

THE SATELLITE-KAWANGWARE AREA

An Urban Design Intervention

DESIGN PROJECT REPORT

Mr. Arch.



Student : Otieno A.O. B/63/7195/99

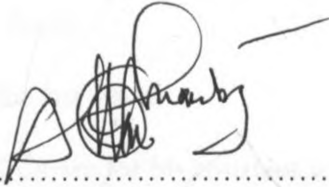
Tutor : Prof. Jerry Magutu

UNIVERSITY OF NAIROBI
ADD LIBRARY

DECLARATION

This Design Project Report is my original work and has not been, to the best of my knowledge, submitted in any other University for the award of a degree. It is in part fulfillment of the degree of Master of Architecture of the University of Nairobi.

Author:



.....
Otieno A.O.

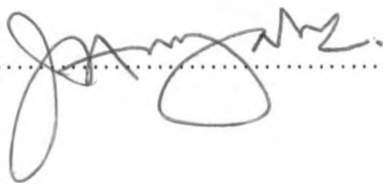
This Report is hereby presented for examination with our authority as University supervisors in the Department of Architecture.

Course Coordinator:



.....
Professor J.G. Magutu.

Chairman:



.....
Mr. T. Anyamba.

DEDICATION

To my dear family,

Mama and the late Papa,

My friend K'Obare for his constant words of encouragement,

My friend Alfred Omenya, for his office space and motivation,

To Professor J.G. Magutu, for bringing me this far,

And to Millie,

The greatest people I know.

CONTENTS	PAGE
1.0 Preamble	1
2.0 Problem Statement	13
3.0 Aims and Objectives	17
4.0 Methodology	19
5.0 Scope and Limitations	20
6.0 The Client	21
7.0 Research Findings	24
8.0 The Brief	28
9.0 Conclusions and Recommendations	31
10.0 Implementation of the Proposed Design	41
11.0 Development Approach	45
12.0 Appendices	50

1.0 Preamble

Urban Design has all to do with Human Settlements, briefly defined as **systems of human activities**. These human activities develop in patterns as influenced by various factors.

The growth and pattern of human settlements in Kenya has been influenced by political, social, economic and environmental factors. Before the advent of colonization, in the late 18th Century, Kenya's economy was predominantly agricultural with infusions of pastoralism in the arid and semi-arid areas. Fishing was the mainstay of the communities around the fresh water lakes and mainly around Lake Victoria. Traditional spontaneous weekly markets were the culmination of trade within the traditional villages.

This pattern of human settlements development changed drastically during the colonial era. The construction of the Kenya –Uganda railway led to the development of a string of towns along the railway line, the establishment of administrative centres and commercial centres. Nairobi and Kisumu owe much of their history to the Railway Line. The former was the main administrative centre while the latter developed as a transition point and the end of the main line across the "Kenya Colony."

Other towns emerged as a result of population growth and concentration to facilitate marketing, communication and transportation. This was the beginning of 'modern' urbanization in Kenya. Centres of industrialization and commerce followed this pattern.

After Independence, the rate of urbanization in Kenya accelerated as a result of natural population growth, rural-urban migration, boundary extensions of towns and reclassification of local authorities.

During the recent decades, the rate of Urbanization in Kenya has been rapid:

- 1948-there were 17 towns with a population of 276,240 representing 5.1% of total population.
- 1962-there were 34 towns with a population of 670,950 representing 7.8% of total population.
- 1969-there were 48 towns with a population of 1,079,908 representing 9.9% of total population.
- 1979-there were 91 towns with a population of 2,307,000 representing 15% of total population.
- 1989-there were 139 towns with a population of 3,900,000 representing 18.1% of total population.
- 2000-it is projected that the urban population will be 6,950,000 representing 22.3% of the total population.

(Data source-*Kenya National Plan of Action for Shelter and Human Settlements-a Habitat II Conference Paper*)

This rate of urbanization has led to the demand for essential services in the urban areas which far outstrips the supply. The result has been the negative externalities of urbanization: Inadequate supply of housing, infrastructure, health services, food, delinquency, drug abuse, crime, overcrowding, general lawlessness, unemployment/underemployment and environmental degradation.

The Urban Design challenge has been how to marshal all available physical, financial, human and technical resources to manage the problems and utilize opportunities emerging from Urbanization.

Various steps have been taken to resolve the negative externalities of urbanization:

- Planning-the production of **Master Plans** that guide developments and investments at both the Urban and Rural levels.
- Deliberate steps to slow down primate city growth and enhance the level of services available to the main urban areas.
- Promotion of Small Towns and Intermediate Cities (STICS)-these cut down on the rate of Rural-Urban Migration hence helping to decongest the urban areas.
- Family Planning and Planned Parenthood policies to control population growth.
- Promotion of Rural Per-capita to spur growth in the rural areas and help ease the pressure in the urban areas.
- Creating counter-magnets e.g. the EPZs (Export Promotion Zones). These are employment and services areas, which attract people away from the cities.
- Development of infrastructure and provision of incentives like airports (e.g. Eldoret International Airport) to help promote agricultural development in the region.
- Opening up of growth corridors within the urban areas especially along major roads to decongest the Central Business Districts (C.B.D.) Examples are the Nairobi-Thika Corridor, Nairobi-Karen-Ngong corridor.
- Opening up Satellite centres based on the idea of the Garden Cities-*self sustaining* districts with the necessary infrastructure at close proximity to the Urban Area. A good example is the Riruta Satellite Area of Nairobi.

Despite the noble plans and steps taken the problems of Urbanization have been persistent. The above steps have failed because of various obstacles:

- Politically driven conflicts among regions, cities and towns.
- Weak and ineffective policy instruments.
- Incentives provided do not measure up with the lure of the primate cities.
- Myopic focus, which underestimates geographical impacts of promoting intermediate towns.
- Highly centralized administration, which has led to the concentration of services in specific areas only.
- Lack of adequate financial and manpower resources.

1.1 The Case of Satellite-Kawangware Area.

The growth and pattern of human settlements in the Satellite-Kawangware area has been influenced by political, social, economic and environmental factors. The same applies to all peri-urban areas of the city of Nairobi.

The need to plan the growth of the city was recognized by the British Colonialists who endeavored to produce the 'Nairobi Master Plan for a Colonial Capital' in 1943.

However with the dawn of independence in 1963, a huge influx of people streamed into the capital city that Nairobi had become in search of "better living conditions." This rural-urban migration generated demands that the then small city could not meet.

Most residents of the city then took the initiative to provide the necessary services themselves. This saw the unplanned and uncontrolled growth of the city to areas far beyond the initial city boundaries. The unplanned growth and development of the city became an urgent issue with the city authorities. There was an urgent need not only to arrest and control this rapid growth, but also to plan and guide it.

In 1973 the 'Nairobi Metropolitan Growth Strategy' was published. This report addresses the problems of:

- Public Transport
- Development of the city's Central Business District (C.B.D.)
- Housing and the associated problems
- Employment, Unemployment and Underemployment

It was recommended that the city's boundaries be expanded to stretch from Kikuyu in the West to Thika in the north-east. Within this area the city was to be planned to accommodate three million people by the year 2000. The planning was to be flexible enough to accommodate four million people, if necessary. Additional commercial centers at strategic locations throughout the expanded city and additional industrial employment centers at Dagoretti, Karen, Langata, Wilson Airport, Dandora, Ruaraka and Kasarani was another proposal.

In this report it was also noted that:

- Nairobi was a classic primate city.
- A majority of the future population of Nairobi will be poor.
- A substantial proportion of the labour force would be outside the range of gainful employment.
- It is possible that the Informal Sector would be significant in the future.
- The City Council should be more tolerant in licensing the activities of the Informal Sector as a way of alleviating unemployment.

Three major problems would face Nairobi:

- Unemployment
- Lack of Housing
- Financial stringency

The report further listed the emerging areas of development. (Growth Corridors): (*Appendix. 1 pg.51*)

- Lineal development linking Nairobi to Thika
- A new city at Thika
- Eastern extension to Nairobi
- Eastern extension to Nairobi and developments at Athi River
- Extensions to the North, East and minimally West
- Extensions to the North East
- A new city at Athi River

Of all the corridors the relevant one to this study was the Western Nairobi extension which includes Dagoretti. The study areas of Riruta Satellite and Kawangware are zones within this District. For planning and administration purposes Dagoretti is divided into two Districts: (*Appendix. 2 pg. 52*).

- Eastern Dagoretti-Incorporates Riruta and Kangemi Sub-Locations.
- Western Dagoretti- Incorporates Waithaka, Mutuini, Ruthimitu, and Uthiru Sub-Locations.

The Satellite-Kawangware area falls within Eastern Dagoretti.

East Dagoretti is located adjacent to the city's residential area of Lavington. It stretches from the main road to Nakuru on the North to the main Ngong road on the South. It is about 8 kilometers from the C.B.D. and 12 kilometers from the industrial area. Along its southern boundary is the main railway line and to the South is the Ngong forest. (*Appendix. 3 pg. 53*)

The historical development of the Satellite- Kawangware area is as follows:

Year/Item	By 1956
Land	<ul style="list-style-type: none"> • The area was part of the Kikuyu native Reserve. Land was communally owned as part of Kiambu District. • Land adjudication took place with the following results: <ul style="list-style-type: none"> -Township Plots ¼ acre plots -Satellite Plots ½ acre plots -Farm Plots 3-20 acre plots -Public purposes plots were created along Naivasha Road -Kawangware and Kangemi Townships were demarcated.
Economy	<ul style="list-style-type: none"> • Agricultural based traditional economy. • There was a traditional weekly market at Kawangware.
Population	<ul style="list-style-type: none"> • Mainly consisted of the Kikuyu ethnic group. • The number of inhabitants is not known.
Infrastructure	<ul style="list-style-type: none"> • Communal watering points from wells, streams and springs. • Traditional refuse disposal methods either in the open land or as compost. • Vehicular circulation limited to the market areas. • All roads are adoptions of the traditional paths • No formal schools, hospitals • No established financial institutions.
General Description	<ul style="list-style-type: none"> • Kawangware developing into a township with dormitory type housing. • Traditional construction methods predominant. • The area has a distinctive rural character.

Year/Item	By 1959
Land	<ul style="list-style-type: none"> • Communal Land limited to parcels of 3-20 acres • Individual ownership of land in existence • Regulations governing the use of land not enforced • Riruta Township sponsored by the Kiambu African District Council and the Central Housing Board(Africans) is established(11/8/1959). Tenant purchase housing was introduced.
Economy	<ul style="list-style-type: none"> • Agricultural based traditional economy. • There was a traditional weekly market at Kawangware. • Informal Industries developing around Kawangware Market.
Population	<ul style="list-style-type: none"> • Rural-Urban migration contributing to population increase. • Migrants from various ethnic groups contributed to cultural integration. • The number of inhabitants is not known.
Infrastructure	<ul style="list-style-type: none"> • Communal watering points were wells, streams and springs. • Main roads murramed • No formal schools, hospitals • No established financial institutions.
General Description	<ul style="list-style-type: none"> • The area showed signs of developing into a peri-urban precinct. • Traditional construction methods were predominant. • No social or communal facilities existed for the Riruta Township

Year/Item	By 1964
Land	<ul style="list-style-type: none"> • Dagoretti was incorporated within the city boundaries. Land control board was set up to oversee land transactions • Traditional land owners were selling out their parcels to the new immigrants. • Communal ownership of land faded away. • Development regulations were not enforced on government land.
Economy	<ul style="list-style-type: none"> • Informal Sector Economy was evident • The Kawangware market had grown beyond its traditional boundaries. • Subsistence farming was carried out in small plots • There was a small number of professional staff working in the Central Business District.
Population	<ul style="list-style-type: none"> • Ethnic grouping included the Kikuyu, Kisii, Luo, Luhya, Nubians and Maasai. • The number of inhabitants was not known.
Infrastructure	<ul style="list-style-type: none"> • Eight(8) new primary schools were developed in the whole of Dagoretti. • There were three(3) health centres in this area. • Water supply was from the Kikuyu Springs • No new roads had been developed. • There was reliable and affordable bus-transport to the city centre. • No sewer development had taken place here.
General Description	<ul style="list-style-type: none"> • It was evident that this area would develop into a peri-urban area • Traditional styles of living were eroded away. • Demand for infrastructural services was increasing • Unplanned housing began to develop around the Kawangware Market.

Year/Item	By 1969
Land	<ul style="list-style-type: none"> • There was mixed use of land-agricultural, commercial and residential. Most commercial activities were developing along Naivasha Road. • Urban Agriculture was evident within the residential compounds. • There was high demand for land for residential and commercial purposes.
Economy	<ul style="list-style-type: none"> • Agricultural and Commercial based economy. There were institutionalized merchandising outlets along Naivasha Road. • There was formal employment of the lower middle class within the City Centre and at Dagoretti Corner.
Population	<ul style="list-style-type: none"> • Mixed ethnicity with the following distribution: <ol style="list-style-type: none"> 1. West Dagoretti 15,354 2. North East Dagoretti 9,173 3. South East Dagoretti 16,882 • There was high population growth as a result of urbanization of the city of Nairobi.
Infrastructure	<ul style="list-style-type: none"> • Plans were underway to improve the existing road networks. In this plan Naivasha Road was to be tarmacked. • There was also plans for trunk sewer. • Water source was still from the Kikuyu springs. However this was inadequate owing to the high demand.
General Description	<ul style="list-style-type: none"> • Unplanned commercial and residential developments in existence. • General social malaise was evident seeing the emergence of various religious and social groupings with objectives of resolving specific social problems. The Catholic Church was the most active by this time.

Year/Item	By 1974												
Land	<ul style="list-style-type: none"> • There was mixed ownership and use of land. • The Lands Control Board still in existence overseeing all land transactions • There was high demand for land for residential and commercial purposes with the unplanned residential settlement around Kawangware market expanding rapidly 												
Economy	<ul style="list-style-type: none"> • Agricultural and Commercial based economy. There were institutionalized merchandising outlets along Naivasha Road. There was also high demand for services from the Informal Sector. • There was formal employment of the lower middle class within the City Centre and at Dagoretti Corner. 												
Population	<ul style="list-style-type: none"> • Mixed ethnicity with the following distribution: <table style="margin-left: 20px;"> <tr> <td>1. Kangemi Sub-Location</td> <td style="text-align: right;">15,000</td> </tr> <tr> <td>2. Riruta Sub-Location</td> <td style="text-align: right;">32,000</td> </tr> <tr> <td>Total for the two Sub-Locations</td> <td style="text-align: right;">47,000</td> </tr> </table> <p>The populations for the two Sub-Locations for 1969 were:</p> <table style="margin-left: 20px;"> <tr> <td>1. Kangemi Sub-Location</td> <td style="text-align: right;">9,173</td> </tr> <tr> <td>2. Riruta Sub-Location</td> <td style="text-align: right;">16,882</td> </tr> <tr> <td>Total for the two Sub-Locations</td> <td style="text-align: right;">26,055</td> </tr> </table> <p>This was about 80% increase in population within a period of five years.</p> • There was high population growth as a result of urbanization of the city of Nairobi. 	1. Kangemi Sub-Location	15,000	2. Riruta Sub-Location	32,000	Total for the two Sub-Locations	47,000	1. Kangemi Sub-Location	9,173	2. Riruta Sub-Location	16,882	Total for the two Sub-Locations	26,055
1. Kangemi Sub-Location	15,000												
2. Riruta Sub-Location	32,000												
Total for the two Sub-Locations	47,000												
1. Kangemi Sub-Location	9,173												
2. Riruta Sub-Location	16,882												
Total for the two Sub-Locations	26,055												
Infrastructure	<ul style="list-style-type: none"> • No road improvements yet. • No trunk sewer constructed by this year. • No improvements in the water supply had been done by this year. • There was reliable public transport system to the city centre. 												
General Description	<ul style="list-style-type: none"> • Unplanned commercial and residential developments growing. • There was limited community feeling about land. The traditional identity had been eroded. • Approximately $\frac{3}{4}$ of the housing was unplanned. • The Seventh Day Adventist Church (S.D.A.) becomes stronger than the Catholic Church and leads the way in attempting to resolve the problems in this area. 												

Year/Item	By 1985						
Land	<ul style="list-style-type: none"> • There was mixed ownership and use of land. • There was a marked rapid decrease in agricultural land with Urban Agriculture becoming part and parcel of the residential neighbourhoods. • Most indigenous land owners had sold out. Most land owned by absentee landlords giving way for the mushrooming of squatter developments. • The urban edge is occupied by the informal spontaneous commercial activities. 						
Economy	<ul style="list-style-type: none"> • The Informal Sector was the main income generating activity. • There was formal employment of the lower middle class within the City Centre and at Dagoretti Corner. • Agricultural activity was situated along the Kirichwa Kubwa river and within the residential areas. • There was reliable transport services to the city centre. • The Satellite-Kawangware area becomes a centre for commercial activities, most of which are informal in nature. 						
Population	<ul style="list-style-type: none"> • Mixed ethnicity with the following estimated comparative distribution: <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 20px;">1. 1976-Dagoretti</td> <td>100,000</td> </tr> <tr> <td>2. 1980-Dagoretti</td> <td>159,000</td> </tr> <tr> <td>3. 1985-Dagoretti</td> <td>300,000</td> </tr> </table> (Source: Nairobi Metropolitan Growth Strategy 1973) • There was high population growth as a result of urbanization of the city of Nairobi. 	1. 1976-Dagoretti	100,000	2. 1980-Dagoretti	159,000	3. 1985-Dagoretti	300,000
1. 1976-Dagoretti	100,000						
2. 1980-Dagoretti	159,000						
3. 1985-Dagoretti	300,000						
Infrastructure	<ul style="list-style-type: none"> • Naivasha Road had been tarmacked. Other roads remained murramed. • Trunk Sewer had been developed along part of Naivasha Road. • Most residents used septic tanks and pit latrines • Piped water reticulation was along the main roads only with most people using water from Kerichwa Kubwa river for most of the household chores. • There was power and telephone lines along the main roads only. • Many educational institutions, both privately owned and operated by the Church organizations existed. A good example is the Precious Blood Riruta. 						
General Description	<ul style="list-style-type: none"> • There was evidence of multi-use spaces; spaces which met both residential and commercial needs. • Tenant purchase housing had degenerated into 						

	<p>commercial and high rise residential developments in most areas..</p> <ul style="list-style-type: none"> • Approximately 4/5 of the housing was unplanned. • The activities of the Informal Sector were predominant • Environmental pollution and blight was evident.
--	---

The following **historical summary** is from –‘Housing’-a booklet prepared and issued by the Central Housing Board of Kenya:

- Up to 1964 Dagoretti was part of Kiambu District; land was privately owned in small holdings. The area still has a distinctively rural character with evidence of rapid urbanization taking place. The main townships in this area are Kawangware and Riruta satellite.
- Kawangware developed as a traditional market place within the original Kiambu district. With the advent of urbanization it has rapidly grown to include even residential housing.
- The Development of Riruta Satellite can be traced to 11/8/1959 when the new Dagoretti Satellite Township was officially opened.
- This settlement scheme was sponsored by the Kiambu African District Council. The main aim of this scheme was to house the growing number of Nairobi workers within reasonable distance of their place of employment. The Central Housing Board financed this project from emergency funds.
- The area was planned for self-contained suburbs with provisions for all the necessary facilities for urban life. Amenities planned for Riruta Satellite township included a market place, well run shops owned by individual Kikuyu, a club complete with a small sports ground and a cinema. Most of these facilities were not realized.

2.0 Problem Statement

*Urban Design Intervention is indeed a complex undertaking. In spite of the many attempts at resolving the problems of the urban space there seems to be no workable resolution. The Satellite-Kawangware area is a typical peri-urban area. It experiences all the common problems of urbanization. Many plans have been tried here including the establishment of a township by the Central Housing Board-Africans in the 1950s. All these plans have fallen short of meeting their target-resolving the problems of urbanization. Urbanization problems still persist. Urban designers seem helpless. The conventional Architect has failed. Planners don't seem to do much. The local authorities insist on applying outdated planning and regulatory mechanisms, which have not only failed to resolve the problem, but also contributed to its magnification. The resident communities blame the Local Government for being insensitive to their plight. The Local Government blames the Central Government for not empowering it enough to enable it resolve the various problems of Urbanization. **All groups however agree that the incessant problems of Urbanization (Inadequate supply of housing, infrastructure, health services, food, delinquency, drug abuse, crime, overcrowding, general lawlessness, unemployment/underemployment and environmental degradation.) including Urban Poverty need urgent and effective resolution.***

It can therefore be asserted that the problems of urbanization (Inadequate supply of housing, infrastructure, health services, food, delinquency, drug abuse, crime, overcrowding, general lawlessness, unemployment/underemployment and environmental degradation) call for urgent intervention.

Furthermore the problem of Urban Poverty has also been identified as a cause of great concern in this area. Urban Poverty is however not a new problem. Poverty in general was declared a national problem at independence. However past efforts at alleviating poverty in Kenya have not achieved the desired results. Since the 1970s the government has pursued policies that have elements of addressing problems of the poor. For instance, the development plans since the 1970s, (1970-74; 1974-78; 1979-83; up to the current, 2000-2003) have always made efforts to alleviate poverty in Kenya but have lacked elaborate implementation mechanisms. Policy papers such as the Sessional Paper no. 1, 1985 (*Economic Management for Renewed Growth*), No. 2 of 1992 (*Small Enterprise 'Jua Kali' Development*), No. 2 of 1996 (*Industrial Transformation to the Year 2020*), No. 1 of 1994 (*Recovery and Sustainable Development*) and Social Dimensions of Development (S.D.D.) Report, 1995, have similarly faced the same fate. It has been realized too late that these efforts have not borne fruitful results. Because of this the Government declared Poverty a National Crisis in 1999.

'Development Partners' have also realized that years of injection of foreign capital in terms of aid, and soft loans has not made any impact in alleviation of poverty especially in African countries. If anything, it has made the situation worse.

One can therefore ask the following questions:

- What went wrong?
- Why have the previous programs failed?
- What can be done to address the situation?

The current key phrase in world economic circles is *Poverty Alleviation*. World attention has shifted to addressing issues of poverty, and development sponsors are currently geared to supporting programs that will alleviate poverty.

The proposed Urban Design intervention in the Satellite-Kawangware area addressed the issue of Urban Poverty as a way of attempting to resolve the other problems of urbanization. '*Poverty Alleviation*' was therefore chosen as an appropriate theme at this point in time.

