



National Institute of Rheumatic Diseases, Piešťany

Project parameters:

- New heat source consists of a cascade of four stationary condensing boilers HOVAL Ultragas with a heat output of $2 \times 400 \text{ kW} + 2 \times 200 \text{ kW}$
- Water treatment for the OPV system is provided by the Aquaterm softening station
- The OPV storage tank from the manufacturer Reflex has a volume of 1500 l
- Danfoss thermostatic control valves were installed on existing radiators
- The entire heat management is managed by the electronic SCADA system, through which online monitoring and dispatching supervision is established 24/7

The project of modernization and streamlining of thermal management in NÚRCH - Piešťany was implemented in 2014. Four original hot water boilers were worn out and obsolete after 25 years of operation which was mainly reflected in the reduction of boiler room output. They were no longer sufficient for effective heat and hot water supply. Users experienced a decreased comfort - some branches in the peripheral parts of buildings were not heated, and the temperature of hot water at consumption points was reduced. Sediments were formed in the OPV accumulation production system - the so-called incrustation - which damaged the wiring from the inside, clogged the exchangers and the outlet fittings - batteries.

To prevent the formation of these deposits (incrustation) boiler replacement was just as important as the installation of drinking water softener which adjusts the hardness of the water.

The old hot water boilers have been replaced by new condensing boilers the efficiency of which is near one hundred percent. The measured efficiency of the original boiler room technology was 60-65 percent.

After the implementation of energy efficiency measures, this project shows a saving of about 30 percent compared to the original operating costs. That is enough difference to pay off the entire investment in ten years.





Svet Zdravia hospital Galanta

Parameters of the project implemented in the form of GES:

- new distributors and collectors of water heating with implemented regulation and mixing
- modernized entire hot water system
- construction of heat regulation nodes
- reconstruction and modernization of the main exchanger station
- fitted with 243 control valves with thermostatic heads
- monitoring of energy consumption via eIoT (heat, cold water for the preparation of hot water and flexible gas meters), monitoring of indoor and outdoor temperatures using its own weather station
- the project was completed in 2020



KOOR in hospital Galanta implemented a project aimed at improving the economy of administration and operation of heat and hot water distribution technology. In designing the project, it was necessary to consider the way in which the area can be connected to an efficient central heat source. This makes the geothermal well as a renewable source of thermal energy only solution, so it was not possible, due to current legislation, to consider disconnecting and building a central boiler room for the hospital premises. We evaluated it as uneconomical as well as non-ecological. Geothermal well was therefore preserved, and the GES project covered the reconstruction and modernization of other facilities.

At the bottoms of the individual parts of the buildings where the connections of the heating plants were located KOOR installed heat-regulating nodes controlled by electronic regulation.

The main exchanger station was entirely technically redesigned and reconstructed. We connected to the new switchgear measurement switchboard. The original heat transfer station was not in good technical condition and did not have the possibility of regulation. As part of the GES project, KOOR modernized the exchanger stations - new distributors and collector of the heating water were built with implemented regulation and mixing. At the same time, the entire hot water distribution system was modernized.

The overall level of savings achieved by these measures was so high that they were sufficient to cover the investment in new kitchen equipment - all cooking appliances that were originally built on steam technology were replaced by new gas appliances. The source of steam - gas colts, was subsequently decommissioned.

The implemented measures brought the hospital savings of 24 percent.