



## Reconstruction of the main administrative building of the Urban Community of Bordeaux-CUB (FR)

<b>Keywords</b>	<b>Energy efficiency, renovation, insulation, renewable energy sources</b>
<b>Photos</b>	 
<b>Objectives of the action</b>	<p>The Urban Community of Bordeaux (CUB) has embarked on the comprehensive reconstruction of its main building, as part of the High Environmental Quality (HQE) approach. The project was designed to make the building compatible with new standards of comfort and safety. This will notably enable to divide by half the energy consumption of the building, constructed back in the 70's.</p>
<b>Description of the action</b>	<p>The administrative building of the Urban Community of Bordeaux was designed in the 70's and inaugurated in 1978. Although the building was going through a constant maintenance to ensure its operation, a large part of its technical equipment is now reaching the end of its life, the level of comfort is not satisfactory, security installations became obsolete and the building's energy bill is too high.</p> <p>Thus, a large reconstruction operation has been undertaken in order to realise an exemplary renovation project, in the framework of a wider High Environmental Quality (HQE) approach. Among the fourteen targets of the HQE, five are treated as regulatory, another five as leading to a higher efficiency, and four as leading to a very high efficiency. They concern the environmental impact of the construction, energy management, maintenance management, as well as the hydrothermal comfort.</p> <p>Basing on these targets, the Urban Community of Bordeaux has set the following main objectives:</p> <ul style="list-style-type: none"> <li>➤ energy consumption of the building will be at least divided by half and 30% of heating will be produced by renewable energy sources, including the geothermal heating,</li> <li>➤ a dynamic thermal simulation will be performed in order to simulate the thermal behaviour of the building with relation to weather conditions, and thus to determine the best strategic choices,</li> <li>➤ waste from the construction site will be sorted, out of which 15% will be recycled; the internal charter of the clean construction site is going to be applied,</li> <li>➤ all possible terms of the maintenance of equipment and materials will be studied,</li> <li>➤ 500 m<sup>2</sup> of photovoltaic panels will be installed on the rooftop (including a part being installed on a canopy),</li> <li>➤ a project for the recovery of heat from wastewater is being studied.</li> </ul>
<b>Results / achievements</b>	<p>This project should allow divide by 2 the energy consumption of this building, which alone accounts for nearly half of the energy consumption in CUB's administrative buildings. Reinforced insulation of walls, replacement of windows and joinery coupled with the use of renewable energy sources through connection to a geothermal drilling nearby and the recovery of heat from wastewater combined with a heat pump, should help considerably in reducing the consumption of the building. A division by 2 is a gain of 3 500 000 kWh per year. Furthermore; photovoltaic panels installed on the rooftop are expected to produce 70 000 kWh annually.</p>
<b>Friendly advice for replication</b>	<p>Such operation requires a comprehensive reflection at the very early stages in order to take into consideration all important issues and provide an overall examination. It is also important to take use of the assistance provided by the highly qualified Project Management Support (French: <i>Assistance à Maîtrise d'Ouvrage</i>) for project definition and realisation of different studies.</p>
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