GENTRIFICATION, USE CONVERSION AND TRADITIONAL ARCHITECTURE IN KUMASI'S CENTRAL BUSINESS DISTRICT – CASE STUDY OF ODUM PRECINCT

K. K. Adarkwa ¹ and R. A. Oppong ²

¹Department of Planning,

Kwame Nkrumah University of Science and Technology

(KNUST) Kumasi, Ghana

²Department of Architecture,

Kwame Nkrumah University of Science and Technology

(KNUST) Kumasi, Ghana

ABSTRACT

The process of gentrification unfolding in parts of Kumasi's Central Business District (CBD) is captured in this paper to facilitate an understanding of the change process at work; namely, the invasion and succession of old run-down traditional residential buildings by high rent yielding commercial developments. The study reveals that the process at work bears semblance with similar processes documented elsewhere in literature. Nonetheless, there are subtle differences. For example, the gentrifiers are not in the middle income category. Instead, they are in the low income category and perceive the process as a way of attracting investments to develop their properties without relinquishing their rights for posterity. The process also involves complete construction of new structures rather than refurbishment, remodelling or renovation. The location of displaced residents affected by the process is varied but is primarily dependent on income and average rents prevailing in various parts of the city. The link between gentrification and traditional architecture is also explored but the impact of the latter on the former is seen largely as being negative although streetscapes have been enhanced and skylines improved to reflect a more productive use of prime land. Consequently, the study has established a close link between gentrification, use conversion and the traditional architecture of the study area. It is argued that an understanding of the gentrification process in the study area is basic to a more efficient management of the change process at play in the CBD of Kumasi. To facilitate this, the extent of invasion and succession of residential uses by commercial interests in the CBD needs to be ascertained.

Keywords: Gentrification, Use Conversion, Traditional Architecture, Kumasi, Central Business District

INTRODUCTION

Opinion is divided about the immediate effects or long-term impacts of various economic reforms

implemented in the recent past in Ghana. For example, while some writers and commentators are of the view that these reforms have corrected several structural imbalances in the economy, others argue that their impacts have been cosmetic and are yet to be felt by the ordinary Ghanaian. However,

in spite of all these view points, the effects of these bold economic policy initiatives are now visible in most medium sized and large settlements in Ghana. Various consumer goods are now more readily available; albeit at prices which may be out of reach of many Ghanaians. Economic activities in general and petty commodity trading in all kinds of goods in particular, are visible in various parts of our cities; particularly in the Central Business District (CBD) and along major transportation arterials (Adarkwa and Post, 2001).

In Kumasi's CBD, for example, commercial activities take place on almost every available space and these uses are gradually invading and converting various low class residential buildings into other uses and as a result, inner city residents are being forced by economic circumstances, to relocate to different parts of the city. In the process, their original land spaces and structures are taken over by high rent yielding properties such as shops, offices and mixed commercial/residential development even though the latter land use type is not very popular. In all cases, some remodelling, renovation or refurbishment of the old structures takes place. In some cases new structures are being developed instead.

While the foregoing process is very similar to what takes place in cities in other parts of the world and could be referred to as gentrification, the process in Ghanaian cities presents very interesting features and dynamics which are yet to be properly understood. For example, who are the people displaced by this process of invasion and succession? Where do they relocate when their properties are invaded by commercial interests? Can the extent and the rate of gentrification be ascertained? What effect, if any, does the process have on the traditional architecture of the CBD? How best can such architecture be preserved?

The foregoing are some of the concerns addressed in this paper. In particular, the paper examines the link, if any, between gentrification, use conversion and traditional architecture of the CBD by an examination of a major precinct in the CBD of Ku-

masi, Odum Commercial Precinct. To adequately answer the questions of interest in this paper, a short overview of the concept of gentrification and the methods used in this research are presented.

