

615 8005004601 (2)
 PD-AAG-757

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <input type="checkbox"/> A = ADD <input type="checkbox"/> C = CHANGE <input type="checkbox"/> D = DELETE		PP 2. DOCUMENT CODE 3
3. COUNTRY/ENTITY Kenya		4. DOCUMENT REVISION NUMBER <input type="checkbox"/>		
5. PROJECT NUMBER (7 digits) <input type="checkbox"/> 615-HG-005 <input type="checkbox"/>		6. BUREAU/OFFICE A. SYMBOL AFR B. CODE <input type="checkbox"/> 06 <input type="checkbox"/>		7. PROJECT TITLE (Maximum 40 characters) <input type="checkbox"/> Nairobi Housing & Community Facilities <input type="checkbox"/>
8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="checkbox"/> 8 <input type="checkbox"/> 4		9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="checkbox"/> 7 <input type="checkbox"/> 9 B. QUARTER <input type="checkbox"/> 4 C. FINAL FY <input type="checkbox"/> 8 <input type="checkbox"/> 0 (Enter 1, 2, 3, or 4)		

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT) IIPUP	(175)	()	(175)	(350)	()	(350)
(LOAN)	()	()	()	()	()	()
OTHER U.S. 1. HG Loan		25,000	25,000	25,000		25,000
2.						
HOST COUNTRY		5,180	5,180		8,080	8,080
OTHER DONOR(S)						
TOTALS						

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>79</u>		H. 2ND FY <u>80</u>		K. 3RD FY	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) SD (DS/H)	720	850		175		175			
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	D. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) SD (DS/H)					350		MM YY <input type="checkbox"/> 0 <input type="checkbox"/> 5 <input type="checkbox"/> 8 <input type="checkbox"/> 2
(2)							
(3)							
(4)							
TOTALS							

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 = NO
 2 = YES

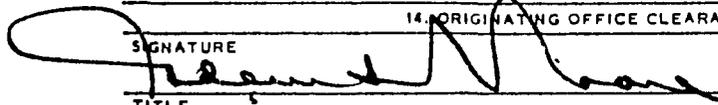
14. ORIGINATING OFFICE CLEARANCE SIGNATURE  TITLE Glenwood P. Roane Director, USAID/Kenya		15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION DATE SIGNED MM DD YY <input type="checkbox"/> 0 <input type="checkbox"/> 8 <input type="checkbox"/> 1 <input type="checkbox"/> 7 <input type="checkbox"/> 7 <input type="checkbox"/> 9 MM DD YY <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
---	--	--	--

TABLE OF CONTENTS

<u>I.</u>	<u>SUMMARY</u>	<u>PAGE</u>
	A. Facesheet	1
	B. Recommendations	3
	C. Summary Project Description	3
	D. Summary Findings	7
<u>II.</u>	<u>DETAILED DESCRIPTION</u>	
	A. Background	12
	1. Prior AID Activity	12
	2. GOK Policy Changes	12
	3. The New Development Plan	13
	4. Population and Shelter Overview of Kenya and Nairobi	14
	5. NCC Request for Assistance	15
	B. Project Goal and Purposes	15
	1. Sector Goal	15
	2. Project Purposes	16
	3. End of Project Status	16
	C. Beneficiaries	17
	D. Outputs	22
	1. Physical	22
	2. Socio-economic	24
	3. Institutional	24
	E. Inputs	26
	1. HG Loan	26
	2. Host Country and Other Capital	26
	3. Technical Assistance	27
	F. Important Assumptions	27
	G. Employment Generation	28
	H. Other Donor Activity	31

III. <u>PROJECT ANALYSIS</u>	33
A. Economic Analysis	33
1. Overview of the Kenya Economy	33
2. Public Debt Level and Service Ratios	33
3. Effect of HG Loan on Debt Service Ratio	34
4. Economic Rate of Return	34
B. Social Analysis	35
1. Community Development	35
2. Attitudes Toward Renting	35
3. Women in Development	35
4. Employment and Income Generation	36
5. Economic Integration	36
6. Spread Effect	37
C. Technical Analysis	37
1. Site Characteristics	37
2. Planning Standards	38
3. Program Components	39
4. Use of Local Materials/Building Components	42
5. Environmental Concerns	42
D. Administrative Analysis and Plan	43
1. Background	43
2. Lessons Learned	46
3. Administrative Plan	46
4. Post-Implementation	49
E. Financial Analysis and Plan	50
1. Project Costs	50
2. Shelter Solution Cost Recovery	50
3. Community Facility Cost Recovery	51
4. Employment Generation Program Cost Recovery	52
5. Costs of Loan Administration	52
6. Cash Flow	52

IV.	<u>PROJECT IMPLEMENTATION</u>	53
	A. NCC Project Management	53
	B. AID Project Monitoring	53
	C. Schedule of Implementation	55
	D. Evaluation	58
	E. Negotiation Status	59

List of Tables

	Page
I-1 Project Funding Sources and Components	10
II-1 Unit Costs and Affordability Estimates	20
II-2 Community Facilities	23
III-1 Nairobi City Council Organization	45
III-2 Project Funding Sources and Components	50
III-3 Community Facility User Fees and Charges	51

List of Figures

I-1 Umoja Site Plan	2
II-1 Nairobi Income Distribution	21

ANNEXES

1. Logframe
2. Planned Performance Tracking Network
3. PID Approval Cable and Nairobi City Council Request
4. Technical Standards
5. Technical Illustrations
6. Proposed Umoja Project Unit Organization
7. Draft Guaranty Authorization
8. Statutory Checklist

TABLE OF ABBREVIATIONS

CDC	Commonwealth Development Corporation
DP	Development Plan (Kenya)
DS/H	Office of Housing, A.I.D.
DSSH	NCC's Department of Social Services & Housing
EDF	European Development Fund
GOK	Government of Kenya
HDD	Housing Development Department (NCC)
HG	Housing Guaranty Program
IBRD	International Bank for Reconstruction & Development
KIE	Kenya Industrial Estates
MOH	Medical Officer of Health (NCC Department)
MHSS	Ministry of Housing and Social Services
NCC	Nairobi City Council
NCCK	National Christian Council of Kenya
NHC	National Housing Corporation
ODM	United Kingdom's Overseas Development Ministry
RHUDO	Regional Housing & Urban Development Office (Nairobi, Kenya)
UPU	Umoja Project Unit (NCC)

CURRENCY EQUIVALENTS

Currency Unit =	Kenya Shilling
US \$1.00 =	KShs 7.5
KShs 1 =	US \$0.13

METRIC EQUIVALENT

1 m ² =	10.75 square feet
--------------------	-------------------

PROPOSED ~~UNAJA~~ ROAD HOUSING PROJECT

Umoja II

BARBARA ROAD



PROPOSED KAYOLE SITE AND SERVICE PROJECT

-2-

BORU BORU

ZONE 1

ZONE 3

ZONE 2

FUTURE PUBLIC PARK

Umoja H
Umoja H

AREA A

AREA B

SECTOR I

SECTOR V

SECTOR IV

SECTOR II & III

AREA E

AREA D

PROPOSED DOONJLM HOUSING ESTATE

SCALE	1:1000
DATE	1980
PROJECT	DOONJLM HOUSING ESTATE
DESIGNED BY	[Signature]
CHECKED BY	[Signature]
APPROVED BY	[Signature]
DATE	1980

I. SUMMARY AND RECOMMENDATIONS

I.B. Recommendations

Based upon a review of the proposal set forth in this paper, it is recommended that the subject guaranty be approved as follows:

Amount of Guaranty: \$25 million

Term: The consolidated loan will be for a period of up to 30 years with a grace period of the repayment of principal to be negotiated with the Investor.

Interest Rate: The interest rate payable to the U.S. Investor shall not exceed the allowable rate of interest prescribed by the AID Administrator pursuant to Section 223(f) of the FAA and shall be consistent with rates of interest generally available for similar type loans.

Technical Assistance: Resident technical assistance will be provided for three years to assist NCC in project implementation especially in community development aspects of the program. This assistance at a total estimated cost of \$350,000 will be funded from the resources of AID's Integrated Improvement Program for the Urban Poor (IIPUP) which is a centrally funded grant program.

I.C. Summary Project Description

I.C.I. Background

The first Nairobi HG project, authorized in 1966, produced only 343 completed houses for middle income households. The next project, authorized in 1974, comprised almost 3,000 core houses, and reflected the new Congressional mandate that HG funds be used to finance activities for the benefit of low income households. That project was the beginning of Umoja Estate. It rapidly augmented the Nairobi housing stock, but more importantly, it instilled an awareness of the kinds of expertise required to implement large scale shelter projects. In the past decade, GOK shelter policy has shifted dramatically AID (as well as the World Bank) has helped to stimulate this improvement. The GOK shelter policy now reflects:

- . a stronger focus on the urban poor;
- . an increasing commitment to self-help and low-cost design;
- . a shift to fuller cost recovery,

- a greater emphasis on secondary cities; and
- an increasing willingness to reorganize shelter institutions.

The population of Kenya is growing at 3.9% annually, and is approaching 15 million persons. Urban population is growing at 7.5% per year, and about 2 million people already live in urban areas, that is, in towns of over 2,000. Opportunities in the agricultural sector cannot be expected to absorb future population growth. Consequently several million more people will live in towns by the end of the century. In Nairobi, new family formation is about 10,000 per year, while formal sector housing production is below 4,000 units. Production must more than triple to meet new demand and decrease the existing deficit.

GOK has requested assistance in twelve urban places including Nairobi. The Nairobi City Council (NCC) has requested a HG loan to complete development of Umoja Estate. Continuing the trend set by the first Umoja HG project, this project will reach even lower-income households. The predominant form of shelter will be a serviced site with a wet core, and building materials loans. This project is also broader in scope than the Umoja I, meeting the growing need in Umoja for community facilities and employment opportunities.

I.C.2. Project Goal and Purpose

The sector goal is to assist the GOK to develop the institutional, technological, and financial capacity to provide shelter under reasonable conditions for all levels of society with emphasis on government actions to meet the needs of the poor. The project will support GOK and AID efforts to strengthen existing housing institutions, to institutionalize the concepts of self-help, low-cost design and fuller cost recovery, and to strengthen long term shelter sector programming.

The purposes of this project are (a) to increase production of low cost housing with essential community facilities and at the same time to provide income generating opportunities, and (b) to strengthen NCC capability to plan, develop and manage such programs.

Anticipated end of project conditions include:

- shelter provide for 34,000 people from low income groups, 6,000 people from middle income groups and community facilities completed for 82,000 people.
- a low-cost housing planning unit established and functioning in NCC.
- an effective revenue collection office operating in Umoja.

skilled officers transferred from Umoja Project Unit to appropriate posts in other NCC departments.

a revolving small business loan fund operative in Umoja with appropriate management assistance to borrowers, and plans for rollover of recoveries.

I.C.3. Beneficiaries

There will be about 34,000 direct beneficiaries of the shelter component of this project including 3,400 allottees; about 40% will be tenants of allottees. An estimated 82,000 people will use the community facilities produced by this project, including the residents of the first Umoja HG project, and others in unassisted Umoja housing. There will be about 1,000 new jobs created by the employment generation subproject, and another 1,000 employed in commerce and public service delivery.

Subletting of a part of a house is common in Nairobi and will be encouraged in Umoja as a way to maximize the number of beneficiaries and to reduce the allottee income floor. Those eligible will range down from \$255 (KShs 1,900) per month; the minimum income will not be rigid, but probably will be at or below the 11th percentile or \$68 (KShs 510) per month. Eligibility criteria, aside from income level and credit worthiness will include established residence in Nairobi and lack of ownership of residential property there.

I.C.4. Outputs

Umoja II will comprise 3,400 low-income housing units produced with HG financing and 610 medium income maisonettes with local financing. The low-income units will be of five types, including three variations of a courtyard row-house (2,820 units) plus a core house version of the middle-income maisonette (100 units) and a two room flat (480 units). The row and core houses cost from \$4,050 (KShs 30,451) to \$5,687 (KShs 42,651), including building materials loans.

The community facilities will comprise nursery, primary and secondary schools, health clinics and community centers, playgrounds, markets, small industry facilities, post offices, a police station, an NCC management office and a library, in short, most of the essentials of a complete community. All infrastructure will be developed with HG assistance, but some buildings will be locally financed.

Social outputs from the intensive community development effort will include (a) a sense of community, which is a basic human need, and (b) beneficiary participation in public service delivery as a means to increase the cost effectiveness of NCC programs. The economic benefits to shelter allottees will be (a) the opportunity to own a basic house at cost (which is much less than market price) and on terms that they can afford, and (b) the opportunity to obtain income from renting a part of it.

Institutional outputs will include strengthened NCC sector performance, achieved through demonstration of an integrated team approach to program management. This will involve the simultaneous expansion of UPU responsibilities and enhancement of coordination between UPU and the permanent NCC Departments.

Another expected institutional output is improved capacity for physical planning and long-term programming; these results should flow from the feedback generated by intensive evaluation, and the proposed technical assistance in project management and long term programming.

I.C.5. Inputs

The host country contribution to this project will take four forms - allottee down payments totalling \$1,370,000 (KShs 10,275,000), land provided by NCC and valued at \$3,700,00 (KShs 27,750,000), community facilities erected without HG assistance at a cost of \$2,910,000 (KShs 21,825,000), and management consulting services to small business subprogram beneficiaries by KIE at an illustrative cost of \$100,000 (KShs 750,000).

External inputs will comprise the proposed \$25,000,000 HG loan, and technical assistance. The AID Integrated Improvement Program for the Urban Poor will provide advisory assistance at a cost of \$350,000, which will focus on community development, estate management and coordinated public service delivery.

Other assistance will be provided for long-term programming of NCC housing sector activity; this could be funded by HG fee income. Intensive evaluation of this project is proposed. Because the findings will have wide application in other sectors, Bureau funded grant assistance will be sought.

I.C.6. Important Assumptions

The key assumptions underlying this proposal are (a) that host country agencies will provide their agreed inputs (b) that NCC will institute effective administrative arrangements, (c) that NCC will have sufficient resources for its recurring expenses, and (d) that agreement can be reached with an agency to administer the employment generation program.

I.C.7. Employment Generation

The labor supply is growing much more rapidly than formal sector demand. Employment generation is needed with increasing urgency. Because Nairobi is now growing to a size where commuting can be a major burden for low-income households, it is desirable to locate additional employment opportunities near low-income communities. In the Umoja area, employment will be generated by the construction of community facilities and markets, and plots for light industry which: (a) is environmentally inoffensive, (b) will service Umoja and nearby areas, and (c) will be labor intensive. Initially, construction-related industries will have priority. At all times, Umoja residents and worker-owned firms will have priority for allocation of market stalls or shops and industrial plots.

short term housing units worker-owned

?

HG loan funds will include about \$300,000 (KShs 2,250,000) for markets, about \$160,000 (KShs 1,200,000) for servicing small industry plots, and \$1,000,000 (KShs 7,500,000) for a small business revolving loan fund and for related management assistance.

Implementation of this subprogram is expected to involve the Kenya Industrial Estates (KIE), and National Christian Council of Kenya (NCCCK); both agencies have relevant experience. This subprogram will demonstrate an industry development approach that serves firms much smaller than the usual KIE client, but larger than those now served by NCCCK; no agency in Nairobi now reaches this group. The description of this subprogram is in Section II.G; the analysis is in each section of Chapter III.

I.C.8. Other Donor Activity

The World Bank is financing a 6,000 unit site and service scheme (Dandora) in Nairobi (about 20% complete) and has agreed to a second loan for site and service and upgrading projects in Nairobi, Mombasa and Kisumu. The Bank is studying a third loan proposal for several other towns.

The European Development Fund is also supporting low-income projects in Nairobi and the Commonwealth Development Corporation is financing middle-income housing. In other towns, the U.K. and Dutch governments are active.

Coordination of these efforts is being provided by the Ministry of Housing and Social Services. In addition, AID and the World Bank are coordinating their shelter programs in Nairobi. The intensive evaluation being planned for this Umoja project should build on the Bank's assessment of its Dandora experience, both contributing significantly to the improvement of shelter activities in Kenya.

I.D. Summary Findings

I.D.1. Economic Analysis

The annual gross domestic product of Kenya has grown substantially since Independence in 1963, both in aggregate and per capita terms, and was \$337 (KShs 2,528) per person in 1978. Inflation declined to about 12.5% in 1978, and probably continues at about that rate. The 1979-83 Development Plan (DP) emphasizes expansion of self-employment; this project is consistent with the DP, in the respect and in relation to urban development and shelter sector strategies.

Kenya's external debt service has risen rapidly in recent years, but was still only 5.5% of export earnings in 1978. The proposed loan would increase the public debt by only 1.8% and thus would not add significantly to the servicing burden.

The economic rate of return for the shelter component of this project has been estimated at 17%. Return on investment in community facilities is difficult to estimate, but positive effects on labor productivity, health and welfare may reasonably be expected.

I.D.2. Social Analysis

This project should demonstrate that community organizing can increase the cost effectiveness of shelter and public service delivery. Some resistance to this approach may be expected, but there is evidence from recent experience in Nairobi and elsewhere in Kenya that it will succeed.

Most of the allottees will rent out a part of their house. Renting is common because housing is scarce, and many people still prefer to own a home in their rural birthplace. Both occupant ownership and partial renting will be encouraged in this project.

Women seldom own real property, although legally they may, and 12% of Nairobi household heads are women. This project will encourage women to make use of their right to equal access to ownership. The substantial community facilities, especially the nursery and primary schools will give women greater freedom to seek education and employment, and in the small business program women will have equal opportunity to participate.

This project will employ about 1,000 people in the small industry program, 1,000 in commercial and other community facilities and 6,000 in construction related work. An estimated 2,200 direct beneficiary homeowners will also get rental income.

Economic integration will be encouraged in Umoja by offering a range of housing costs, HG and locally financed, suitable for families earning from about \$70 to \$500 per month, and by providing a variety of employment opportunities.

This project may have two substantial spread effects. First, demonstration of improved shelter policy and procedure should lead to adoption for other shelter projects. Second, the proposed approach to community organizing is widely applicable in other sectors.

I.D.3. Technical Analysis

Umoja Estate is about 7 km east of the center of Nairobi, and in the path of the most rapid city growth. Nearby are housing estates for people of higher and lower income, and the main industrial areas; public transport is available, and trunk utility connections are on site. The soil is unstable but shallow; removal to bedrock and replacement with stable soil is feasible; similar conditions are common in Nairobi.

The master plan adopted for Umoja will create a hierarchy of four communities containing 16 neighborhoods, each composed of numerous small residential clusters around a neighborhood market, school, etc. (see Figure I-1). Pedestrian safety is stressed and road area is minimized. About 80% of the community facilities are initially being developed; funds for the balance are being reserved, pending a mid-project evaluation of actual needs.

Residential densities should rise in Nairobi to reduce transport and other costs, so the planned incorporation of multi-storey units is desirable. Non-combustible materials predominate, to minimize the danger of fire. Most of the materials are produced in Kenya; additional local production will be encouraged by this project.

An Initial Environmental Examination identified three issues to be addressed during project development; two concern the unstable black cotton soil covering the site. First, the soil has poor load-bearing capacity; as a consequence, it will be excavated wherever a building or road is to be constructed. Second, disposal during self-help construction could be a substantial problem, so all excavation and construction of the foundations and slabs will be done by NCC contractors. Third, the level terrain and shallow bedrock will require careful engineering of the drainage system to provide sufficient slopes. AID will reserve the right to review designs and construction to ensure proper performance.

I.D.4. Administrative Analysis and Plan

NCC elects the mayor and its committee chairman from their ranks and one committee oversees each of the nine operating departments. NCC shelter related responsibilities include town planning, road, water and sewerage systems, plot development and housing construction, regulation of private construction and services including sanitation, medical care, primary education and public markets.

The Umoja Project Unit (UPU) was established in 1975 to ensure a team approach to Umoja development as earlier NCC experience had demonstrated the difficulties in coordination between departments concerned with complex shelter projects. A Dandora Community Development Unit, also established in 1975 now has been designated the NCC Housing Development Department (HDD). In past years, the City Engineers Department also built many units, but it is less active today. NCC now owns about 25,000 units. Lessons learned in reviewing both UPU and HDD experience are reflected in the physical, financial and administrative plans of this project. In particular attention will focus on allocation, coordination, on-site collection, and community development efforts.

It is proposed that UPU should have sufficient staff for construction supervision, community development, administration and financial operations required during project development. UPU would be a vehicle for training and demonstration of improved techniques. Upon completion of Umoja, the staff would be assigned to HDD or to the Department of Housing and Social Services (DSSH) which handles long-term estate management. UPU will have

sections responsible for construction management, community development, and finance. Other NCC Departments will be involved. They include Engineers (town planning and roads sections), Water and Sewerage, Health (medical care, sanitation, and dwelling health code sections), Treasurer (final accounts and audit), Town Clerk (legal counsel), Education (nursery and primary schools), and DSSH (market and community center management). UPU will bear primary responsibility for coordinating this complex development.

The long-term programming function will be supported and strengthened in the permanent department primarily concerned, HDD.

I.D.5. Financial Analysis and Plan

Total project cost, including land, and including the 610 locally financed maisonettes, will be about \$40,000,000 (KShs 300,000,000); a detailed breakdown is presented in below.

Recovery of the shelter investment will be by monthly installments - level and graduated, over 25 years. About 50% of community facilities costs will be recovered by NCC from rents (for markets), fees (for schools, etc.) and GOK grants (for primary schools). The balance will be covered by NCC general revenues which mainly come from property taxes. The employment generation loans are to be fully recovered.

TABLE I - I
PROJECT FUNDING SOURCES AND COMPONENTS

Component	Units	Cost	Unit Deposit	Total Cost	FINANCING			
					Cash Deposits	Host Country	HG	UPUP
Shelter								
Type I	1000	34060	3400	34,060,000	3400,000			
Type II	1320	4873	480	6,432,360	633,600			
Type III	500	5687	560	2,843,500	330,000			
Type IV	100	5687	560	568,700	56,000			
Type V (flats)	480	3411	-	2,397,280				
Maisonettes	610	11000	-	5,710,000	5,710,000			
Subtotal	4010			23,211,840	8,079,600			
Community Facilities			Say,	23,212,000	8,080,600		315,133,000	
Employment Generation				1,100,000		100,000	1,000,000	
Technical Assistance				350,000				3350,000
Subtotal				26,439,000				
Land				3,700,000		3,700,000		
Totals:				340,139,000	38,080,000	34,710,000	325,500,000	1350,000

I.D.6. Implementation

The project period is February 1980 through December 1983); a schedule has been prepared for this period which projects commencement of construction in late 1980, and completion of move-ins in late 1983.

Intensive evaluation of this project is proposed. Nairobi is considered an ideal location for such an effort, as it has excellent support facilities and personnel, and a growing body of research materials and comparative project experience. The evaluation will measure the impact of the project both in improving the welfare of beneficiaries and increasing the capacity of NCC to manage a large program of low-cost shelter and community development.

II. DETAILED DESCRIPTION

II.A. Background

II.A.1. Prior AID Activity

For over a decade, AID has been actively involved in Kenya's shelter sector. In 1966 the first Housing Guaranty program was authorized, a \$2 million middle income project in Nairobi called Kimathi Estates. Three hundred and forty-three (343) four and five-room completed units were constructed at a cost of between \$5,500 - \$6,100 (KShs 41,500 - KShs 46,000). The current estimated market value of these units is now between \$21,000 - \$25,000 (KShs 160,000 - KShs 190,000).

Consistent with a major change in AID's shelter policy in 1974 which required that increasing consideration be given to the shelter needs of low-income households, and which was codified in 1975 to mean shelter affordable by families below the median-income in a given urban area, two new Housing Guaranty projects were simultaneously authorized in 1974 and agreements signed in 1975. They are the \$10 million Umoja I project in Nairobi and the \$5 million HG project in Kenya's secondary cities. Both projects were the culmination of several years of studies and negotiations with GOK institutions to reduce the cost of housing to lower-income households through the introduction of more appropriate building standards and unit designs.

In the Nairobi project approximately 3,000 expandable one to three-room units have been constructed in Umoja Estates, six miles from the city center at selling prices ranging from \$4,000 - \$5,000 (KShs. 30,000 - KShs. 37,500). Monthly payments range from \$40 - \$47. The structures, over 75% of which are one room units, were provided at cost, under a tenant-purchase arrangement, and with 25-year financing, generally not available in Kenya. Today their market value is twice as high as the original sale price, and for allottees who sublet units, market rents exceed monthly payment by 50% - 100%. In the second project 1,000 expandable one and two-room units have been built in 12 provincial towns at selling prices between \$4,800 - \$6,100 (KShs. 36,000 - KShs. 45,750).

Given the slow pace of public sector production prior to 1975 and explosive effective demand, both projects, but especially Umoja I, made a substantial contribution to the total housing stock. Most importantly, they caused an awareness of the kinds of management and technical expertise required to implement large-scale shelter projects.

II.A.2. GOK Policy Changes

During this past decade, positive shifts in GOK shelter policy have evolved. Evidence of these changes is found in budgetary allocations for new shelter and related community facilities and in the performance of institutions responsible for planning and implementing shelter policy and programs.

AID, through its HG program, and the World Bank through corresponding efforts, have played a catalytic role in institutionalizing these changes, especially in shifting Kenya's focus to lower-income households and in organizing its shelter resources more efficiently. The major, positive shifts in GOK shelter policy can be summarized as follows:

a stronger focus on the urban poor (people in urban places of more than 2,000), especially those households who can be served by AID's HG program, i.e., those falling below the 50th percentile in income distribution; indeed, "it is the government's policy to direct a large proportion of funds available to the provision of housing for the low-income groups" (Development Plan).

an increasing commitment to provide shelter affordable by the urban poor through both a reduction in building standards and a shift from completed, contractor-built housing to either housing extendable by the owner or self-help construction on a serviced site by a tenant purchaser.

a shift from subsidization of land, infrastructure, community facilities and interest rates to cost recovery and reinvestment in additional shelter and community development through the use of economic charges in the form of ground rents, user fees and rates, and shelter loan payments.

a greater emphasis on promoting the rational growth of secondary cities and populated centers through spatial development and a greater allocation of shelter development and financing resources to these towns.

an increasing willingness to reorganize institutions at both the national and local level in order to increase the capability of these public bodies to rapidly produce housing and community facilities, to deliver social services, and to manage housing estates.

II.A.3. The New Development Plan (1979 - 1983)

It is noteworthy that the GOK's recently published third Development Plan clearly sets forth the need for government to concentrate its efforts on constructing shelter with less expensive building standards and further supports the policy shifts enunciated above. It states that:

"The Government's long-term objective is to build as rapidly as possible a national stock of housing of minimum standard with basic standards of privacy and security providing a healthy environmental for all".

The currently proposed project for Nairobi, and the project for Kenya's secondary urban areas now in the planning stage, are both consistent with and in support of the policy objectives stated in the new Plan.

II.A.4. Population and Shelter Overview of Kenya and Nairobi

Growing at one of the highest rates in the world, 3.9% annually, Kenya's population is approaching 15 million. About 2 million of these people are urban residents, defined by the GOK as those people living in towns of more than 2,000. Although these towns and cities now comprise only 15% of the country's population, their population is growing at the rate of 7.5% per year, and is doubling every ten years. The capital city of Nairobi illustrates this phenomenon. In the 10 years from 1969 - 1979 its population increased from 509,000 to 1,000,000. Because the projected population exceeds the absorptive capacity of the land for agricultural purposes, it is estimated that several million more Kenyans will have to move to towns by the end of the century.

And as shown by numerous studies which have attempted to document the decision calculus of rural to urban migration, it is not the "bright lights" of the towns and their physical and social amenities which exert the pull force of urban areas but the expectation of obtaining a well-paying job. Although the number of job opportunities has been increasing in urban areas, especially in the poorly paid informal sector, the rate of new job creation continues to lag dramatically behind the rate of new urban arrivals. Correspondingly, growing pressures on agricultural land have reduced productive opportunities in rural areas, stimulating a steady push to urban areas.

The twins of rapid urbanization and population growth are exacerbating an already serious shelter situation. During 1979-83, Kenya's new Development Plan period, newly urban households are expected to total 150,000. The current housing deficit is estimated to be 140,000 units (DP, p. 171). In spite of increasing GOK efforts, five-year formal sector urban housing production is expected to be less than 70,000 units, including upgrading and serviced sites. In other words, one-third of all urban families now lack adequate housing, and the proportion is increasing rapidly.

In Nairobi, new family formation is on the order of 10,000 per year, while the formal sector housing production rate is much lower. Private and public production each total less than 2,000 units per year.

The growing deficit has been met by mushrooming squatter settlements and severe overcrowding. Illegal construction was estimated in 1978 to total 65,000 units, or 38% of the housing stock. In other words, production must triple to keep up with current population growth; to relieve the existing overcrowding and unsanitary conditions, production must increase more than threefold.

In Nairobi the principal agency responsible for coping with this problem is the City Council (NCC). Before 1976, NCC production averaged only 800 units per year. Subsequently, production has doubled, but continued support is required to sustain rapid further growth in the production rate.

II.A.5. NCC Request for Assistance

The continuing rapid growth of Nairobi and the dramatic urbanization of Kenya's secondary cities and smaller towns, coupled with an inadequate institutional and resource capacity to meet existing and new demands, led to requests by the GOK for new AID assistance in shelter and community development. One of these requests for additional financing was from the Nairobi City Council. In August of 1978 the NCC submitted an application to AID for \$30 million to complete Umoja Estate. Extensive discussion with the NCC has resulted in a major new demonstration program in which the predominant form of shelter will be a serviced site with a wet core and building materials loan to complete either a two or three room unit. In addition, the concept of Umoja Estate as a new human settlement with significant social and economic needs has been recognized and the integration of community facilities now plays a prominent role in the design of the project.

Concurrent with the original proposal from NCC, AID initiated a comprehensive study of the urban and rural shelter sectors in Kenya, including an evaluation of the HG programs it had implemented to date. As a result, a formal assessment of the NCC proposal was delayed until Spring of 1979 when preliminary results of the Kenya Housing Study were available. Findings from this study have provided a backdrop of experience and lessons which have been used in the physical, institutional, and administrative design of this project.

II.B. Project Goal and Purpose

II.B.1. Sector Goal

The sector goal is to assist the GOK to develop the institutional, technological, and financial capacity to provide shelter under reasonable conditions for all levels of society with emphasis on government actions to meet the needs of the poor. This is the first of two major new shelter projects which were approved in principle in a single Project Identification Document. Both projects are consistent with Kenya's new Development Plan and together support continuing GOK efforts and AID's long-term shelter strategy to:

a. strengthen the capacity of existing housing agencies and departments at the national and local levels in Kenya, through the provision of technical assistance, to finance, plan, implement and manage large-scale shelter programs, especially for low-income households;

b. institutionalize within Kenya housing agencies the aided/self-help, minimum standard, cost-recovery approach to low-cost housing, through programs demonstrating the economies and reinvestment benefits of this approach;

c. reinforce emerging GOK efforts to foster development of secondary towns and populated centers through provision of shelter and community development finance, small employment generation pilot programs, and technical assistance to local authorities;

d. encourage greater participation by the private sector in the mobilization of household savings, provision of finance and loan management services for lower-cost shelter schemes through AID-funded studies and pilot efforts;

e. support long-term financial planning for publicly-financed housing production through short-term assistance in systematizing the analysis of the national housing stock, effective demand, and housing revenues.

