

Renovating the façade of an unused warehouse as part of plans for a sustainable Youth Centre

Consorti de la Ribera & Alzira Municipality (Spain)

Background

Alzira Municipality is the capital of its county in the Valencian region of Spain, with a population of about 44,500 people. Alzira Municipality is a signatory of the [Covenant of Mayors](#) for Climate and Energy since 2016.

The town is part of the [Consorti de la Ribera](#), a consortium of local governments comprised of 47 small municipalities in two neighbouring counties. The Consorci coordinates various environmental initiatives at the regional and municipal levels, including a Green Office (“Oficina Verda”) to promote responsible energy use by citizens and to push for renewable energy sources.



The Consorci de la Ribera is also a participant in the [ProminentMED](#) (Public pRocurement of Innovation boosting greEN growTh in the MEDiterranean area) Project, which aims to boost the use of innovative energy efficient materials and processes in the refurbishment of public buildings through innovative contract procedures in public procurement. Although the majority of public procurement within the region is done by the relevant municipal authorities, the Consorci leverages its expertise and access to funding in order to boost an environmental or innovative focus in tenders such as this one.

Procurement objectives

The Energy Department of the Consorci de la Ribera wanted to sustainably refurbish an unused warehouse and transform it into a Youth Centre (“Casal Jove”) for Alzira. The Consorci decided to use an innovation procurement approach for the first time in order to solicit more environmentally friendly solutions from the market, in accordance with the town’s overall sustainability goals. Suppliers were asked to provide innovative façade renovations (principally windows—including glazing, frames, and shading) which would significantly reduce the overall building energy consumption and associated CO₂ emissions without compromising the building’s functionality and comfort. This renovation will contribute to an overall aim of achieving a near zero energy building (NZEB), with the remaining energy needs being met by renewable sources.

The contracting team considered green criteria from the outset of the refurbishment project, as well as emphasising innovation throughout all criteria as a means to achieve their sustainability targets. After a needs assessment, the priorities for tender criteria were: innovation in how the solution responds to project requirements in a holistic way; energy efficiency as a technical approach, demonstrated by the use of tools to test performance (e.g. of lighting, heating gains and losses); and the life cycle cost (LCC) of the renovation.

Before launching the tender in early 2018, the Consorci de la Ribera organised a market consultation day in collaboration with the local university and Alzira Municipality to facilitate open dialogue and information sharing between the administration and potential suppliers—mainly manufacturers and providers of window solutions. The tender produced was a result of those dialogues and used an open procurement procedure. A simulated energy performance analysis of the building with standard solutions (meeting the minimum performance by current building regulations) was provided as a baseline, and each supplier was asked to demonstrate the reduction in energy demand that their bid would achieve by inputting their solution into the theoretical model, with a minimum of 5% improvement accepted. In June 2018, the municipality hosted an information session to explain the criteria and resolve doubts, and they also led a guided visit to the project site.

Criteria used

Subject matter of the contract:

Energy-efficient refurbishment of the exterior façade (121.94m² total, 86 window units) of a city-owned warehouse, towards the goal of a NZEB for the Youth Centre.

Selection criteria:

Bidders had to prove recent experience in energy rehabilitation of buildings, professional competency (relevant qualification and experience of project team), full civil liability insurance coverage, and solvency (economic viability, good standing with public administration).

Award criteria:

The Consorci de la Ribera provided energy efficiency and LCC calculation tools as well as the building model for energy simulations. Using these tools, each bidder was required to demonstrate the improved energy performance of their proposed solution over a common baseline.

Energy efficiency modelling considered the heating and cooling demand.

The LCC analysis included:

- Cost of material supply and installation
- Cost of related energy consumption during use
- Cost of related maintenance
- Cost of end-of life (sorting and recycling) of materials

The contract was awarded to the bidder who fulfilled all required criteria and scored the highest in the evaluation, in this case comprised of both qualitative and quantitative components.