OVERVIEW OF GENTRIFICATION

Gentrification, in its generic sense, simply refers to a physical, social, economic or cultural phenomenon through which inner city neighbourhoods are converted into more affluent middle class communities. The conversion is achieved through renovation, remodelling or refurbishment which results in increased property values and the relocation of the poor. Deteriorated portions of human settlements including areas of architectural or historic importance are attractive for gentrification as the case in Kumasi's CBD would reveal.

Reasons for gentrification are many and varied but they can all be grouped under the production-side or consumption-side arguments. On the production-side, Smith (1987) uses his classical rent-gap theory to explain the phenomenon simply through economics in the sense that capital flow and the productivity of human settlements tend to attract capital towards the development of such areas. In other words, an inflow of investments would fuel gentrification implying that less investment or "devolution" of the inner city capital would result in neglect of its related properties. In addition, inner city land price also falls relative to land prices on the periphery. According to Smith (1987), when the rent-gap is wide, developers and other stakeholders will see the potential profit to be obtained by developing them for new residents as a way of closing the gap. The need to close the rent-gap is primarily to result in a higher and more productive use of land. Other writers including Harvey et. al. (1999), Davis (1994) and Clark (1995) tend to support the framework provided by the productionside framework.

On the other hand, the consumption-side theory emphasises the need to understand the characteristics of gentrifiers as a basis for better understanding the process. It is argued that these socio-economic characteristics are such that in a service-based economy, such people would desire to be within the proximity of their work places. These are the young professionals with a relatively high disposable income and service oriented jobs in the urban core. While this may have limited application to the contemporary situation in Ghana, it is still plausible to understand the unfolding process using this framework. Other proponents of the consumptionside theory include Wetzel (2001) and Alejandrino (2000).

In Ghana, gentrification may not be occurring at a very fast pace but it is still occurring in various settlements in patterns which have not yet been studied extensively for us to clearly understand its form and dynamics. Some inner city areas in the five large centres of Accra, Tema, Kumasi, Sekondi-Takoradi and Tamale; particularly their CBDs, appear to be undergoing a wave of redevelopment, remodelling and refurbishment to accommodate new offices, shops as well as other related uses. In Kumasi, for example, in addition to the CBD other sub - centres in areas such as Tafo, Asafo and Bantama also appear to be redeveloping individual properties, particularly along major arterials, to accommodate new office and commercial uses. In virtually all the cases, the original uses were the traditional poor and low-income residential accommodation which appears to have been neglected for many years but are located on prime land. It is within the context of the foregoing that a major precinct within the CBD was studied with the view to providing some answers to the questions of concern in this paper.

STUDY AREA AND DATA COLLECTION METHODS

The study area is located within Kumasi's CBD and it is part of the original nucleus of the city which has now expanded to include other nearby villages to become suburbs of the city of Kumasi (Figure 1). The study area is bounded in the south by Guggisberg Road and Bogyiwa Street, on the east by Prempeh II Street, on the north by Stewart Avenue. On the extreme west of the study area is the State Transport Company (STC) Road (Figure

2). The area enjoys a high level of accessibility to every part of the city on account of its proximity to several central functions and a major transportation hub; Kejetia Lorry Park. The study area is also within a distance of about 1.5km from the city's Central Market.

The precinct, which occupies an area of about six acres, is zoned predominantly commercial but it has a high degree of mixed commercial/residential uses dotted all over the area. A ground count of all existing buildings revealed that there are nearly 105 building structures; about 90 percent of which are predominantly used for commercial purposes. Densities are fairly high, averaging about 20 buildings per acre. This is certainly one of the highest recorded building densities in the city which vary from about four buildings per acre in the low density high-income residential areas to about 15 buildings per acre in the high density low-income areas. On the other hand, residential densities are relatively low, estimated to be about 60 persons per acre, primarily on account of the overall function that the area performs as the commercial hub of all business activities in the city of Kumasi.

It is to be further noted that the precinct is surrounded on all sides by commercial land uses on which brisk business takes place. In spite of all these, it sounds rather ironical to observe that rundown, poorly maintained and deteriorated old buildings are still located on prime lands with potential values which are far more in excess of their current values. This situation gives rise to gentrification and, in the words of Smith (1987), it facilitates the narrowing of the rent-gap between the various adjoining land uses within the CBD.

