

# Cooperative Housing National Army Chillogallo in Quito – First Part

## Case study

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## Introduction

Cooperative housing National Army in Chillogallo is located in the southern limit of Quito in Turubamba zone, an urban development area filled with spontaneous and planned neighbourhoods beside an important factory area in a flat valley, the entrance to the city from the coastal region.

The general purpose of this study is to analyse the initial plan and how it has developed 10 years after it building through the identification of the strategies, actors and design of a cooperative as a solution for housing and how the actors got to their main objective.

In particular, this analysis remarks the importance of the urban design in human settlements and proposes recommendations in order to contribute improvement of the quality of life of the inhabitants of this type of quarters.

## Problem Definition

**The lack of opportunities to obtain dwelling houses for the personnel of the National Army in Ecuador was the reason behind this cooperative housing project.**

In 1980 there were 5.000 employees from the National Army that did not have their own house, including high officers 15% and soldiers 85%. It represented a big social problem that was based on the lack of opportunities to buy plots, houses or apartments with the help of a loan supplied by governmental institutions as IESS (Instituto ecuatoriano de seguridad social) and BEV (Banco ecuatoriano de la vivienda)<sup>1</sup>, because most of the army employees worked outside of Quito and the institutions' activities were centralized in the capital.

## Motivation for the Choice of Study

The district in study is part of an area of high and fast expansion in Quito with features of most of the low income planning settlements around the city.

The analysis and schematisation of this case gives conclusions about management, architectural and building issues because it is a model of cooperative housing where the main objective was obtained,

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<sup>1</sup> IESS Ecuatorian Social Assurance Institute. BEV Ecuatorian Housing Bank.

and not like much of the cooperatives that only achieve to supply the plot.

On the other hand this is an opportunity to check how this type of settlements link to each other, how their urban organization is and what is their impact in the city and the citizens life.

## Method of Study

This report is based on specialised literature about Housing Cooperative National Army in Chillogallo and Quito's Planning, as well as management, user interviews and personal experience of the author who worked as supervisor in the construction site.

SIDA's<sup>2</sup> Housing and Development course, its theories and information guide this desk study in order to acquire knowledge and organize new ideas related with housing in Quito.

## Background

The Housing Cooperative National Army Chillogallo, is located in the Metropolitan Area of Turubamba in the southern part of Quito in Ecuador, South America.

### Country Level



Figure 1. Map of Ecuador

The Republic of Ecuador has an area of 283,520 km<sup>2</sup> which contains four regions with several climates and diversity of fauna and flora, allowing the generation of industries as: Oil, bananas, shrimp, fish, coffee, textiles, metal work, paper products, wood products, chemicals, plastics, fishing, lumber. (see figure 1).

Of the total population 40% is mestizo, 40% Indian, 15% Spanish descent, 5% African descent the growth rate is 2.1%. There are as many regions as many languages are spoken by the 12,920,092 inhabitants, but the main languages are Spanish and Quichua.

Ecuador as many Latin-Americans countries faces the growth of the urban areas where the policies of national and local governments are not enough to overcome the problem of lack of housing. Thus in Ecuador the housing deficit is around 1,200,000 dwellings.

<sup>2</sup> SIDA: Swedish International Development Agency

## Regional Level

### Quito

Quito means the centre of the time, the centre of the space. It is an old city near the middle of the Earth enriched by highland landscape and Spanish colonial urban and architectural towncenter. It was declared a world cultural heritage site by UNESCO in 1978.

As a result of massive rural migration, since 1950 the population has grown 200% in 30 years, and now 40% of the population lives in slums settlements.

The Municipality has faced one of the issues around the housing that is the land by establishing a territorial organization of Quito where the city according with the Metropolitan District Plan, enlarge her limits toward towns nearby and is divided in four principal zones of the consolidated area of Quito.

Thus we have the areas of Turubamba, Uninsaya, Yavirac and Anansaya.

Table 1: Evolution of Population in Quito

Zone	Pob 1990	Pob 1995	RBP** 95	Pob 2000	RBP 95-00	Pob 2020	RBP 2000 - 2020
Turubamba	64.989	126.552	13,3	177.198	6,7	312.610	2,84
Uninsaya	403.576	510.782	4,7	585.279	2,7	627.852	0,35
Yavirac	340.156	354.404	0,8	348.508	0,34	363.278	0,21
Anansaya	284.509	409.651	7,3	504.824	4,2	981.664	3,33
Total Quito	1'093.230	1'401.389	4,97	1'615.809	2,85	2'330.404	1,83

From: General Direction of Planning, 1996. \*Population \*\*Population Birth Rate

## Project Level

The major zone of growth in Quito is Turubamba (table 1, figure 2). It is in the southern limit of the city. Farm production was concentrated there until the 70s with farms like Arcadia or ex Agropecuaria, El Carmen, Balbina, Las Cuadras. From 80s the urban area of this zone has increased with 2,180 ha. through the possession of the land by: illegal settlements (96%) and urbanizations (4%).