II.B.2. Project Purposes

The purposes of the proposed Housing Guaranty program are two-fold: first, to increase the production of low-cost shelter in Nairobi affordable by low-income households within the context of a well planned community which will include necessary services such as adequate roads, water, electricity and sanitary disposal, and community facilities such as schools, health clinics, markets, etc; second, to strengthen the capability of the Nairobi City Council to plan, develop and manage, such large-scale comprehensive programs of shelter and community development. An ancillary purpose is to enhance income-producing opportunities in Nairobi.

II.B.3. End of Project Status

At the end of the project it is intended for a number of conditions to prevail which will demonstrate that these purposes have been achieved. They include:

a. Shelter Production and Community Facilities

1) the completion of a new human settlement in Nairobi comprising 82,000 people, 30,000 from the earlier HG, 12,000 who will be living in non-HG housing, and 40,000 of whom will benefit in this project from new shelter and water and sewage infrastructure, secure tenure, and access to long-term housing finance;

2) a broad range of community facilities to meet on a priority basis and at an acceptable standard, the health, educational, recreational, social and basic commercial needs of the 82,000 people in Umoja Estate;

b. Institutional Development

1) a Low-Cost Housing Programming Unit is staffed and functioning within NCC's Housing Development Department assisting the Council in planning and programming physical and financial resources for low-cost shelter production;

2) a cadre of trained and experienced estate management officers is transferred from the Umoja Project Unit to the Department of Housing and Social Services strengthening the long-term capacity of NCC to service its rental and tenant-purchase schemes;

3) a team of community development officers experienced in community organization and technical advisory support to self-help groups is transferred from the Umoja Project Unit to NCC's Housing Development Department.

4) an on-site revenue collections office is operating in Umoja Estate employing effective delinquency control procedures and servicing 8,000 households; accountants trained in long-term portfolio management are transferred from the Umoja Project Unit to the Finance Division of HDD, contributing to strengthening NCC financial management of new shelter projects.

c. Employment

1) a revolving loan fund is established and providing short-term credit to small businesses and industries in Umoja.

2) a technical advisory staff is providing promotion and business management advice to commercial and light industrial allottees.

3) an institutional framework, including policy and procedural guidelines, is developed for re-lending of proceeds from the revolving fund.

II.C. Beneficiaries

There will be about 3,400 low-income shelter allottees in this project. Counting their family members and tenants, there will be about 34,000 direct beneficiaries of the shelter component of this project. About 40% of them will be tenants of the allottees. This projection is based on the NCC planning staff estimates of 10 persons per plot and 6 persons per family in similar existing projects.

This project will also build community facilities to serve all 82,000 Umoja residents, in accord with NCC aims to create an economically and socially integrated community, and to bring community facilities for the existing Umoja I project up to the same standard. When this project is completed, Umoja Estate will be fully developed, and at that time it is expected to have the following population:

Umoja I (3000 HG financed units complete and 1200 locally financed units under construction)	Residents	42,000
Umoja II (3400 HG financed units proposed and 610 locally financed units proposed)	Residents	<u>40,000</u>
	Total Residents	82,000

About 64,000, people, or 78% of the community facility users will be living in homes financed by HG loans.

There will be approximately 1,000 worker beneficiaries of the employment generation component. Others will indirectly benefit from the employment generating impact of (a) project construction and (b) of community facility staffing, as explained in the Social Analysis.

Subletting of a part of a house is expected to be common in Umoja, as it is elsewhere in Nairobi, for reasons noted in the Social Analysis and also for economic reasons noted below. The severe housing shortage in Nairobi has led to very high rents which induce many people to sublet a part of their house. Because of these high rents, poorer families in Nairobi often can afford only one room.

In this project, some applicants will be accepted who can afford their units only by subletting a room to increase their income. Thus, encouragement of partial subletting will increase the number of beneficiaries and reduce the minimum affordable income.

In fact, the propensity to sublet in Nairobi has been explicitly taken into account in the planning of this project and the design of shelter solutions. While partial subletting will be accepted as a legitimate economic decision of tenant purchasers, allottees will not be allowed to sublet their entire house. This rule is considered important to deter misallocation, and to ensure beneficiary commitment to the long term development of Umoja as a stable community.

The household income range of the target population is from the 11th to the 50th percentile, as shown in Table II - 1 below. This corresponds to a projected household income range from \$68 to \$255 (KShs 510 - 1900) per month, after a conservative adjustment for the anticipated income increase (due to inflation) up to the projected beneficiary selection date (July 1980).

Inflation in Nairobi has been about 12.5% per year since the last income distribution survey (1977); it will probably continue at this rate for at least another year. Incomes within the target range probably have lagged, however, and relative lag observed in the last two years is applied here to allow for this common tendency of low incomes to rise more slowly than inflation.

Sources of income will be primarily wage employment and rent, and the latter contributing at least \$33 (KShs 250) month in a majority of the households. Typical urban occupations within the target population income range include teacher, semi-skilled clerk or industrial worker, and construction tradesman. Among this target group, propensity to rent a part of the dwelling is extremely high. It is considered reasonable and prudent therefore, that allowance should be made for anticipated rental income in determining affordability.

The current Kenya Development Plan assumes that median income families spend 25% of income on housing. The most recent (1977) GOK household expenditures survey suggests that a lower average rate is more accurate, but an above-average rate appears appropriate for families who have just purchased new homes. On balance, 25% of income appears to be an appropriate criterion for limiting dwelling design and cost. The affordability estimate for this project is based on this percentage rate.

At any given income level, however, willingness to spend for shelter varies, and some families will choose to spend more than 25% of their income, rather than accept less desirable housing. Therefore, during project implementation, flexibility will be exercised in determining individual eligibility.

The minimum affordable income for this project using a traditional level payment plan, would be the 20th percentile or \$89 (KShs 670) per month. This floor may be reduced to about the 11th percentile, or \$68 (KShs 510) per month by offering a simple graduated payment plan.

In this graduated payment system beneficiaries would make their monthly payments according to a graduated scale commencing with a 20% reduction in the amount attributable to debt service. The amount payable each month would then be gradually increased each year. The debt would bear the same interest rate and be repaid over the same 25 year term as the level annuity system.

The plan cannot be offered to all beneficiaries, because the project cash flow would become excessively negative in the early years of occupancy. It may be offered safely to at least 1,000 allottees, however, and priority will be given to those families having incomes below \$160 (KShs 1,200) per month.

Other important selection criteria, aside from income level and reliability will be established residence in, and lack of any real property in Nairobi.

Available data suggest that most of the beneficiaries will come from old, over-crowded housing estates. While utility services are not likely to be major inducements, increased space and privacy, and home-ownership will be major benefits.

The following Table II-1 and Figure II-1 present the range of dwelling solutions and financing alternatives to be offered in this project, and compare them to the Nairobi income distribution. For example, an allottee earning only \$68 (KShs 510) per month could afford the lowest cost solution in this project if he were able to complete a wet core without a building materials loan, and if he were willing (a) to rent out one room, which would bring in \$33 per month, (b) to devote 25% of his income to his monthly payment, and (c) to make graduated monthly payments.

In the foregoing example, rent received by an allottee is treated as increased income. However, this rent is available to the allottee only because he has been allotted a unit. It is reasonable therefore to consider the net impact on an allottee of being selected. In the example, the monthly rental income of \$33 exceeds the monthly payment of \$25.15, so the dwelling actually is profit-making for the allottee, and there is no minimum affordable income. In fact, even if the allottee takes the building materials loan, the rental income from one room is virtually equal to the graduated monthly payment of \$34.22, and again, there is no minimum affordable income. In either case, the allottee also has free accommodation for his family.

Table II - I Unit Costs and Affordability Estimates (in US\$)

Unit Type and Payment Plan	Number of Units	Unit Cost	Down Payment	Unit Loan	Monthly ¹ Loan Payment	Other Charges	Total Monthly Payment	Income Floor ²		
								\$	Percentile	
I. Wetcore & Slab for two rooms	1000	2842	284	2558						
(a) without bldg materials loan										
1. graduated monthly payments						21.15	4.00	25.15	68	11
2. level monthly payments						26.44	4.00	30.44	89	20
(b) with bldg materials loan		4060	406	3654						
1. graduated monthly payments						30.22	4.00	34.22	105	25
2. level monthly payments					37.77	4.00	41.77	134	32	
II. Wetcore & Slab for three rooms	1320	3046	305	2741						
(a) without bldg materials loan										
1. graduate monthly payments						22.67	4.67	27.34	76	15
2. level monthly payments						28.33	4.67	33.00	99	23
(b) with bldg materials loan		4873	487	4386						
1. graduated monthly payments						36.27	4.67	40.94	131	31
2. level monthly payments					45.34	4.67	50.00	167	38	
III. Kitchen, bedroom & Slab for two rooms	500	4469	447	4022	41.58	5.33	46.90	154	36	
(a) without bldg materials loan		5687	569	5118	52.90	5.33	58.23	200	43	
(b) with bldg materials loan										
IV. Kitchen, bedroom & Slab room for one room ³	190	5078	508	4570	47.24	5.33	52.57	177	40	
(a) without bldg materials loan		5687	569	5118	52.90	5.33	58.23	200	43	
(b) with bldg materials loan										
V. Flat with two rooms ⁴	480	5411	-	5411	55.93	8.67	64.60	225	47	

1. Initial payment on graduated payment plan will be 80% of level monthly payment.

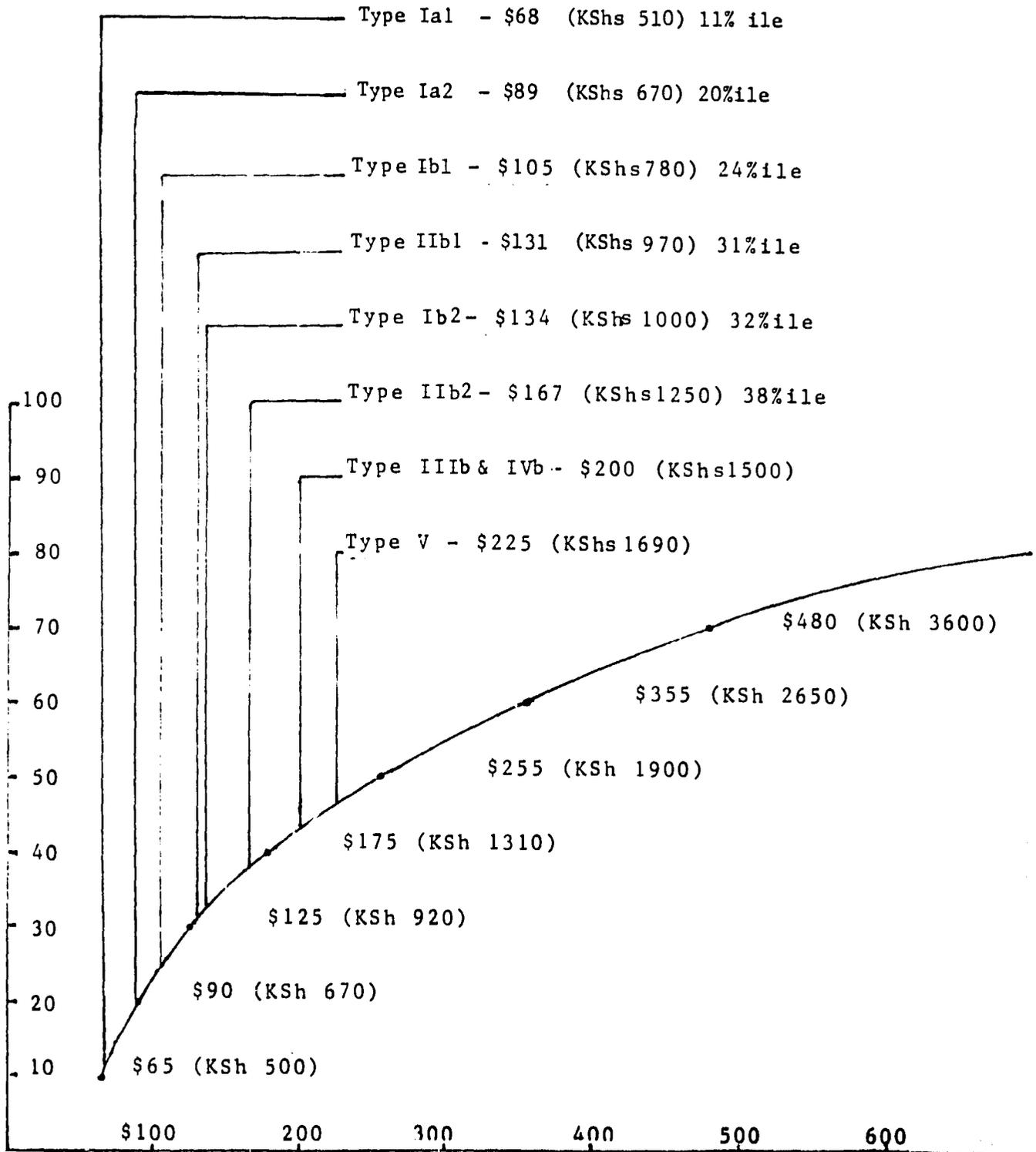
2. Adjusted for income from rental of one room (\$33).

3. Type IV is core maisonette ; Umoja II also will include 610 locally financed completed maisonettes.

4. Type V will be completed by contractor.

Nairobi Income Distribution

Figure II - 1



II.D. Outputs

II.D.I. Physical

The proposed HG loan will be used to build some 3,400 housing units in Umoja II for families below the median income level as well as the schools, health, shopping, recreational and employment facilities required for all 82,000 residents of Umoja. A master plan has been developed which will integrate Umoja I and Umoja II into a balanced new community.

a) Shelter Solutions - 4,010 serviced plots will be developed as part of Umoja II including 3,400 with HG financing. Three basic kinds of dwelling units are to be HG financed.

A one storey courtyard plan row-house built to various levels of completion (Types I, II and III).

A two storey core maisonette which is expandable upward (Type IV).

A two room rental apartment (Type V).

There will also be 610 completed maisonettes which will be sold at market rates to higher income families.

b) Community Facilities - the proposed HG loan will provide \$8,866,906 (KShs 66,501,800) for community facilities which include \$393,666 (KShs 2,945,000) for providing site preparation, infrastructure and services to all of the plots designated on the master plan for these purposes. Some of these sites will be sold at market value for development by private individuals or organizations; others will be developed by the responsible host country agency. A substantial portion of the facilities will, however, be built with HG funds with repayment and operating costs coming from NCC. Table II - 2 below indicates the types of facilities to be provided, those which are completed or presently under construction as a part of Umoja I, those to be financed initially within Umoja II, at estimated unit cost, and the total number planned within the Umoja Estates.

The completion of the package of community facilities designated above for initial construction within Umoja II should total approximately \$7,037,773 (KShs 52,783,300). Allocation of the remaining \$1,829,926 (KShs 13,718,500) will be undertaken following a survey of the residents in approximately the 36th month of project. Based on the actual demographic profile obtained from this survey, the remaining funds will be allocated so as to bring the housing and community facilities into balance in accordance with the planning standards established for the project.

-23 -
Table II - 2
Community Facilities

	Total No. Planned	Built In Umoja	Planned for Umoja II	No. Units Initial Phase Umoja II	Financed Cost <u>1/</u> per Facility
Nursery School	32	2	30	15	\$67,080
Primary School (21 Classrooms)	16	2	14	7	\$586,970
Secondary School	4	2	2		\$ 5,333 <u>2/</u>
Health Center/ Clinic	4	1	3	2	\$268,330
Community Center	4	1	3	2	\$158,480
Special Purpose Facility (Church/ Social Center)	16	4	12		\$ 1,680 <u>3/</u>
Branch Library	1	-	1		<u>4/</u>
Post Office	4	1	3		<u>5/</u>
Police Station	1	-	1		\$ 3,350 <u>6/</u>
Playing Fields/ Open Spaces	16	-	16	16	\$25,160
Small Industry Plots	120	-	120		\$ 1,680 <u>7/</u>
Local Corner Shops			16	16	<u>8/</u>
Local Market (10-15 shops in each)	16	-	16	10	\$33,540
Community Market (40 stalls)	4	1 (320 stalls)	-	-	
Shopping Center	4	1	3		\$ 3,380 <u>9/</u>

- 1/ includes landscaping of public areas adjacent to community facilities. For facilities built by a footnoted agency or group, then HG-financed project cost includes infrastructure but excludes facility.
- 2/ structure to be built by Ministry of Education. HG-financed project cost includes infrastructure but excludes facility.
- 3/ structure to be built by private groups
- 4/ space for this facility being provided in one community center
- 5/ space being provided in social centers
- 6/ structure to be built by NCC
- 7/ includes infrastructure only.
- 8/ existing house plots developed as store-front houses
- 9/ structure to be built by private developer

II.D.2. Socio-Economic Outputs

Social benefits will include increased popular participation in public service delivery due to formal community development efforts. The consequent sense of community and establishment of informal relationships with neighbors is a legitimate end in itself (see Social Analysis), but other tangible although hard to quantify community development outputs are expected. These should include reduced cost and/or increased standards of community facility operation, including sanitation, public safety, education, health care and other public services.

Community development efforts will include encouragement of beneficiary collaboration in public service delivery, especially in the provision of health care, child-development and informal education services.

The direct beneficiaries of this improvement in quality of life will be all of the residents of Umoja. In addition, because NCC has limited experience in this work, a substantial demonstration or spread effect is expected.

Most of the measurable project economic benefits will accrue to allottees of the shelter component, or to workers or allottees in the markets and the small industries subprogram. A shelter allottee will benefit by obtaining, on reasonable term, a house that is worth much more than it costs. He may then use this new asset to increase his income by renting out part of it. As a homeowner, he also will get protection against future inflation in the cost of his own shelter because his monthly payment to NCC will be controlled. As a tenant of a private landlord, he would have to pay rent at the private market rate, which is rapidly rising.

In the small industry sub-program, the workers should benefit from increased access to steady employment, and allottees should benefit from increased profits due to improved location, access to credit and management assistance. In those cases where workers are also allottees, both types of benefits would accrue to people within the target population.

II.D.3. Institutional Outputs

One of the major purposes of this project is to strengthen the capacity of the Nairobi City Council to plan, manage, and administer large scale, low-cost shelter projects. Considerable attention has been given during project preparation to the organizational, staffing, and technical assistance requirements to accomplish this. By concentrating in the Umoja project unit all the resources required to implement this project, and employing an integrated team approach to technical and administrative tasks, it is intended to demonstrate the efficiencies which can be achieved in shelter and related service delivery through a model organizational structure.

Staff seconded to this Unit from other NCC Departments or specifically recruited for a position are expected to measurably benefit from their exposure to a cross-functional approach to project administration. They will have gained hands-on experience and training in a major new community and will have gained an understanding of the importance of technicians and administrative personnel communicating, cooperating, and coordinating their activities.

An example of this is the level of cooperation that is anticipated among community development, estate management, and on-site collection staff. It is planned for community development workers to educate allottees in the provisions of the tenant purchase agreement -- especially concerning loan repayment and prohibitions against full subletting. They will work with estate management officers who will monitor violations of the agreement (and visit tenants with final demand notices to explain the consequences of non-payment) and with revenue collections staff who will monitor repayment delinquencies. The personnel in the team will need to communicate with the Town Clerk Department, the Legal Services Section of which has responsibility for evicting defaulters. Through this approach, it is intended to establish and maintain an informed allottee population, 7,000 repayment records, and a level of delinquency which does not exceed 10% of the total loan portfolio.

Another output expected on the institutional side is an improved physical planning capacity. With community development and other UPU staff members, and the results of the intensive evaluation providing continuous feedback to UPU's technical staff on allottee shelter and facility satisfaction, and this information applied to physical planning and design, it should be possible to demonstrate that user needs and preferences can be reasonably met in both shelter design and the design and distribution of community facilities. It should also demonstrate to NCC what planning standards are appropriate for a new human settlement of this size and of this income range.

The project will demonstrate savings attainable in low-cost shelter production, through allottee participation in unit completion and improvement, supported by community development officers working in the close cooperation and UPU's Inspector of Works who will inspect and approve incremental work completed by allottees.

Another institutional improvement which can be expected as a result of this demonstration effort is an organizational structure to promote Harambee efforts and increase popular participation in public service delivery decisions. Community development officers will work together with estate management officers to consider ways in which estate management can be enhanced and made more effective by utilizing local group resources and involving locally based officials such as teachers, social workers, and health care workers who will staff the community facilities.

Increased capacity to deliver critical city services will be demonstrated through introduction of alternative methods, using Umoja Estate as an experimental model. A benefit to NCC delivery capability should be realized, for example, in the area of garbage collection where efficiencies maybe demonstrated by operating a local collection service.

On the employment generation side, an administrative agency will be operating the \$1 million revolving loan fund for small industry allottees in Umoja. It will be demonstrated that employment generation can be legitimately and effectively integrated with shelter and community activities in a major human settlement, facilitating access to employment and creating needed jobs and services.

II.E. Inputs

II.E.1. HG Loan a loan for \$25,000,000 will be authorized and contracted with an eligible U.S. Investor.

II.E.2. Host Country and Other Capital

The host country capital contribution will take four forms - downpayments, land, community facilities, and employment generation assistance.

Downpayments by beneficiaries will be 10% of dwelling development cost, including cost of attributable infrastructure, dwelling construction (in the case of the core houses), and loans to beneficiaries for completion or construction of their dwellings. In the aggregate, the downpayments will total about \$1,370,000.

A tract of land now owned by NCC, and another now being acquired, have been reserved for this project. They have been valued at about \$30,000 per hectare or \$3,700,000. About 23% of the total land area is reserved for community facilities and therefore about 23% of the \$3,700,000, or \$850,000 is attributable to sites for the community facilities.

Funds for Umoja community facilities will come from NCC and GOK as well as the HG loan. NCC investment in Umoja community facilities completed to date totals about \$1,480,000. Additional NCC community facilities work in progress (or about to begin) is expected to cost about \$1,430,000.

Employment generation assistance is in the form of market analysis, management consulting and related advisory services provided without charge to small industry plot allottees by KIE. Its estimated value is \$100,000.

The total host country contribution can be summarized as follows:

Downpayments	\$1,370,000
Land	3,700,000
Community Facilities	2,910,000
Employment Generation	<u>100,000</u>
Total	\$8,080,000

II.E.3. Technical Assistance

The predominant form of technical assistance will be the Integrated Improvement Program for the Urban Poor (IIPUP). Total funds in the amount of \$350,000 will be provided from this centrally-funded grant program in the form of a long-term technical advisor to the Nairobi City Council. In an effort to increase the capacity of the NCC to plan, manage, and administer large-scale shelter programs, especially those designed to serve lower-income households, continuous resident assistance over three years will be provided in such areas as community development organization, especially self-help methods of development; design of an effective, equitable plot allocation system, design and administration of a market survey to determine Umoja demand for commercial services; planning and implementation of the employment generation component of this project; improvements in procedures to collect revenues from tenant-purchasers and reduce delinquencies; and planning and delivery of community and social services.

Other technical assistance resources may be required to fund short-term consultancies in such areas as long-term housing programming in order to assist the NCC to plan for its future shelter needs. These consultancies could be funded by fee income generated by the HG program. Additional funding will be needed to finance the intensive evaluation proposed for this project. The longitudinal survey planned, to periodically observe the effects of major changes to be introduced by program inputs, is a complex and expensive undertaking. Because of the broad mix of outputs, the results are likely to have application to other AID development efforts, especially in the areas of health, education, and institution building. Accordingly, Bureau funded grant assistance for the following fiscal year will be sought. Additional IIPUP funds are also a possible source to support the intensive evaluation.

II.F. Important Assumptions

There are a number of key assumptions that have to be made in order to assert that the project can be successfully completed. It is assumed that the GOK and NCC will carry out all of their host country obligations including the timely purchase of the remaining land for the Umoja II project area. Further, the NCC will demonstrate its commitment to improving its administrative and management capacity by supporting arrangements for long-term shelter planning and production, the enforcement of tenancy agreements, especially provisions prohibiting full subletting, and new administrative procedures to ensure the timely collection of rents and improvements in estate management.

Key planning assumptions have been made with respect to the staffing and equipping of community facilities. In particular, it is assumed that the GOK/NCC will expand their resource base as required to meet recurring obligations. Finally, it is assumed that an effective market for the shelter solutions and small industry and business plots will exist and that agreement will be reached with a GOK agency or agencies to administer the revolving loan fund and provide technical advisory services.

II.G. Employment Generation

II.G.I. Background

NCC included a small industry subprogram in its initial plan for Umoja II. Discussion of this component with NCC has led to increased attention being given to the integration of this component into the total settlement program.

This effort addresses a serious and growing problem. Since Independence in 1963, the labor force has grown much faster than formal sector employment. The current Development Plan suggests that 80% of those entering the non-farm labor force must seek self-employment, largely in the informal sector. From 1977-1978, according to the 1979 Economic Survey of Kenya, informal sector employment grew by 9.6% while the formal sector grew by only 1% and now comprises less than one half of total employment.

In addition, as the Nairobi population and urbanized perimeter expand, the time and expense of traveling to work can become a major burden for low-income households. It is desirable, therefore, and indeed consistent with current GOK thinking, that employment opportunities be located near residential areas when possible. This concept of linkage forms an important and integral demonstration feature of the total project.

The objective of this subprogram is to increase appropriate employment within Umoja. While such employment includes provision of commercial and public services, it also includes small manufacturing in shops producing such items as furniture, and a variety of intermediate processing, maintenance and repair services.

A set of criteria will be developed to determine eligibility for assistance in this subprogram. Currently it is expected that small industry applicants would have to demonstrate that their proposed production, processing, maintenance, or repair service activity in Umoja would:

- be inoffensive environmentally, that is, would not be unduly noisy, smelly or otherwise obnoxious.
- service the Umoja community and other nearby residential areas in Nairobi's eastern corridor.
- be relatively labor intensive and employ workers within the target income range to the maximum feasible extent.

It is intended initially to give priority to construction-related activities. This provision would help to ensure that allottees have access to materials, equipment and supplies to construct and finish their houses.

II.G.2. Beneficiaries

Priority in the allocation of plots for small industry (and commerce) will be given to Umoja residents, including tenants of allottees. It is proposed that allocation of plots will take place concurrently with or just subsequent to allocation of residential plots. Subprogram applicants will be expected to show evidence of some experience and skill in their chosen line of business. Preference will be given to cooperatives or partnerships in which the workmen have an ownership interest.

II.G.3. Outputs

Total employment in this small subsidy subprogram probably will be about 1,000 persons. Net new employment generation is difficult to estimate. However, labor productivity should increase, because both small industrial employers and their workers are more efficient when provided plant sites in or near major residential areas like Umoja. Rising productivity generally aids economic expansion and thereby increases total employment. Continuing population growth also increases total demand for goods and services, especially in newly developed areas of the city. Provision of facilities to serve the increased population, therefore, should also lead to increases in total employment. Physical output will include about 150 shops, and 120 small industry plots, as described in Section II.D.1.

II.G.4. Inputs

Capital investment from HG loan funds will total about \$300,000 (KShs 2,250,000) for commercial facilities, and about \$160,000 (KShs 1,200,000) for servicing small industry plots. All of these will be owned and rented out by NCC, except the storefront dwellings, which will be sold on the same terms as other dwellings, but at a higher price.

Additional HG loan funds totalling \$1,000,000 (KShs 7,500,000) will be provided to create a small business revolving loan fund and to provide related management assistance. Small industry plot allottees will be eligible for loans from this fund for purchase of essential equipment, working capital and related business needs, as determined by an NCC appointed small enterprise assistance agency. These loans will be relatively small and short-term, and will carry an interest rate reflecting the expected administrative costs and significant risk inherent in such lending.

II.G.5. Implementation

The implementation arrangements for this subprogram will be detailed after further discussion with NCC, and with Kenya Industrial Estates (KIE) and the National Christian Council of Kenya (NCCCK). Both of these agencies have substantial experience in this type of activity, and both have expressed interest in participating in the implementation of this subprogram effort.

KIE is a parastatal organization, and is the primary source of financial and technical assistance to small manufacturers. It can lend up to \$667,000 (KShs 5,000,000) and has no minimum loan limit. A typical KIE loan is \$50,000 (KShs 375,000), but KIE also seeks out smaller firms and has expressed interest in working at lower levels. KIE provides technical and management assistance to its borrowers at no charge.

NCKK is an association of churches with an active social service program which includes among its services employment generation assistance to the poorest urban families. A typical NCKK loan is in the range of a few hundred dollars, and is accompanied by intensive counseling where required, on business as well as personal matters. The NCKK aim in employment generation is to help the poorest people to reach a level where they can qualify for formal sector assistance - such as that provided by KIE.

Very small scale entrepreneurs may qualify for KIE assistance more rapidly if they join together in worker-owned and operated firms, pooling their financial, technical and management resources. These firms could be partnerships, cooperatives or corporations in which worker control and profit sharing could stimulate productivity and increase equity in distribution of project benefits. Organization of these worker groups will require special attention from an agency which has relevant experience, such as NCKK.

This subprogram will demonstrate an approach to small industry development which seeks to serve firms which are much smaller than KIE's usual client, but larger than those now served by NCKK; no agency in Nairobi now reaches this group. Thus, this subprogram hopes to usefully exploit the specialized approaches and resources of NCKK and KIE with the goal of forging a link between the two agencies. Both have expressed a desire to work together and to meet the unmet needs of the middle group of entrepreneurs.

Technical support may be provided to small industries by KIE in the form of market analysis, production planning, management consulting, and training in business management. These services would be provided as a Host Country contribution, since KIE now receives GOK appropriations to support its on-going program of assistance to small scale enterprises. Although the specific cost of these services has not been determined yet, preliminary estimates indicate that \$100,000 (KShs 750,000) would be required. Additional organizational support may be provided by NCKK to groups of craftsmen or small-scale traders who want to establish themselves as cooperatives or partnerships.

KIE also could provide additional loan funds, if required, to supplement the proposed loan fund. However, emphasis will be placed on relatively labor intensive technology. Rollover of these loans will be directed toward expansion of these same enterprises and to starting similar small scale enterprises in Nairobi.

A typical borrower under this program might be a firm producing wooden doors and windows for completion of dwellings in Umoja and neighboring low income estates. The firm might occupy a 300 square meter plot,

employ eight persons earning \$135 (KShs 1000) per month each, sell products worth \$40,000 (KShs 300,000) per year, earn gross profits of \$10,000 (KShs 75,000) per year, and pay taxes of about \$2,500 (KShs 18,750) per year. It would require initial assets of \$9,000 (KShs 67,500) including a loan of \$8,000 (KShs 60,000). The loan would be in three parts: \$3,000 (KShs 22,500) for ten years for a work shed, \$3,000 (KShs 22,500) for five years for tools; and \$2,000 (KShs 15,000) for one year for working capital.

II.H. Other Donor Activity

1. World Bank

The World Bank's first urban project in Kenya is a 6,000 site unit and service scheme, together with supporting physical and social infrastructure, in Dandora, eastern Nairobi. Loan agreements signed in 1975 provided for a \$7 million IBRD loan and a \$7 million IDA Credit. The project was programmed for completion in 1979, but has experienced some difficult implementation problems. About 1,000 plots have so far been prepared and allocated; the remainder are now scheduled through 1981, resulting in a substantial increase in original project cost estimates.

