Sustainable construction through Public Procurement: innovative solutions focused in near zero energy consumption buildings

SESTAO CASE STUDY

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Sustainable construction through Public Procurement: innovative solutions focused in near zero energy consumption buildings

1. Objective and description
2. Sestao Case Study
3. Recommendations
Implement and validate **Innovative Solutions** for the achievement of **sustainable construction** through new Public Procurement process, focusing on **Nearly Zero Energy Buildings**

There are a lot of innovative technologies in the market that could help to achieve this goal; however, this kind of solutions does not penetrate in the market for different reasons, economic, lack of knowledge, lack of critical mass, and lack of effective dissemination... among others
1. Objective and description

www.papirus-project.eu
Challenges of PAPIRUS tender

SPECIAL FUNCTIONALITIES OR FEATURES

Vs

DEFINED PRODUCTS

Examples: Need of new type of industrialized façades, looking for thinner and lighter solutions, more efficient solutions than normally purchased, easy installation required, ....
1. Objective and description

BASIC FUNCTIONALITIES

- Reduce the energy losses through the opaque envelope of both new and already erected buildings.
- Decrease solar gains in summer and energy losses in winter through windows and fenestrations.
- Technologies that provide good quality natural daylighting.
- Materials and elements that store thermal energy shifting heating and cooling peak loads.
- Reduce CO₂ emissions due to their industrialized manufacturing and easiness of implementation.
2. Sestao Case Study

BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

PREPARATION

- NEEDS EVALUATION
- PLANNING
- DIALOGUE WITH THE MARKET
- IMPLEMENTATION OF TENDERS
- EVALUATION OF TENDERS
- CONTRACT
Brief description of the demo

Sestao’s tender is a supply and installation tender and aims to purchase and fit innovative products to be installed in the new construction of 18 dwellings in 33 and 35 of Txabarri Street in Sestao.

The call for tender is divided into two lots:

• **LOT 1:** Solutions to reduce energy loss through the opaque building envelope.

• **LOT 2:** Solutions to reduce energy loss in winter and solar gains in summer through the windows.

Two buildings designed to located 18 social housing
2. Sestao Case Study

BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

Award criteria

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ENVELOPE</th>
<th>WINDOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Sustainability</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Installation, maintenance and others</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Economic criteria</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>

**INNOVATION** is not included as such

**INNOVATION** is implied in the fulfilment of the requirements.
BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

2. Sestao Case Study

Joint Cross-Border Evaluation Team (JCBET)

- 5 Members with full rights (Technical experts)
  +
- 1 members (Legal) with only voice right designated by the contracting entity
BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

INNOVATIVE SOLUTIONS AWARDED

Social housing
Txabarri 33-35,
Sestao
Spain

PROJECT

TENDER
CONSTRUCTION

Implementation of solutions
FACADES: kodaxter and knauff insulation

The Knauf system comprises a light Aquapanel wall, screwed to a metal galvanized steel structure subject to the building structure. On the outside is adhered one SATE system with mineral wool Knauf Insulation and continuous coating finish. On the inside there is placed a mineral wool and double plasterboard. This combination makes the system easy and quick to assemble, since practically all system is dry, and Aquapanel system offers a perfect flatness to avoid corrections in setting the SATE system.

Thermal transmittance: 0,156 W/m².K
2. Sestao Case Study

BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

WINDOWS: Polyurethane Frame
BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

ARCHITECTS FINAL PROJECT
2. Sestao Case Study

BUILDING OF 18 NEW HOMES IN TXABARRI 33 & 35, SESTAO

TECHNOLOGICAL VALIDATION

NEW CONSTRUCTION

Social housing
Txabarri 33-35, Sestao
Spain

PRE-INTERVENTION SIMULATION
INNOVATIVE SOLUTIONS AWARDED
POST-INTERVENTION SIMULATION

RETROFITTING

OTHERS

PRE-INTERVENTION MONITORING
INNOVATIVE SOLUTIONS IMPLEMENTED
POST-INTERVENTION MONITORING
3. Recommendations

PAPIRUS training Guide for public procurers on “How to implement Public Procurement of Innovation. Lessons learned from the PAPIRUS project”

www.papirus-project.eu