

BUILDING GOOD PRACTICE

Different public buildings - Barcelona Provincial Council

| | | |
|--|---------------------------------|--|
| Name of the public building renovation: | | Different public buildings of Barcelona Provincial Council. There are 75 buildings, 102 offices dealing with tax management, and 38 patrimonial buildings that are managed by the Department of Building maintenance of the province. |
| Index of Building Good Practice (kWh/m²) | | No data available |
| Sub-group | | Offices |
| Description | Photo |  <p style="text-align: right;">CAN SERRA</p>  <p style="text-align: right;">EL RELLOTGE BUILDING IN L'ESCOLA</p> <p>INDUSTRIAL</p>  <p style="text-align: right;">MANNING'S COURTYARD</p> |
| | Address | Main address: Edifici Can Serra. Rambla Catalunya, 126. 08008 Barcelona. |
| | Public sector contractor | Barcelona Provincial Council |

| | |
|--|--|
| Architects Engineering consulting firms | Different depending on the building, as an example Can Serra was first build by Josep Puig i Cadafalch and then renovated by different architects (Federico Correa Javier Garrido, Alfons Milà, Francesc Ribas, engineer: Pedro V. Ibañez). The textile industry of l'Escola Industrial (Industrial school) buildings was a project of Rafael Guastavino and was lately renovated by Lluís Planas I Calvet. |
| Date of construction | Many are historical buildings such as: <ul style="list-style-type: none"> • Can Serra that was built on 1900 and renovated on 1985-1986. • Pati Manning (Manning's courtyard): it was originally the site of the convent of our Lady of Montalegre, set up by a community of nuns in 1362. Restoration and remodelling work began in 1985. • Escola Industrial (Industrial School): it was built on 1868-9 as a textile industry and it was renovated on 1927-31. |
| Legal aspects (e.g.: protected property) | |
| Date of renovation | Every year there are renovations carried out in the buildings of Barcelona Provincial Council. In this fact sheet we focus on the most recent ones, since the start of the POR (Plan for optimizing resources). |
| Nature of the work (short description) | Barcelona Provincial Council is implementing different measures to save energy and install renewable energies in its buildings following the sustainable guidelines set up in the Plan for optimizing resources. A first phase of the Plan focused on defining actions (from Nov. 2002 to March 2003). On February 2006 a second phase was launched to implement actions to create a more sustainable provincial council. |
| Budget and financing source | Barcelona Provincial Council own budget |

| AVAILABLE RESULTS | |
|--|--|
| What were the big problems (in terms of energy efficiency) to tackle? | <ul style="list-style-type: none"> - Lack of a common strategy on sustainable energy use in Barcelona Provincial Council buildings. - High consumptions in some buildings. - The need to achieve better environment comfort inside buildings. - High potential to save energy and to install renewable energies. - Improve in new buildings or in renovations the use of natural light, insulation and building materials with less environment impact. - The need to adapt to new regulations: Directive 2002/91/CE on the energy performance of buildings (updated later on with Directive 2010/31/UE) , Decree 21/2006 of Catalan Government regarding environmental criteria and ecoefficiency of buildings, national law RD 314/2006 that approved the Technical Code for Building. |
| Has this building been already analysed and certified? | An energy audit has been undertaken in the Minerva building and 3 other buildings have been certified (14 building in Escola Industrial, P. Mastral in Maternitat and Can Serra). |
| What are the key innovative energy efficiency measures undertaken through the renovation? | <ul style="list-style-type: none"> - Using energy efficient lights and electronic ballast for interior lighting. - Installing motion detector lights to control lighting in some areas. - Controlling lighting in public lighting installations - Using lights with less luminous pollution and more efficiency in exterior lighting. - Setting criteria for selecting the heating/cooling systems. - Installing photovoltaic panels. - Installing solar thermal systems - Installing reactive power compensation equipments - Proposals to enter in the free market for electricity and gas. - Energy certification of buildings. |
| What are the measurable improvements in terms of energy efficiency (kWh saved)? | It has not been measured yet |
| What is the project Payback period (Years) | It has not been measured |