Definitions suffice at this juncture:

Urban Poverty is a situational syndrome characterized by the following:

- Poor Services-water supply, sanitation, poor housing
- Low incomes and lack of access to employment and credit. (*Income Poverty*)
- Lack of land tenure
- Poor access to health services
- Lack of access to educational facilities
- Poor nutrition and inability to afford appropriate food and inadequate food consumption. (*Food Poverty*)
- Overcrowded living conditions. (*Housing Poverty*)
- High mortality and morbidity rates
- Low educational levels
- High unemployment and underemployment
- Widespread marginalization

Urban Poverty cannot therefore be dissociated from Housing Poverty, Income Poverty and Food Poverty.

Housing Poverty and Income Poverty are typical Characteristics of Urban Poverty. Food Poverty is taken as part of Housing Poverty, and will therefore not be defined separately.

Housing Poverty is conventionally defined as the lack of proper housing comprising two habitable rooms(at least) with the necessary infrastructural services like roads, water electricity e.t.c. A habitable room is approximately 7.5 Sq. M. Conventionally such a room must be constructed of technologically acceptable building materials(Concrete, stone etc.)By definition therefore any abode which does not meet these standards is not proper housing.

Housing Poverty is also typical to overcrowded abodes which is a characteristic of the settlements in the Satellite-Kawangware area. Housing Poverty has also resulted from the demand for housing in the area which has far outstripped supply. This demand has been caused by high populations arising from migrations, either rural to urban or urban to urban.

Income Poverty is a manifestation of the level of affordability of basic needs. According to the Urban Household Survey(1982-83) the cost of basic needs(in urban areas) was Ksh.2,648 per month. This figure has varied upwards with the years. Since housing is a basic need, therefore any person who realizes an income below Ksh. 2,648 per month cannot therefore afford decent housing hence experiences Housing Poverty. Housing Poverty is evident in the Satellite-Kawangware area.

Income Poverty also contributes to lack of access to proper education, health services ,water supply etc. hence Urban Poverty. Furthermore access to funds(credit) for shelter is limited. Qualifying terms for mortgage, for instance, are too stringent to be met by the low income groups in this area. The inadequate resources in relation to demand for housing development, inability to finance house loans (low affordability) and high interest rates on mortgages have led to Housing Poverty in the area.

The criteria for poverty in general has been developed by the *Welfare Monitoring Survey* of 1994 and set benchmarks as follows:

Any person who earns below the following amounts is classified as poor.

- Ksh. 980 per month in the rural areas.
- Ksh. 1,490 per month in the Urban areas

That the residents of the Satellite-Kawangware area are poor cannot be stressed further. A quick look at the statistics from the *1999-2000 Population Census* reveals this even more clearly:

- In 1999 Nairobi had a population of 2,143,254 (pg. XXVII)
- Dagoretti district had a population of 240,509 (pg. 1-4). This was 11% of Nairobi's population.
- Nairobi had a population of 168,663 unemployed persons and 683,699 economically inactive persons, a total of 852,362.(pg. 3-2) It can be deduced that the Satellite-Kawangware area had a total of 93,759 unemployed and economically inactive people.
- The area of Dagoretti is 38.7 sq. Km. (pg. 1-4) This means that there are a total of 2,422 unemployed and economically inactive persons per square Kilometer in Dagoretti.
- It is estimated that 50% of Nairobi's population live in Informal Settlements and are therefore considered poor. This works out to 1,071,627. It can therefore be deduced that about 117,879 persons in Dagoretti are poor, or 49% of the population. Most of these poor people have helped generate the nature of the Satellite-Kawangware area as it is today. They have ventured into the Informal Sector, which is the mainstay of the economy of the area.

It is therefore evident that any urban intervention in the Satellite-Kawangware area must address the issue of Urban Poverty.

The Kenya Government, in its '*Interim Poverty Reduction Strategy Paper for the period 2000-2003*', (June, 2000) states thus:

- The poor constitute slightly more than 50% of the population of Kenya (pg. 3)
- To help eradicate poverty in the urban areas increased access to *employment* and *self employment* in both the **Informal** and the Formal sectors will be vital. (pg. 11) The project was an attempt to design for the **Informal Sector** as a way of alleviating poverty in this area.

3.0 Aims and Objectives

This project was a demonstration of a possible resolution of the incessant externalities of urbanism. Poverty Alleviation was used as a vehicle to attain this goal. The main objective was to identify practical ideas and principles that would help in poverty alleviation. To this end, the following Urban Design issues with specific reference to the Satellite- Kawangware area were studied:

- **Human Settlements:**-defined as *a system of human activities*. This included all the activities that the residents of the Satellite-Kawangware area involve themselves in towards their endeavour to survive. It involved the study of all the systems and activities of man: residential, leisure, commercial, infrastructure and services.
- **Urban Planning:**-the process of *making choices* among *different priorities* given *limited resources* and towards *attaining certain goals*. The study was aimed at understanding the planning regulations at place; the regulations that govern developments in this area. These were then compared to the reality on the ground. The planning aspects studied were plot ratio, plot coverage, zoning measures and use of land.
- **Urban Land:**-all human activities occur on land and are dependent upon land. The extent and nature of such activities are reflections of the land's diverse physical characteristics and of myriad complementary and evolving human interests and abilities. The research was aimed at studying the various aspects of land in this area including current land use and land tenure methods.
- **Environment:**-man's choice of his environment is dependent on his background, culture, associations, utility and aesthetics. Environment must satisfy man's hunger, thirst, quest for security and value systems. It must be culturally relevant. The research was aimed at studying the levels of interaction of the residents in this area with their environment and how they have attempted to make use of it to sustain themselves.
- **Sustainability:**-all urban interventions must have the characteristic of renewability-a level of permanence(memory) and affordability. The study was aimed at understanding the various levels of sustainable developments at place in the area. This included technologies and agriculture.
- **Urban Economics:**-an understanding of the *location theory* of firms and households is important. This explains the factors which influence the development of economic activities where they are seen to develop. It also explains why households, specifically unplanned, develop where they do. It was therefore the aim of the study to analyze the current economic activities in the area and their location patterns.

- **History of the Urban Area:**-this is recorded in various urban artifacts, landmarks, nodes, edges, districts and paths. The study was aimed at analyzing the status of any artifacts, landmarks, nodes, edges, districts and paths in the area as a pointer to future developments and changes.

4.0 Methodology

The information that guided the design project was derived from empirical observations.

Details of human settlement patterns were observed unobtrusively. This information was then recorded in photographs that were used to guide the design as a whole.

Information was also drawn from written text, (published and unpublished) newspapers and magazines. This is because, to the extent of urban design, the media gives a record of current issues.

Information so gathered was translated into relevant design sketches and specific details. It should be stressed here that the main thrust of the design project was to identify the *practical ideas and principles* that would help in poverty alleviation and the resolution of the problems of urbanization.

5.0 Scope and Limitations

The project was limited to the Satellite-Kawangware area of Nairobi. It was concentrated along Naivasha road as the main spine. This area is a typical peri-urban area with characteristics similar to any peri-urban area in the third world. The total area of the site is approximately 200,000 Sq. M. (*Appendix. 4 pg.54*)

The project **does not** attempt to resolve the general housing problem in this area. It however attempts to demonstrate a possible way of planning for housing and commercial activities as adjacent spaces in order to **alleviate Urban Poverty**.

There were also limitations arising from lack of updated information from the Local Government. There were no relevant Part Development Plans for this area. There was no current Master Plan that would have broadly indicated the planning intentions of the Government. As a result, the author had to rely on empirical observations and earlier plans to generate this proposal.

6.0 The Client

The residents of the study area have formed the **Satellite-Kawangware Self Help Group**. This is a welfare organization whose main objective is to improve the livelihood of the members drawn from the landlords and the tenants in the area and members of various organizations already operating in the area. This was the client.

The formation of this group was a result of the following factors:

- The realization that the problems facing the members can only be resolved under an **umbrella community** structure and through **self-help**.
- Hard economic times which has seen many of the residents venture into small scale commercial ventures in a bid to augment their income.
- The growing importance of Naivasha Road and its potential towards income generation through trade.
- The deteriorating environmental conditions in this area.
- The need to provide communal and infrastructural services which can no longer be provided by the City Council of Nairobi or the Central Government.
- To develop a self-sustaining community, providing the basic needs, creating employment and generally addressing the issue of poverty.
- To enhance the already existing activities and plan for them in a bid to achieve an acceptable level of organization and controlled development.
- The success of the Karen-Langata group in taking care of the interests of the residents of the Karen-Langata area.
- To form a cohesive society and a friendly neighborhood for all the residents.

The following is a typical client characteristic:

Activities begin early in the Nyakoe family, a typical household in the Satellite-Kawangware area. Today is Friday. Nyakoe Mogotio, the father, wakes up at four in the morning. His wife, Njeri, prepares breakfast while he is washing up and dressing. She also wakes up Nyambane, their 10 year old son so he can buy local milk from Muriuki, a 'well to do' resident who keeps one grade cow at his backyard for milk. He also buys some cow legs from Owino, a local butcher who specializes in the 'not so acceptable' animal parts. The legs will make good soup for supper. After all this is what he can afford for the family owing to his level of poverty. Lunch is a luxury.

Njeri boils water in an old 'sufuria' using firewood for the three other children, Obiri, Nyariki and Mwangi who have to go to the local primary school. She gets the leftover ugali from the previous evening meal. This ugali forms a good meal in the morning especially when washed down with strong tea.

At five thirty, Nyakoe walks over to the house of Mulwa who owns ten 'mkokeitenis' (handcarts) for hire. Nyakoe has to be there early enough because he is not the only person willing to hire one of the handcarts. Being a Friday, transportation will be good business at the sprawling Kawangware market. A lot of farm produce will be coming from the outskirts of the city and the traders will need affordable transport services to the various outlets. The more trips he makes the more he will earn. Nyakoe works on the basis of the 'boundary system' wherein the first Ksh. 50 he gets goes to Mulwa. Anything beyond this boundary is his. There will be bribes to the Nairobi City Council 'askaris' who like harassing them on such days. There are also tough gangsters who portend to 'own' the gates of Kawangware market. These will also have to be bribed otherwise he risks being severely beaten up.

As soon as Nyakoe leaves Njeri picks her water bucket and leaves to the 'Kerichwa Kubwa' river to fetch some water. There is reliable piped water source in this area. On return she instructs her three children to go to school. Nyambane does not go to school. He goes to 'work' in the city, though her mother suspects that he has become a street boy. She does not mind this because he comes home with as much as fifty shillings on a good day however she wishes her son could be engaged in a more acceptable occupation. Njeri then goes to sell vegetables by the roadside where she uses stones carefully placed as her display surface. Today Nyambane informed her that he will not go to town. He will instead go and try out his hand at car washing along Kinyanjui Road.....

Business was good today for Nyakoe. He was not only able to pay Mulwa his borderline fees, but also brought home three hundred shillings. He is exhausted and finds Njeri preparing porridge for him and the children from school. The children arrive at six from school and immediately tend to the chicken that they keep at a corner in their one roomed 'mabati' house. The house sometimes leaks when it rains, but they have to do with this because they cannot afford the so called permanent houses the government approves of. Moreover the construction methods are too complicated for him to understand and use. He remembers how he constructed this house. None of the 'mabatis' were new. The timber framing was drawn from off-cuts that are widely available near Kawangware Market. He only had to buy nails. The rest only required his personal effort. In exactly three days the house was up. He did not have to worry about the location of the house. He knows the land belongs to somebody, but he does not know who he is. In any case the owner of the land has never shown up for the last thirteen years he has lived here.

Nyakoe sips his sugarless porridge then decides to 'take a walk.' Today being a Friday, 'member's day', he will go to Kabiria market to partake of a tin of 'mchozi ya simba', a local but illicit brew to soothe his paining joints. Tomorrow will be Saturday and he will not go to work because he is a member of the Seventh Day Adventist Church. He however cannot remember when he last went to Church. He knows Mulwa will also be at Kabiria joint. He suspects the joint is owned by Mulwa. He knows this business is illegal to the government. He however does not understand why the government should send its policemen to arrest those who conduct this business. If the said government is serious about resolving the problems of poor people then why should it disturb those who are trying to help themselves? He bears the aim of patronizing the more trendy bars along Naivasha Road but for the cost of formal beer, which however does not knock him off as fast, a perfect excuse.

Njeri prepares the rest of the family for bed. He ensures Nyakoe leaves behind enough money to last the whole weekend lest he spends all of it in Kabiria. Being a Friday, Nyambane who also prides himself at being a man will not come home at all. From 'work' he will probably go to town and mug some people to augment his 'income'. He wonders why people have to work so hard in school to earn a living whereas what one needed to do is to use some of his strength to get some money. He reckons he is much better than his school-going agemates who are still under the jurisdiction of teachers.

At ten o'clock the family is fast asleep save for Njeri who somehow cannot sleep early nowadays. She hears Nduta, their neighbour's teen-age daughter leaving for 'work' in town.

At three in the morning, Nyambane has not returned home. Nyakoe lumbers in mumbling inaudibly and Njeri wakes up to welcome him. Her mother taught her that a husband must be welcomed home at all times. However today, the face of Nyakoe is swollen, having been either beaten up by thugs around 'Trends' bar or as a result of a quarrel with his 'mchozi ya simba' colleagues. It is not the first time however. She is used to seeing her husband in such conditions and worse.....

7.0 Research Findings

The residents of Satellite-Kawangware area are engaged in various activities all of which are aimed at addressing the problem of Urban Poverty and the negative externalities of urbanization as earlier outlined:

- **In an attempt to resolve Housing Poverty**

1. Residential Developments (*Appendix. 5* , pg. 55)

There is a rapid development of residential spaces in this area. Due to high demand for housing many landlords have taken to building flats for rental purposes.

In addition there is a proliferation of unplanned residential developments in this area. Most of these are conventionally classified as slums. They employ relevant and affordable technologies.

2. Developments of Multi-Use spaces

These are mainly located along the main circulation paths like Naivasha Road. They involve the use of commercial spaces for residential purposes. This is the concept of living and working in the same place.

- **In an attempt to resolve Income Poverty**

These are activities that create employment hence income to be otherwise unemployed and underemployed.

1. Merchandising (*Appendix 6* , pg. 56)

The retail and wholesale of industrial products mainly along Naivasha Road represent this. The demand for such products is evident. The shops and kiosks that store these products are relatively small in area as compared to those within the C.B.D. Most of these stores have been developed from the residential spaces. The concept of multi-use space was noticed. Most of the stores also doubled up as living quarters.

2. Light Manufacturing (*Appendix.7* , Pg. 57)

There are a number of workshops along Naivasha Road specializing in furniture and joinery, metalwork, leather etc. These workshops have developed as a result of the Informal Sector in this area. They employ a great number of people. This sector also meets the needs of people from far flung areas of the city.

3. Service Sector (*Appendix. 8* , Pg. 50)

This is represented by service activities like carwash, hawking, open air garages etc. All these help generate income hence attempting to alleviate Income Poverty besides creating self employment and providing the much needed services.

There are also potters who transport goods from one place to another within the area. The services of the hand-carts and pick-up trucks cannot go unnoticed.

4. Collection and Recycling of refuse

This is another income generating activity observed in the study area. The Riruta Environmental Group and other individual Refuse Handlers are involved in this activity. The refuse is collected, sorted, and sold to industries to be recycled.

• **In an attempt to resolve Food Poverty**

1. Urban Agriculture (*Appendix. 9* , Pg.59)

Urban agriculture is evident in the form of crop farming near the Kerichwa Kubwa River, rearing of goats, sheep and poultry. The spontaneous markets along the various paths and at Kawangware offer the products from this sector for sale reliably and affordably.

It was also observed that Urban Agriculture is an important component of the residential compounds. Most of the products from this sector are offered for sale locally.

The planting of fruit trees albeit at a limited scale was noted. Avocado trees, Mango trees and Orange trees are privately grown by the residents.

A few residents keep cows for milk under the zero-grazing system within their compounds. The milk is sold locally.

It is therefore evident that the residents of this area have attempted within their means to address the problem of Urban Poverty.

There are also attempts at addressing other negative externalities of urbanization:

1. Environmental Pollution and Degradation

The Riruta Environmental Group is active in this area. It collects refuse and plants trees. Members of this group are drawn from the residents of the area.

The services of individual refuse handlers was also noted. These collect refuse, sort them out and sell them to various factories and similar establishments for possible recycling.

2. Social Malaise

Problems of drug abuse, delinquency and general lawlessness are mainly addressed by the various Churches in the area. They employ a religious approach through teachings of good and acceptable morals. This is however not very successful as the same problems persist.

An attempt at taking care of abandoned children was noted. The Riruta Shed for the Abandoned and Orphaned Children is situated at the Riruta Shopping Centre. It is sponsored by the Church and other well wishers. This helps address the problems of delinquency and lawlessness that would otherwise have increased had such children not been taken care of.

Most of the problems emanating from drug abuse, lawlessness and related crime are handled by the administrative structures which include the provincial administration and the Chief. For this purpose there is a police station at Riruta Shopping Centre and in Kawangware area, and a Chief's camp along Naivasha Road.

Besides all the above there are also other aspects of human settlements observed in the area:

1. Social Activities (Appendix. 10 , Pg. 60)

Bars and restaurants, playgrounds, social clubs etc represent this.

The Satellite-Kawangware area is famous for the traditional 'Nyama Choma', very popular with a majority of city residents who frequent the 'choma' joints during the weekends. The young in body engage in various sporting activities such as football, netball, basketball, volleyball, and bodybuilding. In addition to these, the Green Valley Country Club along Kinyanjui Road represents the 'upper class' social joints. There are also a number of bars offering both legal and illicit brews.

2. Institutions (*Appendix. 11* , Pg. 61.)

There are financial, religious, educational and health institutions in this area. The K-Rep. Bank and the Cooperative Bank are the two main financial institutions in this area. Educational Institutions include, among many others, the Precious Blood High School, St. Eunice Academy, Riruta Satellite Academy, Kamrose School, Gichagi Primary School, New Splendid College, Starkid Academy, Computer Training Services, Le Pic School among many others. Religious institutions include The Deliverance Church, The Presbyterian Church of East Africa (P.C.E.A.), African Independent Pentecostal Church of Africa (A.I.P.C.A.), The Seventh Day Adventists (S.D.A.), The Apostles Church, African Inland Church (A.I.C.), Rhema Fellowship Church, The Orthodox Church, African Christian Church and The Church of Jesus Christ of Latter Day Saints (L.D.S.) (Mormons) among many others. The Mid Hill Nursing Home and the Riruta Medical Centre among others provide health services in this area.

3. The Construction Industry (*Appendix. 12* , Pg. 62)

This is represented by the open-air hardwares dealing in all types of construction materials and the various workshops servicing the same industry.

There is evidence of construction projects in site. Most of the developments are residential in nature, either in concrete and masonry or timber off-cuts and iron sheets roof.

8.0 The Brief.

The following brief was formulated alongside the theme of this proposal; *Poverty Alleviation*.

- **To alleviate Housing Poverty**

1. Residential Developments

It was necessary to design residential houses which are affordable and acceptable. These developments were to employ relevant technologies and materials, employing the available labour resources and individual self-help concepts.

The residential houses were to be easily constructed with little external support.

2. Multi-Use spaces

There was need to design spaces which will not only be used for residential purposes but also be easily adaptable to meet other needs at minimum cost.

Within the residential spaces, there was to be limited fixed use of any space. A space designed as lounge should be able to be used for sleeping as need arises.

- **To alleviate Income Poverty**

Various activities which generate income needed to be designed for:

1. Merchandising

There was need to design for merchandising activities at appropriate locations within the study area.

Some of the spaces so designed were to be part of the residential spaces. These will generate income and provide employment.

2. Light Manufacturing

There was need to design for workshops along Naivasha Road from where components of furniture and metalwork would be made to meet the prevailing market. The residents would realize income from such spaces besides gaining training and employment.

3. Service Industry

Service activities like carwash, hawking, open air garages etc. needed to be designed for at appropriate locations because they help in creating self employment and provision of the much needed services.

There are also potters who transport goods from one place to another within the area. These, together with the services of the hand-carts and pick-up trucks had also to be designed for.

4. Collection and Recycling of refuse

This is another income generating activity that needed to be designed for. There needed to be collection and recycling points of refuse so that the same could be sold to generate income.

5. The Construction Industry

The proliferation of hardwares and sheds for construction materials along Naivasha Road could not be ignored. These needed to be relocated at appropriate spaces.

• **Alleviating Food Poverty**

1. Urban Agriculture

There was need to design for urban Agriculture at appropriate locations.

The planting of fruit trees was also to be considered as part of Urban Agriculture.

Besides these, the negative externalities of urbanization needed to be addressed as part and parcel of the intervention:

1. Environmental Pollution and Degradation
2. Social Malaise
3. Lack of adequate infrastructural services
4. The issue of image of the area derived from the nodes, paths, districts and edges in the area.

Other aspects of human settlements that needed to be designed for were:

1. Social Activities

Bars and restaurants, playgrounds and social clubs fall under social activities which needed to be addressed as part of the intervention.

For the purposes of administration and coordination in the whole area, a community centre needed to be provided for. This centre would accommodate the following functions:

- Coordination offices for the **Satellite-Kawangware Self Help Group**.
- Offices for the Kawangware Landlords' Welfare Association.
- Office for the Riruta Environmental Group.
- Financial office to be occupied by staff from **K-Rep** bank, which will advance small loans to the small-scale traders in this area.
- A community outpatient clinic to be manned by qualified staff recommended by the Nairobi City council.
- A planning and design office from where all developments will be controlled. Representatives of the City Council and the Satellite-Kawangware Self Help Group will jointly occupy this.
- A hall for indoor games: basketball, netball, martial arts, and gym. Etc.
- A Police Post
- An Information Technology outlet accommodating cyber-cafes.
- An education centre for public lectures.

9.0 Conclusions and Recommendations

The following design resolutions are recommended for this intervention:

- To alleviate Housing Poverty

1. Residential Developments

The residential houses proposed are affordable and would be acceptable. These developments will employ relevant technologies and materials, employing the available labour resources and individual self-help concepts.

