



# SOLAR HOT WATER

**NAUTICAL CENTER ETIENNE GAGNAIRE  
VILLEURBANNE**



solar thermal

The City of Villeurbanne made a commitment on a policy of reducing energy consumptions on its building heritage.

Consequently the City decided, in 2004, to realize works of renovation : insulation of the roof on the nautical center and improvement on the heating system.

To lead this renovation further, a study was also led, with the ALE partnership and the energy office GIRUS to add solar thermal system to the swimming pool.

So near half of the roof's surface on the Olympic pool has been covered with solar cells allowing to preheat the water of both outside ponds and of the internal pond.

This installation is one of the most important of this type at this day in France.



### Solar system :

- 1110 m<sup>2</sup> of solar tube absorbers in roof distributed in two fields :
  - . 580 m<sup>2</sup> of solar tube absorbers are linked up on the filtering system of the outside pools
  - . 530 m<sup>2</sup> of solar tube absorbers are linked up on the filtering system of the inside pool
- Mechanical fixing with wooden frame on roof
- Auxiliary heating is operated by gas heating system

### Results expected :

- Economy on the invoice of 12 000 € / year, 380 000 kWh PCI (equivalent to 10% of the total needs of the site)
- Rate of production : almost totality of the heating needs of pools in summer period
- Environmental gain : replacement of the equivalent of 91 tons / year of CO<sub>2</sub>

### Financial plan :

- Global Investment: 184 500 € TTC (16 000 € engineering)
- Subsidy of the Region Rhône-Alpes : 34 000 €

### Partners :

- Client : City of Villeurbanne
- Office study : Girus (Vaulx-en-Velin - 69)
- Solar thermal system : Giordano (Aubagne - 13)
- Installer : Larue Establishment (Saint-Victor-sur-Rhins - 42)
- Accompaniment : ALE