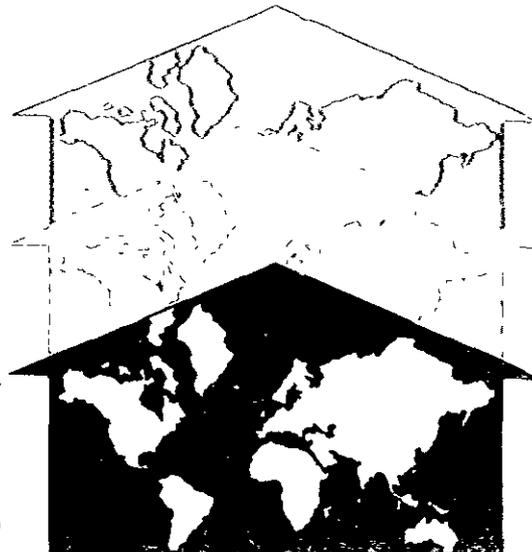


PV-AAJ-669
dupl'

A Study of the Progressive Development of Three Low Cost Housing Projects in Panama

Occasional
Paper Series
Spring 1981

**AGENCY
FOR
INTERNATIONAL
DEVELOPMENT**



OFFICE OF HOUSING

NOTE: The findings and recommendations of this study are for the purpose of discussion and review and are not to be considered as the official position of either the Agency for International Development or the Government of Panama.

A STUDY OF THE PROGRESSIVE DEVELOPMENT
OF THREE LOW COST HOUSING PROJECTS IN PANAMA

DECEMBER, 1980

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON D C 20523

FOREWORD

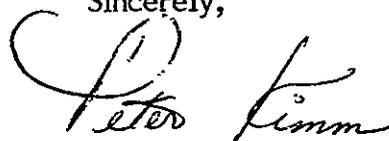
The Office of Housing is pleased to present this study of the progressive development of low cost housing in Panama City. We feel that this report contains valuable information for institutions concerned with the improvement of shelter for low income families. The report deals with three low cost housing projects and the changes which have occurred over a period of years in the physical structure of the houses and in the communities. The solution types that were studied (lots, piso-techo or floor-roof, and core units) and problems to be dealt with are similar to those found in many countries and therefore, the findings should be of interest to project planners outside of Panama.

The study is the first effort of a newly formed evaluation unit within Panama's Ministry of Housing, which is composed of staff members from its Department of Social Affairs. It was undertaken in April-August, 1980, in response to a request from the Ministry of Housing's project planners. The evaluation team consisted of: Benigan Magallón de Hernández, Director of the Office of Social Affairs; Manuel Flores, Alba Alvarado, Edna Bethancourt, Félix Gonzales, Humberto González B., Dilia Reyes de Morales, Edgardo Tuñón, and Hercilia Ureña.

The A.I.D. Office of Housing assisted the Ministry of Housing in the execution of this study through the provision of a resident technical advisor, Julie Otterbein, who worked with the evaluation unit in the study design, field investigations, analyses, and reporting.

In addition the A.I.D. Office of Housing in Panama City is working closely with the Ministry of Housing to seek ways to apply the lessons of the report to A.I.D. Housing Guaranty-funded projects and other low cost housing projects.

Sincerely,

A handwritten signature in cursive script, appearing to read "Peter Kimm".

Peter M. Kimm
Director
Office of Housing

Table of Contents

	Page
Forewōrd	
Executive Summary	1
Introduction	4
I. Some observations on the Target Population within Panama: The Groups which Entered the First Projects and Those Still in Need of Housing Programs	8
II. One Indicator of the Housing Stock: Size of Constructed Area	14
III. The Process of Construction	17
A. The Steps IVU took to Help Families to Relocate	17
B. The Conversion of Wooden Houses (Lots) and the Expansion of the other Units	20
B.1 The Time Period Families in Nuevo Veranillo have Used to Make Their Improvements	21
B.2 The Delays in Initiating Improvements: The Core Units in Cerro Batea	22
B.3 Definition of a "Finished" House	23
C. Principal Sources of Labor and Financing for Housing Improvements	25
C.1 Sources of Labor	25
C.2 Sources of Financing	26
C.3 Implications for Future Programs of Assistance	28
IV. The Physical Attributes of the Houses Studied	30
A. Number of Rooms	31
B. Durability of Construction Materials	32
C. State of Repair of the Structures	34

D.	Access to Water and Sewerage Systems	34
D.1	Water Connections in Nuevo Veranillo	36
D.2	Sewerage Connections in Nuevo Veranillo	36
E.	The Density Factor	37
E.1	Constructed Area Per Person	37
E.2	Number of Persons Per Room	38
F.	Indices: Quality of Structure/Quality of Life	39
G.	The Appearance of the Houses	43
H.	Current Estimated Value of the Houses	50
V.	The Project Beneficiaries	53
A.	Mobility of the Project Populations	53
B.	The Cancellation of Mortgages in Nuevo Veranillo	54
C.	Socio-Economic Characteristics of the Project Beneficiaries	56
C.1	Sex of Heads of Households	57
C.2	Household Incomes	58
C.3	A Comparison of Female Headed Households with Male Headed Households in Terms of Income and Type of Employment	60
C.4	The Families in Nuevo Veranillo who Have not Made Improvements/Lots and Piso-Techo Units	61
D.	Levels of Monthly Payments and Implications for Affordability	63
VI.	Changes Within the Communities	65
A.	Nuevo Veranillo: 13 Years Later	65
B.	Cerro Batea: 1976 - 1980	66
	Annex I - Questionario para Proyectos Originales	
	Annex II - The Characteristics of the Core Units of Cerro Batea According to the Project Stage	

EXECUTIVE SUMMARY

A STUDY OF PROGRESSIVE DEVELOPMENT OF THREE LOW-COST

HOUSING PROJECTS IN PANAMA

Panama's Ministry of Housing is in the process of constructing large scale housing projects for low-income groups which include three basic types of units: Core Units (a 25m² expandable dwelling with sanitary facilities); Piso-Techo or Floor-Roof units (essentially core units without walls); and Serviced Lots (a 180m² lot with access to sewerage and water mains). Given the large financial investment in these projects, it was deemed important to review the experiences of earlier projects with similar units in order to determine the level of success of the progressive development approach in meeting the housing needs of low-income groups.

A study was carried out in three project areas: The first two projects, (Lots and Piso-Techo units) were initiated more than a decade ago and, therefore, offered a unique opportunity to review the characteristics of the housing after the elapse of ten to twelve years. The Core Units project was built in stages, starting in 1976, which provided an intermediate time-frame to judge the level of investment in housing by project beneficiaries. The study provided information on the characteristics and quality of structures, the construction process, the development of the social and physical environment of the communities, and a profile of the project beneficiaries.

Some major findings and conclusions from the study were the following:

1. In the two earlier projects, 90% of the original sites had been improved and the majority of those houses were classified as "adequate" to "good" structurally, based on a comparison with the full-size units which the Ministry constructs for higher income groups. (Quality was measured in terms of size of constructed area, number of rooms, durability of materials, state of repair of the structure, and service levels for water and sewerage).

2. The complete transformation of such housing projects requires a period of about a decade. While a significant number of families made major housing improvements in the first few years of residence, a large segment of the population waited many years to make such improvements, some even waited twelve years. Thus, these projects must be viewed as long-range solutions to the housing needs of the target populations. Since the newer project of Core Units was less than four years old, the fact that 46% of the sample had constructed additions indicated satisfactory progress, given the time frame for constructions indicated by the earlier projects.

3. The pattern of self-help construction (defined here as labor of owner, friends and relatives) was prevalent for all three projects studied. However, the beneficiaries in the newest project relied more heavily on credit to finance their constructions than the beneficiaries in the earlier projects who used savings to a much greater degree as their primary source of financing. The causes for the increased demand for formal financing could not be determined from the data. However, the survey did reveal that families seeking credit did not appear to have difficulties obtaining it.

4. The projects clearly reached the target population in Panama City. A review of the entry level incomes of beneficiaries in the earlier projects (1967-68) and the current incomes of beneficiaries in the newer projects (1976-78) shows a concentration between the 15th and 25th percentiles.¹ The families moving into the project areas (renters and buyers) are from the same income strata as the original beneficiaries. Therefore, it can be said that the projects continue to serve the designated target population.

5. The survey data indicated that the vast majority of participants in the earliest projects have been able to cancel their mortgages. (Those projects had ten-year mortgage terms versus the 25-year period of current projects.) Thus, the families proved to be good clients and demonstrated an ability to invest substantial amounts in housing consolidation. This is especially important since the system of collections for the early projects was more informal than the current system within the Ministry; the payments in 1968 depended in large part on the good faith of participants. Currently, the Ministry requires direct discount from salaries, or cosigners, obligations which were instituted in 1974 and thus did not affect the early beneficiaries.

6. Despite the high level of construction and quality of housing more than half of the families do not consider their houses "finished" since they still plan major constructions. An even larger percentage plan some kind of improvements in the future which are esthetic in nature, e.g. a patio or a fence for the garden. This indicates that "progressive development" is a dynamic process and that the level of housing expectations for this group is very high.

7. One very important finding was an extraordinarily high proportion of female headed households in the areas of the early projects (1967-68): 40% of those household heads are women as compared with a more common ratio of 25/75 (female to male) in the 1976-78 projects and in the population as a whole. The study team hypothesized that families in the early projects might have been subject to a high degree of disintegration, i.e. spouses either dying or deserting the family in the twelve years since the initiation of the projects. In fact, this proved not to be the case. The review of Ministry files showed that in 1968 female heads entered the projects in much greater numbers than is currently the case, i.e. the proportions of female to male heads has not changed significantly over the life of the projects. There is no evidence that women were "overselected" compared with men and, therefore, it must be assumed that the original target areas (defined geographically) already had more female headed households, many with spouses. What is important is that the selection criteria during that period allowed the entry of so many women. If current selection practices had been strictly applied in 1968, probably a much lower percentage of women would have been participants. (The current criteria emphasize permanent salaried employment and women generally work in the informal sector and rely more on transfer payments which are not considered "stable" income.)

¹Based on January 1979 income estimates. (Currency values were adjusted for the 1967-68 figures.)

8. Relatively high levels of community services can be found in the areas of the early projects which compare favorably to services in the newer projects areas. Since the institution concentrated primarily on housing units in the earlier period, grass-roots organizations were the primary means to secure needed community facilities. In recent years "integrated programming" has become a goal; the large new housing projects have areas designated for a wide variety of community services. However, the means to synchronize inputs by the responsible ministries has not yet been developed. At the same time, community organizations have been relatively inactive. Since the government has promised certain facilities, the communities tend to be more passive than in previous periods. A conclusion of the study was that mechanisms need to be developed whereby communities actively participate with government institutions in defining priorities and in constructing facilities in project areas.

A STUDY OF PROGRESSIVE DEVELOPMENT
OF LOW COST HOUSING UNITS IN PANAMA

INTRODUCTION

Many governments have officially adopted an approach to housing low-income families which might be termed "minimalist". Serviced sites and basic expandable core units have become standard projects in countries throughout Latin America, Africa and Asia. The premise of these projects is that while low-income families are unable to purchase standard completed houses, if they are given a base upon which to build, they should be able to provide themselves with adequate housing over time.

Since many of these low-cost housing projects are still relatively new, some planners view the projects with skepticism. A persistent fear of government officials is that serviced-site projects will start out with sub-standard housing and will remain in poor conditions, thus linking the government with the creation of new slums.

Studies conducted in a number of countries have provided preliminary evidence that the "minimalist" approach is not only viable, but successful beyond original expectations. Poor families have proven themselves both able and willing to invest substantial amounts for house improvements over a period of years. This study, carried out in the metropolitan area of Panama City between April and August 1980, reinforces the findings from other countries.

A very large percentage of the current projects of the Ministry of Housing (MIVI) is comprised of Serviced Lots, "Piso-Techo" Units (Shell house); and Basic Core Units. The general characteristics of these project types are:

- Serviced Lots: 180m² lots with access to water and sewerage connections, costing \$22.00 per month (these cost figures as of October, 1980);
- Piso-Techo Units: Shell houses comprised of cement foundations, four columns and a zinc roof, including a sanitary core unit.² The constructed area is 25.2m² and the average lot size is 180m². The average cost per unit is \$42.00 per month;
- Core Units: Enclosed units with the same dimensions as the Piso-Techo Units, ready for occupancy. Additional items include electrical outlets and a multi-purpose sink. The cost per month is approximately \$53.00. (Monthly payments vary slightly according to actual lot size.)



1. Piso-Techo unit in the Roberto Duran Project, 1980

Thousands of these three types of units are being built and more are planned for execution over the next few years. The projects are concentrated in the area of San Miguelito^{1/} to the Northeast of Panama City which is a major population center and considered the most appropriate area for planned growth on the scale needed to meet the housing demand of Panama City and environs.

Many staff members within the Ministry have thought of these new projects as "experiments," yet more than a decade ago the Ministry, which was then known as the Institute for Housing and Urban Development (IVU), prepared thousands of lots and also Piso-Techo units in the area of San Miguelito and elsewhere. The lot programs were of two types: legalization of the tenure of squatters, and planned lot areas with minimal urbanization, usually only communal standpipes for water. The Piso-Techo units were 25.2m² and also

^{1/} San Miguelito currently has a population of approximately 170,000 persons. Most of its growth has occurred since 1960, in the form of land invasions and has been in large part a result of the scarcity of land within the City of Panama. (Until 1979, the land restrictions of the Canal Zone created a U-shaped growth pattern, with the Bay of Panama as the limitation on the other side.)

serviced by a communal water supply. Because of the low level of urbanization, these projects were very low-cost and within the reach of Panama's lowest income groups. In 1976, the Ministry built its first project of Core Units in a sector which is contiguous to the newest projects.

Thus, the current projects can hardly be called experimental in the sense of being a completely new concept in Panama. However, no attempt had ever been made to review the experiences of those early projects. Given the level of uncertainty within the Ministry with regard to the appropriateness of the new projects, especially the Serviced Lots, it became evident that a review of past projects was long overdue.

In April of 1980, an Evaluation Program was launched within the Ministry and the first study requested was an investigation of the changes which have occurred in the early IVU/MIVI^{2/} projects. This study provides information on the changes in the physical characteristics of houses, the methods used in construction, the socio-economic composition of the project populations and aspects of the community structures and how they have changed over time. Since the first two projects studied were initiated over ten years ago, the evaluation offered a rare opportunity to judge the level of success of projects of this type. In many countries, models such as planned lot programs are new. Even five years is a short period of time for assessing the progress of such projects since often only part of the population makes major investments in housing during the first years of residence.