The Bank's second urban project, agreements for which were signed in mid-1978, is a \$50 million (\$25 million IDA credit - \$25 million IBRD loan) site and service and squatter upgrading effort in Nairobi and in the cities of Mombasa and Kisumu. Project funds are also supporting new program development in 10 secondary cities jointly selected by the Bank and GOK for study. From these ten, six will be selected for site and service and upgrading projects.

2. European Development Fund (EDF)

The EDF is providing slightly over \$25 million in grant funds for subprojects in Nairobi, one an integral part of the World Bank's Mathare Valley slum upgrading effort, a rental improvement scheme in Kawangware Village, and a Workshop Cluster within the Dandora project site to promote informal manufacturing enterprises.

3. Commonwealth Development Corporation (CDC-U.K.)

The CDC is a substantial investor in housing in Kenya having loaned money both to the Housing Finance Corporation of Kenya and to the NHC. However, all of its schemes, both rental and for-sale housing in Nairobi, cater to residents in the upper and upper-middle quartiles. Effective demand for CDC units is always strong.

4. Ministry of Overseas Development (ODM - U.K.)

ODM has recently decided to get involved in shelter for lower-income households in Kenya and as a first step is about to begin a study of eight secondary towns selected in consultation with the Ministry of Housing and Social Services (MHSS).

5. The Netherlands

The Netherlands is currently providing Kenya with a loan of approximately \$1.3 million for the construction of a 500 unit site and service project in the town of Eldoret. This development will provide full infrastructure to the plots and a building materials loan of approximately \$933 (KShs 7,000) to each allottee. The loan has been furnished the Government of Kenya at 2% interest with a 20 year term and 5 years grace. The loan will be administered by the National Housing Corporation and on-lent to beneficiaries having incomes in the \$40 - 160 (KShs 300 - 1200) per month range. Interest rate and term to the beneficiaries will be consistent with the NHC's usual terms.

The Ministry of Housing and Social Services (MHSS) is responsible for GOK shelter policy formulation, including determining housing requirements in each urban area, in a manner consistent with the national development strategy for urban-rural balance. To achieve balanced development, a hierarchy of growth centers has been identified, their hinterland rural service areas defined and their functions and linkages described. In this context MHSS is coordinating GOK requests for external assistance, (including a request to AID for shelter program assistance in twelve towns and populated centers.) The GOK, through the MHSS, is ensuring donor collaboration for this significant undertaking. Specifically, it is taking steps to ensure consistency in policy approach and in study methodology for individual town analyses. In addition, AID and the World Bank are coordinating their shelter programs in Nairobi. Information on current experience is regularly shared and the intensive evaluation being planned for this Umoja project should build on the Bank's in-depth assessment of its Dandora experience, both contributing significantly to the state-of-the-art in low-cost shelter.

III. PROJECT ANALYSIS

III.A. Economic Analysis

III.A.1. Overview of the Kenya Economy

During the first nine years since independence in 1963, Kenya's economy exhibited steady growth in constant terms of 6.9% per annum. Since that time, economic activity has followed a cyclical path, fluctuating on an upward trend except for a marked slump which occurred in 1975 when growth dropped to 1.2% in real terms. Economic revival was touched off by the "boom" of 1976 and 1977 when unprecedented world prices were reached for Kenya's two principal agricultural exports, coffee and tea. Kenya's economic performance during 1978 slowed markedly as Gross Domestic Product growth fell back to 5.7% (at constant 1972 prices) from the peak of 8.6% registered in 1977. A return to high levels of economic performance is not expected before 1980/81 as the short term situation continues strained with the fall in world coffee prices. During 1978 alone, they fell 33%.

Although inflation declined to approximately 12.5% in 1978, Kenya is experiencing difficulties in trying to transform its economy from an agricultural base to one exporting substantial quantities of manufactured goods. Exports of manufactured goods dropped 13% in 1978 (largely a result of the closing of the common border with Tanzania and the loss of commercial outlets to Malawi and Zambia), but despite this fact, the manufacturing sector expanded by 14%, fueled by increased domestic demand. Kenya has yet to find alternative markets for their manufactured goods although the new situation in Uganda may stimulate substantial demand over the next year.

Kenya's new Development Plan (1979 - 1983) calls for the expenditure of \$11 billion. The Plan's key strategy emphasizes increasing income earning opportunities through self-employment activities. The 1978 per capita Gross Domestic Product is estimated to be US\$166 at constant (1972) prices or US\$337 at current prices. The proposed shelter program will contribute to the Plan's employment goals in a number of ways. Immediately adjacent to the proposed site is an industrial zone which is presently being developed by Nairobi City Council. Explicitly linking settlement areas with industrial estates will help to minimize transportation and other costs related to urban sprawl. In addition, the type of expandable house proposed will provide opportunities for the small scale artisan. Although more difficult to measure, the proposed program should increase individual worker productivity by improving health conditions and increasing the level of vocational skills.

III.A.2. Public Debt Level and Service Ratios

The drastic drop in world coffee prices in 1978 and an import surge in the first half of that year seriously deteriorated Kenya's trade and balance of payments accounts. In December 1978 the government introduced various corrective measures including import deposit schemes to curb the exchange flow. These measures appear to be succeeding, and reserves have held fairly steady throughout the first half of 1979.

Kenya's public debt nearly doubled in four years to KShs 526.2 million at June 1978. There is likely to have been a further substantial rise in the last twelve months.

Despite the substantial rise in the annual debt servicing charge from KShs 26.6 million in June 1977 to KShs 56.0 million at June 1978, the debt service charge for external debt accounted for only 2.5% of earnings from exports of goods and services in 1977 and 5.5% in 1978. A further fall in exports in 1979 accompanied by greater debt service payments will probably raise the debt service ratio to more than 7% this year.

III.A.3. Effect of HG Loan on Debt Service Ratio

It does not appear that a \$25 million loan under the HG program, representing only 1.8% of total estimated central government public debt as of June 30, 1978, would constitute a significant additional debt-service burden. Given that the long term prospects for economic growth and development in Kenya are favorable, the injection of long term external financing, even on commercial terms, would also serve to ease the balance of payments difficulties now being experienced in Kenya because of the dramatic increase in the price of petroleum.

III.A.4. Economic Rate of Return

The project is expected to generate a wide range of benefits including increased employment in the construction and building materials industry, improvements in living conditions and health standards, and the delivery of a wide range of social services through the provision of community facilities. However, in order to permit an easily quantifiable and conservative evaluation, only the economic benefits of the tenant purchase shelter subprogram have been evaluated. It is felt that imputed rental value accurately reflects the many locational and amenity criteria which low income households take into account when looking for a place to live.

The imputed rental value used for each room (considered as bedrooms only and not counting kitchens) is KShs 250 per month. This rental estimate is conservative so as to take into account renting costs and turnovers.

The project costs include the land (currently valued at \$440 per plot), on-site infrastructure costs, contractor built shelter elements, building materials loans, and an estimated labor cost discounted 25% (or "shadow priced") to reflect Nairobi's relatively high unemployment rate and the fact that a certain part of house completion is typically done by persons who are not normally part of the active labor force. The average internal rate of return for all tenant purchase shelter solutions is 17%.

Community facilities are planned to serve a much larger group of beneficiaries, including the existing residents of Umoja I and the tenants who will sublet rooms in Umoja II as well as the direct allottees of Umoja II. Although the benefits of the community facilities are non-monetary in kind, their indirect effect on labor productivity, health, and welfare are considerable. Furthermore, the

project should have substantial redistributive effects by directing NCC resources into expandable housing instead of more conventional solutions which ordinarily have gone to the middle and upper income groups.

III.B. Social Analysis

III.B.1. Community Development

NCC has little experience in the use of community development as a mechanism for enhancing the cost effectiveness of its public services. This project should demonstrate that a community organizing effort, consequent popular participation in public service programming and operations, will lead to more effective and efficient delivery of shelter and public services. It is expected that the proposed Umoja community development staff will have the dual task of fostering the formation of neighborhood-based community groups and of facilitating collaboration between them and the various concerned NCC departments.

Some NCC officers may hesitate to accept this innovation in the belief that it is unwise for beneficiaries not trained in the professions to participate in defining program priorities, procedures and standards. However, there is reasonable evidence to suggest that the demonstration will succeed. In two Nairobi projects (Dandora and Hurama Village) community development officers are successfully organizing and promoting small groups to facilitate the financing and construction of homes by beneficiaries. Throughout the country, collaboration between citizens and government has been encouraged for countless projects under the slogan, "Harambee" (pulling together).

III.B.2. Attitudes Toward Renting

Many beneficiaries of this project will be tenants of other beneficiaries. This is desirable in the current Kenyan context. Renting is common in most towns, even for long periods, for three reasons. First, the housing shortage is quite severe; where two families must share a toilet and kitchen, at least both have access to these facilities. Second, many urban residents think of a rural area as home; they prefer to save for construction of a house in the place where they were born. Third, although it is less relevant to this project, large numbers of more recent immigrants have not yet dealt with more immediate needs, or obtained the sufficiently secure income needed to undertake home ownership. Maximum home ownership is to be encouraged, however, and so all plots are being sold on the customary tenant purchase basis to allottees. Although flats are planned to be rented, coop ownership remains a possibility.

III.B.3. Women in Development

Kenyan statutory law grants women the right to own property. However, few title deeds are in fact held by women. Technically men and women have equal access to credit facilities. However, a recent study of mortgage loans showed only 3.5% were allotted to women applying separately. Some financial institutions require that a woman obtain her husband's consent prior to applying for a loan.

Umoja II will offer women equal access to tenant purchase plots and loans, and this policy will be publicized, aiding Kenyan women in realization of their full legal rights. In Nairobi female headed households make up about 12% of the total. Special attention will be given in this project to ensuring that female allottees who head households are given the opportunity to register plot titles in their own name.

In the indigenous extended family system, child care is shared among available women and older children. Modernization has brought increased formal education; this has benefited not only children but also mothers, who now have more time to work or continue their own studies. The extensive Umoja school facilities will provide women with greater freedom to seek education and employment. Finally, the employment generation program of Umoja II will endeavor to advance the role of women in business. Kenyan business laws are generally unbiased sexually. However, as a result of differential access to financial and educational resources in the past, men are often able to engage in larger-scale business ventures than women. It is the lack of access to credit and other resources that this program will attempt to remedy. Equal access to small industry plots as well as access to technical assistance and credit will be promoted.

III.B.4. Employment and Income Generation

The project will directly and substantially enhance income or employment in four ways. First, the employment generation component is expected to create about 1,000 permanent small industry jobs on site, as noted in section II.G. Second, the community facilities component will require the permanent employment of at least another 1,000 people on site, two thirds in retailing and related consumer services, and one third in teaching and other public services. Third, according to a World Bank study in 1977 (Urban Development Strategy: Rural Urban Balance) \$1,000,000 (KShs 7,500,000) invested in housing construction directly creates over 250 jobs. On this basis, adjusting for inflation, this project will directly create 6,000 construction-related jobs. Fourth, the dwellings are designed to facilitate partial subletting so as to specifically provide income production opportunities. As noted in Section II.C. above, it is projected that about two-thirds, or 2,200 allottees, will sublet parts of their houses. Given current rental rates, rental income could increase the income of an allottee by 15 to 30%.

III.B.5. Economic Integration

It is NCC policy to foster economic integration in Umoja by providing a variety of shelter solutions, community facilities, and employment opportunities. Most of the existing housing projects in Nairobi aim at narrow income bands. By offering a wide range of shelter solution costs, Umoja will demonstrate the efficiency and social feasibility of economic integration within large-scale projects. This goal is important because Umoja is much larger than a traditional project; it is virtually a new town.

This project will house families having incomes ranging from about \$70 to \$255 (KShs 750 to KShs 1900) per month. Other housing in Umoja will serve families earning up to \$500 (KShs 3,750) per month. The extensive community facilities planned as part of the project will help to attract higher income families to the unassisted housing in Umoja, and will provide employment opportunities for people at all income levels throughout the anticipated income range.

III.B.6. Spread Effect

Substantial spread effects are anticipated from this project in two ways. First, demonstration of improved shelter delivery policy and procedure should lead to application of these approaches to other NCC projects, and in other towns. In Nairobi alone, NCC currently manages over 26,000 units in rental and tenant-purchase estates. This project will attempt to provide a model for improved management of those estates and assistance in programming of future projects which could adopt this model. The Kenyan community development profession is beginning to note the need for sustained attention to the special conditions of community development in an urban context.

Second, the community development orientation contemplated in this project stresses collaboration between community groups, as an alternative to confrontation, unaided community self-help, or traditional public service delivery. This proposed approach is widely applicable to other types of projects not involving urban housing. Success in this project, which will be studied by senior Kenyan community development professionals, could contribute to diffusion of this approach into other types of programs.

III.C. Technical Analysis

III.C.1. Site Characteristics

The Umoja Estate is located about 7 km east of the downtown business district of Nairobi. This area is presently developing with housing estates and light industrial areas to meet the rapid growth of Nairobi population. To the immediate west of the Umoja site is Buru Buru Housing Estate, a middle to upper income area. To the southwest is Nairobi's principal industrial area, a major employment center. To the south is Doonholm Estate, a private housing development. To the east lies undeveloped land of the Kayole Estate, site of an approved World Bank project (Urban II.). To the north is the new Dandora Road with the Dandora Industrial Park presently under development. Further north is the World Bank's Dandora sites and services project (Urban I.).

Currently two principle roads serve Umoja. Walking remains one of the principal modes of transportation, thus Umoja's proximity to the industrial area and to newly developing employment centers is highly desirable. Buses and private taxis ("matatus") provide low cost transport alternatives.

The site is underlain by durable volcanic rock, with a variable thin cover of softer ash-deposited volcanic rock. No faults have been detected in the immediate area of Umoja. However, the Eastern Rift Valley boundary is within forty kilometers of the site. This active fault zone has produced several tremors in Nairobi within the last decade. Thus the single story houses in Umoja may be safely built with concrete block or stone walls and lightweight wooden frame roofs. The multi-story units are reinforced concrete structures.

Bedrock is covered with an average depth of one meter of black cotton soil which exhibits the following properties: a) when dry, cracks develop to a depth of fifty centimeters; b) when wet, the soil becomes highly elastic, expanding in volume up to fifty percent. The slightest moisture triggers the pronounced shrink/swell cycle. Thus, the soil is quite unstable for supporting houses, roads or other structures. Due to the fortunate fact that bedrock lies at only one meter depth, it is possible at Umoja to remove the unstable soil completely in those areas where structures or roads are to be built.

As indicated in the Initial Environmental Evaluation, the native vegetation consists of tall grasses with scattered scrub acacia trees. Because the land is predominantly flat and the soils are dense clays, stormwater drainage is poor, requiring special provisions.

III.C.2. Planning Standards

The existence of desirable though economically unrealistic planning standards is a common impediment to the development of housing for lower income families in developing countries. Unrealistically high standards often result in the proliferation of unauthorized squatter settlements which fail to provide even the minimal level of sanitation and community facilities which could be afforded by the inhabitants. Nairobi is no exception to this pattern. While official planning standards for infrastructure and community facilities as well as those for building codes remain far too high to permit legal construction of housing for the lowest income groups, some progress has been made.

The standards outlined in Table 2 of Annex 4 have been used in developing the master plan for Umoja. This plan has been approved by the Nairobi City Council. The plan provides sites for all the required community facilities. All of the sites will be provided with infrastructure using funds from the HG loan but not all will be developed at the present time.

The approved master plan for Umoja (figure 8 in Annex 5) provides land use allocations for a total community of 82,000 (42,000 in Phase I and 40,000 Phase II). A hierarchical order has been established for Umoja consisting of four communities of about 20,000 people with 16 neighborhoods (5,000-7,500 people) composed of smaller clusters (200-300 people). Residential areas occupy 45% of the land area, community facilities 27% and circulation 28%.

III.C.3. Program Components

Infrastructure. The Umoja site is fully serviced with a piped water supply, waterborne sewerage system, and electrical service as described in Section 4 of Annex 4.

Although engineering design has not begun, on-site standards for infrastructure will be adjusted for Phase II based on the experience gained in Phase I. Standards for street lighting will be increased in an effort to enhance project security as will the design specifications for the paving of pedestrian paths. Water supply, storm drainage and sewage collection standards will remain constant. The master plan and the cluster plan as well as the unit designs have been modified to reduce the length of these lines thus yielding greater efficiency and economy. Road reserves and design speed standards will be reduced in accordance with the standards contained on Table 4, Annex 4.

Community Facilities. The master plan provides for a wide range of community facilities in accordance with the NCC approved planning standards for the project. While all of the sites will be serviced and made available to the NCC, not all will be developed with project funds. Table II - 2 (in the physical output section) indicates the full complement of facilities as well as the level to which the project will fund construction. The project provides for development of community facilities in two stages. Approximately 20% of the budget for community facilities has been reserved but not allocated at this time. This phasing allows for mid-project evaluation and reassessment of needs based on actual resident profiles rather than on hypothetical population projections (on which the planning standards are of necessity based). The initial allocation provides educational facilities for all ages of children ranging from nursery to secondary levels. Adequate provision for play fields is made within these educational facilities. NCC is responsible for the construction and operation of the primary schools, while the Ministry of Education is responsible for both construction and operation of the secondary schools. The nursery schools can be operated as a voluntary community-based responsibility in conjunction with the Department of Social Services and Housing of the NCC. Serviced plots for special purpose facilities, such as churches, will be made available without cost in exchange for community access to the resulting multi-purpose social halls and other facilities.

On-site commercial facilities (which will also provide employment opportunities) are provided for in the master plan, including plots for small industries, markets, shopping centers and corner shops. It is anticipated that small-scale entrepreneurs will be provided with serviced plots and loans to generate employment within the community.

Funds have been budgeted for landscaping the public open spaces and road reserves adjacent to community facilities. The planting of indigenous species of trees, plants and shrubs will also be encouraged in the residential areas on a cooperative community basis. Maintenance is the responsibility of the Parks Section of the NCC.

Shelter. The site characteristics described above indicate several areas requiring specific attention at the level of unit design.

Foundations - Unstable black cotton soils cover the Umoja site to an average depth of one meter. As described above, the complete removal and back filling procedure used in Umoja I is the most reliable solution and is also reasonably economical given the shallow deposit. Figure II in Annex 5 illustrates the excavation and trenching process used in Umoja I. Approximately 25% of the total cost of the housing units is in the foundations and slabs. These stone foundations sitting directly on bedrock can easily support two or even three storey structures. As an alternative one might be able to build light weight woodframe structures on pilings or piers except for the constraints discussed in the following section.

Structural responses to Natural Hazards-Light weight wood frame structures might therefore seem ideally suited to the soil conditions and earthquake hazards but other natural factors argue against this solution. Deforestation is becoming a serious concern in Kenya. In addition the high cost of land and rapid population growth require building at densities which require non-combustible materials, at least for party walls between units. Earthquakes are a potential hazard in the Nairobi area. Thus in the Umoja project, single storey structures are to be built with stone or concrete block walls and light weight woodframe roofs while multi-storied structures are to be built of reinforced concrete.

Unit Design. Experience gained in building Umoja I has been used in the design of each of the solutions. Three basic housing forms have been adopted; a one story courtyard plan row house built to various levels of completion (Types I, II and III), a two storey core maisonette which is expandable upward (Type IV), and a two room rental apartment (Type V).

The first form is a one story row-house core unit which is expandable around a courtyard similar to the traditional Swahili house.* Space for outdoor activities is provided and the circulation pattern facilitates subletting. When fully developed the house consists of an enclosed kitchen, a sanitary core including a water closet (toilet), a shower stall and a wash basin, plus habitable rooms. This plan has been developed in direct response to the survey of residents of Umoja I and will be the predominate dwelling design in Umoja II. It offers considerable cost flexibility depending primarily on the level of completion of the unit at the time it is delivered to the purchaser.

Types I, II, and III of the five types described below are all based on this row house core unit dwelling form.

*The traditional Swahili house consists of a number of individual sleeping rooms loosely organized around a central courtyard. Food preparation, washing and many other household activities take place in the outdoor courtyard which serves as the principal living space for the large extended family.

Type I - (See Figure 3, Annex 5) provides the purchaser with a fully serviced plot ranging in area from 126 to 147 square meters on which is built a wet core consisting of the toilet, the shower and the plumbing wall of the kitchen. The slabs for completing the kitchen and two rooms are also built by the contractor prior to delivery to the purchaser. The sales price for this solution will be approximately \$4,060, (KShs 30,450) including a building material loan for completion of the kitchen and two rooms. There will be 1,000 units built to this level.

Type II - (see Figure 4, Annex 5) is identical to Type I with the addition of a contractor built slab for one additional room and a larger loan for building materials to cover the completion of that additional room. The sales price for this wet core plus three room slab plus building materials loan is approximately \$4,873 (KShs 36,551). As an option, the Type II purchaser may request a contractor completed kitchen in lieu of the slab and building materials loan for the third room. There will be 1,320 units built to this level.

Type III - (see Figure 5, Annex 5) provides the purchaser with a fully completed core house including a toilet, shower and wash basin, a kitchen, a single living/sleeping room and the slabs for two additional sleeping rooms. The sales price for this solution is approximately \$5,687 (KShs 42,651) including a building materials loan for completing the two rooms. Only 500 units will be built to this level, but two other types of units are also to be available in this same price range.

Type IV - The second form of housing unit will be an completed or expandable two storey row-house or maisonette plan (see figure 6, Annex 5). Completed units of this type have been well received among middle income Nairobi families. In fact, Umoja II will contain 610 such units which will be completed and sold at full market value. The expandable core version of the as an maisonette, will be tried as an experiment. The objective is to demonstrate the viability of vertical expansion as a means of reducing construction and infrastructure costs. This solution consists of a one room core unit including a combination toilet and shower room, a kitchen and one living/sleeping room plus the slab for an additional ground level room. The reinforced concrete roof which will serve as the floor for the second level, and a building materials loan will be furnished for completing the second room. Only 100 units will be built of this type. The sales price is the same as Solution III, approximately \$5,687 (KShs 42,651). Although funds for expansion will not be included in the program, these units can be doubled in size while occupying sites of only 100 m². The second floor can be built either as an expansion of the first floor dwelling or as a completely separate unit for subletting.

Type V - This type (see Figure 7, Annex 5) will be completed apartments or flats intended for rental. The units will be built on four floors with four units on each floor arranged around common stairs.

This solution provides a two room apartment plus sanitary facilities, including a toilet, shower and a wash basin and a separate kitchen. The unit is completely contractor built and could be sold on a cooperative basis for approximately \$5,411 (KShs 40,586) or rented at about \$64.60 (KShs 485) per month. A total of 480 units of this type are included.

III.C.4. Use of Local Materials/Building Components

Most of the basic construction materials which are to be used in the Umoja project are produced locally and are in adequate supply. These include cement, stone, and timber. In addition, many of the building components are manufactured locally from local materials including windows, doors, kitchen sinks, and asbestos cement roofing. Others are fabricated locally from imported materials including security bars, reinforcing rods, door hardware, PVC plumbing pipes, jalousy windows, and fiber-glass louvers. A few items must be imported such as electrical fixtures, glass and toilets. An attempt will be made to stimulate local manufacture of those components now being imported and substitution of locally manufactured items. The employment generation component of the project envisions setting up a number of small industries to fabricate building components which will be needed during the construction of Umoja II and the adjacent housing estates.

III.C.5. Environmental Concerns

The potential environmental effects of the proposed project were examined in an Initial Environmental Examination dated April 1979. The IEE identified three issues to be addressed during project development. Two of the issues relate to the black cotton soil which covers the site. The first issue raised is the foundation problem related to the shrink/swell cycle of the unstable soil. Given the relatively shallow depth of the soil deposit on the Umoja site, the decision was reached to excavate fully as in Umoja I rather than attempt any of the less complete solutions considered. The second issue raised related to the disposal of soil removed during the owner construction phase of project implementation. The sedimentation problem, which became quite serious in Umoja I, will be eliminated in Umoja II by having all the foundation work completed by the contractors prior to delivery of the units to the purchasers. Thus all excavated soil will be removed from the site and dumped at suitable locations designated by NCC.

The remaining issue raised in the IEE must be finally dealt with at the time of detailed engineering design. The issue is one of assuring proper gradients in both the sewerage system and the stormwater drainage system. The experience of Umoja I indicates that the project planners and engineers are well aware of the need and the appropriate techniques for achieving gravity flow on a virtually flat site with shallow bedrock. AID will, however, reserve in the Implementation Agreement the right to review all tender documents and to inspect work in progress prior to any disbursements of funds.

III.D. Administrative Analysis and Plan

III.D.1 Background

The City of Nairobi has an elected counsel of 41 members, a Mayor elected by the councillors from within their ranks, and a Town Clerk, who is the Chief Executive, appointed by the Council on the advice of the Minister of Local Government. The Council is organized into a series of committees to deal with the City's business and these committees roughly correspond to the operating departments of the City. Committee chairmen are elected from the ranks of Councillors. Council services are provided by nine departments, each one headed by a Chief Officer. These Chief Officers serve at the pleasure of the Councillors; their policies and programs must be approved by the committees. The organization of the Council is illustrated in Table III - 1.

The City Council of Nairobi has extensive shelter sector responsibilities, including town planning; road, water and sewerage systems; large-scale plot development and dwelling construction; procurement of long-term financing for all of the above; regulation of private land and dwelling development; and provision of related services -- sanitation, medical care, primary education and public market facilities. NCC owns and manages most of the housing that it has built -- over 25,000 units.

Low-cost shelter programs have posed a challenge to the traditional professional organization of City Council departments since they require an integrated approach by different professional groups. Issues affecting more than one department and committee require a high level of consensus and coordination among officers and councillors. Early site and services projects undertaken by existing City Council departments demonstrated the difficulties of shelter planning and implementation, especially in the areas of coordination and control. As a result, new organizational arrangements emerged with the aim of streamlining shelter delivery functions for large-scale, low-cost projects.

In 1975 the Umoja Project Unit (UPU) was established to bring together as a single project team, architects, quantity surveyors, accountants, and engineers, to implement the first phase of the Umoja housing development (Umoja I, financed under HG-004). The creation of the unit was supported by AID and concentrated on design, construction, and allocation of houses. However, it has relied on the City Treasurer's Department to handle the administration of the tenant purchase agreements and collections. Estate management and social services, which (in other projects) are the responsibility of the Department of Social Services and Housing, were not provided for.

In the same year the Dandora Community Development Unit was formed to undertake the World Bank's first site and service program in Nairobi. This unit was broader in scope than the Umoja Project Unit and included community development, revenue collection, finance and legal staff. Both the UPU and the Dandora Community Development Unit, which subsequently became

the Housing Development Department (HDD), report to special coordinating committees of Council which monitor and administer the projects. The creation of both the UPU and the HDD reflected the need for and demonstrated the utility of an integrated, project-centered approach to the organization of major shelter development projects.

The other major NCC agency responsible for housing development is the City Engineers Department. The Town Planning Division of this Department is initially involved in the planning of all housing projects.

It is difficult to compare the output of the Umoja Project Unit, the Housing Department, and the City Engineers Department since the types of units produced have not been comparable. However, the number of units produced since 1975 may suggest the relative scale of their housing activities. UPU produced 3,000 core houses; HDD produced 1,000 wet cores on serviced sites, and the Engineering Department produced 2,260 units of various types.

Although the HDD, which is implementing the World Bank's complex site and service scheme at Dandora, has adequate financing to complete the remaining 5,000 units in that scheme, the City Engineers Department, which has focussed on higher cost schemes, has experienced a chronic shortage of funds. Over the past five years, that Department has planned 6,450 units but only produced 2,000. The Umoja Project Unit, on the other hand, was able to construct some 3,000 units within a three year time period, and despite inflation, within cost estimates. Much of the performance of UPU is attributable to strong leadership and the project team approach to housing development.

III.D.2. Lessons Learned

Although Umoja I was efficiently built and occupied, some important lessons were learned during implementation. As a result of the experienced gained, particular attention in Umoja II is being given to the following areas:

a. physical planning support to ensure that unit designs reflect user needs and preference, especially in the areas of subletting, security, and ventilation and to ensure that community facilities are adequate for all Umoja Estate residents and appropriately integrated into the residential community.

b. improvements in project administration, especially in the areas of revenue collection, screening of candidate for allocation, enforcement of tenancy agreements, site cleaning, garbage pick-up, and the social integration of residents into their neighborhoods.

c. improvements in coordination among the Umoja Project Unit and other NCC Departments responsible for functions bearing on Umoja project implementation, such as review and approval of designs and planning standards, and phasing construction and staffing of community facilities.

A number of the problems relating to physical planning and design have already been addressed during project preparation. Others which correspond to administrative deficiencies are addressed below.

III.D.3. Administrative Plan

One of the primary purposes of this project is to strengthen and expand the capacity of the NCC to carry out the major housing programs which will be required of it in coming years, in an economic and efficient manner. AID's strategy to achieve this purpose is to use the Umoja Project Unit during project implementation as a vehicle for training and providing hands-on experience in the multiple functional areas of shelter and community development planning and management.

It is proposed that UPU should have sufficient staff for the site supervision, community development, administration and financial operations required during the development of the project. Staff would be specifically recruited for some positions or seconded to UPU from other operating departments. On completion of the project it is proposed that seconded staff be returned to the relevant departments of Council, and that other staff be integrated into the Housing Development Department, making that Department the primary vehicle for shelter programming and implementation for low-income households.

Consideration during project design was given to making HDD the immediate implementing unit for construction of Umoja II, but it was felt that such an arrangement would severely risk overloading the present administrative capacity of the HDD. Not only is HDD responsible for supervising the construction of 2,700 units this year and 2,300 in 1980 in order to complete the Dandora scheme, but its staff will be increasingly involved in the planning of 20,000 additional site and service units and upgrading solutions in IBRD's second urban project.

The Umoja Project Unit, under the control of an officer reporting to a coordinating and monitoring committee with sufficient powers to administer the project, will serve the dual purpose of ensuring the timely completion of a large number of units to meet the critical demand of lower income households in Nairobi for improved shelter, and at the same time will train a large number of staff to meet the longer-term institutional goal of strengthening NCC capacity. To meet these needs and goals, it is proposed to maintain the Umoja Project Unit as a free-standing agency within the City Council structure, organized in a similar manner, and operating under similar procedures, as the Housing Development Department.

