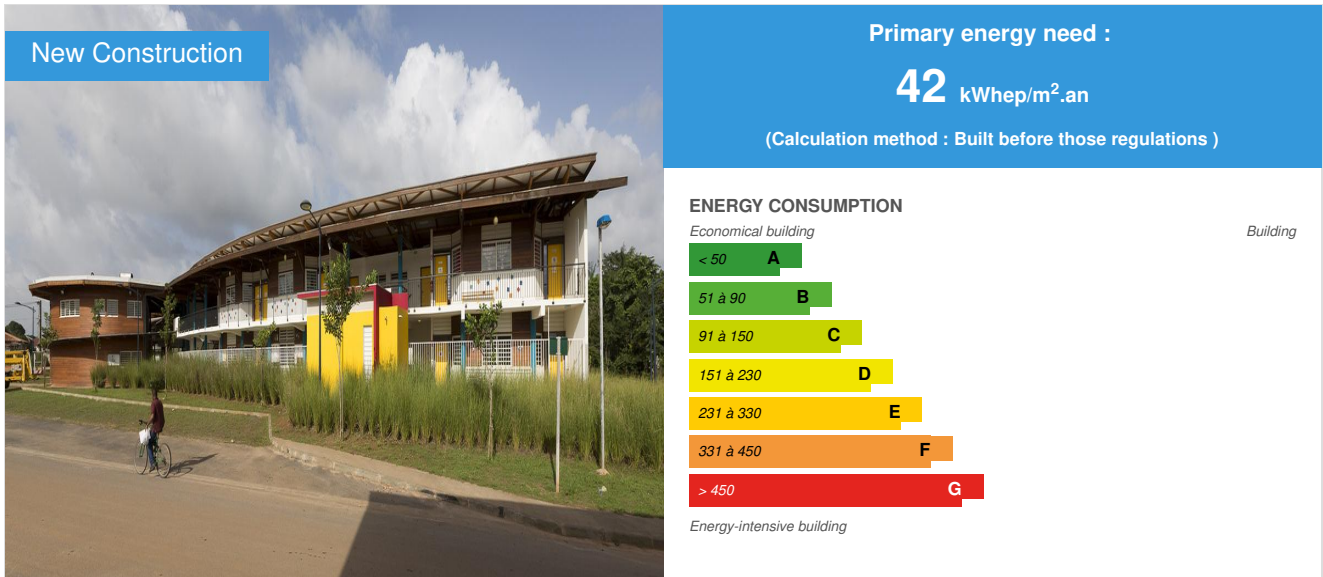


## Cogneau-Lamirande School Group

by Frédéric PUJOL / 2017-03-08 20:33:32 / France / 9569 / FR



**Building Type** : School, college, university  
**Construction Year** : 2010  
**Delivery year** : 2012  
**Address 1 - street** : 97351 MATOURY, GUYANE FRANCAISE, France  
**Climate zone** : [Af] Tropical Wet. No dry season.

**Net Floor Area** : 2 230 m<sup>2</sup>  
**Construction/refurbishment cost** : 3 200 000 €  
**Number of Pupil** : 360 Pupil  
**Cost/m<sup>2</sup>** : 1434.98 €/m<sup>2</sup>

### General information

The Cogneau-Lamirande school group comprises a nursery school and an elementary school, each of 6 classes, with the possibility of extending two additional elementary classes.

Established on a site that has already been the subject of earthworks in a previous project, the school group has been designed according to the Amazonian Environmental Quality (QEA) approach:

An installation taking into account the existing earthworks and managing the few residual embankments on site, while positioning the bodies of buildings favorably in relation to the sun and the wind;

An orientation of the latter according to their internal atmosphere and making the best use of the implantation;

A morphology of the spaces that makes the best use of the orientation to ensure their natural ventilation;

Complementary systems chosen in a logic of sobriety.

Finally, the architecture of the school group aggregates all these parameters to offer spaces extremely varied and conducive to the awakening of children accompanied by a landscaped treatment of courses and surroundings particularly generous for this type of establishment.

### Sustainable development approach of the project owner

The City council had acted in the Municipal Council to establish its public facilities in accordance with an environmental approach, in particular by respecting the QEA: Amazonian Environmental Quality standard.