The study was concentrated in San Miguelito in two sectors. In Nuevo Veranillo, IVU built a project of 438 Lots and another of 500 Piso-Techo units between 1967 and 1970. (The earlier of the two was the Lot project). The study also included the Ministry's first project of Core Units in Cerro Batea which was begun in 1976 and completed in 1979 in four phased stages. The time difference between the projects is clearly critical and should be kept in mind throughout the report.

A random sample of 100 households was taken for each type of project and a structured questionnaire was applied. (See Annex 1). In addition, a series of meetings was held with community leaders in order to gather more general information on the development of the communities as a whole: The results of the study are organized in the following manner:

1. A brief overview of target areas for housing projects in Panama and some specific groups which entered the early projects.
2. A discussion of one physical characteristic of the houses today: the size of constructed area.

^{2/} Acronyms for the Urban Institute and the Ministry of Housing. The former was officially converted to a Ministry in 1974.

3. A presentation of various aspects of the construction process carried out by the beneficiaries.
4. A detailed look at a number of important structural characteristics of the houses and the factor of density with a presentation of two experimental indices for determining "quality" of the houses.
5. A discussion of the socio-economic characteristics of the project populations, and some of the implications for project design.
6. The final section of the report deals with the community or the environment in which these projects unfolded.

The information collected is extensive and varied. Absolute conclusions are often difficult because of interrelationships among the data and the exceptions to tendencies which were found. However, if there can be one simple conclusion from the study, it is that the evidence points to the success of the minimalist approach in solving the housing problems of low-income families. The results indicate that poor families can and will marshal resources to satisfy their housing needs once they are given a structure to do so. While it is impossible to guarantee that the experiences described for the projects in Panama can be replicated since circumstances change over time, the study does indicate that the approach has proven its worth and should be supported until evidence to the contrary is found.

I. SOME OBSERVATIONS ON THE TARGET POPULATION WITHIN PANAMA: THE GROUPS WHICH ENTERED THE FIRST PROJECTS AND THOSE STILL IN NEED OF HOUSING PROGRAMS

The target populations for housing projects in Panama City are usually defined in terms of geographical area since many sections of the city are visibly "substandard".

Tenements

A number of areas in Panama City are tenement slums consisting of rows of two-story wooden houses built at the time of the construction of the canal more than 70 years ago. The condition of those structures can vary enormously given the maintenance provided through the years. However, a very large number are considered irreparable and have been officially condemned by the government.^{3/} These structures are prone to fires and some have literally collapsed. As soon as viable options are found, families are relocated and the structures are razed.



2. Tenement structures in the area of Chorrillo, Panama City

^{3/} Often houses have deteriorated much more rapidly once they are designated "condemned" since by law, rent is no longer collectable and the owners no longer have incentive to make even minor repairs.

For the families living in condemned structures, conditions are poor. While many of the buildings have twenty to thirty rooms, it is common to find one family per room sharing bathroom facilities with many other families. Also, these families live with the constant hazard of fire or structural damage.

A key phrase with regard to the relocation of these families is when viable options are found. In some cases families are too poor to buy houses or even to move to a higher rent apartment. In other cases, families have the means, but not the desire to move away from the center of the city and there is simply nothing available within the same area. The low-cost options offered by the Ministry are in the city's periphery, at some distance from the center and many inhabitants of these tenements are reluctant to move since they have lived in the area all their lives and their work is located closeby.

In the late 60's, when the Piso-Techo and Lot projects were conceived, one famous tenement area, Marañón, was scheduled for complete urban renewal. All wooden structures were to be demolished and a new civic center and other government buildings were to be built. The program was carried out to the point of relocating the vast majority of the area's families since in that period it was possible for the Ministry to insist that families with the economic means move to one of various alternative projects. Some families went to new 12-story high rise apartments within the center of the city and others to housing projects in the outskirts, including the Piso-Techo project in Nuevo Veranillo, the area of the study. Approximately one-fourth of the sample for the Piso-Techo project were families who had lived in Marañón.

The history of Marañón's urban renewal still has not been written since today a number of condemned houses are still standing in the area. While these represent a small percentage of the original structures, they house the poorest of the poor, i.e. the people with no options without subsidies. Until some kind of alternative can be found for them, they continue to live in structures that were condemned 15 years ago. Meanwhile no "renewal" takes place in the area.

Marañón is just one of various tenement areas in Panama City. The others are very much like Marañón was 15 years ago. The population has a wide range of income groups, some of whom would be eligible for the new Piso-Techo or Core Units, or for serviced lots.

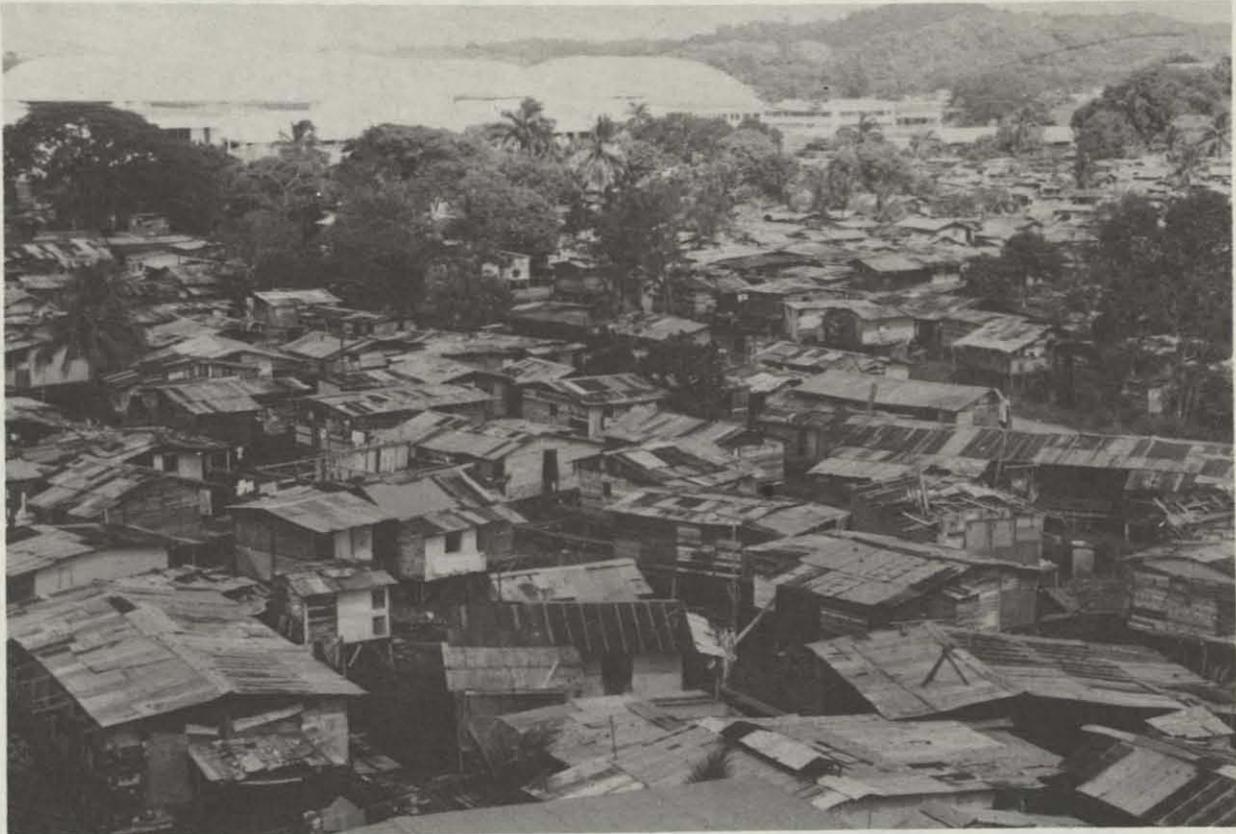
Squatter Areas

A number of areas within Panama City have characteristics similar to those found in almost every large city in Latin America. These areas were subject to invasion by families and some have been in existence for 20 to 30 years. Some of the older squatter areas are quite established; many families have converted their temporary structures to permanent materials. Others which are newer, or those which have always been considered "vulnerable"



3. Condemned structure in the area of Marañón, Panama City

because of the value of the property which they use, are characterized by wooden houses in very poor condition, low levels of services (usually just a few water standpipes for hundreds of families), poor drainage and a resulting problem with sanitary waste, and extremely crowded conditions.



4. Squatter area of Curundu, Panama City

One squatter area called Veranillo occupied prime land owned by the National University of Panama. In the late sixties when the University decided to expand its facilities it requested the assistance of IVU in relocating the majority of the families. The result of that relocation program was the Lot project in Nuevo (or New) Veranillo which also gave its name to the Piso-Techo project. More than 50 percent of the population sampled in the Lot Project came from the Veranillo area of the University.

A more recent relocation of families took place in 1976 when families living in a centrally located squatter area named "Loma La Pava" were required to abandon the area so that a hospital could be built.^{4/} The first stage of the Core Unit project in Cerro Batea gave priority to those families. In the sample taken in that area, almost all the families in the first stage were from Loma La Pava. In the subsequent stages of the project, families were accepted from many different areas.



5. Structures in Viejo Veranillo, Panama City

^{4/} The hospital was not built and the area is currently being prepared for a high-income housing project.

Given the areas where many of the project beneficiaries originated, the results of the study should provide insight into the appropriateness of the same kind of projects for families still living in tenement or squatter areas. However, there is a great difference between the manner in which families from these areas will enter the projects. While in the decade of the 60's and up until 1976 it was feasible to consider massive relocation programs, the atmosphere in Panama no longer allows that kind of unilateral action on the part of a government institution. A major goal of the Ministry of Housing is to attempt, to the extent possible, to find housing solutions for families where they currently live. However, often the lowest cost alternatives are still projects in the outskirts of the city, like those dealt with in this study.

Factors such as land costs often place centrally located housing out of the economic reach of the target population. At the same time, given the political constraints, the Ministry is no longer able to pressure families into certain kinds of projects, but rather must "sell" the units in the fullest sense of word.

Notes on the analysis

The base numbers of the different analyses in the report vary. While a sample of 100 households was taken for each project area, in the area of Nuevo Veranillo, the study team encountered a few commercial sites and a few apparently "abandoned" houses, i.e. no furniture could be seen inside. These were considered valid sample cases since they provided insight into the area's composition. At the same time, interview information could not be collected. For this reason, some tables in the text are based on slightly less than 100 cases.

In addition, some information, especially that pertaining to the construction process, could only be provided by families who were involved in it, i.e. "original" project families. Since some turnover has occurred, with new families buying or renting the units in the area, some of the analyses were based on the responses of original families, which reduced the base numbers, as well as the inevitable "no response" category for this kind of study.

In Cerro Batea, these variations were not in evidence since up until now there has been very little turnover or sales of the units (none appeared in the sample) and very little conversion of core units to a strictly commercial activity.

II. ONE INDICATOR OF THE HOUSING STOCK: SIZE OF CONSTRUCTED AREA

Data was collected on various physical characteristics of the houses in each project. In determining whether a house is "adequate" (or better or worse than adequate),^{5/} many physical attributes should be taken into account. However, the overall size of a structure can provide a first measurement of the level of investment in the housing stock and can be used as a starting point for judging the overall progress of the projects in each area. Chapter IV provides a detailed look at the other physical characteristics of the houses which were measured and how they might be aggregated to judge the overall quality of a house.

Comments on Cerro Batea:

For this analysis and all those which follow, the data for the Core Units in Cerro Batea are presented simultaneously with the results for the Lots and Piso-Techo units in Nuevo Veranillo. While close to 90 percent of the houses in Nuevo Veranillo have been improved, to date only 46 percent of the units in Cerro Batea have additions. This is due in large part to the time factor. The earliest part of the Core Unit project is only four years old and the newest only about two years old, while in Nuevo Veranillo houses are 10 to 13 years old.

Not only did we expect to find fewer houses with annexes in Cerro Batea, but we expected to find most of the improvements in the first two stages (1976-1977). The sample for Cerro Batea was divided proportionally according to the total number of solutions in each Stage, e.g. 29% of the total Core Units are found in Stage I and therefore 29 questionnaires were applied. While throughout the body of the report, the data on Core Units is provided in summary form, Annex II contains tables for Cerro Batea which presents the data by project stage. It is worthwhile, however, to note the detail of houses with annexes here:

Core Units with Annexes in Cerro Batea

	(1976-1977)		(1978-1979)	
	I	II	III	IV
Number of cases in sample	29	45	17	9
Number of houses with annexes	16	21	3	0
Number in process of construction	<u>3</u>	<u>3</u>	<u>0</u>	<u>0</u>
Total with annexes	19	24	3	0
% with annexes	65.5%	53.3%	17.6%	-

^{5/} In order to measure "adequacy", norms are required which often are not clearly defined or which vary over time and from place to place. For this study, some definitions had to be established as the analysis proceeded.

A clarification of terminology is also in order. In this cases "annex" is used in a very broad sense and refers to any addition made to the house of a room or rooms. While some families have constructed only one additional room, others have constructed three bedrooms, a dining area, etc. The detail of those constructions can also be found in Annex II.

Size of Constructed Area of the Houses in the Three Projects

The study team measured the enclosed area of each structure in the sample. Porches or other constructed areas which were not enclosed were not taken into account in order to have more comparable data and because these generally do not serve as primary functional areas. (They may or may not have important social functions but generally are not used for activities such as eating, sleeping, working, etc.).

The table which follows defines four categories for constructed area. One helpful point of reference is the size of "completed" houses which the Ministry has built or is building for somewhat higher income groups. In one project (Santa Librada), the Ministry built two-bedroom houses which include a combined dining-living area, a kitchen and bath. The average size of these houses was 40m². Over the years, the Ministry has constructed much larger houses for higher income groups.

Percentages of Houses in Four Categories of Constructed Area

<u>ENCLOSED AREA</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA</u>
	<u>Lots</u>	<u>Piso-Techo</u>	<u>Core Units (with annexes)</u>
66m ² or more	46.0	36.1	34.8
46-65m ²	27.5	34.0	58.7
26-45m ²	20.4	13.4	6.5
25m ² or less	6.1	16.5	----
Total number of cases	98	97	46

NOTE: The Piso-Techo units in Nuevo Veranillo were built with an area of 25.2m². Since any fraction between 25 and 26m² falls within the lowest category, the 16 cases for Piso-Techo have the area mentioned since annexes have not been constructed.