Figure 2: Aerial view of Turubamba Zone

### Location

The area is located in the Metropolitan area of Turubamba on Arcadia's Farm or Agropecuaria Farm with a total area of 355,822 m<sup>2</sup>. It is limited by:

At North: paved road Panamericana Sur and the neighbourhood La Ecuatoriana. At south: A stone way that limits the lands of the ex-farm

named Agropecuaria. In East: Lands belonging to the ex-farm named Agropecuaria. In west: roadway Quito-Jambeli and chasm without name.



Figure 3: View of Housing Cooperative National Army Chillo in 1992



Figure 4: View of Housing Cooperative National Army Chillo in 2002

## Strategies

The Army authorities were aware of the lack of opportunities to obtain housing and promoted the development of the Housing Cooperative National Army as independent entity. It began in November 1980 and in 1981 the Assembly of Partners nominated the Council of Management and the Council of Vigilance. Since that time they planned the following strategy to facilitate access to land, services, houses and credit facilities.

- 1 Open the way for new partners.
- 2 Search of financing
- 3 Research and reception of land applications for pilot plan
- 4 Zoning and housing design of pilots plans.
- 5 Housing applications and delivery of the plots in pilot plan
- 6 Planning and construction of Housing
- 7 Residence construction and delivery

These strategies were followed from 1980 to 1992 to obtain a housing area that served 855 families in Quito.

## Description

### **Open the Way for New Partners**

In the first year the Cooperative began with 150 members from the Army, officers, soldiers and civil employees from most of the units in all the country. It increased by 150 members per month.

Each member, in freedom, filled an application that contain orders for discount from their salary in order to capitalize the fund of each member. The contribution per month per member was 700 sucres or USD 22.65 in 1981.

### **Search for Financing**

With a high number of members, the solution was to look for massive housing plans that require big investment. The contribution of each member was not enough for the purpose. It was necessary to look for new solutions like: through State Programs of Housing, through the direct management of the Cooperative, through external loans, through the help of some army organizations and through the idea of ‘Mutual help and Own effort’.

Finally, after analysing all the possibilities the cooperative began the pilot plan with the direct management of the Cooperative, through external loans.

### **Research and Reception of Land Applications for Pilot Plan**

The place was chosen by the members according to the localization of the work place of the soldiers because most of the headquarters are located in the south part of Quito.

Before to sell the land, the cooperative made a research and received applications from owners of many places in Southern areas of Quito. The land was bought from a family who owned the farm called La Arcadia.

### **Zoning and Housing Design of Pilot Plans**

The Cooperative incurred in three housing plans, one in the location of Sangolqui destined for officers house and two for soldiers in Chillogallo. The cooperative decided to begin with a pilot plan in First part of Chillogallo and Sangolqui that would satisfy the 25% of the members.

The members had expressed that they would have acquired famil houses and few members building apartments.

### **Housing Applications for Pilot Plan**

It was fit a solution model standard for the two types of users, thus they could obtain the plot with basic infrastructure and the house based on S.M.V. (Vital Minimum Salary 27.000 sucres in 1989 or USD 47.48). The study was made in 1989. (Table 3)

*Table 3: Chart with the Solution Model standard*

<b>Users</b>	<b>Plot m<sup>2</sup></b>	<b>House m<sup>2</sup></b>	<b>SMV</b>	<b>Pay in 25 years in SMV</b>
Officials	300	90	278	390
Soldiers	240	72	222	312

*From: Files Cooperative housing National Army in Chillogallo*

Each member needed initial saving of 120 SMV to obtain a house and the plot. Those persons whose had this base save received the plot by lottery in an Assembly meeting.

### **Planning and Construction of Housing**

The Army Engineers Group, as contractors, developed the infrastructure who designed the division of the plots, streets and communal area according to the municipality regulations.

