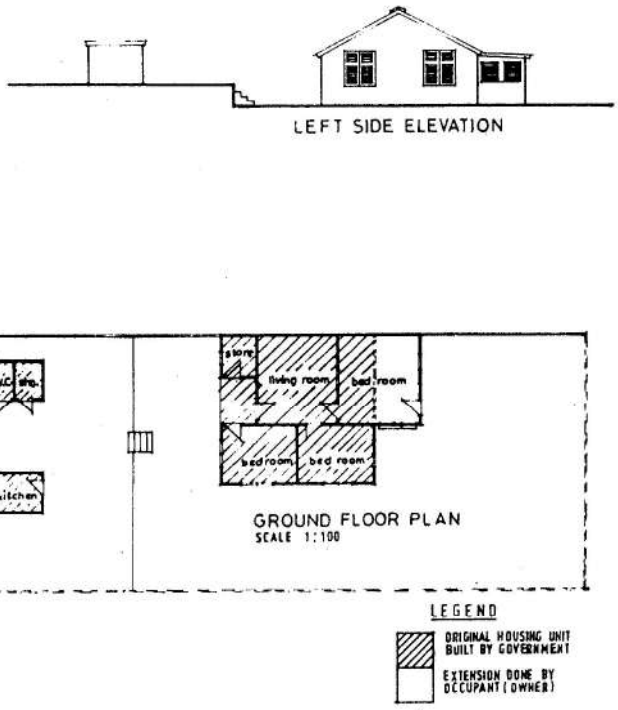

FIG. 2 : EXAMPLE OF SMALL SCALE TRANSFORMATION

House No. SS 11
NORTH SUNTRESO

crease in bedroom spaces has definitely led to increase in the resident population and therefore pressure on the utility services as they have been scarcely increased.

In South Suntreso and some cases in North Suntreso, the owners have built fence-walls giving them more security and privacy. The amount of space surrounding the houses does not give way for any serious landscaping. Most of the houses have aprons and drains and plain in-situ concrete floors as finishes for the yards or the compounds.

MATERIALS AND METHODS OF CONSTRUCTION

The extensions to the houses have been constructed using similar materials as the original units built by S.H.C. The exceptions are in the materials used in the extensions for finishes. A majority follow a typical pattern of load bearing walls of 150mm solid sandcrete blocks; trusses or purling supporting corrugated roofing sheets in aluminum or galvanised iron; plywood or high quality tongued and grooved (T & G) wooden ceilings; cement screed or terrazzo flooring; wooden doors and windows, wholly or sometimes in plain sheet glass louvre blades and carriers (Naco/galvanised); water closet, often combined with shower or bath and electrical installations. The few two-storey buildings are, however, made up of reinforced concrete frames and sandcrete blocks. In some cases polyvinyl chloride (PVC) tiles are used as floor finishes and ceramic glazed tiles as wall finishes in the toilet and bathrooms.

The selection of contractors for the building of some of the dwellings was based on the negotiated form of tendering and recommendations made by friends or relatives. The private individual usually employs the services of a small scale contractor when he is influenced by a job done by that particular contractor. A contractor is normally paid the full amount at the end of the construction work in which case the contractor pre-finances the whole project. Alternatively, portions of the work completed are estimated and paid by the client (owner) when he is satisfied with the work done. This

payment arrangement continues until the whole project is completed. The other payment arrangement is, one-third (1/3) of the agreed amount at the start of work, one-third (1/3) about half way through the work, and the remaining one-third (1/3) on completion.

Some of the construction works in the study area were carried out through the engagement of technicians (Foremen) who employs a few artisans and labourers. In these cases, the clients pay for the cost of materials and labour and the technician does the supervision. In the case of the small scale extensions, artisans were engaged to carry out the construction with the client supplying the materials when required as well as supervising the construction. Under such arrangements, the artisans are paid daily rate, which, between the time of the survey (December 1991) and October 1992, increased from 1,500 cedis to between 2,000 and 2,500 cedis per day for qualified artisans (e.g. masons, carpenters etc) and from 600 cedis to between 800 to 1,000 cedis for unskilled labourers. A rate of 850 Cedis to 1 UK Pound Sterling can be used for conversion.

THE COST OF THE EXTENSIONS

Data on the present level of house building costs in North and South Suntreso are scarce. No systematic attempts were made by the owners to keep such records. At this stage of the study, it is possible to give only estimates using the current level of house building costs in Kumasi.