In Cerro Batea, the 54 houses which do not have annexes and which are not reflected in this table, have an area which varies slightly since the original core units were built with 25.2m², 25.68m² and 27.6m². Since the units in these categories would be reflected in the second lowest level above even though they have no additions, only houses with annexes were used in this classification.

If we are able to use the example of the Ministry-built $40m^2$ house as an indicator of a norm, or an "adequate" house, then 73% of the Lot houses and 70% of the Piso-Techo units not only met that norm, but many are much larger. Also, in Cerro Batea the constructions which have been made to date are larger than those of the Ministry's completed houses. The category which causes some problems is that of $26-45m^2$ since it is probably too broad for the purposes of measuring proximity to the norm. Within that category, the study team found, that the average size of Lot houses was $35m^2$ and for Piso-Techo units, $41.1m^2$. Thus, an even larger percentage of the houses are comparable in size to the Ministry's completed house.

The final category, $25m^2$ or less, seems "inadequate" in terms of the size criterion. However, without taking into account the number of people or the density of the structure, this determination is one-dimensional. For instance, in one case there was a single man living in a Piso-Techo unit in Nuevo Veranillo. Although the unit did not have annexes, the man was much more comfortable (space wise) than most of his neighbors although they had much larger houses. The density factor will be discussed at length later on in the report. (See Chapter IV).

Since the projects in Nuevo Veranillo are the oldest, any conclusion reached about the building progress of families, in terms of size of structures, should be based on the samples of those two projects. The average size of the structures in the Lot project was $65.3m^2$, and for Piso-Techo $60.05m^2$. The families have built structures at least as big and usually much bigger than those which the Ministry constructs as complete units.

Taking into account the other indicators of quality which will be discussed later on, an important observation is that if the Ministry were to build replicas of the houses found today in Nuevo Veranillo, only a tiny fraction of the families living in them would be eligible to buy them!

Obviously, the families did not construct these houses in a short period of time. The key to the success of the minimalist approach is the time element which will be looked at in detail in the following chapter. While some families do build the major portion of their houses in the first few years, others wait many years, or build little by little over a period as long as 10 to 12 years. The success of a project should not be judged by the individuals who construct in the first few years; but rather by the housing stock which exists when there has been enough time for the majority of families to make their improvements. In other words, the focus should be the transformation of the project as a whole and not necessarily the slow builders versus the fast builders. After more than a decade, Nuevo Veranillo has reached that transformation point. In Cerro Batea, which is still in a relatively early stage of development, the progress appears to be excellent.

III. THE PROCESS OF CONSTRUCTION

The time difference between the Piso-Techo and Lot projects in Nuevo Veranillo and the Core Unit project in Cerro Batea is most important when determining the level of change within the projects as a whole. However, there is another rather obvious difference in the typology of the units. In order to occupy a Lot, the owner must build some kind of structure and the Piso-Techo units have to be at least enclosed before a family can move in. On the other hand, if a family buys a Core Unit they can occupy it immediately, albeit suffering cramped quarters until additions are built.

When the projects in Nuevo Veranillo were conceived, IVU had various policies and programs which were designed to assist families in the initial period of moving and occupying the units. The section which follows describes those programs and their implications for the families who received Lots and Piso-Techo units.

A. THE STEPS IVU TOOK TO HELP FAMILIES TO RELOCATE

An important policy of IVU was to encourage families to move their wooden structures to the new area of Lots and even help them to do so by sending a truck and a crew to dismantle the houses and to reconstruct them at the new sites. As mentioned previously, a major group of beneficiaries came from the University grounds of Veranillo where they already had a house, generally an improvised or wooden structure. Given the circumstances, i.e. obligatory relocation, this was probably the least the institution could do.

Currently, the Ministry is reluctant to encourage the relocation of wooden structures for fear that they will be "promoting" slums in new areas. At the same time, the most practical approach is to have families occupy the Lots as quickly as possible using the materials they already have at hand. In fact, squatter families seem to be the "natural" target group for Lot Projects because they have such materials at hand.

Another program of IVU was materials loans (discontinued by the Ministry)^{6/} which was directed at both the families with Lots so that they

^{6/} The reason generally given for discontinuing the program is that there were abuses by the beneficiaries, i.e. people sold the materials rather than using them for construction. According to the beneficiaries in the project areas, there was a certain amount of mis-use of the materials but they feel that only a small fraction of the families could be considered "guilty". Another reason given for dropping the program was "administrative" difficulties such as poor bookkeeping. While few Ministry staff emphasize this, it appears to have been a very important consideration in dropping the program. (Currently, the Ministry is planning to reinstate a materials loans program similar to the IVU model.)

could begin the conversion of their temporary structures, and at families with Piso-Techo units so that they could enclose the units and occupy them. The program took the form of a materials center (CENTROCOOP) where families could withdraw materials such as concrete blocks and zinc roofing materials, cement, etc. and the cost of the materials was calculated and added to the mortgage payments. (The dis-benefit to the families of that practice was probably enormous since it implied ten years of payments instead of the two years of most short term loans.) Supervisors were periodically sent out to determine how the materials were used and to provide technical assistance in construction.

The two practices of IVU undoubtedly gave the beneficiaries in Nuevo Veranillo a head start. Since families in the original area of Veranillo already had houses, it was a help to have the institution move them. For families with Piso-Techo units, many came from center city areas like Marañón and did not have immediate access to construction materials; for them it was a definite help to have credit in the materials center so that they could enclose their units and move in.

The different needs of the two groups can be seen graphically in the percentage of families which took advantage of the materials loans program. In general, the families with Piso-Techo units were offered fewer materials since the primary goal was to have them enclose the already standing units. For the families with Lots, more materials were offered so that they could build something equivalent, but fewer took advantage of the offer, probably because they already had a house, one termed "temporary" by the institution but one which served the purpose of the family.

The table below is based on the responses of the families who were "original" beneficiaries. (Of the total sample in Nuevo Veranillo, 76 original families were found in the Lot project, and 77 in the Piso-Techo project).

A significantly smaller proportion of families with Lots took advantage of the Loans Program than those with Piso-Techo units (47% versus 73% of the original families respectively). Because temporary structures were moved for the Lot project, fewer families felt an immediate need for building materials, and probably did not wish to have their monthly payments increased by taking out loans from IVU. At the same time, given the type of housing the Piso-Techo families had previously, e.g. rental or condemned houses in center city, fewer had access to temporary materials and therefore were in greater need of loans.

Those families who did take out IVU loans, tended to take only enough for their immediate needs, i.e. the Piso-Techo families generally received loans of around \$200, enough to enclose their units and the families with Lots tended to take out more materials, worth approximately \$500, which was enough to build a small basic house.

Percentages of families with material loans
according to amount of loan

<u>AMOUNT OF IVU MATERIALS LOAN</u>	<u>LOT</u>	NUEVO VERANILLO <u>PISO-TECHO</u>
Less than \$200.00	0.	10.7
\$200-300	19.4	58.9
\$301-400	2.8	---
\$401 or more	69.5	3.6
No information	8.3	26.8
<hr/>		
Total number of cases	36	56
	Total sample (76)	(77)

NOTE: The currency of Panama, the Balboa (B1.), is in actuality the U.S. dollar. Therefore, all cost and income information is in dollars.

Delay in Occupying the Units

A concern of planners is that beneficiaries will wait to occupy the units and have to pay housing costs twice, that is, pay rent for current housing as well as mortgage payments until they occupy the new unit. While many of the families in the projects studied would not have had this difficulty since they lived previously in a non-paying situation (e.g. rent free condemned houses or squatter areas) it is instructive to look at the time it took for the families to move to the new sites.

In the case that families would, in fact, be paying twice, the problem would be likely to occur in projects like Lots and Piso-Techo since the Core Unit projects supposedly allow immediate occupancy.

Of the six families with Core Units who delayed in moving, five constructed additions prior to occupying the units indicating that they had more available resources than most. (For the sixth, no explanation for the delay was given.)

In comparing the families with Lots with those with Piso-Techo units, it is clear that the former group was able to move more quickly to the sites.^{7/} It can be assumed, therefore, that the transfer of the temporary structures by IVU was accomplished efficiently. Just three families with Piso-Techo units indicated that they moved in immediately and these enclosed their units with temporary materials (one used sheets).

^{7/} One or two families in the Lots project already lived in the area. Their Lots were legalized by IVU and they are reflected in the "immediate" category.

Percentages of families according to
the time between buying a unit and moving in.

<u>MOVING TIME</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA CORE UNITS</u>
	<u>LOTS</u>	<u>PISO-TECHO</u>	
Immediately	57.9	3.9	94.0
Less than 1 month	5.3	28.6	
1 - 2 months	7.9	18.2	2.0
2 - 4 months	9.2	18.2	3.0
5 - 6 months	1.3	5.2	1.0
More than 6 months	18.4	15.6	---
No information	---	10.3	---
Total number of cases	76.	77.	100.

Many more families with Piso-Techo units took between one and four months to move in, reflecting the time needed to enclose the units. In general, the families who took more than five months to occupy their units decided to build more substantial structures before moving to the sites.

An observation on the first period in their Nuevo Veranillo projects is that the programs of IVU seemed to facilitate the process of moving into the areas. While the houses in those two projects could not at that point be strictly compared to those in Cerro Batea since many were not made of concrete blocks, the service levels were lower, etc., in a broad sense all the families were in similar circumstances, i.e. occupying a basic structure while ahead lay the process of constructing the houses in the dimensions and in the style they desired. The following section looks at the period of construction after the families occupied the sites.

B. THE CONVERSION OF WOODEN HOUSES (LOTS) AND THE EXPANSION OF THE OTHER UNITS

As has been noted, the houses in Nuevo Veranillo are quite large compared with those being built by the Ministry. In the questionnaire, the families were asked what they built before moving in, and what they built

after moving in, up until the date of the survey. The data on the latter proved to be extremely varied and complex for analysis by manual procedures. Some families made major constructions all at once and some built over quite a number of years. The difficulty arose in trying to put all these variations into a comparable form, i.e. the family that built one room in 1972 and another in 1979 versus the family that built five rooms in 1976. Since this analysis deals with the "original" families of the Nuevo Veranillo area, there were a total of 153 observations for both Lots and Piso-Techo units, and each observation was different. Thus, it became almost impossible to define specific construction stages to show the progress of the families' by time periods.

An added complication was the fact that families were asked about their construction plans in the future and a very large number indicated that they planned to build more rooms despite the fact that the structures were already large. So it became difficult to speak of "completed" units from the viewpoint of the families living in them.

The analyses which follow attempt to reach a compromise. They are instructive, if still not detailed enough for some audiences. The first deals with the total period of time that the people in Nuevo Veranillo have taken to arrive at the stage they are currently at; the second is a more detailed look at the time it takes for families to start improvements (in the Core Units); and finally there is a discussion of how the families see the future in terms of construction and a definition of a "finished" house.

B.1 The Time Period Families in Nuevo Veranillo Have Used to Make Their Improvements

The information in the questionnaires was "compacted" in order to arrive at figures which could be compared for the Lots and Piso-Techo projects in Nuevo Veranillo. The previous chapter indicates the size of the houses constructed, and a key piece of information is how long people took to arrive at that level of construction. The analysis was simplified in the following manner: The difference between the date that families moved in or occupied the sites and the date they finished the last construction was calculated. Clearly these families were not involved in construction constantly. There were periods of inactivity which sometimes stretched to years. Therefore, the following table should be thought of in general terms as the families' overall investment period for their housing.

In the following table (based on the responses of original families in Nuevo Veranillo), 16 wooden houses in the Lot area which have never been improved, and 11 Piso-Techo units which were not improved after being enclosed were not considered.

Percentages of Families Making Major
Housing Investments by Defined Intervals

<u>CONSTRUCTION TIME FRAME</u>	NUEVO VERANILLO	
	<u>LOTS</u>	<u>PISO-TECHO</u>
1st or 2nd Year	43.3	12.1
3rd to 5th Year	16.7	16.7
6th to 8th Year	16.7	25.8
9th to 12th Year (or currently in the Process of Construction)	23.3	42.4
No information	---	3.0
Total number of cases		
	60	66

The table indicates that while many families made improvements in the first two years of residence (especially in the Lot project), the majority of families took many more years, and a significant number at least a decade, to make major housing investments. Especially in view of the figures given for the Piso-Techo project, it is clear that the transformation of a project should not be judged in its first few years.

B.2 The Delays in Initiating Improvements: The Core Units in Cerro Batea

Given the more limited number of units with additions in Cerro Batea, it was possible to analyze the periods of delay in the initiation of improvements on the houses in order to obtain information complementary to that for Nuevo Veranillo. The difference was calculated between the date of occupation of the site and the date that the first construction was undertaken.

Of the families with annexes, half made the improvements within the first 12 months of residence. However, another way of looking at the information is that only 46% of the total sample have made improvements to date. Of the remaining 54 families, 35 families in the first two stages have already waited 3-4 years and still have not begun improvements and 23 families in the last two stages have waited 1 to 2 years. Even if each of those families were to begin construction tomorrow, which is highly unlikely, the average delay in initiating improvements would be three years. Given the information we have on the families in Nuevo Veranillo, it appears that the families in Cerro Batea are following a similar pattern in terms of the rhythm of construction.

Delays of Families in Cerro Batea Undertaking Improvements

CERRO BATEA

<u>TIME PERIOD</u>	<u>NUMBER/FAMILIES</u>	<u>% FAMILIES</u>
less than 6 months	9 *	19.5
6 - 12 months	13	28.3
1 - 2 years	13	28.3
2 - 3 years	4	8.7
3 - 4 years	<u>7 **</u>	<u>15.2</u>
TOTAL	46	100.0

* five families built annexes before moving in.

** six families are currently in the process of making improvements.

Progressive development housing projects are long-range answers to the housing needs of low-income families. If institutions are willing to accept that "long-range" means at least 8 to 10 years, and maybe more, than the changes in Cerro Batea as well as in Nuevo Veranillo can be considered signs of success. If, however, planners are impatient for changes to occur in a shorter period of time, it is necessary to consider interventions which might facilitate the process of improvements.

B.3 Definition of a "Finished" House

Although the study revealed a very high level of development of the structures in Nuevo Veranillo, it was very interesting to note that many families have plans for further constructions, sometimes substantial ones. In one sense, this indicates that the process of progressive development never ends, and that the housing expectations of families are quite high.

The questionnaires included the following questions:

"Have you considered making further improvements in the near future?"

YES ()

NO ()

If Yes, "What Type?"

1. _____
2. _____
3. _____

If No, "Why Not?"

