

Energy efficiency in sensitive collective housing

The rehabilitation of the Nicolas Garnier site in Villeurbanne (F) owned by ARALIS, foundation for transitional housing, is the opportunity to enforce appropriate solutions for the particular context of sensitive housing. Eu.bac certified, the THERMOZYKLUS individual room control is chosen to optimize the heating operation.



Nicolas Garnier site, Villeurbanne (F)

240 transitional one room apartments to control

The building's type requires the implementation of efficient and sustainable equipment despite of the permanent comings and goings. The renovation is organized in several tranches to allow the foundation to continue its actions during the works realized by **EIFFAGE ENTREPRISE**. The **THERMOZYKLUS** individual room control, set up by **SECP** (Grigny) and commissioned by **ESA** (Messimy), already runs in an optimal way in 150 apartments – the last tranche is scheduled for 2018.

Security, accuracy and automation

Anti-vandal RS room sensors are installed in each apartment, which avoids the equipment's replacement or breakdown risk due to unwanted manipulation. They measure room temperatures and send the information in real time to the ZE central unit that controls the valves' openings and closings via its SK actuators, placed on radiators instead of thermostatic heads.



The ZE+SK solution has been chosen for its accuracy +/- 0,15°C and its eubac certification of 0,2 Ca on hydraulic radiators.

In a global securing strategy of the building, all equipment is automated. The heating installation is run by a BMS to allow remote control and simplify operation. With the SK actuators and the anti-vandal RS room sensors, no local modification is possible, the operator has full control over the system. To be noticed: the Thermozyklus system is totally autonomous and works even in case of BMS breakdown.

Contact : Marie-Christine Joubert

Thermozyklus sarl
23, Rue Carnot • F-95160 Montmorency
Tel. : +33 (0) 1 30 10 11 25
joubert.marie-christine@thermozyklus.fr
www.thermozyklus.fr

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Global eco-efficiency of the heating installation



SK actuator with automatic hydraulic balancing

The proportional SK actuators integrate an automatic hydraulic balancing function; they permanently calculate the optimal mass flow of each radiator and adapt in a dynamic way, which lessens operator's intervention and ensures constant efficiency of the building, generating savings on maintenance costs.

Moreover, actuators and sensors are self-powered via an 18V bus cable mounted serially or in star; a traditional actuator requiring an independent power supply and a protection, the savings for the operator are real. In the same way, the automatic window opening detection that switches off the heating without contacts eliminates energy wasting without any additional cost.

Another major asset is the in the SK integrated sensor, which allows checking if warm water arrives and realizing a quick diagnosis in case of breakdown for instance. Finally, the Modbus protocol ensures reliable communication and the eeprom memory the information saving in case of power failure.

The eco-efficiency is therefore guaranteed, as well as the users' thermic comfort.

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