The residential houses will be easily constructed with little external support, and using locally available materials.(Fig. 1a-1f)

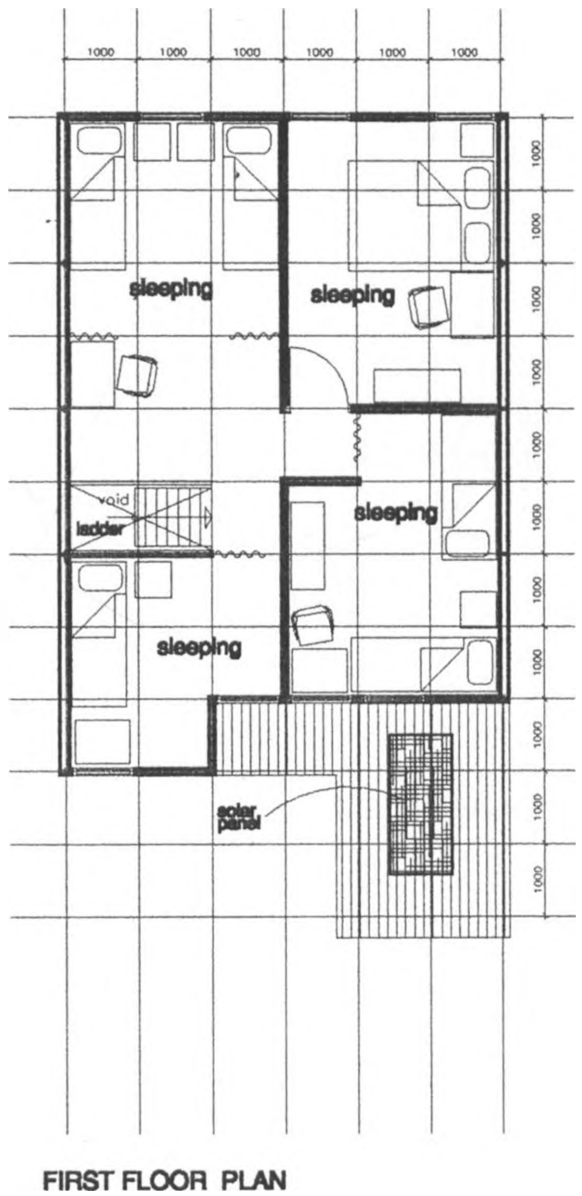
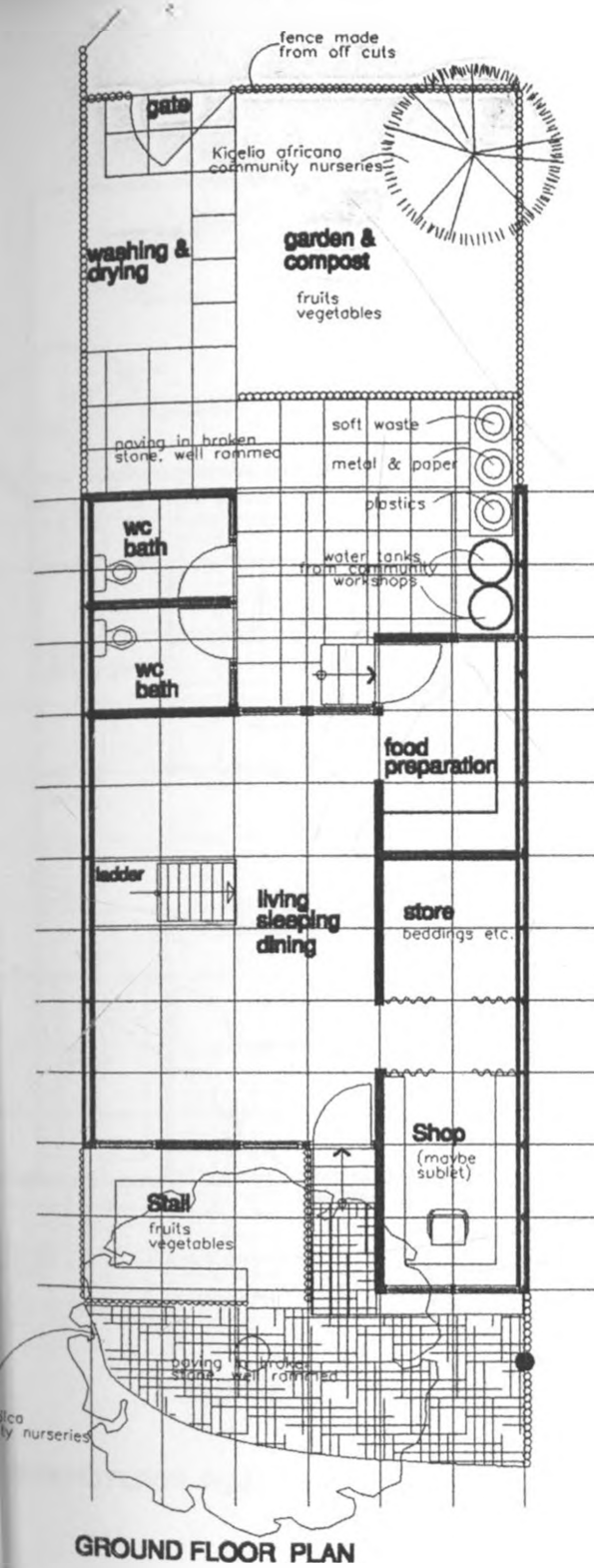
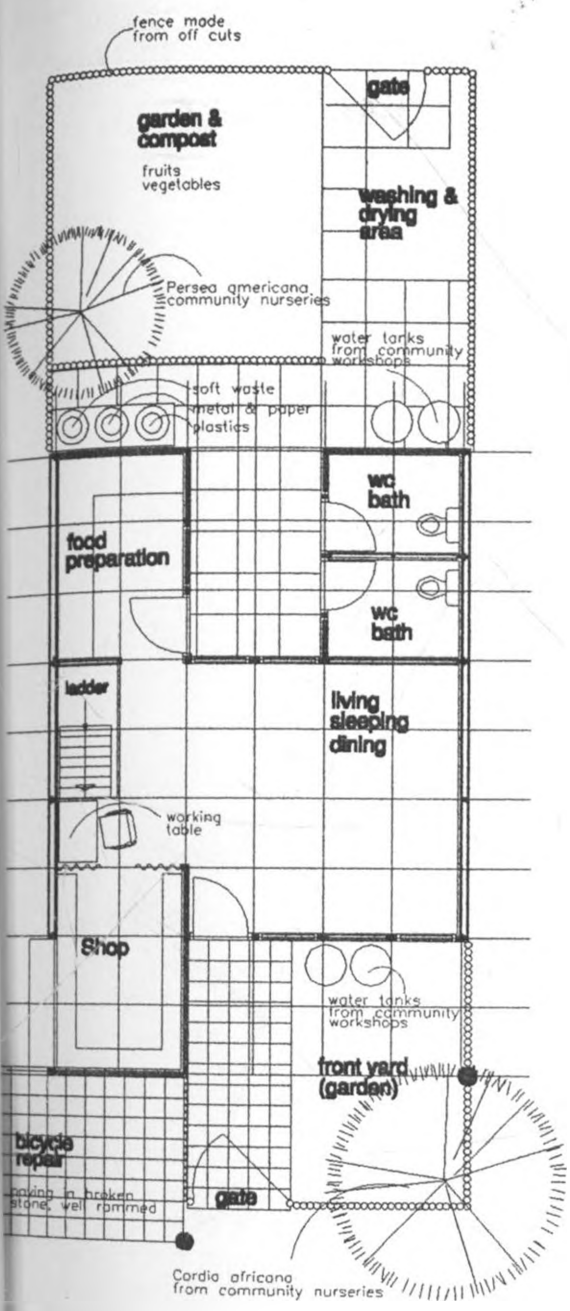
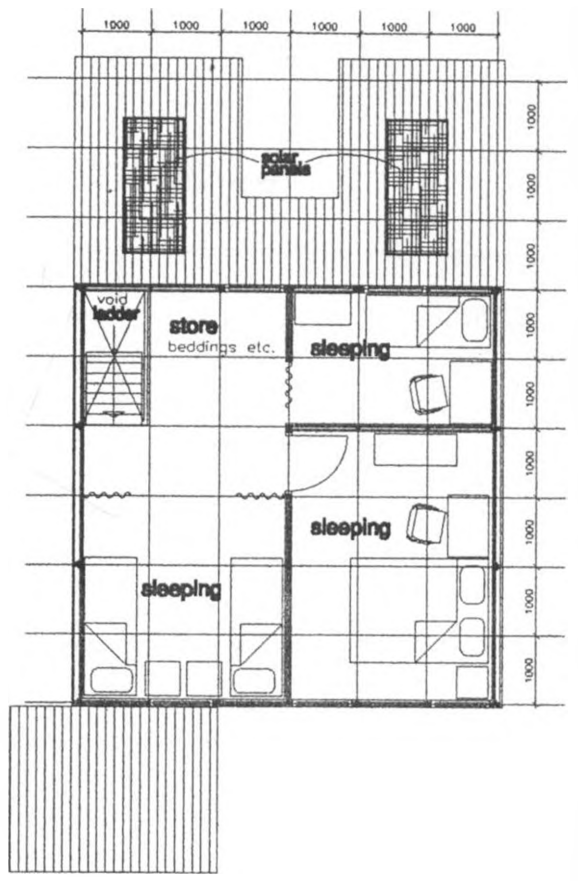