- Lack of Resources ()
- The house is finished ()
- Other _____

A definition of a "finished" house was based on the following premises:

- (1) "Finished houses were defined as those which the families themselves defined as finished (see above) and also those in which families indicated that future improvements would only affect the appearance of the house, e.g. a new porch, masonry, etc.
- (2) An "Unfinished" house was defined as one in which a family planned major constructions of a functional sort, such as additional rooms, and also a family which indicated a lack of resources, since it was assumed that if they had the means, they would make major improvements.

The results of this analysis indicate that only about half of the original families in Nuevo Veranillo consider their houses finished.

<u>HOUSE IS FINISHED</u>	NUEVO VERANILLO	
	<u>LOTS</u>	<u>PISO-TECHO</u>
"Finished" as defined by families	6	3
Only improvements for Appearance/Finished in Terms of Function	<u>29</u>	<u>40</u>
Sub-Total	35 (46%)	43 (56%)

HOUSE IS UNFINISHED	NUEVO VERANILLO	
	LOTS	PISO-TECHO
Plan to build more rooms	12	22
Plan to build new house	12	--
"Lack Resources"	17	12
Sub-Total	<u>41 (54%)</u>	<u>34 (44%)</u>
TOTAL:	76	77

The families in the Lot project who indicated that they plan to build a new house, still have the wooden structures built at the beginning of the project. That group will be looked at in more detail in a later part of the report. If those families are not taken into account, the size of the groups with "unfinished" houses is almost equivalent. Given the level of construction found in the area, it could be concluded that housing expectations are high.

C. PRINCIPAL SOURCES OF LABOR AND FINANCING FOR HOUSING IMPROVEMENTS

Along with the timeframe for the improvement process, the study focused on various aspects of the construction process, in particular the mechanisms for financing the constructions and the types of labor utilized. A major question which the study team hoped to answer was how self-reliant the families are in terms of making improvements and whether institutional programs for assisting beneficiaries seem warranted. Since there were programs to help the families in Nuevo Veranillo in the first phases of construction, the information presented below concentrates on the subsequent construction phases in Nuevo Veranillo and compares the data with that for houses with annexes in Cerro Batea where no special programs of assistance have been implemented.

C.1 Sources of Labor

The categories of labor defined in the table are not necessarily exclusive since a family may have obtained assistance in construction from various sources. However, the data was analyzed according to the principal type of labor utilized in the constructions.

Percentages of Families by Project According to Categories of Labor Sources

<u>PRINCIPAL LABOR SOURCE</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA</u>
	<u>LÓTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Self-Help	33.8	14.1	19.6
Relatives/Friends Neighbors	40.2	38.5	32.6
Contractors	22.1	47.4	47.8
No Information	3.9	--	--
Total number of cases	77	78	46

When the category of Self-Help (the owner) is combined with that of Relatives/Friends/Neighbors, it is notable that in the Lot project, 74% of the families used un-paid labor for their constructions. For Piso-Techo the same group represents 53% of the families and in the Core Units of Cerro Batea the same tendency is evident in that 52% of the families who have made improvements to date have used un-paid labor. Thus, informal or unpaid labor represents an important resource for beneficiary families and it appears that this pool of constructions skills is available to families in newer projects in about the same proportion as it was in earlier projects.

C.2 Sources of Financing

If the tendency with regard to utilization of un-paid labor seems to have remained constant, the same cannot be said for the types of financing utilized in a new project (Cerro Batea) compared with earlier projects (Nuevo Veranillo).

Percentages of Families by Project According to Categories
Of Financing For Improvements

<u>PRINCIPAL SOURCE OF FINANCING</u>	<u>NUEVO VERANILLO*</u>		<u>CERRO BATEA</u>
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Savings	70.1	69.2	58.7
Loans	13.0	14.1	19.6
Combined Loans/ Savings	13.0	15.4	21.7
No Information	3.9	1.3	--
Total Number of Cases	77	78	46

*Does not include the loans from IVU.

While the first two categories are not completely exclusive, the information from the questionnaires indicated that the major amount of money spent on construction came from either savings or from loans. In the third category of combined savings/loans, approximately half of the money came from each source.

A greater proportion of families in Cerro Batea have utilized loans than the families in the previous two projects. While the number of families is still limited (only 19) since fewer families have made improvements, the data may show an increasing demand for formal financing in newer projects. Two hypotheses were that families taking out loans wanted to build larger houses or wanted to build them faster than the families who were willing to rely on savings. Based on the data for Cerro Batea, relationships were sought between the size and speed of constructions and the source of financing.

Percentages of Families in Cerro Batea According to the
Number of Rooms Constructed and Source of Financing

NUMBER OF ADDITIONAL ROOMS: *	FINANCED BY:	
	<u>Savings</u>	<u>Loans</u>
1	14.8	26.3
2	44.4	15.8
3 - 4	40.8	57.9
<hr/>		
Total Number of Cases	27	19

*The number of Rooms excludes the Core Unit itself and the bath and kitchen.

While the number of observations is limited, it appears that taking out a loan did not necessarily result in the construction of a larger house. While the group with loans did build proportionately more additions of three and four rooms, they also built more additions of just one room.

Also, loans did not positively affect the speed of the improvement process. More families using savings (60%) made improvements in the first year than the families who sought loans (only 40% of those families made the improvements in the first year of residence).

A final general observation for all the projects is that those families who sought loans did not have difficulties getting them; these families represent a wide range of income levels. Only two families in the three projects indicated that they tried to get loans but were unsuccessful due to their economic situation. The rest either were successful or had not attempted to obtain credit. While it is possible to conclude that the financing market within Panama reaches low-income groups, it is also possible that many families simply did not try to get loans because they believed that they would be unable to. Therefore, it is still unclear whether the data reflect the real demand for formal financing.

C.3 Implications for Future Programs of Assistance

Within the Ministry of Housing there is growing support for the reinitiation of a materials loans program based on the model used by IVU in Nuevo Veranillo. There is a general concern that because the costs of materials have increased substantially over the past decade, families will no longer be able to convert a lot or a minimal unit such as Piso-Techo or Core Unit into an adequate house. Actually, that concern is not supported by simple observation of the progress of families in the Ministry's new projects where construction is taking place. However, it cannot be said with certainty

whether or not the families are finding the improvement process much more difficult now than it was ten years ago because of inflationary rises in the costs of construction materials. (More information on this subject will be gathered from monitoring the new projects of the Ministry). The primary question is whether a program of loans would facilitate the construction.^{8/}

One observation with regard to the families who have taken out private loans is that often the terms are not particularly favorable. Some have taken out loans from commercial banks and others from materials suppliers within Panama City. The terms for credit in stores are usually somewhat higher than those of the financial institutions, e.g. 12-13% versus 10%.^{9/} If the Ministry is able to offer "softer" terms than the commercial institutions there is no doubt that there would be a large demand for loans since the beneficiaries would recognize a "good deal". At the same time if materials loans have low interest rates and low cost materials, they would invite abuse since beneficiaries would be able to make a profit by reselling the materials. In turn, vigilance would be required by the Ministry which implies a system of controls and substantial administrative costs.

^{8/} Rather than making a concrete recommendation, the study team proposed a Ministry wide discussion on first, the advisability of initiating a loans program, and if such a program was considered desirable, the discussion of two alternative models: (1) Cash loans with two-year terms; and (2) a materials center system. The former provides greater ease of administration and freedom for the beneficiaries to buy materials even on the second-hand market; the latter provides more control by the Ministry which many staff members deem essential.

^{9/} A clear advantage of these loans is that they are short-term rather than spread over the mortgage period.

IV. THE PHYSICAL ATTRIBUTES OF THE HOUSES STUDIED:

For many years the Ministry has conducted surveys of target areas, gathering base information on the socio-economic characteristics of families and on their housing conditions. Along with data such as types of materials and tenancy, houses conditions were classified as "good", "average" or "bad". That classification was subject to variation since it depended on personal criteria of the interviewers. There were no guidelines or definitions formulated to make the classifications more systematic. As a result, in one survey it was discovered that some staff members were classifying well-constructed block houses as "average" because they were not painted. A house's general appearance greatly influenced the interviewer as well as its relative appearance compared with others in the vicinity. In another case, it became clear that social rather than structural considerations took precedence when an old but structurally sound building was classified as "bad" because the toilets were not functioning and were causing a health hazard. While no one would argue that the conditions for the residents were poor, relatively minor reparations would have caused a very different classification. For example, the following photograph shows an expanded Piso-Techo Unit in Nuevo Veranillo which does not have a professional finish but is otherwise a well-constructed and adequate house.



6. Piso-Techo unit in Nuevo Veranillo with annexes, but unfinished.

For the Progressive Development study, it was decided that various characteristics would be taken into account to determine the quality of housing stock and an attempt was made to remove the subjectivity of classifications. The five indicators chosen were:

- Total Constructed Area (discussed in Chapter II)
- Number of Rooms
- Durability of Construction Materials
- State of Repairs of the Structure
- Access to Water and Sewerage Systems

Each of these characteristics represents an important aspect of housing quality, although some may be interrelated, e.g. the size of constructed area and the number of rooms within the house. While determining the categories to be used for each of the characteristics, the idea surfaced to give each characteristic (and category) a numerical value which could be aggregated to provide a more systematic classification of "good", "adequate" or "bad". Initially this was to be called an Index of the Quality of Life. However, it quickly became clear that this would be a misnomer since structural characteristics were being measured and not necessarily the level of comfort of a family. The factor of density was missing from the calculations.

There were two issues: The quality of the housing stock and the quality of the life of the residents. Therefore, two additional calculations were made:

- Constructed Area Per Person
- Number of Persons Per Room

Since some of the characteristics, such as access to water and sewerage systems, could not be defined simply as structural improvements but were very closely related to the health and well-being of the families as well, no clear cut line could be made between the two issues of quality. As a result, two numerical indices were used, with some of the characteristics used in both. Those indices, still very experimental in nature, are discussed in the final section of this Chapter. The sections which follow present the data for each of the characteristics separately.

A. NUMBER OF ROOMS

There is a certain amount of overlap between the size of a house, or its total constructed area (See Chapter II), and the way it is divided into rooms. It is much less feasible to divide a 25 M² house into various rooms than one which has 100 M² of floor space. However, relatively small houses

can be divided into specialized areas and some investigators place more emphasis on the number of rooms than on the size of the resulting spaces. The theoretical basis rests in the health and social life of a family, i.e. that it is better to separate sleeping quarters from areas for cooking, etc. Also, the value of a house is often affected by the number of rooms, with particular value placed on the number of bedrooms.

Percentages of Families by Project According to Number of Rooms

<u>NUMBER OF ROOMS</u> (Excludes bath and kitchen)	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
1	9.1	16.5*	54.0*
2	11.2	14.4	6.0
3 - 4	69.5	57.8	33.0
5	10.2	11.3	7.0
Total Number of Cases	98	97	100

* Without Annexes to date.

By far the greatest number of families have at least three rooms: 80% of the families in the Lot Project and 70% of those with Piso-Techo units. The same tendency can be seen for the 46 families in Cerro Batea who have made additions to their units.

B. DURABILITY OF CONSTRUCTION MATERIALS

In Panama there is a wide-spread prejudice against wood as a building material because of climatic conditions. Termites are an ever present problem and fires in older wooden structures have caused great damage and some loss of lives. Nevertheless, there are many wooden structures within the city which are both well-preserved and even elegant.

In classifications for this characteristic the study team tried to concentrate on the potential life of the wall materials and defined durability in the following manner:

High Durability: Concrete blocks, bricks (not common in Panama), clay blocks and new or first-hand wood;

Medium Durability: Second-hand wood;

Low Durability: Improvised structures made of mixed materials like zinc, cardboard, plywood, tarpaper, etc.

In terms of the second category, it should be noted that within Panama there is a thriving market in second-hand wood, usually originating from the area of the Canal. If it has been well-maintained, it is both durable and low-cost. On the other hand, new wood is sometimes more expensive than concrete blocks, depending on the type of wood.

There are still difficulties in defining strict categories for durability of materials since once again some subjective criteria come into play. However, since the large majority of the houses in these projects are constructed with concrete or clay blocks, the overall analysis is not affected.

Percentages of Families by Project According to Categories of Building Materials

<u>DURABILITY OF BUILDING MATERIALS</u>	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
High	77.5	91.8	97.0
Medium	14.3	8.2	--
Low	8.2	--	3.0
<hr/>			
Total Number of Cases	.98	97	100

Since Core Units were constructed of concrete blocks, and generally the Piso-Techo units were enclosed with concrete blocks, the survey team concentrated on the additions or annexes to those units. For the Core Units without annexes High Durability is a given and the analysis indicates that except for three cases all additions have been made with High Durability materials.

In the older projects only eight houses were classified in the lowest category and these are families with Lots who still have not converted their original structure, transported from the university grounds ("old" Veranillo). After so many years it is difficult to classify these houses as "temporary".^{10/}

^{10/} It is important to note that 16 not eight houses in the sample of Lots are wooden structures which have not been improved since the initiation of the project. The data implies that half of those wooden structures still have at least "medium" durability.

C. STATE OF REPAIR OF THE STRUCTURES

It was initially difficult for some interviewers to see the distinction between this characteristic and the durability of materials since the state of repairs seemed to be a natural extension of the type of materials, i.e. it was expected that a house constructed of concrete blocks would not need structural repairs. In the field, however, exceptions can be and were noted. An extreme example was observed in a Piso-Techo unit which did not fall within the sample. The unit had been enclosed with concrete blocks but with poor workmanship. The unit was not only abandoned, but the walls were falling down.

The state of repairs took into account the walls, the roof and the floor of each structure. The category "good" indicates that no repairs were needed; "medium" that some, relatively minor repairs were needed and "bad" that many repairs would be needed to make the structure sound, or that the house was irreparable. The results were as follows:

Percentages of Families by Project According to State of Repairs Categories

<u>STATE OF REPAIRS</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA</u>
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Good	72.5	81.4	97.0
Medium	20.4	18.6	--
Bad	7.1	--	3.0
Total Number of Cases	98	97	100

In comparing the table on the durability of materials with this table on the state of repairs, it can be noted that some structures which were classified as "high" durability shift into the medium state of repair category (about 10% of the Piso-Techo units). This underlines the importance of taking into account various structural characteristics rather than depending exclusively on the types of building materials utilized to determine the quality level of a structure.

D. ACCESS TO WATER AND SEWERAGE SYSTEMS

Access to water and sewerage systems are important elements of an urban environment and closely linked with the health and well-being of families. In Nuevo Veranillo, all Lots and Piso-Techo units had access only to a

communal water supply when the projects were initiated. In Cerro Batea, on the other hand, all the Core Units except those in the last stage of the project had completed connections for both water and sewerage. (The Core Units in Stage IV had water connections and latrines.) While the data on the connections to water and sewerage systems are most pertinent to the projects in Nuevo Veranillo, the distributions for all three projects are presented below.

