

FLEMISH GOVERNMENT, BELGIUM

Procurement objectives

A requirement for a new administrative centre in Leuven, which will house 26 departments and 800 officials was identified. The Flemish Government uses a handbook on sustainable office buildings to evaluate larger contracts for the design and construction of office buildings.

The handbook provides for evaluation of building designs based on energy use, the quality of life and welfare of users, and the overall environmental impact. The newly opened administrative building in Leuven is an example of a successful application of this approach. Construction began in 2008 and the building has been in use since December 2010.

Background

The Flemish Government adopted a Flemish action plan on sustainable public procurement (SPP) on 5 June, 2009. It is the first of four action plans covering the period up to 2020 – the central goal is to reach 100% SPP by 2020.

The action plan incorporates the use of the handbook for sustainable office buildings. First published in 2008, the [handbook](#) has become the key guide to the design, renovation and rental of buildings for the Flemish government, and a reference source for the construction industry. A new version will be published in 2011.



Criteria used

The energy concept of the building was based on three key principles:

- Minimising energy consumption
- Maximising renewable energy capacity
- Efficient use of fossil fuels for remaining energy needs

These principles were implemented in the procurement procedure by including the following requirements:

Subject matter of contract: Design, build and maintenance of low-energy office building

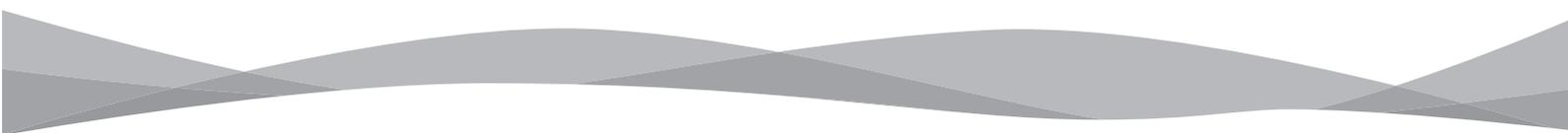
Technical specifications: Defined in the guidelines

Award criteria: The scoring methodology assigns between one and four stars to each building design based upon detailed sub-criteria related to energy use, quality of life and welfare of users, and overall environmental impact. Designs which meet the minimum requirements receive zero stars, while the most innovative and sustainable designs receive four stars.

Results

The design that was chosen combines low energy use with high insulation. A number of passive measures guarantee a low energy use:

- The outer shell of the building has a very thick insulation layer
- The windows and other cabinet work are in accordance with passive house standards. The windows are triple-glazed and super insulating



Building to a higher standard in Leuven

- All water pipes are insulated to reduce the loss of energy during water transport

The building also uses active measures such as:

- The setup of an exhaustive set of measurement devices, to ensure an overview of sub-level of various energetic and environmental parameters is attained
- The application of timers and presence detection on the lighting infrastructure, to avoid the occurrence of a permanently illuminated building
- A closed geothermal system for heating and cooling which relies on borehole energy storage (BES)

Through the use of passive and active measures, the building has a K-value (total insulation of a building) of 21 and an E-value (the measure of emissivity, radiant heat transfer - the principle source of energy loss) of 49, indicating that the building uses only half as much energy as a standard (new) office building. Water consumption is also only 40% of that of a standard new office building, due to the recuperation of rainwater for sanitation use, and the placement of timers on taps.

Environmental impacts

A study conducted by an energy consultancy along with the construction team, found that the technique of borehole thermal energy storage (BTES) was responsible for energy savings of 30% and a reduction in annual CO₂ emissions by 67 tonnes, compared to a conventional installation. This is equivalent to the average CO₂ emissions of 15 Flemish families. In addition to the energy performance of the building itself, its strategic location of being close to Leuven's central rail, bus and tram stations facilitates transportation connections for the 800 employees and visitors that use the building on a daily basis.

For more information, please see European GPP criteria for [construction](#) and various [building materials](#).