### **Residence Construction and Delivery**

The Cooperative decided to invite architects and engineers who were in charge of the construction of the 855 model standard solutions. Before taking a decision the cooperative made a research and proved about some style of construction, like adobe, bamboo, wood and also tried to use pre-fabricated houses, but the members preferred block and concrete.

Finally they arrived to a solution half prefabricate, half manufactured. All house had the same modular iron structures. One company who distributed concrete according to a schedule made the concrete in site. The blocks were made in factories near the place and also were distribute to each contractor who was paid according to the evolution of the work.

After one year and a half the whole of 855 houses was finished and delivered to the owners.

### **Analysis**

This experience was successful in terms that all the actors reached their final objective. It is a management model where the users solve themselves the acquiring of land, finances, technical assistance and the security of tenure to build, thus the cooperative becomes a developer and housing institution.

The financing was a high fence to jump in this process, the economic situation of Ecuador in the 80s and 90s did not allow getting loans in the national or international banks, due to the increasing interest rates. For that reason, the financing process consumed time and energy until they arrived to an institution that gave them a soft loan to begin the first works.

It took 10 years to overcome all the problems on the way but the strategy followed as a cooperative organization and the perseverance of the actors let them to enjoy a private property.

### **Actors**

A massive housing project demands the participation and effort of many institutions, professionals and civil workers that in this study will be called actors.

The target group in this case (First part of Cooperative Housing National Army) were the soldiers but during the process they also accepted officers.

The persons and organizations involved in this project are in the following chart: (Table 3)

