

# Energy efficient building in the public eye

March 14 2014

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Building showcase projects must guide public building to become more energy efficient.

The heating and cooling of buildings take a large share in the [energy](#) consumption in Europe. The average energy consumption in the non-residential sector, such as public and industrial buildings, is estimated to be at least 40% greater than in the residential sector. Integrating technologies to make existing buildings more energy efficient is the

challenge that the EU-funded BRICKER research [project](#) will be addressing in the next four years. The project consists of retrofitting showcase public buildings in Spain, Turkey and Belgium.

The objective of the project is to ensure that the solutions developed in these public buildings can be replicated elsewhere, in the hope that architects, designers, promoters and end-users may adopt them.

"Buildings owned by public bodies have a high visibility. As such, the public sector can be an important driver for [adoption of] more [energy] efficient buildings and for behavioural changes in energy consumption by citizens and enterprises," says project coordinator Juan Ramón de las Cuevas, who is also a project manager working at Spanish building contractor company and project coordinator Acciona, based in Madrid.

The buildings selected to be used as showcases, are all non-efficient buildings with a high level of energy consumption. The Spanish showcase is a rather recent administrative complex located in the city of Cáceres, in Extremadura. It was built in 2005, and is owned by the regional government. The Belgian showcase building is much older. It dates from 1964 and is owned by the provincial administration of Liège. In Turkey, project researchers initially planned to refit a hospital in Izmir, which had financial problems. "As the building owners are paying for the refitting works, the hospital had to abandon the project," explains de las Cuevas. Another hospital could be chosen.

Experts welcome the combination of private and public sector partners in the project. "It is a good thing that so many enterprises are involved in the project," comments Jean-Marie Plasschaert, civil engineer and founder-manager at Scheldimmo and Geo-Thermics, which are construction and engineering companies in the niche of residential houses using shallow geothermic energy—typically energy harvested below 150 meters deep—, both located in Schelderode, Belgium. "If only academic institutes were involved, my fear would be that the final

results would be very theoretical and not fitted for immediate practical use."

Plasschaert also sees limits to the cost-efficiency value of so-called passive design and other heavy insulation-based retrofitting solutions. "For building with enough available ground surface, a complete refitting would be too expensive. Limited construction works, in combination with the use of geothermic energy will be sufficient to decrease the energy bill," he tells youris.com. He refers to Smart-Geotherm, a project coordinated by the Belgian Building Research Institute, as an example of good practice in this field. "It limits the insulation level to an economic optimum."

Other experts underline the importance of sharing the lessons learned in such showcase projects. "Effective know-how transfer is a key issue in the transition towards a sustainable society," says Hans Buitenhuis, managing partner at consultancy and engineering firm DWA in Bodegraven (Netherlands). "Our field experience in monitoring buildings efficiency taught us that a limited knowledge in the design and construction phases of contemporary, sustainable buildings and installations is the main cause for many problems," he tells youris.com.

Buitenhuis believes that the average measured energy provision of buildings stay about 20 to 40% below the intended level. He recognises that the project does well to pay a lot of attention to the dissemination of knowledge. Planned activities include workshops for local stakeholders, training seminars and webinars, clustering with related projects and, the publication of a best practices book.

The project is also designed to integrate all types of energy efficient solutions. The showcase projects include passive design and other techniques to reduce [energy consumption](#) with methods for local generation of power, [heat](#) and even cold. This can partly be achieved by

interconnections with smart grids, with heating and [cooling](#) networks, controlled by a building level energy operation system. De las Cuevas Jiménez concludes: "We expect to produce far-reaching results in the areas such as demand reduction strategies, integration of innovative hybrid—solar and biomass fed—[energy] cogeneration systems, effective interactions of energy flows and improved methodologies for interconnectivity."

**More information:** [www.bricker-project.com/](http://www.bricker-project.com/)

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