



Grupo Sofonias

SKAT

SKAT/RAS CASE STUDY SERIES

DOSSIER: SOCIAL HOUSING SH1, 1998



Housing Development Villa Hermosa in Diriamba, Nicaragua

PROJECT INFORMATION



Cover page:

The „seed house“ design allows attractive additions and variations.

Above:

Every family adds its finishing touch.

The country

Nicaragua is one of the five countries of Central America, located in the tropical area of the Northern Hemisphere, the climate of its southern area being hot-humid. The country has some 130,000 km² with a population of about 4,5 million. Diriamba is a small town 40 kms south of Nicaragua's Capital Managua. Its great advantage is the climate. Located on a hill in the midst of coffee farms, it is much cooler than stuffy hot Managua and, therefore, an attractive place to

Self help project

live, in spite of its rather rural setting. Grupo Sofonias, an international NGO working out of neighbouring Jinotepe, has a 20-year history of assisting the local population in house construction programs, they had always been directed at the poorer segments of society and essentially were self-help projects.

In recent years, the economic situation of the middle class in Nicaragua has worsened so much that many live in a

Target group

“poor people's condition” and find it more and more difficult to maintain a “middle class status”. Especially in the housing market, young professionals do not have a chance. They neither qualify for subsidies or commercial mortgages, nor do they earn enough to rent a house. Many live in crowded conditions in their parents' home and, often, the couple has to share the bedroom with other family members. Several interest groups approached Grupo Sofonias to start a

Extinction of middle class

project for the “middle class in danger of extinction”.

The German NGO “Viva Diriamba”, with cofinancing from the European Union, approved a first stage and the “Swiss Development Cooperation” a second one, to build a total of 34 houses. The commercial branch of Grupo Sofonias, “EcoTec S.A.” (its profits are used for social programs) has purchased land and contracted a team of consultants of the EcoSouth Network to plan the project.



Above:
The roofs are covered
with Micro Concrete Tiles

Right:
Houses under construction

BUILDING CONSTRUCTION



Building material

Economy and Ecology

Seed house principle

The decisive parameters for the planning were "Economy and Ecology", while creating an attractive neighbourhood with an architectural touch of its own. Based upon detailed information on Nicaraguan lifestyles, habits and dreams, and, of course, with all available technical information, the Cuban team elaborated a simple but innovative proposal. The

precarious situation of water supplies, the lack of sewage systems and the need to install an electricity grid has led to a long, but fruitful interchange between the actors.

The houses are designed on the "seed house principle", which means that by starting from an identical centre, rooms can be placed in different directions and vary in size.

Using all possibilities of locally available materials in their pure form creates a comfortable environment and interesting architectural expressions. The rooms are high and, through innovative roof constructions, economies have been achieved while, at the same time, the thermal comfort and the visual attractiveness of the house have been improved.

Micro-concrete roofing tiles, local timber, the partial use of puzzolanic cement (which unfortunately was not available at the start of the project) and windows made of wood instead of the aluminum windows used normally in Nicaragua, are combined for economy and ecology.



This CASE STUDY SERIES, published by SKAT, is a collection on intelligent architecture and best practices of economical and energy-efficient building systems. It encompasses traditional and sociocultural aspects as well as the requirements of modern living. The CASE STUDY SERIES comprises three dossiers: Social Housing, Health Facilities and Educational Facilities.

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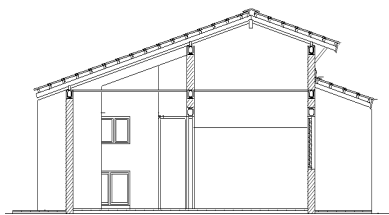
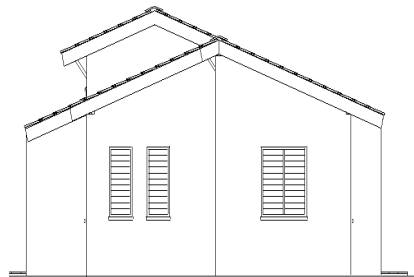
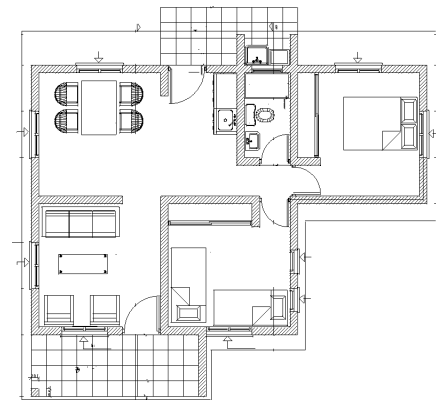
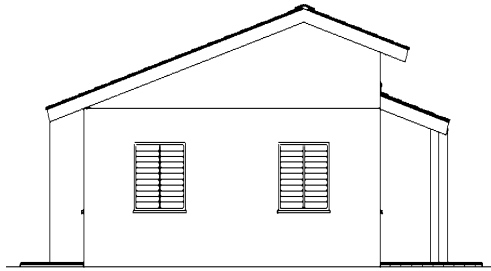
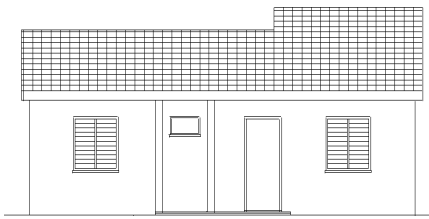
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FUNCTION	Housing Development
LOCATION	Diriamba, Nicaragua (Department of Carazo)
PROMOTER	Grupo Sofonias, Jinotepe, Nicaragua
ARCHITECTS	CIDEM, Sta. Clara, Cuba
ENGINEERS	CIDEM, Sta. Clara, Cuba
IMPLEMENTATION	EcoTec S.A., Nicaragua
YEARS OF CONSTRUCTION	1997 -



