



STRASBOURG
MÉTROPOLE
DES DEUX RIVES

A wooden low carbon residential block

With its predecessor being the largest wooden building in France, the Port du Rhin district wooden residential block combines bio-sourced materials and energy performance, and kicks off the transformation of the Deux Rives sector.

A NATIONAL RECORD

Inaugurated on 11 June 2019, in the presence of Emmanuelle Wargon, Secretary of State to the Minister of Ecological and Social Inclusivity Transition, the "Sensations" complex completed by Bouygues Immobilier consists of 146 housing units distributed over three buildings, including one that is 38 metres high rising to 11 floors. A height unequalled for a wooden structure in France. But above and beyond this record, "Sensations" demonstrates the ability to use wood to build at height and in town. Almost the entire fabric of the buildings consists of this natural material: the floors, load-bearing walls and facade are made of CLT and are joined to a post-beam structure made of glulam timber. The cores of the vertical traffic, elevators and stairs, are also made of wood. Only the flights of stairs and the load absorbing base on the ground floor are made of concrete, for regulatory reasons.

ENERGY PERFORMANCE DIAGNOSTICS - DPE (FRENCH EQUIVALENT OF UK ENERGY PERFORMANCE CERTIFICATE - EPC)

Two of the three buildings reach passive level performance. Winter heating and summer cooling are obtained via

KEY DATA

- > **448** housing units including **117** social housing units
- > **29,700 M²** of floor space
- > **€1.84 M** of support from the City of Tomorrow Investment for the Future Program (IFP) just for the "Sensations" block, €60,210 for the instrumentation and monitoring of residents' energy consumption, and €197,759 for design
- > **€1.38 M** of IFP support for lot 1 Green'wood, done by Nouvel Habitat and €76,452 for instrumentation
- > **€941,536** of IFP support for lot 3 L'Orée des Deux Rives, done by PTFA and €30,770 for instrumentation
- > **€49,000** of IFP financing for support from the city of Strasbourg

reversible floors powered by a heat pump which captures the calories from the Rhine water table. This same geothermal system enables the domestic hot water to be heated. It is shared to benefit neighbouring buildings. Because "Sensations", which won the 2018 FimbACTE Cadre de vie trophy, is the first delivery of a future neighbourhood made of 100% wood.

4 LOTS FOR ONE BLOCK

Between Kehl, in Germany, and the Strasbourg Eurometropolis in France, 74 hectares of cross-border industrial territory are



undergoing hectic rates of transformation. The wooden residential block in the Deux Rives sector of the Port du Rhin district is the signal for this reconquest. "Sensations" is the first of four lots which, on a 2-hectare site belonging to the local authority, will total 443 units (331 for home ownership, 112 social housing), activities and shops and an underground car park. All these dwellings will then have floors which allow heating or cooling by "geocooling".

Well under way, Green'Wood, the lot shouldered by promoter Nouvel Habitat, includes 98 housing units and also aims for passive energy performance at Building level. Finally the other two lots, whose construction projects will continue until 2021, are managed by Nouveau Logis de l'Est (NLE) and Pierres et Territoires de France-Alsace (PTFA). The first will include 66 subsidised housing units for rent and

KEY FIGURES

- > **HEATING REQUIREMENTS** less than **15 KWH/M²** residential space/year
- > **BUILDING LABELS** at passive energy **RT2012** and LCB level Excellent
- > **GEOHERMAL** on groundwater
- > **BIOSOURCED MATERIALS** from the wood industry with local construction
- > **REALISATION** of **300 TO 400 HOUSING UNITS** made from wood per year

DIRECT

“ Creating demonstrators is a priority to show that we can provide answers to the questions raised by climate change. Projects like the low-carbon wooden residential block are only of interest as an experiment if they can be reproduced. The challenge is therefore to transform the test, that is to say, to look at the lessons that can be drawn from these buildings and then write them into public policy.”

Thalie Marx,
Head of Sustainable Urban Development,
Eurométropole de Strasbourg



51 social housing units, distributed over three buildings, the tallest reaching 6 storeys. The second will comprise of 90 ordinary and intermediate home ownership housing units in two buildings going up to eight storeys, which aim for performance at the 2012-20% energy efficiency standard. All of them should be able to get a Low Carbon Building (LCB, Bâtiment bas carbone) label.

MULTIPLE OBJECTIVES

The EcoCity project for a low-carbon wooden residential block demonstrator has three objectives:

- Studying the bioclimatic relevance of the use of wood in construction with BEPAS type performance levels;
- Analysing the technical and structural constraints linked to the development of wood as a major material in construction and achieving a mass effect;
- Participating in the development of a local wood construction industry "from the tree to the site and the resident".

Reproducible in the Strasbourg Eurometropolis region (whose objective is the creation of 300 to 400 wooden dwellings per year), the wooden residential block is also a pioneer for the coming 2024 Olympic village buildings, which will also be LCBs entirely made of wood!



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