

Niama

by François Garde / 2016-07-07 13:25:01 / Francia / 12070 / FR

New Construction



Primary energy need :
100 kWhep/m².an
(Calculation method :)

ENERGY CONSUMPTION

<i>Economical building</i>	<i>Building</i>
< 50 A	
51 à 90 B	
91 à 150 C	
151 à 230 D	
231 à 330 E	
331 à 450 F	
> 450 G	
<i>Energy-intensive building</i>	

Building Type : Collective housing < 50m

Construction Year : 2014

Delivery year : 2014

Address 1 - street : Ravine Blanche 97410 SAINT PIERRE, LA RÉUNION, France

Climate zone : [Aw] Tropical Wet & Dry with dry winter.

Net Floor Area : 1 695 m²

Construction/refurbishment cost : 2 450 000 €

Number of Dwelling : 19 Dwelling

General information

Located in the neighbourhood of 'Ravine Blanche', in Saint-Pierre, Niama is a social housing operation that includes 19 units. The building is closed to a new urban park, both part of an urban renewal program that aims at restructuring the neighborhood and connecting it to the city center. Ravine Blanche is the only neighborhood that awarded the french 'EcoQuartier' certification in the tropics among 32 other projects in 2013. This existing neighbourhood already received in 2010 a local distinction for its innovative approach.

The building includes passive features such as cross natural ventilation and solar shading devices so as to enhance thermal comfort while reducing energy consumption.

Sustainable development approach of the project owner

Located in the neighbourhood of 'Ravine Blanche', in Saint-Pierre, 'Niama' is a new social housing operation that was completed in the end of the year 2014. Niama is compliant with the Thermal, Acoustic and Ventilation French Regulation for the overseas territories (in French: Réglementation Thermique, Acoustique et Aération or RTAA DOM). RTAADOM is applied to the design of new residential buildings only and requires mandatory rules concerning thermal, acoustic and ventilation performances. The objectives of the project were to house people at low-level income inside comfortable apartments. As a result, Niama uses many passive design strategies in order to reduce its energy consumption while maintaining satisfactory thermal comfort conditions inside the building. The building was also designed so as to be integrated within its environment.

Architectural description

Niama has been designed and built on the basis of local climate and resources, for energy (sun) and materials. Passive features such as building orientation, natural cross ventilation or the choice of construction materials such as wood, have been taken into account. Since the effects of vegetation on a site's microclimate can be considerable, the building is surrounded by native plants and trees.

In addition, the park and the building include features for the integrated management of rainwater , such as a serie of landscaped ditches and basins, the design of a path allowing the natural flow of rainwater, as well as the consideration of soil permeability and the type of covering materials.

If you had to do it again?

Each apartment has its own parking space. However, the actual rate of use is approximately of only 30%. The related area could have been used for vegetation or other common areas.

See more details about this project



http://www.smartweb.re/envirobat/files/fiches_envirobat_reunion/logements/FICHE_ENVIROBAT_REUNION_NIAMA.pdf

Stakeholders

Stakeholders

Function : Contractor

SIDR

<http://www.sidr.fr/>

Function : Designer

co-architectes

peyrebonne@co-architectes.com

Function : Other consultancy agency

<https://www.facebook.com/Int%C3%A9grale-Ing%C3%A9nierie-106799096326821/>

Structural and mechanical engineering

Energy

Energy consumption

Primary energy need : 100,00 kWh_{ep}/m².an

Primary energy need for standard building : 165,00 kWh_{ep}/m².an

Calculation method :

Envelope performance

Envelope U-Value : $0,40 \text{ W.m}^{-2}.\text{K}^{-1}$

More information :

The roof is composed of an insulated sheet metal complex "Mauka Brizz" (from ArcelorMittal) and 13mm of plasterboard.

For the solar exposed walls, the materials used from the exterior to the interior are listed below:

First floor: 18cm of concrete + 2cm of expanded polystyrene + air gap of 0,5 cm + 1,3 cm of plasterboard

Last floor: 2cm of wood + 3cm of expanded polystyrene + air gap of 10cm + 1,3 cm of plasterboard

Other floors: Insulated sheet metal complex Mauka Brizz (ArcelorMittal)+ 18cm of concrete

Each floor is composed of different materials according to the facade orientation and the sun exposure.

Renewables & systems

Systems

Heating system :

- No heating system

Hot water system :

- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Natural ventilation

Renewable systems :

- Solar Thermal

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Environment

Urban environment

Land plot area : 970,00 m²

Built-up area : 58,00 %

Green space : 407,00

NIAMA is located in Saint Pierre, in Reunion Island. This volcanic island is located in the Indian Ocean and experiences tropical climate which is marked with hot and humid weather conditions. This area is also often struck by tropical cyclones, generating building difficulties. The prevailing

winds blow from the east and south-east - the west coast being known as the leeward coast.

Niama is located next to a new urban park, that was previously an unused urban space. The new park, which was part of the process of urban tissue restructuring of the neighborhood, is a green lung for the city of Saint-Pierre. Niama has been harmoniously integrated between the vegetated area of the new park and the mineral area of the existing buildings. The East facade of the building is more mineral with light-coloured painted walls and metal cladding whereas on the urban park side, it is the wood materials that prevail. It is viewed as a "bridge" between the two areas.

Products

Product

Chance Brizz

ArcelorMittal

0590268203

<http://arcelormittal-construction-caraibes.com/index.php/nos-solutions/couverture/mauka-brizz>

Product category : Table 'c21_italy.innov_category' doesn't exist SELECT

one.innov_category AS current,two.innov_cat
oneINNER JOIN innov_category AS two
ON one.parent_id = two.idWHERE
one.state=1AND one.id = '7'

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Each floor is composed of different materials according to the facade orientation and the sun exposure.

This product was well accepted by the different stakeholders of the project.



Costs

Construction and exploitation costs

Total cost of the building : 3 219 000 €

Health and comfort

Comfort

Health & comfort : The roof is composed of an insulated sheet metal complex "Mauka Brizz" (from ArcelorMittal) and 13mm of plasterboard.

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Contest

Building candidate in the category



Energie & Climats Chauds



Coup de Coeur des Internautes

