

# Project Management by the Cuban NGO Habitat-Cuba, Society for Housing and Planning

*Ulises Garcia*

MSc Structural Engineer  
Adviser

## Summary

Because of the collapse of the Socialist Block and the persistence of the blockage, our country faced a deep economic crisis.

The program for housing development up to the year 2000, like all the development of the country, was seriously affected since 1991. This program foresaw sustainable increases in housing construction and its capacity to reach the next century with a higher degree of satisfaction of the housing demand.

In this complex financial and economic situation Habitat-Cuba was created Habitat-Cuba, a Society for Housing and Planning. Our Society works in those housing fields together with international co-operation and solidarity, where the slums appear.

Habitat-Cuba addresses its mission to improve living conditions of poor people encouraging the production and the use of local materials and appropriate technologies, to carry out local demonstrative and replicable designs of habitat, to promote the advisory and the integral training of population in the first place, co-operating state housing and habitat policies and management; and promoting concepts, methods and experiences conducted for the achievement of sustainable habitat.

Therefore it may be concluded that Habitat-Cuba should work in establishing alliances with Institutions, Local Governments, Ministries and Communities, to get the aims of the plurality of actors as warranty of the success of its program and projects. These successes get replicability and diffusion as a way to solve the big problem of the habitat in the country.

## Introduction

This work aims to show how a Cuban non-governmental organisation develops its management to contribute to the solution of the Cuban habitat, promoting alternative, sustainable and participatory actions, holding an equity criteria through demonstrative practices, it also develops of research, training, documentation, communication and

technical advisory. This work aims, through this study to improve its project management.

## What is Habitat-Cuba?

Solutions for the housing problem in Cuba were approached by the State in 1959, as were all other pending social needs, i.e. education, health care, social security and other services. Improvement in housing for much of the population was one of the major targets to be achieved by the State. The target was reached through new designs and construction techniques, which put a great emphasis on, industrialised and patterned large-scale construction as well as increased teaching programs for Architects and Engineers.

By 1980, having solved to a great extent the demands in other social needs, the State decided to give more priority to housing. At the same time, a group of professionals in the field were concerned about the resources needed for large-scale construction and encouraged instead self-help construction and the rehabilitation of existing housing. Some of these ideas were included in the General Law on Housing in 1984 and 1988.

With the collapse of the Socialist Block and the persistence of the USA blockage, Cuba faced a strong economic crisis that forced changes in the strategy of economic and social development including the introduction of new elements into the Cuban society. This factor led to an abrupt decline of the Gross Domestic Product. As a result of this crisis, technical material bases for construction suffered severe decapitalization and the housing stock further deteriorate. Cuba has redefined the concept of house investment, the later ceasing to be a product, to become a broad – based participatory, decentralised and environmentally sustainable process. Its was then, necessary to substantially reduce the construct-material consumption of the great industry, which demand huge energy expenditures and hard currency for their and import. To create a technical – material base in each province, municipality and community to produce materials from the raw materials existing in each territory, with small - scale processes, with low energy consumption and low environmental impact.

This situation pressed too, to the decentralisation process that had started with the creation of small local Popular Councils. The Councils strengthened the ties between the population and the structures of power and provided a wider participation of the community in the solution of their problems. One of the challenges of the decentralisation process is to ensure that the population takes the chief role, so that the community is the subject and object of development. In order to consider the needs, habits, traditions and hopes of the diversity of residents, communities need to be trained in the process of community development. This community development approach is now seen as a way to achieve an improvement in the living conditions of settlements in urban and rural areas, including the capital.

It is in this context of changes in the Cuban civil society that a group of professionals in the housing sector became aware of new possibilities for their role and **HABITAT-CUBA** was created. **HABITAT-CUBA**, hereafter called "The Society", is sponsored by a group of social institutions such as the National Union of Architects and Engineers of Construction (**UNAICC**), the Centre of Studies of Tropical Construction and Architecture (**CECAT**), the Group for the Integral Development of the City of Havana (**GDIC**) and with the approval, as Cuban Legislation establishes, of the National Institute of Housing (**INV**), Leading Governmental Institution of this field in our country.

**HABITAT-CUBA** is a Cuban non-profit society, created in 1993 by a group of professionals, architects, engineers, sociologists, lawyers, economists and geographers under Legal Registration No. 2160, August 1994 by the Ministry of Justice.