The Odum precinct is also part of the historic core of Kumasi with important landmarks including the following:

- 1. the Odumhene's (Chief of Odum's) Palace and Mausoleum of the first Queen of Ashanti;
- 2. the Palace and Mausoleum of the Akyenpemhene of Kumasi;

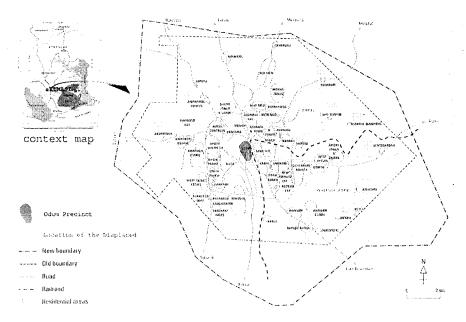


Figure 1 - Map of Kumasi showing major suburbs

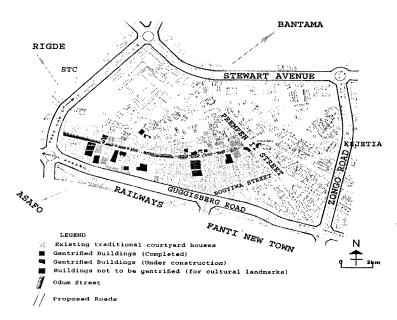


Figure 2 - Map of portion of Kumasi's CBD showing the study area (Odum Precinct)

- 3. Kumasihene's (King of Kumasi's) Palace; and
- 4. Premier traditional houses in Kumasi.

In addition to all these, there are also two blighted areas or zones within the precinct which are hardly patronised by most people because they are well known "red-light districts". Apart from the foregoing, there are other recently developed structures which are aesthetically pleasing and have been developed in areas which were once occupied by single storey traditional family houses. A detailed breakdown of the types of building structures in the precinct is presented in the next section.

To facilitate data collection, buildings in the study area were classified into five clusters from which samples of each building type were surveyed (Table 1). Where parts of the buildings were used for residential purposes, households were also selected from each of the clusters for interviewing. Methods for data collection made use of a combination of both quantitative and qualitative techniques. First, extensive use was made of a formal interview of selected households and residents as well as house owners in the precinct. In all, a total of 24 households and about 120 residents were

covered in the interviews as summarised in Table 1. Second, focus group discussions were held with stakeholders comprising land owners, tenants, property owners, traditional authorities and shoppers. Third, physical inventory of buildings and other construction materials as well as cartographic recordings of buildings were undertaken over a five-day period. Finally, photographs of buildings were taken and analysed within the context of the study's objectives. In view of the fact that there are no comprehensive data on various houses or properties within the precinct for various points in time, we had to make intelligent inferences from earlier accounts by other writers; including Korboe (2001).

DATA ANALYSIS AND DISCUSSION

A detailed breakdown of the building types is presented in Table 1 and also shown in Figure 2. It is clear from Table 1 that out of the total of 105 buildings in the precinct, only two or about 2 percent are of architectural, cultural and historic or landscape significance which have to be preserved. These structures which include some traditional houses and Chiefs' palaces would necessarily have to be protected from the process of invasion and succes-

Table 1 - Classification of Buildings by Proportion of Buildings Surveyed and Residents Interviewed

Type of Building	No. of Buildings	Percent- age	No. of House- holds inter- viewed	Percent- age	No. of Residents inter- viewed	Percent- age
Gentrified Buildings (Under Construction)	20	19.0	3	12.5	18	15.0
Gentrified Buildings (Completed) Buildings yet to be	17	16.2	6	25.0	29	24.2
Gentrified Buildings not to be Gentrified for cultural and architectural rea-	66	62.9	14	58.3	70	58.3
sons (landmarks) Total	2 105	1.9 100.0	1 24	4.2 100.0	3 120	2.5 100.0

Source: Field Survey, January/February 2005

sion currently unfolding in the study area (for example, Plate 1).