In spite of the variations in the size and quality of the extensions, it is possible to identify a range of estimated costs per square metre for the developments. The range is 75,800 cedis for the smallest type of a two bedroom extension to 75,200 Cedis per square metre for an eleven bedrooms extension with related facilities. These estimates are based on a typical bill of quantities and set of unit prices currently applied for developments by the S.H.C. in Kumasi, with minor variations introduced to take into account the use of local materials and artisans. The estimated values do not include price of land.

Differences in quality of finishes do affect the cost per square metre. Some of the houses surveyed are dwellings built to comparatively high construction standard, with fully equipped bathrooms, hot water supply,

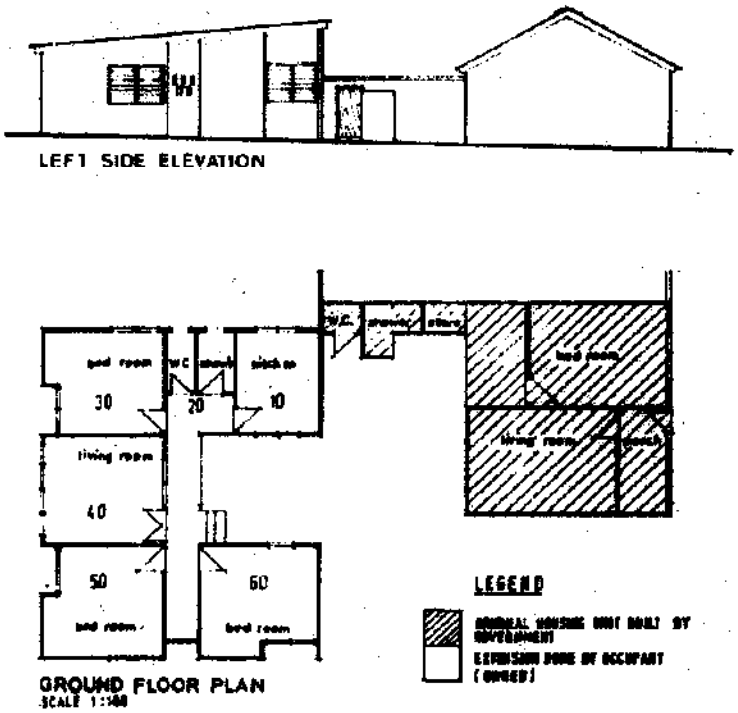

FIG 3 : EXAMPLE OF MEDIUM SCALE TRANSFORMATION

House No. P 34
NORTH SUNTRESO

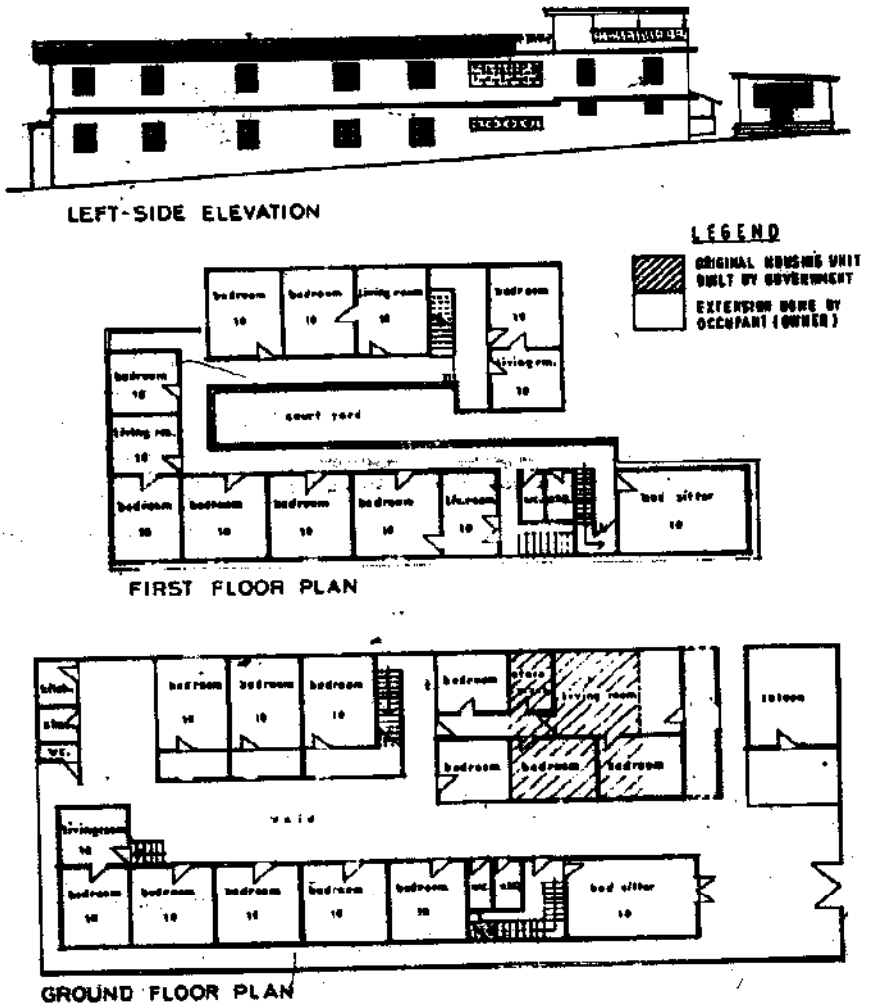

FIG. 4 : EXAMPLE OF LARGE SCALE TRANSFORMATION

elaborate electrical installations and so on. It should be noted also that the estimated rates took into account the fact that the extensions were built by local artisans and small scale building firms. The small local artisans usually build at cheaper rates.

CHARACTERISTICS OF THE SUPPLIERS OF HOUSING

In all, 205 households were covered in the sampled 120 units in both North and South Suntreso. As would be expected, there are more male household heads than their female counterparts. However, the number for the female household heads are quite high, especially among the house owners (Table 3). The study does not investigate whether these female household heads were divorced, widowed or that their husbands had travelled. However, it was found out that female heads were responsible for some of the major alterations and extensions to the estate houses and it could be said, therefore, that they also contribute to the urban housing stock.