### Strategic Goals

1. Encourage the production and the use of local materials and appropriate technologies.
2. Carry out local demonstrative and replicable designs of habitat.
3. Promote the advisory and the integral training of habitat participants (professionals, technicians, labourers and population).
4. Develop strategic processes and alliances that encourage the co-operation and participation of the State, local governments, civil organisations and population that are involved in the solution of the problems of habitat.
5. Develop methodologies and participative technical designs.
6. Promote research concerning to the habitat.
7. Cooperate in State housing and habitat policies and management.
8. Promote concepts, methods and experiences conducted for the achievement of a sustainable habitat.

### Finances

Habitat-Cuba is a self-financed organisation. It achieves its sustainability in local currency by means of the workshops and seminars and the services of the Information Centre, and in hard currency (Dollars) by means of donations, bilateral and multilateral projects of co-operation financed by other States, Intergovern-

mental Institutions, NGO's and Financial Institutions or Private Capital for demonstration projects.

### Domestic and international relations

At the domestic level the Society keeps close relations with Governmental Institutions and Non Governmental Organisations and Bodies, whose work is related to habitat.

Governmental relationship: Ministry of Co-operation and Foreign Investment; Ministry of Construction; Ministry of Construction Materials; Ministry of Science, Technology and Environment; Housing Institute; Physical Planning Institute; Office of the Historian of the City of Havana; Group for the Integral Development of the Capitol and the four Architecture Schools of the country.

Non Governmental relations: National Union of Construction Architects and Engineers of Cuba; Martin Luther King, Jr. Memorial Center; CUBASOLAR; CARITAS-CUBA and the Information and Inter-American Relationship Studies Center.

At the international level the relations are focused on the following financial agencies:

Misereor, EZE, Pan Para el Mundo, Monimbo-Interred and the Heinrich Böll Foundation (Germany); GVOM (Switzerland); Movimiento Laici a America Latina and Centro Mondialità Sviluppo Reciproco (Italy); CIMADE (France); ASTM (Luxembourg); APN (Norway); United Methodist Church (USA); Atelier and Cooperaccio' (Spain) and OXFAM Family (Canada, Belgium and United Kingdom). Other Research Institutions such as: CRATerre-EAG (France); IREC (Switzerland) and LCHS (Sweden). We also have relations with institutions that have similar support and advisory programs at a regional and global level, such as "Centro Cooperativo Uruguayo".

Habitat-Cuba is member of: Habitat International Coalition (HIC) and we represent Cuba as the Initiative Center in the Woman and Habitat Program (UNCHS); we are also part of the National Network "Viviendo y Construyendo" (Red XIV.B-CYTED).

Habitat-Cuba was part of the Training and Strengthening Program for Non Governmental Organizations (FICONG) and will now continue as the Strengthening of Alliances (FORTAL).

### Information about the Republic of Cuba

The Republic of Cuba is an archipelago consisting of the Island of Cuba, The Isle of Youth and around 4 195 smaller cays and islets. It has total land area of 110 922 square kilometers and its located at the entrance to the Gulf of Mexico, in the Caribbean Sea.

The island of Cuba is 210 kilometers across at its widest point, from Practices point to Mota Port, and 32 kilometers wide at its narrowest point, from Mariel to Majana; its average width is 100 kilometers. It is 1 200 kilometers long from Maisi Point to San Antonio Cape, with a coastline 5 746 kilometers long.

The climate is moderate sub tropical. There are only two clearly defined seasons in Cuba: the dry season, from November to April, and the rainy season from May to October.

For political and administrative purposes, Cuba is divided into 14 provinces and special municipality. Cuba's population is 10.94 million. The provinces that are more populated are the following:

City of Havana (Capital of the Republic)	2 175 995
Holguin	1 012 220
Santiago de Cuba	1 017 948

Spanish is the official language and the Peso is the monetary unit.

The basis of Cuban Economy is sugarcane and the sugarcane industry. Other important products are tobacco, citrus fruit, and coffee. Plus other like: Nickel, rum, honey, cocoa, as well as refractory chrome, manganese, asphaltite, marble, cement, sisal and its by-products, rayon, leather and hides. The pharmaceutical and biotechnology industry has developed greatly. Tourism is booming and its growth represents an important source of hard currency earning.

## Habitat-Cuba in the Last Year

1998 year was characterised by constant growing of the level of activities, new projects were approved and new relationships of work were established. At the same time, Habitat-Cuba took important decisions about the Program the Architect of Community, which in July, passed to be attended by Housing Institute and Habitat-Cuba remained responsible only for the training of belonging professionals.

### The Architect of the Community Program

This program was the central axis of the Society's work, designed to give technical and specialised services to the people in the housing field, and it also had the important role of the implementation to the rest of the programs and in fact, it was the fundamental economic support in national currency of Habitat-Cuba as NGO.