A significant portion of the houses, sixty-six in number or 62.9 percent, have not been gentrified but are likely to be impacted by the on-going process. This implies that in due course they will be affected and therefore there is the need for the City of K umasi to a dopt proactive measures to ensure that the development which ensues maximises the use of prime land in the CBD. Some of the palaces (Plate 1) and some traditional family courtyard houses (Plate 2) fall within this category of houses.

Another group of buildings in the Odum precinct



Plate 1 - A view of Kumasihene's Palace (It is under threat of invasion and succession but should be protected)

are those currently under construction. In other words, some of the old housing units are now being converted into multi-level office and accommodation units (Plate 3). This group of houses constitute nearly 19 percent of all buildings within the study area and they are at various stages of completion. It is even understood that most of the offices and shops within such structures have already been allocated to prospective businessmen against which various sums of money deposit, as goodwill, have already been paid. Following the completion of these buildings, the study area will be transformed.

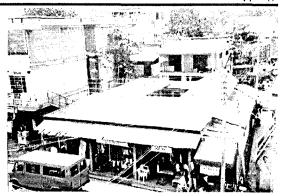


Plate 2 - Traditional compound house located on prime land (stands strong possibility of gentrification)

the skyline changed and there will be a more productive use of land.

The last group of buildings in the study area comprise those that have been fully completed; the gentrification processes virtually ended and use conversion taken place. This group of houses constitutes about 16 percent of all houses in the study area. Such buildings have been put to several commercial uses including shops, offices, hotels and other ancillary uses. The completion and presence of these buildings appear to facilitate the gradual invasion and succession of nearby run-down low



Plate 3 - Example of old residential unit (in background) converted to multi level office Building (poorly maintained house in foreground is also candidate for gentrification)

rent yielding properties (Plate 2). This is in line with Smith's (1987) earlier assertion that inflow of investment would further fuel gentrification. Indeed, it is a paradox, albeit temporarily, to see buildings with a forlorn air of decrepitude located on prime land in the study area. It is clear that this state of affairs is a combination of ownership and use rights, planning and current market conditions. It is on this basis that the reasons responsible for the invasion and succession of residential uses by commercial uses or the entire process of gentrification are identified.

REASONS FOR GENTRIFICATION

In virtually all the cases of gentrification studied, apart from a single plot which was developed 20 years ago from scratch, the major reason for gentrification was because the buildings had deteriorated to such an extent that there necessarily had to be some external infusion of capital into the area to rehabilitate the subject buildings. The owners and tenants in those buildings have not resisted attempts or efforts to rehabilitate run-down buildings in the Odum precincts simply because they do not have any other viable alternatives. The general view is that, the infusion of capital through the refurbishment and rehabilitation of selected buildings is seen not only as an investment but also as a way of carrying out the several years of neglected maintenance of these buildings.

The foregoing appears to be the general perception because more than 70 percent of the respondents were of the view that the reason for gentrification is deeply rooted in economics (Table 2). Their simple explanation is that since some adjoining refurbished and remodelled properties are attracting very high returns, they must also ensure that their properties are rehabilitated, refurbished or remodelled so that they can also enjoy similar returns. This then partly explains why several traditional houses in the precinct are being demolished to make way for properties which will ensure more efficient use of space and maximum economic returns. This group of owners and tenant have developed several innovative schemes with the developers which ensure that their interests are protected.

