

Païamboué Middle School

by [Adrien BOUJU](#) / ⌚ 2016-07-01 02:13:15 / France / 👁 15537 / 🇫🇷 FR



Building Type : School, college, university

Construction Year : 2015

Delivery year : 2016

Address 1 - street : Koné, Province Nord 98860 NOUVELLE-CALÉDONIE, France

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

Net Floor Area : 3 470 m²

Construction/refurbishment cost : 15 500 000 €

Cost/m2 : 4466.86 €/m²

General information

In service since February 2016, the Païamboué middle school is located in the municipality of Kone, in the Northern Province of New Caledonia. Sized to accommodate 400 students (with a land reserve allowing quick expansion to 600 students), it consists of six buildings in educational and administrative functions, as well as a sports field. This project particularly innovative in the territory, has been the subject of a local label approach QEC (for Caledonian Environmental Quality) notably driven by ADEME and the Government of New Caledonia.

Therefore, it was built from the design of the project, strong sustainability criteria, which focus on two areas: the use of materials locally to innovative and sustainable features, and adaptation to topographical, hydraulic and pneumatic land concerned. The first axis is reflected in the use of techniques such as rammed earth concrete (subject to Atex type b with CSTB) and the timber frame, using raw materials harvested locally. The objective is to obtain a low carbon footprint and thermal quality for use while minimizing air intakes.

The second organizing implantation from buildings and side of a trough, at high points, land characterized by a trough (respect the natural terrain, storm water management, natural ventilation). A metal bridge for communication between the two "zones".

Sustainable development approach of the project owner

- Objectives: to integrate a local environmental labeling process to a structuring project for its territory and beyond, sustaining the integration of sustainability criteria in the construction of public facilities on the VKP area
- Translation in the project using an innovative material and operated locally (stabilized earth concrete) to reduce the supply channels, the carbon footprint and costs eventually work on the thermal characteristics and the maximum adaptation constructions and development of all the natural ground
- This is the first time that we push as much exercise on one of our site, also for the first province north and almost to New Caledonia, an island territory where changing practices (be it in terms cultural or economic sectors) in construction is particularly complicated
- A total success of the project, in the quality of life for the user (and 5 months of service), for the progress of the site, communication on the processes of aesthetic quality, except perhaps for the costs (prototype appearance)

Architectural description

6 buildings (3 wood frame, 3 concrete stabilized earth) located on two high points of a land in the basin, with conservation of the vegetated central trough for stormwater management.

Selection guidelines for optimal natural ventilation. Earth exploited locally, worked on site, wood from cut situated in a radius of 50 km, sawing and local treatments.

Building users opinion

Comfort, especially in a school setting (heat and sound), natural setting, few artificialities soil, point of vigilance on stormwater management (even with precautions, build around a trough always has some risk)

If you had to do it again?

We have already integrated the concrete ground stabilized in our subsequent projects. The aim is to mount a real alternative sector, medium or long term course. This remains a confidential process, even on the scale e New Caledonia.

See more details about this project

<http://terra-award.org/project/college-paiamboue/>

Stakeholders

Stakeholders

Function : Contractor representative

SAEML Grand Projet VKP

Ange Marie BENOIT, Directeur Général, am.benoit@semvvp.nc, + 687 47 58 04

Contracting method

General Contractor

Type of market

Realization

Energy

Energy consumption

Primary energy need : 30,00 kWh_{ep}/m².an

Primary energy need for standard building : 50,00 kWh_{ep}/m².an

Calculation method : Other

Envelope performance

Envelope U-Value : 1,00 W.m⁻².K⁻¹

Renewables & systems

Systems

Heating system :

- No heating system

Hot water system :

- Heat pump
- Solar Thermal

Cooling system :

- Roof-top

Ventilation system :

- Natural ventilation

Renewable systems :

- Solar Thermal
- Heat pump

Environment

Urban environment

A suburban area in strong development, predominance of housing and public facilities, with

an axis of structuring circulation, lack of overall planning strategy, future urban area still characterized by large natural spaces.

Products

Product

Stabilized earth concrete

ALTERNATIVE CONSTRUCTIONS

Clovis MUTIN

<http://www.alternativeconstructions.com>

Product category : Structural work /
Structure - Masonry - Facade

soil mix riddled, cement and water, and stabilized rammed manual compressor, implemented between two form panels with a thickness of 40 cm and successive layers of 60 cm in height



First time in new caledonia, Atex type B on this project

Costs

Contest

Reasons for participating in the competition(s)

Le contexte local : territoire insulaire de l'océan pacifique, climat de type tropical, isolement du site par rapport à la capitale Nouméa (contrainte dans l'acheminement de matériaux et de leur coût). A partir de ce constat, le projet présente les points forts suivants :- utilisation de matériaux écologiques et innovants localement : béton de terre banché (utilisation de terre extraite "sur place", affranchissement de la filière béton traditionnelle, caractéristiques thermiques notoires) et ossatures bois (murs et résilles brises soleil),- réflexion poussée sur l'isolation des bâtiments et la ventilation naturelle par rapport au climat (réduction maximale

de la présence des climatiseur et donc de la consommation électrique), - respect maximal de la topographie naturelle du terrain en forme de talweg, notamment pour une gestion des eaux pluviales efficace et une orientation optimale par rapport aux vents dominants : construction des bâtiments sur les deux points hauts du terrain en forme de cuvette et conservation en l'état du talweg central, végétalisé à l'origine. Minimisation des déblais/remblais.

Building candidate in the category



Energie & Climats Chauds



Coup de Coeur des Internautes