FIG. 1a-DWELLING UNIT TYPE 1

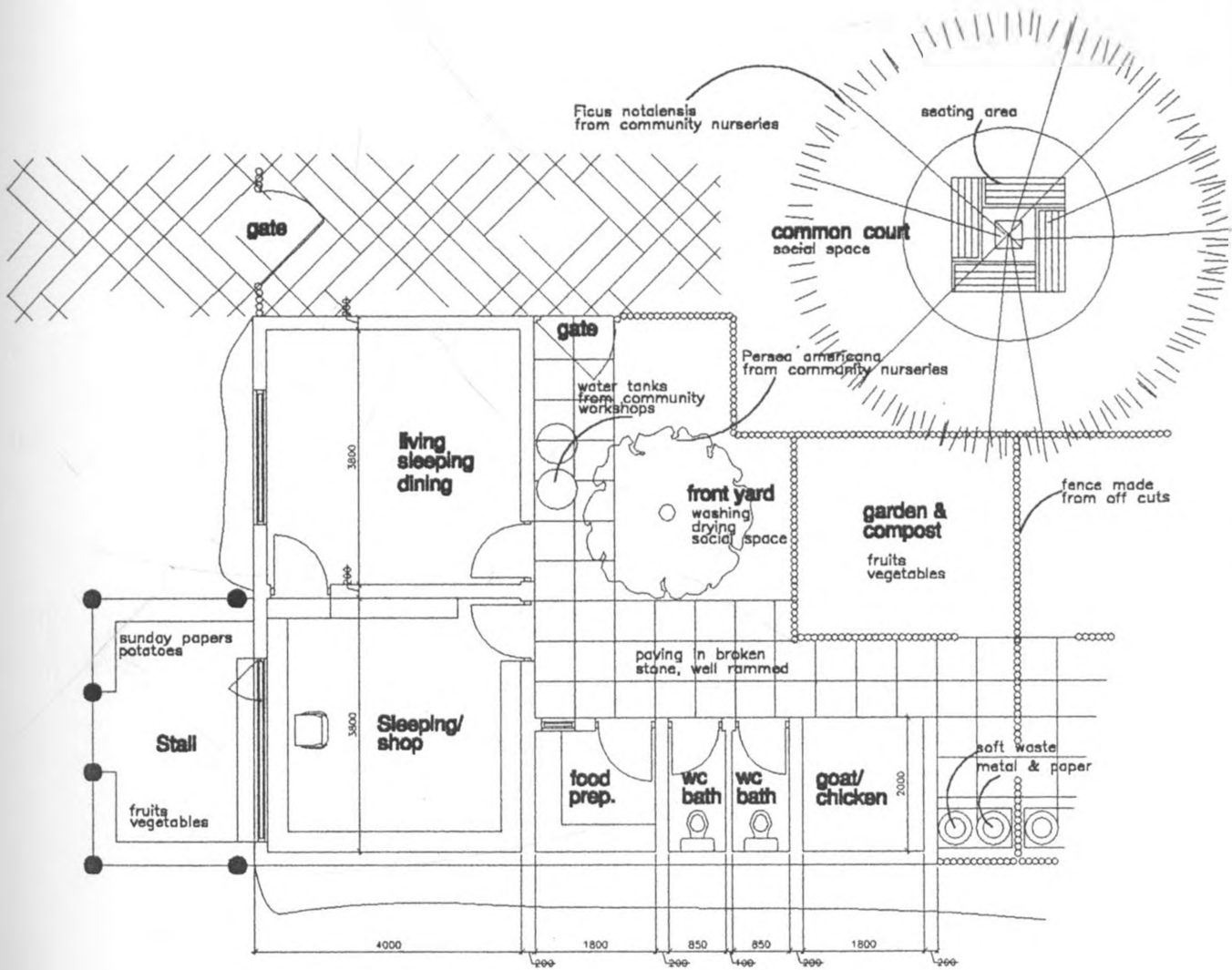


GROUND FLOOR PLAN



FIRST FLOOR PLAN

FIG. 1b-DWELLING UNIT TYPE 2



GROUND FLOOR PLAN

FIG. 1c-DWELLING UNIT TYPE 3

UNIVERSITY OF MAIRDET
ADD LIBRARY

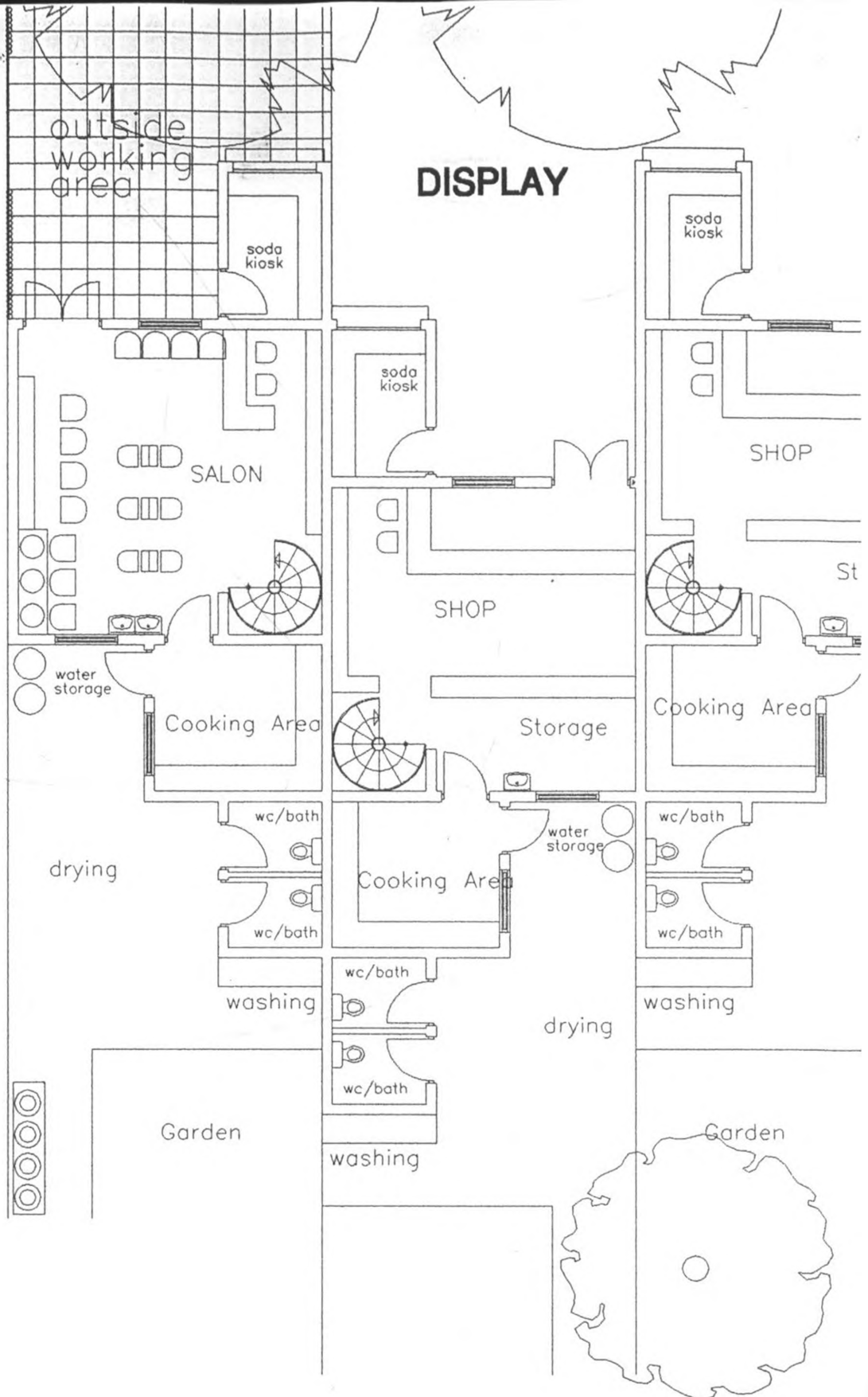


FIG. 1d-comercial-residential units

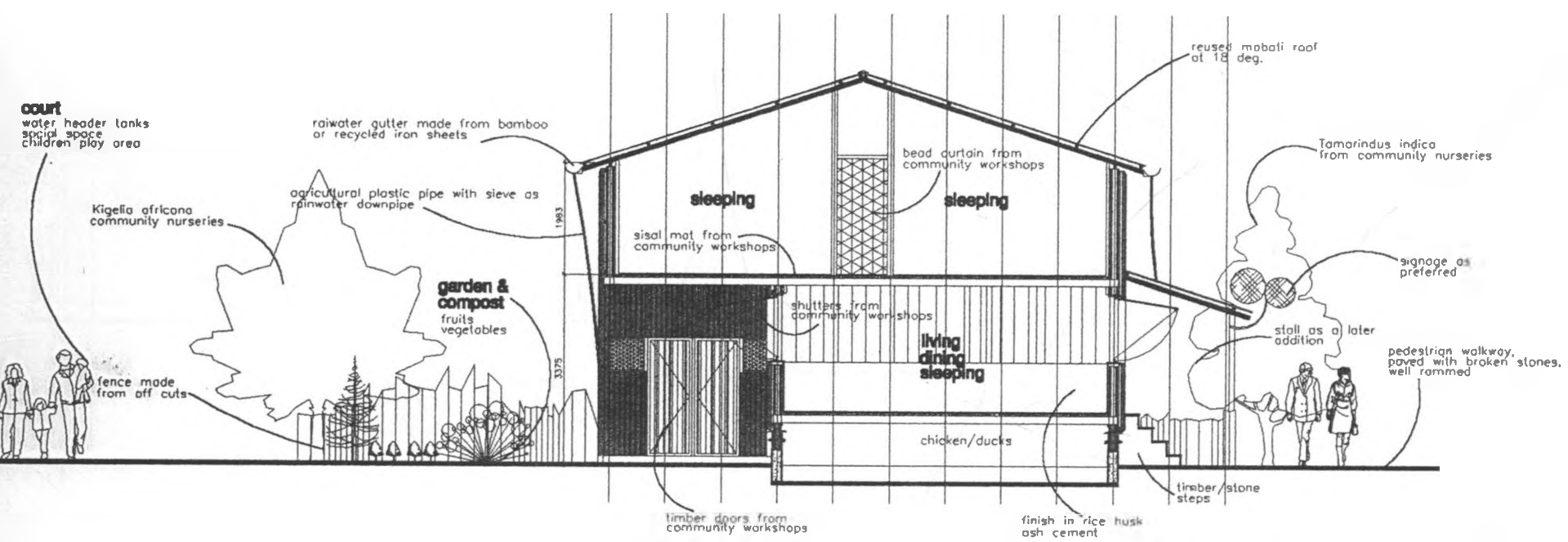


FIG. 1e-DWELLING UNIT -TYPICAL SECTION-ELEVATION

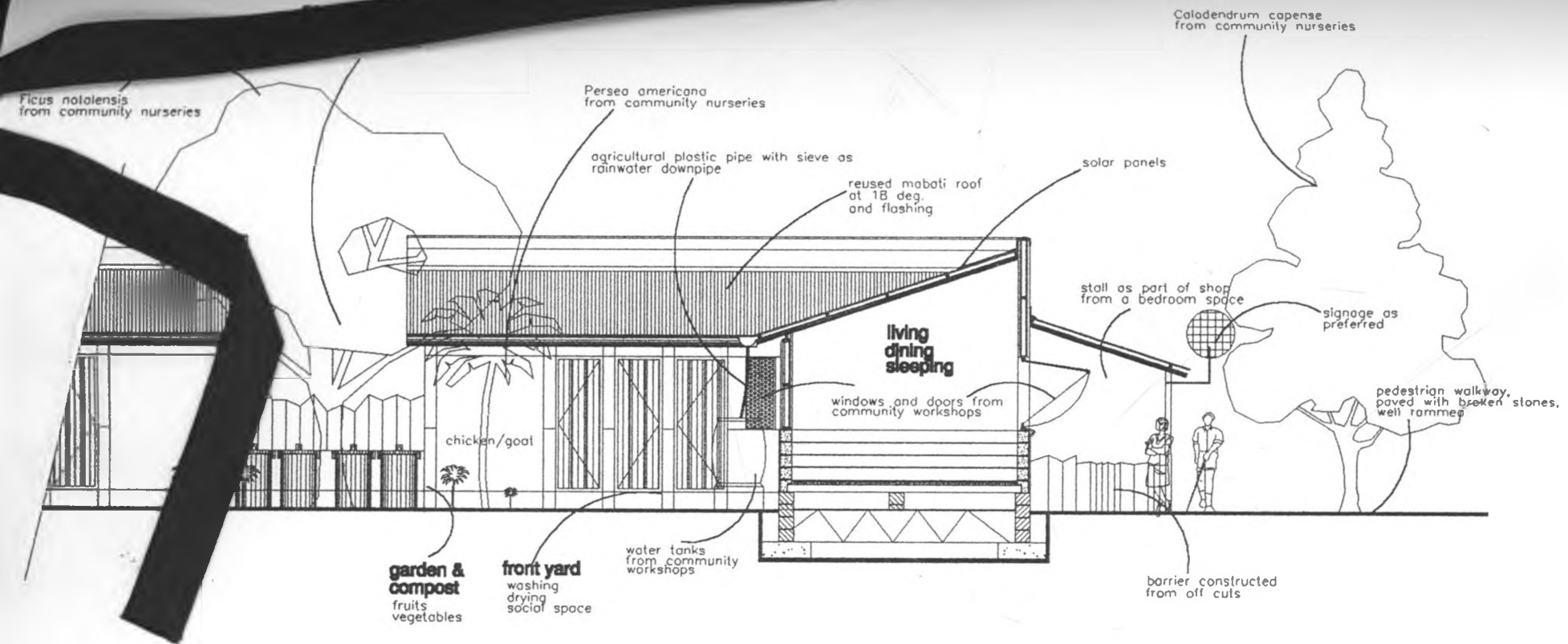


FIG. 1f-DWELLING UNIT TYPE 3 -TYPICAL SECTION-ELEVATION

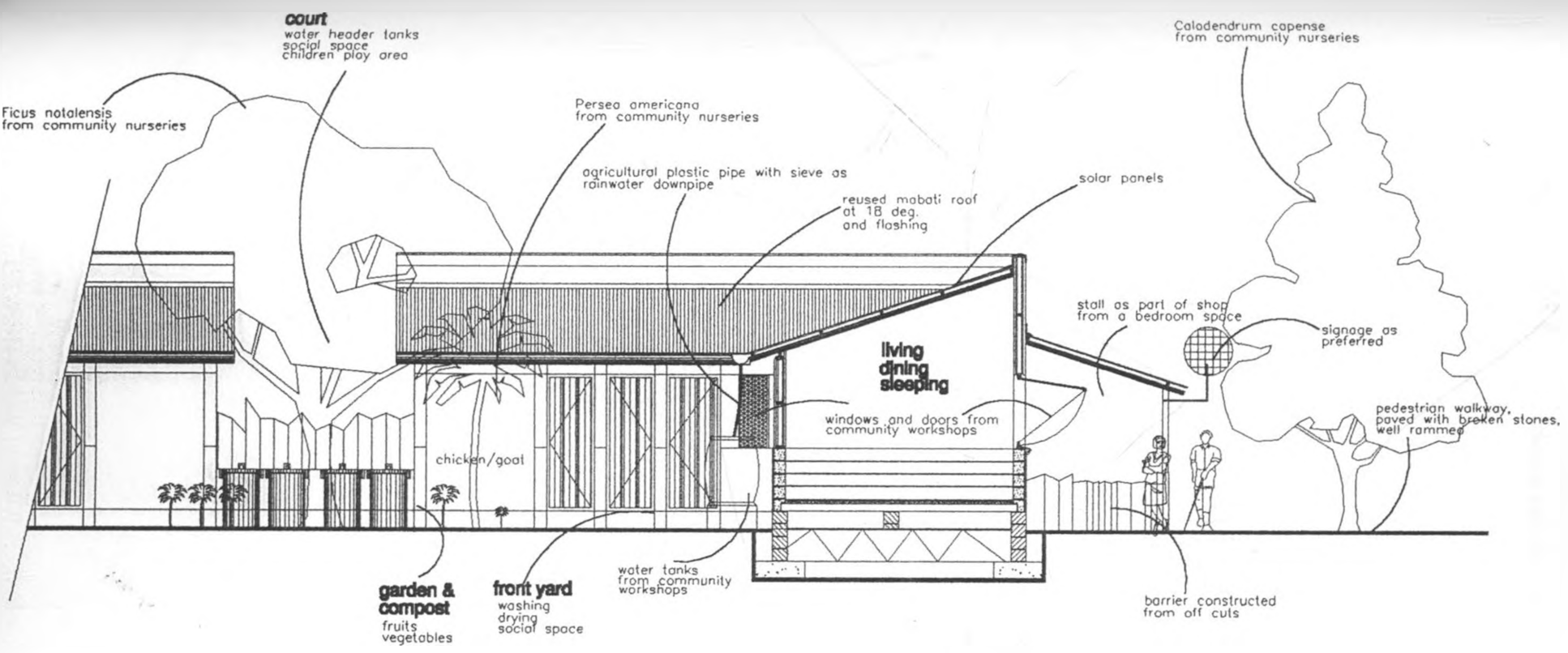


FIG. 1f-DWELLING UNIT TYPE 3 -TYPICAL SECTION-ELEVATION

2. Multi-Use spaces

Some of the residential units can be adapted to suit commercial purposes. For example a lounge or dining can also be used for sleeping when necessary.(Fig. 2a-2c)

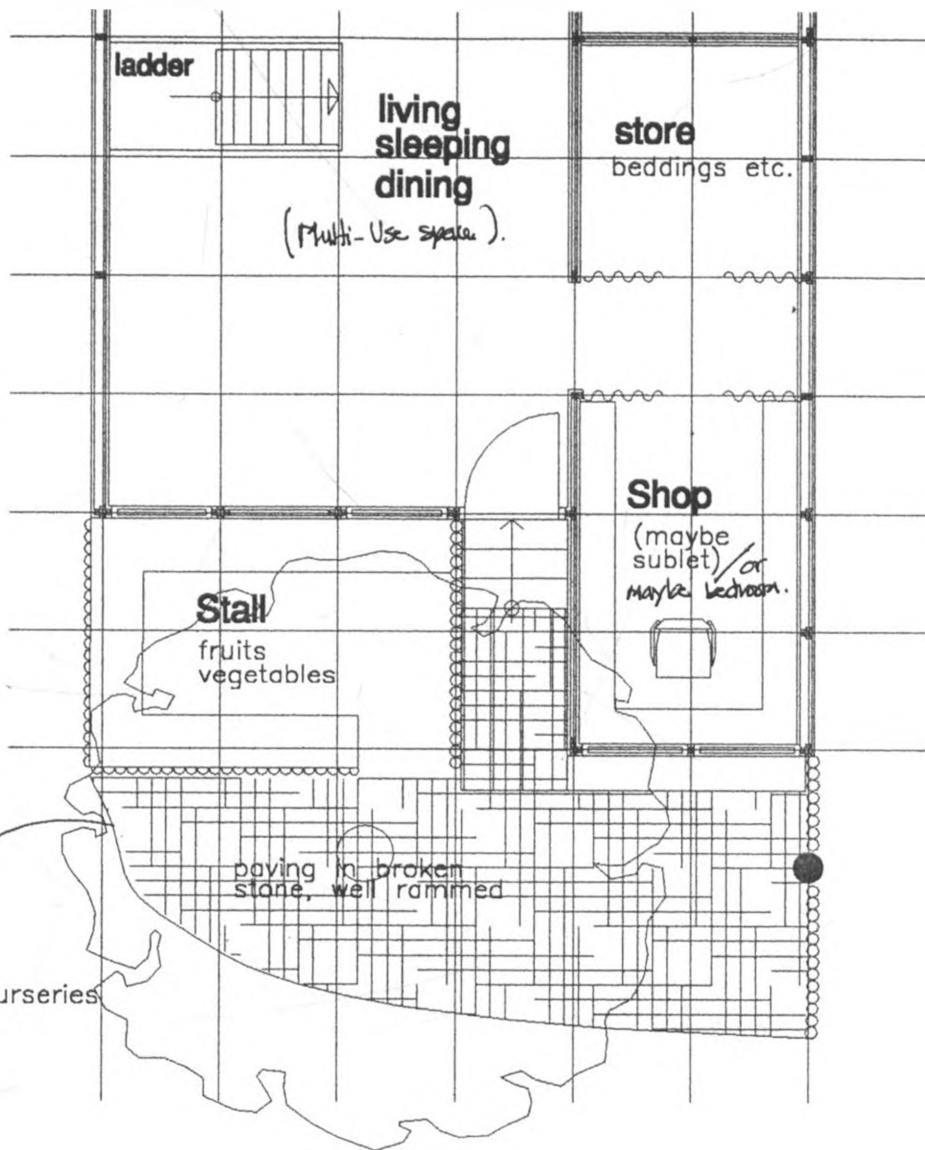


FIG. 2a-a bedroom becomes a shop

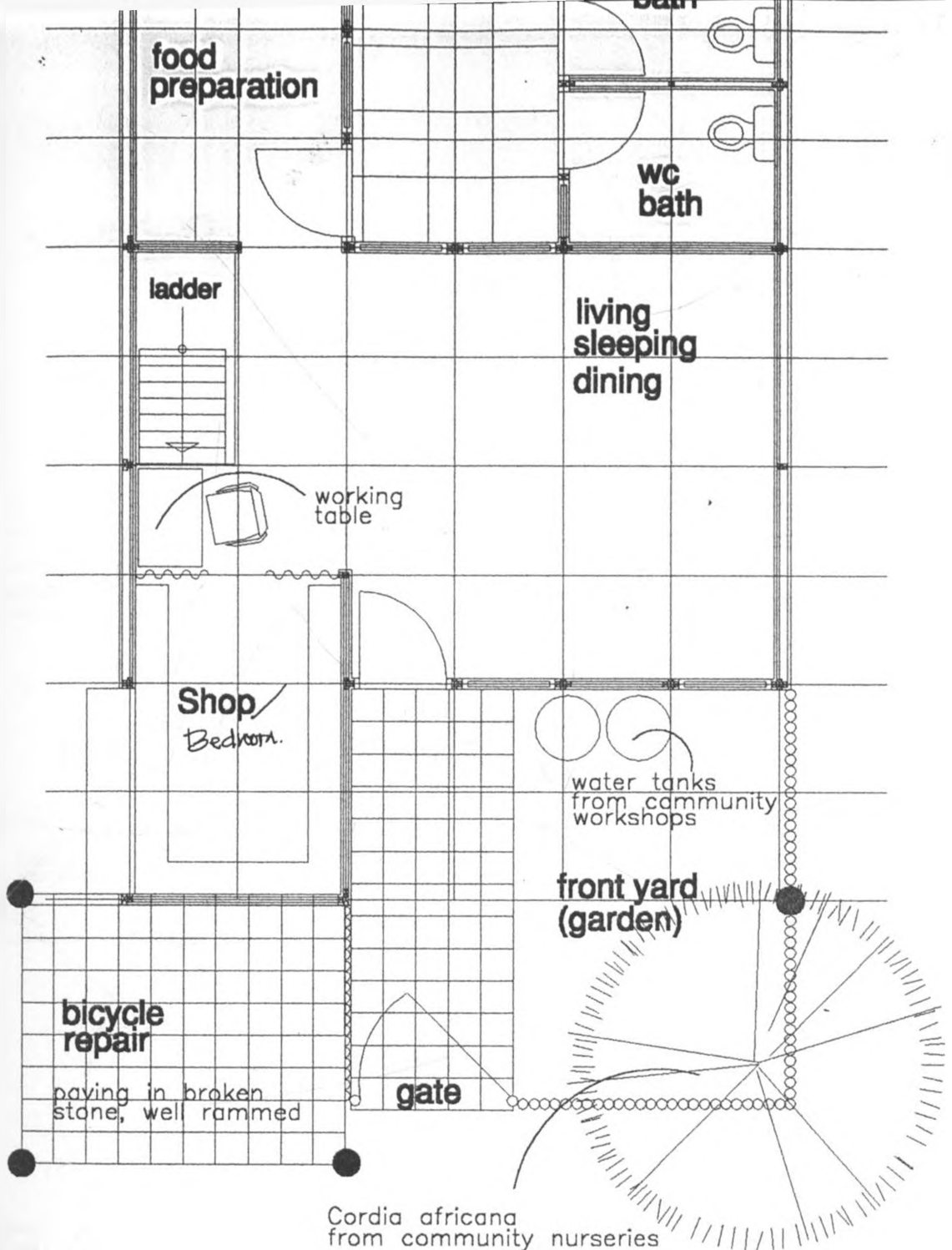


FIG. 2b-a bedroom becomes a shop-lounge space also used for sleeping

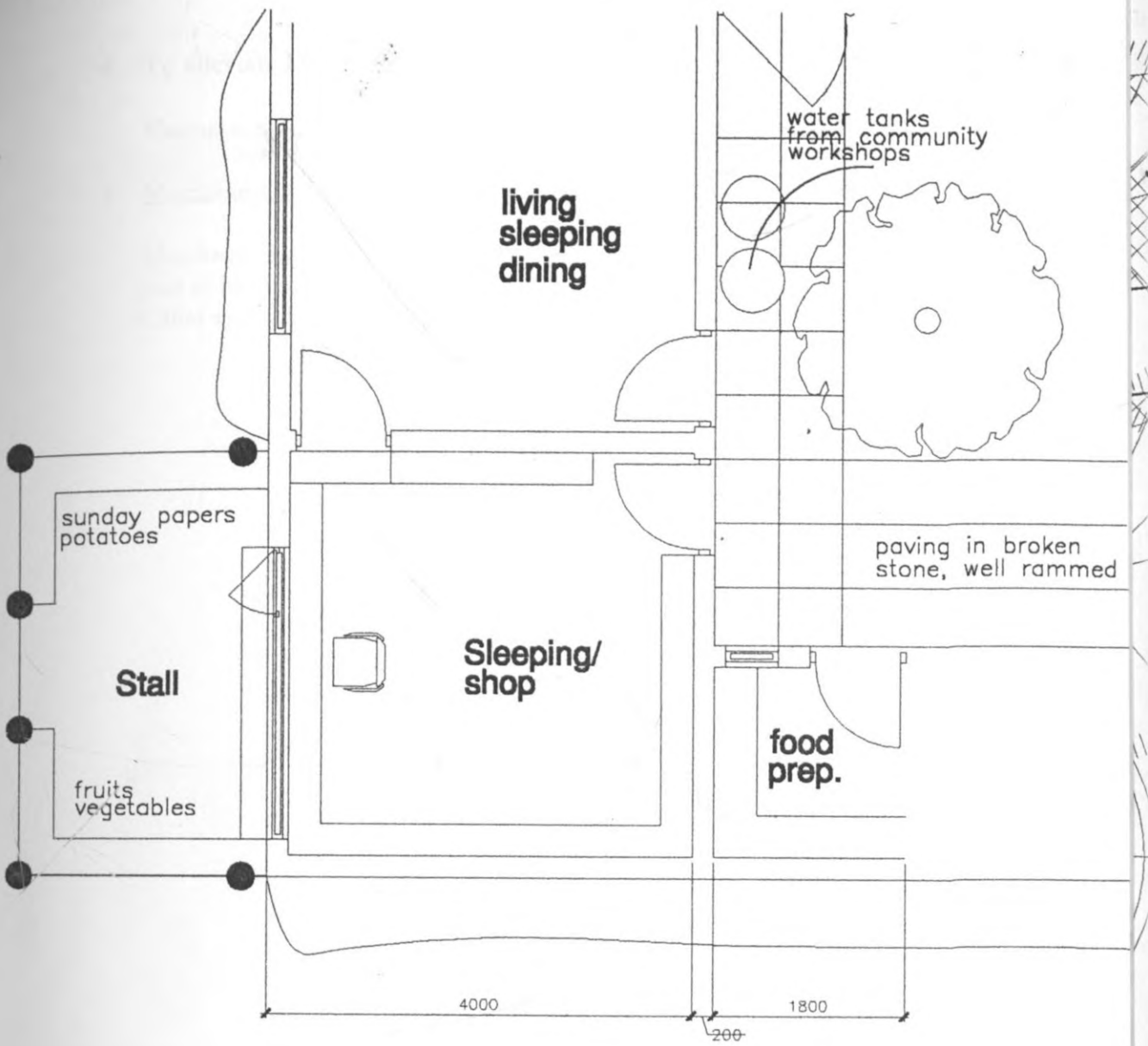


FIG. 2c-multi-use spaces

- **To alleviate Income Poverty**

Various activities which generate income have been designed for:

1. Merchandising

Merchandising activities have been mainly located along Naivasha Road as part of the commercial precinct.(fig. 3a)

Other spaces have been provided as part of the residential precinct.(fig.3b)

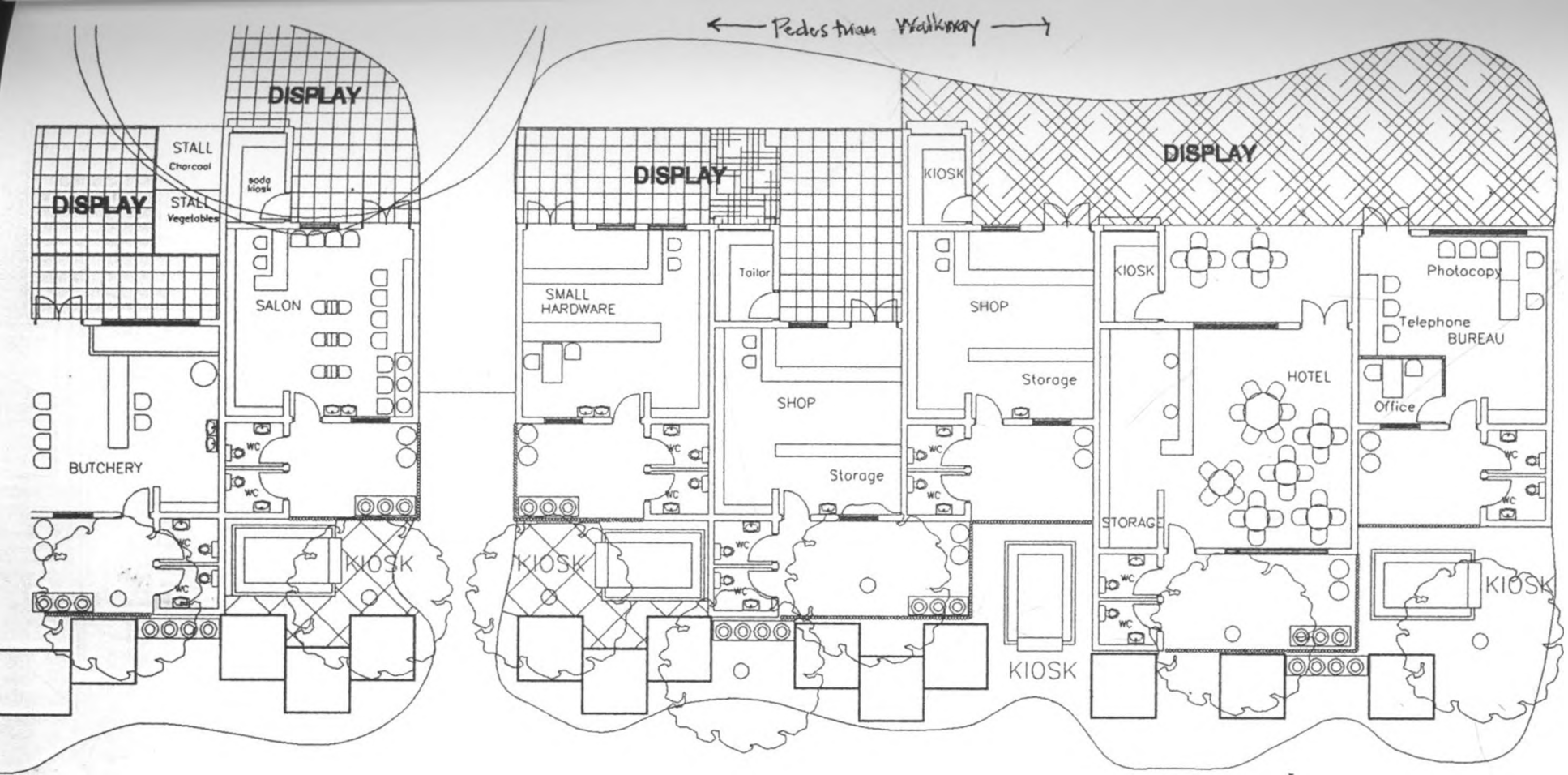


FIG. 3a-merchandising spaces near Naivasha Road.

- the various stores offer various goods.

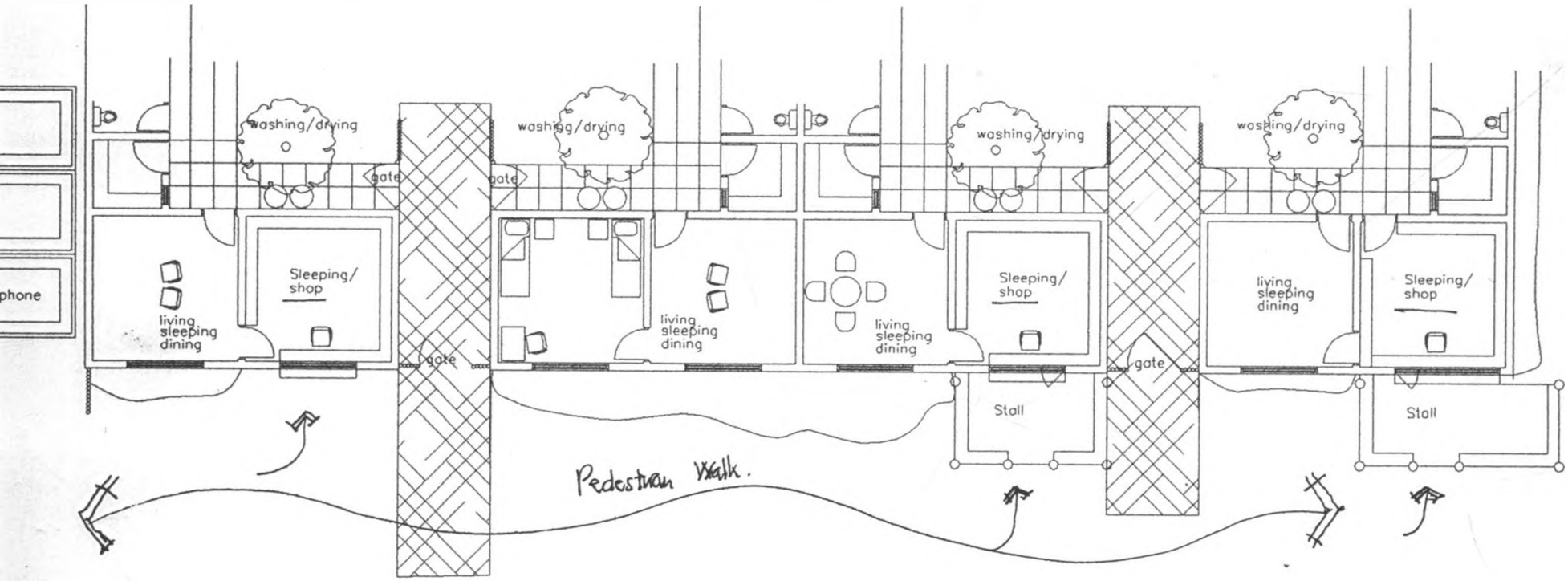


FIG. 3b-merchandising spaces as part of residential precinct

2. Light Manufacturing

it is recommended that workshops for both metalwork and woodwork be designed for along Naivasha Road to meet the need for metal and timber products. Some of these workshops will also act as training facilities for the youth so that they can be self –employed. (fig. 4a-4b)

