

Residence 9 Town, Lyon, France

New luxury housing project in the private sector for which the heat for space heating and domestic hot water is produced by a set of 4 gas absorption heat pumps

Key facts

Building

Location	Lyon, France
Construction date - year	
Heat distribution	air vector system
Heated area	m ² living
Level of insulation	BBC RT 2012

Heat pump and source

Number of heat pumps	4
Installed capacity	150 kW
Operation mode	monoenergetic
Heat source	Air source
Brand and type developed by	France-Air - Xinoé , ROBUR
Refrigerant	NH3/water
Sound level	45 dB

Heating system

Heat demand	
Heating temperature	30°C

Domestic hot water

Type of system	Collective with substations
Max. Temperature	55°C
Circulation system	
Legionella measures	thermal
Storage size	1000 litres
Number of storage tanks - 4	
Storage losses	
Temperature control	

Other information

Electric energy Consumption year	kWh
Investments costs	unknown
PV installation	
Solar thermal	

[Project overview](#)



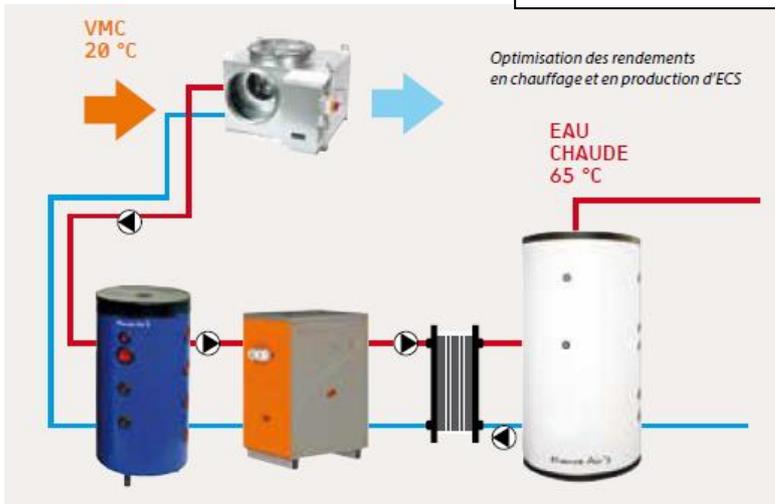
The new housing project in the private sector 'Residence 9 Town', was developed by Noaho, in the suburb Vaise north-west of Lyon. "9 Town" is a new residence of 106 apartments close to Valmy metro, Vaise train station, the ringroad within 5 minutes, Vaise remains a real district with its local shops and all schools, from kindergarten to high school, as well as its new university center. In the complex the real estate program in Lyon 9 Town offers 81 apartments from studio to 5-room, high-end services, with balcony terrace or interior patio, generous spaces with large openings on the landscaped areas or the hill depending on the exposure. The apartments, subject to the specifications of Grand Lyon Habitat durable, meet the standards of RT 2012.

The heat for space heating and DHW is produced by a set of 4 gas absorption heat pumps with a thermal power of 150 kW, coupled with 175 kW of gas condensing boilers mounted on a rack on the roof terrace. An air vector system is connected to the heat pump producing low temperature hot water, which is directed to the air handling unit, using energy from the water loop to heat the air. A network of ducts allows air to be channelled to the rooms to be served. The heated air is distributed in the rooms of the accommodation. The air is diffused into the room with a supply and return air diffuser. The return air is recycled and filtered by a fan with a DC motor and variable speed. A room by room regulation system. Each room is equipped with a radio or wired thermostat allowing independent temperature control. Heating by air vector at very low speed was chosen for its acoustic qualities and the comfort of its heat distribution. Each living room has a supply/return air outlet and an individual thermostat allowing room-by-room temperature regulation.

Residence 9 Town, Lyon, France, Technical details



Source: France Air



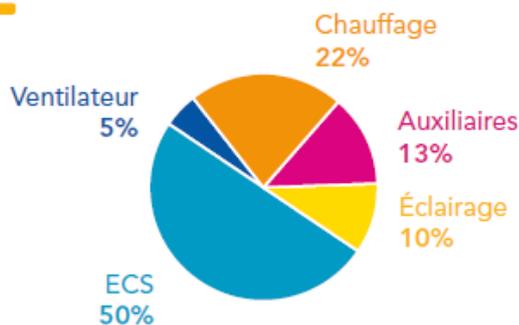
PRINCIPE DE FONCTIONNEMENT

Le système de vecteur air est relié à un système de production d'eau chaude basse température : chaudière à condensation gaz naturel et/ou PAC absorption / PAC électrique ou réseau de chaleur.

- 1 L'eau chaude est dirigée vers une **unité de traitement d'air Zairo®** qui utilise l'énergie de la boucle d'eau pour réchauffer l'air.
- 2 Un **réseau de gaines Phoniflex** permet de canaliser l'air vers les pièces à desservir. L'air réchauffé est distribué dans les pièces du logement.
- 3 La bouche **Twintop** permet une diffusion homogène de la chaleur dans la pièce desservie. Elle assure également la reprise de l'air en faux plafond qui, par différence de pression, sera aspiré puis filtré par la centrale.
- 4 Un **système de régulation pièce par pièce**. Chaque pièce est équipée d'un thermostat radio ou filaire permettant un contrôle indépendant de la température.



Description of the technical concept



Climate Zone H1c	Project	Reference RT2005	Gain
Average insulation (W/m ² .K)	0.45	0.65	31.4%
Energy Consumption (kWh _e /m ² .a)	54.9	121.5	54.8%

The BBC standard, which stands for low-energy buildings, designates a set of measures applicable to the construction of new buildings. Its objective is to considerably reduce energy consumption through insulation, ventilation, exposure to the sun and air tightness. The BBC standard is a mandatory label for new constructions since the entry into force of RT 2012.

The apartments' solar exposure has been carefully studied and the building has reinforced thermal insulation. The promoter, Noaho, wanted to build a housing complex that meets the requirements of low-consumption buildings, while balancing well-being and budget. The strengths of the RT 2012 project with renewable energies in accordance with the Grand Lyon Habitat Durable standard Innovative high-performance solution enabling high yields to be obtained.

"We wanted to carry out a housing project meeting the requirements of BBC standards that would combine comfort and energy savings, so we favoured controlled solar gains to take into account summer comfort, reinforced thermal and acoustic insulation, a heating system soft but without inertia, individual and modular room by room, and moreover economical thanks to free renewable contributions. The goal is to make our buyers save energy, while ensuring optimal comfort. Gas absorption heat pumps for the production of domestic hot water and heating seemed to us to be totally suitable for our objectives. This type of production combined with heating by an air vector (freeing up "furniture" space) thus meets the goal we had set for ourselves on this project: to provide our customers with comfort and energy savings." Martial Anizot, Technical Director.