


## CasAHStudio

by Ariel Hidalgo / © 2013-03-06 00:00:00 / Spagna / © 10946 / ES



**Primary energy need :**

17 kWhpe/m<sup>2</sup>.year

(Calculation method : Primary energy needs )

**ENERGY CONSUMPTION**

*Economical building* *Building*

< 50	<b>A</b>
51 à 90	<b>B</b>
91 à 150	<b>C</b>
151 à 230	<b>D</b>
231 à 330	<b>E</b>
331 à 450	<b>F</b>
> 450	<b>G</b>

*Energy-intensive building*

**Building Type** : Terraced Individual housing  
**Construction Year** : 2011  
**Delivery year** : 2012  
**Address 1 - street** : Los Geranios 506 CARTAGO - COSTA RICA, Otros países  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 80 m<sup>2</sup> Other  
**Construction/refurbishment cost** : 33 000 €  
**Number of Dwelling** : 1 Dwelling  
**Cost/m<sup>2</sup>** : 412.5 €/m<sup>2</sup>

### General information

The justification of this project is based on the study of the architectural context of the Central Valley of Costa Rica. Tres Ríos is the study area comes from the coffee marketing between the City of San José and Puerto Limón This situation, generates the advent of new lifestyles and new ways of conceiving the Victorian-influenced architecture, which is adapted to the socio-cultural and economic conditions, at that moment. For other hand, We can mention, the free plan saves a relationship between social spaces, mixing house-study with transitory spaces area, the natural light and ventilation are introduce from the back yard, this project encourages constructivity concepts and self-construction, promoting a sense of belonging to users building their own space.

### Data reliability

Self-declared

### Stakeholders

### Stakeholders

Function : Designer  
Ariel Hidalgo Solano  
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<http://www.ahsarq.com>

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Function : Site manager  
Alan Barquero Muñoz  
Estructuras A.B Jeshua S.A

## Contracting method

Other methods

## Owner approach of sustainability

Environmental considerations: BioClimatic design, for the best use of solar and wind in the area, that to incorporate natural light and ventilation to the spaces. – Sloping roof to promote rainwater harvesting. – Building on stilts, this to maintain the permeability of the soil and protect against insects, in addition to reducing moisture and facilitate electromechanical maintenance. – Differential treatment of facades in the orientation function. – Provision of sun protection systems, with protection elements in front Northwest. – Low emission of CO<sub>2</sub> in relation to the transport of source materials for suppliers to work, covering a radius no more than 25km – Low consumption of water when pouring concrete in place only at the stage of foundation (piling). – Reduction of waste by designing prefabricated systems modulated elements. – Modular construction system with micro-concrete panels Habicon construction system, designed by the Center for Research in Housing and Construction (CIVCO), the Technological Institute of Costa Rica, (ITCR)

## Architectural description

We can mention, the free plan saves a relationship between social spaces, mixing house-study with transitory spaces area, the natural light and ventilation are introduce from the back yard, this project encourages constructively concepts and self-construction, promoting a sense of belonging to users building their own space.

## Energy

### Energy consumption

CEEB : 0.0002  
Primary energy need : 17,00 kWhpe/m<sup>2</sup>.year  
Primary energy need for standard building : 25,00 kWhpe/m<sup>2</sup>.year  
Calculation method : Primary energy needs

## Renewables & systems

### Systems

- Heating system :
- No heating system
- Hot water system :
- Other hot water system
- Cooling system :
- No cooling system
- Ventilation system :
- Natural ventilation
- Renewable systems :
- No renewable energy systems

## Environment

## Water management

Water Self Sufficiency Index : 0.09

Water Consumption/m<sup>2</sup> : 1.2

Water Consumption/Dwelling : 96

Consumption from water network : 96,00 m<sup>3</sup>

Consumption of harvested rainwater : 10,00 m<sup>3</sup>

## Products

### Product

Micro-concrete panels

Instituto Tecnologico Costarricense TEC

TEC

<http://www.tec.ac.cr/sitios/docencia/construccion/civco/Paginas/default.aspx>

Product category : Opere strutturali / Struttura - Involucro - Finitura

## Costs

### Construction and exploitation costs

Global cost/Dwelling : 33000

Reference global cost/Dwelling : 33000

Global cost : 33 000,00 €

Reference global cost : 33 000,00 €

### Energy bill

Real energy cost/m<sup>2</sup> : 6.25

Real energy cost/Dwelling : 500

Forecasted energy bill/year : 500,00 €

## Urban environment

Houses located in an area with sharing with another 150 residential units, playgrounds, communal area, treatment plant wastewater 1km Tres Rios, Cartago, Costa Rica. The location of the house is close to the protected area of the hills of La Carpintera, gifted community Ecological Blue Flag Program, which is why this community was selected for the project grew into it with environmental awareness initiatives.

### Land plot area

Land plot area : 140,00 m<sup>2</sup>

### Built-up area

Built-up area : 80,00 %



### Green space

Green space : 17,50

### Parking spaces

17,5 m<sup>2</sup>

Building candidate in the category



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