COMMUNITY TRAINING WORKSHOPS

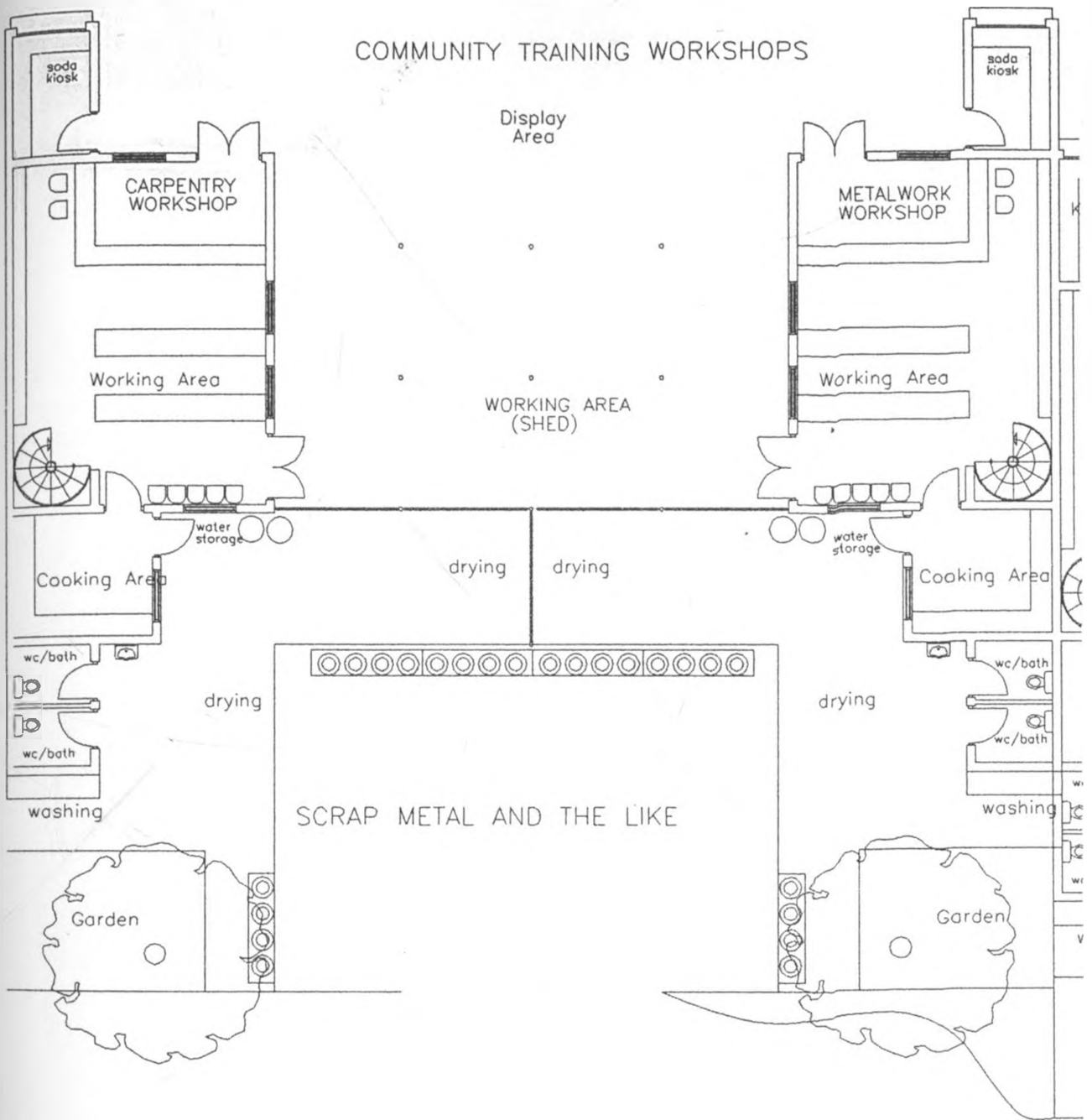


FIG. 4a & b-workshops for training the youth

3. Service Industry

It is recommended that service activities like carwash, hawking, open air garages be located near the main thoroughfares for them to be effective and useful. (fig. 5a-5e)

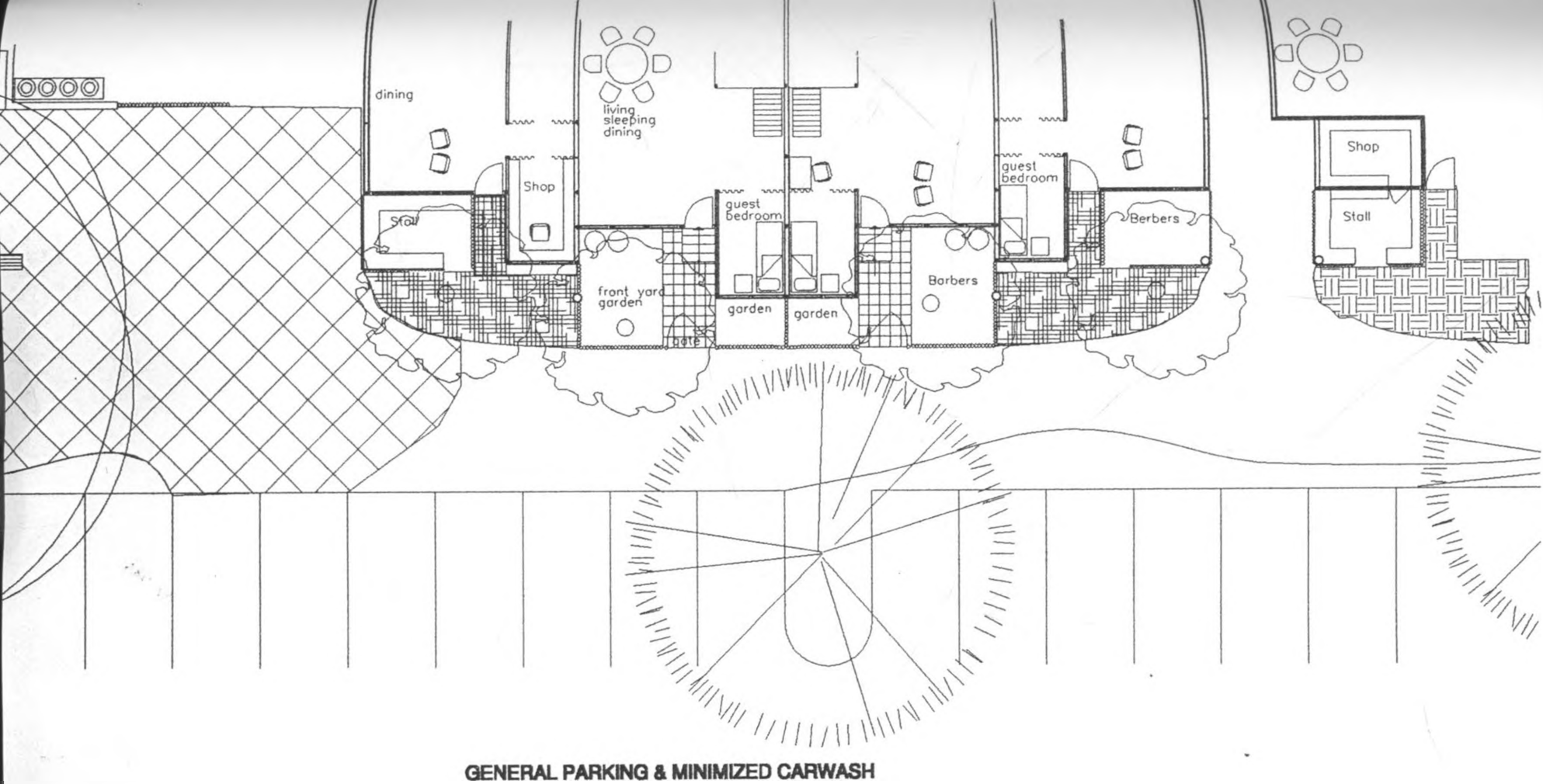


FIG. 5a-car wash designed for as part of formal parking spaces

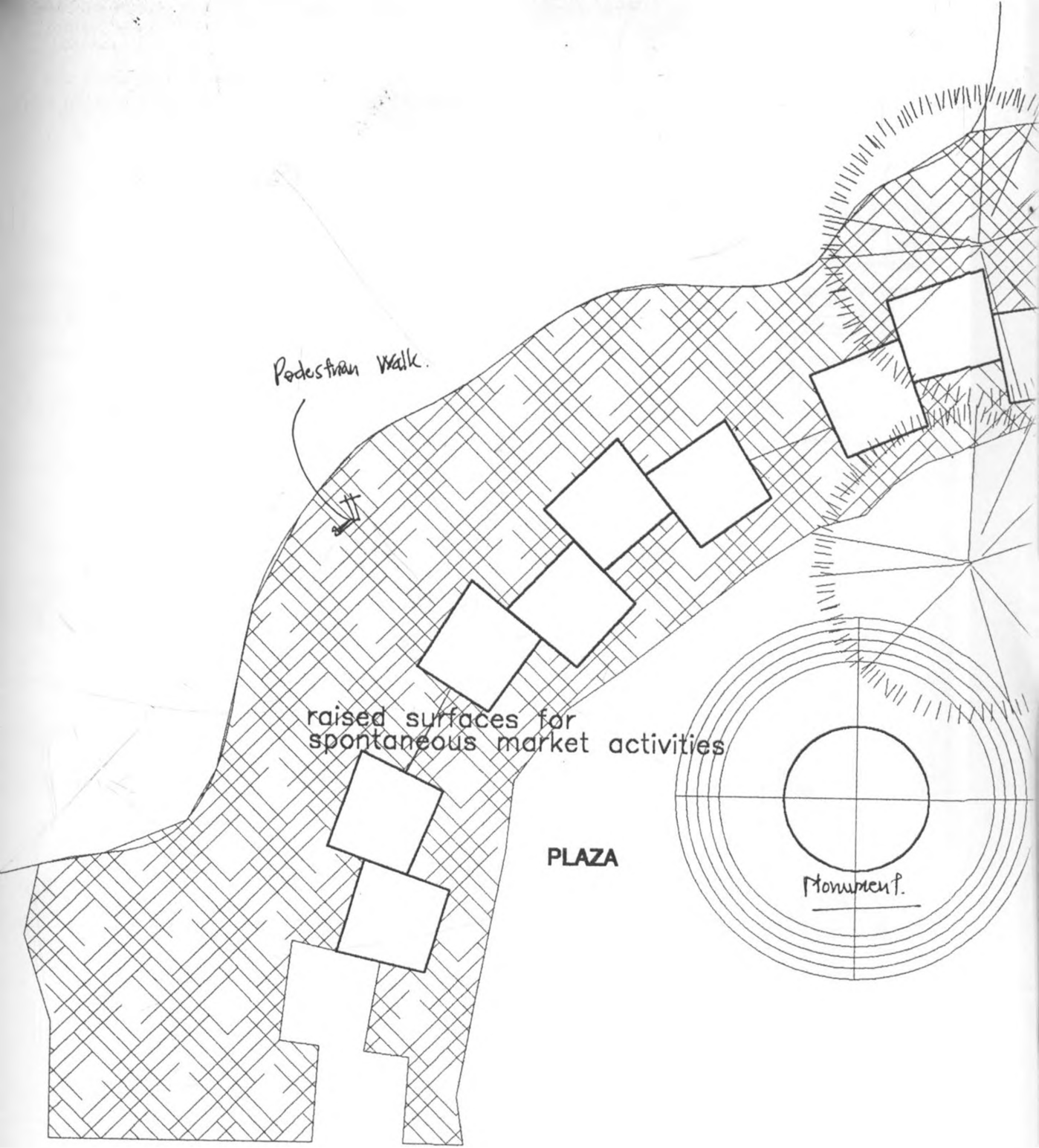
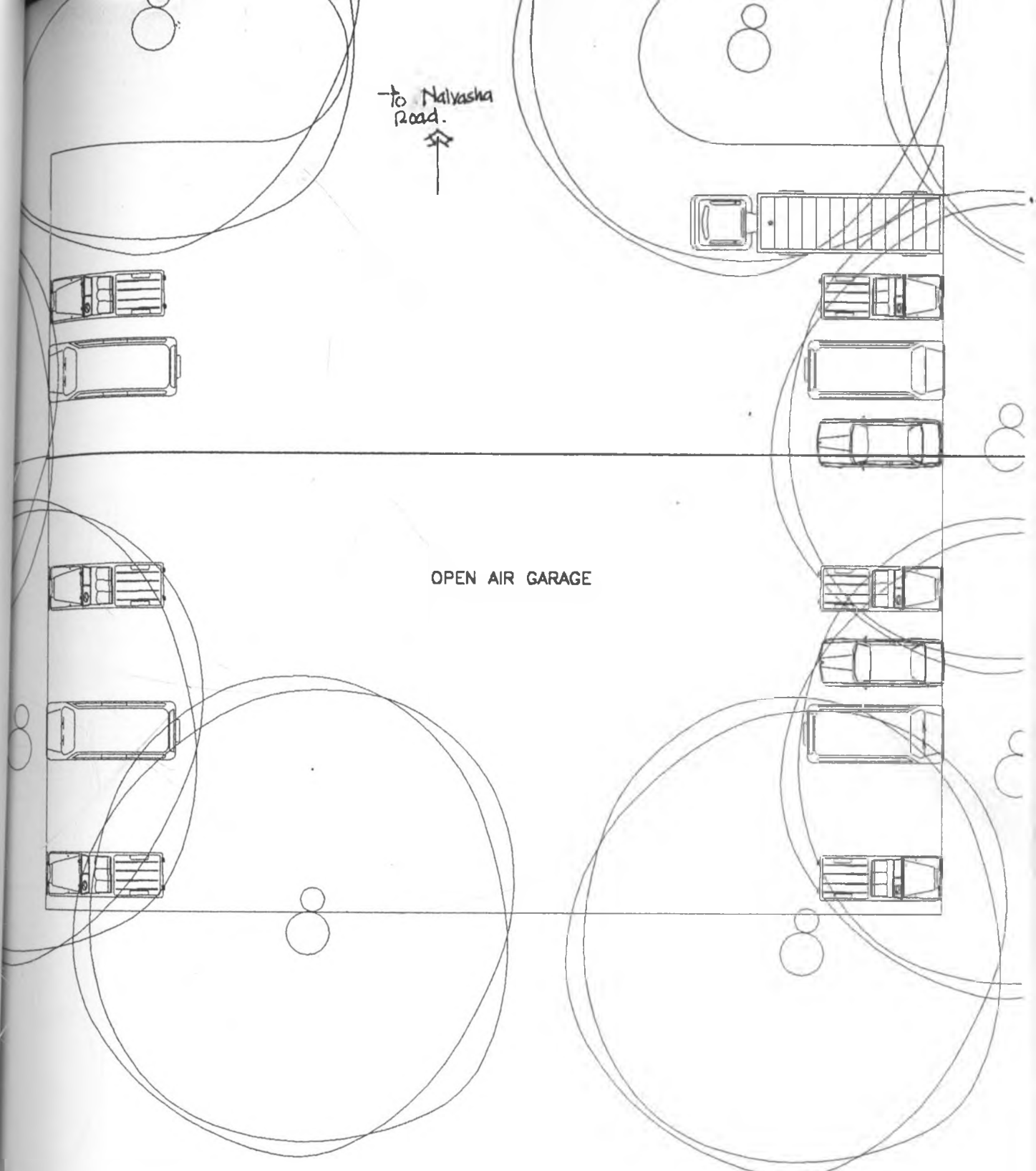


FIG. 5b-raised surfaces for hawking activities

to Naivasha Road.
↑

OPEN AIR GARAGE

FIG. 5c-open air garage near Naivasha Road



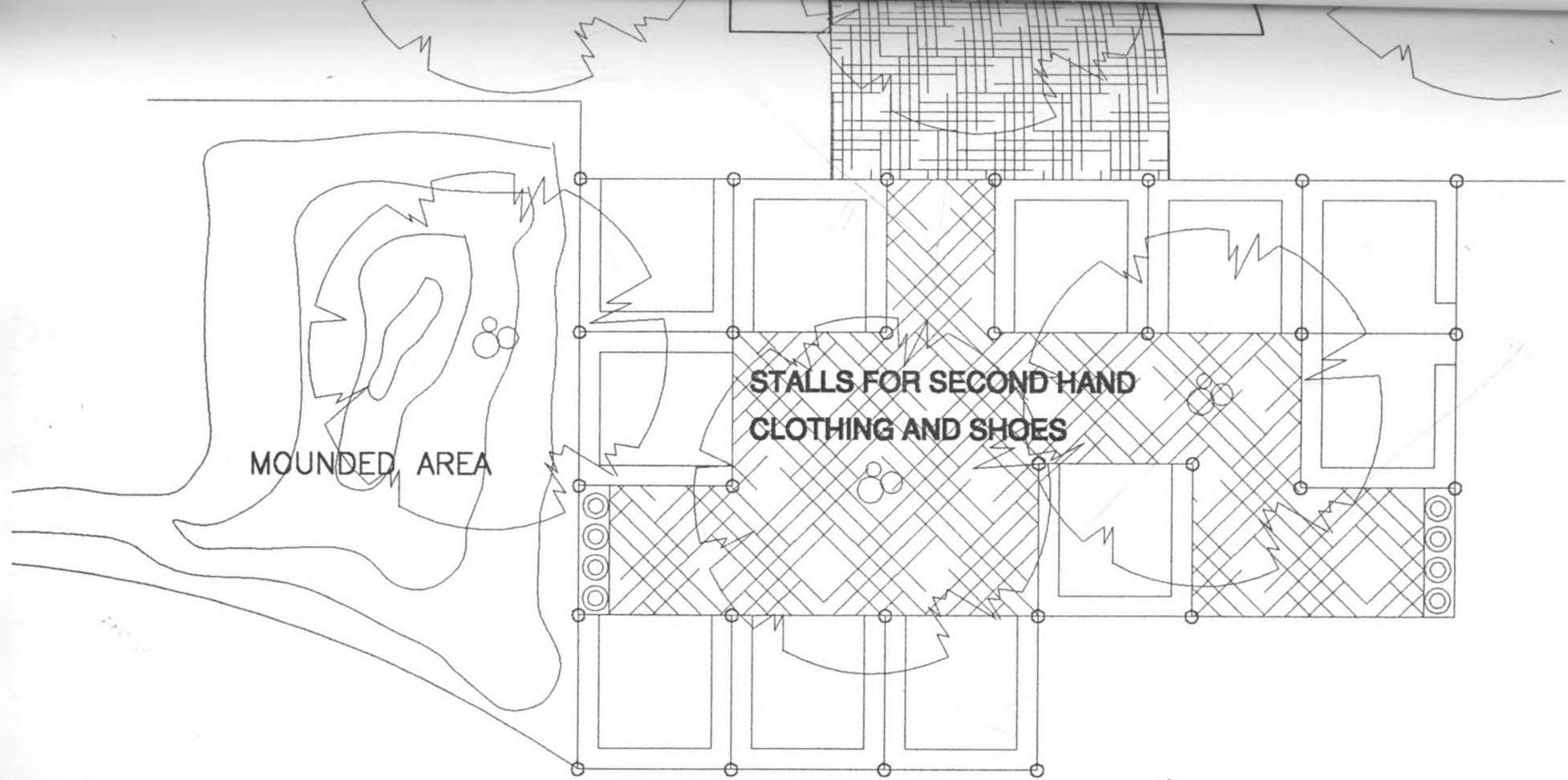
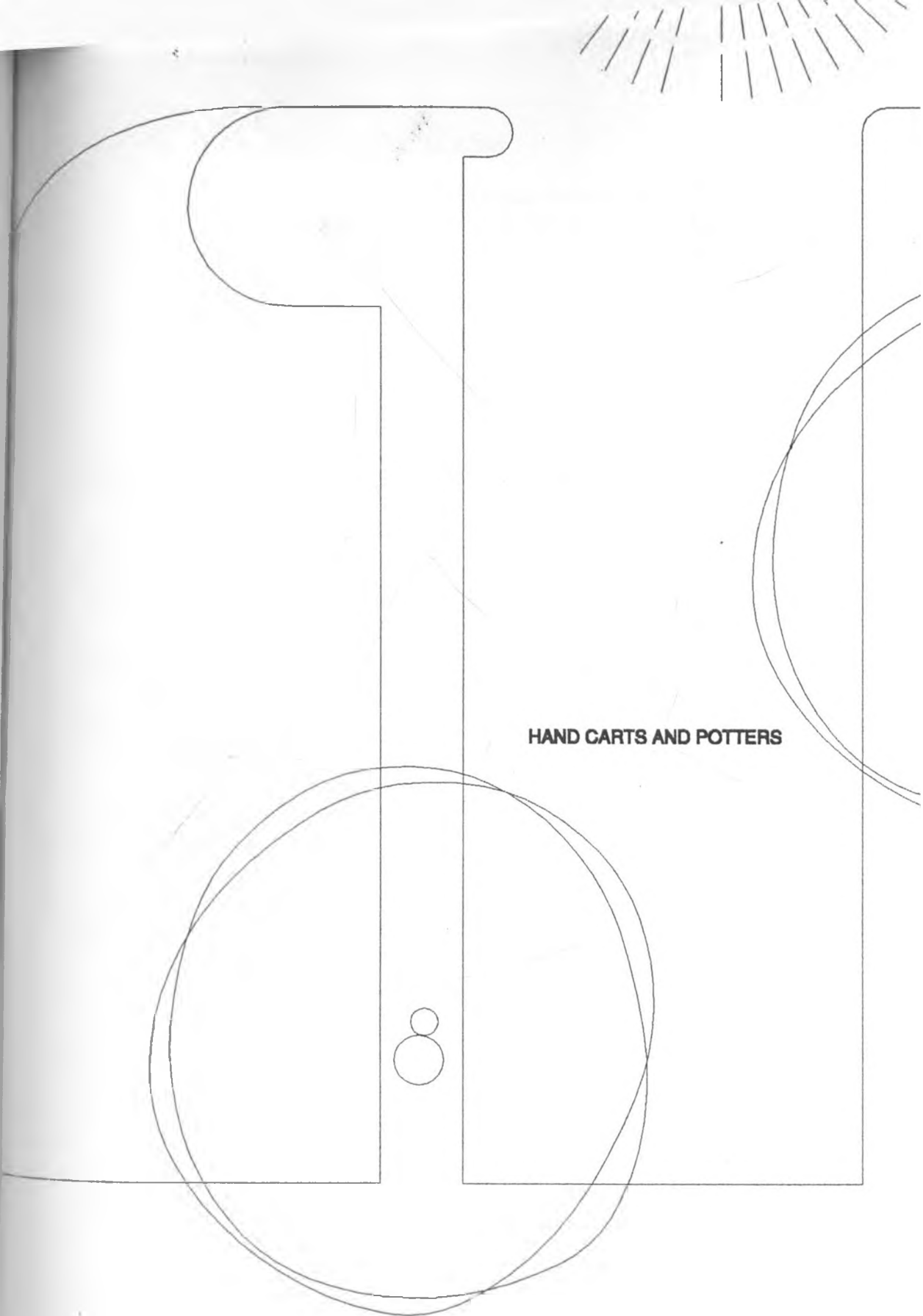


FIG. 5d-Stalls



HAND CARTS AND POTTERS

FIG. 5e- Station for hand carts and potters

4. Collection and Recycling of refuse

Refuse collection and handling begins from the domestic level. It is therefore recommended that the residents be encouraged to sort our refuse at this level. (fig. 6a)

Metallic refuse and cellulose based refuse from the workshops will be collected and sorted out separately. (fig. 6b)

The refuse so collected will either be taken to the Community Energy and Technology centre (fig. 6c.) or sold out as follows:

<i>Refuse Type</i>	<i>Possible Buyer</i>	<i>Product</i>
<i>Paper</i>	<i>Chandaria Industries</i>	<i>Paper products-packets, tissue paper etc.</i>
<i>Broken bottles</i>	<i>Central Glass Industries</i>	<i>Glass bottles etc.</i>
<i>Whole bottles</i>	<i>Kenya Breweries Ltd.</i>	<i>Bottles for soft drinks etc.</i>
<i>Soft and hard plastics</i>	<i>Pan Plastics Ltd.</i>	<i>Various plastic products</i>
<i>Steel</i>	<i>EMCO, Steelworks Ltd.</i>	<i>Steel products</i>
<i>Bones</i>	<i>Gladhoma Ltd.</i>	<i>Adhesives</i>
<i>Scrap metal</i>	<i>'Jua Kali Sector'</i>	<i>Tins, building materials etc.</i>
<i>Fish remains</i>	<i>Sandak Shoes Co. Ltd.</i>	<i>Sleepers and shoes</i>
<i>Organic matter</i>	<i>Urban Farmers</i>	<i>Animal feeds, compost</i>

Organic waste will be turned into compost for local Urban Agriculture and for sale. This will take place in the gardens and at the Community Energy and Technology Centre.