One of such schemes ensures that family members, and occasionally tenants, continue to maintain an interest in the rehabilitated property. All the floors in the rehabilitated building are usually rented as shops, offices and related uses but the last floor is usually left to be used for residential purposes. In such cases, the land is leased to the developer for

Table 2 - Ranking of Reasons for Gentrification in Odum Precinct

Reason	No. of Buildings	Per- centage	
Purpose – built (Commercial)	1	1.0	
Economic Reasons	80	76.2	
Restoration/ Maintenance	9	8.6	
Aesthetic/Attraction (especially the "red – light" zones)	15	14.3	
Total	105	100.0	

Source: Field Surveys, January/February 2005

an extended period of time, say twenty years, following which if it not extended further under a new agreement, the building reverts to its original owner(s). This may be an oversimplification of a complex process but what is also emerging is that funding for this particular purpose is now gradually being procured through a combination of various sources including private developers, family initiative, company initiative and landlord initiative (Table 3). In addition, it is also clear that for those who rehabilitate or refurbish the run-down buildings also utilise offshore resources from relatives.

There are similarities between the gentrification process that is occurring in the study area and those documented elsewhere. In both cases, original residents are displaced but while in the study area, poor people return to the area after the properties have been enhanced or totally demolished and rebuilt in other recorded cases of gentrification, those who return belong to the middle class. The return of the poor to the refurbished or rehabilitated houses may not be a widespread phenomenon and it is likely to be further weakened because of economic reasons. In several respects, the return of the poor to the rehabilitated properties still with some interest in the properties validates earlier studies on Ghana which concluded that a building or a house is never considered a commodity to be sold off

Table 3 - Sources of Funds for Rehabilitating or Refurbishing Rundown Buildings

Sources of Funds	No. of Buildings	Percentage	
Private Developer	10	41.6	
Family Initiative	4	16.7	
Company Initiative	2	8.3	
Landlord Initiative	4	16.7	
Not Decided (but Private Developer in mind)	4	16.7	
Total	24	100.0	

Source: Field Surveys, January/February 2005

completely (Korboe, 2001). Even in spite of severe economic constraints, family members do not exercise the option of completely selling off or relinquishing their interest in land or property inherited from their ancestors. In this respect, it is important to note that whether the property is owned by a family or an individual has very little influence on whether the building is rehabilitated or not. It is in this regard that the next section examines in detail, the type of people displaced and where they relocate; albeit temporarily.

THE DISPLACED AND WHERE THEY RELOCATE

The survey indicates that based on income and type

of employment, displaced persons can be categorised into three groups as shown in Table 4. In this survey, family members were separated from the low and middle income tenants so as to enable an easy comparison with literature.

Table 4 is fairly consistent with literature which clearly indicates that most displaced people arising out of the gentrification process are usually low income or poor tenants who are subsequently replaced by middle income tenants. In the study area, however, it is noticeable that family members who own the old, run-down buildings which are candidates for gentrification form 10 percent of the respondents. This fact simply reinforces the earlier assertion in this paper that, typically family members in the study area and Ghana as a whole, are not pre-disposed to selling family property, such as houses, in order to "buy up" as is usually the case elsewhere. The family members displaced by gentrification have lived in their family houses in the Odum precinct of the CBD for several generations. Their strong attachment to the area, therefore,

Table 4 - Classification of Displaced People by Income Groupings

Category	No. of People	Percent- age	
Low Income (Tenants)	84	70	
Middle Income (Tenants)	24	20	
Family Members (Owners)	12	10	
Total	120	100.0	

Source: Field Surveys, January/February 2005

partly explains their inordinate desire to still return to the area following its redevelopment as a result of which they evolve several innovative schemes to make this desire a reality. This is not in any way influenced by where family members relocate when they are displaced.

The displaced tenants and family members relocate to various parts of Kumasi depending on their income category. The surveys indicate that nearly 90 percent of the low income displaced tenants and family members relocate to the peripheral areas or suburbs in Kumasi including Mamponteng-Fawoade area (Figure 1) from where they commute over the 14.5 km distance to work daily in Kumasi. The very few, about 10 percent of this group, who cannot afford rents in these fast growing peripheral areas relocate to their hometowns and occasionally travel to Kumasi for well defined purposes.