Percentages of Families by Project According to
Water and Sewerage Connections

<u>SERVICE LEVELS</u>	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Have <u>both</u> water and sewerage connections	36.8	45.4	91.0*
Have <u>only</u> water connections	57.1	49.5	100.0
Have <u>neither</u> water nor sewerage connections	6.1	5.1	---
Total Number of Cases	98	97	100

* In the sample there were nine cases from Stage IV which account for those without sewerage connections.

In Nuevo Veranillo the service connections were made by the families themselves. More than 90% of the families in that area have installed water connections while only about 40% have sewerage connections. It appears from the data that water connections have a much higher priority. While this may be true, a key factor in the sewerage connections is that main lines (which make possible such connections) were only recently installed in the area of Nuevo Veranillo. The following tables indicate the years of connection for both water and sewerage in Nuevo Veranillo.

D.1 Water Connections in Nuevo Veranillo

Percentages of Families According to
Year of Water Connections

<u>YEARS OF CONNECTIONS</u>	<u>LOTS</u>	<u>PISO-TECHO</u>
1968-1971	35.9	25.0
1972-1975	30.4	25.0
1976-1980	21.7	33.7
(Unknown Year)	12.0	16.3
<hr/>		
Total Number of Cases	92	92

Before 1976, 66% of the families with Lots and half of those with Piso-Techo units connected their houses to the water system. If we assume that the families who cannot remember the year made their connections early in the 1970's, almost three-fourths of all the families in the area had water connections before 1976, which reflects the high priority families give this service.

D.2 Sewerage Connections in Nuevo Veranillo

Percentages of Families in Lot and Piso-Techo Projects
According to Year of Sewerage Connections

<u>YEARS OF CONNECTIONS</u>	<u>LOTS</u>	<u>PISO-TECHO</u>
1970-1976	2.8	31.8
1977-1978	8.3	13.6
1979-1980	88.9	41.0
No Information	--	13.6*
<hr/>		
Total Number of Cases	36	44

* The six families in this category are new to the area and do not know when the original owners made the connections.

The Public Works Department of Panama began to install sewerage mainlines in Nuevo Veranillo in 1979. A small part of the Piso-Techo project and a smaller part of the Lot project had access to an older sewerage system before that time. Given that many families have only recently had access to a system, the progress in making connections seems acceptable to date.

E. THE DENSITY FACTOR

In addition to the structural characteristics already discussed, the density of the households was considered to be a vital aspect of the living conditions of the families in the project areas. For example, if a Piso-Techo unit of 25M² is inhabited by a single person (such a case occurred in the sample), it is clear that the situation of that person is much superior to that of a family of five inhabiting the same type of structure (cases can be found in the Core Units without annexes). Two calculations were made: Constructed Area ÷ Number of Household Members = M² per Person; and Number of Household Members ÷ by the Number of Rooms = Persons Per Room. The tabulations which follow include the current situation of all the families in the Core Units in Cerro Batea although it should be remembered that the situation of many families will improve once they make additions to their units.

E.1 Constructed Area per Person

Percentages of Families by Project According to Square Meters per Person

<u>M2 PER PERSON</u>	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
14.0 M ² or More	31.6	30.0	14.0
9.0 M ² - 13.9 M ²	24.5	27.8	34.0
5.0 M ² - 8.9 M ²	32.7	27.8	31.0
4.9 M ² - or less	11.2	14.4	21.0
Total Number of Cases	98	97	100

NOTE: Since guidelines or "norms" were unavailable on space standards, the categories were determined in a somewhat arbitrary way, e.g. the highest category would represent at least the space of half of a Core Unit for each person. A difficulty with this kind of tabulation, and the one that follows, is that the intervals must be cut finely and the difference of one decimal point (e.g. 8.9 versus 9.0) can change the classification for a household.

If the assumption is accepted that more than $9M^2$ per person is a valid indicator of a certain level of comfort for a household, then 56% of the families with Lots and 58% of those in the Piso-Techo units can be classified as relatively "comfortable" in the early projects in Nuevo Veranillo and almost half of the families in the Core Units are in the same situation. At the other end of the continuum, the families who have less than $5.0M^2$ per person (equivalent to a Core Units with a family of five) are represented by 11%, 14% and 21% of the families respectively in the three projects. Definitively, these families are living in cramped quarters.

One reason why the Core Units in Cerro Batea do not show a situation as extreme as might be expected is that the average family size is somewhat smaller. In Nuevo Veranillo the Lot and Piso-Techo families have an average size of 5.9 persons while in Cerro Batea the average is 4.8 persons.

It is instructive to look at the cases which represent the highest and lowest densities in Nuevo Veranillo. In the Piso-Techo units, the most space per person was $46.5M^2$ which was calculated for a $93M^2$ house with two persons; the least space in that project was $3.5M^2$ per person (a $53M^2$ house with 15 family members). For the Lot project, similar extremes were found: the least space being $3.7M^2$ for a family of 8 living in a $30M^2$ house and the most space for 2 people living in a $115M^2$ house ($57.5M^2$ per person).

E.2 Number of Persons per Room

Since the analysis of structural characteristics took into account both Constructed Area and the Number of Rooms of the houses, density was also calculated in two ways.

Percentages of Families by Project According to Four Categories of Number of Persons Per Room

<u>NUMBER OF PERSONS PER ROOM</u>	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
1 or less	17.3	16.5	12.0
1.1 - 2.4	55.1	50.6	30.0
2.5 - 4.9	19.4	21.6	25.0
5 or more	9.2	11.3	33.0
<hr/>			
Total Number of Cases	98	97	100

The distributions for this characteristic are remarkably similar for the Lot and Piso-Techo projects. In that area, it can be seen that a few families are still living in very dense conditions. (It is hoped that the greater number in the most dense category in Cerro Batea will diminish in the near future as the families continue to build annexes). Given the generally large houses in the Nuevo Veranillo projects (see Chapter II), the less positive results of the density calculations must be attributed to the large household sizes in the projects.

F. INDICES: QUALITY OF STRUCTURE/QUALITY OF LIFE

For each of the five structural characteristics which have been described in previous sections, numerical values were assigned to the categories in intervals of 5, the lowest being 0 and the highest 15. In some cases the characteristics or the categories within each were given more or less weight by skipping an interval of five points or by using 10 as the maximum value. This was done because some characteristics or categories seemed to have a greater implicit importance than others. For example, having water versus not having water seemed to be a much more important step than that between having both water and sewerage versus having water.

The Quality of the Structure was then defined as the sum of the points for each of the five structural characteristics which were aggregated into macro-classifications in the following manner:

QUALITY OF STRUCTURE

GOOD	=	55 to 70 points
AVERAGE/ADEQUATE	=	35 to 50 points
POOR	=	0 to 30 points

The Index for the Quality of Life was calculated in exactly the same manner except that Constructed Area was replaced by Area Per Person and the Number of Rooms was replaced by Persons Per Room. The Values for each of the Characteristics and categories for both Indices are given in the following pages.

VALUES: QUALITY INDICES

LIFE

STRUCTURE

CONSTRUCTED AREA/SQUARE METERS

<u>VALUE</u>	<u>M² PER PERSON</u>	<u>VALUE</u>	<u>TOTAL M²</u>
<u>15</u>	(14.0 or more)	<u>15</u>	(66 or more)
<u>10</u>	(9.0 - 13.9)	<u>10</u>	(46 - 65)
<u>5</u>	(5.0 - 8.9)	<u>5</u>	(26 - 45)
<u>0</u>	(4.9 or less)	<u>0</u>	(25 or less)

NUMBER OF ROOMS

(Excludes Kitchen and Bath)

<u>VALUE</u>	<u>PERSONS PER ROOM</u>	<u>VALUE</u>	<u>NUMBER OF ROOMS</u>
<u>15</u>	(1 or less)	<u>15</u>	5 or more
<u>10</u>	(1.1 - 2.4)	<u>10</u>	3 - 4
<u>5</u>	(2.5 - 4.9)	<u>5</u>	2
<u>0</u>	(5 or more)	<u>0</u>	1

LIFE	(No change occurs in Points)	STRUCTURE
------	---------------------------------	-----------

<u>VALUE</u>	<u>DURABILITY OF MATERIALS</u>
<u>10</u>	High (Concrete blocks, first class wood, etc.)
<u>5</u>	Medium (Second-hand wood)
<u>0</u>	Low (Improvised)

<u>VALUE</u>	<u>STATE OF REPAIRS</u>
<u>15</u>	Good
<u>10</u>	Medium
<u>0</u>	Bad

<u>VALUE</u>	<u>SERVICE LEVELS (Connections)</u>
<u>15</u>	Water and Sewerage
<u>10</u>	Water
<u>0</u>	None

An example is provided below to show how the scores for each Index were calculated.

<u>QUALITY OF STRUCTURE</u>		<u>QUALITY OF LIFE</u> (a household with 7 members)	
50M ² House	= 10 Points	7M ² Per Person	= 5 Points
3 Rooms	= 10 Points	2.3 Persons Per Room	= 10 Points
Cement Block Structure	= 10 Points	(Does Not Change)	= 10 Points
Good State of Repairs	= 15 Points	(Does Not Change)	= 15 Points
Only Water Connections	= 10 Points	(Does Not Change)	= 10 Points
	+ _____		+ _____
SCORE	55 Points	SCORE	50 Points

In the example, the Quality of Life score is only five points lower than that of the Quality of Structure, but the difference changes the macro-classification from "Good" (Structure) to "Average/Adequate" (Life).

The scores for each household were calculated and aggregated as follows:

Percentages of Households by Project According to the Classifications of Each Quality Index

<u>QUALITY</u>	<u>INDEX</u>	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
GOOD (55-70 Points)	LIFE	55%	57%	48%
	STRUCTURE	69%	61%	39%
AVERAGE/ADEQUATE (35-50 Points)	LIFE	30%	34%	52%
	STRUCTURE	16%	31%	61%
POOR (0-30 Points)	LIFE	15%	9%	-
	STRUCTURE	15%	8%	-
Total Number of Cases		98	97	100

The differences between the two scores indicate that the factor of density is indeed a powerful one. If the Index for the Quality of Structure is used for the Lot and Piso-Techo projects, a greater proportion of houses are classified as GOOD than is the case when the other Index is used. The reverse is true for the Core Units in Cerro Batea.

The experimental nature of these Indices should be emphasized. The definitions used for characteristics and the intervals selected to measure area, density, etc. are open to discussion and adaptation. Also, the merits of using two indices could be debated since housing agencies are not able to address density considerations when they plan low-cost housing programs. The reason that a Quality of Life Index was included is that too often structures are judged without regard to their relationship to the families who reside in them, i.e. a "good" house may be very inadequate to the needs of the particular family living in it.

The main purpose of the exercise was to try to make a more systematic assessment of the housing stock in the projects in Panama. A valuable outcome of the exercise was to point out the complexity of that assessment and the need to choose the instruments for measurement with care since ultimately they affect the determination of a project's level of success.

G. THE APPEARANCE OF THE HOUSES

The survey data included variables which are related to the appearance rather than the function of the project houses. In the analyses, these were purposely separated from the other characteristics for the reason already given: they should not influence the determination of a structure's quality. While a garden or a porch may increase a family's sense of well-being, they are not essential components of a house.

The following categories are not exclusive since a house can be both painted and have a garden or a porch, or both. (The percentages, therefore, do not sum to 100%).

Percentages of Families by Project According to
Categories of Appearance of Houses

<u>APPEARANCE</u>	NUEVO VERANILLO		CERRO BATEA
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Have enclosed garden	27%	29%	26%
Have porch/terrace	48%	45%	25%
Have masonry and/or are painted	75%	66%	100%*
Total Number of Cases	98	97	100

* All units in Cerro Batea were painted by the Ministry before they were occupied.

NOTE: All of the units in the projects have an abundance of plants and flowers in the yard. The garden category above refers to a more formal area, enclosed by a fence.

In order to provide a visual image of the project houses in addition to the data which have been presented, photographs were taken of a few houses in each project area.