Household sizes are comparatively larger in the area. The mean household size is 7 for owners and caretakers, and 4 for tenants. The highest household size of 22 was recorded among the caretaker households. There were only 11% of the 205 households with sizes of 1 to 3 persons per household. The large household sizes were recorded in North Suntreso and most of them occupied one-room dwellings. Data collected in 1980 by A. G. Tipple indicate that for Kumasi, the mean household size is 4.8 persons. Although the mean household size obtained from the pilot survey is high for the owners and caretakers in Suntreso area, the room occupancy rates in both areas of Suntreso do conform to the average for the city as a whole.

The average age for the owners is 59 years; the range

is 26 to 86 years. For caretakers, the average age is 51 years, with a range of 27 to 76 years. For the tenants or roomers, the mean age is 37 years, with a range of 20 to 65 years. The house owners tend to be older than their tenants.

In both North and South Suntreso, approximately 91% (Table 4) of the owners are from the Akan speaking regions, (which are Ashanti, Brong Ahafo, Central, Western and part of the Eastern). Despite the fact that every region is represented, the representation tilts in favour of the Ashanti Region. Owners from the Ashanti Region alone account for 57% of the total number of owners interviewed. Also 59% of the caretakers said that they were from the Ashanti region. Non-Ghanaian owners form less than two per cent of the total. Discussions with household heads who are from the Ashanti Region reveal that most of them come from towns and villages within 50 kilometers radius of Kumasi. Traditionally, most Ashantis would like to build a house in Kumasi, which is the seat of the Ashanti political system, and this may account for their large number in the owners' group.

The mean length of stay in Kumasi by the owners is 43 years, while that of caretakers is 33 years. There are extreme cases; the maximum length of stayed in Kumasi by some of the owners is 80 years, while the minimum length of stay is about 10 years. All the household heads have stayed in one suburb of Kumasi before settling at the Suntreso Housing Estates.

Out of the 74 owners, approximately 65% have stayed in their houses for 25 years or more, and only 9.5 per cent of them have been in their houses for a period of less than 10 years (Table 5).