Project administrative responsibilities encompass a wide range of functions which are necessary to support an integrated shelter management program. These functions as they relate to the proposed organization of the Umoja Project Unit and other NCC departments are summarized below.

a. Planning. The Planning Section of the City Engineers Department, among other functions, reviews planning and layout standards and building design plans, and coordinates the reviews of plans by the Health Inspectorate, Roads Section and Water and Sewerage Department and other Council sections. Although the Planning Section has given preliminary approval to the proposed Umoja II master plan and it has been approved, along with planning standards and costs, by the Works and Town Planning Committee, further coordination between the Planning Section and the Umoja Project Unit will be required to ensure approval of building design plans. In addition, UPU will need to coordinate with relevant Council departments to ensure that financial and staffing plans for the proposed community facilities are consistent with construction phasing.

b. Community Development. Support and staff in this area will be required for three purposes: (1) to conduct screening of eligible applicants and ensure the fairness of the allocation process; (2) to organize and assist neighborhood groups for self-help building, social, and community educational purposes; and (3) to encourage collaboration between community groups and NCC officers responsible for public service delivery in Umoja. While the staff of the community facilities will be provided by and report to their respective Council departments, it is proposed that Community Development Officers who will be providing other services be directly recruited by UPU. It is essential that they be fully integrated with the technical staff of UPU. At the conclusion of the project, these staff would be transferred to either HDD or DHSS. IIPUP-funded resident technical assistance will be provided to the UPU to assist in community develop-

ment planning and implementation. Special emphasis will be given to establishing procedures and systems to facilitate the coordination and delivery of social services.

c. Revenue Collection and Loan Management. The City Treasurer's Department is responsible for collecting revenue from all housing schemes with the exception of Dandora. In general, collection of payments has been poor and high levels of delinquency are reported in all estates, including Umoja. In a departure from traditional practice, the HDD introduced the concept of an on-site collections office for the Dandora scheme. This effort has been very successful in facilitating payments and keeping delinquencies low. It is proposed that a similar on-site collections office be established at Umoja to serve all of Umoja Estate. However, it is proposed that responsibility for approval of payments, loan account processing, production of final accounts, banking and for audit remain with the City Treasurer. Assistance under IIPUP will be provided to help design practicable revenue collection procedures and the production of timely financial management information.

d. Estate Management. The Estate Management Division of the Department of Social Services and Housing (DSSH) provides estates officers located in each rental estate and some tenant purchase estates. These officers are responsible for examining the physical condition of NCC-sponsored housing and coordinating maintenance and repair services provided by the City Engineers Department. They are also responsible for monitoring the condition of public areas and buildings and coordinating services such as refuse collection, grass cutting, clearing of drains, and repairs to water pipes, sewers and roads. Finally, they deal with tenant complaints and enforce tenancy agreements, including evictions and control of stalls and corner shops.

To effectively service an estate the size of Umoja, it is estimated that current services would have to be considerably augmented. It is proposed to second required estate management staff from DSSH to UPU during project implementation and return them at the conclusion of this period. To increase compliance with the provisions of the tenant purchase agreement, especially those prohibiting full subletting, it is essential that not only sufficient staff be provided to monitor enforcement but that the Council fully support rigorous enforcement. Community Development Officers working in Umoja will facilitate the work of Estate Officers through a continuing program of tenant education. It is anticipated that the IIPUP-funded resident technician will assist in designing a communications program to inhibit infractions of the tenant purchase agreements.

e. Legal Services. Legal services for housing development include 1) preparation of tenant purchase agreements; 2) processing of contract documents; 3) legal action to recover debts; and 4) eviction of defaulters. The Town Clerk's Department has provided these services for Umoja I. Its resources are considered adequate to serve Umoja II. During project implementation, however, special emphasis will be given to coordinating the work of Community Development Officers, on-site collections staff, and the Town Clerk's Department

to ensure consistency of approach in allottee education, delinquency monitoring, and eviction of defaulters.

f. Garbage Collection. The Health Inspectorate of the Medical Officer of Health's Department is responsible for ensuring compliance with health regulations and may enforce removal of rubbish and temporary structures from sites and compliance with approved building designs. The Cleaning Section is responsible for garbage collection, street cleaning, and clearing of drains. Site clearing and garbage collection have been cited as problems in the first project and consideration is being given to introducing alternative methods in Umoja II, such as operating a local garbage collection service and including laborers on the UPU staff who can undertake basic site care functions. The latter will be particularly important in view of the continuous unit construction which will take place over the four year implementation period.

III.D.4. Post-Implementation

Following execution of the project, there will be a continuing need to provide estate management and revenue collection services on site. These functions, although the responsibility of different department -- Social Services and Housing and City Treasurer's, must be closely integrated since the collection of revenue is dependent upon the enforcement of the tenant purchase agreement. In addition, these services should cover both Umoja I and II. Staff requirements to undertake these functions have been estimated and they will provide a framework for discussion with the NCC on long-term administrative needs.

One of the purposes of this project is to enhance the capacity of the NCC to program future low-cost housing activities and to plan its requirements for staff and finance. To meet the requirements for forward planning of large-scale, complex shelter projects in Nairobi, it is proposed to provide support for the establishment of this housing programming function within the Housing Development Department. This proposal is currently being discussed by NCC and AID. Short-term consultancies funded by the HG fee funds could be provided to assist NCC in establishing the organizational framework and financial planning and programming methods needed to operate a Housing Programming Unit.

III.E. Financial Analysis and Plan

III.E.1. Project Costs

The total of cost of the project (including host country contributions) is calculated to be \$40,139,000 of which amount \$25,000,000 will be HG financed. Although the bulk of the HG investment will be for shelter solutions, \$8,867,000 will be devoted to the provision of a wide range of community facilities. In addition, there will be a coordinated program of technical assistance, credit, and facilities directed towards employment generation costed at \$1,000,000. A breakdown of project financing by sources and components is listed in Table III-1.

TABLE III - 2

Project Funding Sources and Components

Components	Units	Cost	Unit Deposit	Total Cost	FINANCING			
					Cash Deposits	Host Country	HG	IIPUP
Shelter								
Type I	1000	\$4060	\$400	\$4,060,000	\$400,000			
Type II	1320	4873	480	6,432,360	633,600			
Type III	500	5687	360	2,843,500	280,000			
Type IV	100	5687	360	568,700	56,000			
Type V (flats)	480	5411	-	2,597,280				
Maisonettes	610	11000	-	6,710,000	6,710,000			
Subtotal	4010			23,211,840	8,079,500			
Community Facilities			Sag,	23,212,000	8,080,600		\$15,133,000	
Employment Generation				1,100,000		100,000	1,000,000	
Technical Assistance				350,000				\$350,000
Subtotal				36,439,000				
Land				3,700,000		3,700,000		
Totals:				\$40,139,000	\$8,080,000	\$6,710,000	\$25,000,000	\$350,000

III.E.2. Shelter Solution Cost Recovery

Capital cost recovery of the HG financing for shelter solutions types 1-4 will be by means of the monthly mortgage repayments made by the beneficiaries. These payments are calculated on such a basis as to fully repay all capital costs involved including a 1% interest spread to NCC for loan administration and management.

Two types of monthly repayment plans (the level annuity and the graduated payments system) are proposed for the development. These plans and their differential effect on affordability are described in the Beneficiaries section of this Paper.

III.E.3. Community Facility Cost Recovery

The principal Nairobi cost recovery mechanism for these facilities will be the general tax revenues of the city (called "rates"). To the greatest extent possible, however, a portion of capital and recurrent costs of community facilities will be recovered through user fees and charges. A detailed description of user and other fees for specific community facilities follows in Table III-2.

Although receipts total 50% of the costs, an annual deficit of \$808,267 (KShs 6,062,000) is estimated for the recurrent expenses (including amortization payments) of this subprogram. AID recognizes the importance of ensuring that the Borrower has the necessary additional sources of funds. AID will enter into negotiations with NCC and other GOK agencies to arrive at a mutually agreeable course of action. A range of possibilities will be discussed including raising the city's general tax rate, increasing the amount of the Central Government's grant to Nairobi, and exploring possible additional ways to increase and maximize local revenues.

Table III - 2 Community Facility User Fees and Charges.

<u>Facility</u>	<u>Responsible NCC Department</u>	<u>Amount of User Fees and Charges</u>
Nursery	Medical Officer of Health	User fees total 25% of recurrent costs.
Primary School	City Education Department	User fees for pre-school unit only total 100% of running costs; whereas rest of primary school 'free with 75% of teachers' salaries being paid by Central Government.
Community Centers	Department of Social Services & Housing	No user charge for voluntary social, educational or cultural activities, but other events (musical shows, films, etc) carry a hire charge estimated at 3% of running costs.
Health Centers	Medical Officer of Health	Essentially no user charges since drug and staff costs come by Central Government; some fees estimated to cover 3% of running costs.
Local corner shops & local markets & workshops	Department of Social Services & Housing	Rental charges recover 100% of costs including all rent service costs.
Playing Fields	Department of Social Services & Housing	Almost no user fees though estimate hire charges at 1% recurrent costs.

III.E.4. Employment Generation Program Cost Recovery

Specific details of this program have not yet been fully developed. Loans to beneficiaries will be for varying purposes and terms (building loans, working capital, etc.). The typical loan amount will be approximately \$8,000 as further described in the Employment Generation Section II.G. of this Paper. The principle followed will be to encourage fast roll-over of the money to enable it to be relent rapidly as required. It is expected that apart from the technical assistance aid, there will be full cost recovery of all other capital and recurrent costs from the business plot allottees. The Kenya industrial Estates contribution of technical assistance, however, will be fully met by their budget and will not be reimbursed by either the NCC or the beneficiaries. NCC will be responsible for repaying this portion of the HG loan from the proceeds of the revolving funds.

III.E.5. Costs of Loan Administration

It is proposed that the Borrower, NCC, receive a 1% spread between its interest rates for borrowing from a U.S. Investor and its on-lending to tenant purchasers to cover the costs of loan administration.

It is further proposed that loan administration functions for both phases one and two of Umoja be combined to achieve better economies of scale. RHUDO Nairobi commissioned a specific study to investigate staff requirements and cost demands for loan administration. The study reported that all recurrent costs of loan administration (wages and salaries, supplies and equipment, overhead, etc.) could be accommodated by a 1% spread which would yield an amount estimated to be \$146,893 (KShs 1,101,700) per annum.

III.E.6. Cash Flow

As the various components are more fully developed in detail, a master Project Delivery Plan including cash flow, will be prepared. Each project component has been structured to ensure initial positive cash flow at all times after completion of development.

IV. PROJECT IMPLEMENTATION

IV.A. NCC Project Management

Although final details of short and long term project administration and estate management have yet to be agreed upon, a draft administrative plan for Umoja II has been prepared by an outside consultant working closely with NCC and RHUDO. This plan proposes that the Umoja Project Unit (the implementing arm of the Council) should be self sufficient in site supervision, community development, administration and financial staff required for the development period of the project. It is expected that the head of the unit will report to a coordinating and monitoring committee of the NCC with the powers necessary to administer the project. The head of the Umoja Project Unit will have sufficient authority to make the day-to-day decision involving shelter production and administration for Umoja II and will seek approvals where necessary from other pertinent NCC departments and from the appropriate coordinating committee of NCC.

Although community facilities' staff will report to their respective departments of City Council, the Umoja Project Unit will endeavor to coordinate their services at the local level. It is intended to establish a site office at Umoja which would help facilitate the integrated delivery of social services to the Umoja community and would provide a framework for future NCC decentralization of selected administrative and social services.

Finally, a system will be established with NCC to transmit the findings of the Intensive Evaluation to the appropriate NCC committee responsible for Umoja. It is believed that this feedback should prove useful to NCC in modifying some practices and taking remedial action where necessary.

IV.B. AID Project Monitoring

As the proposed project is a significant part of AID's bilateral assistance program to Kenya, USAID/Kenya will be responsible for the policy framework within which it is implemented. The AID Office of Housing (DS/H) is responsible for development, negotiation, and management of the proposed Housing Guaranty within the Mission policy framework. The Office of Housing responsibilities will be carried out by the East and Southern Africa Regional Office of the Office of Housing (RHUDO) which will coordinate all activity with USAID/Kenya.

Project Agreements for IIPUP activity will be negotiated by the RHUDO and cleared by USAID. Authority for AID reviews and approvals called for in the Guaranty Agreements have been delegated by the Office of Housing to RHUDO.

Technical and environmental reviews of the project will be conducted by short term consultants from the Office of Housing. Similarly, regular financial reviews will be scheduled.

RHUDO recommends that this project be the subject of an Intensive Evaluation. Terms of reference for this study will be drawn to test the principal assumptions on which the project is based and to monitor implementation progress. The Intensive Evaluation reports will also serve to monitor progress on the Log Frame and the Planned Performance Tracking Network and the Master Project delivery plan.

IV.C. Schedule of Implementation

The project period is February 1980 - December 1983.

Third Quarter CY 1979

1. PP approved; \$25 million authorized. AID/W

Fourth Quarter CY 1979

2. NCC & RHUDO agree on program for community facilities (including staff funding). NCC, RHUDO
3. NCC & RHUDO agree on program for allocation of residential & commercial plots. NCC, RHUDO
4. NCC & RHUDO agree on program for site clearing and refuse removal. NCC, RHUDO
5. NCC & RHUDO agree on program and costs for revenue collection and loan administration. NCC, RHUDO
6. NCC & RHUDO agree on tender and bidding procedure. NCC, RHUDO
7. NCC, RHUDO, and GOK agencies agree on employment generation program. NCC, RHUDO, GOK Agencies
8. RHUDO & GC/H negotiate Implementation Agreement. RHUDO, GC/H

First Quarter CY 1980

9. AID and NCC sign Implementation Agreement. AID, NCC
10. Advertise for and select U.S. investor. DS/H, GOK, NCC, U.S. Investor
11. Parties sign U.S. Investor & Host Country Guaranty & Loan Agreements. DS/H, GC/H, GOK, U.S. Investor
12. NCC & RHUDO add required IIPUP Technical Assistance Grant. NCC, RHUDO
13. NCC project architects prepare final design drawings, plans & specifications. NCC
14. RHUDO prepares terms of reference for Intensive Evaluation. RHUDO

SECOND QUARTER CY 1980

15. RHUDO & consultant sign contract for intensive evaluation. RHUDO, Consultant

THIRD QUARTER CY 1980

16. NCC prepares bills of quantity & tender documents. NCC
17. NCC advertises for tenders. NCC
18. NCC invites individual applications. NCC

FOURTH QUARTER CY 1980

19. NCC reviews tender and with RHUDO approval, awards contracts. NCC, RHUDO
20. Construction begins on infrastructure, shelter units and units and community facilities. NCC

FIRST QUARTER CY 1981

21. NCC screens and ballots applications and makes plot allocations. NCC

SECOND QUARTER CY 1981

22. Community development & estate management staff recruited for and/or seconded to UPU. NCC
23. NCC and RHUDO agree on procedure for building material loan program. NCC, RHUDO
24. NCC recruits staff and equips first phase of community facilities. NCC

THIRD QUARTER CY 1981

25. First allottees sign Tenant Purchase Agreements. NCC
26. First shelter units occupied; additional units occupied every 60 days thereafter. NCC
27. NCC begins to voucher building materials loans. NCC
28. NCC begins portfolio management, prepares loan cards and establishes repayment procedures. NCC
29. NCC community development staff begins to advise allottees in completion of shelter units. NCC

30. Initial community facilities opened and staffed. NCC

FOURTH QUARTER CY 1983

30. Final shelter units completed and occupied. NCC

IV.D. Evaluation

With the implementation of Umoja II, Umoja Estate will be completed and will constitute a major human settlement of approximately 82,000 people. It will also reflect a significant AID effort over time to demonstrate policy and program improvements in the delivery of low-cost shelter affordable by below-median income households. Accordingly, it is considered timely and appropriate to select Umoja II for Intensive Evaluation. Consultants will be engaged by RHUDO to assist in designing an evaluation methodology which sets forth hypotheses to be examined, measures to be used in testing the hypotheses, baseline data to be collected, provisions for periodic updating of that data, and a plan for analyzing and reporting results.

It is intended to conduct a baseline survey of eligible beneficiaries, implementing administrative units, and conditions before project occupation; shortly after move-in but prior to house expansion or consolidation; and after the full development of the housing scheme.

Kenya, and Nairobi in particular, have optimal facilities and personnel to support an intensive evaluation. Furthermore, a number of significant shelter studies have been carried out in Kenya during the last three years on a range of urban housing solutions: on site and service by the World Bank and the University of Nairobi's Housing Research and Development Unit; on core housing by the Bureau of Educational Research; and on middle income housing by the Commonwealth Development Corporation. These studies along with those planned for squatter upgrading efforts in Mathare Valley will usefully serve as analytic reference points for the Umoja II Intensive Evaluation and will provide a basis for comparative assessments of different types of low-cost shelter programs.

Umoja II will attempt to improve the physical, economic and social environment of the urban poor through the provision of the following components: tenure, basic infrastructure, new shelter and building materials loans, technical assistance in community development organization, the integrated delivery of social services, and improved estate management practices, a full range of community facilities, and incentives to stimulate small scale employment opportunities.

The Intensive Evaluation will measure the impact of these components in achieving both intended and unintended program results in a) improving the physical and socio-economic environment and well-being of project beneficiaries and b) in improving the capacity of the NCC to plan, manage, and administer a complex and large-scale program of low-cost shelter and community development. Some of the underlying assumptions of core housing and sites and service projects will be investigated.

An illustrative list of areas for possible analysis includes: the effects of the building materials loans (including varying sizes of such loans) in stimulating timely unit construction and the movement of private resources into shelter; the role of sub-letting in housing capital formation; the relationship

between new or improved housing and beneficiary quality of life (health and productivity); the effect of a mix of residential, commercial, and community facilities on community satisfaction; the impact of community development organization efforts on popular participation in public service delivery; and the direct and indirect benefits of employment creation on Umoja and contiguous areas.

Requirements for an Annual Regular Evaluation will be met through periodic reports submitted as part of the Intensive Evaluation. These reports will include evaluation of progress in meeting the projected program outputs and major implementation events, as outlined in the Logical Framework, Planned Performance Tracking Network, and the Project Delivery Plan. They will also note the deviation of the project's actual performance and present a detailed, factual basis for such revisions of the project inputs and outputs as may be necessary.

Host country participation will be provided by NCC. The NCC will be expected to submit periodic Progress Reports to RHUDO/Nairobi which indicate success in achieving scheduled targets and problems in project implementation which are inhibiting progress and require immediate attention. Policy issues, in particular, those whose resolution may be aided by RHUDO and USAID participation, should be highlighted in these reports.

In addition, as an integral part of continuing project monitoring, an architectural and engineering firm under contract with RHUDO will be requested to make periodic site inspections during the construction phase of implementation. It is expected that recommendations on improving technical aspects of the program will result from these inspections and will be transmitted by RHUDO to the NCC for action.

IV.E. Negotiation Status

AID will authorize a HG loan and send a Letter of Advice to the Borrower. When the Borrower is ready, a Notice will be placed in the Federal Register inviting interested Investors to submit loan proposals to the Borrower.

The terms and conditions of the four basic documents of the project guaranty will be negotiated simultaneously.

The legal documents are:

1. The Implementation Agreement between AID and the Nairobi City Council.
2. The Loan Agreement between the U.S. Investor and the Borrower.

3. The Guaranty Agreement between AID and the U.S. Investor.
4. The Guaranty Agreement of the Republic of Kenya between AID and the Government of Kenya.

A Master Project Delivery Plan will be prepared prior to advertising for a lender. It will be updated prior to each disbursement.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX D

Life of Project: 1979 to FY 1983
From FY 1979 to FY 1983
Total U.S. Funding \$25 million
Date Prepared: Aug 29, 1979

INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.

Project Title & Number: Nairobi Housing & Community Facilities (HG 615-005)

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: (A-1)</p> <p>To assist the Government of Kenya to develop the institutional, technological, and financial capacity to provide shelter under reasonable conditions for all levels of society with emphasis on government actions to meet the needs of the poor.</p>	<p>Measures of Goal Achievement: (A-2)</p> <ol style="list-style-type: none"> 1. GOK/NCC increases its allocation of resources for coordinated planning and production of low-income shelter units, community facilities, and social services. 2. GOK/NCC increases its output of shelter units. 3. Expansion in numbers of community facilities staffed and operating for the target population. 4. Expansion in amount of housing finance available to target population from private and public sources. 	<p>(A-3)</p> <ol style="list-style-type: none"> 1. GOK/NCC budget reports and financial data. 2. GOK/NCC official statements and reports concerning shelter. 3. Data from 1979 Census. 4. Intensive Evaluation reports. 	<p>Assumptions for achieving goal targets: (A-4)</p> <ol style="list-style-type: none"> 1. Continuing GOK/NCC financial and technical commitment to the shelter needs of the urban poor. 2. Private sector mortgage financing can be mobilized for the target population. 3. An effective market for the shelter solutions will exist in spite of inflation and economic fluctuations.

PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK

Life of Project: 1979 - 1983
 From FY 1979 to FY 1983
 Total U.S. Funding: \$25 million
 Date Prepared: August 22, 1979

Project Title & Number: Nairobi Housing & Community Facilities (IG 615-005)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose: (B-1)</p> <p>1. To increase the production of low-cost shelter in Nairobi affordable by low-income households.</p> <p>2. To strengthen the capability of Nairobi City Council to plan, manage, and administer large-scale, comprehensive programs of shelter and community development.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <p>1. Shelter production: a. New settlement of 82,000, including 40,000 from this project, is completed and new infrastructure, secure tenure, and access to long-term housing finance provided; b. Facilities and staff in place and programs operating for broad range of health, educational, and recreational, social and commercial facilities for the 82,000 Umoja residents.</p> <p>2. Institutional Development: a. Low cost housing programming unit staffed and functioning within NCC Housing Development Department. b. Cadre of estate management officers, trained at Umoja, transferred to Department of Housing and Social Services. c. Team of community development officers, trained at Umoja, transferred to Housing Development Department. d. On-site revenue collection office operating in</p>	<p>(B-3)</p> <p>1a. NCC project files and progress reports. 1b. Intensive Evaluation reports.</p> <p>- Same as above</p>	<p>Assumptions for achieving purpose: (B-4)</p> <p>1a. GOK/NCC carry out Host country obligations. 1b. Persons within target group willing and economically able to pay for improved shelter and services. 1c. NCC can recruit appropriate staff for community facilities. 1d. GOK/NCC expand their resource base to meet recurring obligations for staffing & maintenance of community facilities.</p> <p>2a. NCC accepts need for long-term housing planning and programming for low-cost shelter and support creation of forward-planning unit. 2b. NCC supports seconding of estate management officers from DSSH to UPU for project implementation. 2c. NCC supports personnel transfer as best organizational option. 2d. NCC supports establishment of on-site collections office and organizational transfer of portfolio management function.</p>

PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK

Life of Project
 From FY 1979 to FY 1983
 Total U.S. Funding \$25 million
 Date Prepared Aug 22, 1979

Project Title & Number: Nairobi Housing & Community Facilities (HG 615-005)

PAGE 2

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose: (B-1)</p> <p>3. To enhance income-producing opportunities in Nairobi.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <p>Umoja Estate, servicing 8,000 households; long term portfolio management staff transferred to Finance Division of HUD.</p> <p>3. <u>Employment Generation:</u></p> <p>a. Revolving loan fund established providing short-term credit to small business and industry in Umoja.</p> <p>b. A technical advisory staff is providing promotion and business management and advice to light industry and commercial plot allottees.</p> <p>c. An institutional framework, including policy and procedural guidelines, is developed for re-lending of proceeds from revolving fund.</p>	<p>(B-3)</p> <p>- Same as above.</p>	<p>Assumptions for achieving purpose: (B-4)</p> <p>3a. Market survey indicates sufficient effective demand and clientele for planned allocation of business plots.</p> <p>3b. Agreement is reached with a GOK and/or local agency to administer the revolving fund and provide technical advisory services.</p>

52

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1979 to FY 1983
Total U.S. Funding \$25 million
Date Prepared: Aug 29, 1979

Project Title & Number: Nairobi Housing & Community Facilities (HIC 615-005)

PAGE 3

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs: (C-1)	<i>Magnitude of Outputs:</i> (C-2)	(C-3)	<i>Assumptions for achieving outputs:</i> (C-4)
1a. New low-income shelter solutions.	1a. 3,400 shelter units completed and occupied.	1a. NCC construction reports.	1a. GOK/NCC carry out Host Country obligations.
1b. Building material loans,	1b. Up to 2920 building materials loan provided in cash or kind.	1b. UPU project reports and Intensive Evaluation.	1b. Effective demand exists for shelter solutions.
2. Improved infrastructure services,	2. Approximately 8,000 households served by improved roads, water supply, storm & sanitary sewers, and street lighting by 1983.		1c. Demand sufficient for building materials loans.
3. New community facilities built, staffed and operating.	3. Approximately 8,000 households served by community facilities including schools, health clinics, markets, recreation facilities, etc.		3. NCC can recruit appropriate staff for community facilities.
4. Increased employment through high labor content of construction activities and businesses and light industries established on site.	4a. Estimating an average of 5 construction workers per plot, 5,000 short term jobs created each year during construction period. 4b. Light industry plots generate 1,000 long term jobs. 4c. Staff of 1,000 per community facilities.	4. Intensive Evaluation reports.	4a. Allottees use informal sector workers and local materials encouraging small scale suppliers & artisans. 4b. Construction activities remain labor intensive. 4c. Size of work force comparable to that found at existing projects.

PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK

Project Title & Number: Nairobi Housing & Community Facilities / HG 615-005

Life of Project:
 From FY 1979 to FY 1983
 Total U.S. Funding: 525 million
 Date Prepared: August 29, 1979

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs: (C-1)	Magnitude of Outputs: (C-2)	(C-3)	Assumptions for achieving outputs: (C-4)
5. NCC using a revised, automated portfolio and accounts management systems.	5a. A model program produced & installed for routine portfolio management and delinquency monitoring. 5b. All tenant purchase accounts timely posted after payment received. 5c. Tenant purchase loan repayment delinquencies don't exceed 10% of total portfolio. 5d. Program established for regular maintenance activities and other estate management functions.	5. NCC budget reports & financial data.	5. NCC commitment to institutional change to achieve timely collections and improved estate management.
6. NCC produces and begins implementation of long range plan of action for production and finance of shelter for low-income families.	6a. Staff upgrading completed by 1983. 6b. Plan implemented for coordination of NCC shelter planning and production agencies by 1983.	- Same as above	6. NCC commitment to institutional change to achieve coordinated shelter production and finance.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Nairobi Housing & Community Facilities (HG 615-005)

Life of Project: From FY 1979 to FY 1983
Total U.S. Funding: \$25 million
Date Prepared: August 29, 1979

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2)	(D-3)	Assumptions for providing inputs: (D-4)
1. HG Loan	1a. \$15.2 million used for financing for 3,400 shelter solutions.	1. Intensive Evaluation reports.	1. Host country signs all HG loan agreements.
2. IIPUP Technical Assistance Grant.	1b. \$8.8 million used to finance community facilities (workshops included for employment generation). 1c. \$1 million finances employment generation loans. 2. \$3.5 million IIPUP grant.	- Same as above	2. IIPUP funds can be authorized and technical assistance personnel available.
3. Local Investment:	3a. NCC allocates 70 hectares of land.	- Same as above	3a. NCC commitment of land and other resources is timely and adequate.
a) Host Country Participation.	3b. GOK/NCC furnishes staff and equipment for community facilities.	- Same as above	3b. Effective demand continue.
b) Allottee Downpayments	3c. GOK/NCC contributes community facilities for \$2,910,000.	- Same as above	
c) Cash sales of market units	3d. GOK or local agency furnishes \$100,000 in technical support for employment generation.	- Same as above	
	3e. Allottees pay approximately \$1.3 million each cash for unit down payments.	- Same as above	

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Nairobi Housing & Community Facilities (HG 615-005)

Life of Project:
From FY 1979 to FY 1983
Total U.S. Funding \$25 million
Date Prepared: AUGUST 29, 1979

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2) 3f. Buyers of market-rate units pay approximately \$6.7 million for maisonettes.	(D-3)	Assumptions for providing inputs: (D-4)

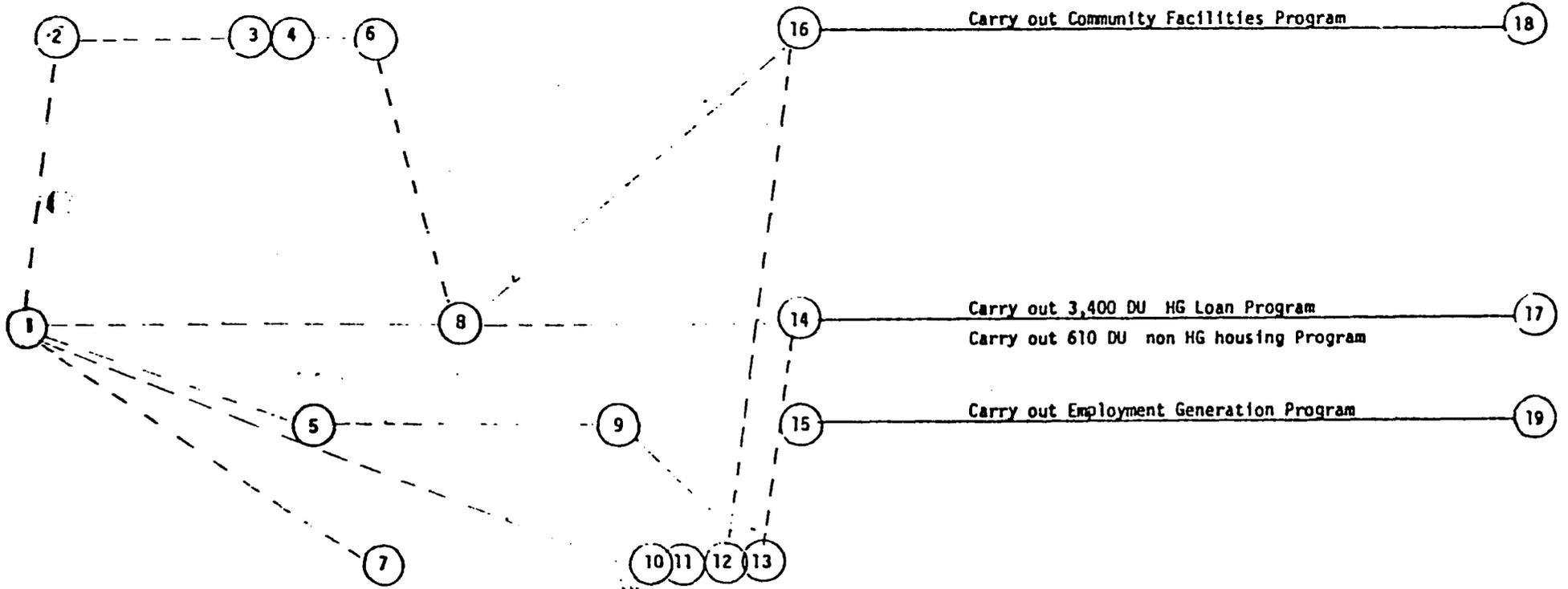
PLANNED PERFORMANCE TRACKING NETWORK

Events

1. Parties sign Implementation, Host Country Guaranty and Loan Agreements.
2. NCC's project architects prepare final design drawings, plans and specifications.
3. NCC prepared bills of quantity and tender documents.
4. NCC advertises for tenders.
5. NCC invites individual applications.
6. NCC reviews tenders and, with RHUDO approval, awards contracts.
7. RHUDO and consultant contract for Intensive Evaluation.
8. Construction begins on infrastructure, shelter units, and community facilities.
9. NCC screens and makes plot allocations by lottery.
10. Community development and estate management staff recruited for and/or seconded to UPU.
11. NCC and RHUDO agree on procedure for building materials loan program.
12. NCC recruits staff and equips first phase of community facilities.
13. First allottees sign Tenant Purchase Agreements.
14. First shelter units occupied; additional units occupied every 60 days thereafter.
15. First business plots occupied and employment generation program begun.
16. First community facilities opened to Umoja community.
17. Completion and occupation of all shelter units.
18. Occupation of all business plots and granting of all business loans.
19. Completion and use of all community facilities.