LOTS

PHOTO Nº 7

PHOTO Nº 8

PHOTO Nº 9

PISO-TECHO UNITS

PHOTO Nº 10

PHOTO Nº 11

PHOTO Nº 12

CORE UNITS

PHOTO Nº 13

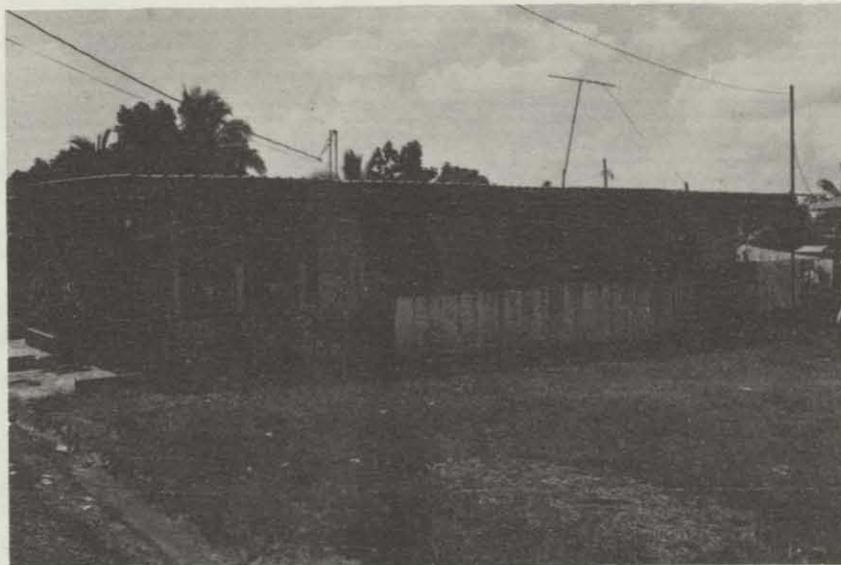
PHOTO Nº 14

PHOTO Nº 15

Lots



7. Finished house on lot site, Nuevo Veranillo



8. Finished house on lot site, Nuevo Veranillo



9. Unimproved wooden house on lot site, Nuevo Veranillo

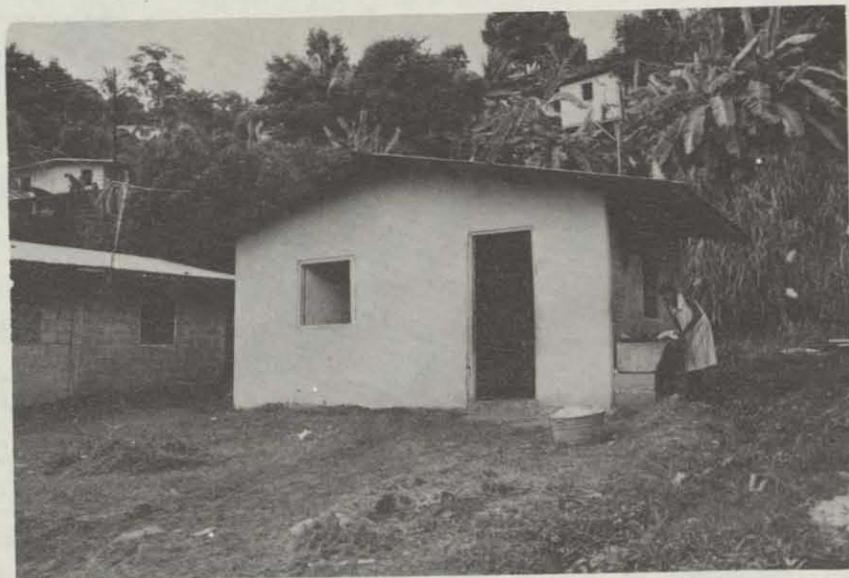
Piso-Techo Units



10. Piso-techo unit with substantial improvements,
Nuevo Veranillo



11. Piso-techo unit with annexes, Nuevo Veranillo



12. Piso-techo unit without annexes, Nuevo Veranillo

Core Units



13. Core unit with annexes, including area for small business, Cerro Batea



14. Core unit with improvements and annexes, Cerro Batea



15. Cerro Batea. Two core units in Cerro Batea, one with temporary annex of wood.

H. CURRENT ESTIMATED VALUE OF THE HOUSES

Respondents were asked to estimate the current value of their properties. In the older projects, where more sales have taken place, families were generally able to make such an estimate while in Cerro Batea only 16 percent of the families responded. Also, some of those families (Core Units) gave extremely unrealistic estimates. For instance, one head of household estimated that his house was worth \$20,000 although is much smaller than the two-bedroom houses bordering on the project area which sell for considerably less. Other respondents indicated that they would ask only the amount which they have invested in construction which does not take into account the increased value due to changes in the real estate market over a three to four year period.

Despite the difficulties with the data, the study team was able to select three cases which appeared to be realistic estimates of current values, and to analyze the potential return on the investments if those families were to sell their houses now at the price indicated.

Potential Return on Investments in Cerro Batea

<u>TOTAL AMOUNT INVESTED (IN U.S.\$)*</u>	<u>ESTIMATED CURRENT VALUE</u>	<u>POTENTIAL PROFIT**</u>	<u>PERIOD OF YEARS</u>	<u>PERCENTAGE PROFIT PER YEAR</u>
\$2,556.00	\$ 9,000.00	\$1,904.00	1	74%
\$3,160.00	\$ 9,000.00	\$1,290.00	1	41%
\$3,036.00	\$15,000.00	\$8,404.00	4	69%

* Includes monthly payments made to date and the construction expenditures for improvements.

** Estimated Value minus Total Amount invested minus capital still owed on mortgage.

The percentages estimated in the previous table are extraordinarily high. They are somewhat overestimated since a shadow price for self-help labor was not included in the investment column. However, the main reason for such potentially high returns on housing investments can be attributed to the current housing market in Panama. In 1973, the construction industry in Panama suffered a severe setback and until recently there was little activity in that sector. The pent-up demand is now being expressed in rapidly rising housing prices. For example, rental units which were not subject to rent control (those with rents above \$250.00 per month) have in some cases shown a 300% increase in rent over a two to three year period. While this may be a

short term phenomenon, even under less favorable circumstances, investment in housing is by far superior to any other investment option within Panama City. (The current interest rate for long-term certificates of deposits is around 10%.) Thus; low-income groups can benefit substantially in a financial sense by buying property as well as meet their immediate housing needs.

For the older projects in Nuevo Veranillo, more confidence in the estimated values is justified. However, the analysis of the data was limited by the technology available, i.e. due to the great variability of the data on expenditures it was not possible to convert the investments of all the families over a 12 year period into comparable terms. (One family may have built a complete house in a specific year and others built parts of the house in different years). Therefore, the ranges of estimated values are presented without further analysis.

Percentages of Families in Nuevo Veranillo
According to Estimated Values of Properties

<u>ESTIMATED VALUE</u>	NUEVO VERANILLO	
	<u>LOTS</u>	<u>PISO-TECHO</u>
Less than \$2,000.00	2.0	1.0
\$2,000 - \$5,000	13.3	22.8
\$6,000 - \$9,000	25.5	11.3
\$10,000 - \$15,000	28.6	27.8
\$16,000 or more	8.2	9.3
No information	22.4	27.8
<hr/>		
Total number of cases	98	97

In addition to the estimated values for the houses, information was collected on the purchase price of those units which were sold by their original owners in Nuevo Veranillo. The year of purchase, the purchase price and the number of rooms in the house at the time of purchase are listed on the following page.

Purchase Prices of Houses in Nuevo Veranillo

<u>YEAR OF PURCHASE</u>	<u>LOT (# ROOMS AT TIME OF PURCHASE</u>	<u>PISO-TECHO (# ROOMS AT TIME OF PURCHASE</u>
1969	\$ 500.00 (*)	
1970	\$4,000.00 (2)	
1971	\$6,000.00 (4)	\$ 718.00 (1)
1972	\$ 600.00 (*)	\$6,000.00 (3)
1972	\$ 650.00 (*)	
1973		\$1,700.00 (1)
1974	\$2,500.00 (3)	\$ 969.00 (2)
1974		\$6,000.00 (4)
1975	\$3,000.00 (3)	
1976	\$1,824.00 (1)	\$4,500.00 (1)
1977	\$4,000.00 (3)	
1977	\$ 900.00 (1)	
1977	\$5,000.00 (3)	
1978		\$ 4,888.00 (1)
1978		\$10,000.00 (4)
1978		\$ 8,000.00 (4)
1979		\$ 2,400.00 (3)
1979		\$ 6,500.00 (3)
1980	\$8,500.00 (4)	

* Houses of Wood

V. THE PROJECT BENEFICIARIES

The groups which benefited from the three projects studied came in large part from high priority target areas within Panama City (discussed in Chapter I). Many similar areas still exist in the city. Therefore, it can be assumed that if the projects studied were successful and appropriate for the original beneficiary populations, the same types of projects should be appropriate for the low-income groups still living in squatter and tenement areas.

This chapter provides a more detailed look at the socio-economic characteristics of the beneficiaries in Nuevo Veranillo and Cerro Batea, and at some other indicators of "success" such as the status of the mortgages for those families who should have cancelled their debts by this time.

A. MOBILITY OF THE PROJECT POPULATIONS

In Spanish, the term "solution" is used for the units or lots sold to beneficiaries. The term has a rather permanent connotation which reflects an underlying assumption of the projects: low-cost units or lots provide a basis for solving the housing needs of target populations which will remove them from the housing demand equation. The mobility of a population, or rather its inverse--the stability of a project population--is one indicator that housing needs have been met.

The subsequent analysis divides the families in Nuevo Veranillo into those who have lived in the area since the projects were initiated (the "original" families) and those families who have more recently moved into the area (buying or renting a house from the original owner). The analysis does not contemplate the families in Cerro Batea since 100 percent of the sample were original owners.

Families in Nuevo Veranillo According
to Length of Residence Categories

<u>TYPE OF FAMILY</u>	<u>LOTS</u>		<u>PISO-TECHO</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Original Families	76	77.6	77	79.4
New Families	<u>22</u>	<u>22.4</u>	<u>20</u>	<u>20.6</u>
TOTALS	96	100.0	97	100.0

Mobility has not been high for a period of more than ten years, since almost 80 percent of the first beneficiaries still live in the area.

In the survey, families were asked about their future plans with regard to moving. This might be considered, in very general terms, an indicator of satisfaction or stability, although it must be noted that other factors might cause a family to stay in a project even though they would like to move, e.g. they might not be able to afford to move. For all the projects (including Cerro Batea) only 10 families indicated plans to move and eight of those were non-owner "new" families in Nuevo Veranillo. They planned to move in order to buy a property, and indicated that they wanted to buy in the new project areas of the Ministry. Only two families (of the 295 families sampled) indicated that they would like to move because they were unhappy with their "social environment" (in Nuevo Veranillo). If the indicator is a valid one, the project families seem to be satisfied with their situation.

B. THE CANCELLATION OF MORTGAGES IN NUEVO VERANILLO

It is still much too early to determine the status of the mortgages in Cerro Batea since those units have a 25 year mortgage period.^{11/} However, for the Lot and Piso-Techo projects in Nuevo Veranillo, the mortgage period was ten years and therefore the original families should have cancelled their mortgages within the last few years. The status of the mortgages is particularly important in view of the fact that the system of payments used for those projects was much more informal than the current one within the Ministry. Beneficiaries made monthly payments personally, at an office within the area of Nuevo Veranillo. Therefore, the system depended, to a great degree on the good faith of the families. (There were payment collectors, but if a family refused to pay, there were few enforceable sanctions). In contrast, the current system in the Ministry functions primarily by direct discount from the paychecks of beneficiaries which guarantees payments, unless the beneficiary loses his/her job. (For heads of households who do not have permanent salaried jobs, a co-signer who does is required).

Because of the payment system, it might be expected that the record for the cancellation of mortgages would be poor in Nuevo Veranillo. This was not substantiated by the information provided by the respondents. (The table which follows indicates the responses for original families in Nuevo Veranillo with regard to their mortgages).

^{11/} Questions regarding arrears were avoided to prevent interviewing difficulties.

The Status of Mortgages for the Original Families
in Nuevo Veranillo

<u>STATUS OF MORTGAGES</u>	<u>LOTS</u>		<u>PISO-TECHO</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Cancelled	71	93.4	69	89.6
Pending	<u>5</u>	<u>6.6</u>	<u>8</u>	<u>10.4</u>
TOTALS	76	100.0	77	100.0

The large majority of the original families in the Lot and Piso-Techo projects have paid off their mortgages. This does not indicate that there were no cases of arrears during the mortgage period, only that the families did meet their obligations to the institution, as well as make major investments in housing improvements.^{12/}

The implication for the policies of the Ministry is that perhaps, the payment system could be more flexible for potential beneficiaries who are not subject to direct discounting since families in the older projects have demonstrated a high degree of responsibility with regard to housing payments. The crux of the matter is that some needy families may not be eligible for Ministry projects if they do not meet the requisites of having either a permanent salaried job or a salaried co-signer. Taking the original beneficiaries in Nuevo Veranillo as an indicator, perhaps one-fourth^{13/} would not have been eligible for the projects if the current system had been in place and if they were unable to secure co-signers.

From the viewpoint of the institution, the direct discount policy is a safe-guard and extremely important for administering projects on the current scale of the Ministry. It is highly unlikely, therefore, that a more flexible payment system will be considered seriously. At the same time, the results from the study point out the consequences for a significant portion of the target population.

While it was expected that the new families in the area of Nuevo Veranillo would not yet have paid off their mortgages, it was noted that some had paid cash for their houses. Therefore, a tabulation was done on the

^{12/} A review of MIVI records for 140 families in the two early projects (Lots and Piso-Techo) indicated that the 90% figure was accurate.

^{13/} Based on a review of the original documentation on the families in the Ministry's files.

status of the mortgages for the new families. While the number of observations is limited, the proportion of new families who have already paid off their mortgages is noteworthy.

The Status of Mortgages for the New Families
in Nuevo Veranillo

<u>STATUS OF MORTGAGES</u>	LOTS		PISO-TECHO	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Cancelled	7	31.8	6	30.0
Pending	10	45.5	6	30.0
Non-owners	<u>5</u>	<u>22.7</u>	<u>8</u>	<u>40.0</u>
TOTALS	22	100.0	20	100.0

The question which arose was "Are the New Families Richer?" Since some families were able to pay off their mortgages so quickly and some even paid cash it seemed important to look at the economic situation of those families compared with the original families in the area. An extreme case was found in the sample of a family which paid cash for a Piso-Techo unit (without annexes) in 1979 and promptly invested \$15,000.00 in improvements. They constructed a house with four bedrooms, a dining/living area, a terrace with an impressive fence, and installed a clay tiled floor and indoor plumbing. In other words, they built a residence which is considerably superior to those of their immediate neighbors.

In analyzing the income levels of all the new families, however, that particular family appears to be an exception since the income distribution of the new families was very similar to that of the original families. (The tabulations for income for the population as a whole, are presented in a subsequent section.) In view of the fact that some of the new families purchased wooden houses for about \$500 (see page 52), it seems clear that the project areas continue to benefit families from the same economic strata.

C. SOCIO-ECONOMIC CHARACTERISTICS OF THE PROJECT BENEFICIARIES

The surveys gathered current information on the composition and economic characteristics of the beneficiary families. Since important variables can change dramatically over a decade, it was considered essential to investigate, as far as possible, the changes which have occurred over time in the area of Nuevo Veranillo. A complementary analysis was conducted reviewing the files of the Ministry on over 100 of the original beneficiaries in the Lot and Piso-Techo projects and comparing selected variables with the survey information. That information is provided where appropriate in the following analyses.

C.1 Sex of Heads of Households

In the analysis of the composition of the project populations according to the sex of the head of household, it was noted that 45% of the original families in Nuevo Veranillo were female headed households, an extremely high percentage given that the more common ratio of male to female heads is closer to 75/25. The large number of female heads could have been due to changes in the family structure over time, e.g. deaths of spouses, or separations.

The analysis of the Ministry's files on original beneficiaries in Nuevo Veranillo allowed a comparison between the status of households in 1967-68 with that of the current survey data for 1980. The analysis shows that the original number of female heads was very high. In fact, for the PISO-Techo project the proportions have not changed. In short, many more female headed households entered the projects in Nuevo Veranillo than is the case for the Ministry's newer projects.

Comparison of Original Families in Nuevo Veranillo
According to Sex of Head of Household
Between the Time of Initiation of the Projects
and the Time of the Current Survey, in Percentages

<u>SEX/HEAD</u>	<u>LOTS</u>		<u>PISO-TECHO</u>	
	<u>1967-68</u>	<u>1980</u>	<u>1967-68</u>	<u>1980</u>
Male	61%	55%	54%	55%
Female	39%	45%	46%	45%
Total Number of Cases	70	76	70	76

In contrast to the projects in Nuevo Veranillo, the composition of the families in Cerro Batea shows a very different split between male and female heads. (The proportions below are also very similar to the new families in the area of Nuevo Veranillo.)

