


## SMED 13 New headquarters

by William Martin / © 2016-06-24 15:27:43 / France / © 10169 / FR

New Construction



Primary energy need :

### 39.1 kWhep/m<sup>2</sup>.an

(Calculation method : RT 2012 )

**ENERGY CONSUMPTION**

*Economical building* *Building*

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

*Energy-intensive building*

**Building Type** : Office building < 28m  
**Construction Year** : 2015  
**Delivery year** : 2015  
**Address 1 - street** : 1 Avenue Marco Polo 13141 MIRAMAS, France  
**Climate zone** : [Csa] Interior Mediterranean - Mild with dry, hot summer.

**Net Floor Area** : 1 239 m<sup>2</sup> SHON RT  
**Construction/refurbishment cost** : 2 540 000 €  
**Cost/m2** : 2050.04 €/m<sup>2</sup>

**Certifications :**



### General informations

The SMED13 has built its headquarters in the town of Miramas. This is an office building with a floor space of 1,100 m<sup>2</sup> to house SMED13 employees and delegates.

Located on the plaine du Crau, the land with a surface of 2520 m<sup>2</sup>, straddles the municipalities of Miramas and Grans. It is part of the Clé Ouest ZAC, managed by the EPAD Ouest Provence

The land doesn't have neither tree nor construction.

The building was built in the south field, in the town of Miramas, in seismic zone 3. This move preserves much of the undeveloped land.

## Sustainable development approach of the project owner

Performance and image variety of possible: Reduced requirements, high performance envelope, significant solar gain, low temperature emissions, PAC water / water cooling on water, photovoltaic, solar thermal, wind, CNG station, taking electric vehicles.

## Architectural description

On the site of intervention:

Location marked by a row of majestic plane trees, a riparian forest that accompanies the main channel draining the property, the court of Mas des Molières, remarkable for its scale and quietude, a field, always green, where the project is implanted.

These elements, which, on their own, constitute the site, are essential. And even they are sufficient. It is therefore appropriate to identify the invasive scrub, to clean them, to strengthen them, to develop them by eliminating anything that might lead to a strong reading of this landscape. It should also make them live together again. This is the meaning of the interventions that we suggest in the site plan, including opening the field to the Court, linking areas, releasing the views.

Concerning the context and implementation on the ground:

In this context, our project restricts its footprint and frees the land. By frugality to save the land, in advance, to clear the possibility of a further extension, but above all to leave this field that is the place, its leadership and integrity. A parking lane and pedestrian walkway, clearly stop the boundary between rural and urban. The field of green grass is free. But it is not accessible.

The project dovetails with this divide, delicately placed on the ground, reducing any impact on the field, floating like a great ship docked, propped against plane alignment.

Concerning the question of the image:

After insertion into the site, the project must meet the needs of SMED 13 in terms of image. A new institution, which manages, with access to energy issues of importance to our common future, and that claims of this some visibility, identity, and affirmation of a presence in a place that is yet to create. Our team has worked hard to ensure this exceptional building energy performance that can create, by example, the legitimacy of SMED. In fact, it is the volume of the project, the expression of its facades, the texture of their skin, which express the strength, the energy, the dynamism in this institution. Pulsed power in the idea of the Earth as energy issues are implicit in them.

## See more details about this project

[http://www.leoffdd.fr/fichiersprojets/constructiondesnouveauxlocauxdusmed13-OFFduDD\\_AK\\_SMED13.pdf.pdf](http://www.leoffdd.fr/fichiersprojets/constructiondesnouveauxlocauxdusmed13-OFFduDD_AK_SMED13.pdf.pdf)

## Stakeholders

### Contractor

Name : SMED 13

Contact : J. SAUTEL Président

### Construction Manager

Name : ATELIER DE LA RUE KLEBER (13)

Contact : Valérie Décot & Jean-Luc Rolland

<http://www.atelierdelaruekleber.com/index.php?page=jean-luc-rolland>

### Stakeholders

Function : Environmental consultancy

Function : Others

Function : Thermal consultancy agency

SOL.A.I.R

L. MONTELLAZ

<http://www.sol-air.ch/>

fluids, thermal engineering, environmental and bio climate, acoustics

Function : Assistance to the Contracting Authority

IQE CONCEPT

W. MARTIN

CATEGORY

Function : Structures calculist

BET André Verdier

### Energy consumption

Primary energy need : 39,10 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 56,00 kWh/m<sup>2</sup>.an

Calculation method : RT 2012

Breakdown for energy consumption : - Heating : 9,6 kWh EP/m<sup>2</sup>/year

- Ventilation & Aux : 11,5 kWh EP/m<sup>2</sup>/year

- Lighting : 12 kWh EP/m<sup>2</sup>/year

- Hot Water : 6 kWh EP/m<sup>2</sup>/year

### Envelope performance

Envelope U-Value : 0,46 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

Floor:

