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Reducing the energy costs in nursing homes: Savings in home Palata in Prague

An expert conference focused on energy savings in residential care institutions took place in ILF Hotel, Prague. About 50 participants, mostly directors and managers of these institutions, attended this event on May 29, 2012. Contributions to inform about the SAVE AGE project and its outcomes, current trends in building energetics and related legislation changes were not the only issues introduced. There was also given an example of specific experience with energy saving measures in a social care institution in the Czech Republic.

The Director of the Residential Home for the Visually Impaired Palata, Prague, Ing. Jiří Procházka, informed the audience about a project which helped to lower energy consumption by 30 % between 2008 and 2011. This project started in 2003; there was an energy audit at Palata Home and the building got an energy label, which classified the building with grade "C". Based on recommendations, they were trying hard to implement such measures leading to grade "B" (regarding the age of the building and due to its location – conservation area – grade "A" seemed to be unreal to reach).

There were several changes made during the reconstruction. First in 2006, 56 new windows were installed and the rest of windows were renewed (these restrictions were delimited by the National Heritage Institute), which allowed to save 7 % of the energy consumption (5238 GJ in 2008 instead of 5608 GJ in 2006). Return on investment was calculated as 6,6 years.

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The Source of heat production was the next thing changed. When a new part of the home was built, the former boiler plant became insufficient. This problem was solved via installation of the combination of a gas boiler plant and a cogeneration unit (electric power 71 kW, max. heat power 109 kW). The installation was carried out in 2010 and nowadays the system runs 8 hours a day. The use of the cogeneration unit is a high effective way of heat and electricity production. In comparison to other types of boiler plants, the cogeneration unit does not waste the heat produced during electricity production, but the heat is used for heating (its efficiency is between 80 to 90 % compared with thermal power stations with 25 to 30 %). Moreover, heat and electricity is produced at the same place as it is consumed. Therefore there are no heat losses caused by district heating. Return of this investment was originally assessed by 8.6 years, but due to recent changes of energy prices, the investment should be returned in 5 to 6 years.

When the cogeneration unit was installed, the gas boiler room needed to be replaced and renewed and two extra condensing boilers were installed. Also a device to eliminate Legionella bacteria became a part of the system.

The last energy saving measure in Palata was the installation of shower and basin water savers. It was a low-cost measure (only 62352 CZK – 2418 EUR) which returned already in 93 days.