<u>SEX/HEAD</u>	<u>CERRO BATEA/CORE UNITS</u>
Male	76%
Female	24%
Total Number of Cases	100

It is unlikely that the institution over-selected female headed households for the early projects, i.e. gave them special consideration in the selection process. It is more probable that the target areas for the earlier projects (Viejo Veranillo and Marañón) had a disproportionate number of female heads from the beginning. The important implication, however, is that the selection criteria at that time did not hinder the entry of women since it was flexible in terms of types of employment. Since women tend to work more often in the informal sector than do men and since they depend to a greater extent on transfer payments for family income, e.g. child-support payments from an ex-spouse, they are at a disadvantage in the current selection process of the Ministry. (Permanent salaried employment is stressed in the selection of beneficiaries.) At the same time, the study showed that women as well as men were good clients in terms of mortgage cancellations and were able to improve their houses. In addition, although the sources of income may be different between male and female headed households, income levels are not necessarily lower for females. (See section C.3.)

C.2 HOUSEHOLD INCOMES

Family income includes all sources of income, i.e. the salaries of all working members and other types of income, such as child support, pensions, etc. As a point of reference, the median monthly family income for the area of Panama City was calculated at \$457 as of January, 1979.

Percentages of Families by Project
According to Categories of Monthly Family Income

<u>INCOME PERCENTILES</u>	<u>FAMILY INCOME</u>	<u>NUEVO VERANILLO LOTS</u>	<u>PISO-TECHO</u>	<u>CERRO BATEA CORE UNITS</u>
(1-10%)	Less than \$100*	6.2	5.5	4.0
(11-20%)	\$100 - \$149	12.4	8.8	9.1
	\$150 - \$199	10.3	12.1	22.2
(21-30%)	\$200 - \$299	16.5	29.6	47.5
(31-40%)	\$300 - \$399	21.6	16.5	12.1
(41-50%)	\$400 or more	33.0	27.5	5.1
Sub-Total (number of cases)		97	91	99
No Information		1	6	1
Total Number of Cases		98	97	100

* Includes those which were unemployed and without income at the time of the survey.

Although the majority of the families can be considered within the target population, i.e. below the median income, in general it can be said that the families in Nuevo Veranillo are relatively better off economically than the families in Cerro Batea. A greater proportion of those families are closer to the median income than in Cerro Batea where families are concentrated in the lower income brackets. An aggregation of the above figures into three income categories shows the relationships more clearly.

<u>THREE CATEGORIES OF FAMILY INCOME</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA</u>
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Less than \$150	19%	14%	13%
\$150 - \$299	27%	42%	70%
\$300 or more	54%	44%	17%
Number of Cases	94	91	99

While it is clear that currently the families in Nuevo Veranillo are somewhat better off economically than those in Cerro Batea, the complementary analysis of the Ministry's files on Original Families allowed a comparison of their situation at the time of entry into the project with the 1980 survey data to verify if their situation has always been better or whether it has changed over time. That comparison is presented below:

Incomes of Original Families/Nuevo Veranillo:
Unadjusted Values

<u>FAMILY INCOME</u>	<u>LOTS</u>		<u>PISO-TECHO</u>	
	<u>1967-68</u>	<u>1980</u>	<u>1967-68</u>	<u>1980</u>
Less than \$150	72%*	18%	67%	22%**
\$150 - \$299	24%	30%	34%	37%
\$300 or more	3%	49%	1%	40%
No Information	1%	3%	3%	1%
Number of Cases	70		70	

* Contains 2 unemployed heads
** Contains 3 unemployed heads

Although declared income for 1980 is substantially higher than in 1968, when the incomes are adjusted to equivalent currency values (\$1.80 in 1968 equals \$1.00 in 1980) it appears that many families in Nuevo Veranillo have simply maintained their real income levels. However, some have shifted from the lower income levels to higher ones in the approximately 12 years since the initiation of the project. Approximately 20% of the original families currently have incomes over the median income level.

C.3 A Comparison of Female Headed Households with Male Headed Households in Terms of Income and Type of Employment

Given the fact that women represent such a large proportion of household heads in Nuevo Veranillo, and also given that generally income levels for women are lower than for men, a comparison was made of incomes by sex of head of household. The 1980 income levels are aggregated as in the previous section.

THREE CATEGORIES OF FAMILY INCOME	NUEVO VERANILLO				CERRO BATEA CORE UNITS	
	LOTS		PISO-TECHO		Male/Female	
	Male	Female	Male	Female	Male	Female
Less than \$150	10%	34%	3%	30%	8%	29%
\$150 - \$299	29%	21%	50%	28%	76%	50%
+300 or more	61%	45%	47%	42%	16%	21%
Number of Cases	58	38	55	36	75	24

Female headed households are concentrated in the lowest income groups, but there is a significant group in the relatively higher levels as well. Along with current household income, the type of employment of the heads of household was taken into account since it bears on the relative stability of a household's income. While data was not gathered on the month-to-month changes of the incomes of the households, it is generally assumed that permanent salaried workers have the highest income stability, in contrast to independent workers. Also, since the category "housewife" commonly indicates a female head without spouse who often depends on support from outside the household, it is also considered a less stable category with regard to income.

Percentages of Families by Project According to
Employment Categories of Heads of Household

<u>EMPLOYMENT CATEGORY</u>	NUEVO VERANILLO				CERRO BATEA	
	<u>LOTS</u>		<u>PISO-TECHO</u>		<u>CORE UNITS</u>	
	Male	Female	Male	Female	Male	Female
Permanent salary	69%	25%	66%	32%	85%	43%
Independent worker	13%	10%	29%	8%	12%	14%
Retired/pensioned	18%	2%	5%	5%	3%	--
Housewife	Not appl. 63%		Not appl. 55%		Not appl. 43%	
Total Number of Cases	55	40	58	38	71	23

Considering the totals for males versus females, 81% of the heads of household with permanent, salaried positions are men. Women are concentrated in the supposedly less secure income categories ("Housewife" and independent workers). At the same time, women have displayed equivalent ability with men in both the cancellation of mortgages and home improvements.

C.4 The Families in Nuevo Veranillo who have Not Made Improvements/
Lots and Piso-Techo Units

As has been noted in previous sections, a group (16) of the houses in the sample of Lots have never been converted from the so-called "temporary" structures of wood which were erected at the time the project was initiated. Another 16 Piso-Techo Units were never improved or enlarged after the basic area was enclosed. It was appropriate to look at those cases in greater detail to attempt to identify the reasons why no improvements were made, and specifically whether income levels seemed to play a role in the decisions of families.

Reasons for Not Making Improvements

	<u>LOTS</u>	<u>PISO-TECHO</u>
Have plans to build and seem to have sufficient resources	7	5
Actually have initiated some construction or have materials and are preparing to build	4	4*
Say that they don't have sufficient resources	<u>5</u>	<u>3</u>
Indeed have very low income	(3)	(1)
Have incomes equivalent to others who have been able to build	(2)	(2)
The house is only on loan	---	2
Single man with no need for more room	---	1
No Information	<u>---</u>	<u>1</u>
TOTAL	16	16

* In one case the owner started construction but stopped because he lost his job.

Well over half of this group expressed intentions to build or have started some improvements. It is not clear why they have waited this long without making improvements, but it seems to be related more to low aspirations in housing consumption than to economic considerations. This can also be said of at least half of the group who claimed economic problems since their economic situation does not differ substantially from the rest of the families who have made improvements, e.g. in one case, the household income was more than \$500 per month. A few others have no incentive to make improvements because the house is only on loan and they would not necessarily be repaid for any investments made. In one Piso-Techo unit, a man lives alone and therefore, is comfortable without making any additions, although he does plan to build a porch.

In the Piso-Techo project, there were visible signs in a few cases that constructions were begun many years ago and abandoned, which seems to indicate that those families may have suffered economic set-backs at some previous time^{14/}.

^{14/} It would have been a simple task to just ask those families about those aborted constructions. However, the interviewers were not instructed to do so. Therefore, no insights are available.

D. LEVELS OF MONTHLY PAYMENTS AND IMPLICATIONS FOR AFFORDABILITY

As was seen in the analysis of the income levels of the various project populations, the families in Cerro Batea are not necessarily better off economically than those in the area of Nuevo Veranillo. At the same time, they pay more for housing than the earlier project participants because they received more constructed area (core units) and because the costs of construction have increased in the interim period. The following table shows the average monthly payments for the three projects. (The lower figures for the projects in Nuevo Veranillo are due largely to the low level of urbanization of those projects, i.e. communal water supply, in comparison with Cerro Batea project as well as to the lower levels of construction.)

Percentages of Families by Project According to Ranges of Monthly Payments which they Previously Paid (Nuevo Veranillo) or are Currently Paying (Cerro Batea)

<u>MONTHLY PAYMENTS</u>	<u>NUEVO VERANILLO</u>		<u>CERRO BATEA</u>
	<u>LOTS</u>	<u>PISO-TECHO</u>	<u>CORE UNITS</u>
Less than \$8.00*	50.0	1.3	----
\$ 8.00 - \$10.00	20.0	62.5	----
\$11.00 - \$15.00	26.3	27.5	----
\$16.00 - \$19.00	1.2	3.7	----
\$20.00 - \$29.00	2.5	1.3	10.0**
\$30.00 - \$39.00	----	----	66.0
\$40.00 - \$49.00	----	----	20.0
\$50.00 or more	----	3.7***	----
<hr/>			
Total Number of Cases	80	80	100

* The average payment for a Lot in Nuevo Veranillo was \$5.00. Some of the higher figures are due to increases for materials loans.

** The lowest payments in Cerro Batea are for families in the Fourth Stage of the project where urbanization was restricted to water only.

*** These three cases are New Families who purchased much improved units.

NOTE: The figures for Nuevo Veranillo could be adjusted to current values by multiplying the monthly payments by \$1.80.

The cheapest solution, the Lot, was only about \$5.00 12 years ago, compared with the current Lots (completely urbanized) of the Ministry which now cost \$22.00. The Piso-Techo units of Nuevo Veranillo cost an average of \$10.00 in the late 60's while the current Piso-Techo units are approximately \$39.00 per month. Just four years ago, the Core Units (with urbanization) in Cerro Batea averaged between \$35 and \$40 per month and the ones being built today cost more than \$50 per month. The Core Units offer the best comparison for seeing the increases in construction costs over time since they are comparable in terms of service levels, i.e. both water and sewerage connections were provided. However, all the figures indicate that it is becoming more difficult to provide minimal solutions at very low cost.

For a certain portion of the target population, even a payment of \$22.00 per month (the serviced Lots) may not be possible. For these families it is appropriate to consider reception areas with minimal service levels (similar to the Lot program in Nuevo Veranillo) since 30-50% of the current costs of construction can be attributed to the infrastructure. While there is strong opposition to planning new projects with low service levels given inefficiencies and the fact that subsidies are often provided later on, there seem to be equally strong arguments in favor of such projects, especially in view of continuing growth of unplanned invasion areas in the San Miguelito vicinity. (The population of one such area, near the Ministry Projects, grew over 300% in a matter of two and a half years.) Many families find the serviced Lots too expensive and seek out minimally urbanized areas.

VI. CHANGES WITHIN THE COMMUNITIES

A family's well-being cannot be judged simply in terms of the house they dwell in. The surrounding social and physical environment are vital aspects to be considered in assessing the experience of housing projects and in judging the living situation of beneficiaries. A larger picture of the project communities is presented in this Chapter and observations on the changes which have occurred over the course of many years in at least one community.

A. NUEVO VERANILLO: 13 YEARS LATER

Very little existed in Nuevo Veranillo when IVU built the Lot and Piso-Techo projects. There was a very small population residing in the area (families who had invaded land). It was essentially a semi-rural area. As described in an earlier chapter, service levels for IVU's projects were limited to a few communal standpipes; for some families in the Lots even the communal water supply was so distant that they had to carry water from a nearby church.

IVU did build two primary schools and a small structure for community meetings, but the area could be considered "underdeveloped" at the beginning. Today, Nuevo Veranillo is a bustling community with Mom-and-Pop food stores, a health clinic, additional schools, paved roads and foot paths, churches, a major bus depot, pharmacies, etc. Many of the changes are attributable to the private sector, i.e. the small business which were set up as the population grew. But many changes in the physical infrastructure were due to community action programs. Through spontaneous mutual help, the families in the area built a school, the health center, many of the foot paths, and other facilities. The pride that the community takes in these achievements is very evident in conversations with community members and leaders.

The survey included various questions to determine the level of satisfaction of families with community services. Due to the current stage of development of services in the area of Nuevo Veranillo, and undoubtedly because of the active role people played in their creation, the general satisfaction levels were high. Out of almost 200 families sampled (both the Lot and Piso-Techo) a very few mentioned that the health center should be enlarged to meet the increased demand. There were no complaints about the schools. The most complaints were about the lack of a super-market (15% of the families mentioned it) and about the garbage collection service (24%).

In the case of the super-markets, there is very little that government institutions can do.^{15/} In the case of the service of garbage

^{15/} The small grocery stores provide a very needed service, but are not competitive in prices with the larger super-markets which are at some distance from the area.

collection, there could be marked improvement (collections sometimes are made every two weeks which creates both a health problem and a very unpleasant aspect); however there is a difficulty in the coordination of the service. The responsible agency covers both Panama City and San Miguelito while it would be more appropriate for the authorities in San Miguelito to take the responsibility given the size of that population center, if they had the funds to do so.

The majority of the development which has occurred in Nuevo Veranillo must be considered community-based or arising out of the felt needs and resourcefulness of the community itself. There is a less vital development occurring in Cerro Batea which may be in part related to the "integrated programming" approach which has been a goal of the Ministry for a number of years, as it is in so many other countries. The approach has not been very effective since it requires the coordination of many different government level agencies. In the meantime, certain services are "programmed" which affects the expectation levels of project beneficiaries and tends to reduce the kind of spontaneous mutual help programs that were seen in Nuevo Veranillo. In other words, nothing is built, sometimes for many years.

B. CERRO BATEA: 1976 to 1980

Currently, the area of Cerro Batea has one primary school which accounts for 100% of the social services in the area. The area has more than 1,000 families which provides a good idea of the shortages in services which exist. Since the project area borders on the new project areas of the Ministry where thousands of new units (Lots, Piso-Techo and Core Units) have been constructed or are under construction, the magnitude of the demand for social services will soon reach an extreme level.