Most of the house owners (about 95%) have no intentions of leaving Kumasi permanently (Table 6). Only a small proportion of the owners (1.4%) said that they would return home but do not know when, while

Table 3: Sex of Heads of Households i Suntreso

Heads of Households

	Owners		Caretakers		Tenants	
Sex	Number	%	Number	%	Number	%
Male	40	54.1	37	58.7	62	72.9
Female	37	45.9	17	37.0	23	27.1
Not indicated (missing value)			2	4.3		
Total	74	100.0	46	100.0	85	100.0

Table 4: Suntreso: Distribution of Heads of Households by Region

	Owners		Caretakers	
Regions	Number	Percentage	Number	Percentage
Ashanti	42	56.8	27	58.7
Northern,Upper East and Upper West	1	1.4	5	10.9
Brong Ahafo and Eastern	11	14.9	11	23.9
Central and Western	14	18.9	2	4.3
Greater Accra and Volta	5	6.8	1	2.2
Outside Ghana	1	1.4	-	-
Total	74	100.00	46	100.0

Table 5: Length of Stay in Dwelling by House Owners and Caretakers in Suntreso

Number of Years Lived in Dwelling	Owners		Caretakers	
	Number	Percentage	Number	Percentage
1 - 4	5	6.8	6	13.1
5 - 8	3	4.0	3	6.5
9 - 12	3	4.0	3	4.3
13 - 15	3	4.0	5	10.9
16 - 19	1	1.4	4	8.7
20 - 24	10	13.5	10	21.7
25 - 29	13	17.6	2	4.6
30 - 34	16	21.6	9	19.6
35 - 39	12	16.2	4	8.7
40 - 50	7	9.5	0	0.0
No response	1	1.4	1	2.2
Total	74	100.0	46	100.0

Table 6: Suntreso: Future Intentions of Heads of Households on Movement

Intentions	Owners		Caretakers	
	Number	Percentage	Number	Percentage
Will return home as soon as objective is achieved	3	4.1	3	6.5
Will return home at unspecified date	1	1.4	2	4.4
Will stay but will keep in touch with village	31	41.8	16	34.8
Will always be in Kumasi	27	36.5	18	39.1
Born and bred in Kumasi	12	16.2	6	13.0
No response	-	-	1	2.2
Total	74	100	46	100.0

4.1% of them said that they would go back home as soon as their objectives were achieved. The high responses for those who have made up their minds to continue their stay in Kumasi confirms the established fact that most Ashantis regard Kumasi as their second home because of its importance as the seat for the Golden Stool and its occupant, the Asantehene. Observations also show that a good number of the household heads who said they were born and bred in Kumasi are mainly from the Central Region and are of Fanti origin. It was noted during the interview that the households heads who have properties situated at North and South Suntreso do not have any plan to move out of the estates. These people, if not constrained by space around the units, are the potential investors who would be willing to increase the number of rooms in the existing houses in their area through extensions and alterations.

In certain situations, the level of education attained among potential housing developers does have an influence on the type of house that eventually get built (especially in the aspects of use of the services of qualified professionals and artisans, the design of the house itself and the choice of building materials, and the type and level of facilities to provide). This factor was not specifically investigated in the pilot survey, but the responses to some of the questions do suggest that there is a lack of appreciation among the housing suppliers for the need for additional facilities and provision for proper ventilation in rooms. This can be attributed to their level of awareness.

Comparatively, the educational level attained by the heads of household is low. Elementary school leavers (mostly, the former middle school leavers) form 51% of owners and 27% of caretakers. Owners and caretakers with secondary education account for 23% and 13% respectively. About one quarter of owners and caretakers are illiterates. There were no University graduate owners among those interviewed during the study. About 2% of caretakers have had University education; these caretakers are most probably the children or close relatives of the owners. During the period of the development and later sale of the houses (i.e. during the 1950s and 1960s) graduates occupied the top positions within the civil service and the corporations, and therefore could not have occupied the area earmarked for low income urban workers (Tipple, 1987, provide further information on the initial target population). This explains the low level of education found among the owners in the area.

Occupation and Income

Data on occupation and income were collected to determine the owners' capability to effectively supply housing through the use of their own financial resources in a country where institutional financing of housing is very limited and the eligibility requirements very restrictive. It has been found out that about one-third of the owners (31%) are in the professional and clerical employment in government institutions. The other significant occupational groups among the owners are farmers and retailers (Table 7).

