

G4 ENERGY EFFICIENCY

A HANDS-ON EXPERIENCE IN DE BONNE'S NEW SCHOOL

SYNOPSIS

A new elementary school is built in Grenoble with a 50% lower energy consumption level than the national average.

BACKGROUND

In 2007 the City of Grenoble drafted its Energy Action Plan, in line with the Metropolitan Climate Plan with the aim to cut by four GHG emissions by 2050. The objectives for 2020 are the EU's "3x20". As 80% of GHG emissions in Grenoble come from buildings, the City concentrates has concentrated its efforts on this sector in recent years. Thus, the City of Grenoble engaged itself to renew the 8.5 hectares of military barracks in the de Bonne district, including the new school.

OBJECTIVES

- Build a new energy efficient 17 class school. The energy consumption sums up to 50 kWh/m²/year for heating. This represents 30% to 40% less than applicable building standards.
- Educate all stakeholders involved: the Municipality of Grenoble, building managers, teachers, school staff and children.
- Raise awareness among parents thanks to a specific children-oriented communication programme on the energy performance of the project.

PROJECT DESCRIPTION

The construction of a new school in de Bonne is linked to the renewal of this district launched in 2001. The school welcomes children who live in the de Bonne area as well as in the surrounding neighbourhoods. It is a 2 floors building with 2973 m² of gross area, mixed concrete and a timber structure with external insulation, low emission glazes, with special focus on thermal bridges, a simple flow ventilation with pre-heated air, low consumption computers and a green roof.

RESULTS

Since the opening a dynamic thermal simulation, an infrared photography campaign and a consumption measurement campaign have been implemented. The final energy consumption is a little more than 50 kWh/m²/year for heating.

RECOMMENDATIONS

- The energy specifications need to be fixed and accepted by all actors early in the planning stage.
- The architects should collaborate with thermal consultants at the beginning of the design phase.
- The follow up of the energy targets has to be ensured during all the building process.



FURTHER INFORMATION

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