The Architect of Community was structured in provincial groups with total autonomy; the Society methodologically controlled those groups. Each of those provincial groups adopted a structure according to its provincial characteristics.

The Architect of the Community functioning is based in a participatory designing method in allowance with its strategy. The program was created to offer technical services to the self – help housing construction sector.

When the role of Society was defined respect to this Program, the concepts of formation and technical assistance take a more important role. Therefore, the main mission is: To contribute to the solution of the Cuban habitat, promoting alternative, sustainable and participatory actions, holding an equity criteria through demonstrative practices and the development of research, training, documentation, communication and technical advisory.

The development aims were established in three levels:

- 1) Maximum priority to:
  - Habitat's problem of town planning scale,
  - Economic analysis of construction efficiency,

- Progressive approach of the solutions of the habitat,
- Architectural and town planning designs improvement,
- Alternative management in the habitat production,
- Architectural and town planning patterns suitable to rural areas.

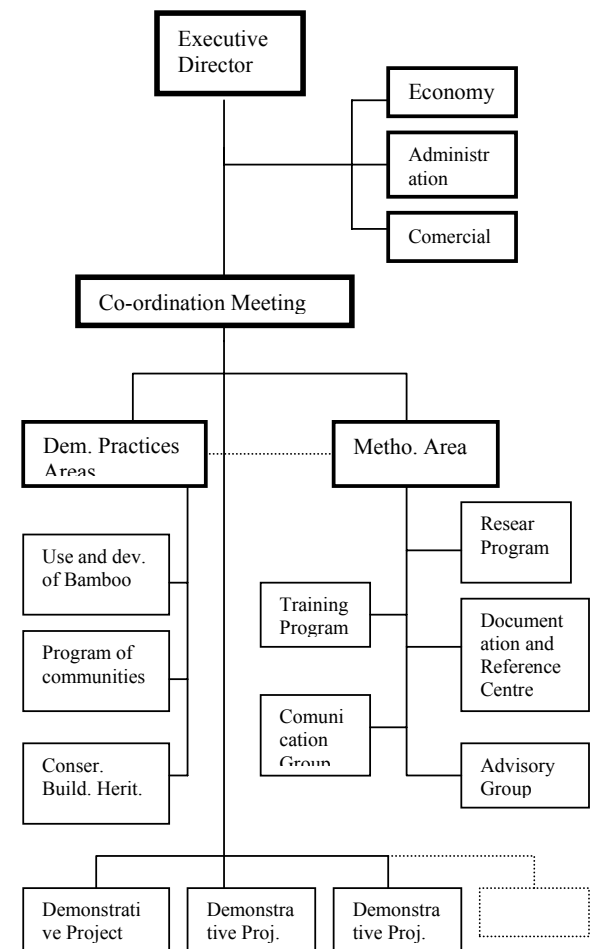
2) Extend the relations and improve the:

- Participation of the population,
- Appropriate environmental solutions in the projects,
- Rehabilitation and conservation problems.

3) Maintain:

- The use of local materials and appropriate technologies,
- The training of professionals, technicians and labour force.

## The Framework of the Society



Within this framework in all projects, the following goals are considered: Appropriate technology both for construction and the use of renewable energy; water

supply and water residual treatments; test on new forms on the production management for the habitat and the participation of the people. In the construction actions, such as the development of soil as a building material have a very important role.

## Demonstrative Practices Areas

This area has three programs:

- 1) Program for the use and development of Bamboo.
- 2) Program of Communities.
- 3) Program of Conservation of Building Heritage.

### Development Aims for each program

#### 1. The use and Development of Bamboo:

- Creation of a national source for obtaining high quality of timber.
- Generating new employment both in the agriculture and in the industry.
- The development of its use as structural elements (floors, walls and roof among others) and as a material for making doors, window, furniture, etc.
- Contribute to the protection of the environment.

#### 2. Program of Communities:

The program of communities was established by promoting the knowledge and application of the sustainable principles in the design and building of urban and rural communities, for this reason, it has two lines of development:

- Eliminate precariousness and unhealthy conditions in the existent slums.
- Build new communities.

Both under the base of ample process of integrity, of the participant and multipartite, where all actors join in the search for local solutions for the problems and the needs. The program, in its general conception, proposes to integrate the appropriate solutions to the natural potentialities, social and economics of each community:

- Develop processes of participation in urban and architectonic design the principles of bioclimatic architecture will be applied.
- Use of renewable energies.
- Develop the local production of basic construction materials.
- Apply the organic agriculture and contribute to development of local management.

