



Name of the public building renovation:		Complete reconstruction of municipal head office SLOVSEF programme
Description	Category	Financial/Technical/Legal tool
	Address	
	Photo	
	Public sector contractor	Slovak Energy and Innovation Agency
	Characteristic of Public Building	Elementary school (public body)
	Date of Construction	1973
	Date of Renovation	2012
		
Implementation	Nature of the works	Thermal Insulation of External Walls - EPS thickness 80mm; Insulation of Unheated Floor of Attic - mineral wools 150 mm; Insulation of Unheated Floor of the Basement - EPS 60 mm; Exchange of Windows, Door and Glazed walls for plastic windows with insulation glazing; Exchange of Light Sources; Reconstruction of heating system - installation of a new boiler and installation of hydraulic adjustment of thermostatic valves;
		
	Budget/Finanancial resources	222 406 € with VAT
	Supervisor	EBRD
Energy savings	Metodology for savings calculation	Energy audit
	Savings calculation in 2012	Savings of heat -100 MWh/r Savings of electricity 0,2 MWh/r Total enery savings - 100,2 MWh/r
	Estimated savings by 2022	1 002 MWh

Assets of the project		Comprehensive renovation of building, Energy and Financial Savings, Increasing of Overall Usage of the Building, Increasing the Values of the Building, Prolongation of the Life Cycle of the Building Itself
Available results	What were the big problems in terms of energy efficiency to tackle	
	Has this building been already analysed and certified	Yes, energy certification has been processed after building's renovation
	What are the key innovative energy efficiency measures undertaken through renovation	In comparison to initial conditions of the building all measures undertaken through the project have innovative character
	What are the measurable improvements in terms of energy efficiency in electricity and heating	Savings of the fuel, electricity, maintenance costs, emissions of CO ₂ , 77,00 MWh per year
	Simple payback period	14,5 years
Energy Efficiency Measures	Envelope	Wall: To achieve the desired values of the thermal resistance of the external wall insulated thermal insulation with minimal thermal conductivity coefficient 0,039 W/(m.K) minimal thickness 80mm. Thus insulated wall will have a thermal transmittance $U = 0,38 \text{ Wm}^{-2}\text{K}^{-1}$.
		Windows: Several openings on the building design did not meet the current requirements of standards. As an optimal solution replacement for the original plastic windows with insulating glazing has been proposed. These are all the original windows of the Municipal Office Building, entrance doors and glass walls of the vestibul.
		Roof: To achieve the desired value of the roof thermal resistance (in an unheated attic ceiling), the original original roof was insulated with minimal thermal conductivity coefficient 0,039 W/(m.K) thickness 160mm. Thus insulated roof has a heat transition coefficient $U = 0,23 \text{ Wm}^{-2}\text{K}^{-1}$.
	Heating system	The boiler room in the building was morally and technically outdated its operation uneconomic. Replacement of old boilers for gas condensing boiler was carried out. All original equipment have been removed. Two new natural gas boilers were installed with a heat output 2x45kW. New pumps, piping etc. were also installed. The heating system in the entire building was hydraulically adjusted, new radiator thermostats have been installed on existing radiators.
	Ligting	Light sources were unsuitable in terms of energy consumption. Exchange of light sources and luminaires wa carried out.
Sustainability of the Renovation	Design and Choice of Sustainable Materials	Materials and products used meet all technical standards and requirements All required certificates have been issued.
Building maintenance after renovation	Water and Waste Treatment	Given that municipalities are required to implement the system for the separation of waste, at the municipal office building directly produced waste is subsequently separated.
	Application of Evaluation Methods	The results will be verified by the International Protocol for validation and performance evaluation(IPMVP).
Building maintenance after renovation	Is in the building energy monitoring system?	The building is fitted by measurement devices of natural gas, electricity and water, which measured values are recorded at regular intervals of the building administrator.
	Who is in charge of the maintenance of the heating system of the building?	During the warranty period supply companies are responsible for the maintenance, under the supervision of the building's administrator. After the warranty period the administrator will be adequately trained to basic maintenance and operation. Maintenance services will continue to be supplied by service companies.
	Are there any specific measures to raise energy awareness and to implicate users?	Brochures on Insulation Methods, Effective Energy Systems, Improved aesthetic appearance of the building.
Transferability	Transferable aspects according to the partners in charge of this example of good practice	The project addresses the comprehensive renovation of the building. The ideal way which is possible and even appropriate to apply in other public buildings. Achievement of significant improvements in energy efficiency and reducing the costs of the municipality to ensure the purchase energy media.
	Transferable aspects according to all the partners of Serpente project	
Resources	Publications	
	Web site	www.kosickapolianka.sk ; www.munseff.eu
	Interviews	