| ENERGY EFFICIENT MEASURES | |
|---|---|
| Energy efficient measures of the building envelope | <ul style="list-style-type: none"> • Improving lighting to make it more efficient (energy efficient lighting, motion detectors) and electronic ballast for interior lighting. Implemented in 3 buildings (Can Serra, el Rellotge, Xarxa de Biblioteques). • Controlling lighting in public lighting installations. Implemented in a complex (Torribera). • Using lights with less luminous pollution and more efficiency in exterior lighting: Changing mercury-vapor lamps for LED lamps. Implemented in a group of buildings (Mundet). • Setting criteria for selecting the heating/cooling systems: using free-cooling in the UPS room in one building (Rellotge). • Installing photovoltaic panels. On 2011 there were 7 buildings with photovoltaic panels with an estimated annual production of 260.712kwh (on 2011 they produced 150.814kwh (27.297 kg CO₂)) this generated a revenue of 49.597€. • Installing solar thermal systems. On 2011 nine buildings had solar thermal systems, there were 65 collectors (169m²) with an estimated annual production of 122.025kwh (24.807 kg CO₂). • Installing reactive power compensation equipments in 3 complexes. |
| Energy efficient measures of the heating system | <ul style="list-style-type: none"> • Setting criteria for selecting the heating/cooling systems. |
| Energy efficient measures of monitoring energy | <ul style="list-style-type: none"> • Proposals to enter in the free market for electricity and gas. Unifying the gas supply for all the buildings of Barcelona Provincial Council. The electricity supply has been also unified and a minimum of 15% of the energy supplied for the provider the previous year will be from renewable or cogeneration sources. • Energy certification of buildings: energy audit in Minerva building, energy certification in Building 14 in Escola industrial, energy qualification in P.Mestral in Maternitat and Can Serra. • Monitoring energy consumption in a building (Pavelló Nord of Llars Mundet). |
| Energy efficient measures regarding behaviour | <p>An internal communication campaign among workers of Barcelona Provincial Council was undertaken during 2010 and 2011. The slogan of the campaign was “in Diputació, we enhance our environment”. The objective was to disseminate the actions on sustainability carried out linked with the Plan for optimizing resources. It was a digital campaign using the intranet of Barcelona Provincial</p> |

| | |
|----------------|--|
| | <p>Council. There were advices, questions and feedback with the employees.</p>  |
| <p>Others?</p> | |

| <p>SUSTAINABILITY OF THE RENOVATION</p> | |
|---|---|
| <p>Design and choice of sustainable materials?</p> | <p>No information available</p> |
| <p>Sustainable building site management? (sorting waste, water...)</p> | <p>Different measures are being implemented to improve sustainability of water and waste in public buildings of Barcelona Provincial Council:</p> <ul style="list-style-type: none"> - Reuse the underground water resources located in some buildings. - Limiting water pressure in the consumption points. - To have a rational use of watering with efficient technologies. - Creating a waste manager in every buildings complex. - Setting up a support centers for the waste managers. - A Plan for prevention of waste has been developed - Greening drink and food vending machines. - Selective waste management in the resting areas - Minimizing use of CD and discs. |
| <p>Application of a valuation method (BREEM? HQE? Others?)</p> | <p>No information available</p> |

| <p>BUILDING MAINTENANCE: life of the building after the renovation</p> | |
|---|---|
| <p>Is the building object of an energy monitoring? Is there a responsible manager?</p> | <p>Monitoring energy consumption in a building (Pavelló Nord of Llars Mundet). Logistics and buildings Office of Barcelona Provincial Council is the responsible manager.</p> |

| | |
|--|--|
| Who is in charge of the maintenance of the heating system of the building? | Logistics and buildings Office of Barcelona Provincial Council |
| Who is in charge of the day-to-day energy management? | Logistics and buildings Office of Barcelona Provincial Council |
| Are there some specific measures to raise energy awareness and to implicate users in energy efficiency? | As mentioned before there was a specific campaign in the intranet to raise awareness among employees. There is also information about the actions carried out to improve sustainability of Barcelona Provincial Council buildings in the intranet. |

| FUNDING | |
|---|------------------------------------|
| What financing plan? | |
| Innovative or specific aspects in the method of financing (European funds or loan, energy performance contract,...) | Barcelona Provincial Council funds |
| What is the balanced budget for each stakeholder <ul style="list-style-type: none"> • Energy costs for tenant before /after • Increase in the rent | |
| Is there any specific economical indicators (payback time on investment, global cost, ...) | |

| TRANSFERABILITY | |
|---|---|
| Transferable aspects according to the partner in charge of this example of good practice | Many actions can be used for other local or supralocal administrations to improve sustainability of offices and public buildings. |
| | |
| | |
| Transferable aspects according to the partner in charge of this example of good practice | Most of the actions can be transferred, some of them can generate revenues or important energy savings and other have low implementation costs. |
| | |

| SOURCES | |
|---------------------------------|---|
| Publications | |
| | |
| Web Site | http://www.diba.cat/web/rsc/por |
| | www.diba.cat/documents/429042/23a5a14a-f338-4a13-a7a7-c160ec5418af |
| | http://www.diba.cat/documents/429042/b5433dbc-5661-4d7f-9131-d6239c3b7ab1 |
| Interviews/ Meetings | |
| | |