Grey water and such waste will be used to generate methane for cooking and sale. The resulting water will be recycled for general use. (fig. 6d)

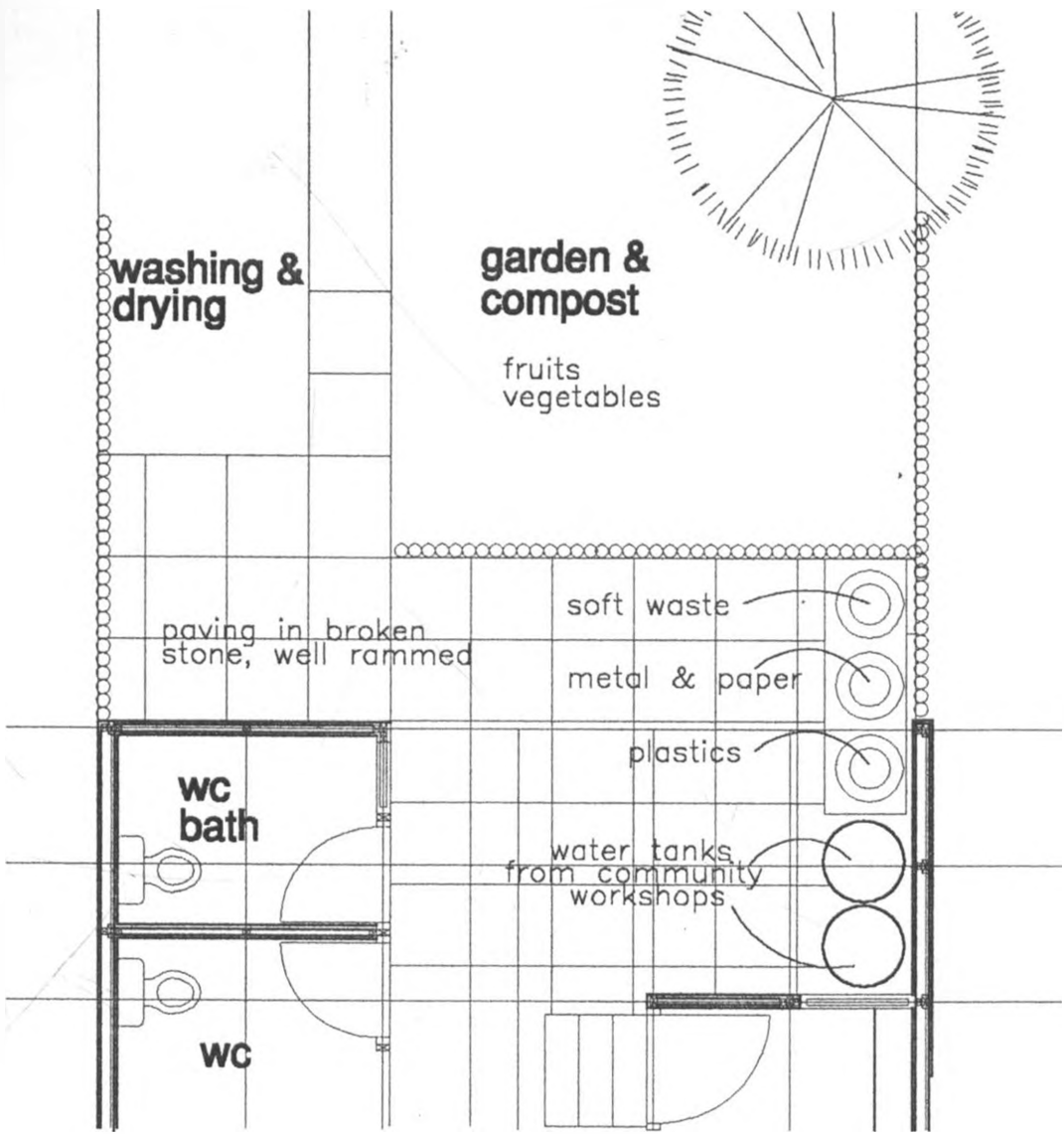


FIG. 6a-refuse collection at the domestic level

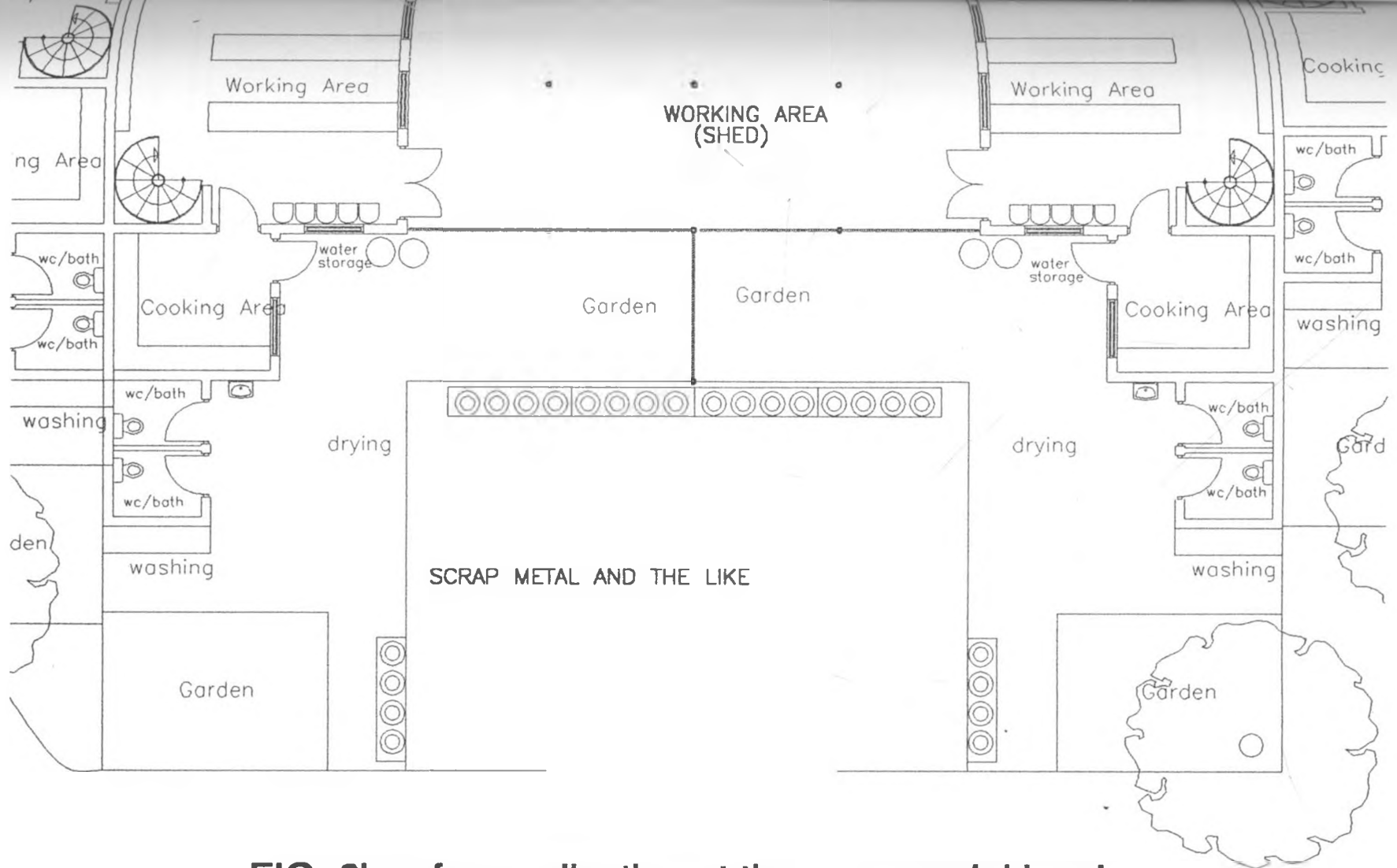


FIG. 6b-refuse collection at the commercial level

UNIVERSITY OF NAIROBI
ADD LIBRARY

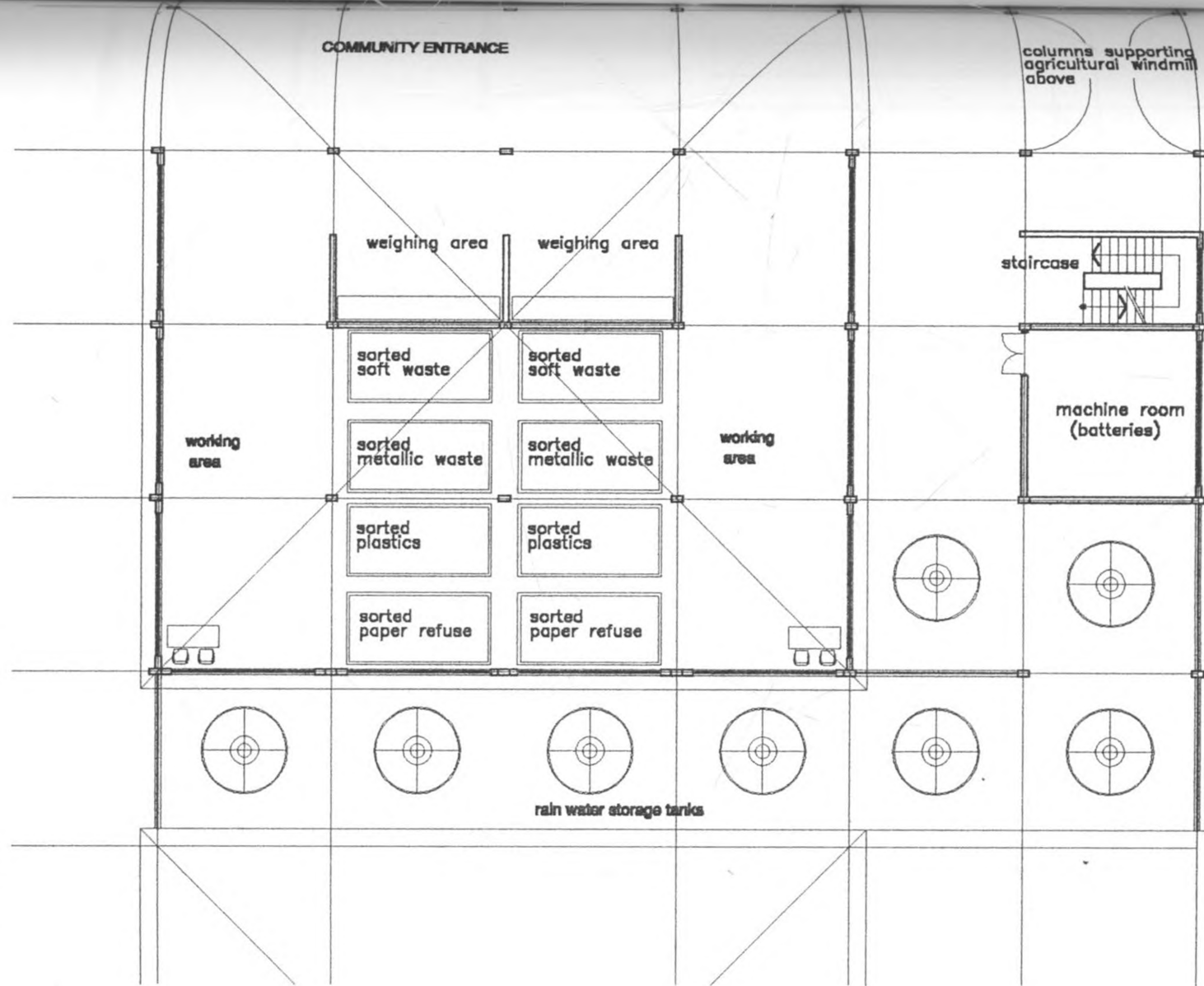


FIG. 6c-refuse receptacles at the community energy centre

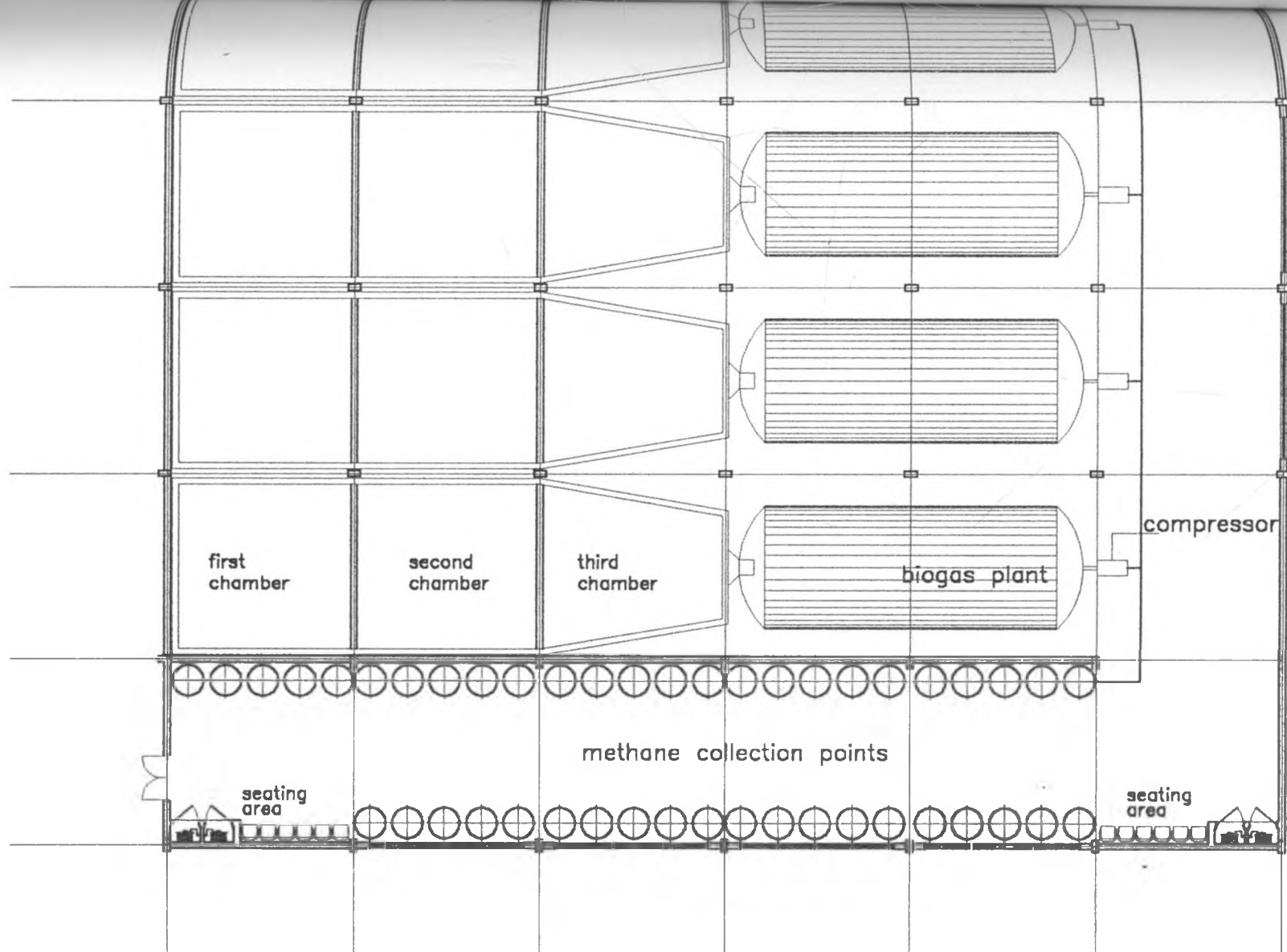


FIG. 6d-generation of methane for cooking at the community energy centre

5. The Construction Industry

It is recommended that hardwares and sheds be located along Naivasha Road. These will offer various construction materials and automotive spares for sale. (fig. 7a)

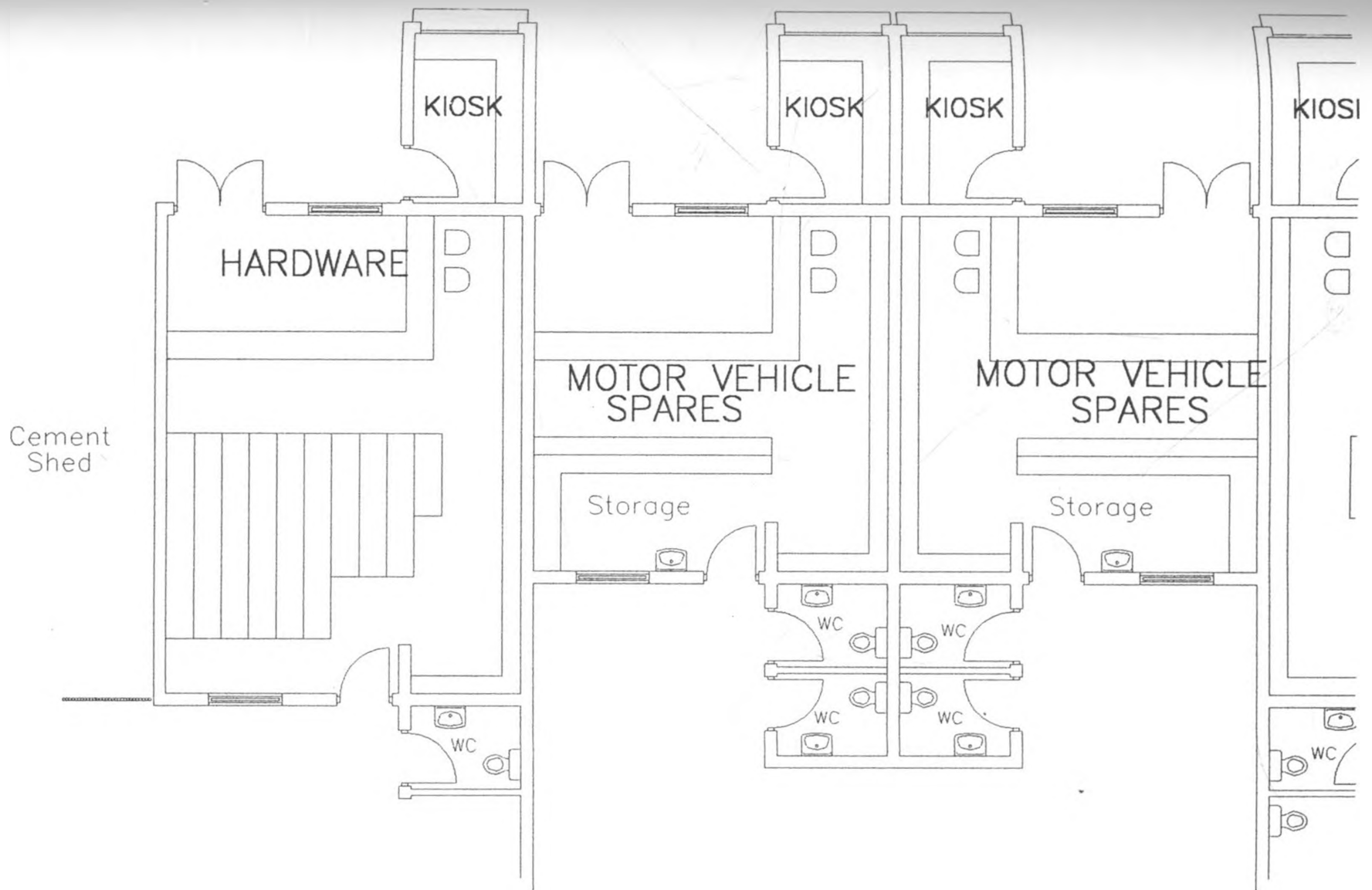


FIG. 7a-hardware stores along Naivasha Road

- **To alleviate Food Poverty**

1. Urban Agriculture

It is recommended that this be carried out within the residential areas and at the Community Energy and Technological Centre.(fig. 8a-8c)