Table 7: Occupations of Heads of Households in Suntreso

Occupational Group	Owners		Caretakers	
	Number	%	Number	%
Pensioner	7	9.5	2	4.4
Professional/Clerical	23	31.1	23	50.0
Skilled Artisan	3	4.1	5	10.9
Business/Retailer	16	21.6	5	10.9
Farmer	22	29.7	4	8.7
Domestic/Factory Security	1	1.4	4	8.7
No response	2	2.7	1	2.2
Total	74	100.0	46	100.0

Table 8: Monthly Incomes of Heads of Households in Suntreso

Amount in Cedis	Owners		Caretakers	
	Number	Percentage	Number	Percentage
1 - 19,999	17	23.0	1	2.2
20,000 - 39,999	23	31.1	13	28.3
40,000 - 59,000	8	10.8	10	21.7
60,000 - 79,000	6	8.1	5	10.9
80,000 - 99,999	2	2.7	1	2.2
100,000 - 119,999	1	1.4	-	-
120,000 - 139,999	1	1.4	-	-
140,000 - 159,999	-	-	3	6.5
160,000 - 179,999	-	-	-	-
180,000 - 199,999	-	-	-	-
200,000 - 219,999	-	-	-	-
220,000 - 239,999	-	-	-	-
240,000 - 259,999	-	-	1	2.2
260,000 plus	-	-	2	4.3
No response	16	21.6	10	21.7
Total	74	100.0	46	100.0

If the assertion that the type of occupation a person engages in may give a clue to his or her level of income is accepted and applied to the study area, then it can be said that the incomes of the owners are likely to be high since the professional and retail commercial activities are among the very lucrative in Ghana.

Contrary to what their occupations suggest, 54% of the household heads indicate that they earn less than 40,000 cedis per month which is below the food expenditure of most of them. None of the owners indicated monthly income above 140,000 Cedis; and 22 per cent of them did not disclose their incomes (Table 8).

The general impression created by the responses to the question on income is that incomes are low. However, the question which one may ask is, what is the source of the money for the huge expenditures of household heads? For example, the declared monthly expenditure of 47% of the owners is 40,000 to 99,999 Cedis and for 23% of them it is 100,000 to 250,000 Cedis. Although real incomes have fallen substantially among most Ghanaians in relation to household budget requirements, especially food [7] the declared monthly incomes of the heads of households appear to have been understated and can only be used as a guide; that is, as the minimum income for them.

Looking at the general expenditure pattern of household heads who were interviewed during the survey vis-a-vis the interior decoration of housing units and the external finishes, one can say that the owners are not low-income earners. Alternatively, the data indicate that, although the Suntreso housing estates were developed for the low and moderate income households or public sector low-income employees, in reality moderate to high income persons, through probably understatement of incomes coupled with connections in the administering public institution, managed to have access to the houses and have extended or are now extending them to provide comparatively cheaper accommodation to renters and family housers, who may be in need of a room or two with shared facilities.

UNDERLYING FACTORS FOR THE TRANSFORMATION ACTIVITY

Usually positive changes in the economic circumstances of people find expression, among others, in the desire to improve upon their housing situation. In Ghana this finds expression in the desire to build a new house or add rooms and other facilities to the existing housing stock (the incremental development). The extensions and alterations to the original housing units in North and South Suntreso can be due to changes in tenure and signs of improvement in the economic circumstances of the occupants.

The decisions by house owners or occupants to alter or extend their dwellings are undoubtedly influenced, in the first place, by the need to accommodate the increase in the size of the owners' households and lodgers from the extended family and the number of households seeking accommodation to rent. As Graham Tipple [8] pointed out in his Introductory Study on Self-help Transformations of Low-cost Housing, shortage of accommodation is the fundamental factor of the phenomenon of housing transformation. Beyond this, a host of factors come into play to sustain the transformation processes; some of which are, ownership of the dwelling, sufficient

incomes to finance the transformation, availability of vacant space around the original building, technology of the original buildings and the economic prospects of transformation. The developments in the Suntreso area are assessed in the light of these factors.

Shortage of Accommodation

The pilot study identifies the immediate need for accommodation as the major underlying factor for the alterations and extensions to the estate houses by their occupants, usually owners. It is obvious that the number of rooms provided in the original housing units (a maximum of three with a large number having only two rooms) is not sufficient for the size of an average Ghanaian household (which usually includes extended family members). With a current mean household size of 7.6 for the study area and over 45 per cent of the owner households surveyed recording household sizes well above the mean, the need for extra room is important for each household.