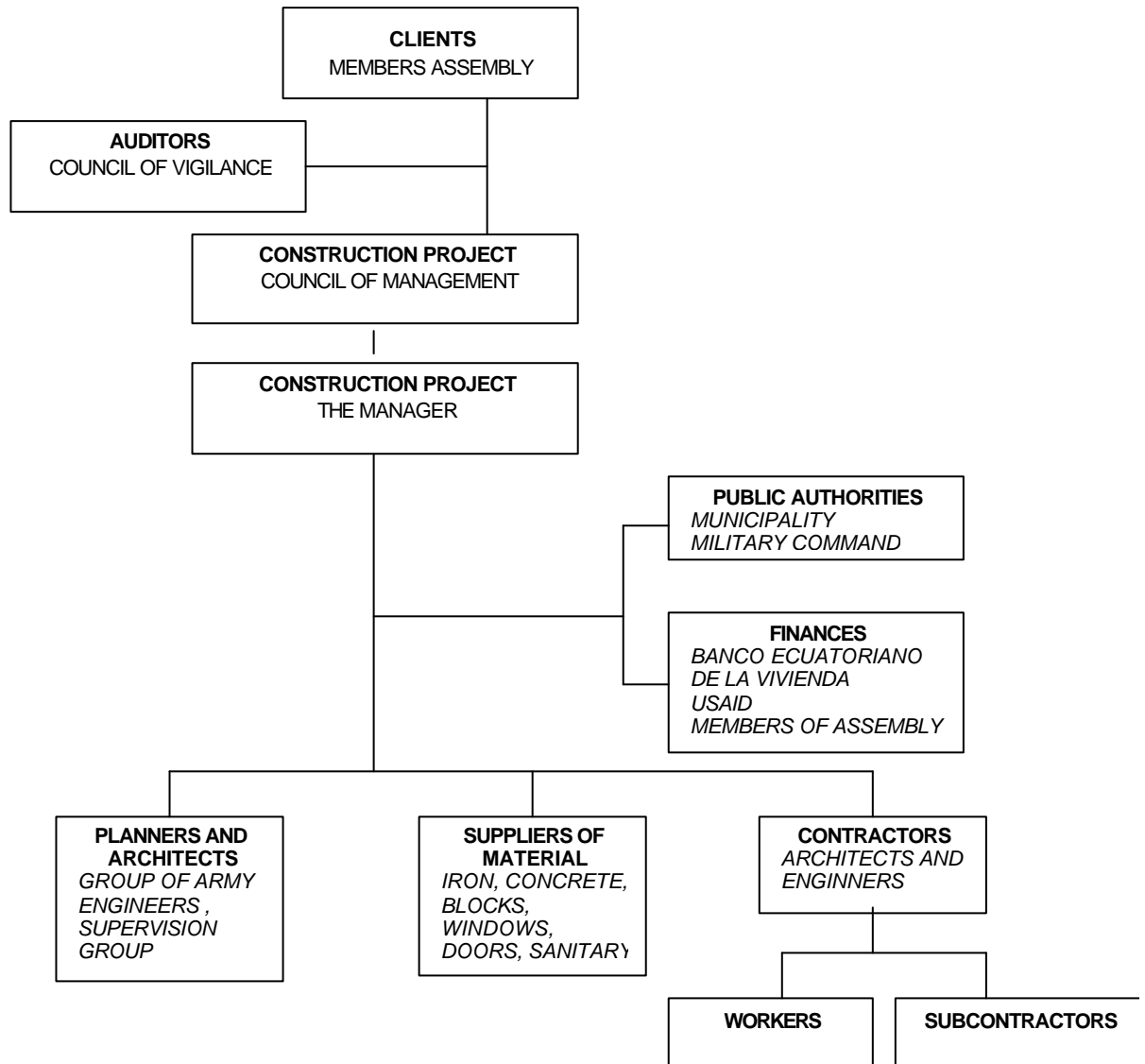


Table 3: Actors and their relations in the Planning and Construction process. Community organization: Clients, Auditors, Construction project. Local Government: Public authorities, National Government, External donors and community organization. Private sector: Planners and architects, suppliers of materials, contractors, workers and subcontractors.

## Description

### Community Organization

*The Housing Cooperative National Army*

The principal authority in the cooperative is the Assembly that nominate a council of management and vigilance. These in general are in charge of elaborating the regulations and controlling the investments and activities of the entity.

This organization is not allowed to leave the activities concerning the housing issues. Their main aims among others are:

- To try the obtaining of housing for the members
- To execute housing plans over the country

- To leave a place appointed for communal areas and other services for the sake of social health in all housings designing by the cooperative.
- To arbitrate all the resources to get financing and an appropriate operation system.
- To function as savings and loans organization.
- To lend money to the members of the Cooperative.
- To buy all the goods needed for the implementation of the project.

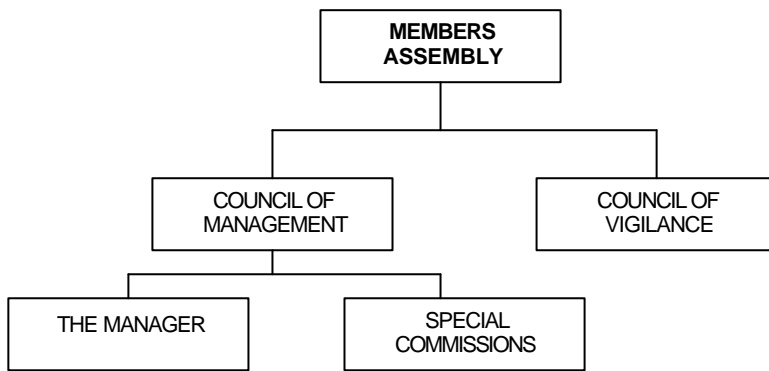


Table 4: Organization of Housing Cooperative National Army

*The Members Assembly*

The members of the cooperative are the members of the National Army and civil workers of the Institution. It is important that they declare not having a house inside the canton or small area where the housing program is located.

Each member is part of the Assembly where they can vote and debate the economic and administrative aspects.

**Local Government**

*Public Authorities*

The municipality approved the planning of urban design according to the city regulations.

The Military Command did not give an economic help; it assisted in the logistic to discount the contributions from salary members.

**National Government, External Donors and Community Organization**

*Finances*

The Banco Ecuatoriano de la Vivienda, BEV, is a State financing institution that gave the loan to each member to buy the plot and the house.

The USAID (Aid for International Development - Unite States of America) gave the loan to the Cooperative to make the first works of infrastructure on the land.

The monthly contributions of the Assembly members paid the land and the Cooperative management offices could operate.

**Private Sector**

*Planners and Engineers*

The Army Group of Engineers worked in the general urban planning and built the infrastructure like streets, sidewalks, division of the plots, sanitary and water net. They had a role as a private contractor.



#### *Planners and architects*

A group of architects invited by the Cooperative made architectural design, budget, specifications, plans and research of the appropriate construction system. The supervision group were professionals contracted by the Management Council in charge of the quality control and the persons who authorised the payments to the contractors according to the schedule.

#### *Suppliers of Materials*

The management council bought the main materials as concrete, cement, iron, electrical and sanitary supplies, vinyl floor and wall tiles, wood doors, aluminium windows with 3mm glass and lockers directly from the producers and organized the provision to the contracts. The contractors only acquired minor goods like sand, stone, wood, plastic and tools.

The iron structure was designed and made by ARMEX company who deliver the iron structure set of each house in a storehouse in the Cooperative Housing.