PROJECT SCOPE

Site:		Buildings:	
Coverage	12'000 m ²	Gross area	12'000 m ²
Roads	560 m ¹	No. of houses	34
Sidewalks	610 m ¹	Covered area	3'000 m ²

BUILDING COSTS

Overall project costs	US \$ 550'000.—	(urbanisation and houses)
Construction cost per m ²	US \$ 141.—	(incl. planning & administration)
External financing	US \$ 390'000.—	
Autofinancing	US \$ 160'000.—	

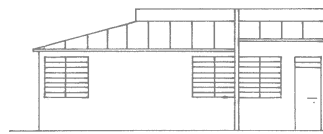
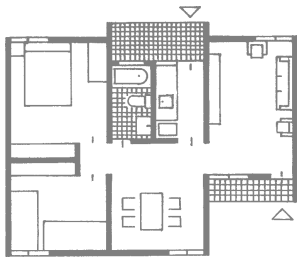
MODEL HOUSE

Evolution Phase III:
Ground Plan
Elevations
Section

FINANCING SCHEME

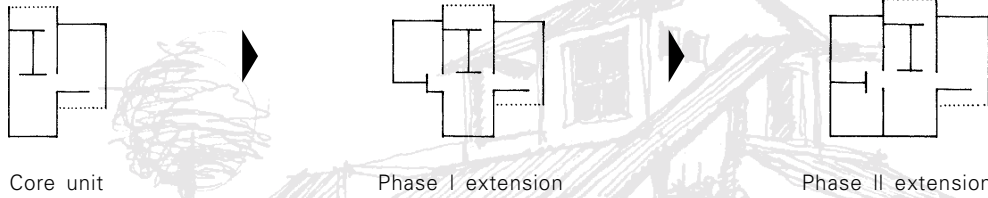
Grupo Sofonias conceived a system with sliding interest rates, benefiting the house owners who choose a faster payment schedule with a higher initial down payment. The current bank rate for preferential mortgages is 18% with repayment in 20 years. The scheme is so attractive that most people sign for a 7 year mortgage with a 33% down payment, which brings them to a favorable 9.5% interest rate.

SEED HOUSE EVOLUTION

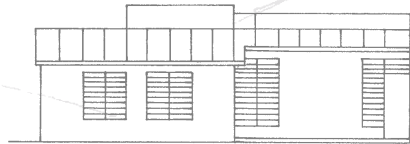
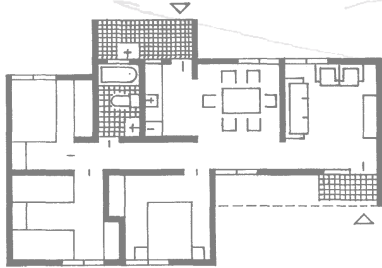


House Type 1

Plan and Elevation

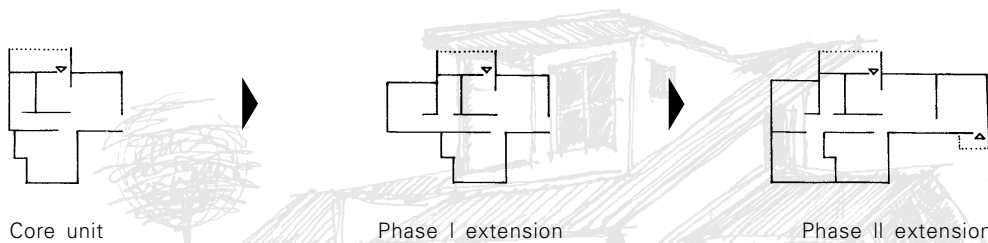


Evolution Scheme

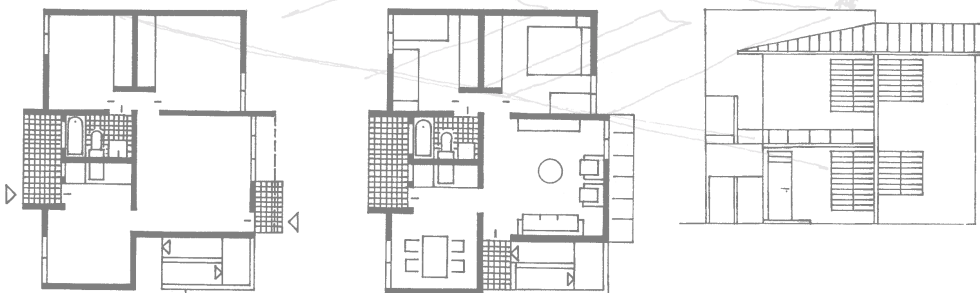


House Type 2

Plan and Elevation

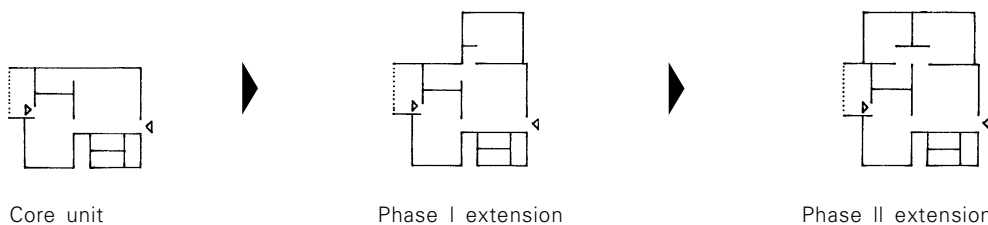


Evolution Scheme



House Type 3

Plan Ground Floor /
Plan 1st Floor
Elevation



Evolution Scheme