In the case of the middle income displaced tenants, some of them (about 45 percent) relocate to areas such as Fumesua, Kwamo, Kentinkrono, Tafo, Ayeduase and Kotei (Figure 1) where they may have acquired building plots earlier on and have started developing them. Under such circumstances, they are forced to move into those partially completed houses. Usually, it is common practice to partially develop a section of one's house to create spaces for accommodation while the other parts are completed in due course. It is interesting to note that most of those in this group include shop owners in the CBD and those with family businesses either within the CBD or its proximity.

The third group of displaced people are family members who own the traditional houses which have run-down and are to be replaced with high rent yielding properties. The surveys revealed that this group of people are treated specially by the prospective developers. In most cases, the family members are relocated temporarily by the developer in rented accommodation usually on the outskirts of the city in locations such as Pankrono, Tafo, Bohyen and Abuakwa where rents are relatively cheaper than in the CBD. This group of people would usually continue to commute daily to work in the CBD until the redevelopment is fully completed and they return to occupy the last floor of the newly built structure. This arrangement is guaranteed by a contract between the developers and traditional owners of the buildings and the

plots. In any case, the land is usually leased to the prospective developers for periods less that the head lease on the land. Where the family is fairly large, some are forced to permanently rent rooms in other parts of the city. This is usually determined by the prospective developers be they private, family, company or an initiative by the landlord as was presented in Table 3.

EFFECTS OF GENTRIFICATION ON TRADITIONAL ARCHITECTURE

As is noticeable to any casual observer, through this gradual process of invasion and succession of old run-down traditional houses by modern structures housing offices and shops, the traditional architecture is also gradually giving way to the contemporary. In the concluding section of this paper, therefore, the effects of gentrification and use invasion on the traditional architectural identity of the Odum precinct is considered.

Most of the buildings affected by the process of gentrification are traditional courtyard houses typical of Odum in the CBD, (Plate 2). They were constructed of mud and timber with gable ended roof structures and iron sheets as the roof covering material. The existing traditional courtyard houses which exemplify the rich Ashanti culture appear to be negatively impacted by the gentrification process. There is a clear loss of the traditional building identity in respect of their form and function. The courtyard concept is gradually being obliterated and efforts to preserve it in the new buildings have not been successful. The traditional courtyard has now been replaced with solid row or block of buildings. Some efforts to introduce the concept into newly designed buildings have had a rather negative effect in the sense that in some cases they appear to have created a "tunnel effect" with poor ventilation and very warm temperatures in building interiors. The absence of a courtyard is a real problem for gentrifiers who return to live on the top floors of rehabilitated buildings because most of their previous outdoor activities are now restricted. There is now no space for usual groundfloor activities like fufu pounding as well as washing and

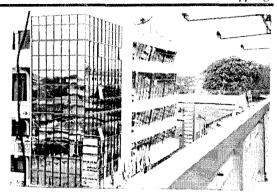
drying of laundry and play areas for children are now restricted in their new environment.

The extensive use of glass in the new buildings (Plate 4) has rendered most of the gentrified buildings environmentally unfriendly. There is now overdependence on electricity to provide lighting. ventilation and air-conditioning. This may also be partly attributed to the fact that the size of the courtyards in most gentrified buildings, whenever available, does not enhance cross-ventilation and airflow through the building. However, the sensible use of natural light, particularly in the many buildings in the study area which are usually occupied during the day, offers a valuable contribution to ways of energy saving, visual comfort and wellbeing of the occupants. The reduction of the internal loads it provides when used to the greatest extent possible, makes natural lighting a key element in the architectural design of buildings such as those being developed in the study area. This has been asserted by many writers on buildings and climatology including Marocco and Orlandi (2000).

Even though the skyline of the study area in particular, and the CBD in general, is being enhanced through gentrification, the complete absence of soft landscaping elements is a matter of great concern considering that vegetation enables a built environment to hold more water, take in carbon dioxide and give out more oxygen. It also reduces glare and prevents reflection between buildings from climatic elements. Materials such as brick, mud and timber used in the construction of the traditional houses in the CBD result in cool environmental conditions within buildings compared with the "harsh" architecture emerging out of gentrification.