Hormigonera Quito Company who installed a cement cylinder elaborated the concrete and the concrete machines deliver up to 27 m<sup>3</sup> of concrete per house.

The blocks were made in a factory nearby.

#### *Contractors*

For the construction of the houses, the Cooperative convoked a group of professionals to present the offers according to the plans and building specifications elaborated by planners and architects.

Each contractor was handed 40 to 60 houses to be built in one and a half years.

### Analysis

One of the advantages in this project is the organization of the entire group of actors involved in the Cooperative Housing. It was possible because they had a Management Council and Manager lead efficiently all the issues around the principal aim.

Most of the members have a security base organization and a strict training in everything they do. This let them to be perseverant in the purpose.

During the process, the target group accepted the officers who became this programme because the size of the plot and the house were offered to them as an excellent cheaper solution. Later on the differences are showed in the housing morphology where the extended houses are more than 4 times the original house.

The period for approval of the plans in the Municipality was a dense time produced by many steps and papers asked, but more because the municipality did not have an adequate system of communication about the regulations. The inquiries always are person to person and it required time to consult every step.

The Army Engineers Group is an organization that works for the State and its priority is to attend the emergencies caused by the multiple natural phenomena in the country and that caused a delay in the infrastructure works given to them.

Around 5 years later BEV, increased the interest rate of the credit and the house cost became higher than the members had expected. It was a problem because the sources became from the State who were

affected by the political changes and the paying of the high external loan.

## Design

The objectives of the design process were to get affordable prices of land, housing and dwelling for the families whose vital minimum salary was 27.000 sucres USD 47.48 in 1989, to establish uniform housing standards in land and dwelling areas, to elct future extensions according to the municipality regulations, to use construction systems that made future expansions possible until second floor, to let the cars and trucks to go inside the plot, to leave a space for communal facilities and recreation.

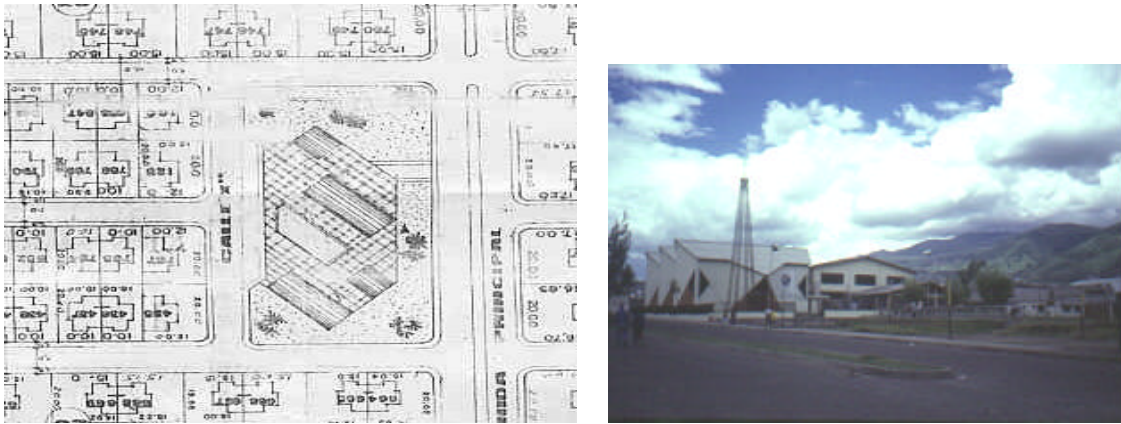


Figure 5: The main street and common area in Cooperative Housing National Army

## Description

In this pilot plan the Cooperative Housing National Army developed 855 plots with sizes of 200m<sup>2</sup>, 300m<sup>2</sup> and maximum 411m<sup>2</sup>.

The total area of 320.750 m<sup>2</sup> was divided in useful area: 72%. streets area: 24%, common areas (central area and border of the chasm) 4%.

The size of the street is 10 mts including two walksides of 1.5 meters each one.

The infrastructure design solved water system through two natural springs found in the land. In 1997 the Municipality Water enterprise connected Cooperative net to the global water service net.

The drainage system as the electricity system were built by the cooperative and connected with the existing systems of the area.

Now there is public transportation by bus from the south station of the Trolleybus (city bus net crosses straight around 30 Km from north to south).

The waste disposal areas were not provided in the design process, it was an issue delegated to the municipality.