PLANNED PERFORMANCE TRACKING NETWORK

1980												1981												1982												1983											
F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	



TELEGRAM OFFICIAL

TO:

FROM:

NO.:

ACTION COPY

SUBJECT: NAIROBI HOUSING

Action taken:

No action necessary: X

(Initials) DF (Date) 8-7-79

ADAC NAIROBI PASS TO RHUDO

SUBJECT: KENYA LOW COST HOUSING (615-HQ-005, 6)

1. REVIEW OF SUBJECT PIDP HELD JULY 12, 1979, WITH RHUDO REPRESENTATIVE IN ATTENDANCE. PIDP FOUND TO BE A COMMENDABLE DOCUMENT WITH NO OUTSTANDING ISSUES AND CONCURRENCE GIVEN TO PROCEED WITH PREPARATION OF TWO HIGS - ONE IN FY 79 FOR 2,050 SERVICED PLOT (700 WITH CORE HOUSING) EXPANSION OF THE UNOJA PROJECT IN NAIROBI, AND THE OTHER IN FY 80 FOR SITES/SERVICES, BUILDING MATERIALS LOANS, SQUATTER UPGRADING, COMMUNITY FACILITIES, AND SMALL ENTREPRENEURS LOANS IN ELEVEN TOWNS AND CITIES THROUGHOUT KENYA.

2. PROJECT COMMITTEE WAS PARTICULARLY IMPRESSED WITH SOCIO-ECONOMIC ORIENTATION OF BOTH HIGS WHICH GIVE COGNIZANCE AND SUPPORT TO OTHER ELEMENTS OF IMPROVED HOUSING - I.E., SOCIAL SERVICES AND JOB OPPORTUNITIES. ALSO FAVORABLY DISPOSED TO INSTITUTION BUILDING COMPONENTS OF HIGS TO DEVELOP THE CAPACITY OF THE IMPLEMENTING BODIES TO CARRY OUT LOW COST HOUSING SCHEMES. IN THIS REGARD USE OF IIRUP PROGRAM GRANT TO PROVIDE TECHNICAL ADVICE TO THE NATIONAL HOUSING CORPORATION AND PEACE CORPS

VOLUNTEERS TO WORK WITH SUBPROJECT TOWN COUNCILS TO INSURE BETTER IMPLEMENTATION AND ADHERENCE TO SOCIAL GOALS ARE WELCOME ADDITIONS TO HIG PROGRAM. VANCE

BEST COPY AVAILABLE

HF

UNCLASSIFIED
Classification

OPTIONAL FORM 151(H)
(Formerly FS-412(H))
January 1975
Dept. of State

TELEPHONE 2428
TELEGRAMS MUNICIPALITY NAIROBI

REF NO ADM.2/3/2/815



MAYORS PARLOUR
CITY HALL
P.O. BOX 30075
NAIROBI
KENYA

15th August, 1979.

G. Roane, Esq.,
Director,
USAID Mission in Kenya,
P.O. Box 30261,
NAIROBI.

Dear Mr. Roane,

NCC/USAID HOUSING SCHEME
SECOND PHASE OF UMOJA

A lot of ground has been covered since my last letter Number ADM-2/3/217 of 1st August, 1979 towards achieving the commencement of 2nd Phase of the Umoja Housing Project. If things go the way they are planned we may even take up the physical work early next year.

Our proposals as submitted in August last year were reviewed by your technical teams from Washington, who examined the details critically and have given us some very useful suggestions, in the light of which, the scheme has now been revised and appears to be much more comprehensive. As it will be seen from the detailed reports being submitted separately, the 2nd Phase of Umoja is proposed to consist of :-

1. One Thousand expandable core units of Option 1 type, with Toilet, Shower and foundations for a kitchen and two rooms already built and materials provided to build above foundations for the unbuilt portion.
2. One Thousand Three Hundred and Twenty Units, of Option 2 type with Toilet, Shower and foundations for a kitchen and three rooms already built and materials provided to build above foundations for the unbuilt portion.

...../2

3. Five Hundred Units, of Option 3 type, with one room and a kitchen also built, in addition to Option 2 and foundations completed and materials provided for another two rooms, to be built on self help basis.
4. One Hundred Units, of Option 4 type, with WC/Shower, Kitchen, one room and foundation for the second room already built and materials provided for the superstructure of second room to be completed on self help basis. Such units will have an R.C.C. slab roof, space for a staircase and a plan to build another three rooms, a shower and a WC on the 1st floor from tenant's own resources as and when he may desire to do so.
5. Four Hundred and Eighty Units, of Option 5, flat type with two rooms, a kitchen, a WC and a shower, placed in sets of four flats each, in four storey blocks for letting out on economical rentals.
6. Six Hundred and Ten Units, of Option 6, maisonette type, with two rooms, kitchen, WC/Shower and a staircase on the ground floor and another three rooms, a WC and a shower on the 1st floor, complete in all respects for sale on market prices.
7. One Hundred and Twenty serviced plots, with materials/equipment loan to set up small scale/cottage industries.
8. Adequate number of Community facilities, like Primary Schools, Nursery Schools, Health Centres, Community Halls, Corner Shops, Market Centres etc. and serviced plots for Secondary Schools, Special Purposes and Open Spaces.

It is estimated that above mentioned 4,010 dwelling units will cost approximately Shs:123.8 Millions, Community facilities will cost approximately Shs:67.4 Millions and another 8.8 Millions will be spent to service 120 plots and provide loans to set up small scale/cottage industries(610 maisonettes not included).

As I have said before, Housing needs for the residents of Nairobi without appropriate shelters and those who are continuously migrating from rural areas have been discussed at various forums and are well known, particularly to USAID, for you have been showing a very keen interest and have also contributed substantially, for which we are indeed indebted to you.

Nairobi's present population of approximately Nine Hundred Thousands is increasing rapidly at the rate of 7½% per annum and it is expected that this population will grow to about Three Million people by the turn of the century.

From various reports and statistics available, we have concluded that unless there is a regular addition of about 10 Thousand Housing Units every year, to our present housing stocks, the gap between demand of houses and availability will continue to grow higher and higher.

Nairobi City Council has devised some schemes to cope up with this situation of acute housing shortage and I must acknowledge that assistance from USAID, in the past, has gone a long way in fulfilling our obligations to the residents of Nairobi for the provision of adequate houses. In spite of your substantial contributions, we have still not been able to meet even half of the total requirements of Five Thousand Units per year needed for the lower middle to poor income groups and that is without taking into account the demand of another Five Thousand Units for the middle to upper income groups.

Finances from various institutions are available to cater for the needs of poorest income groups, while for the lower middle to poor income groups, which need approximately 2,500 Units per year, we are seeking further finances with the assistance of USAID.

Nairobi City Council therefore requests for the approval of 2nd Phase of Umoja consisting broadly of the above mentioned components, estimated to cost approximately Shs:200 Millions, under Government of Kenya Loan Guarantee Scheme, similar to the one in the 1st Phase of Umoja, already completed.

It has been seen and established that the 1st Phase of Umoja was completed very successfully and thus we now have more experience and better organisation to undertake its 2nd Phase, under the control of City Council's Project Director who has delegation of council's authority same as that in the 1st Phase. However 2nd Phase being bigger in magnitude and of different concept, we are requesting that our Project team be further supplemented by technical assistance from USAID and that such assistance be given out of your grant provisions.

- 4 -

With this formal request, I am pleased to say that technical details, in the shape of Plans, Drawings, Financial Statements and Reports etc. which were completed as a result of strenuous efforts by your local housing office, experts from Washington and the staff of Nairobi City Council, are also being submitted.

Thanking you once again, for all that your office here in Nairobi and that of the Housing Directorate in Washington have done for us so far, I am now hoping for even more co-operation between our organisations in future.

I remain,

Yours very sincerely,

COUNCILLOR A.K. NGUMBA
M A Y O R

ANNEX 4 - Technical Standards

1. Land Use

A review of the detailed breakdown of land use in the table 1 indicates considerable differences between Phase I and Phase II of Umoja. For example, in Phase I 37.1% of the land area was allocated to roads while in Phase II only 17.4% is used for this purpose.

TABLE 1

	<u>LAND UTILIZATION:</u>		Umoja I (existing) and Umoja II				
	Umoja I		Umoja II		Total		
	HA	%	HA	%	HA	%	
Residential	61.22	43.4	57.01	46.1	118.23	44.6	
Community Facil	15.25	10.8	28.11	22.7	43.36	16.4	
Special Purpose	4.17	2.9	6.20	5.0	10.37	3.9	
Open Spaces	8.20	5.8	10.94	8.8	19.14	7.2	
Roads	52.35	37.1	21.50	17.4	73.85	27.9	

2. Neighborhood Facilities and Standards.

Each Umoja "neighborhood" will have a primary school, nursery schools, a social hall, local markets, corner shops, and open spaces. These facilities have been located along pedestrian walkways for easy and safe access, while also having separate vehicular access. A mixed land-use strategy has been proposed to incorporate residential, community, commercial and employment areas. Figures 1 and 2 in Annex 5 illustrate the neighborhoods/cluster organization.

The clusters of housing units which contain 200 - 300 people, (i.e., 20 - 30 plots) are proposed to ensure both provision of semi-public areas and an efficient circulation network. A hierarchy of open spaces in the neighborhood and the larger playing fields in the community are located in a spatial arrangement to enhance the quality of the environment.

Tables 2 and 3 show the total land requirements for community facilities in Umoja (Phase I and II). Table 2, which is based on the standards developed for the second World Bank urban project yields a total land requirement of 75.5 ha (29% of the total area of 264.95 ha). Table 3, on the other hand, is based on the Nairobi Urban Study Report.

TABLE 2: COMMUNITY FACILITIES -
 PLANNING STANDARDS : PHASES I & II (80,000 POPULATION)
 (BASED UPON SECOND URBAN PROJECT PLANNING STANDARDS - NCC -W/TP.23.02.79).

FACILITY	POPULATION CATCHMENT (No.)	MAX. WALKING DIST. (M)	LAND REQUIRED UNIT (HA)	TOTAL UNITS REQUIRED (No.)	TOTAL LAND REQUIRED (HA.)
NURSERY SCHOOLS	2,500	2-300	0.15-0.25	32	7.0
PRIMARY SCHOOLS	5,000	4-600	1.50	16	24.0
SECONDARY SCHOOLS	20,000	-	2.00-4.00	4	12.0
COMMUNITY CENTRES	20,000	-	0.4 -0.60	4	2.0
HEALTH CENTRES	20,000	-	0.25-0.50	4	2.0
SPECIAL PURPOSE/ SOCIAL HALL, CHURCH	5,000	4-600	0.25-0.50	16	3.5
CORNER SHOPS/ LOCAL SHOPS	5,000	4-800	0.25-0.50	16	3.5
LOCAL MARKETS	5,000	4-800	0.10-0.50	16	2.5
COMMUNITY MARKETS	20,000	-	0.40-0.60	4	2.0
SHOPPING CENTRES	20,000	-	1.00-2.00	4	4.0
LIGHT IND. AREA (SMALL SCALE/COTTAGE INDUSTRIES)	20,000	-	0.20-0.40	4	1.0
POST OFFICE	20,000	-	0.20-0.40	4	1.0
POLICE STATION	50,000	-	0.50-2.50	1	1.0
BRANCH LIBRARY (WITHIN COMMU- NITY CENTRE).	80,000	-	-	1	-
PLAYING FIELDS (OPEN SPACES).	5,000	4-600	0.50-1.00	16	7.0

Land per capita = $9.5m^2$; Total land = 75.5 Ha. (REQUIRED).

Land per capita = $9.5m^2$; Total land = 75.5 Ha. (PROVIDED).

TABLE 3: COMMUNITY FACILITIES -
 PLANNING STANDARDS : PHASES I & II (80,000 - POPULATION).
 (BASED UPON NAIROBI URBAN STUDY - PLANNING STANDARDS - 1970/71).

FACILITY	POPULATION CATCHMENT (No.)	MAX. WALKING DISTANCE (M)	LAND REQUIRED/ UNIT (HA)	TOTAL UNITS REQUIRED (No.)	TOTAL LAND REQUIRED (HA.)
NURSERY SCHOOL	2,500	-	0.20	32	6.4
PRIMARY SCHOOL	5,000	-	2.80	16	44.8
SECONDARY SCHOOL	12,000	-	4.80	6	28.8
SOCIAL CENTRE	20,000	-	0.40	4	1.6
CLINIC	10,000	-	0.40	8	3.2
CHURCH	10,000	-	0.40	8	3.2
COMMUNITY CENTRE	20,000	-	0.50*	4	2.0
HEALTH CENTRE	20,000	-	0.50*	4	2.0
CORNER SHOP	3,000	-	0.10	26	2.6
LOCAL SHOPPING CENTRE	7,500	-	0.60	10	2.0
COMMUNITY MARKET	20,000	-	0.50*	4	2.0
SHOPPING CENTRE	20,000	-	2.40	4	9.6
LIGHT IND. AREA	-	-	-	-	-
POST OFFICE	10,000	-	0.25*	8	2.0
POLICE STATION	50,000	-	1.00*	1	1.0
BRANCH LIBRARY (WITHIN A COMMU- NITY CENTRE.)	80,000	-	-	1	-
PLAYING FIELDS (INCLUDED IN PR & SEC. SCHOOLS.)	-	-	-	-	-

* Assumed to be the same as in the Second Urban Project since no information is readily available.

Land per capita = $14.4m^2$; Total land = 115.2 HA. (REQUIRED).
 " " " = $9.5m^2$; Total land = 75.5 HA. (PROVIDED).
 " " " = $4.9m^2$; Total land = 39.7 HA. (SHORTFALL).

3. Road Standards.

TABLE 4 - Road Standards Umoja II.

	Road Reserve (m)	Design Speed (Km/h)
Primary Distributor with Bus Traffic	20	50
Primary Distributor	18	50
Local Distributor (Residential Dist.)	12	30-40
Minor Access Road	9	14-25
Primary Path	9	NA
Secondary Path	6	NA
Domestic Path	3	NA

The above hierarchy and road reserves have been approved by the NCC Works & Town Planning Committee (23.02.79) as the planning standards for the World Bank Second Urban Project and will be used in the detailed design of Umoja II.

Major road intersections will all be T-junctions rather than x-junctions to provide safe flow of vehicles. Pedestrian crossings and bus "lay-byes" will be provided at appropriate locations.

The NCC traffic section has accepted the realignment of the busway to the south of the site along Kahawa Road, instead of through the middle of Umoja as had originally been proposed. This realignment will further increase safety while providing for adequate access to public transport.

4. Infrastructure

Umoja is supplied with piped water from the Chania River to the north of Nairobi. From the Gigiri Reservoir, a 32" Ø line takes water to the Eastern Area of the city. A main water line then goes alongside Outer Ring Road, and gives a 10" Ø line to serve the Umoja Estate. Nearing

completion is a storage tank immediately to the south.

Phase IA of the Middle Chania Water Supply Project, to be finished by the end of 1979, will increase Nairobi's water supply to 11.5 mgd from the current 9 mgd. Phase 2 scheduled for completion in 1982 will increase water supplies to 30 mgd. Thus the supplies and distribution system should be adequate for Umoja II.

At the present time, two sewerage lines (9" and 15"Ø respectively) from Umoja 1 are built to temporary oxidation ponds near Kariobangi, one kilometer north of New Dandora Road. By the start of 1980, the sewer lines will be connected to the main trunk line which terminates at the Dandora Sewage Treatment Plant (16 kilometers east of Kariobangi along the Nairobi River). This plant will be the main treatment facility for Nairobi. It currently has 96 hectares of oxidation ponds, with land available for expansion to 2,000 hectares of ponds. Umoja II will need lines to the trunk line which is being extended to Kenya Creameries, just north of Umoja.

Hydroelectric power generated at Jinja, Uganda is transferred to the substation at Dandora, which serves Nairobi. A 66 kv line traverses Umoja, but power for the site comes from another line along New Dandora Road. An 11 kv line is transformed on-site to 0.415 kv and then distributed to all units.

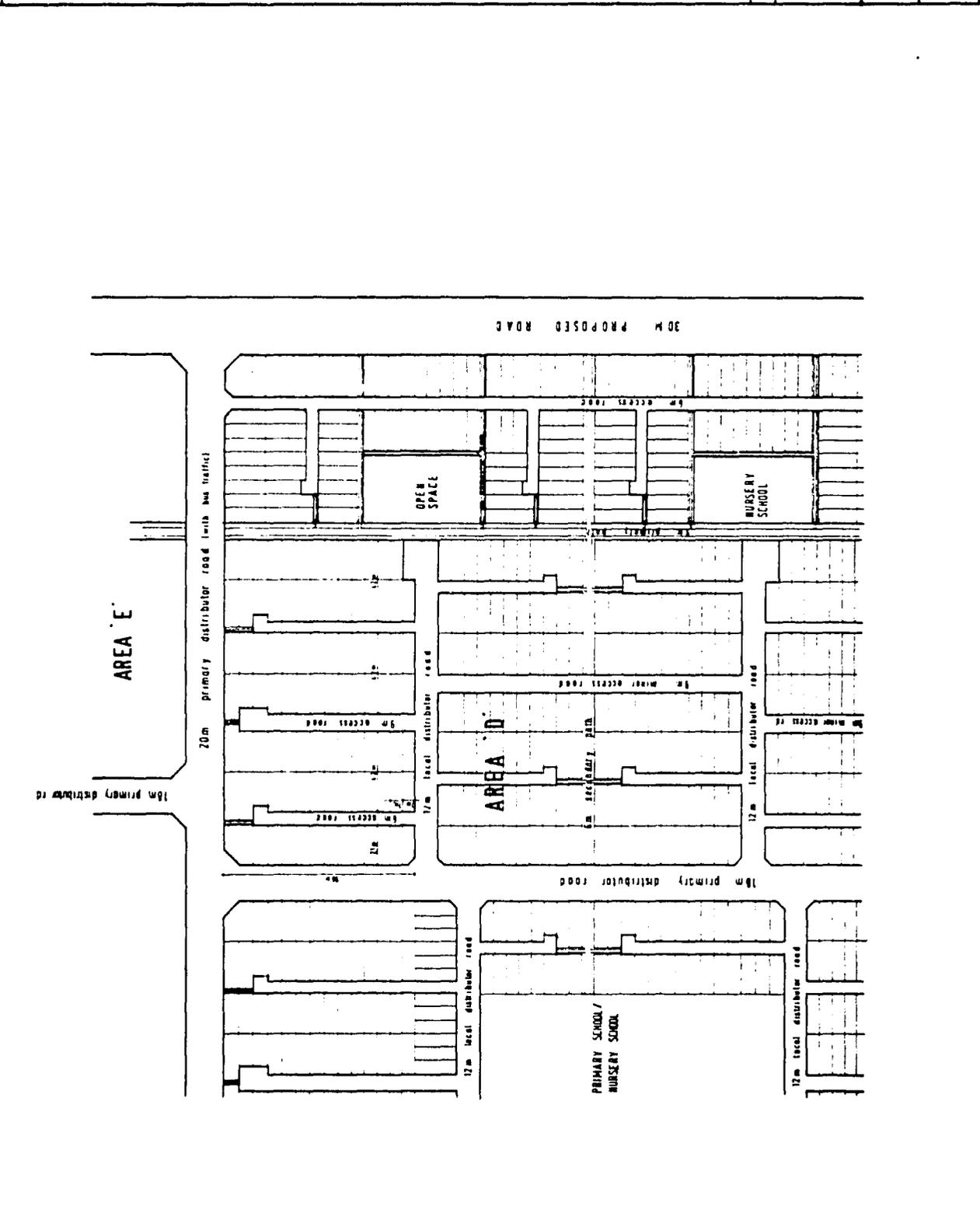
notes -

NAIROBI CITY COUNCIL
 PROJECT NAME: NEW HOUSING DEVELOPMENT AT AREA E
 DATE: 2011
 SCALE: 1:1000
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

PROJECT NO: [Number]
 SHEET NO: [Number]
 TOTAL SHEETS: [Number]

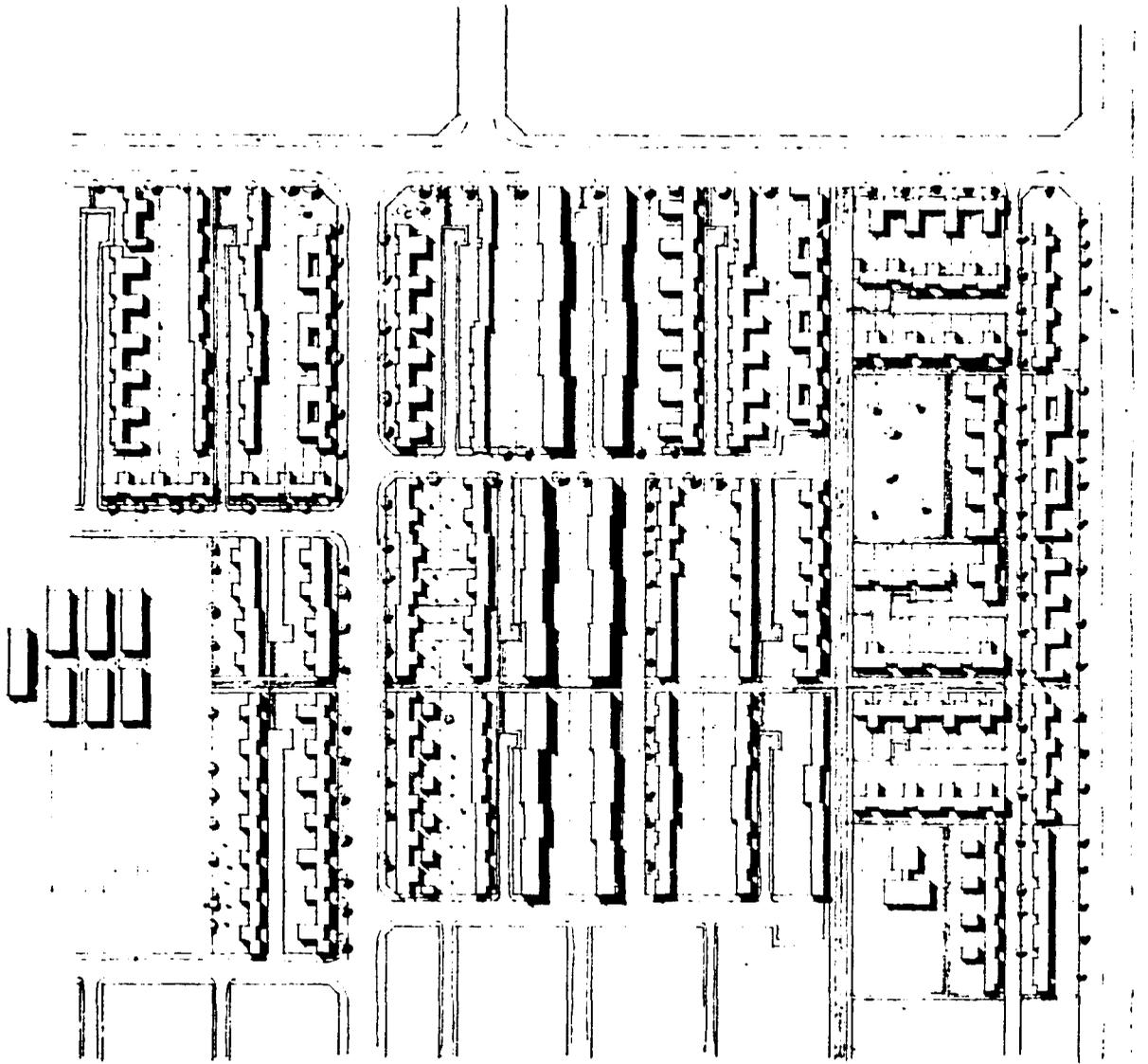
DATE: 2011
 SCALE: 1:1000
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

PROJECT NO: [Number]
 SHEET NO: [Number]
 TOTAL SHEETS: [Number]



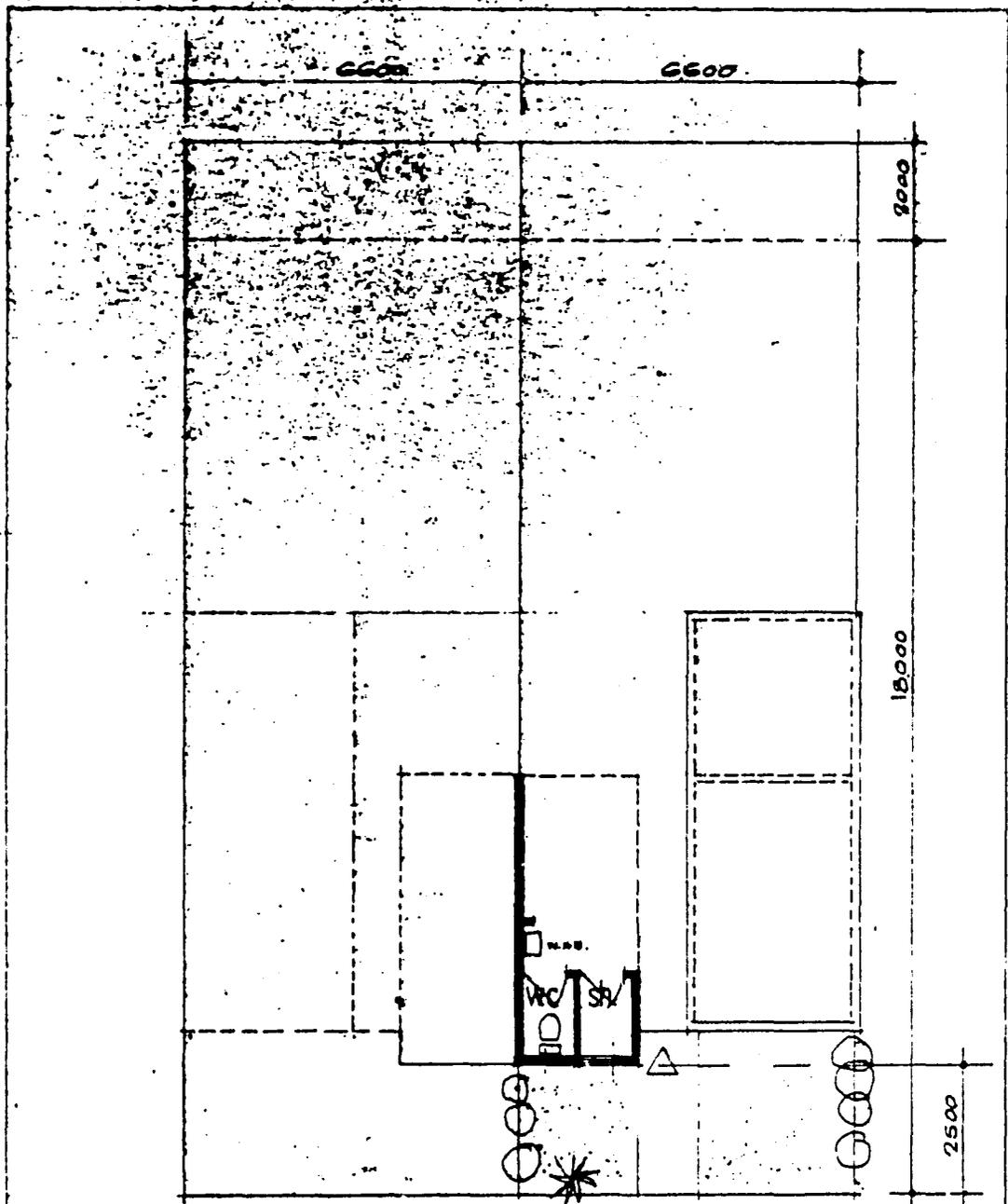
DATE	SCALE	DRAWN BY	CHECKED BY	APPROVED BY
2011	1:1000	[Name]	[Name]	[Name]

Annex 5
 Figure 1



ANNEX 5
FIGURE 2

NAIROBI CITY COUNCIL			
PROJECT: UMDJA - NEW HOUSING PROJECT (PHASE II)			
			
FOR TITLE			
N C C / USAID UMDJA PROJECT II NAIROBI			
SHEET TITLE			
part neighbourhood cluster plan			
samuel riango & partners architects & planning consultants po box 47305 nairobi			
DATE	SCALE	NO. OF	SHEET NO.
14.9.77	1:1000	446	10



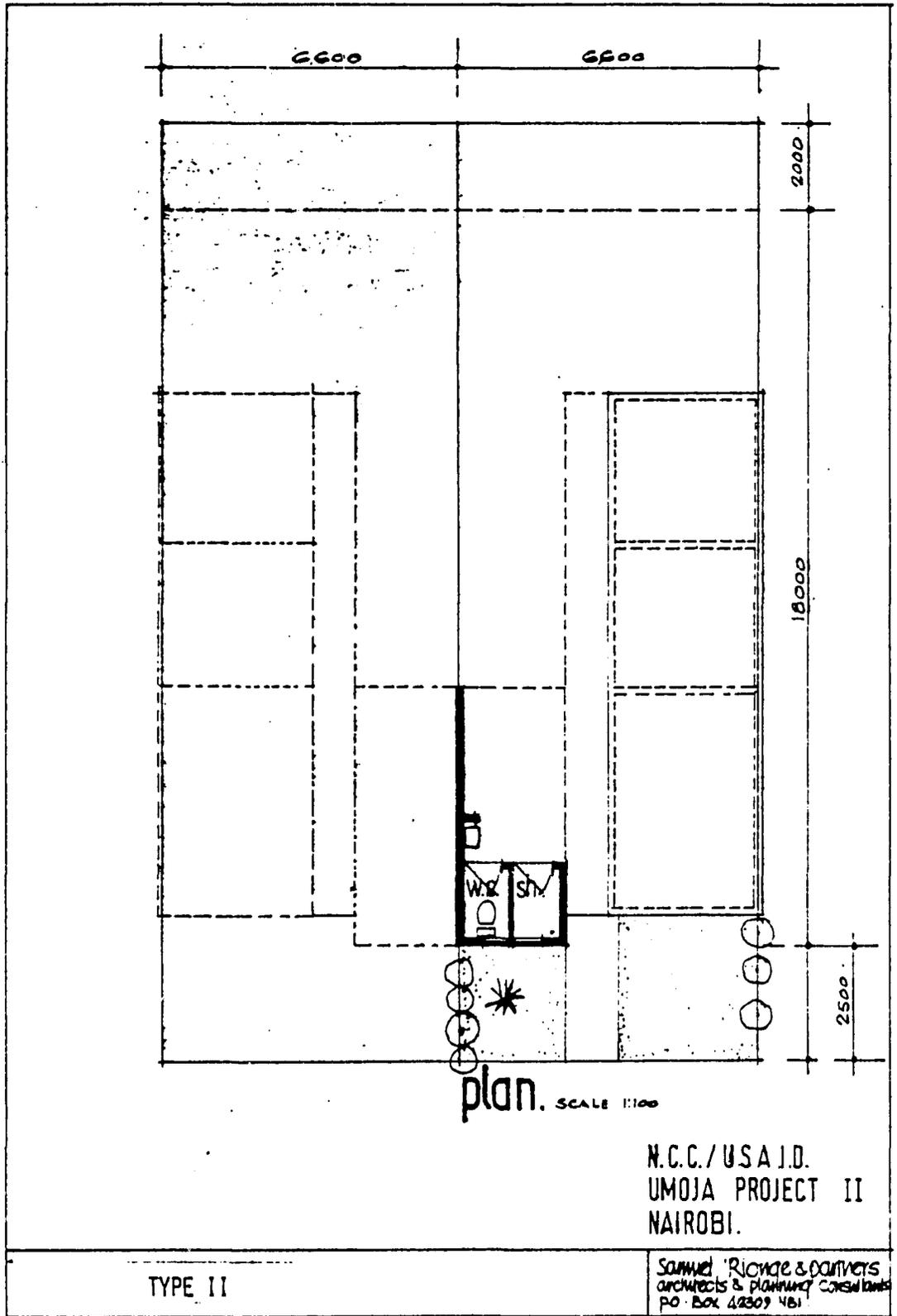
plan. SCALE 1:100.