Qualitative Criteria (45/100)

- implementation of passive cooling strategies such as shading and cross-ventilation (10)
- reducing the needs of artificial lighting by maximising the use of natural lighting (10)
- acoustic insulation: improving the building's soundproofing both inside and out beyond required minimums, considering its potential use for concerts and its proximity to the health and retirement centre (10)
- sustainable nature of the solution (5 points total)
 - materials with ecolabel certification (1)
 - materials come from renewable resources (1)
 - low environmental impact of supplies transportation (1)

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- simple maintenance and minimised need for chemicals in cleaning (1)
- minimised waste in removal and future material recyclability (1)
- innovative character of the solution, beyond described requirements to progress towards NZEB (10)

Quantitative Criteria (55/100)

- Reduction of the heating and cooling needs associated with the thermal performance of the windows, based on the improvement over the baseline building energy performance model provided (25)
- Guaranty of the materials with a minimum of 5 years, extendable to 10 years (10)
- LCC, as calculated with the provided template, awarded proportionally among competent proposals received (20)

Results

Three bidders submitted tenders, of which two were deemed in compliance with all criteria and proceeded to evaluation. The contract for refurbishment of 86 windows (121.94 m² total), including installation, had a value of €200,000 and was fully funded by the ProminentMED project. In the end, the contract was awarded to the bidder with the highest overall score: JEMCO, an SME construction contractor. JEMCO's solution scored well in LCC, passive cooling strategies, and soundproofing. The contract was awarded in January 2019 and construction was completed in July.

As the first tender of its kind in the area, the market was challenged by the invitation to innovate. Despite the Consorci's market engagement efforts and focus on PPI, neither bid scored well on this measure. This tender stands out, however, for its holistic consideration of cost, comparing lifecycle costs rather than upfront acquisition costs. Going forward, continued market engagement and encouragement to provide more energy efficient solutions will be necessary. Similar demands from other municipalities will also be essential. The Consorci de la Ribera has shared their experience in this project widely, in collaboration with Red Innpulso (Spanish Innovation Ministry) and the Valencian Innovation Agency (AVI). In April 2019, the AVI published a [practical guide \(in Spanish\)](#) to promote innovation procurement in the region, which included important contributions from the Alzira case. In May 2019, a first replication of this pioneer model was conducted in another small municipality in the same region, Sueca. The replication was co-financed by the AVI through [their project](#) on innovation procurement in the buildings sector, with the objective of encouraging innovative solutions in the field of energy efficiency in municipal buildings of the Valencian region.

Environmental impacts

A key factor in the environmental impact of buildings is their energy use during occupation, which can be largely reduced through appropriate insulation, passive heating and cooling through strategic design, and proper systems operation by building occupants. Alzira's choice to sustainably refurbish an existing building rather than pursue a new construction also reduced construction and demolition waste and further primary material extraction. In this case, the building envelope refurbishment also took into consideration indoor air and acoustic quality, which improve the wellbeing of the building occupants and neighbours alike. The tender emphasised the ease and low-energy intensity of maintenance as well as material guarantees, therefore minimising future costs.

Compared to the baseline model, the contracted solution demonstrated a 15% reduction in energy demand for heating (from 63 to 54.6 kWh/m²yr) and a 19% reduction in cooling (from 34.1 to 27.5 kWh/m²yr). Overall, the façade renovation shows a 15% reduction of the building's energy needs. As a result, annual operating costs are reduced by 924 €/year, which over the 30 year life cycle calculation amounts to cost savings of €27,720.

Lessons learned

Market engagement: Open market consultations are an essential part of public procurement of innovation (PPI). Getting involved with market partners helps public administrations keep track of the latest innovations. It is also helpful to collaborate closely with technical experts, such as universities, which can help conduct a preliminary market analysis to gauge the state-of-the-art. Communication with the suppliers early on about what was being sought and of all relevant information about the building was very important to build credibility, both by publishing details on regional tender platforms (with a prior information notice – PIN), and in inviting potential suppliers to dialogue with the public authority and visit the site.

Innovation: In this case it was also useful to state the available budget upfront, to show the potential suppliers what was appropriate for innovative solutions. The Consorci also stimulated innovative offers by preparing a detailed questionnaire for suppliers interested in the market engagement events, providing them with an opportunity to show how their solution could help solve Alzira's needs better than the traditional solutions.

Impact: A strong communication plan accompanying innovative public procurement can maximise its impacts and facilitate replication. This tender had a complete website with all relevant information such as the needs analysis, state of the building, foreseen solutions, outcome-oriented requirements, open market consultation registration, etc. Working in coordination with the AVI and ProminentMED provided a platform to share this experience and inspire others to replicate the model.

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For related information, please see European GPP criteria for [Office Buildings](#) and the [Technical Background Report](#).

Further information:

- Tender Documents ([1](#), [2](#))
- Pictures [here](#) or [here](#).