### The House Solution

House area: 56 m<sup>2</sup>

Materials: Reinforcement concrete structure and blocks.

It contains two bedrooms, one living room, one dinning room, kitchen, bathroom and laundry.

The average of number of persons per family was 5 . The house construction was 7'415.000 sucres or USD 3.362,81 in 1994. All the members applied for a loan in that time. It was arranged for 15 years with interest rate of 38%.



Figure 6: View of the model house with second floor built in 1991 built in 1991

## Analysis

The analysis of the architecture solution and site plan will be in terms of: gender aspects, climatic design, daylight in building, functional design and qualities of architecture.

### Gender aspects.

It is a social analysis that opens the way with regard to building an environment where men and women of all ages have the same opportunities for a social, cultural and practical development in urban and rural areas. The check list from Uppsala community<sup>3</sup> was put to the plan of the Cooperative housing National Army in Chillogallo and it obtained a rate of 30% . It means that this area was not “planned according to a perspective of quality between man and woman”. Thus the rates were:

- Woman experience 2/4
- Well designed neighbourhoods 2/5
- Social aspects 1/4
- Relations between living and working 1/4
- Safety and human rights 1/5
- The centre- an important node 2/5
- Give priority to caring for people and for the environment 1/6

Almost the new settlements in Quito can reach the rates above and it means that we have not built a city for man and woman. We need to change the mind and discover in the check list of Uppsala community a useful and handy tool that awakes to a new human settlements and cities.

Some of the visible aspects inside the cooperative housing in study are the laundry area outside the house near the kitchen, a clear and functional place where the mother or father can stay near the children's play site, also the housing area is near working places.

<sup>3</sup> The reference group for equality in community planning Uppsala 1990, rev 2001

### Climatic design and daylight in buildings

It is a new aspect developed the last ten years and “must be considered in the early stages of process design”<sup>4</sup>. In fact, there were not adequate tools for exploring climatic issues in the normal design process of Cooperative Housing.

In this case, the dwellings are located in Quito where the average of temperature is from 10°C to 20°C during the day. Turubamba is a rainy, humid and cold area. The initial design was not concerned with the climatic issues because the main aspect in the process design was performance of the low cost materials use in. Thus the block walls and concrete structure create a cold environment in winter and comfortable environment in summer. Moreover, Quito does not have a heating system because the temperature seldom goes below 10°C, however we can use the passive climatic design to let the dwelling get a comfortable environment that raise the quality of life.

Although, it is a city located in the middle of the Earth, the daylight and sun should have been considered as source of energy and as architectural issue.

Beside, in 1991 and nowadays, the sun sources energy appliances are not in the market as a common good to use in dwellings in Quito.

In this case, the sources of daylight and ventilation are the windows and most of the dwellings have the daylight from east and west.

At the beginning the house of 56 m<sup>2</sup> had enough light and sun coming from the windows, then with the extensions it is a factor the owners did not take care.

The main aspect for them seems be to take advantage of each centimetre of the land. This idea repeats in several plots is the beginning of a new morphology without regard to environmental quality.

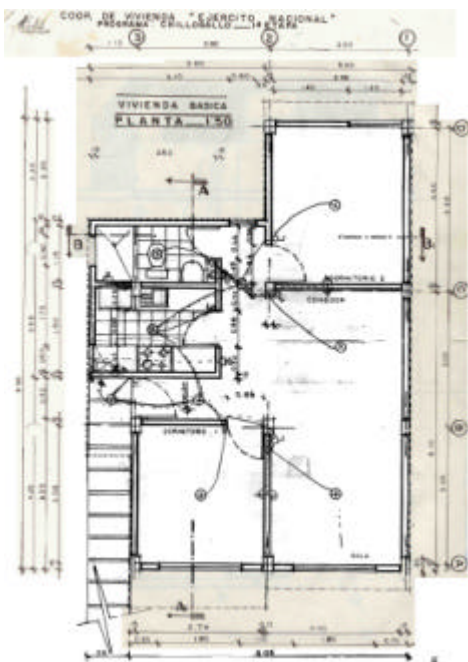


Figure 8: House plan



Figure 9: View of the principal facade

<sup>4</sup> Hans Rosenlund, Climatic Design Lecture, Housing & Development programme, 2002.