## Architectural description

**IMPLEMENTATION** The establishment of the school group has several concerns: firstly, it is a matter of favoring an implantation allowing the best possible bioclimatic orientation of the buildings possible, then it exploits the existing earthworks by laying the constructions and using the voids to slide there. The preals located on the low platforms while respecting the limits of the precautionary zone of the PPRI. The necessary residual developments are managed in balanced cuttings and embankments. Finally, the curve of the main building makes it possible to remove the classes from the nuisances of the road while at the same time isolating the dwellings close to the noise generated by the recreational courts, while avoiding any opposite between rooms and thus preserving The distant and pleasant views on the natural environment. **ORIENTATION-ZONING** The orientation of the various buildings of the school group favors the reduction of the solar contributions and the evacuation of these by the natural ventilation. Thus, the classroom building is set up against the prevailing winds, while the air-conditioned buildings have their facades facing north and south and are grouped in the central part of the school and in the sheltered areas of the wind. The premises generating nuisances are located downwind of the other spaces. The exterior spaces participate fully in the composition of the whole. **MORPHOLOGY** Implementation and orientation have exploited the bioclimatic potential of the site, the morphology of the buildings makes it possible to optimize it: the classrooms are slender in order to offer the largest possible surface to the prevailing winds and a high height under Ceiling while the air-conditioned premises are compact and concentrated. These provisions favoring the east and west orientations for ventilation are compensated for by large roof overhangs, corridors protected from rain acting as protections, as well as sun protection systems designed and dimensioned according to their position and Their orientation. The different rooms are designed according to their layout so as not to interfere with the views from the classrooms. **ENVELOPE** The envelope of the building is the culmination of the approach to exploit the bioclimatic potential of the site: solar protection, openings and their layout in the façades, materials used, vegetation contribute to the project's inscription in a step Of Amazonian Environmental Quality. The porosity of the facades is greater than 30% (real porosity, ie minus the surface of joinery, mullions, etc ...), and increasing between the facade to the wind and the leeward facade. The arrangement of the openings in the façades, both in width and in height, ensures a homogeneous sweeping of each part. The sun breezes are sized to protect the bays from the occupation, with supplement for the first hours ensured by the vegetation . For the west facades, in particular the air-conditioned offices, a vertical sun protection in the form of ventilated wood cladding is installed. **SYSTEMS** To complement the architectural features deployed according to a NégaWatt approach to ensure user comfort, high-performance equipment was installed, including rainwater recovery for sanitary facilities and a solar photovoltaic system.

## Stakeholders

### Stakeholders

**Function :** Contractor  
Mairie de Matoury

**Function :** Designer  
ACAPA  
Frédéric Pujol 0694 23 81 01  
<http://www.acapa-architecture.com>

### Contracting method

Separate batches

### Type of market

Global performance contract

## Energy

### Energy consumption

**Primary energy need :** 42,00 kWhep/m<sup>2</sup>.an  
**Primary energy need for standard building :** 150,00 kWhep/m<sup>2</sup>.an  
**Calculation method :** Built before those regulations

### Envelope performance

**Envelope U-Value :** 0,10 W.m<sup>-2</sup>.K<sup>-1</sup>  
**More information :**  
UBAT is not relevant in tropical climate. We substitute an overall solar factor of about

## Renewables & systems

## Systems

### Heating system :

- No heating system

### Hot water system :

- Solar Thermal

### Cooling system :

- Fan coil

### Ventilation system :

- Natural ventilation

### Renewable systems :

- No renewable energy systems

## Environment

### Urban environment

Facilities located in the heart of an RHI, on the edge of a pri-pri with a clear view on the hills of the island of Cayenne.

## Products

### Product

Wood of Guyana

CBCI

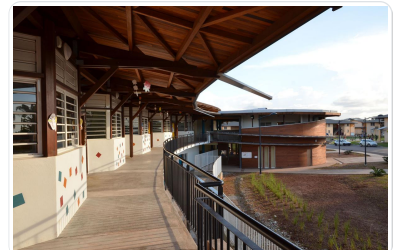
marc.righes@cpci.fr

<http://www.cpci.fr>

**Product category :** Table 'c21\_china.innov\_category' doesn't exist SELECT one.innov\_category AS current,two.innov\_category AS parentFROM innov\_category AS oneINNER JOIN innov\_category AS two ON one.parent\_id = two.idWHERE one.state=1AND one.id = '7'

Timber framing, cladding and sunshade in French Guiana.

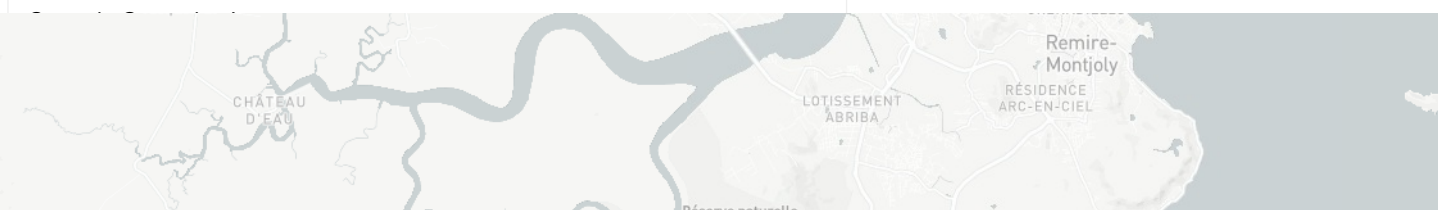
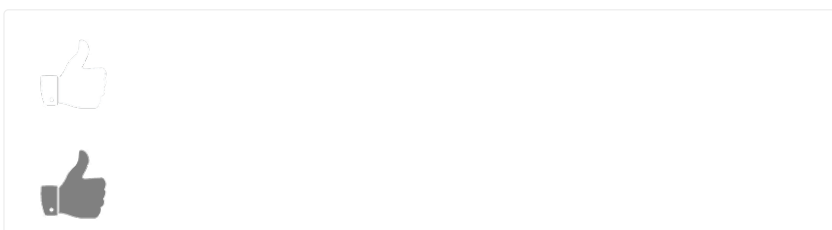
Excellent perception of wood material.



## Costs

## Contest

### Building candidate in the category





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