Hardcore layer + PSE 8 cm + concrete slab Ecocem + stone or tile

First floor on Exterior and intermediate

- carpet + False floor + technical plenum + concrete slab

- On ext or LNC: + flocking isotherm 23 cm + finishing Type plaster

walls

- concrete Sailing Ecocem - DRC: ITI PSE 10cm + BA13

- 1st floor and 2nd floor: wood fiber 20cm + mineral plaster

- 1st floor and 2nd floor: PUR 9cm + parepluie + wood siding or metal tray ceiling: False ceiling acoustic absorbent metal blades + LM (traffic)

Joinery:

- Aluminium or aluminum or wood Larch

- DV LowE Ag (Ug = 1.1W / m<sup>2</sup>K)

Indicator : n50

Air Tightness Value : 1,92

## Renewables & systems

### Systems

Heating system :

- Heat pump
- No heating system

Hot water system :

- Individual electric boiler
- Solar Thermal

Cooling system :

- Reversible heat pump
- Others
- Others

Ventilation system :

- compensated Air Handling Unit

Renewable systems :

- Solar photovoltaic
- Solar Thermal
- Micro wind

Other information on HVAC :

- Heating: Heat pumps water / water (temp system 7/30 ° C) + 6.6 cop active slab.

- Ventilation: 3 CTA including 2 variable Meeting probe CO2 exchange efficiency 56-60%, and electric battery; 1 office 86% yield; increased flows in the meeting rooms during construction at the request of the Control Office to comply with the health regulations and the labor code. No acceptance to consider the complementarity fresh air outside through open windows and fresh air CTA.

- Cooling: plate heat exchanger (bypass line CAP) + active slab emission

- Passive cooling by simple exchange, but the ability to enable or PAC report on CTA battery cold water (scalability possible if needed).
- 33.4 kWhep / m<sup>2</sup>.year for PV is 23770 kWh / year - 4500 kWh / year for wind

## Environment

### Urban environment

Land plot area : 2 520,00 m<sup>2</sup>

The centroid of the department to facilitate access. In a remarkable site identity and the area of Crau. Building off the ground, above a meadow.

## Products

### Product

Concrete Ecocem low carbon

ECOCEM

<http://ecocem.fr/en/contact/>

<http://ecocem.fr/>

Product category : Gros œuvre / Structure, maçonnerie, façade

Ecocem is a granulated slag ground blast furnace (smelting steel manufacturing waste) and used in the concrete composition in substitution of Portland cement. • Enables the reduction of CO<sub>2</sub> incorporated. • CO<sub>2</sub> emissions from the production of Ecocem are 40 times lower than in the production of Portland cement. • Concrete Ecocem reduced heat absorption

drying time slightly longer and maximum hardness compared to traditional concrete.



Active slab CAP water table

uponor

<https://www.uponor.fr/contact.aspx>

<https://www.uponor.fr/>

Product category :

The active floor system is an active heat storage system which operates the building mass concrete for uniform room temperature through a network of tubes installed on metal mesh and incorporated into the body of the book. The water circulates in tubes embedded in the concrete slab that accumulates the heat loads of the room and the external inputs. The concrete mass is then considered as a reservoir of warmth or coolness. Its operation requires low temperatures, can significantly

reduce energy consumption and increase thermal comfort. On the Project SMED 13, the heating / cooling system with active floor is used with water circulation of the web. Two holes, one pump and one reinjection were carried out north and south of the building, in the flow direction of the web. The advantages of the system:

- transmission comfort with a program based mainly on radiation - (resulting temperature, not air temperature)
- Maintenance cost Maintenance zero (the maintenance and service focus solely on production and regulation per facade)
- Operation at low delta T to set up a production of heating with a heat pump water / water with very high efficiency (COP>6)
- Clipping powers to produce hot and cold
- housing Timeliness This system is also used in active walls in two sails of the building's atrium.

The usual users sick because of air conditioning, are no longer with the active slab.



## Costs

### Construction and exploitation costs

Subsidies : 2 213 480 €

## Health and comfort

### Comfort

**Health & comfort :** A gentle heat emission radiation (active slab), healthy materials with low VOC emissions, noble materials used, controlled by the air quality dual flow ventilation systems, acoustic treatment adapted to the scene.

Carbon

## Life Cycle Analysis

**Eco-design material :** Ecocem concrete, wood joinery, insulating wood fiber, wood class 2 decree. AAP ACV performance building

Contest

## Reasons for participating in the competition(s)

Highly thermally insulated, with large facades developed to allow good natural light, the building combines several renewable energy, solar thermal for DHW heating, hot production and cold on geothermal groundwater and pump heat, allowing the draw-also contribute to the diffusion and summer cooling by concrete slabs and walls activated, a power generation involving solar roof and the vertical axis wind turbine, fixed flag on a tower to access the roof.

## Building candidate in the category



Energie & Climats Tempérés



Coup de Coeur des Internautes

PDF