### Functional design

The house is functional, all the activities of a typical family have been considered. The areas let them to organize suitable life for the beginning, but it remains some solutions until now that represents approximate 40% of the total housing that let me to think it is a suitable solution for a group of families.(Figure 8)

The house has a bedroom #1 of  $2.75 \times 3.05 = 8.38\text{m}^2$ ; bedroom #2 of  $2.85 \times 3.4 = 9.69\text{m}^2$ ; living room and dinning room of  $2.85 \times 6.1 = 17.38\text{m}^2$ ; kitchen of  $1.9 \times 2.6 = 4.94$ ; bathroom of  $1.15 \times 2.6 = 2.99\text{m}^2$ ; circulation area and walls of  $12.62\text{m}^2$ . Outside there is a laundry that contains basin and a place for washing. It was made by prefabricated pieces.

### Qualities of architecture

Organization of the space of the house is simple and the proportions of each room leaves from modular structure of  $3.05 \times 3.00 \text{ m}$ . in plant and  $2.3 \text{ m}$ . in high that gives a proportion and scale according to the size and high of the Ecuadorian family. Even it is small house the private areas (bath and rooms) are enclosed ness. The kitchen and one room is semi-enclosed ness and let the dining and living rooms have sightlines with the entrance. Also all the areas have sightlines to outside except the kitchen, unfortunately this main room is dark.

The movement develops through a limit area that connects the rooms in the house, and one access with the laundry or with the street.

The windows provide the daylight, but the dinning room and the kitchen have not enough light, its need artificial light. The parameter for artificial light is one lamp per room. However the work areas have not artificial light, as cooking table. (Figure 10)



Figure 10:Kitchen in construction time

It could have used the same lamp on the working area and another one on the sink.

The materials used let the users to paint the house, as they like. The windows have a detail on the base to protect it from the rain and an entrance path was built. I think the house could have had some material as wood or brick that alive and give a sense of unit to the housing instead of the grey cement.

## Conclusions and Recommendations

### Management and Organization

In 1981 the Cooperative Housing National Army in Chillogallo was born and grew base on new economic, management and building ideas. Certainly, these criterions have given their fruits by granting 855 families.

After 10 years the cooperative housing National Army is a model of management and organization because it could have been executed the program allowing the market to provide the land and houses and the Cooperative could have made only the role of a credit institution. However the Cooperative became a developer and housing institution with the assistance of the State and Donors that facilitated access to land, services, housing and credit to members.

It is an example that could follow by CBOs, group of professionals whose can contribute with organization, active participation, saving scheme and economic development, but their obstacles consist in high cost of the land and financing access. In this last matter the government in Ecuador should implement a Loan Program that pays attention not only low income also middle-income families providing low cost financing assistance to the Cooperatives and Housing organizations. In other side, the State shall be secured by land mortgage system. Site Plan Process

### Urban qualities

Housing pattern reflects the activities, the tastes and the conception of the space of the users. After 10 year, the extensions give the neighbourhood an expression of diversity, as diversity is the country. In spite of this, through the external view this planning area looks anonymous. The roads and common areas left are not enough to express a sense of unity in the diversity.

In this case, the objectives followed in housing planning did not go deep into urban planning and its profits. The concept of a community area was developed in one place and it is a static concept of urban settlement that almost the new housing areas in Quito have. It is important to understand the dynamic between the persons and the nature, the people, their activities, common needs and the facilities.

Also the morphology of the Housing Cooperative National Army in Chillogallo, has changed as a result of the extensions of the original houses, it does not have the qualities to recognize it as a neighbourhood belonging from a community organization with strong bows. Therefore, in the beginning of the design process the professionals should be alert and discuss with the families about the rules of the city plan, public spaces, green land and the meaning of the city, as well as financing issues.

As a proposal, the professionals should involve the future users in the discussion and housing process design following these steps:

- Meetings with the users to talk about the city, its laws and the organization of the land considering the public spaces and green areas.
- Design of Urban Plan for the 30 ha.
- Discuss with the members about the layout of the housing.



- Final Urban design.