N.C.C. / U.S.A.I.D.
 UMOJA PROJECT II
 NAIROBI.

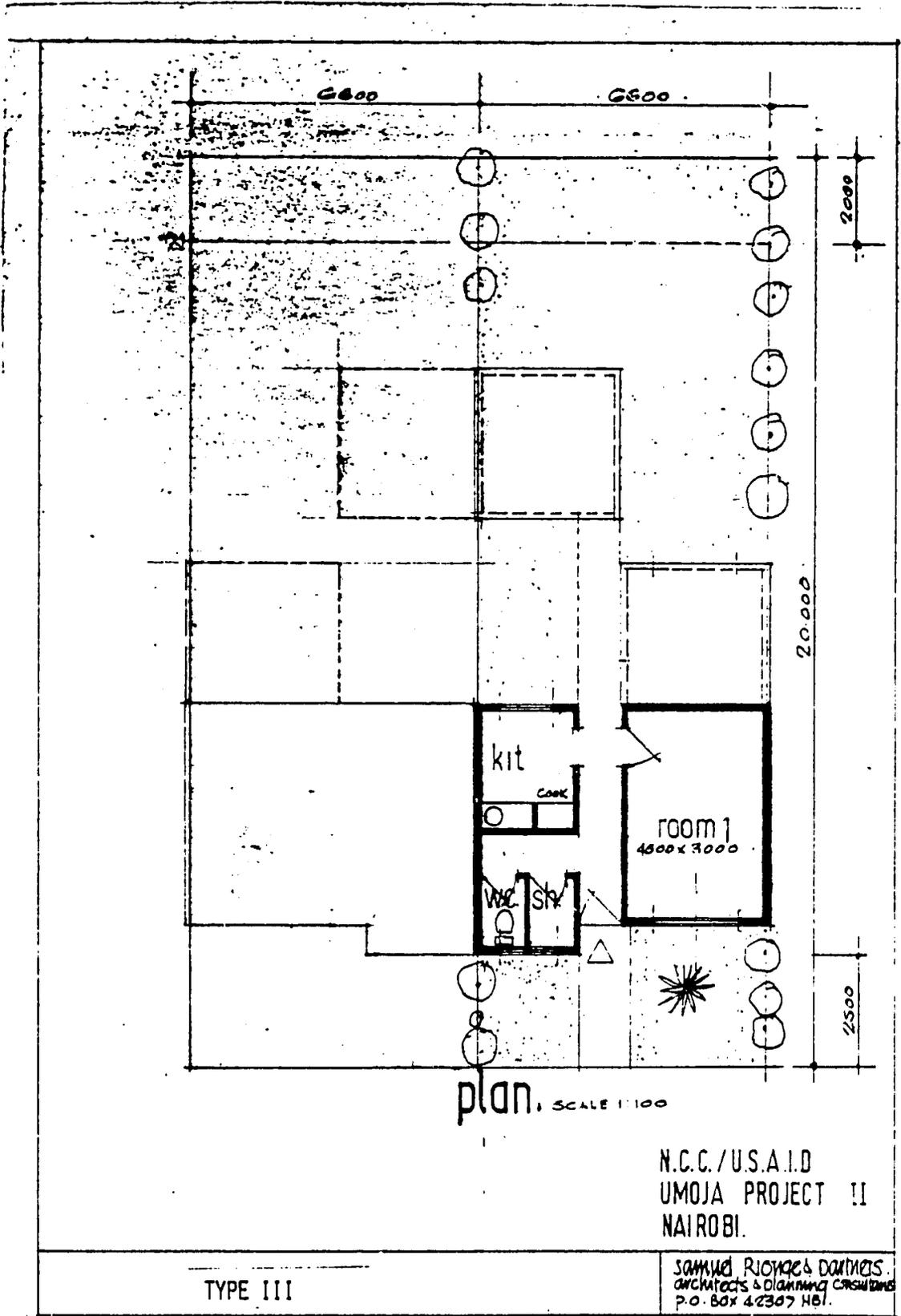
TYPE I

SAMUEL RICHARDS DOWMETTS
 architects & planning consultants
 po. Box 42309 NBI

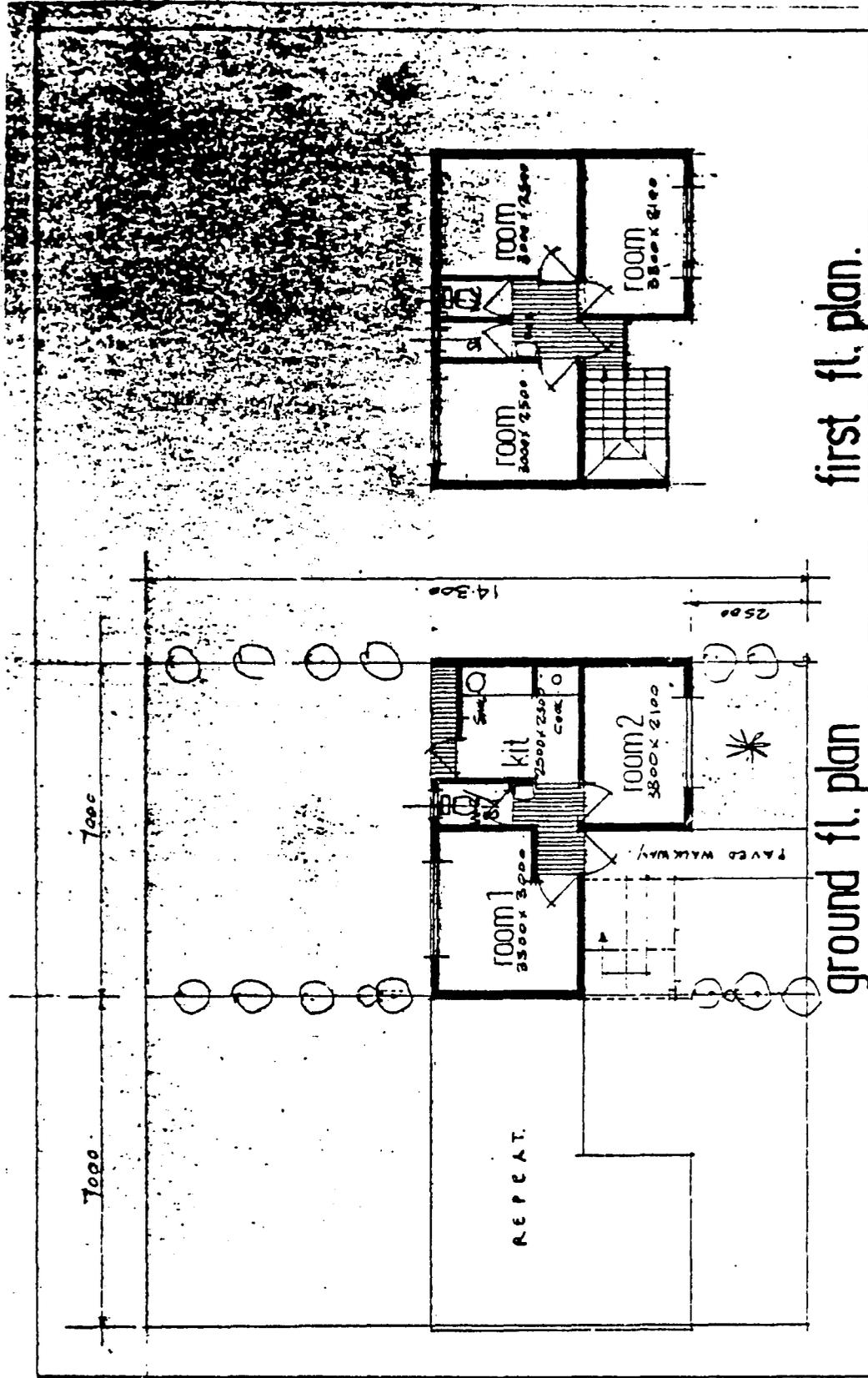
Annex 5 Figure 3



Annex 5 Figure 4



Annex 5 Figure 5



first fl. plan.

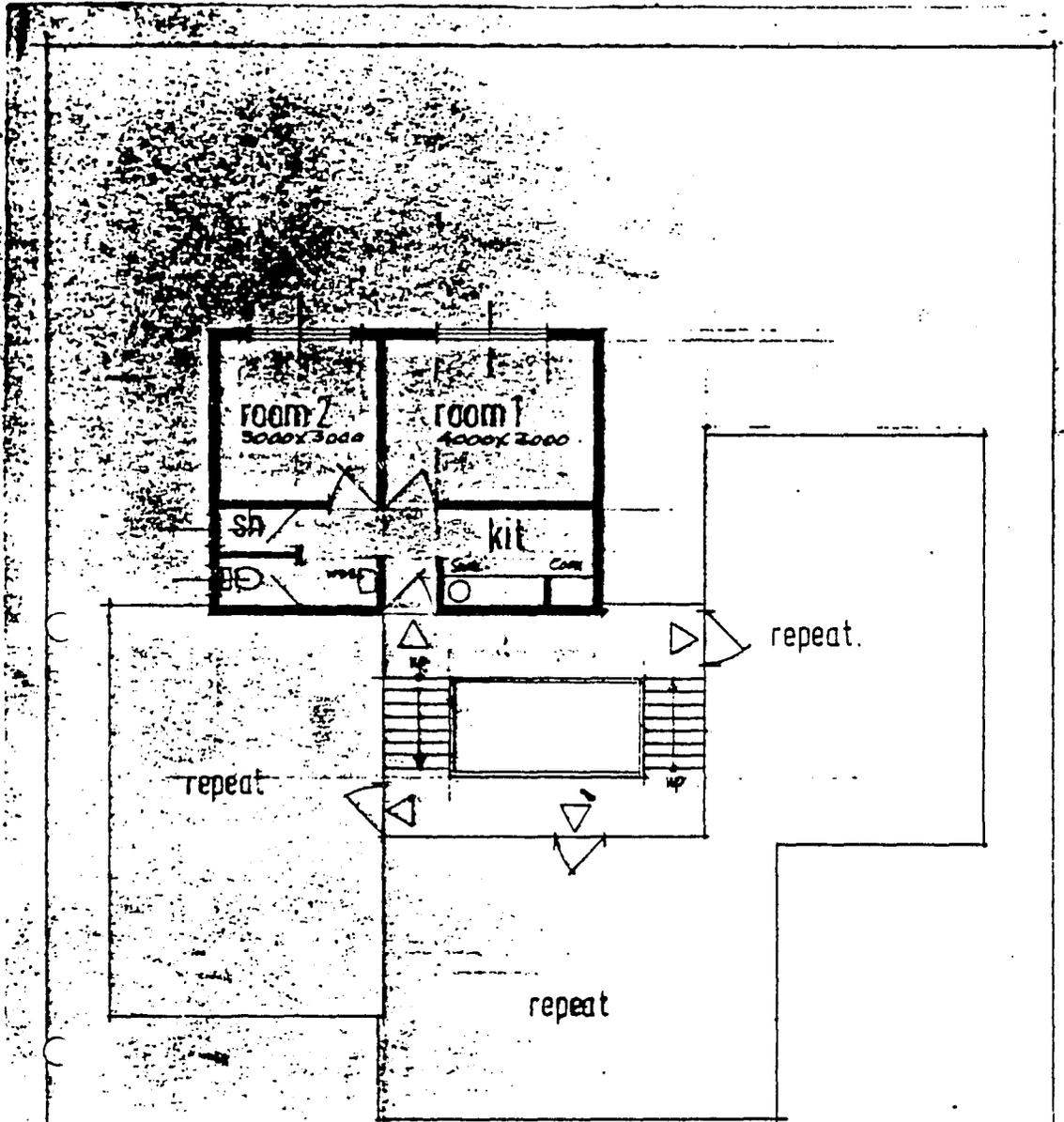
ground fl. plan

SAUNDERS BROS. & BARNES
 ARCHITECTS & ENGINEERS
 No. 400 4th St. N.Y.

UMOJA PROJECT II

MAISONNETS I

Annex 5, Figure 6



plan two roomed flats (SPLIT LEVEL BLOCK)

TYPE V	PLAN OF FLATS	SCALE: 1:100	SAMUEL RICHARDS DARTMOUTH ARCHITECTS & DRAFTING CONSULTANTS P.O. BOX 42309 NBI
--------	---------------	--------------	--

Figure 9.
Annex 5

Scrub thorn savanna vegetation of Umoja II site, looking east. Electric transmission lines across through Umoja.



Figure 10.
Annex 5

Foundations readied for Umoja housing. Undisturbed black cotton soil surrounds foundations on the outside, while red soil fills inside.

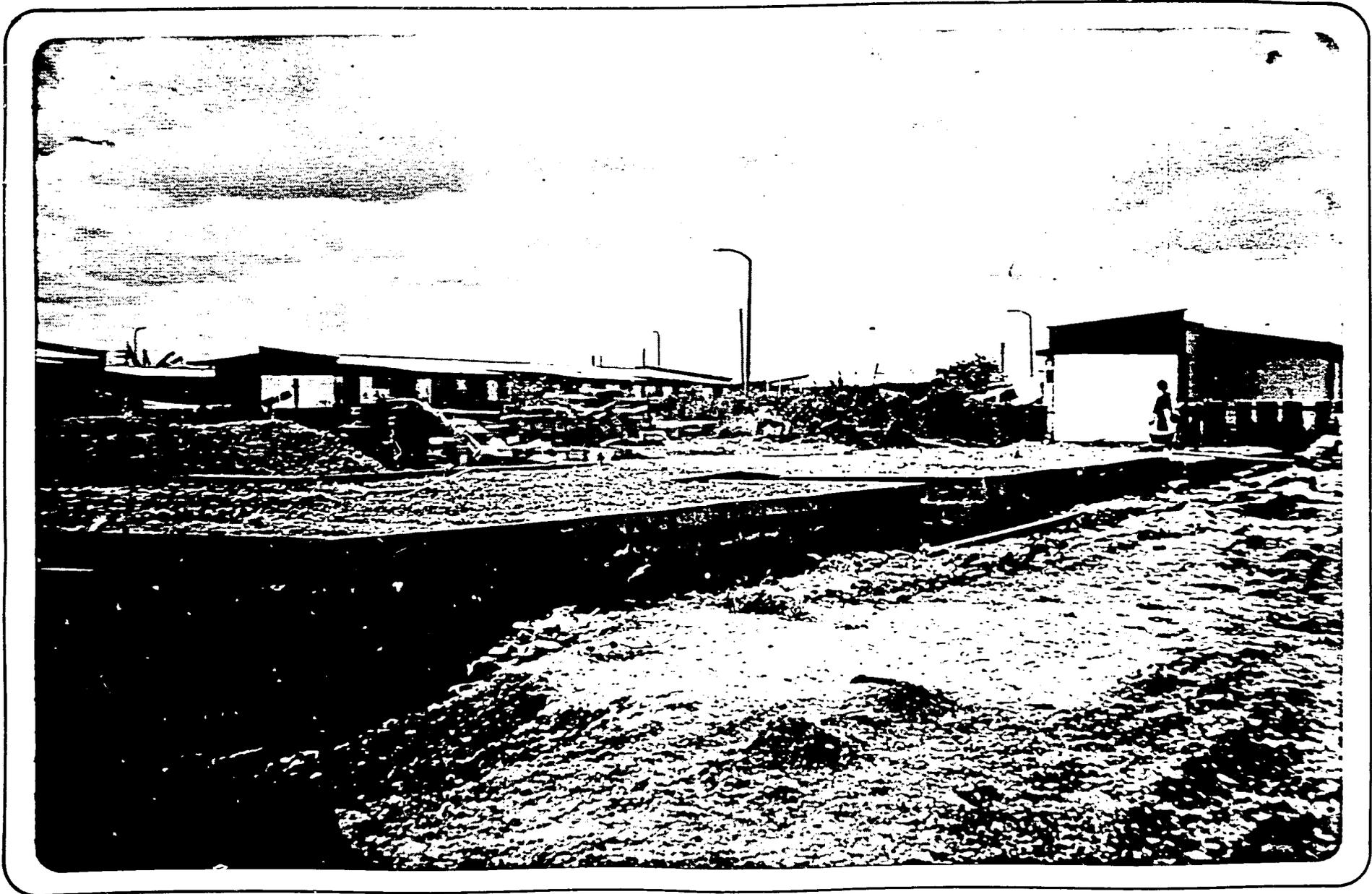
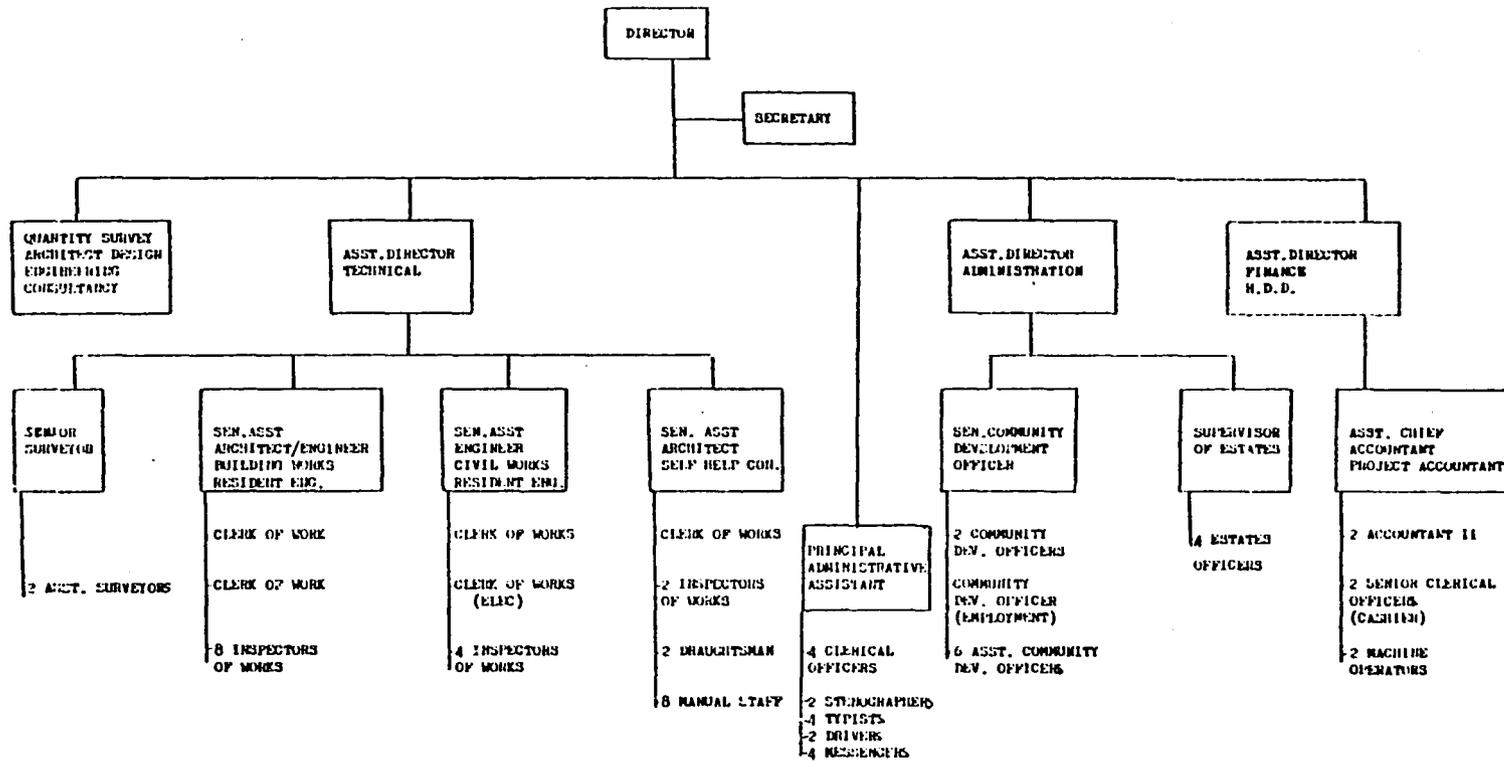


Figure II.
Annex 5

Strip footings being prepared for additional units being built at Umoja I, near New Dandora Road.



ANNEX 6 Proposed Umoja Project Unit Organization



DRAFT

GUARANTY AUTHORIZATION

PROJECT 615-HG-005

Provided From: Housing Guaranty Authority

For : The Republic of Kenya/Nairobi City Council

Pursuant to the authority vested in the Assistant Administrator, Bureau for Africa by the Foreign Assistance Act of 1961, as amended (FAA), and the delegations of authority issued thereunder, I hereby authorize the issuance of guaranties pursuant to Section 222 of the FAA of not to exceed twenty-five million dollars (\$25,000,000) in face amount, assuring against losses (of not to exceed one hundred percent (100%) of loan investment and interest) with respect to loans by eligible U.S. investors (Investor) acceptable to A.I.D. made to finance housing projects in Kenya.

This guaranty shall be subject to the following terms and conditions:

1. Term of Guaranty The loans shall extend for a period of up to thirty years (30) from the date of disbursement and may include a grace period of up to ten years on repayment of principal. The guaranty of the loans

shall extend for a period beginning with the first disbursement of the loans and shall continue until such time as the Investor has been paid in full pursuant to the terms of the loans.

2. Interest Rate: The rate of interest payable to the Investor pursuant to the loans shall not exceed the allowable rate of interest prescribed pursuant to Section 223(f) of the FAA and shall be consistent with rates of interest generally available for similar types of loans made in the long term U.S. capital markets.
3. Republic of Kenya Guaranty: The Republic of Kenya shall provide for a full faith and credit guaranty to indemnify A.I.D. against all losses arising by virtue of A.I.D.'s guaranty to the Investor or from non-payment of the guaranty fee.
4. Fee: The fee of the United States shall be payable in dollars and shall be one-half percent (1/2%) per annum of the outstanding guaranteed amount of the loans plus a fixed amount equal to one percent (1%) of the amount of the loans authorized or any part thereof, to be paid as A.I.D. may determine upon disbursement of the loans.
5. Other Terms and Conditions: The guaranty shall be subject to such other terms and conditions as A.I.D. may deem necessary.

Goler T. Butcher
Assistant Administrator
Bureau for Africa

Date

Clearances:

DEPARTMENT OF STATE
 AGENCY FOR INTERNATIONAL DEVELOPMENT
 WASHINGTON D.C. 20523

THE HOUSING GUARANTY PROGRAM

STATUTORY CHECKLIST
 THE REPUBLIC OF KENYA
 HOUSING GUARANTY HG-005
 NAIROBI CITY COUNCIL

Answer YES/NO

A. General Criteria Under HG Statutory Authority.

Section 221(a)

Will the proposed project meet the following criteria:

- (1) is intended to increase the availability of domestic financing by demonstrating to local entrepreneurs and institutions that providing low-cost housing is financially viable;
- (2) is intended to assist in marshalling resources for low-cost housing;
- (3) supports a pilot project for low-cost shelter, or is intended to have a maximum demonstration impact on local institutions and national policy; and
- (4) is intended to have a long run goal to develop domestic construction capabilities and stimulate local credit institutions to make available domestic capital and other management and technological resources required for low-cost shelter programs and policies?

YES

YES

YES

YES

Section 222(a)

Will the issuance of this guaranty cause the total face amount of guaranties issued and outstanding at this time to be in excess of \$1,180,000,000?

NO

Will the guaranty be issued prior to September 30, 1980?

YES

Section 222(b)

Will the proposed guaranty result in activities which emphasize:

- (1) projects providing improved home sites to poor families on which to build shelter and related services;

YES

- (2) projects comprised of expandable core shelter units on serviced sites; YES
- (3) slum upgrading projects designed to conserve and improve existing shelter; NO
- (4) shelter projects for low-income people designed for demonstration or institution building; and YES
- (5) community facilities and services in support of projects authorized under this section to improve the shelter occupied by the poor? YES

Section 222(c)

If the project requires the use or conservation of energy, was consideration given to the use of solar energy technologies, where economically or technically feasible? YES

Section 223(a)

Will the A.I.D. guaranty fee be in an amount authorized by A.I.D. in accordance with its delegated powers? YES

Section 223(f)

Is the maximum rate of interest allowable to the eligible U.S. Investor as prescribed by the Administrator not more than one percent (1%) above the current rate of interest applicable to housing mortgages insured by the Department of Housing and Urban Development? YES

Section 223(h)

Will the Guaranty Agreement provide that no payment may be made under any guaranty issued for any loss arising out of fraud or misrepresentation for which the party seeking payment is responsible? YES

Section 223(j)

- (1) Is the host country a country that is presently receiving development assistance under chapter I of part I of the Act or one that has received such assistance in the preceding two years? YES
- (2) Will the proposed Housing Guaranty be coordinated with and complementary to other development assistance in the host country? YES
- (3) Will the proposed Housing Guaranty demonstrate the feasibility of particular kinds of housing and other institutional arrangements? YES

(4) Is the project designed and planned by A.I.D. so that at least 90 percent of the face value of the proposed guaranty will be for housing suitable for families below the median income, or below the median urban income for housing in urban areas, in the host country?

YES

(5) Will the issuance of this guaranty cause the face value of guaranties issued with respect to the host country to exceed \$25 million in any fiscal year?

NO

(6) Will the issuance of this guaranty cause the average face value of all housing guaranties issued in this fiscal year to exceed \$15 million?

NO

Section 238(c)

Will the guaranty agreement provide that it will cover only lenders who are "eligible investors" within the meaning of this section of the statute at the time the guaranty is issued?

YES

B. Criteria Under General Foreign Assistance Act Authority.

Section 620/620-A

1. Does the host country meet the general criteria for country eligibility under the Foreign Assistance Act as set forth in the country eligibility checklist prepared at the beginning of each year?

YES

2. Is there any reason to believe that circumstances have changed in the host country so that it would now be ineligible under the country statutory checklist?

NO

DRAFT
INITIAL ENVIRONMENTAL EXAMINATION

KENYA HOUSING GUARANTY PROGRAM
FY 1979

Prepared by:

PETER A. WEBER
Environmental Planner
Technical Services Division
NATIONAL SAVINGS AND LOAN LEAGUE

For:

Office of Housing
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

July 1979

TABLE OF CONTENTS

I.	BACKGROUND INFORMATION	1
	A. DESCRIPTION OF THE PROPOSED PROGRAM	1
	1. Umoja Subprogram	1
	2. Regional cities/Market towns Subprogram	2
	B. BASELINE ENVIRONMENTAL CONDITIONS - GENERAL DESCRIPTION	5
II.	EXAMINATION OF POTENTIAL ENVIRONMENTAL EFFECTS OF THE PROPOSED HG PROGRAM	16
	A. SUMMARY OF CRITICAL ENVIRONMENTAL CONCERNS	16
	B. DISCUSSION OF ENVIRONMENTAL POTENTIAL IMPACTS OF THE PROGRAM	17
	C. DISCUSSION OF KEY ENVIRONMENTAL ISSUES TO BE CONSIDERED IN PROGRAM PREPARATION	20
III.	RECOMMENDATIONS	25
	A. UMOJA SUBPROGRAM	25
	1. Threshold Recommendation	
	2. Incorporation of Environmental Issues into Project Paper	
	B. REGIONAL CITIES/MARKET TOWNS SUBPROGRAM	25
	1. Threshold Recommendation	
	2. Incorporation of Environmental Issues into Project Paper	

APPENDICES

- A. List of Individuals Consulted in Preparing IEE
- B. References and Institutions
- C. Photographic Supplement

I. BACKGROUND INFORMATION

A. DESCRIPTION OF THE PROPOSED HG PROGRAM

During the development of this program, two phases have occurred: first, the scrutiny of a specific site in Nairobi (which already had been partially built under a previous HG program); and second, the enlargement of the contemplated program to include eleven other cities and towns with specific sites not yet determined. Environmental fieldwork was performed only for the identified Nairobi project. The need remains to perform basic analyses of environmental conditions in the other urban centers. This need will be met later in program development, once more detailed program information is generated. For the present Initial Environmental Examination, the report shall be divided into two parts: 1) site analysis of Umoja Estate, Nairobi; and 2) regional-level environmental analysis of the other eleven urban centers.

1. Umoja Subprogram

a. Program Characterization

The proposed Umoja II HG program in Nairobi is provisionally envisioned to be a combination of sites and services/expandable core housing/rental flats for Nairobi residents. Community facilities are planned, including schools, health centers, markets, community centers, and small-scale industries and businesses. The borrower is to be the Nairobi City Council (NCC). At this time, NCC has not determined the size of the available land or the number of units to be developed.

Umoja I was completed in 1978 with over 3,000 units on plots averaging 126 m². These expandable units were predominantly wet cores (toilet, shower, kitchen) with one dry room, although units up to three dry rooms were built.

The beneficiaries are to have an income below the estimated monthly median of 1,800 shillings. Umoja I beneficiaries were required to be employed, to be residents of Nairobi, and to own no other residential property in Nairobi.

b. Program Components

In principle, the following components have been agreed upon:

- 1) Sites and services, approximately 2,000 plots
- 2) Unit of wet core (water closet and kitchen)
---+1 dry room*)
---+2 rooms*) approximately 1,500 units total
---+3 rooms - number undetermined
- 3) Unit of wet core + 4 rooms (two-story unit),
number undetermined
- 4) Flats (walkups), number undetermined
- 5) Community facilities (schools, health centers,
markets, community centers)
- 6) Small-scale loans for industries/businesses
- 7) Technical assistance, to be determined.

* Expandable to three dry rooms (House Type 04).

