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Self-adaptive Heating Control System at Care Home "Communauté des Soeurs de Jeanne Delanoue"

The « Communauté des Soeurs de Jeanne Delanoue » congregation, a care home for elderly situated in Saint-Hilaire-Saint-Florent, near Saumur, has about sixty residents with an average age of 75 - 80 years.

www.thermozyklus.de/fr

The heating always had been a real problem in this home in terms of expenditure as well as temperature control and management of discomfort, as the buildings were often overheated.

Advised by their gas supplier, GDF SUEZ, early in 2009, the sisters decided accordingly to install a self-adaptive heating control system of THERMOZYKLUS.

The result after one year was an achievement of 30% savings, validated by a study of GDF SUEZ.

A technically specialized system for all types of heating systems…

THERMOZYKLUS takes into account energy inputs or losses (opening of doors or windows, hours of sunshine, use of appliances, human presence…), and accumulated heat in a room (inertia of the heating system). Microprocessors – latest generation – collect, process, and store data and accordingly set and cut off the heating periods.

… and easy to install

The modular THZ system works with every application. In the cloister, THERMOZYKLUS installed a wireless THZ system in collaboration with ALTHECIA, its local partner. This wireless option meets all requirements of the cloister (thick walls that cannot be drilled, length of areas to be monitored).

ThermoZYKLUS installed adapted elements on radiators, which were equipped only with manual control heads so far, and then offered its wireless SF radiator valve to be simply screwed onto the radiator's body, leading to an installation in record time!

The temperature is then adjusted in stages of 0,5°C on the RF wireless room sensor, which had to be installed in the rooms that will be monitored, all of it controlled by the ZE central control located at the center of the building for optimum reception despite the difficult layout of the area.

The sisters then adjusted the desired temperature settings and a specific schedule for each room. The automation of the installation led to both savings and serenity with blocked temperatures, all with a very simple installation.

Therefore an energy saving of 84,836 kWh was achieved, which corresponds to a financial saving of € 3,857, as the average price over the period from July 2009 to June 2010 was € 45,47.

The investment paid for itself in less than two years (1.83 years), since the initial investment was € 7,040. According to GDF SUEZ, "with this solution the customer is seriously able to save energy while maintaining the residents' comfort".

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Installation description :

- 21 SF wireless radiator valves were installed instead of the original manual valves. They are handled centrally and prevent from any settings modification by the users or the opening and closing of radiators.
- 3 RF wireless room sensors transfer the temperature's information to the ZE central control through the 2 FE receptors/transmitters.
- 1 ZE central control, core of the system, is continuously processing the information received and anticipates the changes of each area. It controls the solenoid of the radiators in real-time through radio contact (868 Mhz, European standard).
- 2 FV radio amplifiers were integrated to reinforce the radio/wireless communication signal and to overcome the long length of the areas (+100m) and the thick stone walls.

The measurement software made the control of the radio efficiency and the optimization of this radio reception possible.

The installation was completed quickly, especially because of the 100% wireless version, an important function appreciated by the sisters as well as GDF SUEZ.

Study extract: gas consumption in heating season:

Heating season	Consumption	HDD	Ratio kWh/DJU	Corrected consumption/2008-2009
2008-2009	**1,372 788**	**2,381**	**576.56**	
2009-2010	**1,252 205**	**2,319**	**539.98**	**1,337 041**