

Cultural and festive center: L'Etoile in Châteaurenard

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- Project type : Renovation
- Building Type : Concert or conference hall, theater
- Construction Year : 2012
- Climate zone : Mediterranean North
- Net Floor Area : 2 359 m²
- Construction/refurbishment cost : 5 509 300 €
- Number of Seat : 1 170 Seat
- Cost/m² : 2 335 €/m²
- Cost/Seat : 4 709 €/Seat

Avenue Leo Lagrange , 13160 Châteaurenard, France

// Description

- **BDM Approach: Silver level for construction phase**

- Program: The former movie theater and the Etoile room change into a multipurpose room that can accommodate about 900 people and an auditorium for 270 people.

Municipality of Châteaurenard is committed in the “**AGIR pour l’Energie-Villes lauréates**” program (Act for energy-winner cities) since 2008. L'Etoile is a pilot project chosen by the city as part of this program. Therefore this project has to be completely exemplary.

Restructuring of old movie theaters and l'Etoile room into a cultural center reaching the **BBC Effinergie Renovation level** is a priority for the city, since it allows the downtown revitalization. This unique equipment, cultural and festive, is composed of two separate rooms. One is dedicated to banquets, traditional festivities, trade fairs and trade shows. The other is dedicated to culture thanks to an auditorium that could host conferences and varied cultural and artistic programming (theater, classical music, conferences ...).

See more details about this project : <http://www.enviroboite.net/espace-culturel-festif-etoile-chateaurenard>

// Stakeholders

Contractor

- Ville de Châteaurenard
- M. Grégoire: 04 90 95 34 39
- Website : <http://www.chateaurenard.com/>

Assistance to the Contracting Authority

- DoMEnE
- 13300 Salon-de-Provence / 04.90.55.92.89 / raynal.domene@gmail.com

Construction Manager

- D+P Architectes
- 83130 Toulon / 04.94.75.21.61 / contact@dp-architectes.com
- Website : <http://dp-architectes.com/>

Designer

- Ariane Architecture
- 13160 Châteaurenard / 04 90 24 42 20 / contact@ariane-architecture.com
- Website : <http://www.ariane-architecture.com/>

Environmental consultancy

- Architecture & Technique
- 78180 Montigny le Bretonneux / 01.30.44.37.26 / arscen@wanadoo.fr

Structures calculist

- BEGP
- 83085 Toulon / 04.94.08.55.01 / bet@begp.fr
- Website : <http://www.begp.fr/>

Other consultancy agency

- ADRET
- 83500 La Seyne sur Mer / 04.94.10.87.50 / laseyne@adret.net
- Website : <http://www.adret.net/>

Structures calculist

- ALTIA
- 75002 Paris / 01.53.00.90.65 / altia@altia_acoustique.com
- Website : <http://www.altia-acoustique.com/>

Others

- EC 2G
- 83400 Hyères / 04.94.65.27.82 / garino-eco@wanadoo.fr

Company



- 84000 Avignon / 04.90.86.54.85 / jmm.mariani-sas@wanadoo.fr

Energy consumption

Primary energy need : 223,00 kWh PE/m²/year

Primary energy need for standard building : 398,00 kWh PE/m²/year

Calculation method : RT 2005

CEEB : 0 kWh PE / €

Initial consumption : 598,00 kWh PE/m²/year

// Renewables & systems

Systems

Heating system :

- Geothermal heat pump
- Fan coil

Hot water system :

- Individual electric boiler

Cooling system :

- Reversible heat pump
- Fan coil

Ventilation system :

- Nocturnal Over ventilation
- Free-cooling
- Double flow heat exchanger

Renewable systems :

- Heat pump (geothermal)

Heating: The heat pump provides heating of the large rooms with blast air. For offices, an exchanger on CTA allows to reheat the incoming air.

Hot water: A 300 liter hot water cylinder was installed and two water heaters have been decentralized.

Cooling system: Overnight ventilation is planned in free-cooling via the CTA in the two large rooms and windows opening (cross-ventilation) in the office area. The groundwater heat pump (EER = 4.33) also participate in the refresh.

Ventilation: 2 types of CTA:

- CTA WESPER PR240 25000 m³ / h and 160 to PR 15000 m³ / h. (Exchanger 44%). Variable speed CMV 300W subwoofer.
- CTA ALDES high performance DFE type 3000 m³ / h (annexes) and 1000 m³ / h (offices). (Exchanger ~ 80%).

The water-water heat pump make use of calories of groundwater and allows electrical energy consumption about 30% below the base solution (a air / water heat pump).

The purchase cost is higher but the feedback on the heat pump installed more than 15 years ago in the Chateaurenard library has prompted the contractor to equip the Etoile room with this type of heat pump.

A geothermal drilling draws the groundwater between 15 and 30 meters deep and another returns water at 35 meters. The necessary flow for the operation of this heat pump is close to 40 m³ / h and the temperature change between the extraction and the rejection will be around 5°C (+5°C in cooling mode, -5°C in heating mode).

// Costs

Construction and exploitation costs

Total cost of the building : 5 509 300,00 €

// Urban Environment

Urban environment : The site is inserted in an very mineralized urban context, subject to the Mistral and in a Provencal atmosphere. The project is also located in the Uab Area (protected area) of the Local urbanism plan of the city.