2. Regional cities/Market towns Subprogram

The target population to be served by this proposed sub-program consists of those urban inhabitants below the median income in twelve cities found throughout the country. Figure 1 indicates the location of the cities. The list of cities can be divided into two general categories, separated by a number of intermediate cities, based upon size (see Figure 2). The first category comprises three of the four largest cities of the country: Nairobi, Mombasa and Kisumu. Estimates of growth by 1983 result in projected populations of 1.3 million (Nairobi), 0.5 million (Mombasa) and 0.2 million (Kisumu). A secondary level of cities of a population size ranging from 25,000 to approximately 150,000 is to be excluded from HG consideration, since other international donors (IBRD, ODM) will be active in these towns. The second category of possible HG cities is comprised of nine tertiary urban centers, or market towns, which had populations

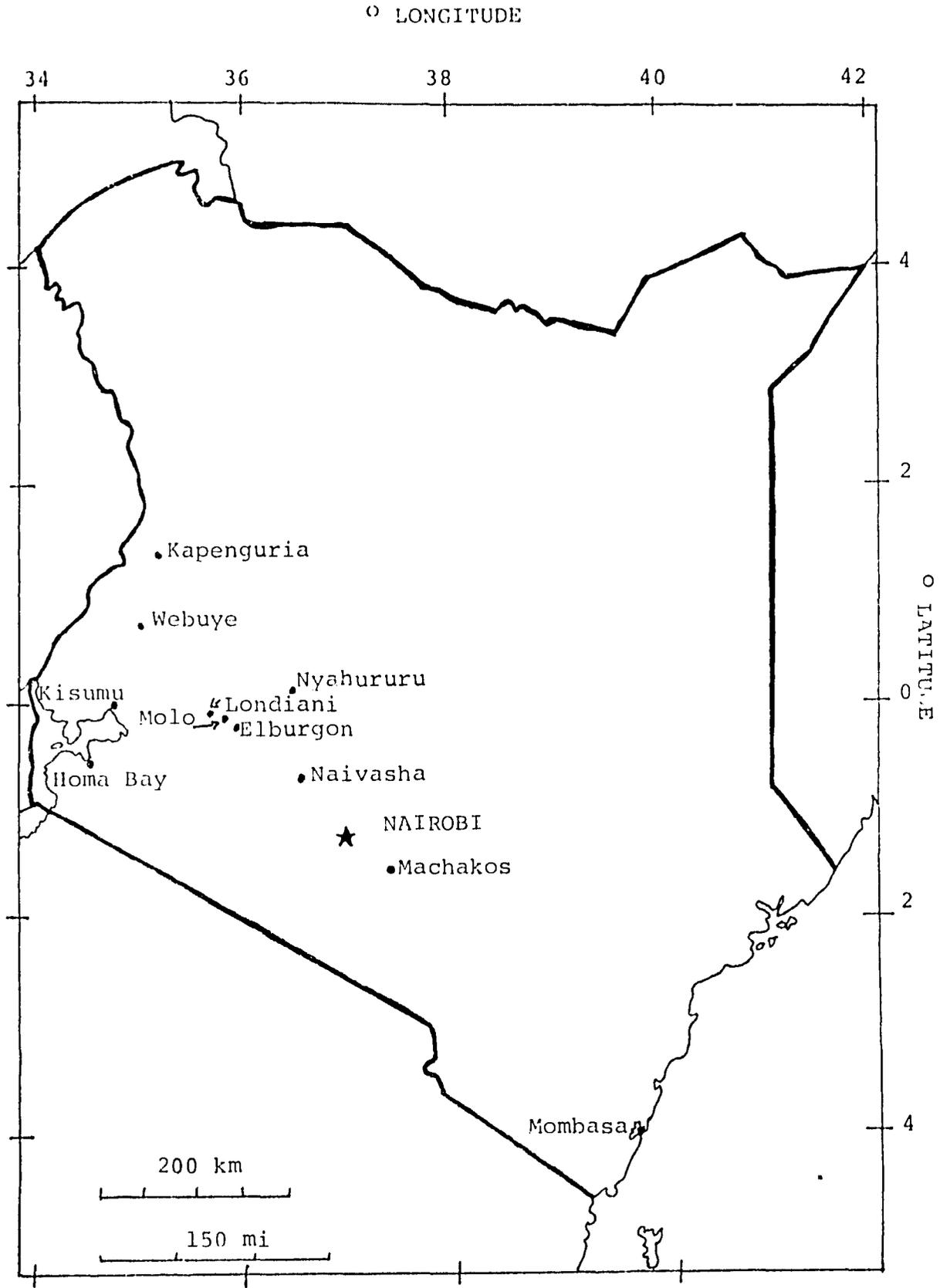


FIGURE 1. Potential Sites for Kenya HG Program

<u>URBAN CENTER</u>	<u>ELEVATION meters/feet (approx.)</u>	<u>PHYSIOGRAPHIC REGION</u>	<u>AVERAGE ANNUAL PRECIP mm/inches (approx.)</u>	<u>POP. Census 1969</u>	<u>POPULATION ESTIMATED 1983</u>
<u>CATEGORY A: REGIONAL CITIES</u>					
Nairobi	1,661/5,450	Eastern Highlands	830/33	509,286	1,335,000
Mombasa	17/57	Coastal Plains	1,221/49	247,073	504,000
Kisumu	1,120/3,750	Nyanza Low Plateau	1,064/42	32,431	169,000
<u>CATEGORY B: MARKET TOWNS</u>					
Nyahururu	2,200/7,300	Eastern Highlands	875/35	7,602	22,000
Naivasha	1,990/6,500	Rift Valley	630/25	6,920	20,000
Machakos	1,775/5,800	Eastern Highlands	750/30	6,312	18,000
Elburgon	2,400/7,800	Western Highlands	1,000/40	5,343	10,000
Molo	2,450/8,000	Western Highlands	1,120/45	4,240	12,000
Homa Bay	1,120/3,750	Nyanza Low Plateau	1,250/50	3,252	11,000
Londiani	2,275/7,500	Western Highlands	1,250/50	2,994	9,000
Webuye	1,500/4,900	Western Highlands	1,390/55	*	12,000
Kapenguria	2,050/6800	Western Highlands	1,120/45	*	6,000

* Less than 2,000 population.

FIGURE 2. Selected Environmental Characteristics for the Potential Sites of the Kenya FY 79 HG Program.

Sources: Ojany and Ogendo, 1973; Survey of Kenya, 1978, Route Map.

ranging from below 2,000 to 7,000 inhabitants at the time of the 1969 census. By 1983, these towns are estimated to grow to a size between 5,000 and 20,000 population.

B. BASELINE ENVIRONMENTAL CONDITIONS - GENERAL DESCRIPTION

1. Umoja, Nairobi Subprogram

a. Natural Environment

Nairobi is situated at the juncture of the Athi Plains and the Central Highlands of Kenya. It lies approximately 140 kilometers south of the Equator and 480 kilometers west of the Indian Ocean. The Umoja housing site is located eight kilometers east of Nairobi City Hall on level terrain. The range in elevation at Umoja is small, being from 1584 meters to 1590 meters (5280 to 5300 feet), with a slight dipping of the terrain to the east and northeast. The climate is tropical continental/savanna. Although situated near the Equator, the altitude is a significant factor in moderating the temperature, which annually averages 20° C. (68° F.). Annual maximum temperature is 25° C., and annual minimum is 13° C. The year is divided into four seasons, the "long rains" in April/May, then a cool, cloudy dry season, followed by the "short rains" in November, with a warm, sunny dry season occurring until the arrival of the long rains. Total precipitation averages 900 millimeters yearly (35 inches). In general, the climate is healthy, without major hazards such as extreme temperatures, high winds, violent storms, and so on.

The site is underlain by durable volcanic rock, with a variable thin cover of softer ash-deposited volcanic rock. No faults have been detected in the immediate area of Umoja. However, the Eastern Rift Valley boundary is within forty kilometers of the site; this fault zone is active and has produced several tremors in Nairobi within the last decade. Bedrock is covered with an average depth of one meter of black cotton soil. Classified as a vertisol (derived from its action of "inverting" or "self-mulching" during the year), it exhibits the following properties: a) when dry, cracks develop to a maximum depth of fifty centimeters, during which time topsoil falls into the cracks; b) when wet, soil becomes highly

elastic, expanding in volume up to fifty per cent, thus creating a highly unstable soil which "turns upside down." Even the slightest moisture triggers the pronounced shrink/swell cycle. The soil is quite unstable for supporting houses, roads and other developments; it must be worked with extensively before these structures are properly in place.

Umoja is dry land with several swales which hold intermittent watercourses. No major groundwater reserves are known for this area. Because the land is predominantly flat and the soils are clays, storm-water drainage is impeded. The native vegetation consists of tall grasses with scattered scrub acacia trees. Originally the site was inhabited by the game plains fauna (elephant, giraffe, lion, etc.), but they have since been displaced by human activity.

b. Physical Aspects of the Built Environment

1) The Nairobi Metropolitan Region

Nairobi is undergoing rapid expansion. As the national capital and centrally located with regard to the major population centers of the nation, Nairobi attracts people from throughout the country. From a 1962 population of 344,000, it now totals over 900,000 inhabitants. The city's growth has been seven per cent per annum. The long-term scenario for Nairobi is its further strengthening as the regional center for East Africa. By the year 2000, Nairobi is expected to contain between two and three million people.

2) Umoja

Umoja is located on the eastern edge of the Nairobi Metropolitan Region (see Figure 3). As currently built, Umoja has over 3,000 units in Phase I (HG-003), arranged in a crescent form stretching from southwest to northeast (see Figure 4). Aerial photographs (Figures 5 and 6 in Appendix C) indicate the regional perspective and the Umoja site, respectively. The Inner Core is now being partially developed by the Nairobi City Council (NCC) in the northwest and southeast quadrants, with a total of about

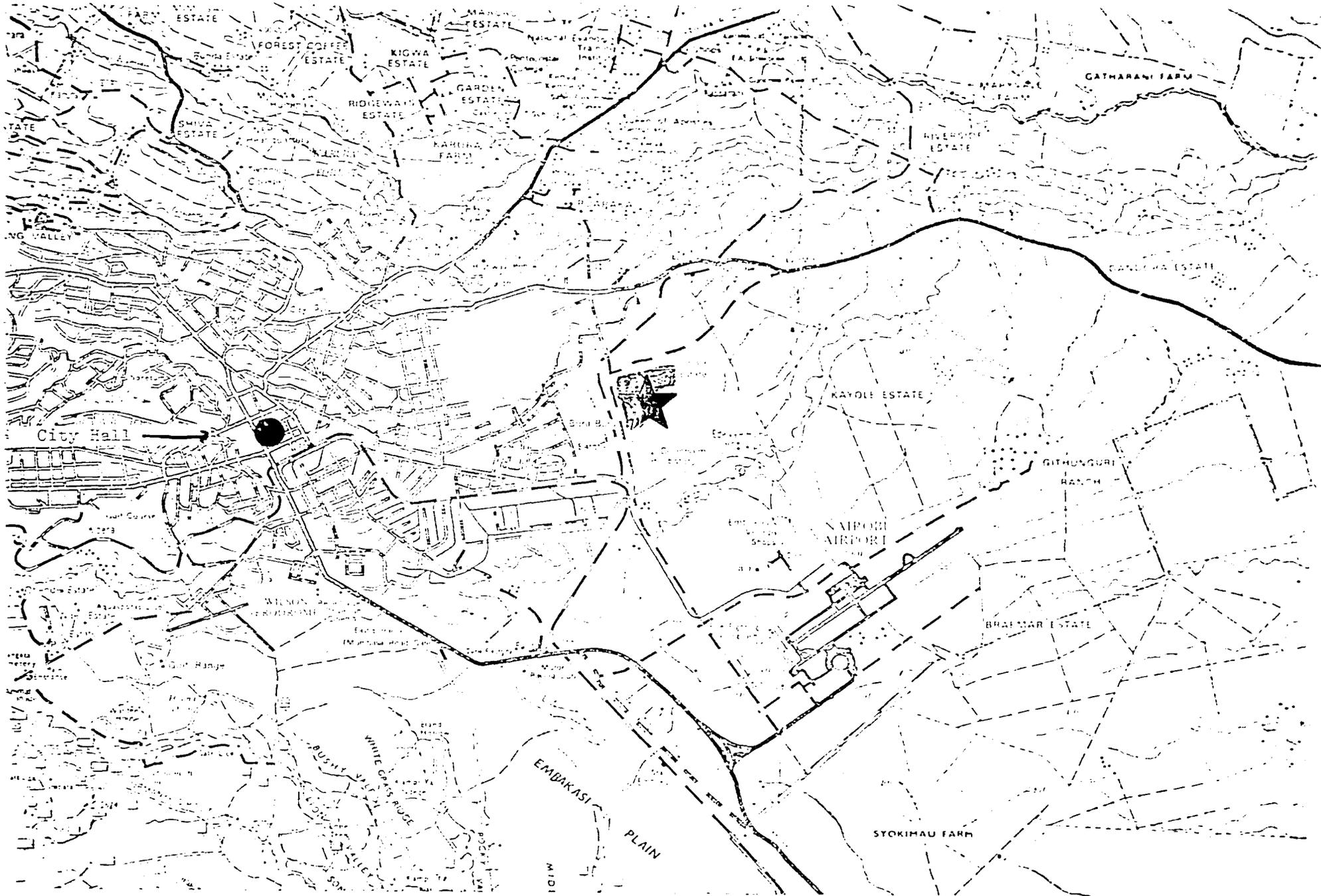


FIGURE 3. Regional Location of Umoja Estate, Nairobi. Source: "Nairobi and Environs," 1978.

Scale: 1:100,000

5 km

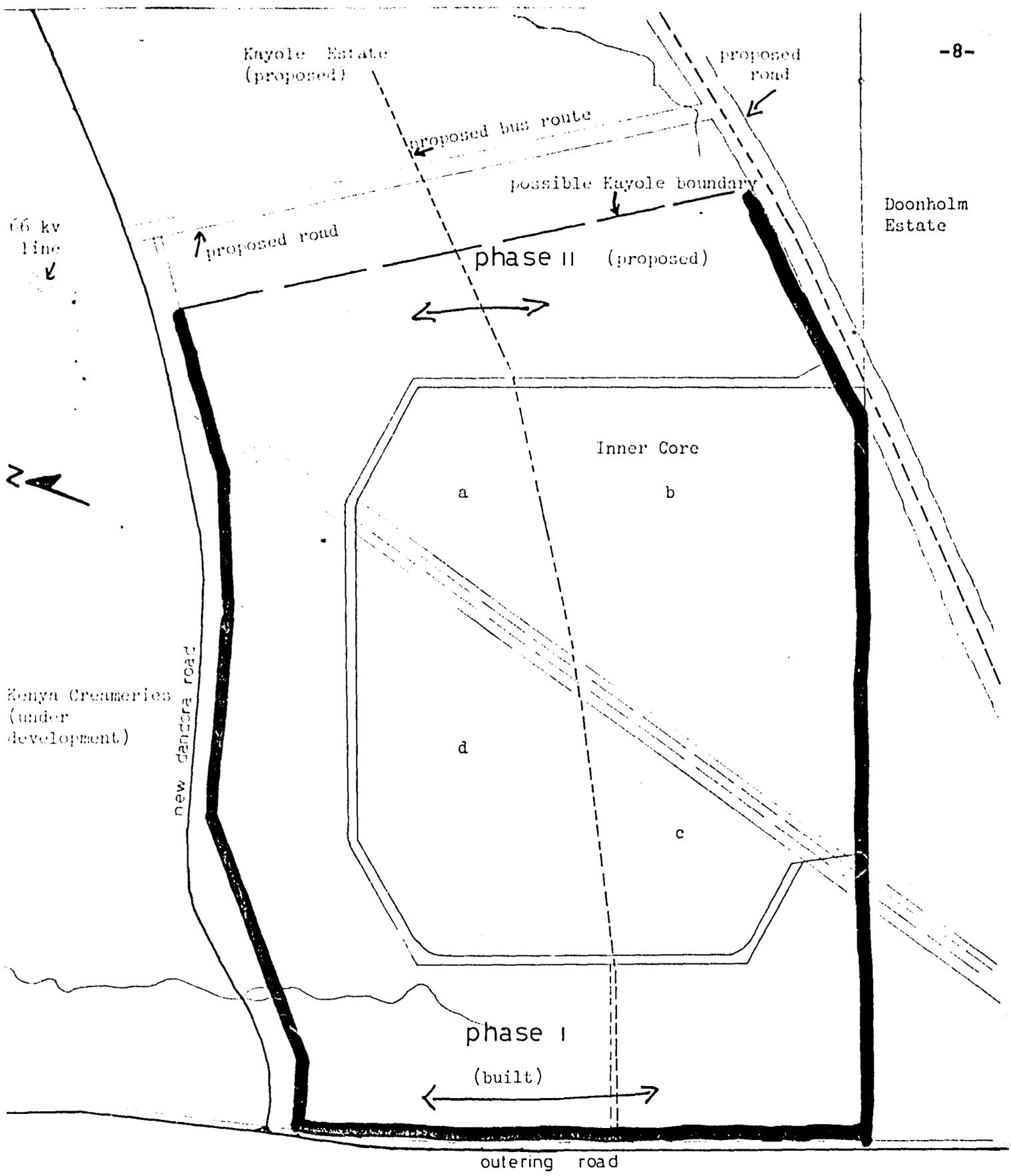


FIGURE 4. Umoja Estate and environs. Source: City Engineer's Department. Phase I is HG-003. Two parts of the Inner Core (b,d) are being developed by NCC. Parts a and c are uncommitted. Phase II land is of uncertain dimensions, since Kayole Estate boundary may be within the proposed road to the west.

1,200 plots to be sold at market rates. Still to be designed and developed are two triangles within the Inner Core and a crescent-shaped area to the east.

3) Regional Land Use

The area is proliferating with housing estates in all directions and a gradual light industrial development of designated areas north and west of Umoja. Most of the land west of Outer Ring Road is already fully developed with housing. To the immediate west is the Buru Buru Housing Estate (middle/upper income inhabitants). To the southwest lies the major Industrial Area, with railway sidings and petroleum tank supplies.

To the south lies the Doonholm Estate, a private housing development. Immediately to the south of Umoja is undeveloped Doonholm land, a municipal water tank, and the high-voltage transmission line. To the east lies undeveloped land of the Kayole Estate (an approved World Bank sites and services project). To the north lies the New Dandora Road, with the Dandora Industrial Park (under development) on the far side. The Kenya Creameries is being completed this year, adjacent to Umoja. Further north is the large Dandora sites and services project (over 6,000 units).

4) Infrastructure

The Umoja site currently is fully served with a piped water supply, waterborne sewerage system, and electrical supply.

Umoja is supplied with piped water from the Chania River to the north of Nairobi. From the Gigiri Reservoir, a 32" \emptyset line takes water to the Eastern Area. A main water line then goes alongside Outer Ring Road, and gives a 10" \emptyset line to serve the Umoja Estate. Nearing completion is a storage tank immediately to the south.

Phase IA of the Middle Chania Water Supply Project, to be finished by the end of 1979, will increase Nairobi's water supply to 11.5 mgd from the current 9 mgd. Phase 2, scheduled for completion in 1982, approximately when Umoja II would be completed, would increase water supplies to 30 mgd. Supplies and distribution system should be adequate for Umoja II.

At the present time, two sewerage lines (9" and 15" Ø respectively) from Umoja I are built to temporary oxidation ponds near Kariobangi, one kilometer north of New Dandora Road. By the start of 1980, the sewer lines will be connected to the main trunk line which terminates at the Dandora Sewage Treatment Plant (16 kilometers east of Kariobangi along the Nairobi River). This plant will be the main treatment facility for Nairobi. It currently has 96 hectares of oxidation ponds, with land available for expansion to 2,000 hectares of ponds. Umoja II would need new lines to the trunk line which is being extended to Kenya Creameries, just north of Umoja.

Hydroelectric power generated at Jinja, Uganda is transferred to the substation at Dandora, which serves Nairobi. A 66 kv line traverses Umoja, but power for the site comes from another line along New Dandora Road. An 11 kv line is transformed on-site to 0.415 kv., and thence distributed to all units.

c. Socio-economic Aspects of the Built Environment

1) Regional Planning

The Umoja housing project is in complete accord with the officially adopted Nairobi Metropolitan Growth Strategy (1973). The plan envisions the major Nairobi residential and industrial growth to be in this area. The land of Umoja was selected for medium-high density housing (350 people/hectare), such as is being envisioned in the current proposal.

2) Economic Base

The major sources of employment are in downtown Nairobi and the industrial areas to the south and east of center city. Major incipient industrial zones are within three kilometers of Umoja, whereas downtown employment centers are within eight kilometers of Umoja. Therefore, the housing estate is well located. The types of jobs that are held by Umoja I residents have not been clearly indicated, but government positions, skilled worker jobs, and laborer positions are the main categories of employment. Job mobility is highly restricted. Job generation has lagged behind need; the industrial parks are slowly being developed.

3) Transportation Network and Usage

Appropriate site location with regard to employment centers contributes to the efficiency of the existing transportation network. A road network tying Umoja to downtown is characterized by good width and capacity. Currently two roads serve Umoja. New Dandora Road is the primary collector, which feeds into Outer Ring Road. The main road into the city, Jogoo Road, intersects with Outer Ring Road within one kilometer of Umoja. Planned new roads include an extension of Jogoo Road, between Umoja and Doonholm, and the construction of a collector road between Umoja and Kayole. Thus the site would have major roads on all sides. However, the new roads are the responsibility of the Government of Kenya (GOK), which at present has no financial commitments to them.

Modes of transportation include walking (high usage), buses and matatus (similar to a jitney) and private vehicles. Bus and matatu rides cost about 20 cents to downtown, and travel time is a minimum of twenty minutes early in the morning. Bus service is every fifteen minutes at peak hours.

A proposed bus route (see Figure 4) is at a preliminary stage of planning. With an

eighteen-meter right-of-way (nine-meter paved width), the route would be a significant factor in the planning of Umoja II. As with the proposed roads, GOK is to plan and implement this facility. No financial commitment has yet been made.

4) Community Facilities

Major health, educational, shopping and cultural facilities remain in downtown Nairobi. Umoja I has a small market, a health clinic, and a primary school of twelve classrooms. Each of these facilities needs to be expanded to serve adequately the existing population; coordination and financing from other NCC departments have been lacking so that the original plan for adequate facilities has not yet been realized.

Facilities within the area which supplement Umoja's include the Ofafa-Jericho Health Centre, located within two kilometers. The staff includes four doctors, four nurses and attendants, and the center is open after 8:00 p.m. until midnight. Nearby primary and secondary schools absorb the overflow student population. Small shopping centers exist between Umoja and downtown.

The Kayole sub-regional commercial and community center (World Bank Urban Two project) is being planned. It would be a step down from the center city level. The center would serve the Eastern Area by offering a major range of facilities and services.

5) Cultural Factors

Nairobi draws people from throughout the country. The Kikuyu, Lui, Luhya, Kamba and Kalenjin are the predominant peoples. Immigration from the rural areas remains the major cause for Nairobi's rapid population growth. Immigrants usually stay with family or friends at the start of their urban living. There does not exist a long tradition of urban living and urban employment, which thus creates difficulties in urbanization. Government policy is to integrate all

the different peoples into one people, and cultural mix in housing estates is one method utilized.

Major perceived needs for the urban population are health, privacy and security (GOK, 1970-74 Development Plan). Housing development under individual initiative includes fencing and installation of security bars for the windows.

2. Regional cities/Market towns Subprogram

a. Natural Environment

The twelve potential Kenyan sites are located within a band extending from 1° North Latitude to 4° South Latitude. Three types of climate predominate: humid coastal lowlands, temperate highlands, and humid lake basin. One site is on the Indian Ocean coast (Mombasa), and two are on the Lake Victoria coast (Kisumu and Homa Bay), while the rest are inland. The majority of the sites are over one mile high in elevation, with only the three coastal towns found at lower elevations. More data of known Kenyan characteristics will now be presented through different environmental sciences. Reasonably foreseeable concerns will also be raised so as to assist in the eventual detailed fieldwork requisite for final program development.

1) Geology

The tectonically active Rift Valley traverses Kenya in the region of the main population centers. In fact, Naivasha is located within this zone. A number of the other target towns are located adjacent to the Rift Valley. Hazardous conditions may be created by the unstable characteristics associated with this geological region, such as earthquakes, landslides and volcanic activity. Besides structural geology issues, geomorphological processes (weathering, erosion) and rock types (such as easily soluble limestone) need to be evaluated for their impact on the environment.

2) Soils

Most of Nairobi is built in a region of black cotton soils, which cause special development problems from shrink-swell characteristics. Soils in other parts of the country may also present difficulties for urban use. For example, the coastal area of Mombasa may include shifting sands; the Kisumu area may include easily erodible soils on steep slopes.

3) Meteorology

In terms of the national climate, the proposed sites are located within the wettest part of the country. All of the project towns receive over 600 millimeters (more than 20 inches) of rain per year. Of major importance are the occurrence and intensity of rainy and dry seasons. The towns near Lake Victoria receive precipitation throughout the year, without pronounced seasons. The other towns have highly variable seasonal rainfall, based upon the formation and movement of the Indian Ocean monsoons. Climate is predominantly modified by elevation and distance from large bodies of water (Indian Ocean, Lake Victoria).

4) Hydrology

Most of the sites are inland, usually with location by rivers and streams, which have flow throughout the year. Tidal action in Mombasa is potentially of concern for the stability and health of the residents, depending upon how close to sea level the neighborhoods are located. Groundwater reserves, unknown at the present time, may prove to be important for augmenting water supply.

5) Biology

The majority of the sites are located in agricultural zones. No regions of extensive forests are within the growing space of the towns, so that vegetation clearing (of the predominant grasslands) should not present any difficulties.

b. Human Environment

1) Regional Planning

Of the proposed sites, all but three (Homa Bay, Kapenguria and Machakos) are located on the Kenya railway system. The sites are all located within the southwestern third of the country, which has the strongest rural economy.

Only three of the eleven sites are projected to have populations greater than 25,000 by 1983. Of the eight smaller towns, the proposed range of units provided will be relatively small, between twenty and eighty units per town. On that basis, the direct impact in regional terms will be minor; land and infrastructure requirements will be at the most a matter of twenty acres for a new population of perhaps 500 people. The proposed housing program will thus take on greater significance in terms of its leadership role in demonstrating government-sponsored low-income housing in small agricultural towns.

2) Health Concerns

The southwestern part of Kenya is characterized by a number of diseases. According to available general information, the following are the health concerns: malaria, tuberculosis, childhood diseases, parasitic and venereal infections. Both cholera and schistosomiasis have been mentioned prominently because of widespread distribution.

3) Infrastrucutre

Potable water, sewerage and electricity services are known only for Nairobi. As discussed under the Umoja section, those services appear adequate. Ministries and the city councils of Mombasa and Kisumu will serve as the sources of information for the other sites.

II. EXAMINATION OF POTENTIAL ENVIRONMENTAL EFFECTS OF THE PROPOSED HG PROGRAM

A. SUMMARY OF CRITICAL ENVIRONMENTAL CONCERNS

1. Umoja Subprogram

The following are the major environmental concerns which need to be addressed in project development. As can readily be observed, only a few environmental parameters are problem areas. They are divided into two phases: design and maintenance respectively. Experiences gained from Umoja I have indicated these concerns to be the most consequential. These components, and proposed solutions to the difficulties they represent, will be discussed further under Part C of this section. The full range of environmental parameters will be presented in Part B of the section.

a. Design Phase

● Black cotton soils--

Design of structures to minimize engineering problems created by these soils.

● Sewerage system/stormwater drainage system--

Design with proper gradient for gravity flow and proper outlet.

b. Maintenance Phase

● Soil disposal--

Construction management of black cotton soils, with solution to problems created by foundation excavation and off-site disposal of the soils.

2. Regional cities/Market towns Subprogram

At the present time, detailed information concerning each of the towns is unavailable. However, during this

initial stage of analysis it is possible to indicate fundamental environmental concerns and to highlight potential environmental effects. According to the national environmental profile of Kenya (prepared by the Clark University Program of International Development in 1976), the country-wide problems are the following, by order of importance: 1) soil erosion; 2) devegetation; 3) water quantity and quality; 4) disease (both human and animal); 5) pollution; and 6) process of urbanization. Although the profile is based upon the national level (which is predominantly agricultural), urban difficulties can be deduced from this list. The above concerns apply in the urban context, to a greater or lesser degree, and in a modified order.

B. DISCUSSION OF ENVIRONMENTAL CONCERNS AND POTENTIAL IMPACTS OF THE PROGRAM

1. Umoja Subprogram

a. Natural Environment

First, because the site is flat (see Figure 7 in Appendix C), land form will not be altered significantly. However, the flat terrain creates a need for construction of a sewerage and stormwater drainage system with man-made gradients (that is, increasingly below-grade excavation as one proceeds towards the off-site outlet) for proper gravity flow. Second, because bedrock is within one meter of the surface, some excavation is required for the sewerage lines, near the juncture with the trunk lines north of Umoja. Umoja I went as deep as three meters below grade. Bedrock, which occurs one meter down, thus had to be removed to a depth of several meters to permit the laying of the line. For construction of the houses, flats and community facilities, nevertheless, the bedrock would be a positive impact since it has high bearing capacity. Third, soils have been identified as a critical environmental concern and will be treated in separate fashion under Part C of this section.

Hydrological and biological impacts also can be considered. Water resources will be altered to a minor extent as rainwater becomes channelized in the stormwater drainage system. Yet no on-site streams exist, so there will not be changes in stream dynamics on-site. Currently drainage occupies

several subtle swales which are less than a meter below the rest of the land. Permanent water courses exist only to the north (an unnamed tributary of the Nairobi River where the Kenya Creameries is to be built) and to the southeast (the Ngong River). The reasonably foreseeable amount of stormwater drainage into these watercourses appears to be slight (reduced by ponding action on the level terrain and high evaporation rates), and therefore the impact is considered to be minor. Also, erosion is not expected since drainage is on level land. Finally, the biological impacts are similarly considered to be small-scale. The effects of the existing vegetation and wildlife upon project development are not large since the site is basically grassland without populations of the large game plains fauna. Some sisal remains from the plantation days but is not densely planted, and the woody plant material consists solely of scrub acacia; therefore, no problem is anticipated in clearing the land for construction.

b. Human Environment

Insofar as Nairobi is able to generate employment, the Umoja residents should be in a favorable geographical position to receive work opportunities. The major categories of available jobs include public services, commerce and industry, all of which are primarily located in downtown Nairobi and eastwards towards Umoja. Within five to ten years, the industrial estates should be providing significantly higher employment opportunities as their development continues. On-site, Phase I already has kiosks in a market area, which generate employment for residents. Proposals for Phase II include loans to permit small commercial and industrial enterprises. In the short-term future, the pattern of dispersed commuting to existing jobs throughout the metropolitan region will most likely continue.

The regional transportation system at the present time appears to be well-built and of appropriate capacity to handle the increased population of Umoja II. All-weather roads tie together the various population/employment centers of Nairobi. There is a variety of transportation modes which are available to Umoja residents. The most fundamental mode, and one of the most widely practiced,

is walking to work places and stores. Walking is expected to continue in its important role. The quicker the development of jobs and community facilities near to Umoja, the greater will be the efficiency of pedestrian traffic.

Mass transit includes large buses and smaller-capacity matatus. Each mode is heavily used, with the smaller vehicles able to give faster service. Matatu use is particularly hazardous, however, because of overloaded vehicles and perilous driving habits. Alternatives to this dangerous mode should be considered. One possibility is rail transit. At the present time, there are no plans to utilize the railroad, which passes by the site to the west of Outer Ring Road, and which goes to all the main employment/service centers of Nairobi. The opportunity for railroad commuting should be explored further as project development continues.

Lack of commitment on three proposed improvements to the transportation network, which take on greater utility as the population grows, may hamper the development of Umoja II. Two GOK highways, one a continuation of the Jogoo Road arterial into town and the other a collector road (between this extension and the recently-completed New Dandora Road), have been in the general metropolitan plan for years but are not budgeted. A proposed bus route is in similar circumstances. At the very least, land needs to be reserved for these transportation corridors. Coordination with GOK is also required to press for commitment and to check on the status of these proposals.

The settling of perhaps 30,000 people (4,000 units at an average of seven people per unit) in a new housing development will create requirements for community facilities. Phase I has been hampered by slowly developing facilities. For example, only one school has been completed out of the two planned. A major reason for such delays is the separation of different development functions (schools, health centers, markets) among different NCC departments, during a time of strained financial and planning resources. The proposal for Phase II recognizes the requirements of the population by submitting an integrated planning and financing package for schools, health facilities, and markets. To meet the fuller needs of the residents, larger-scale

facilities of all types are within ten kilometers of the site. Most beneficiaries should receive equal or improved community facilities, compared with those offered where they live now.

Short-term community disruption will occur as beneficiaries relocate to Umoja. The areas from which the people are coming, such as Pumwani and Mathare, have existing neighborhood and community organizations. It will take time and commitment for community organizations to develop at Umoja. Assistance by qualified community organizers to meet the challenges of relocation and home ownership in this NCC project should be provided. The relocation is an entirely voluntary process which should thus help in smoothing the transition period. Neighborhood cohesion should also be aided by contemplated improvements in Umoja housing design. The aim of Phase II is to create small, cohesive neighborhood units. This design differs from that of Phase I, which is a saturation of the land by housing, with neighborhood and community facilities separated from the residential areas. Micro-scale integration of all housing and community features (possibly at a population level of 5,000 inhabitants) should be the objective, to meet the goal of a superior shelter environment.