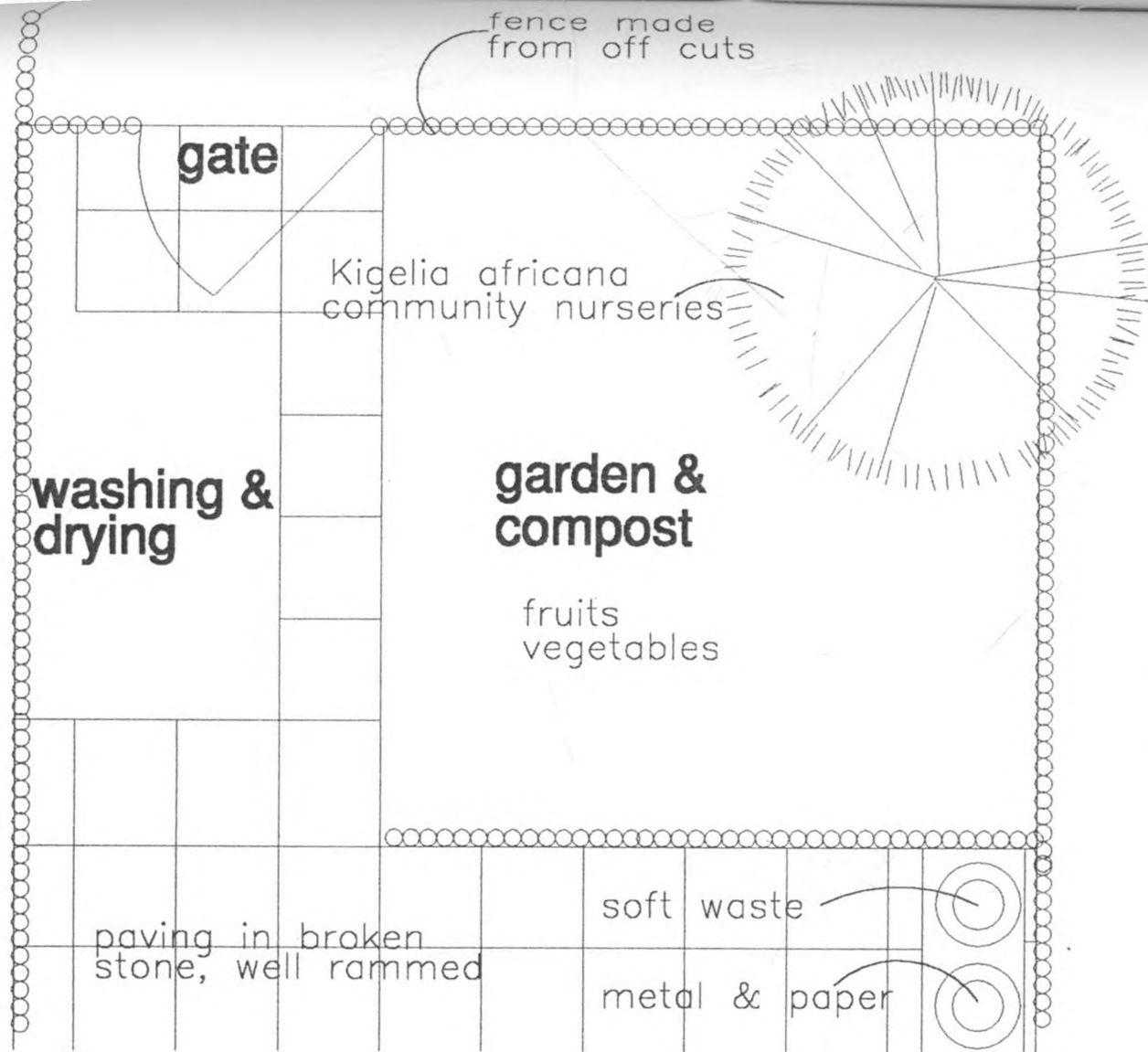


FIG. 8a-urban agriculture at the residential level

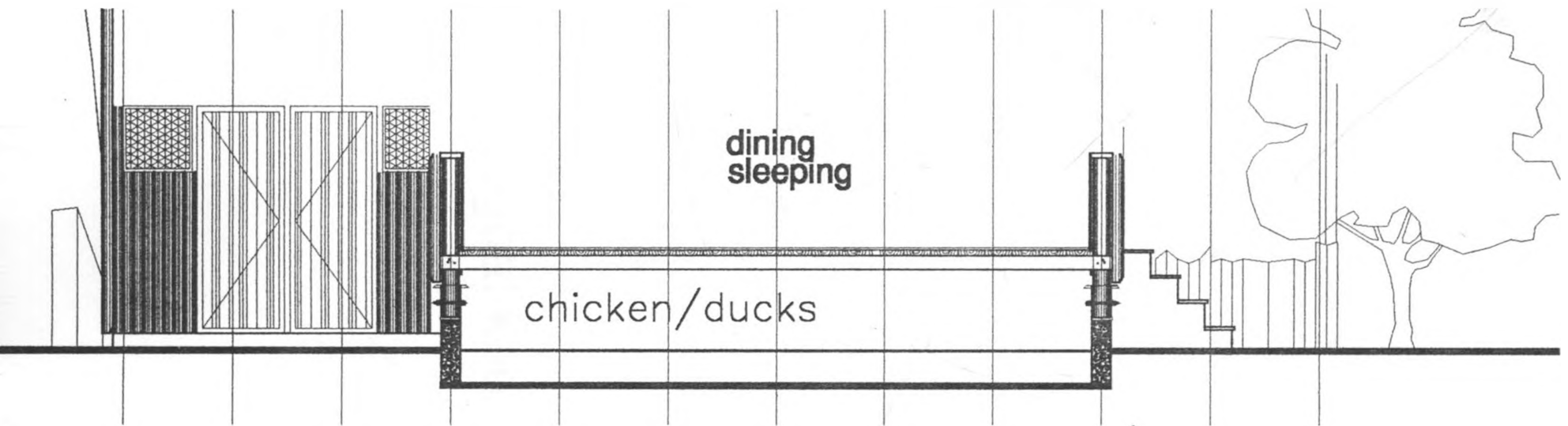


FIG.8b-space under houses used to keep chicken and ducks

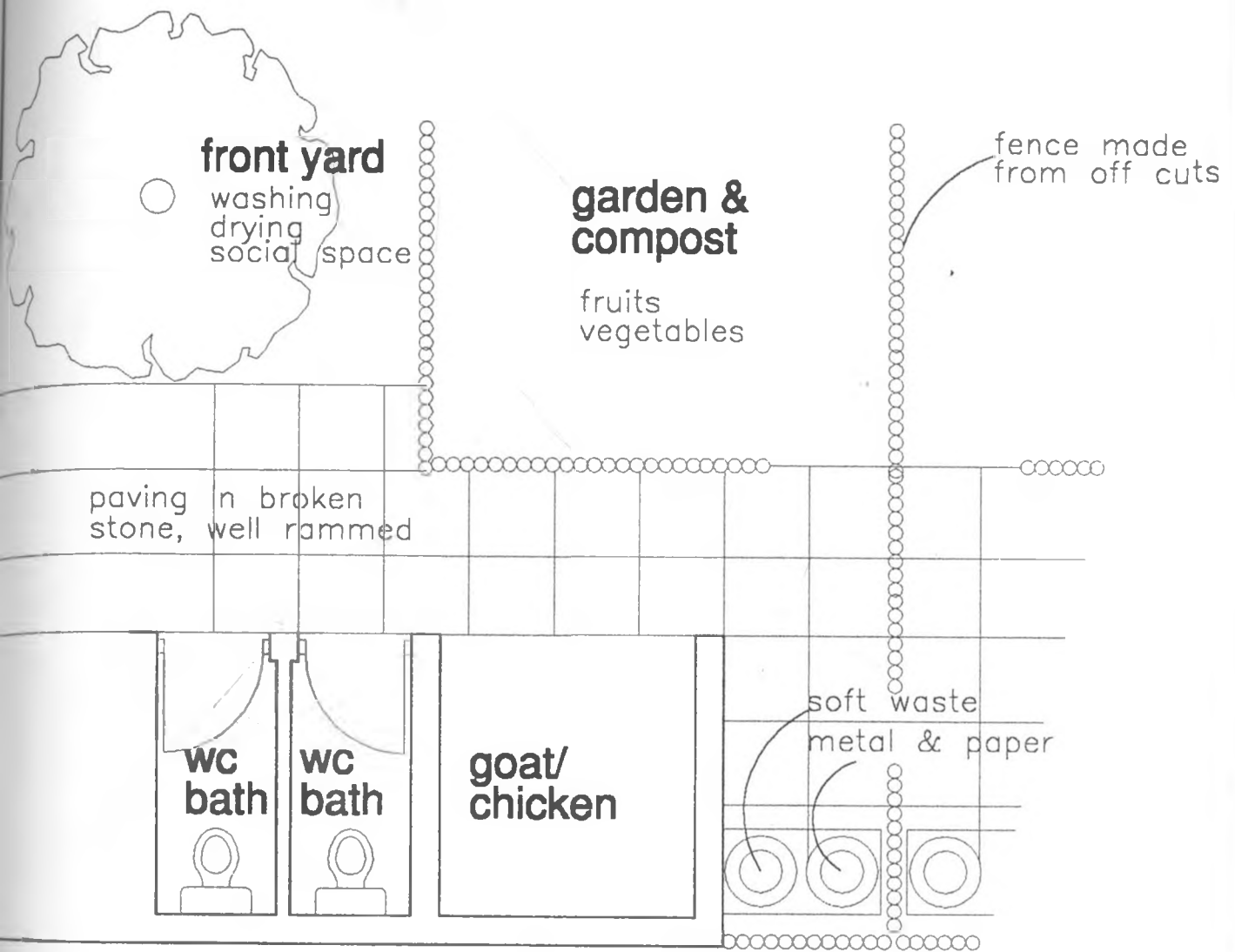


FIG.8c-chicken/goat keeping

- **Environmental Pollution and Degradation**

There is need for a comprehensive environmental conservation policy. Towards this end, it is recommended that all indigenous tree species be conserved. Pollution needs to be checked.

The residents of this area should be sensitized on the advantages of recycling refuse as illustrated earlier.

Alternative and sustainable sources of energy should be used. These include solar energy, organic gas (methane), and charcoal in energy saving 'jikos'.

A concerted effort should be made to plant more indigenous trees and any other with multiplicity of functions. Bamboo should also be planted for construction purposes.

The Riruta Environmental group should be empowered to take charge of environmental management in this area.

Urban agriculture should be carried out in a sustainable manner as earlier illustrated. The planting of fruit trees is therefore recommended.

- **Social Malaise**

It is believed that with the eradication of poverty, most of the social malaise observed will be brought under control.

- **Lack of adequate Infrastructural Services**

It is recommended that the major roads in this area be improved. To begin with, Ngong' Road should be expanded into a dual carriage-way.

There needs to be a secondary road alongside Naivasha Road to help decongest it.

The other roads need regular maintenance by way of application of a hard wearing surface of murrum.

It is also recommended that rainwater be harvested for use in the residential and commercial areas.

The use of solar energy for heating and lighting is recommended. This should be augmented with the use of wind energy. Both of these energy sources are sustainable and friendly.

Other aspects of human settlements that need to be addressed are:

1. Social Activities

The existing sports ground needs to be marked out and replanted with hard wearing grass.

It is also recommended that additional playgrounds be constructed within the residential areas.

These will be supplemented with the social spaces designed for along Naivasha Road within the commercial belt.

For the purposes of administration and coordination in the whole area, a community centre has been planned for. This centre will accommodate the following functions:

- Coordination offices for the **Satellite-Kawangware Self Help Group**.
- Offices for the Kawangware Landlords' Welfare Association.
- Office for the Riruta Environmental Group.
- Financial office to be occupied by staff from **K-Rep** bank, which will advance small loans to the small-scale traders in this area.
- A community outpatient clinic to be manned by qualified staff recommended by the Nairobi City council.
- A planning and design office from where all developments will be controlled. Representatives of the City Council and the Satellite-Kawangware Self Help Group will jointly occupy this.
- A hall for indoor games: basketball, netball, martial arts, and gym. Etc.
- A Police Post
- An Information Technology outlet accommodating cyber-cafes.
- An education centre for public lectures.

10.0 Implementation of the Proposed Design

10.1 Introduction and Concepts

*Architecture has always responded to the changing world with positive results. However since the advent of rapid urbanization the scope, speed and nature of change have resulted in an unprecedented Architectural lag. There is an out-of-jointedness in the urban environment that is a reflection of the failures of the much touted **modern theories** and practices of urban design and planning.*

*The main drawback has been that the authorities entrusted with the resolution of the unwelcome nature of urbanization have **primarily** ignored the human settlements problems.*

*There is need to write architectural programs that fully reflects the needs and aspirations of a particular group of people-a specific target group: Not simply the housing needs as such, but the hopes and aspirations, the culture and custom, the climate and geography, the materials, skills and resources. Furthermore such a program needs to address the issue of **Urban Poverty**.*

*Many a time governments have strived to provide mass housing as a major way of resolving Urban Poverty. However what needs to be done is the **involvement** of the residents or the target group in the task of community building that offers some hopes for resolving the problems of the Urban Poor.*

Many of the urban poor are squatters. What many have failed to realize is that the squatters who are at the centre of the problem are also the core of the solution. They constitute a most important human resource that has never been comprehensively organized and utilized to help improve their own living conditions.

*For the design project, two concepts will be overriding; that of **self help** and that of **community participation**.*

A majority of the residents of the Satellite-Kawangware area are people with high intelligence but are unfortunately poor, unemployed or underemployed, with little immediate prospects to improve their lives.

*They are resourceful people who have free time and are willing to work. The concept of **self help** 'doing one's own thing' is therefore appealing in this area.*

*However it is evident that these people have been doing this all along. The proliferation of **Informal Sector** activities in this area attests to this assertion.*

*These residents also form a **community** of people who have strong ties to one another, who share the same aspirations, and who are willing to make significant sacrifices to improve their lot in the society. Clearly, then, if there is any hope for these urban poor it is not only through **individual self-help**, but also through an organized, well orchestrated **community self help** program.*

Once these policies are in place then the smooth implementation of this project will be realized as follows:

10.3 Land

The land required for this project is approximately 200,000 Sq. M. (Appx. 49 Acres). This will cost approximately Ksh. 34.3 million going by the current rate of Ksh. 700,000 per acre in this area.

The **Satellite-Kawangware Self Help Group** will seek the help of the government to acquire this land.

The government will issue a compulsory acquisition order to the absentee landlords and any other landlord who refuses to accept compensation for his parcel of land.

The finances for compensation will be obtained through the international donors like the International Monetary Fund and the World Bank as a grant. It is hoped that it will not be difficult to realize the funds because the same agencies have supported various developments in Kawangware area before. Furthermore the agencies' policy towards poverty alleviation in the third world is very friendly.

The land so acquired will be placed under the custodianship of the **Satellite-Kawangware Self Help Group**. This group will then identify the members to allocate parcels of land.

10.4 Client and Community Organization

As mentioned earlier, the residents of the study area have formed the **Satellite-Kawangware Self Help Group**. This is a welfare organization whose main objective is to improve the livelihood of the members drawn from the landlords and the tenants in the area and members of various organizations already operating in the area. This will be the client.

It will carry out its objectives in conjunction with the following already existing groups:

- The Riruta Environmental Group
- Kawangware landlords Welfare Association
- The Church Organizations operating in the area.
- The local chief as an arm of the provincial administration.
- The Nairobi City Council

The self help group will represent a joint bargaining front for the residents. It will also be a rallying point for all the residents.

The Group will identify the people to be settled in the land acquired as earlier recommended.

It will have the authority to engage in income generating activities to augment its budget.

10.5 Finance and Labour

Besides the World bank and the International Monetary Fund as earlier mentioned, the other sources of finance will be:

- The **K-Rep Bank**, which is a micro-finance institution actively involved in the development of small scale commercial activities. This Bank has its headquarters in the Kawangware area along Naivasha Road. It will offer affordable finance to the residents to build houses and develop small scale commercial ventures.
- The **Cooperative Bank**, also represented in the area along Naivasha Road will offer necessary finances to the people.
- Personal savings will also be relied upon.

No extra labour from elsewhere will be needed as the residents will take charge of all construction works with minimum supervision.

✓ *'They are resourceful people who have free time and are willing to work. The concept of self help 'doing one's own thing' is therefore appealing in this area.'*

The Group will identify the people to be settled in the land acquired as earlier recommended.

It will have the authority to engage in income generating activities to augment its budget.

10.5 Finance and Labour

Besides the World bank and the International Monetary Fund as earlier mentioned, the other sources of finance will be:

- The **K-Rep Bank**, which is a micro-finance institution actively involved in the development of small scale commercial activities. This Bank has its headquarters in the Kawangware area along Naivasha Road. It will offer affordable finance to the residents to build houses and develop small scale commercial ventures.
- The **Cooperative Bank**, also represented in the area along Naivasha Road will offer necessary finances to the people.
- Personal savings will also be relied upon.

No extra labour from elsewhere will be needed as the residents will take charge of all construction works with minimum supervision.

They are resourceful people who have free time and are willing to work. The concept of self help 'doing one's own thing' is therefore appealing in this area.'

11.0 Development Approach.

The development approach recommended for this area is an adaptation of the Participatory Rural Appraisal (PRA) method.

PRA will enable the community to identify and define its own way to sustainable development, a development strategy that is based on real needs, within the skills, capacities and capabilities of its local institutions.

It will also enable the community to identify the roles of external agencies that can be called upon to provide assistance.

Through this approach a Community Action Plan (CAP) will be developed which will help guide the community as it implements the proposed project.

The PRA attempts to ensure that community development planning is done with the participation of the beneficiaries. This will ensure a stable support and ownership of this project.

The thrust of this approach is that participation by the beneficiaries in the project is fundamental, and that locally serviceable technologies will succeed unlike the more complicated and expensive foreign ones. This will make this project a sustainable one.

Under this method, the following processes are recommended:

- **Site Selection.**

The site as demarcated and illustrated earlier is recommended. The acquisition of this land should be done as earlier explained.

When this has been done the development team is composed comprising representatives of all existing institutions in this area, the provincial administration and the religious groupings currently operating in the area. Membership of this team will include both men and women with multi-disciplinary backgrounds. All these members will have to understand the intended development and the approach.

- **Preliminary visits to the site.**

At this stage the PRA team will be *introduced to the community*. This will involve informal visits and interactions with the community members to learn what goes on in the community.

The main purpose here will be to make the team and its mission be known by the community members and to eliminate any suspicions between the two parties.

During this visit the PRA team will introduce the PRA approach to a broad representation of the community, including elders, church leaders, schools and other existing institutions. They will explain at this stage that the purpose of the visit is to gather information to help the community prepare a CAP and to mobilize community efforts to implement the proposed project.

The CAP will enable the community to achieve its development expectations and needs with minimal dependence on external sources and agencies. The earlier outlined brief will therefore be improved.

After the initial visit several *formal meetings* will be arranged with the community at the existing playground. These meetings will be called by the Chief of this area. During these meetings the details of the PRA exercise are discussed and questions answered. The names of the intended beneficiaries of the project will also be publicized.

Once the PRA process has been accepted, the PRA team, community leaders and local administration represented by the Chief will organize formal *planning meetings* in which all concerned parties will discuss the details and work plan of the PRA exercise. This step will involve the following processes:

- dialogue among the parties concerning all aspects of community problems and possible resolutions. The brief will be revised at this stage.
- full and dynamic community participation
- an integrated approach to development involving proposed beneficiaries and other change agents.

During the planning meetings the group of beneficiaries, now termed community will be divided into working zones. They will discuss and agree on how the subdivisions are to be done, with the proposed master plan as a reference. All the other stakeholders are fully informed of the progress of such meetings.

- **Launching**

By this stage all the preliminary preparations will have been completed. The whole community will then be informed in detail about the PRA and the process. This will take place in a public meeting convened by the Chief of the area and attended by all the other stakeholders as mentioned earlier.

- **Data Gathering, Synthesis and Analysis**

This will take place after the launching stage. Data so far not gathered will be obtained and analyzed. This will include spatial data, time related data, social related data and some technical data.

The analysis and synthesis will involve the ranking of the problems and identification of the opportunities.

- **Preparation of Community Action Plan (CAP)**

This will be the program of action by the community. The plan so prepared will be discussed with all the beneficiaries and stakeholders and adopted.

- **Adoption of CAP**

The CAP will then be adopted as a representation of how the proposed design will be implemented. Activities towards the realization of the proposal will then begin.

- **Participatory Monitoring and Evaluation (PM&E)**

This will be the final phase of the PRA exercise. The developments will be monitored and evaluated according to the CAP. Lessons learnt will be documented for future reference.

Activities begin at six in the Nyakoe family, a typical household in the new Satellite-Kawangware area. Today is Friday. Nyakoe Mogotio, the father, wakes up at six in the morning. His wife, Njeri, prepares breakfast while he is washing up and dressing. He nowadays uses warm water to bathe thanks to the new technology of using the sun energy to boil water. She also wakes up Nyambane, their 15 year old son so he can go and tend to the grade cow at their backyard. Nyambane will do the milking job, after all he is a man. Muriuki is nowadays their competitor in the milk business. Nyambane will then buy some fresh beef from Owino, a local butcher who operates three butcheries along Naivasha Road.

Njeri draws warm water from the reservoir tank for the three other children, Obiri, Nyariki and Mwangi who have to go to the local primary school. Obiri will be a candidate next year. She then prepares potatoes from her garden for breakfast. This will be washed down with proper tea, thanks to the grade cow, nicknamed 'zawadi'

At seven, Nyakoe walks over to the parking lot to tend to his ten 'mkokotenis' (handcarts) for hire. Nyakoe has to be there early enough because he is a sole proprietor and has to be serious enough with his business lest he reverts to hiring the handcarts from Mulwa. Being a Friday, transportation will be good business at the sprawling Kawangware market. A lot of farm produce will be coming from the outskirts of the city and the traders will need affordable transport services to the various outlets. The more his handcarts are used the more he will earn. There are no more bribes to the Nairobi City Council 'askaris' thanks to the community organization which handles their grievances. The gangsters who used to 'own' the gates of Kawangware market are no more, thanks to the Chief who has ensured strict discipline and the rule of law in this area.

As soon as Nyakoe leaves Njeri picks her hoe and goes to tend to her kitchen garden. There is enough water from the header tanks to water her vegetables and for general washing. This water comes from the Community energy and technology centre. By eight the three children have gone to school. Nyambane does not go to school. He goes to the community workshops to be trained in carpentry. She is happy with this because he will soon be able to take care of himself. Lunch is 'ugali' and beef stew; what a meal! She then goes to sell the surplus of her vegetables by the roadside on one of the raised surfaces constructed by her husband.....

At five she has to take the sorted refuse to the Community Energy Centre where she will sell them for some money. She did not know that one could earn an income from refuse. She still wonders what those Indians do with the refuse. Some say they make paper out of them, others say they burn them. She does not care what they do with the refuse as long as she continues to earn from it. This method of refuse collection and disposal has also ensured that the environment is always tidy unlike five years ago when refuse was strewn everywhere.....