The blueprints for the Cerro Batea project and for the new projects include areas designed for schools, health centers, markets, etc. The actual construction of those services, however, is not guaranteed in the near future. The Ministry of Housing participates in a group sponsored by the Ministry of Planning which includes representatives from every appropriate Ministry and which is charged with the coordination of "integrated" programming. To date, progress in this kind of programming has been negligible, largely because it is difficult to agree on priority areas and to coordinate the national budget requests for each Ministry so that the appropriate social services are provided at the right time in the right place (in this particular context the right place being the areas where the Ministry of Housing is constructing its new large-scale housing projects). Based on information from other countries in Latin America, the difficulties with integrated programming in Panama are not unique.

In the specific case of Cerro Batea, a health center has been contemplated since the beginning of the project, and now, some four years later, it is finally being built. The lack of that service is quickly noted in the large number of families in the study (48%) who expressed this as

priority need. While that service will be provided shortly, the basic problem of coordinating the social services for such large housing projects remains.

In a sense it can be said that Nuevo Veranillo was better off than the beneficiaries in the new projects. Because there were no "promises", residents in the area took action on their own to build the services they needed. Since the newer projects entail an implicit promise of a wide array of social services, residents do not feel the need to organize for the purpose of building schools or health centers or other service centers. This is not to be construed as an advocacy of abandoning all responsibility on the part of the government agencies so that communities will be forced to act on their own! Rather, the proposal which has been made to the Ministry of Housing is that it should take a more active role in working with communities in the construction of needed facilities. One concrete form might be for the Ministry to provide building materials while communities provide labor for the construction of services which they deem of high priority; these facilities could be designed to their specifications.

The role of the Ministry in Community Development has recently become a major concern, since in the past the Ministry has stepped out of the picture once housing projects were built. This is no longer seen as appropriate since the large scale of the projects effectively precludes the beneficiaries from being absorbed into the social infrastructure of surrounding established communities. Within the Ministry there is a growing concern to develop mechanisms which will provide continuing support for project beneficiaries after they take possession of the units, both in the construction process and in the development of community services. It remains to be seen what form those programs will take.

As a final note on Cerro Batea, except for the social services, development can be seen in the growth of small businesses, the building of a church, the provision of bus services, etc. Where clearly the government does not have a role, spontaneous change has occurred much like it did in Nuevo Veranillo.

ASESORIA DE ASUNTOS SOCIALES

EL ESTUDIO DE CONSTRUCCION PROGRESIVA DE VIVIENDA

CUESTIONARIO

PARA

PROYECTOS ORIGINALES

1. HOJA DE IDENTIFICACION

ENCUESTADOR _____

VISITAS REALIZADAS:

	Primera (día/mes)	Segunda (día/mes)	Tercera (día/mes)
Completa	()	()	()
Incompleta	()	()	()

Si fue incompleta, o se negó la familia a responder, indicar la razón:

Cita para complementar información:

_____ día _____ hora

(SI ENCUENTRA UNA CASA ABANDONADA, PASE A SECCION VII)

REVISION:

SUPERVISOR _____

OBSERVACIONES: _____

FAMILIA ENTREVISTADA

JEFE DE FAMILIA

NOMBRE: _____

SEXO : Masc. () Fem. ()

EDAD : _____

NOMBRE DEL ENTREVISTADO SI NO ES JEFE _____

DIRECCION : _____

AREA : _____

CALLE : _____

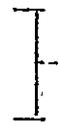
Nº CASA/LOTE : _____

OBSERVACIONES PARA LOCALIZAR LA CASA : _____

II TIPO DE SOLUCION/SERVICIOS

1. Qué tipo de solución fue originalmente?

- UNIDAD BASICA _____
- PISO-TECHO _____
- LOTE _____
- NO SABE _____



Qué tipo de servicios tenía?
(agua, luz, alcantarillado)

2. Servicios actuales (APUNTE SI TIENE)

Luz _____ Agua _____ Alcantarillado _____
(conexión domiciliaria)

2a. Si no tiene, con que tipo de servicio cuenta la casa?

2b. Si instalaron conexiones domiciliarias, en que fecha?

Agua _____
mes/año

Alcantarillado _____
mes/año

III. TENENCIA DE LA VIVIENDA

1. Usted es el propietario de la casa? (Marque uno)

a) Casa propia ()
(PASE A SECCION IV, N° 1)

*b) Alquilada () B/ _____ por mes

o
Cedida ()
(SIGA CON PREGUNTAS 2 A 4)

2. Quién es el propietario de la casa? _____

3. En qué fecha llegó usted a esta casa? _____
mes/año

4. Ha hecho algunas mejoras en la casa?

SI () (PASE A SECCION IV, N° 7b)

NO () (PASE A SECCION V, N° 1)

* NOTA: SI ENCUENTRA UNA FAMILIA ARRIMADA O COMPARTIENDO LA CASA,
ANOTE LA EN EL CUADRO FAMILIAR.

IV. DESARROLLO FISICO DE LA CASA

1. Son ustedes de las familias originales del proyecto _____?
(MENCIONE EL NOMBRE DEL AREA)

SI ()

NO ()

2. En qué fecha compró o recibió la solución? _____
mes/año

3. Cuándo se mudó? _____
mes/año

4. En cuánto la compró? ₡ _____ no sabe _____

5. Cuánto pagaba mensualmente? ₡ _____

6. Todavía está pagando la casa?

SI ()

NO () ----- Cuándo la canceló? _____
mes/año

7. Puede usted mencionar las mejoras que ha efectuado en la casa en su orden de construcción?

(NOTA: SI INDICA "NINGUNA PORQUE COMPRO LA CASA TERMINADA" MARQUE AQUI _____, Y PASE A SECCION V)

7a. Mejoras antes de ocupar la casa:

Tipo de Obra	Inicio - Termino Fecha (aprox.)	Costo (aprox.)/Materiales
1)	_____	_____
2)	_____	_____
3)	_____	_____
4)	_____	_____
	_____	_____

7b. Mejoras después de ocupar la casa?

Tipo de Obra	Inicio - Terminación Fecha (aprox.)	Detallar etapas de construcción Costo (aprox.) / Materiales
1) _____	_____	_____
2) _____	_____	_____
3) _____	_____	_____
4) _____	_____	_____

7c. Ha pensado hacer usted otras mejoras en el futuro inmediato?

SI () NO ()
 : :
 : :
 :

<u>Tipo de Obra</u>	Porqué? (NO LEA LAS RESPUESTAS)
1) _____	1) No tiene recursos _____
2) _____	2) La casa está terminada _____
3) _____	3) Pienso mudarse _____
	4) Otro _____

8. De qué fuente consiguió la mano de obra? (PUEDE MARCAR MAS DE UNO)

auto-construcción _____
 familiares _____
 amigos/vecinos _____
 contratistas _____

(SI INDICA CONTRATISTAS)

8a. Qué obras fueron construidas por contrato?

- 1) _____
- 2) _____
- 3) _____

9. Consiguió usted alguna asistencia del Ministerio de Vivienda (IVU) durante la construcción?

SI ()

NO ()

;
;
;

9a. Qué tipo(s) de asistencia? _____

10. Aproximadamente cuánto gastó usted en mano de obra en total?

\$/ _____

11. Cómo financió usted las mejoras (materiales y mano de obra) que ha mencionado?

Ahorros _____

(o)

Préstamo de:

;
;
;
;

Banco _____
Empleo _____
Prestamista _____
MIVI/IVU _____
Otro _____

Trató de conseguir algún tipo de crédito?

Cuánto? \$/ _____

Términos:

SI _____

NO _____

;
;

Plazo _____
Taza de _____
Interés _____

Tuvo dificultades? _____

12. En total cuánto ha gastado usted hasta la fecha en todas las construcciones? \$/ _____

13. Cuánto cree usted que vale su casa hoy en día?

\$/ _____

V. CARACTERISTICAS DE LA FAMILIA

(Anote todas las personas que viven en la casa y apunte si una familia está arrimada)

NOMBRE	Parentesco	Sexo M/F	Edad	Estado Civil	Ocupación	Sueldo Mensual	Empresa donde trabaja	Tipo de Empleo Perm/Event	Corregi- miento
	JEFE								

Otros ingresos al hogar: \$ _____ ej.: renta, pensión

Explique: _____

1. Dónde residían ustedes antes de mudarse a este proyecto?

2. Qué tipo de vivienda tenían?

<u>Tipo</u>	<u>Tenencia</u>
Casa independiente _____	Propia _____
Apartamento _____	Alquilada _____
Cuarto _____	Arrimada _____
	Casa Condenada _____
	Compartida _____

3. Por qué motivo quiso trasladarse a este lugar? _____

4. Tienen ustedes algunos planes de mudarse?

SI _____ NO _____

;
;

4a. A dónde irían? _____

4b. Por qué razón piensan mudarse? _____

VI. CARACTERISTICAS DE LA COMUNIDAD

1. Hablando de los servicios con que cuenta la comunidad, piensa usted que estas facilidades prestan los servicios adecuados para la comunidad?

	<u>SI</u>	<u>NO</u>
Recolección de basura	_____	_____
Escuela	_____	_____
Mercado	_____	_____
Centro de Salud	_____	_____
(APUNTE OTRAS SI EXISTEN)		
_____	_____	_____
_____	_____	_____

Porqué? _____

2. Utiliza usted el servicio de autobuses?

SI _____ NO _____
 |
 |
 |
 |

2a. Cuántas veces a la semana? _____

2b. Usualmente cuánto es la espera? _____ minutos

VII. CARACTERISTICAS FISICAS DE LA CASA

- 1. Tamaño del lote _____ M x _____ M = _____ M²
- 2. Total del área construida _____ M x _____ M = _____ M²
(cerrado)
- 3. Espacios de la casa:

Ventanas
(APUNTE N°)

Un solo cuarto _____	_____	
Cocina _____	_____	Portal _____
Sala/comedor _____	_____	Jardín _____
Sala _____	_____	
Comedor _____	_____	
recámara (Marque N°) _____	_____	
Baño _____	_____	

- 4. Utiliza usted alguna parte de la vivienda para tienda o taller?
SI () NO ()

Especifique: _____

- 5. Materiales principales de las mejoras (LOS ANEXOS, EL FORRO PARA PISO-TECHO Y LA CASA PARA LOTES)

<u>Piso</u>	<u>Paredes</u>	<u>Durabilidad</u>	<u>Techo</u>
Cemento _____	Bloque de Cemento _____	Alto _____	Zinc _____
Mosaico _____	Bloque de Arcilla _____	Medio _____	Teja _____
Madera _____	Madera _____	Poco _____	Otro _____
Tierra _____	Zinc _____		
Otro _____	Otro _____		

- 6. Condición General de la casa (VEA APUNTES DE METODOLOGIA)

Buena _____	/	Piso _____
Regular _____		Techo _____
Mala _____		Parodes _____

- 7. Apariencia: Marque si
está pintada _____
tiene repello _____

Observaciones: _____

THE CHARACTERISTICS OF THE CORE UNITS OF CERRO BATEA
ACCORDING TO THE PROJECT STAGE

Since the project in Cerro Batea was constructed in four stages, the sample was divided proportionately to the number of units per Stage. The text provides the data for Cerro Batea in an aggregated form. The following tables provide the same data by each Project Stage. (Stages I and II were occupied in 1976-1977 and Stages III and IV were occupied in 1978-1979.)

TYPES OF CONSTRUCTIONS: BY PHASES OF CONSTRUCTION

The term "progressive development" implies construction in various phases over a number of years. To date, there have not been many families who have built in more than one phase, i.e. the majority of the families have made major improvements all at one time, rather than build one room, wait, and then build another room, etc. However, the definition of "progressive development" also encompasses the idea of families waiting for long periods of time until they have sufficient resources to make housing improvements. The experience in Cerro Batea, up until now, points to a prevalence of the latter.

The following table shows the additions which families have made, according to their use, e.g. bedrooms, and whether they were built in one phase or in a second later phase. Neither phase indicates a particular time frame after occupying the unit.

No. of Families by Project Stage
by Construction Phase and Type of Construction

TYPE OF CONSTRUCTION	PROJECT STAGE:	FIRST CONSTRUCTION PHASE				SECOND CONSTRUCTION PHASE			
		I	II	III	IV	I	II	III	IV
Bedrooms	1	5	4						
	2	6	8	1		1	1		
	3	8	12	2		2			
Dining Room		3	1						
Study Room				1					
Porch/Terrace		6	8	1		3	8		

TOTAL CONSTRUCTED AREA (By No. Families By Project Stage)

CONSTRUCTED AREA	PROJECT STAGE:			
	I	II	III	IV
66M ² or more	8	8	---	--
46M ² - 65M ²	9	15	3	--
26M ² - 45M ²	2	21	5	--
25M ² or less	<u>10</u>	<u>1</u>	<u>9</u>	<u>9</u>
TOTAL FAMILIES	29	45	17	9

NUMBER OF ROOMS (By No. of Families by Project Stage)

NUMBER OF ROOMS	PROJECT STAGE:			
	I	II	III	IV
1	10	21	14	9
2	3	3	-	-
3 - 4	13	19	1	-
5 or more	<u>3</u>	<u>2</u>	<u>2</u>	<u>-</u>
TOTAL FAMILIES	29	45	17	9

DENSITY CHARACTERISTICSCONSTRUCTED AREA PER PERSON (By No. of Families by Project Stage)

M ² PER PERSON	PROJECT STAGE:			
	I	II	III	IV
14.0M ² or more	6	7	1	--
9.0 - 13.9M ²	11	18	3	2
5.0 - 8.9 M ²	4	15	8	4
4.9M ² or less	<u>8</u>	<u>5</u>	<u>5</u>	<u>3</u>
TOTAL FAMILIES	29	45	17	9

PERSONS PER ROOM (By No. Families by Project Stage)

PERSONS PER ROOM	PROJECT STAGE:			
	I	II	III	IV
1 or less	7	3	2	--
1 - 2.4	11	17	1	1
2.5 - 4.9	5	9	6	5
5 or more	<u>6</u>	<u>16</u>	<u>8</u>	<u>3</u>
TOTAL FAMILIES	29	45	17	9

QUALITY INDICES (By % of Families by Project Stage)

QUALITY SCORE	INDEX	PROJECT STAGE:			
		I	II	III	IV
GOOD (55-70 Points)	LIFE	62%	56%	24%	11%
	STRUCTURE	52%	44%	24%	--
AVERAGE/ ADEQUATE (35-50 Points)	LIFE	38%	44%	76%	89%
	STRUCTURE	48%	56%	76%	100%
POOR (0-30 Points)	LIFE	NONE			
	STRUCTURE	NONE			