2. Regional cities/Market towns Subprogram

Until such time as specific data sources are obtained, following upon increasingly detailed technical program information, an analysis of environmental concerns would be altogether too cursory. Therefore, investigations will require field work and interviews before further reporting is achieved.

C. DISCUSSION OF KEY ENVIRONMENTAL ISSUES TO BE CONSIDERED IN PROGRAM PREPARATION

Physical and social environmental factors are considered in this part of the report. The critical physical concerns presented in Part A are herein discussed. However, there are other key issues to be presented. These other issues deal with architectural, social and management concerns, all of which are important for consideration in program preparation.

1. Umoja Subprogram

a. Black Cotton Soil

An estimated forty (40) per cent of total construction costs are based on the removal of this clay soil in unit foundation work and infrastructure development. The established practices to deal with this problem are depicted in Figures 8 through 11 (Appendix C). Essentially the soils of the proposed site are excavated and totally removed from the foundation area. Soil is taken at least five kilometers away to fill in eroded areas along river courses, to fill in dumps and to add to agricultural lands. Then the red soil and murram fill are brought fifteen kilometers or more from locations east and north while quarried stone (for hard core filling) is brought about eight kilometers from the northeast. Construction of roads also requires excavation to bedrock (usually one meter down) and fill from outside sources.

Because black cotton soil is found in many other parts of the world, an extensive practical experience has been developed. Alternative construction solutions have been devised for similar soils elsewhere. These alternatives should be examined so as to determine comparative costs. Perhaps the high costs associated with black cotton soils can be reduced.

A review of these other solutions reveals the following types. In general, foundation work may consist of either spread or deep foundation. Because bedrock is within a meter of the surface and the contemplated structures are relatively light, deep foundations (piles or caissons) are not required. Spread foundations are useful for unstable soils when supports which step out at the bottom are required for weight distribution. The Umoja structures should not be heavy enough to require these footings. Mat foundations (concrete slabs) would be applicable with much heavier structures which need wider load distribution. Finally, floating foundations are generally useful when soils are weak and bedrock is too deep to reach--which is not the situation at Umoja.

Basically, unless the soil changes in depth from its average depth of one meter, or changes in soil type, or the bedrock becomes soft, the Umoja I construction practice may be the most feasible. Just one modification presents itself for evaluation at this time. A partial excavation of the existing soil (perhaps leaving 20-30 centimeters of black cotton soil at the bottom over the bedrock) followed by back fill (with a combination of red soil, murrum and crushed rock) may be tried. Still required would be the construction of strip footing to bedrock, so as to seal off the inner area from moisture penetration. If the soil remains dry, the swelling cycle would thus be avoided. To be assured of a proper margin of safety, it may be necessary to make the floor a floating slab independent of the walls with expansion movement possible below the slab. Design of the slab could include an overhang on all sides of the slab above the footings (to act as "roof" to keep moisture from penetrating below the slab). Soil at grade level would also need to be brought in to prevent the shrink/swell cycle of black cotton soil.

This idea of partial excavation of the existing soil ties in with the search for a fundamental economy in construction at this unique site. As mentioned earlier, soil and rock must be brought from far distances and in great bulk to this site. Ways in which costs may be reduced may revolve, not so much around foundation practices but around the costs associated with bringing in the replacement soils and rock. If ways can be found to transport less material in and out of Umoja, then project costs may decrease. The above suggestion is offered as a potential economy which merits further technical examination and cost analysis.

One final issue derived from a consideration of these soils consists of the timing and extent of foundation work. In Umoja I, the practical problem of disposal of unwanted soil reached striking levels. The problem developed in the following manner: During expansion of units, as agreed upon in the contract between NCC and the individual, large quantities of soil had to be taken out. But individuals did not have a simple method for proper disposal of the soil, either on-lot or off-lot. As a result, the soils ended up in drainage ditches, on top of footpaths and in the public streets. As a remedy, it is suggested that all foundation work be done at the start by the contractor. In this manner the soil can be properly disposed of.

b. Infrastructure Design

The major need in sewerage and stormwater drainage systems design is to ensure an adequate gradient for gravity-flow functioning of the systems. Discussions with the Water and Sewerage Department resulted in a minimum recommended gradient of 1:250, or 0.4% gradient, for the sewer lines. Both systems also require proper outlets and receiving areas for the respective discharges.

c. Site Description and Design

Fundamentally, the site boundaries should be determined before further project preparation proceeds. As indicated in Figure 4, the boundary with the Kayole housing estate is not fixed. Project description and cost, with numbers of units and their mix, can then be clarified.

A fuller treatment of design factors, in order to create a more comprehensive site development is also required. The Phase I pattern of a solid hexagonal grid network of over 3,000 houses should not be repeated. Instead, there should be smaller neighborhood units separated by usable open space. Community facilities should be interspersed within the housing development, rather than isolated to one side, away from the inhabitants. Landscaping, through the expertise of the City Parks Department, should be part of the development before people move in. Plantings could include ornamental shade trees and shrubs which are of low maintenance and are resistant to vandalism. The shamba concept of tree crops/vegetable gardens may be incorporated into open space areas or be advanced for on-lot development.

Decisions on unit design, including lot size, numbers of rooms, numbers of stories, types of units and numbers of attached dwelling units can be made now. Figure 12 (Appendix B) indicates a model of Umoja I housing units to serve as the background to unit design.

d. Selection and Settlement of Beneficiaries

The processes of moving to a new formal-sector housing development and assuming the responsibilities for home purchase are ones which the Umoja beneficiaries are not necessarily prepared to complete unassisted. In order to enhance these unfamiliar processes, a variety of support mechanisms should be developed. Starting from the earliest stages of beneficiary selection, an effort should be made to transfer intact those groups of people who express a desire to form a neighborhood. They may be relatives or friends from previous neighborhoods. The resulting neighborhood cohesion should result in a smoothening of the upheavals from changing residences and altering lifestyles. Selection of beneficiaries can still be random; yet a pairing process could be devised to match up small-scale assemblages of peers. The overall housing development would consist of a heterogeneous mosaic of neighborhoods. In this manner the national goal of creating one people can be achieved.

2. Regional cities/Market towns Subprogram

It is premature to discuss key environmental issues until preliminary fieldwork and interviewing are achieved. Therefore, at the Project Paper stage, an environmental component (investigations and input into site location and design) will be integrated into the team effort.

III. RECOMMENDATIONS

A. UMOJA SUBPROGRAM

1. Threshold Recommendation

Based upon the foregoing discussion, a Positive Threshold Decision is recommended for Umoja Phase II, in accordance with the Office of Housing Environmental Policy and Actions (DS/H Manual Order 42-0, January 30, 1979, Part 3.B). The following environmental issues, considered to be of significant importance, should be addressed by the project design team, and incorporated in the Project Paper.

2. Incorporation of Environmental Issues into Project Paper

a. Special Design/Construction Features Concerning Black Cotton Soils, Their Excavation and Disposal

- 1) Comparative analysis of existing construction practices with modifications and/or different practices.
- 2) Recommended completion of all foundation work, both for built portions of the units and the area of future expansion before occupants move in. Contractor to handle disposal of black cotton soil.

b. Provision of Sewerage and Stormwater Drainage Systems with Adequate Gradient and Outlet

- 1) Design and construction for gravity flow to facilities off-site.
- 2) Assurance that off-site disposals for respective discharges are of proper capacity for reception and treatment.

B. REGIONAL CITIES/MARKET TOWNS SUBPROGRAM

1. Threshold Recommendation

A positive threshold decision is recommended, essentially based upon the need for full-fledged environmental input

into the Project Paper. The current level of information does not permit a comprehensive recommendation other than the requirement for continuing environmental work prior to program commitment.

2. Incorporation of Environmental Issues into Project Paper

The outstanding environmental issues include the following:

a. Infrastructure

In particular, the availability of potable water, sewerage and electricity services should be determined for each project town. Absence of any of the services could be a determinant factor in modifying the proposed program, to contain different components or even to suggest deletion of specific towns from the current HG proposal.

b. Physical Environmental Conditions

The basic physical checklist (geology, physiography, soils climate, hydrology and biology) should be completed so as to indicate potential hazards. Subsequently an evaluation should be performed in order to maximize benefits and to minimize disadvantages.

c. Regional Planning

The reasonably foreseeable direct and indirect effects of the proposed program should be ascertained so that site selection and program development are sound. These concerns should take into account the stimulation of urbanization which the HG proposal entails.

APPENDIX A

LIST OF INDIVIDUALS CONSULTED IN PREPARING IEE (Umoja Subprogram)

M. M. Yusuf, Umoja Project Director

Stanley Munogoki, Senior Resident Officer Engineer, Umoja
Project Unit

Peter Nduati, Assistant City Engineer, Estates and Development
Section, City Engineer's Department

Kristian S. Jagden, Structural Engineer, City Engineer's
Department

A. G. Flatt, Chief Assistant Engineer (Water), Planning,
Design and Construction, Water and Sewerage Department

Barry Ingersent, Engineer, Water and Sewerage Department

J. Nguigiti, Sewerage Section, Water and Sewerage Department

Mwangih Wang'ondu, Chief Planning Officer, Town Planning,
City Engineer's Department

Jonah Ichoya, Chief, Forward Planning Section, Town Planning

A. C. Pinto, Chief Assistant Engineer (Roads), City Engineer's
Department

Mr. Kuria, Superintendent, Nairobi City Parks

Dr. W. N. Mugo, Medical Officer of Health, NCC

W. J. Wairegi, Chief Geologist, Ministry of Natural Resources

F. N. Muchena, Head, Kenya Soil Survey, Ministry of Agriculture

W. N. Mbote, Deputy Director, National Environmental
Secretariat, Office of the President

Jeremy Haggar, University of Nairobi

Nils Jorgensen, Housing Consultant

Other individuals in the Umoja Project Unit and NCC departments
were also consulted.

APPENDIX B

REFERENCES AND INSTITUTIONS

References

- Clark University Program of International Development:
1976. National Environmental Profile of Kenya.
- District Planning Committees in Central and Western Kenya.
- Kaplan, Irving et al. 1976. Area Handbook for Kenya.
Washington: USGPO. 469 pp.
- Lake Basin Development Authority (data on irrigation scheme).
- Ojany, F.F. & Ogendo, R.B. 1973. Kenya: A study in Physical
and Human Geography. Nairobi: Longman. 228 pp.

Institutions

- Ministry of Lands and Settlements
A. N. Ligale, Director, Physical Planning Department
- Ministry of Natural Resources
W. J. Wairegi, Chief Geologist
- Ministry of Agriculture
F. N. Muchena, Head, Kenya Soil Survey
- Office of the President
W. N. Mbote, Deputy Director, National Environmental
Secretariat
- Central Bureau of Statistics

APPENDIX C

PHOTOGRAPHIC SUPPLEMENT

Figure

5. Aerial View of Umoja in Regional Setting
6. Aerial View of Umoja Site
7. Land Available for Umoja II
8. Black Cotton Soil Excavation
9. Laying Foundations
10. Foundations in Place
11. Addition of Room to Existing Unit
12. Model of House Design

N.B. Figures I through 4 are included within the body of the report.

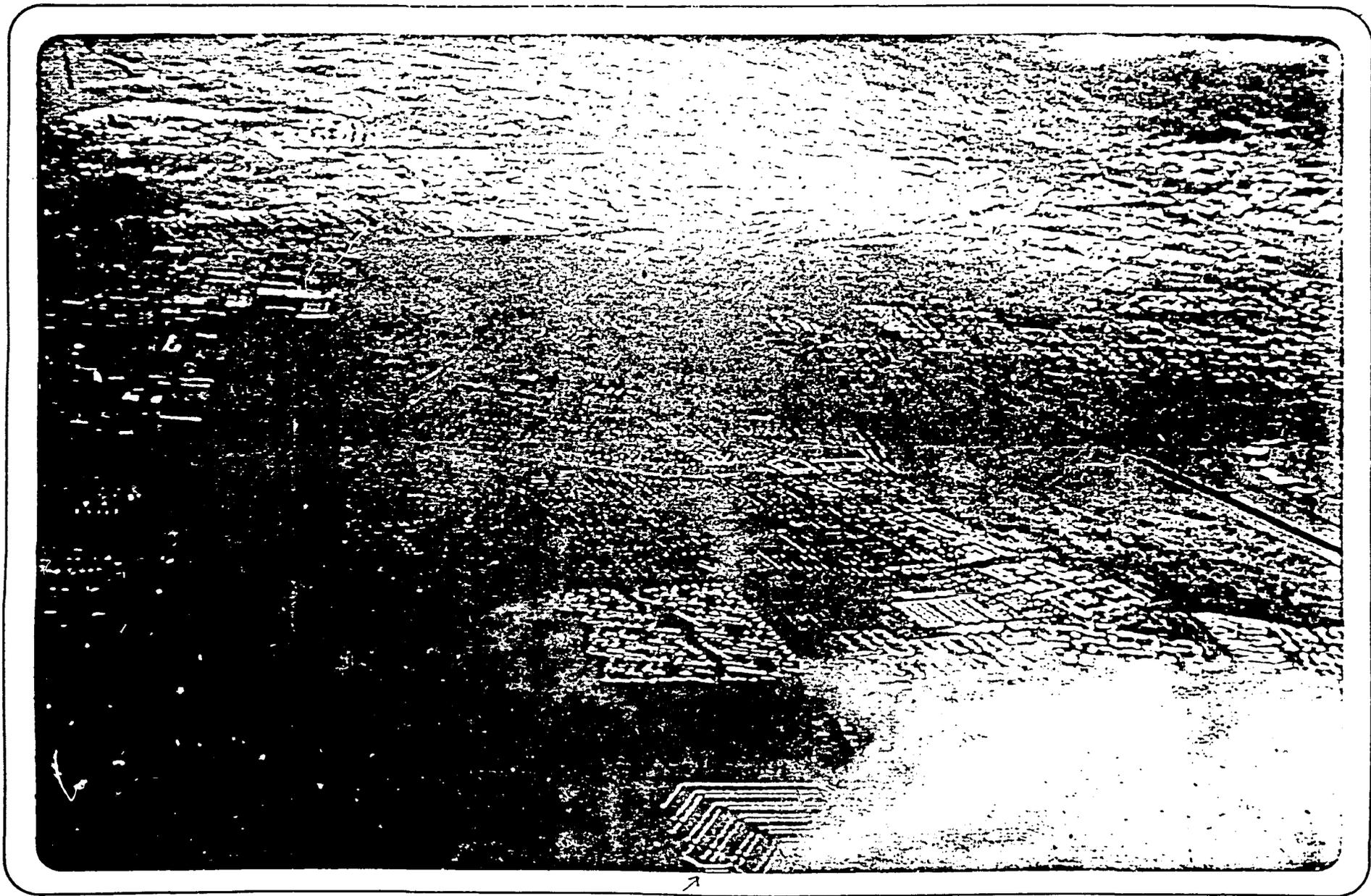


Figure 5. Aerial view of Umoja Housing Estate (foreground) with downtown Nairobi (background).

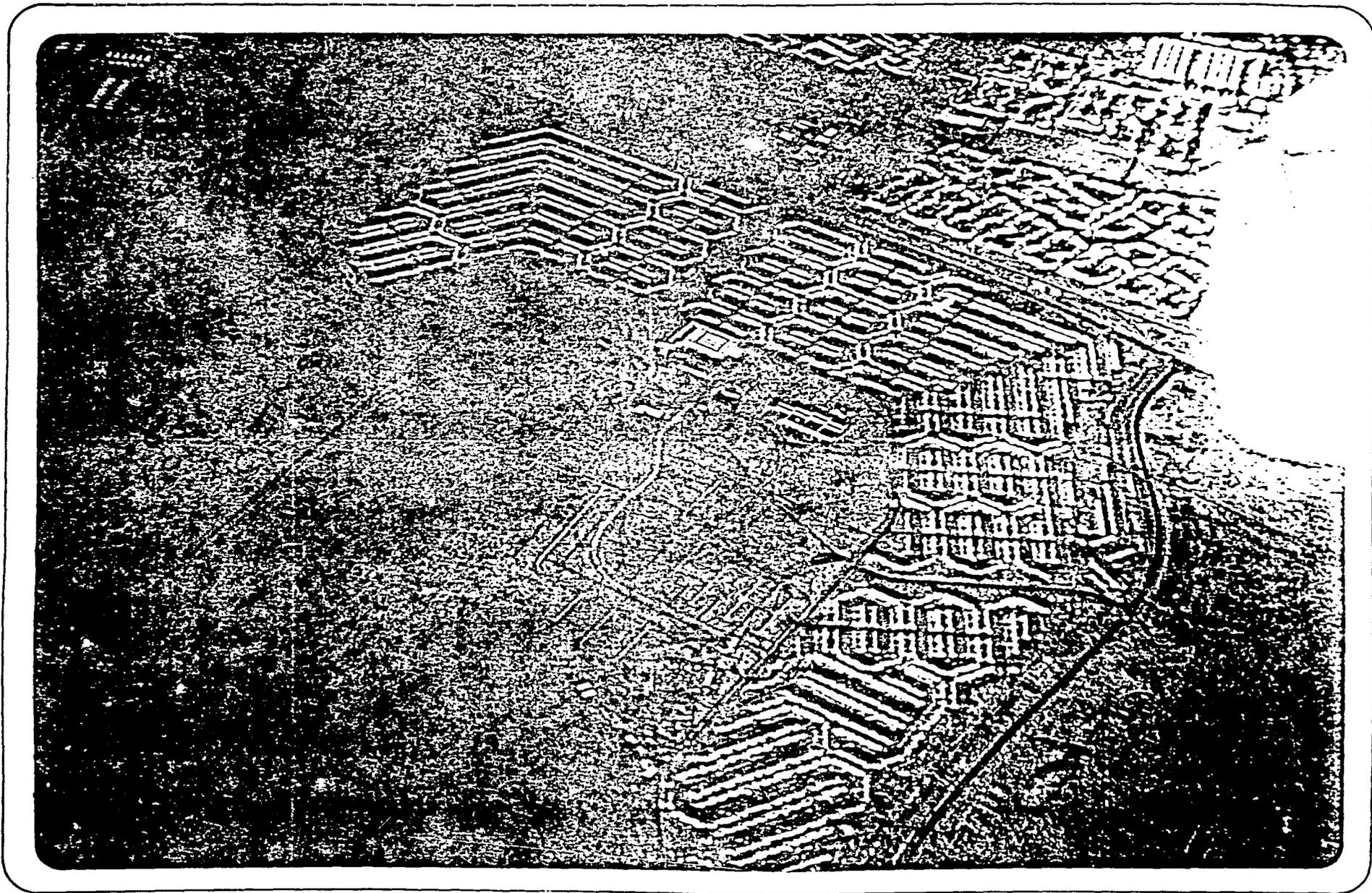


Figure 6. Aerial View of Umoja I, with inner core market and primary school. Umoja II land is to the left. Buru Buru Estate is at top right.

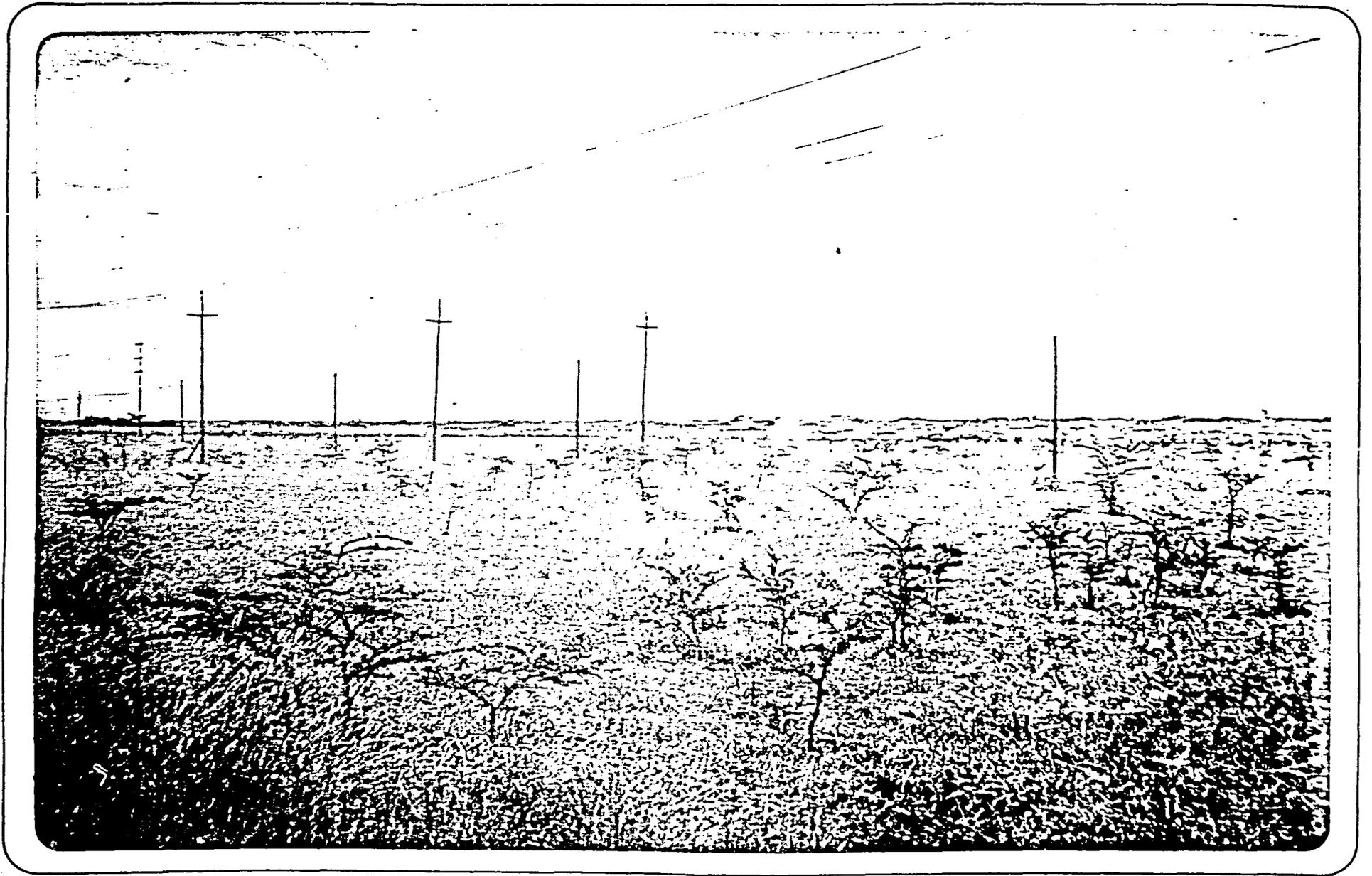


Figure 7. Scrub thorn savanna vegetation of Umoja II site, looking east. Electric transmission lines cross through Umoja.



Figure 8. Method of black cotton soil excavation to prepare housing foundations. Depth of soil is one meter. Bedrock is uncovered in foreground.



Figure 9. Strip footings being prepared for additional units being built at Umoja I, near New Dandora Road.

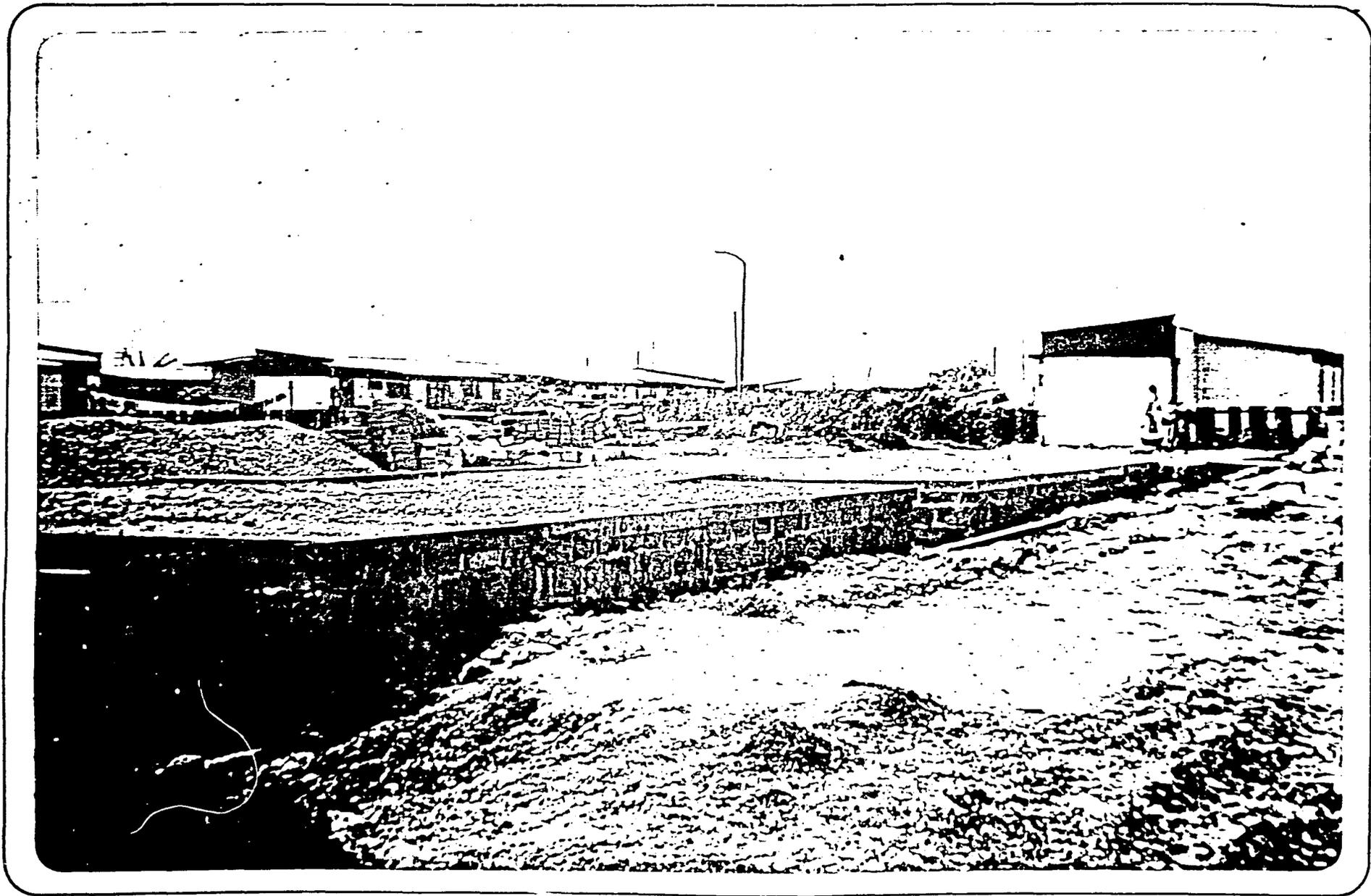


Figure 10. Foundations readied for Umoja housing. Undisturbed black cotton soil surrounds foundations on the outside, while red soil fills inside.



Figure 11. Expansion of Umoja I house by excavation of black cotton soil to bedrock. Soil is discarded by individual beneficiaries either on-lot or on public land (streets, foot paths, storm drainage system).

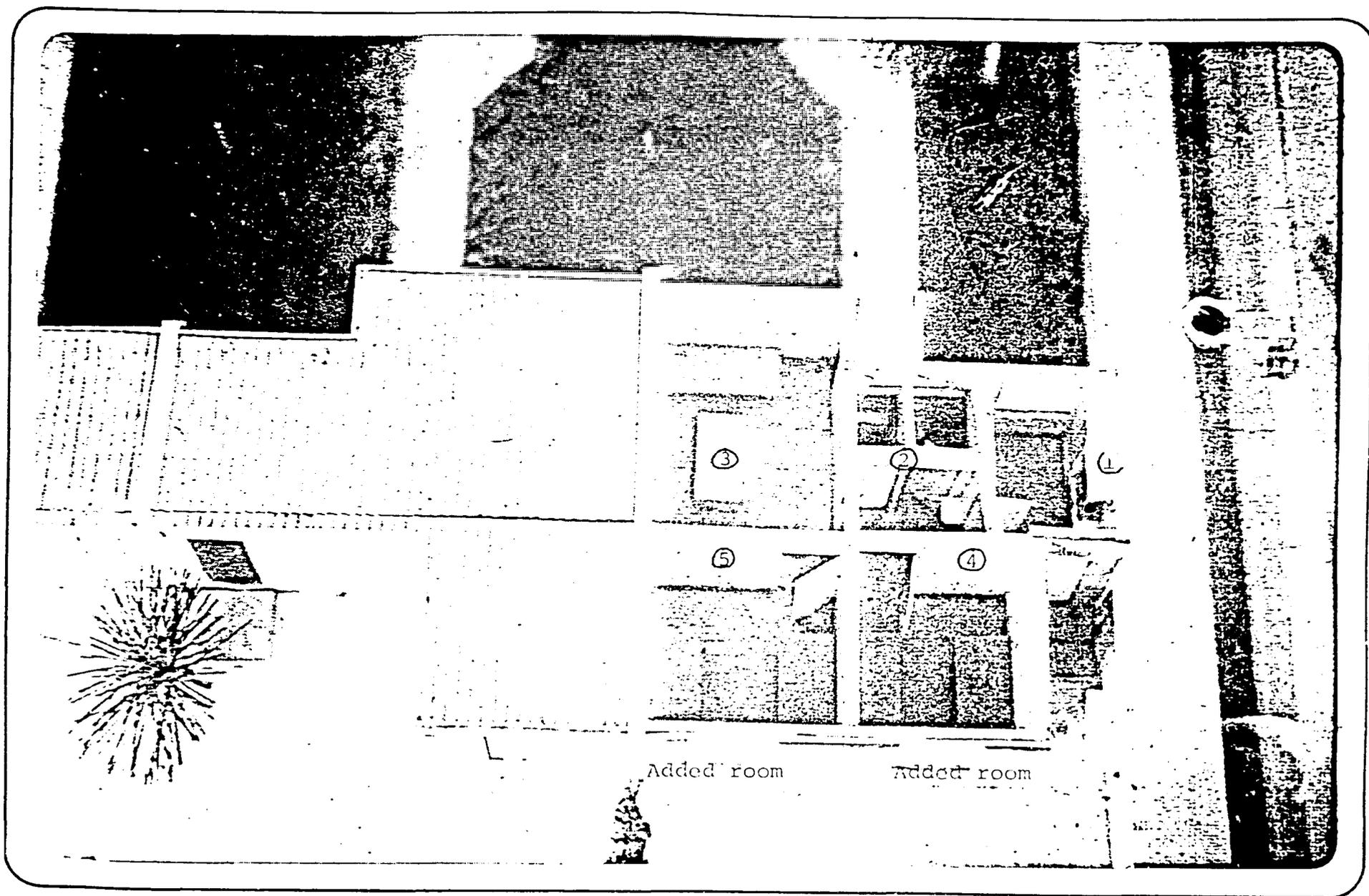


Figure 12. Model of Umoja I housing units. Unit with roof off is Type 04. Rooms are as follows: 1) kitchen; 2) shower and toilet; 3) initial dry room; 4) and 5) added dry rooms. Umoja II most likely will include units with similar components, but design may change.