Business was good today for Nyakoe. He was not only able to pay his monthly contributions to the local cooperative but also brought home eight hundred shillings. He is exhausted and finds Njeri preparing enriched porridge for him and the children from school. The children arrive at six from school and immediately tend to the chicken that they keep in a shed near their garden. Their house is a two roomed one. He plans to turn the other room into a shop during the day. Owino, his neighbour has done the same. He remembers how he constructed this house. None of the 'mabatis' were new. The timber framing was drawn from off-cuts that are widely available near Kawangware Market. He only had to buy nails. The rest required his personal effort and guidance from the Community Organization. The stabilized soil blocks for the foundations and lower portion of the walls were supplied free of charge.

In exactly one month the house was up. He had to choose his neighbour. The location of the site for his house was determined through a lottery basis to ensure fairness to all.

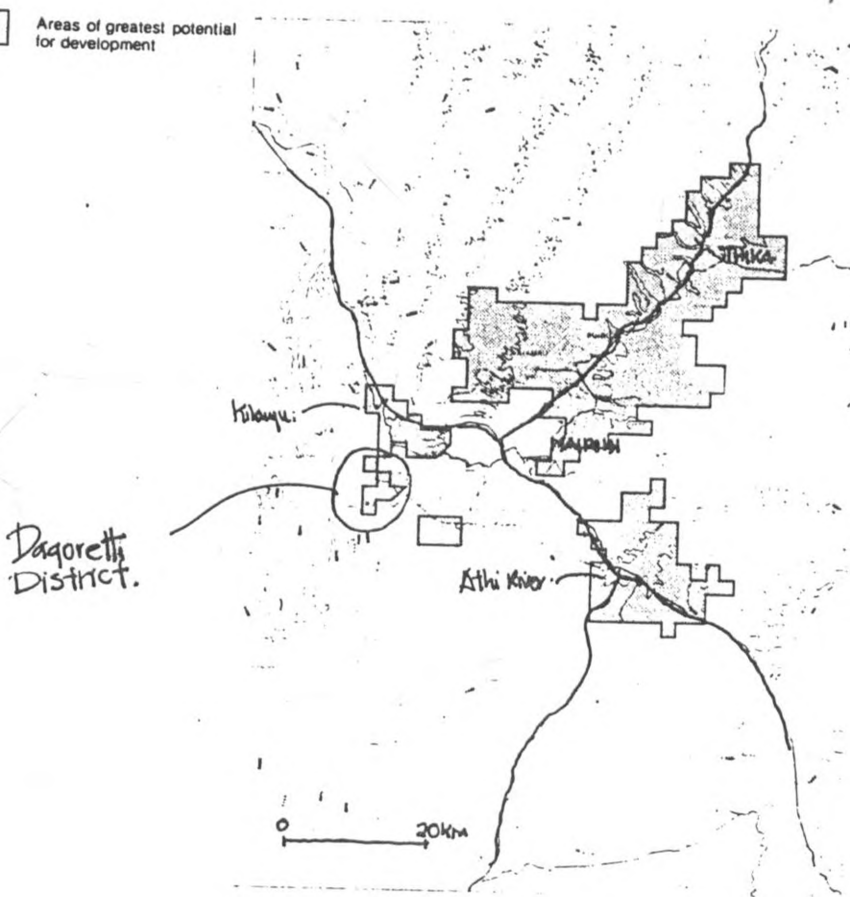
Nyakoe sips his enriched porridge then decides to 'take a walk.' Today being a Friday, he will go to his local Church to help organize for tomorrow's service, which he will be leading. He is still a member of the Seventh Day Adventist Church. He cannot remember when he last failed to go to Church. It must be five years ago. He knows Mulwa will also be in Church, having closed down his sinful business at Kabiria.....

Njeri prepares the family for bed, after a meal of rice and beans. Her husband is tired after a hard day's work. Nyambane is also tired. By ten, the whole family congregates for a word of prayer before retiring to bed. She nowadays enjoys sound sleep. She no longer has to worry about seeing her husband in a sorry state in the morning. Life has truly changed since the introduction of the new development. She wonders why some people had to resist it at the beginning only to turn around and accept it in the end. She was informed today by Mama Nduta that the government plans to help build similar self-help villages in other parts of the city because the Satellite-Kawangware one has been so successful.....

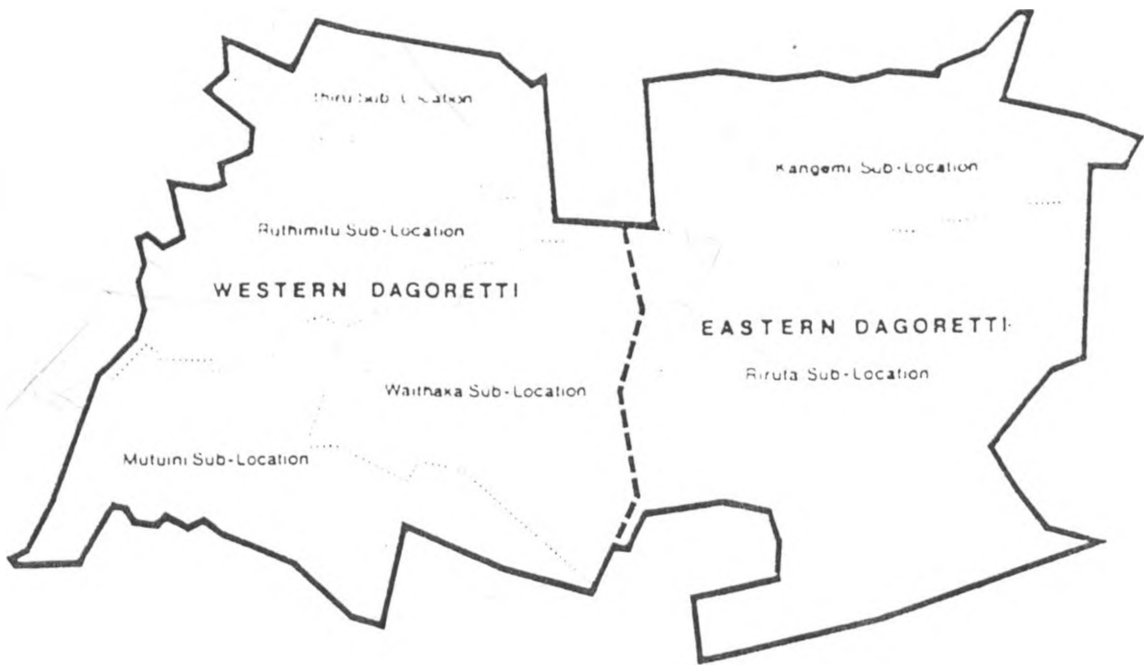
12.0 Appendices

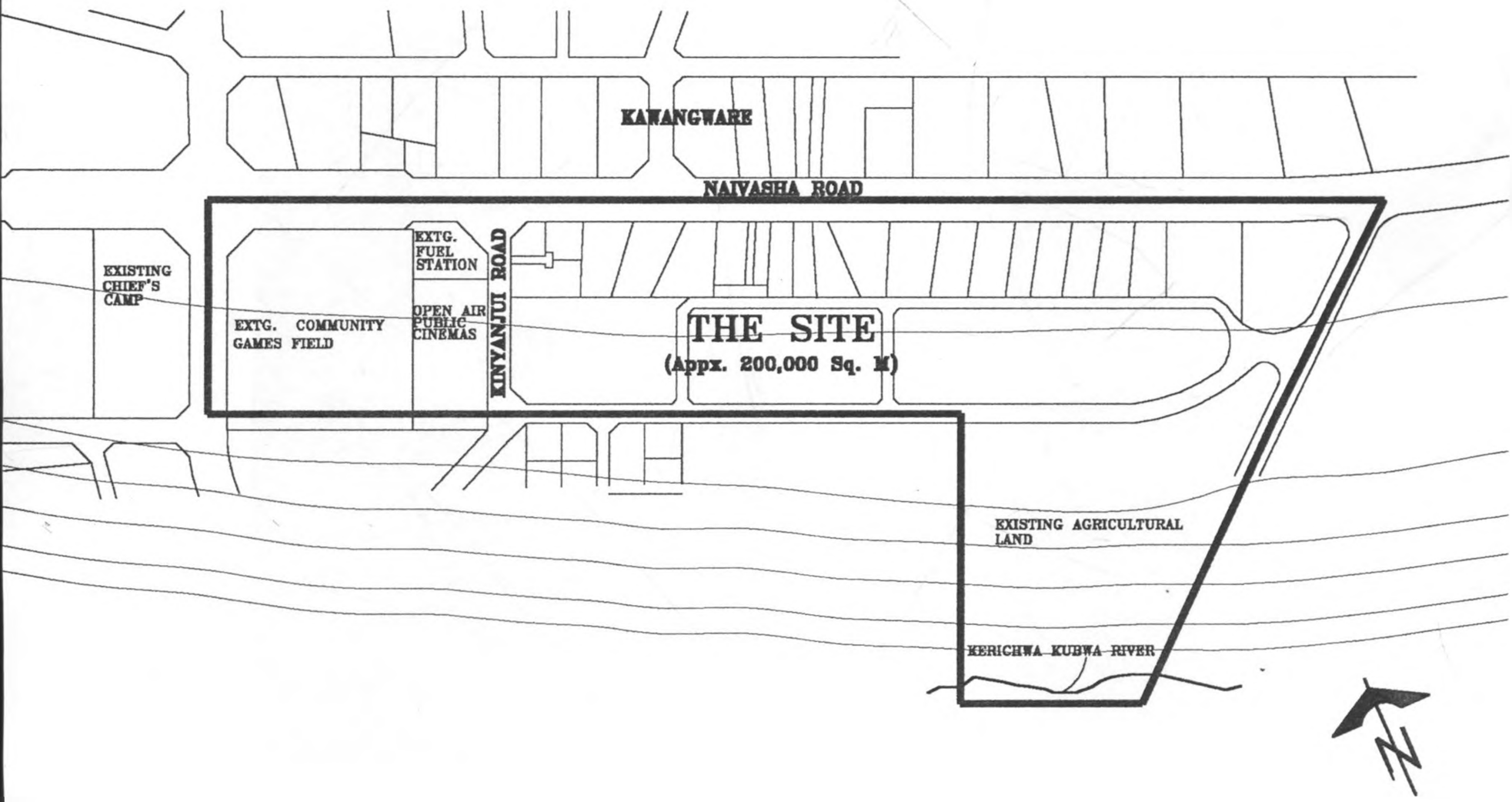
Appendix 1	The Nairobi Growth Corridors	<i>(The Metropolitan Growth Strategy, 1973)</i>
Appendix 2	Dagoretti Administrative Districts	<i>(The Metropolitan Growth Strategy, 1973)</i>
Appendix 3	Location of Satellite-Kawangware Area	<i>(Nairobi Road Maps)</i>
Appendix 4	Site Plan	
Appendix 5	Residential Developments	<i>(Site Photographs)</i>
Appendix 6	Merchandising	<i>(Site Photographs)</i>
Appendix 7	Light Manufacturing	<i>(Site Photographs)</i>
Appendix 8	Service Sector	<i>(Site Photographs)</i>
Appendix 9	Agricultural Sector	<i>(Site Photographs)</i>
Appendix 10	Social Activities	<i>(Site Photographs)</i>
Appendix 11	Institutions	<i>(Site Photographs)</i>
Appendix 12	Construction Industry	<i>(Site Photographs)</i>
Appendix 13	Activities along Naivasha Rd.	<i>(Site Photographs)</i>

Areas of greatest potential for development



UNIVERSITY
ADD LIBRARY NAIROBI





THE SATELLITE-KAWANGWARE AREA-SITE PLAN



Appendix 5 Residential Developments
(Site Photographs)



High-Rise mixed use developments - Shoppers and Flats.



Development of Flats in the area.

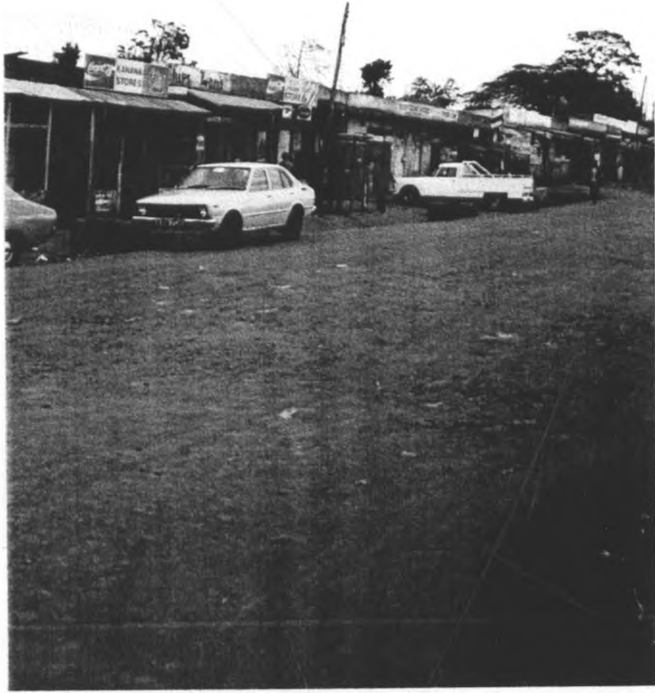


Stores along Kinyanjui Road.



Stores along Nakasha Road.

Appendix 6 Merchandising
(Site Photographs)



Stores along Kinyanjui Road.



Stores along Maiyasha Road.

Appendix 7 Light Manufacturing
(Site Photographs)



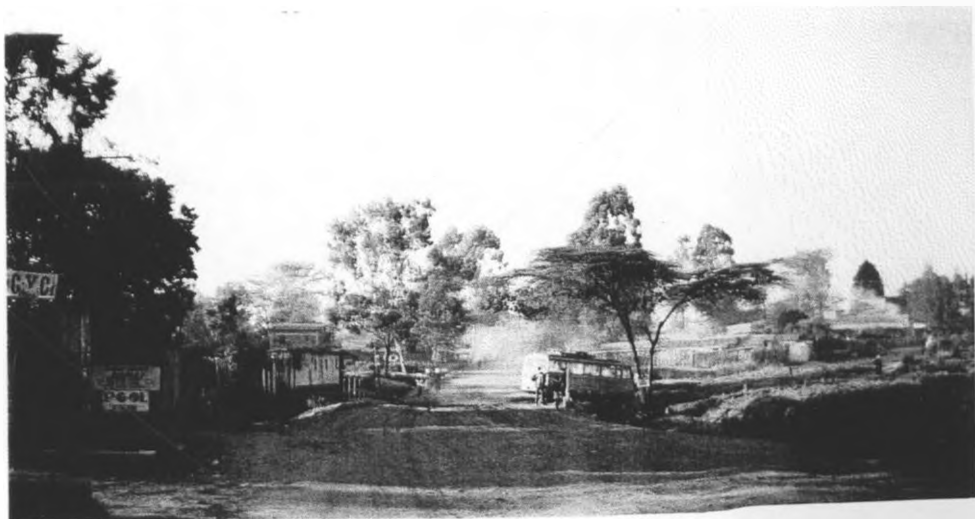
- Cushion Makers
- Upholstery
- Metalwork
- Woodwork.



Open air garage uses the existing sports field.



Harvesting activities on raised surfaces



Carrwash

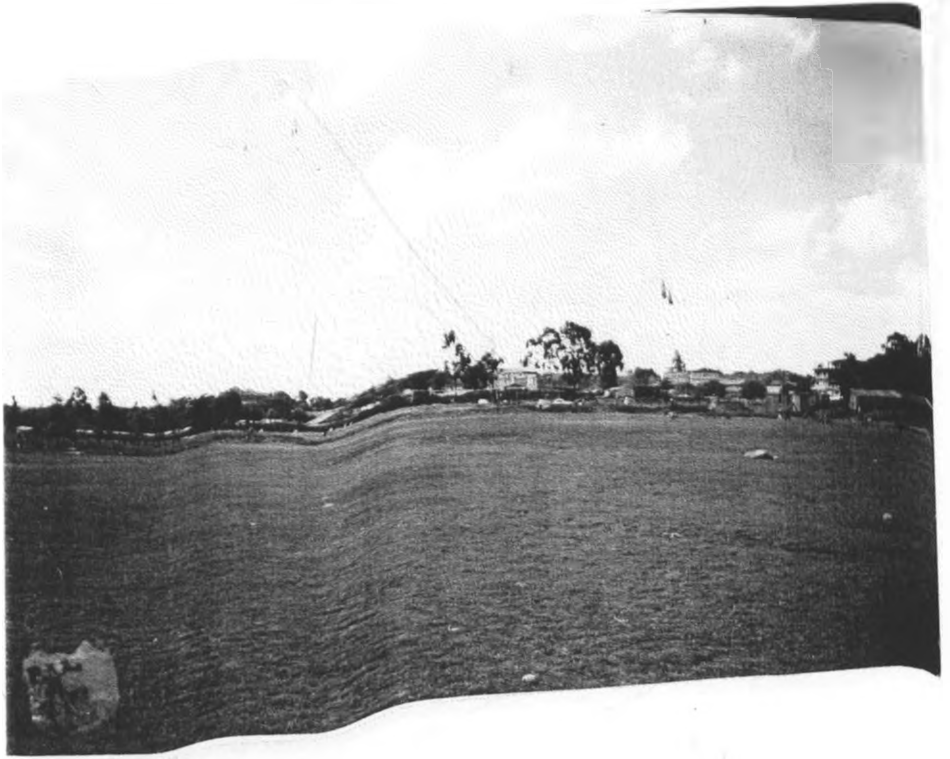
Appendix 9 Agricultural Sector
(Site Photographs)



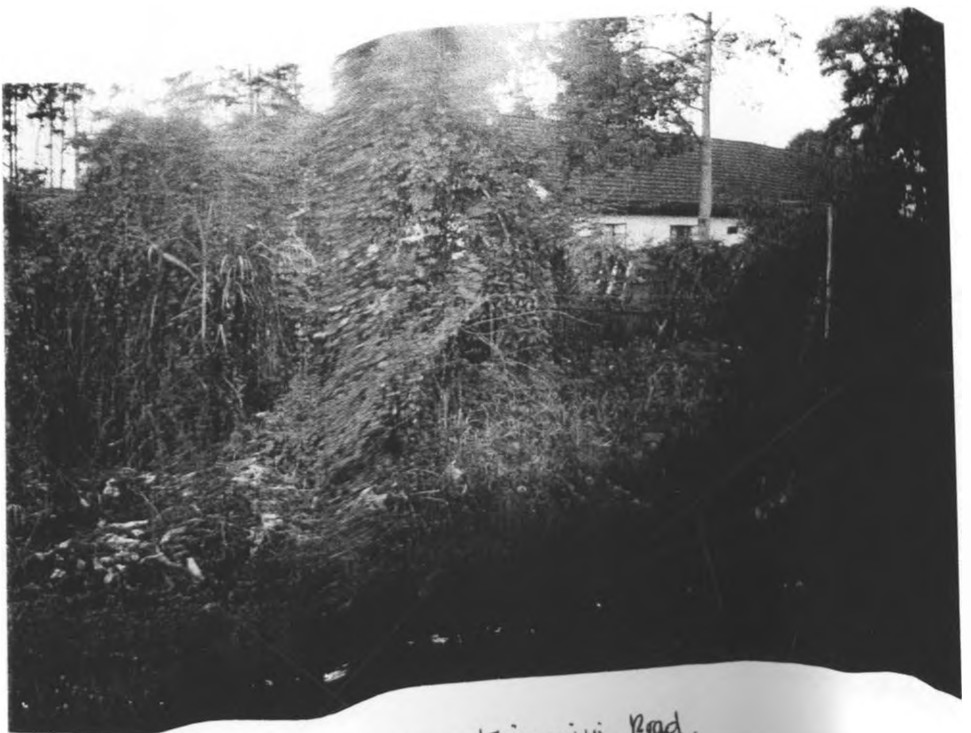
An agricultural products market along Kinyanjui Road.



Playground also used as grazing field by goats and sheep.



Sports ground.



The Green Valley Club
along Kinyanjui Road.

Appendix 10 Social Activities
(Site Photographs)



Sports ground.

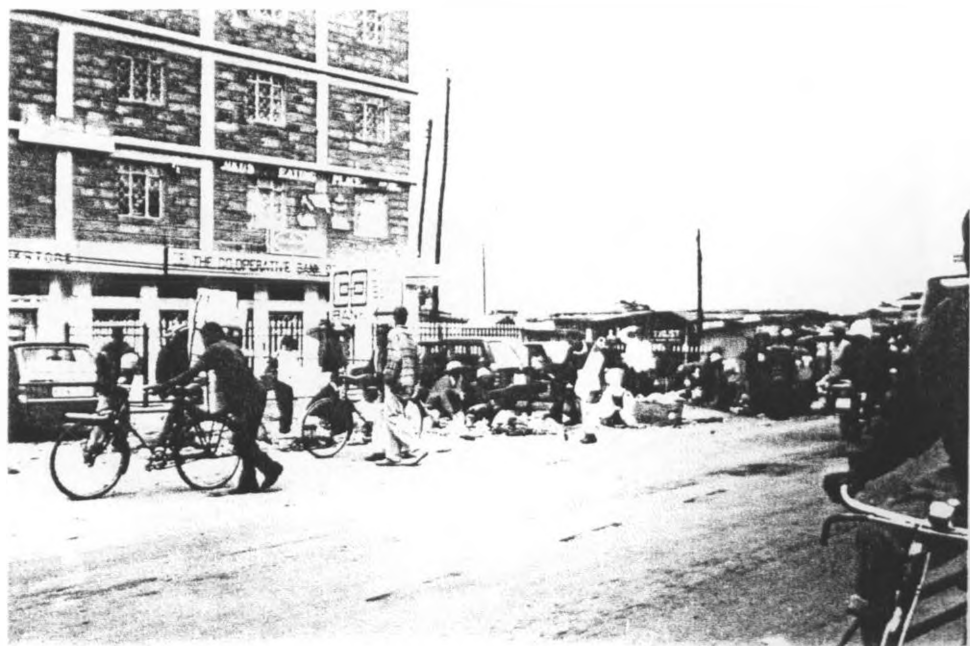


The Green Valley Club along Kinyanjui Road.

Appendix 11 Institutions
(Site Photographs)



A Church



The cooperative Bank Branch.

Appendix 12 Construction Industry
(Site Photographs)



Timber sales.



- Timber
- Ballast
- Sand
- Stone.

Appendix 13 Activities along Naivasha Road.
(Site Photographs)



- Unplanned
- Pedestrian activity
- Handovers
- Workshops



- Mixed-use space.
- All kinds of activities.



- A typical urban area
- Use of the Urban Edge.