These are addressing to the conservation of the ecosystem, taking in mind not only the current conditions but also the needs of future generations.

#### 3. Program for the Conservation the Building Heritage.

We are aware that conservation is the unique viable strategy to avoid the disappearance of our building heritage. Habitat-Cuba tries to rescue a heritage model in the physical urban tissue. For this reason, the program consisting in the defence of Cuban building patrimony, such as architectonic, as well as urbanistic, was not only declared Cultural Patrimony of Humanity, but also the valuable existence in the Cuban cities.

The concept of conservation is more ample, in this program, from the rehabilitation and conservation actions until to the total elimination of the slums and including the concept to harmonica reconstruction, of the urban plot.

## Methodological Area

This area, is methodological support to the development of the demonstrative practices as well as:

Systematise and promote the results by means of:

- Research programs.
- Training programs.
- The documentation and reference Centre.
- Communication Group.
- Advisory Group (Soil and the Other technologies, Bioclimatic Design, Legal, Urban and Rural Sociology, and the others)

### Research Programs

The investigation work starts with the beginning of a new project organisation. This program orientated to the urgent process of strategic planning.

In this moment, this program develops three research projects, in three Latin American cities, the first about the urban environment and social differences in Latin America, and the other about the bamboo reproduction by biotechnological ways and the last about the methodological process by participative urban design, the former will be reported to the Henrich Böll Foundation of Germany.

### Training Program

This program is responsible of training the Architects of Community in the participative methods of design used by Habitat-Cuba, moreover it is answered by training services, according to the pedagogic modules, which have been, in those themes that are not included by the Cuban universities, such as the use of soil as construction material, the use and development of bamboo, urban participative design, Bioclimatic design, etc.

### Documentation and Reference Centre

Now, this centre has more than 1 000 documents and further more important documents about appropriate technologies, in soil, bamboo, gender and habitat. International housing laws and it also gives its services to the professional and student institutions of the Cuban University.

### Advisory Group

This group is formed by high level specialists, which work horizontally to Demonstrative projects in execution, besides gives its services to Institutions and Organisms, as mean its of financial sustainability.

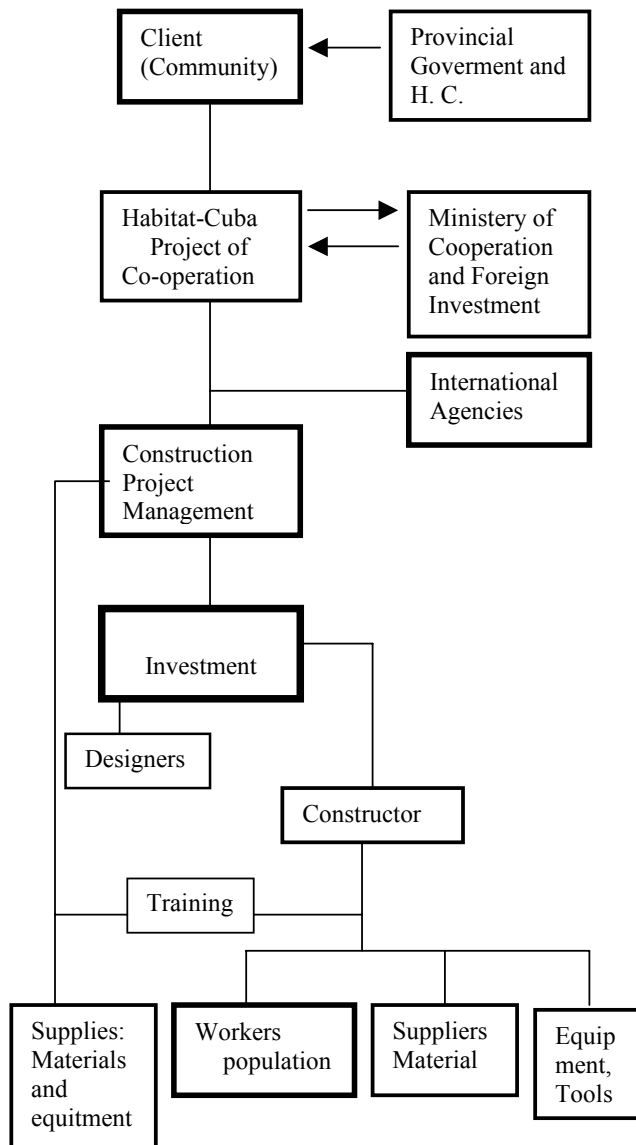
### Communication Group

This group has the function to strengthen Habitat-Cuba, by means of sensibilizing to the Institutions, to government organs, to organisations and the people about the

work that Habitat-Cuba is doing in its different way action.