In a city where there is a severe lack of low priced accommodation and very expensive land values (which is the result of the practice of the landlords or the caretaker chiefs demanding large sums of money, 500,000 Cedis or more even in the peripheral areas, from prospective developers) it is only to be expected that owners would attempt making the most out of whatever accommodation and land they already have, hence the application of transformations to meet their needs. It is therefore not surprising that in as many as 61 per cent of the transformed houses that were surveyed, the extensions served solely to provide accommodation for the owner households and their family members (non-rent paying tenants) put together. It is only in 11 per cent of the houses that the extensions have been occupied solely by rent paying tenants. A combination of owners, family housers and renters (or tenants) were identified in 28% of the housing units.

Ownership of the Dwellings

It is to be expected that for a household to assume the needed confidence to invest in any process aimed at substantially extending its dwelling, there must be a strong feeling of security of tenure. This implies that ownership of houses, or as it were, an endless period of tenancy would be the best guarantee for their transformation. This appears to be the case in the study area where ownership of the buildings had been transferred through direct sale by State Housing Corporation. Judging from the scale and quality of the extensions, it is doubtful whether a household would risk investment into these transformations without the express feeling of undisputed ownership.

Stability of Residence

Another factor which is closely linked with ownership rights is the long and stable residence in the city and in their residence. The scale of transformation activity in this area as well as the responses of the owners and caretakers show that these activities take place over long periods of time. This implies that the owners who planned and implemented these transformations must have lived sufficiently long in the dwellings. As this study indicates, 70 per cent of the owners have lived in their dwellings for well over 20 years.

Transformation activity, however, appears to increase with period of occupancy or number of years the owners have lived in their houses, but there are also quite a good number of houses in the same areas whose owners have lived in them for just as long (as those in the transformed houses) but which have remained very much unaltered. Besides, there are some houses with extensions of fairly recent development by owners who have lived in them for far less than 10 years (mostly those who bought their houses from private persons and extended them almost immediately). It may not therefore be fully correct to conclude that there exists direct relationship between the period of occupancy by owners and the tendency for the owners to transform their houses. Generally, however, it can be said that the period of occupancy does have an influence on the size of extensions as the larger extensions appear to have been made by some of the longest staying resident owners. The stable residence in the Suntreso estates may therefore have contributed a great deal to the transformation of the houses, especially with regards to the scale of transformation activity that was recorded during the survey.

Availability of Space Around Houses

Except in the case of simple internal space alterations involving the shifting of some walls or re-location of openings which do not make direct additions to the total ground floor area of the original building, it is obvious that, all things being equal, extensions are made possible only because there exists enough space around the buildings to accommodate them.

The availability of vacant land around the house in Suntreso appears to be a great advantage for the transformation activity. Each unit, especially in the semi-detached houses, has very large and well-defined undeveloped land around in which the house owners claim as much rights as they have in their dwellings. On the average, house plots covered an area of 495 square metres out of which only 56 square metres or 11.3 per cent was taken up by the original building, leaving the remaining portion free to take extension. These vacant plots have been extensively used, especially in South Suntreso, to produce detached buildings that are in most cases well over three times the size of the original units.

In cases where land was somewhat limited as in the two-room terrace houses of North Suntreso, extensions were forced into the two free faces of the units, thereby often using up planned circulation spaces between the buildings and other public spaces around them. The transformation activities in these house types were limited more to simple alterations such as porch enclosures

and in some cases, small-scale extensions. It is worth mentioning that, even in the terrace houses, occupants of the end units are able to achieve larger extensions (because of the express advantage of being able to expand in three directions) than their neighbours in the middle units.

The significance of the availability of vacant land (i.e. within individual plots) as an enabling factor in transformation activity in Suntreso can therefore be seen in the fact that, given the same resources, occupants of the terrace houses would obviously be unable to achieve the same sizes of extensions as their counterparts in the semi-detached units. In this respect, it does appear that the scale of transformation activity in the Suntreso area has been aided, to a very large measure, by the availability of vacant land around the houses.

