

Improving Energy Efficiency in Housing - Nyíregyháza, Hungary	
<b>Keywords</b>	<b>Improve Energy Efficiency in District Heating and Lightning Systems</b>
<b>Pictures</b>	 
<b>Objectives</b>	To reduce energy costs for citizens, improve their comfort, and prevent the development of urban slums, through renovations to the housing stock and heating systems.
<b>Description</b>	<p>There are 44,000 households in Nyíregyháza, including 22,000 blocks of flats, of which 12,644 are connected to a district heating system. In order to improve the comfort of the population and decrease the amount they spend on energy, the City decided to modernise its district heating system and housing stock.</p> <p>The first stage involved a programme called 'Opening', which was launched in 1997 to upgrade the thermal distribution circuits for more than 12,800 flats and the refurbish the existing housing stock. This resulted in a considerable decrease in energy consumption and was the most cost-effective measure possible.</p> <p>The second stage known as the 'Panel Programme' started in 2001 and involved retrofitting panel blocks. Most of the flats involved in the programme were privately owned, which presented a challenge in securing agreement to retrofit. In order to choose buildings to take part in the Panel Programme, collectives of flat owners within a building were invited to submit an application. Selection of participants was based on a rating system, with points allocated according to factors such as the age of the building, the architecture, the level of commitment of the collective to improving the building (in terms of both effort and finances) and the importance of the building in the cityscape.</p> <p>Other municipal programmes have included improving the energy efficiency of streetlights and indoor lighting in public buildings.</p>
<b>Results / Achievements</b>	<p>The Panel Programme has resulted in energy savings of 26.8 TJ/year. An evaluation of the retrofitting measures has shown that an overall 68% energy saving can be achieved. In terms of the contribution of different components of the retrofit to reducing energy consumption, heating modernisation accounted for a 46% reduction, the replacement of windows 13%, and insulation of the building facade a 9% reduction.</p> <p>The indoor lighting programme resulted in a total of 32.5% energy saving in the respective buildings. This is equivalent to savings of €224,000/year, giving a payback period of 12 years. The installation of energy efficient street lighting resulted in an energy saving of 38%.</p>
<b>Friendly advice for replication</b>	<p>The fact that many buildings requiring retrofits to improve their efficiency are privately owned and therefore are under no requirement to take-up measures, may represent a serious obstacle to a programme.</p> <p>In Nyíregyháza, the problem was solved by subsidising the costs of the retrofits so that the household only bore one-third of the cost (one-third was provided by the State, and one-third by the Municipality). As a consequence retrofit measures proved to be more attractive for private flat owners.</p>
<b>Online information</b>	<a href="http://www.display-campaign.org/rubrique682.html">http://www.display-campaign.org/rubrique682.html</a>
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