CONCLUSION

The objective in this paper was to document and understand an aspect of the rapidly changing character of Kumasi's Central Business District and its impacts on the traditional architecture. A case study of Odum precinct revealed that there is a



Plafe 4 – A demonstration of extensive use of glass in Aseda House

gradual invasion and succession of original low density residential dwelling units by high density commercial and office developments. While there may be some semblance with gentrification in its generic sense, there are major differences. Clearly, the poor are being displaced but their spaces as being occupied, not by middle-class communities but by high rent yielding office and commercial development; resulting in increased property values. In most cases, they return to occupy the topmost floor in the new developments.

As a result of the above process, a tremendous impact on the traditional architecture is noticeable. The skyline has changed significantly and virtually all traditional building materials have given way to the use of modern materials some of which are inappropriate for tropical conditions but may be aesthetically pleasing. The streetscape is gradually changing to reflect a more productive use of land in the CBD. What seems to be facilitating the process of gentrification is the clear lack of maintenance of the old residential structures resulting in a virtually run-down streetscape. On the other hand, the enhanced economic environment and a corresponding increase in the demand for space are also contributing factors.

Consequently, we have established a very close link between the physical change process or gentrification and traditional architecture. An understanding of this change process is critical for a more meaningful management and development of the city of Kumasi considering that changes occurring along the Odum Street are also at work in other parts of the city. It will also be important to ascertain the extent of invasion and succession in the study area and the entire CBD while efforts are made to preserve the traditional architecture to the extent possible.

ACKNOWLEDGEMENTS

We acknowledge the co-operation of Town and Country Planning Office and Kumasi Metropolitan Assembly as well as the assistance of Messrs Stephen Enyonam Morgan, Dennis Kwame Domfeh Bandoh and James Eduful, Architecture II students, in the collection of field data and updating of base map obtained from the Town and Country Planning Office in Kumasi. Abraham Adusei is also duly acknowledged for his secretarial support.

REFERENCES

- Adarkwa, K. K. and Post, J. (2001). The Fate of the Tree: Planning and Managing the Development of Kumasi, Ghana, Thela. Thesis/Woeli, Amsterdam and Accra, p. 5.
- Alejandrino, S. V. (2000). "Gentrification in San Francisco's Mission District: Indicators and Policy Recommendations," Professional Report written in conjunction with Mission Economic Development Association(MEDA), University of California, Berkeley/San Francisco. www.medasf.org/reports/mission_gentrification.pdf

- Clark, E. (1995). "The Rent Gab Re-examined" *Urban Studies*, 32(9), 1489 and 15.
- Davis, J. E. (1994). "Beyond the Market and the State: The Diverse Domain of Social Housing" in J.E. Davis (ed) *The Affordable City: Toward a Third Sector Housing Policy,* Temple University, Philadelphia, pp.75-106.
- Harvey, T., Espionozo, D., Hays, J., Friskin, J., Howard, B.D., Huynh, C., Pengasawat, P., Guss, E., Kao, G., Russ, L., Fearn, J., Kunamneni, R., Terplan, J., Lau, J. and Troung, Bao-Tran. (1999). "Gentrification and West Oakland: Causes, Effects and Best Practices," Unpublished paper written by graduate students in City and Regional Planning, University of California, Berkeley.
- Korboe, D. (2001). "Historical Development and Present Structure of Kumasi," in K. K. Adarkwa and J. Post (eds). *The Fate of the Tree: Planning and Managing the Development of Kumasi, Ghana,* Thela. Thesis/Woeli, Amsterdam and Accra, pp. 53 54.
- Marocco, M. a nd Orlandi, F. (2000). *Qualità del Comfort Ambientale: Elementi per la Progettazione*, Editrice Librivie Dedalo, Roma, pp.95-109,157-177.
- Smith, N. (1987b). "Gentrification and the Rent-Gap," *Annals of the Association of American Geographers*, 77(3), 462 465.
- Wetzel, T. (2001). "San Francisco's Space Wars", Processed World, San Francisco, 1-8.