Technology of the Original Buildings

Another factor in transformation activities is the technology employed in the original buildings. With the exception of the pre-fabricated concrete walling units employed in the Shokbeton structures, all the houses in the Suntreso area were built in load-bearing walls of 150mm solid sandcrete blocks with simple structural system and finishes. Extensions to the houses therefore pose no difficulties and this appears to have enabled transformation activity in the area very much, as nearly all the extensions were made in the same materials and technology. Some of the extensions blend so well with the original houses that it is difficult to identify the originals from the extensions.

Perhaps the most important influence of technology on the transformation processes is presented in the Shokbeton section of the study area where most of the extension have come in the form of separate building units from the prefabricated or precast concrete structures of the original units. Besides, there has been very little internal space alterations in these units such that apart from a few of them which have had some sections pulled down to allow for extensions, most of the Shokbeton houses have remained in the original state. This suggests some difficulty in effecting alterations to the prefabricated walling units hence an inherent limitation of the technology employed here to direct alteration or rearrangement of facilities.

Incomes to Support Transformation

Even though it has not been possible to establish accurate data on income levels, data from the study show that extension activity is largely owner-financed, which implies that income levels must be sufficiently high to support the scale and quality of extension activity recorded, particularly in South Suntreso which records the largest and best quality extensions. Most of the owners claimed sole responsibility for the financing of their extensions, and in some cases, with the help of their children and other family members or relatives.

The fact that many of the poorer households, especially in North Suntreso, have still not altered their dwellings even though the need for extra room is very much expressed (because of the very high occupancy rates and serious overcrowding in some of these units) and there is enough land available, is a proof of the importance of income levels of the owners themselves as a factor in the transformation activity in the study area. It can be said therefore that income levels of occupants in Suntreso does have a direct bearing on the decision to initiate transformations of their dwellings, especially on the quality and scale of the developments that have been recorded.

Economic Prospects

It is to be expected from the number of renter-occupied extensions in the study area that the prospect of earning revenue or rental income from the extensions may have influenced a good number of these activities. About 40 per cent of the sampled houses had some form of rental activity and indeed, about 11 per cent of the extensions solely serve renter households or rent paying tenants. Monthly rents per room average 1,900.00 Cedis, but could be as high as 8,000.00 Cedis depending on the quality and size of accommodation provided.

Sympathetic Local Authorities

It is implicit in the nature of the transformation activity in Suntreso that the authorities (State Housing Corporation, Building Inspectorate Division of Kumasi Metropolitan Authority, and Town and Country Planning Department) responsible for the regulation of land development have been very sympathetic to the cause of transformation to have allowed their occurrence in such proportions and uncontrolled manner. Besides, there is no apparent threat to ownership titles even from the State Housing Corporation in whom the land title for the entire estate is vested; thus occupants have secured title to land and with it the confidence to execute large scale extensions. This underscores the importance of this factor as an enabling factor in this study area.

CONCLUSION

Currently, additions to the housing stock for low-income households in the urban settlements of Ghana are taking place through the building of new housing units (although very slow and in small numbers and mostly as boys' quarters attached to the single family houses or villas) and extensions and alterations of existing houses. The alterations and extensions are taking place especially in the government-built estate housing sector through individual efforts. The transformations occur in estates where the houses have been sold to the occupants. The extension of the original units is an indication that every house is a dynamic structure that grows over time; the incremental development approach common in the Ghanaian housing sector emphasises this factor.

The scale of alterations and extensions in the study area indicates that the original houses of one and two rooms with a toilet and bath/shower have proved to be

inadequate. On the basis of the pilot survey data, it can be said that the original estate houses have been improved through the transformation activity. Also, the site coverage ratios for the individual plots have been significantly increased, which make the use of such land in prime locations quite economical.

It is evident from the pilot study that the decision to transform dwellings is influenced by a number of factors in various combinations or degrees of importance to the owners. In the Sunureso area, the shortage of accommodation, and the economic motives may appear to be the most influential factors generating transformation, but it is clear that the major enabling factors are the availability of large vacant land around the original buildings and the fact that ownership and tenancy were, in no doubt, secured.

In spite of the positive contribution to the supply of housing to low income urban dwellers through the mechanism of transformations, there is still the fact that where the process has been left unregulated, the built environment tends to be poor with related health hazards. Issues such as the quality of the housing environment and development control will be investigated during the main survey.

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Stephen E. Owusu and Martha A. Tamakloe are respectively Senior Research Fellow and Associate Professor of the Department of Housing and Planning Research, University of Science and Technology, Kumasi, Ghana.

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