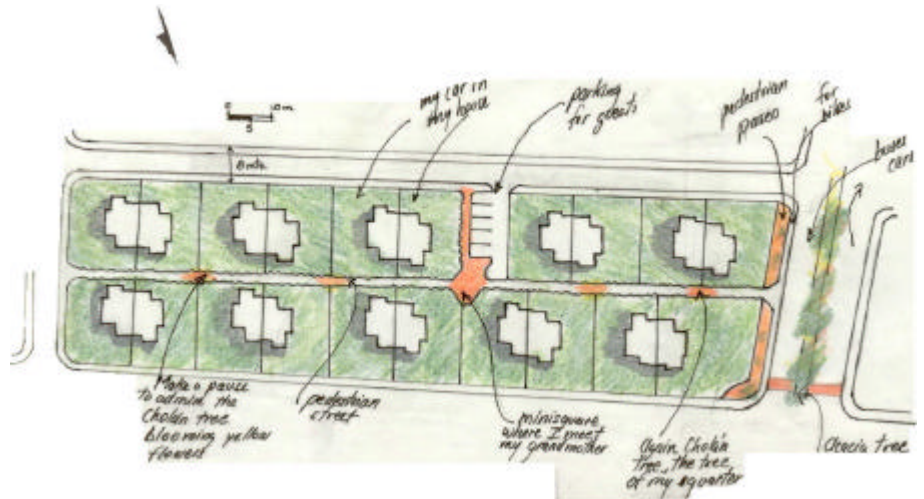


Figure 10: Urban design sketch

### Public space as a symbol of the quarter

As many neighbourhoods in the south and the north of Quito, whose growth has been by itself an effort or planning, it looks like an expression of no integration, an expression of individuality: plot and house (Figure 12).

It is a challenge to define an adequate place that the population accepts and identifies with it, because most of the parks have big areas appointed for active recreation where not all the population can take advantage of them. Nowadays, the typical parks are not secure areas.

The street is the public space they prefer, along it the communitarian life develops. It is a particular public space in low and middle-income housing quarters, but this space has not been taken advantage and has not been designed by architects, planners, neither by the illegal owners of the land.

### The importance of urban qualities in human settlements

The development of the city in a fast way has provoked a new distribution of the land, lack of public spaces especially for elder people and green areas. In this matter, my voice joins to those who's protect the cultural heritage of the ancient cities, because the shapes were derived from movement systems. It means derived mainly from human beings. Nowadays the shape of the cities became from machines in movement.

As Edmund N. Bacon said "In the long run the designer can stimulate in individuals new areas of awareness by the force of his product, but this is a slow and uncertain direction of effort. Alternately, through the architectural form of his structure, he can channel the movement of people through purposeful routes of movement and points of pause, influencing the nature of their responses" (Bacon 1974:64).

Thus the designers of Quito neighbourhoods can evoked the concept of the square, narrow pedestrian streets, porches, gates, and passages of the Spanish city as well as to combine the advantages of the technology. Its also can integrate and link quarters giving them identity.

Why the importance of this idea, how it affects a person, how it upward the quality of the life?

From my point of view, it is important to analyse a psychological answer given by Erik H. Erikson, that explain the concept of forbidding environment and facilitating environment and “show how the balance between these two may affect one’s response to the various turning points in one’s life, strengthening or inhibiting the full realization of one’s potential”<sup>5</sup> This explanation serves to understand the role of the designer to think in the quality more than in the quantity (area) of the buildings, housings and cities.

A chart made by Erikson, psychoanalyst and educator, shows the qualities developed by human beings according to a facilitating environment or forbidding environment in each stage of the life. For example in the Infancy a facilitating environment gives trust to the child, a forbidding environment (space with hostile and danger elements) gives mistrust.

The site plan of case study facilitates only the car movement and forbids people walk in peace, meetings, and communication activities for the entire ages (figure 11). This project has a central area destined for community facilities where the church, central house and child playground was built later on. On the chasm border exists the active recreation as basket and volleyball playgrounds and some areas for



Figure 11: Plan site of Housing Cooperative National Army Chillogallo

Figure 12: Quarters in Southern area of Quito



Figure 13: Main street in Cooperative Housing National Army



Figure 14: Bounder of the chams in Housing

<sup>5</sup> Edmund N. Bacon, Design of cities, London , revised edition 1974, p46



child's games (figure 14). The shops and some services as private health clinics or professional workshops have been developed in the houses near the main street.

Now the place has consolidate and shows big contrast like some plots have not closing wall like many others (figure 13). The limits between private area and public area are defined and there are not possible drastic changes like make units of neighbours with patios, or pedestrian streets, new spaces for passive recreation and meeting open places. The solution starts to work with the families to propose together enhance in front of the houses with plants, tress, and bushes. Also propose a study colour of the facades of the main street and a principal stop for buses.

For the near future the ideas of human and sustainable settlements should spread and debate with common people. The design has to be understood for all the population, as well as the designers has to deep inside the concept of the space in the daily life.

Through this short experience living in Sweden and as a participant in the Housing & Development course is possible to conclude that the humanity is growing toward to consolidate human and sustainable settlements.

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