## Construction Process of the Society

### Organization Plan for the Development and Construction Process



The construction process of Habitat-Cuba for developing Demonstrative Practices (use of Bamboo, Communities, and Conservation of Building Heritage) has two levels:

1. Design Stage: Formulation of Co-operation Project.
2. Production Stage: Execution of the Project.

### Design Stage

At this level, The Local Habitat-Cuba Offices realises an analysis about housing needs in those places of the province where it is possible to follow strategic goals of the Society, this places are sites where, because of actual economic conditions, the state has not enough necessary resources for realising none construction action. We are referring to settlements or buildings where the quality of living of the population is very low; even it might be formed for settlements with high criminal indices.

When the site is chosen, the Local Office Habitat-Cuba proposes to the provincial government its intentions. Generally, authorities give us governmental and politic support by means of the co-ordination with the others governmental organisations, such as the Housing Provincial Direction and with the possible constructor.

In this moment, the different organisations sign Letters of Acceptance with Society, they sign the accordance to add to the next year's plan, for example, in the construction government scheme the amount of houses that will be build by the project. This document is very important. That way the state allocates all resources to build houses as Local (National) Contribution, and in accordance to build a new community.

Mean while, Society seeks with the international agencies the necessary financing co-operation which will cover:

- Those materials resources, that are difficult to get in national currency (Cement and materials for finishing works).
- Equipment (machinery for producing soil blocks).
- Tools.
- Training expenses.
- Protection and hygiene expenses.
- Fuel oil, gasoline by transport and some necessary spare parts.

The rest of the production cost of a house is formed as called Local Contribution such as:

- Main materials for foundation wall and roof.
- Equipment (transport, excavators, etc)
- Salary of professional skilled workers and workers of community.
- And others direct and indirect costs.

For seeking necessary finance, Habitat-Cuba presents a co- operation project to the International Agencies, which has the following contents:

1. Names, Address, Time of foundation, and the others important information about the Society.
2. Presentation and abstract of project:
  - Duration: Date of the beginning of the works, date of ending.
  - Preliminary Budget (all materials, labours, transport, fuel oil, etc). It includes External and local contributions.
  - Brief description of the project.
3. Background, context and justification.
4. Objectives and waiting upshots:
  - General objective.
  - Specific objectives.
  - Expected Upshots and goals.

5. Indicators checking, by observance of the Objectives:
  - Verification.
6. Activities:
  - Preparing Stage.
  - Planning and project.
  - Construction stage.
  - Evaluation and check.
  - Time scheduling.
7. Preliminary budget:
  - National contribution.
  - External contribution.
8. Actors, Beneficiaries.
  - Architects of Community Groups.
  - Municipal Government.
  - Municipal Housing Direction.
  - Constructors.
9. Study of viability:
  - Engagements and settlements.
  - Social sustainability.
  - Actor's position.

These contents could be changed according to the international agency.

In this stage, the Social Work begins, and the sociologist realises interviews to each family for the knowledge of individual social problems and by finding the possible leader, for the future participative construction works. It is very important to have a real leader of the community, because through him many social and economic problems will be solved along the development of works. The leader should be a common person but has enough authority among the other persons of the community. Through the leader we can organise the communities labour force, draw up the settlements with the investor or with the constructor, and we can introduce and organise gender awareness in housing. At the beginning, there is some rebuff to this idea, but at the end everybody accepts it, and women have shown that they have the same ability for the realisation of some handworks.

Finishing the co operation project, it is necessary to report it to the Ministry of Co operation and Foreign Investment by its approve for The Minister, this is the more high warranty by its execution.

## Conclusions

The Society, in general terms, should work in establishing of alliances with Institutions, Ministries, local Governments and Communities, to get the aims of the plurality of actors as warranty of the success of its programs and projects. These successes get replicability and diffusion as a way to solve the big problem of the habitat in the country. For these reasons, should address its work to:

- Stimulate and diffusion the use of appropriate materials and technologies, giving priority to development and use of soils and the bamboo.
- Conservation of the Building Heritage like priority line of work.
- Begin the development of researches for promoting the sustainable habitat and its participant

transformation through collaboration with National and International Scientist Institutions.

- Insure to elevate the technical capacitating, of the professionals specially, those are with the Architect of the Community Program.
- Finished the automatization of the Documentation and Reference Centre, and insure an educated technical infrastructure to improve the diffusion worthwhile information contained in it.
- Design a strategy of communication about of the conceptions, methods and experiences of the sustainable habitat and insure its initial equipment necessary to get a sustainable work of divulgation and sensibilization.
- Warrantee by getting an efficient and clarity administration of the means and resources, improving the economic controls and book - keeper of Society.

