ENERGY PERFORMANCE CONTRACT: ARAGON PICASSO HIGH-SCHOOL IN GIVORS (69)

As part of its heritage management efforts, the Auvergne-Rhône-Alpes Region has undertaken an energy savings programme by launching major renovation projects in its secondary schools. In 2014, the Region hired the SPL (publicly-owned local corporation) OSER (regional energy services operator) to carry out a comprehensive energy retrofit of Aragon Picasso high-school in Givors. The expected reductions in consumption are guaranteed by an Energy Performance Contract (EPC).

> Location
Located between Lyon, Vienne, and Saint-Étienne, Givors is a city of around 20,000 inhabitants. It is part of the Grand Lyon metropolis. The city has two public secondary schools, including Lycée Aragon Picasso, which grew out of the merger between Lycée Louis Aragon and the Pablo Picasso vocational school. As for all establishments of this kind, the Region is responsible for the building’s maintenance as the contracting authority for the work undertaken.

> The renovation of secondary schools, a regional competence
The Auvergne-Rhône-Alpes Region is pursuing its regional sustainable development efforts with the Territorial Climate Air and Energy Plan (SEAP).

As part of its remit and energy transition policy, the Region is renovating the schools it is responsible for. The Energy Performance Contract (EPC), which guarantees energy savings and reductions in CO₂ emissions following a renovation, is an invaluable tool for the success of these projects. The secondary schools being renovated are chosen based on the potential energy savings and the need for renovation of their building envelopes and technical facilities.

The renovation of this school contributes to the targets of the Grand Lyon, which has also implemented a Territorial Climate Air and Energy Plan.
> Objective

Studies conducted for Aragon Picasso high-school in Givors were completed at the end of 2016, following the signature between the SPL and the Region of a 10-year, design, construction, operation, and maintenance (CREM) EPC. Its results guarantee corresponds to a 40% reduction in energy consumption and a 50% decrease in CO₂ emissions, with 11.6% of energy needs coming from renewable energy.

The objective of the retrofit is to improve energy efficiency and comfort in summer as well as the building’s longevity. The work also includes functional improvements (renovation of the entrance to the school, demolition of spaces that were energy inefficient and not very functional, etc.), and improvements to indoor air quality.

1 Price of energy in 2013 taking into account extra maintenance costs.
2 3,255 MWh/year before the work.
3 €146 k Inc. VAT before the work.
4 19.6 kg CO₂e/m² before the work.

> Implementation

The project was able to monetise Energy Savings Certificates (ESC). The Region signed a 20-year emphyteutic lease with the SPL. The work is being paid for through this lease. The Region is reimbursing this amount in the form of an annual rent that includes pricing for the work, the fees, and maintenance.

76% of the services in the contract are being carried out by small and medium-sized companies from the region. The consortium representative, Société nouvelle Jean Nallet, is working with the architectural firm Dassonville & Dalmais, the design office Sintec Ingénierie, and Eolya (maintenance).

The contract calls for 1,690 work hours to be done by participants in professional integration programmes.

The following energy retrofit work was carried out:

- **Spot renovation** of thermally poor walls and **insulation** of accessible low floors
- **Installation of flat roofs** in the day school and multi-purpose room, **insulation of roofs** in Aragon’s workshops
- **Replacement of the joineries** in the day school and workshops with high-performance joineries (made of aluminium), **replacement of the glass atrium** with a central lobby and **new entrance**
- **Renovation of the heating and distribution system** (replacement of the pumps and regulation, desludging, balancing, and installation of thermostatic valves)
- **Renovation of the ventilation** (double-flow in the classrooms, multi-purpose room, and cafeteria; single-flow in the offices — with presence detection — and restrooms)
- **Photovoltaic stations** integrated into the building (99 kWp)
- **Improvement of lighting** (LED lamps with presence detection in the circulation areas and restrooms of the day school)

1 A system in which public authorities require energy sellers (electricity, gas, heating and cooling, domestic heating oil, etc.) to achieve energy savings by actively promoting energy efficiency among their customers and other energy consumers (households, local governments, professionals).

Lycée Aragon Picasso before the renovations ©SPL OSER
An “energy agency” within the school has been created. Various educational actions are being taken around the energy retrofit: raising awareness among all users, use of instruments, identification of additional work, etc.

The energy retrofit project also includes a reconfiguration of the school’s entrance. This new entrance, in response to the recent merger of the Aragon and Picasso schools, includes a new central lobby as a gathering place for students.

A bonus of around 5% of the cost of the work will be paid once the targets are met for a full year.

Otherwise, the service provider is subject to penalties that increase each year as long as the targets set by the EPC are not met.

The verifications are done according to the IPMVP protocol. The adjustment formula is based on degree days. Conditions under which the baseline situation may be revised have been established in the event of a change in use.

1 They correspond to the amount of excess consumption the first year of operation, double this amount the second year, and five times the amount in the following years if the building is unable to reach the targets set.
3 Degree day: difference between the outside temperature and a base temperature. It is used to estimate the thermal energy consumption required for user comfort according to the weather conditions.

An interim report in mid-2018

> Results
The work is ongoing and will finish in September 2019.

> Difficulties
The reorganisation of collective areas (demolition of the glass atrium and creation of a central lobby) is the most complex part in that it is the most inconvenient for the school’s occupants. This work will therefore mostly be done during school holidays. The asbestos abatement also complicates things.

> Outlook
An ongoing experiment…
The projects carried out by the SPL OSER include a guarantee of energy efficiency. Dedicated monitoring tools have been developed internally.

Stakeholders involved

- Auvergne-Rhône-Alpes Region
- Contracting authority: SPL OSER
- EPC representative: Société nouvelle Jean Nallet
- Architectural firm: Dassonville & Dalmais
- Design office: Sintec Ingénierie
- Maintenance: Eolya

Information and contacts

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