

## COMPREHENSIVE THERMAL RETROFITTING OF PUBLIC FACILITIES IN THE MUNICIPALITY OF KARCEW

**Sector:** Energy efficient buildings

**Timeframe:** 2013

**Location:** Municipality of Karczew

### PROJECT BACKGROUND

Karczew (approx. 15 900 inhabitants) is a semi-urban municipality located in the Mazowieckie Voivodeship. It is the first municipality in the region that signed a Public-Private Partnership (PPP) agreement concerning thermal retrofitting of public facilities. In 2011 the Mayor of Karczew established within municipal structures a special team responsible for carrying out investments in cooperation with private partners. Then, two important documents were developed: an "Analysis of the organisational structure and planned investments to be implemented using PPP formula in the municipality of Karczew" and a "System and process of implementing an investment within public-private partnership in the municipality of Karczew". In November 2011 the municipality underwent a verification process conducted by TUV Rheinland (international company specialising in certification) and received a certificate confirming that it is ready to implement projects using PPP formula. The procedure of selection of a private partner to be involved in the thermal retrofitting project lasted from February till the end of 2012. In January 2013 the Mayor of Karczew signed on behalf of the municipality a contract with Siemens Sp. z o.o. company concerning thermal retrofitting of 10 public utility buildings.



Photo: City Hall in Karczew, school and pre-school building in Olwoc Wielki - before and after thermal retrofitting

### PROJECT DESCRIPTION

The aim of the project entitled "Comprehensive thermal retrofitting of Karczew's public utility buildings using PPP formula" was to reduce heat and electricity consumption, enhance buildings' esthetics and improve energy management using environmentally friendly solutions. 10 buildings were retrofitted, including schools, kindergartens and a health center. At first the municipality planned modernisation of 11 buildings and this number was included in the announcement. Then, one building was removed from the list during competitive dialogue procedure due to the low economic profitability of the investment. The contract with the private partner was signed for 15 years: 1 year for the construction works (thermal retrofitting process) + 14 years for the maintenance of the retrofitted buildings (servicing, repairs, removal of defects and faults, replacement of damaged or used elements, etc.). The construction phase was completed on 31.12.2013 r.

Thermal retrofitting and accompanying works were conducted in 9 educational facilities and one health center located in the town of Sobiekursk. They included thermal insulation of external walls and roofs, installation of cladding, replacement of windows and doors, replacement of the guttering and the lightning protection installations, and modernisation of the roofing. Modernisation of the heating systems in respective buildings consisted in the change of the



Photo: City Hall in Karczew, Primary School No. 2 in Karczew - after thermal retrofitting

heating source from coal-based to natural gas-based or from electrical heating to district heating. Old boilers were replaced and new radiators with thermostatic valves were installed. In one of the educational facilities also the electrical installation was replaced. The buildings were equipped with room control systems and energy consumption monitoring systems. Moreover, the project foreseen replacement of old lighting fittings with the new, energy efficient ones, reconstruction of the land around the buildings and construction of drainage systems.

## FINANCING SCHEME

The value of the contract signed between the municipality of Karczew and the contractor - Siemens Sp. z o.o. company - amounted to 11 518 756 zł. (approx. 2 678 800 EUR). To cover part of the costs the municipality received co-financing from the National Fund for Environmental Protection and Water Management, granted within the Green Investment Scheme (GIS) and coming to 1 323 621 zł. (approx. 307 800 EUR). Capital repayment to the contractor will be done over a 14 -year period.

## PROJECT RESULTS

The most important results of conducted thermal retrofitting works concern guaranteed energy savings: 56% savings on heating and 20,9% savings on electricity. Verification of achieved savings is done each year, after the end of the heating season. The first verification was made for the heating season 2014/2015. Relevant report was prepared by the private partner on the basis of the meter readings and the invoices provided by respective energy suppliers. The savings achieved in 2014 were following: 57,68% savings in case of heating and 19,87% savings in case of electricity. Moreover, the investment resulted in improved functionality and aesthetics of the 10 public utility buildings.



Photo: City Hall in Karczew, school and pre-school building in Sobiekursku - before thermal retrofitting



Photo: City Hall in Karczew, school and pre-school building in Sobiekursku - after thermal retrofitting

## MORE INFORMATION

Anna Sikora  
Department for Investments and Fundraising  
City Hall in Karczew  
28 Warszawska str., 05-480 Karczew, Poland  
e-mail: a.sikora@karczew.pl  
um@karczew.pl  
phone: +48 22 780-65-16, ext. 107