## Construction Stage

From moment that the external finance has been obtained by determining an international agency, just beginning the managing process by Habitat-Cuba.

At first, we confirm the selection of the constructor, through the Investment – Contractor, Municipal Housing Direction, this last one, it is unique organisation which is allowed realise investments in the country and with who Habitat-Cuba establishes settlement like this:

### SETTLEMENT of INVESTMENT

#### From one

**part:**....., in his character of President of Habitat-Cuba, Society for Housing and Urbanism, accorded the agreement No..... at 199.... of The General Meeting of Partners, with residence at 7ma street No. 701 at corner with 41 Ave., Playa Havana City that the following will be called **SOCIETY**.

#### From the other

**part:**....., in his character of Director of Provincial Investment United of Housing of Havana City, according to nominate No. .... signed by Minister of Construction and that following will be called **INVESTOR**.

Both parts, admitting the personality and representation with they assist at this act and approve of signing this Settlement regarding to Project of Co- operation named

.....at the following terms and conditions:

**First:** the **INVESTOR** will include into Houses Planning at 199...., the amount of ..... pesos for guaranteeing the beginning of construction works for ..... houses that correspond to this Project and include into Houses Planning at next year the amount of .....pesos.

Besides, the **INVESTOR** guarantees that the allowance of the construction materials will be unlike, in his planning, to those assigned to the population.

**Second:** The **INVESTOR** will pay for the technical documents needed for the project. The initial information and the formulation of the Project of the Co - operation will be paid to the **SOCIETY**, and the previous project, the technical work project and the author control will be paid to the Provincial Group of Architects of the Community of Havana City as Project Organization.

**Third:** The **INVESTOR** will revise together **SOCIETY** and the **CONSTRUCTOR** the technical work project for guaranteeing the quality and to complete the technical information within time limits according to the project organization before paying.

**Fourth:** The **INVESTOR** accords with the Architecture and Urbanism Direction will give the Permission of Construction and the other necessary regulations by beginning the construction works.

**Fifth:** The **INVESTOR** joins the **SOCIETY** and the **CONSTRUCTOR**, will manage the construction works.

**Sixth:** The **INVESTOR** joins the **SOCIETY** carry out the technical control of works.

**Seventh:** The **INVESTOR** will revise joins the **SOCIETY** and the **CONSTRUCTOR** the time scheduling.

**Eighth:** The **INVESTOR** joins the **SOCIETY** will be receptionist of the ending houses and seek the Certificate of Habitable.

**Ninth:** The **INVESTOR** will choose the appropriate constructor for doing all construction works.

**Tenth:** The **SOCIETY** will guarantee the ending in according time at the technical documentation and with necessary quality.

**Eleventh:** The **SOCIETY** will manage approved building without financing for this project of co-operation.

**Twelfth:** The **SOCIETY** will realize the author control during the construction works.

**Thirteenth:** This **SETTLEMENT** will continue during the period the work lasts.

**Fourteenth:** The disagreements and no compliments to any this articles will be solved, at first, friendly among the parts, and if it is not possible it will be submitted to The Economic Law Provincial Court of City.

In Havana City,.....99....,  
In 3 signers copy.

.....

	Society Habitat-Cuba
Investor	

Through the Investment Contractor, Habitat-Cuba selects, among the others projects enterprises, the group of The Architects of Communities due that this group applies a participatory technical design, in which, each family member takes participation in the design of its own house. This new method realises several interviews to each member of the family in order to understand its living habitat, preferences and style of living. After several interviews, the architect is ready to design the house, according to the desires, needs and economic possibilities of a determined family. The prices of the project are very cheap, and the payment is by stages.

During the final design of the house, the designer decides which materials may be use, this depend mainly from state supply of materials which generally is poor due the economic national situation. This is an important reason to develop other construction materials like the soil.

The soil is an abundant construction material, it is close to us, need no transportation and do not awful the ecosystem. With the soil, in Cuba, Habitat-Cuba has built many houses with low cost and good technical function and a good external expression.

With the constructor, Habitat-Cuba signs the other settlements by warranting the correct use of resources to him given by the state or by Habitat-Cuba.

Every day, according to the common interests, with the investor, Habitat-Cuba must sign the daily production forms for paying the completed work to the constructor. The constructor must give employment to the inside project beneficiaries, which will have the same rights as the others workers, the constructor will work joining Habitat-Cuba to the training of the unskilful force of community and owner forces.

