

Energy efficient Buildings 2011 (EeB 2011)
Demonstration of very low energy new buildings
Call deadline : 2/12/2010

OPAC38 Project Description, looking for partners.

Note: all energy consumption in this document are kWh/m²/year of primary energy (including the French 2,58 conversion rate for electricity) for heating, cooling and Domestic Hot Water production.

OPAC38

OPAC38 (Public Office for Country Planning and Construction), is a Social Housing Company located in Isère Department (French territorial division), where it is the first Housing Company.

OPAC38 earns and manages 23 000 dwellings, builds an average of 300 new dwellings per year, and retrofits an average of 500 dwellings among its real estate every year. OPAC38 employs a staff of nearly 500 persons, shared out over a Head Office in Grenoble and seven territorial Agencies.

The energy and friendly environmental policy at OPAC38

OPAC38 has promoted and implemented an environmental and energy policy since 1995, because of the basic following ground: to achieve a “rent and service charge” under control. Today, more than 1000 dwellings are wood-heated and more than 2200 dwellings have a solar system (thermal or photovoltaic).

All new dwellings are already designed according to the standards of the coming 2012 thermal regulation (RT2012), i.e. below 60 kWh/m²/year, which is 50% better than the current regulation. 2 projects (of 16 and 7 dwellings) build up according to this coming standards were ended last spring 2010.

In order to widen this approach based on a sustainable development background, OPAC38 wrote its own Agenda21 (see www.opac38.fr), published in 2005 and now on going. OPAC38 is the first French social housing company to have an Agenda21.

OPAC38's EeB 2011 Project:

The project is the construction of a collective housing in the area of Bourgoin-Jallieu (between Grenoble and Lyon), based on the experience of the Armadillo Box (see www.solardecathlon.fr) developed for the Solar Decathlon Europe competition that just ended in Madrid, late June (see www.sdeurope.org).

- **Logements collectifs à étages :**

30 kWh/m²/an, label BBC



The concept uses innovative constructive and architectural solutions for passive and/or positive energy housing which are based on the hybridization of low tech and high tech building materials and technologies. It is based on threefold decomposition “core-skin-shell” in order to minimize construction costs.

Among the natural materials, unbaked earth is used for its wide range of thermal capacities (inertia, hygrothermal regulation, insulation when mixed with fibres), in association with other natural (wood) and industrial materials (prefabricated building components and elements), and energy efficient technologies (solar, other renewable energy). All components are industrialized in a cost effective perspective.

Other European teams from the Solar Decathlon competition (Germany, Spain) are interested in developing a demonstration project in their own context based on a joint innovative approach.



Local Partners involved:

d' **école nationale supérieure architecture grenoble**



The local project team could associate within an European consortium the Research Unit “Architecture, environment and building cultures” (AE&CC) of the Grenoble National Superior School of Architecture (ENSAG), INES (National Institute for Solar Energy), Les Grands Ateliers (a technological platform developing innovation in construction methods, and housing prototypes), the sustainable development department of CSTB (National Scientific and Technical Centre for Building), and industrial companies.

With a recent prototype called “Armadillo box”, this team recently demonstrated new solutions for fast construction (10 days) as well as energy and cost effective housing (see www.solardecathlon.fr), partly based on earth.

OPAC38 participation in European Contract

OPAC38 already participated in 5 ended European contracts for retrofitting or new construction, from Thermie A to FP5.

OPAC38 is currently involved in the FP6, contract SUSDEV – 2003 – Concerto SESAC n°6183, with the city of Grenoble.

Contract E2ReBuild, including a retrofitting project for OPAC38, is under negotiation within the call EeB2010.

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