The constructor has to calculate the final budget for this; it must use The Price System of Construction PRECONS. The Price System of Construction defines and regulates the methods of conformation of the prices or values in the construction. It establishes the contents and the forms of doing and presentation of Budgets of construction services. The PRECONS is completed by undersystem or prices - lists and documents with has written following:

Undersystem or Price - list of Varied Line.

Price - list of construction materials (Included PRECONS edition)

Rate - lists of timetable (Schedule) of hand labor.

Time - costs list of using construction equipment.

Undersystem or price - list Tech - Economic Indicators.

Undersystem or price - list of Generic Units and Predefine Tasks

Budget - Standards for calculating the Variation Line.

All documentation of PRECONS represents the necessary information for its application in the new tasks, such as in the rehabilitation and the building maintenance.

Calculation of Budget of the Construction Services

The budget will be at the determined period of time.

Once the contract is signed, the agreed budget turns into the value of construction services for the corresponding task.

The budget may be calculated by designers, customers and / or builders, using Variation Line or other sub-systems of price PRECONS according to the agreements among the Customer, the Builder and the Contractor.

The standards of prices of every Variation Line has the number of materials, hand labor and the use of construction equipment, which are the factors of production and mounting for doing an unit of measure of Variation Line, according to use of construction equipment existing in the country.

The Price of the Variation Line is formed by:

Direct Costs of material, Hand labor, Equipment use and Auxiliary Means and Small Materials.

Indirect Costs of Task and Undertaking.

Utility

Are not included in the prices of the Variation Line the following concepts:

Temporally Building.

Fare of Transportation, Banks, insurance and others.

Unexpected

Indirect Costs of Task and Undertaking are, among others the following:

- Quality Control.
- Tools, materials and others products, for example: Oxygen, Acetylene, when they were not included in the construction price.
- Expenses of production process of construction not included in Direct Costs of Materials.
- Topographical situation.
- The expenses of horizontal and vertical moving of construction materials for montage and building of equipment until 150 m of distance and 40 m of height.
- Charge and discharge of materials resources by construction and montage of equipment.
- Storage of material resources by construction and montage of equipment.
- Construction of stairs.
- Stockpile of construction equipment according to building process.
- Payments for licenses, maternity benefit and others allowing expenses.
- Expenses a protection for the worker.
- Expenses by trade and coordination for the granting of materials, including looses by transportation, payment communication.
- Expenses of technical training, and offers.
- Expenses of construction management.

The price formed by Variation Line do not include the expenses related with supply transportation, temporary building, task insurance, bank expenses and others. All these prices will be agree with client and calculated as independent budgets. (For building houses it is 3 % from the total price)

\*Temporary building (Materials storage, tools depository, bathes, and box office, kitchen, access ways and inner circulation, surrounding)

Procedure for the calculate of price of Construction by Varied Line:

<b>Composition Elements and its formulation</b>			<b>Formularization in function of the Direct Cost of materials and labor and using of equipment</b>
<b>N o</b>	<b>Denomination</b>	<b>Equivalency</b>	
C 1	Direct cost of materials		C1
C 2	Direct cost of labor		C2
C 3	Direct cost of equipment		C3
C 4	Aux. Means and materials	3% C1 + C2+C3	0.03(C1+C2+C3)
C 5	Direct cost total	C1+C2+C3+C 4	1.03(C1+C2+C3)
C 6	Indirect Costs	29% of C5	0.2987(C1+C2+C3)
C 7	Total	C5+C6	1.3287(C1+C2+C3)
C 8	Utility	20% elaboration cots	0.26574(C2+C3)
C 9	PRICE	C7+C8	1.03282(C1)+1.59444 (C2+C3)

Cost of Elaboration:

$C2+C3+0.03(C2+C3)+0.2987(C2+C3)=1.3287(C2+C3)$

This way, the project has an exact budget. The Investor and Habitat-Cuba control its performance. We should keep in mind that the Society has a determined finance called External Contribution from an International Agency and we answer for its rights administration. This quantity represents approximately 20 or 30 % from the total expenses; this depends on complexity degree of the project.

The local agencies of Habitat-Cuba realise the construction project management for this they support under Documents of Control and Management:

- The executive project.
- Time scheduling.
- Settlements, Letters of acceptance, National Contribution, Local Resources and Technical Control.
- Contract for working.
- Bank Accounts, in USD and in national currency.
- Daily production forms for paying finished works
- Engagements for using equipment and fuel.

## Conclusions

In this stage, Habitat-Cuba should work to establish new alliance and strengthen the existence with local Governments and Communities, seeking the defence of the ethics and of support to Social Cuban Project by all its partners



and workers, for this reason the Society should work in the:

- Continuation the development of practical experiences to eliminate slump and to the build new urban and rural communities.
- Realisation of a participate processes and of integration of the actors.
- Insure to elevate of technical capacitating of workers and population.
- Organisation a skill and efficient group of advisories as support to the internal programs such as national and international organisations.

## What is Habitat-Cuba doing?

Now, Habitat-Cuba is developing several projects and if we see by different work groups will be like following:

### Program of the Communities

<b>In execution</b>				
<b>Name of Community</b>	<b>Begin</b>	<b>End</b>	<b>Main Actions</b>	<b>Materials</b>
Los trenes. Prov. Holguin	1996	1999	67 houses	Soil-cement
Low cost housing Sta. Cruz. Havana	1998	2000	50 houses	Soil - cement blocks
Rosa, School – workshop. Granma	1998	2000	15 houses	Soils technologies.
<b>Financed</b>				
Rural community Las Marias. Holg.	1999	2001	30 houses, consumption self familiar	Soil cement blocks.
Nuevo horizonte. Integral transformation of lump.	1999	2000	Urban remodelling	
<b>In transaction</b>				
Nuevo horiz. 2 stage. Havana	-	-	46 houses	Concrete - blocks
Tunas de Zaza. Fish community.	-	-	Rehabilitation 250 houses, recovery urban network	Traditional
Micro V, granma	-	-	30 houses	Soil – cement.
Rosa. 2 stage. Granma	-	-	80 houses	Soils technology
<b>Seeking external finances</b>				
8 projects	-	-	516 new rehabilitation of 64 houses. And urban reconstruction in 3 commun.	Soil technologies, and traditional

This table is showing that in the next years, Habitat-Cuba has the possibility to improve the condition of living of

the poor people in 15 communities, in the same way to say: to improve the living of 1 148 families

### Program of the Conservation of Building Heritage

<b>In execution:</b>			
<b>Name of project</b>	<b>Begin</b>	<b>End</b>	<b>Main Actions</b>
Calzada del Cerro # 1211. 1 stage	1998	2000	Remodelation of 12 houses and the same building.
La Calera. School - workshop	1996	1998	5 houses. Soil technologies.
Finished building in Plaza de la Revolution	January 1999	Sept 1999	15 apartment
Housing co-operative	1999	2001	20 houses
<b>In transaction</b>			
Rehabilitation of building. Holguin	-	-	23 houses
Rehabilitation of building. Nueva Gerona	-	-	17 houses
Rehabilitation of building. Granma	-	-	12 houses
Rehabilitation of education centre, Ciudad Havana	-	-	4 childrens gardens 2 schools

And seeking external finances: Substitute 3 250 earth flats in urban zones in the Province of Granma by others of better conditions; Rehabilitation of 274 houses in three different provinces, rehabilitation 16 Social buildings; rehabilitation of a workshop of construction of materials; a Culture Home.

## Property Management

### Life cycle economy

In Cuba are established all standards by building with enough quality. Considering that Cuba is an Island and it geographically is situated in an active cyclone zone is very often that the houses damage as consequence of the powerful winds and intense rains, we can see it in the lost of roof or fall of the walls, even in houses in good condition of conservation.

The state expends a lot of quantity of resources for this reason; it has a reserve stock by using in these cases. Since beginning actual economic crisis, for many reasons, including lack human responsibility, there has been lot of difficulties with the low-income housing. The result has been houses with problems in a short term of years, and theirs repairmen cycle is in short term for maintenance is a high cost.

In the Habitat-Cuba's houses the same user, trained in the technology with was builder his house, is the responsible to maintenance.

### Maintenance Planning

The general situation, in these terms, is quite complicated. There is a total absence of housing maintenance plan. The

Habitat-Cuba has prepared as called Maintenance Modules and when the houses are finished we deliver its to the users, in this modules we explain all factors to take in mind during the maintenance. We explain about the minimum periods of the running and general maintenance.

### Conclusions

In our country is a need of action maintenance planning in order to solve the serious housing problems. If the economic crisis keep on, this situation will be worse and the state doesn't has enough resources to face it. Now the state is making inconspicuous plans to try to solve this problem. In the General Housing Law is written to organise to the neighbours in as called Councils, with aim to make minimum maintenance to the common areas of building, it is necessary to complete this process. Habitat-Cuba should include in its strategic plan and to develop a maintenance program, at least, for these houses had finished under its management.

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