



GREENSETTLE INVESTMENTS



Information about the Kindergarten

Legal address: 186930, RC, M. Kostomuksha, St. Antikaynena 23
Construction year: 1986.
Size: 11092m³
Number of staff: 78
Number of children: 303
Open hours: Mon-Friday from 6.45 to 18.45
Closed: Saturday, Sunday



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Heat Pump Installation
in the Korablic Kindergarten
in Kostomuksha

This project is co-funded by the European Union,
the Russian Federation and the Republic of Finland



Project Description

The objective of the KARELIA ENPI CBC funded Greensettle – Green cities and settlements project is to encourage the development of green cities and settlements in remote cross border areas of Finland and Russia. In green cities and settlements land is used effectively, material is recycled or converted from waste to energy, and the aim is to decrease the ecological footprint and the overall contribution to climate change. Green cities are good for the environment, but provide also pleasant living environments for the people.

The project promotes competitive capacity and raises living standards in remote border areas. Best practice approaches will be implemented, which are based on efficient utilization of local potential and environment friendly technologies. The aim is to endorse economic and social requirements in harmony with ecological and cultural functions and, ultimately, contribute to a long-term balanced spatial development. As part of this project, two small scale demonstration investments have been implemented in the pilot territories of the project to demonstrate the impact of modern environmental technologies on improving resource efficiency. This brochure describes one of the projects.



Introduction

The kindergarten Korablic in the city of Kostomuksha was selected as the first pilot investment for the demonstration project. A decision was made during the kick-off meeting in Kajaani 20.6.–21.6.2011 that the investment in Kostomuksha city will aim at improving the energy efficiency of a building owned by the municipality. Kostomuksha-city administration invested 10 000 euros into this pilot venture, and another 10 000 was provided by the KARELIA ENPI CBC programme.

The Challenge

The Korablic kindergarten in Kostomuksha was constructed in 1986, when low energy prices did not encourage the use of economical solutions, and efficient technologies were not available. The main point of improvement in Korablic was the swimming pool area, which was built using technologies that are now outdated. Specifically, the indoor swimming pool area had high humidity levels, and the average temperature of water and air in the pool area were not meeting standards. The pool water temperature had to be kept too high, which resulted in strong evaporation of water from the surface of the pool.

Since proper ventilation was not installed, the high humidity became a source of discomfort. In addition to this, it caused damage to structural materials and finishes, and led to the appearance and proliferation of fungi and mold.

Another negative factor, which had appeared since the pool area was not properly ventilated, was that the level of carbon dioxide would increase when children exercised in the pool. Excess CO₂ would then negatively affect health and well-being.



The Solution

All the factors mentioned above led Kostomuksha city administration to take the only right decision – total reconstruction of heat recovery system in the swimming pool area. The main components of reconstruction were installation of new ventilation unit LITENED 50-25 and adding two modern Neoclimate air dryers.

The Three Stages of Implementation

I. Assessment

In 2012, the City District Administration of Kostomuksha performed technical evaluation (design estimates) of heat recovery system reconstruction.

II. Tendering process

The city of Kostomuksha placed an official notice numbered 0306300002213000046 as an open tender in the electronic form at the official Tendering website of the Russian Federation for goods, works and services (www.zakupki.gov.ru) on July 12th, 2013. Limited Liability Company “Stroitel” became the winner of the open tender to perform the heat recovery system reconstruction.

III. Implementation

Reconstruction and installation of new equipment started on August 12th, and was completed by the end of October 2013.



The Outcome

At the moment, air temperature in the pool area has normalized, and there is no excess humidity.

The proper ventilation of the entire pool area saves from 60 % to 92 % of thermal energy, minimizes the load on the heating system, as well as provides optimal conditions for recreation and maintains better health conditions for the children. The pool was open for kids on November 4th, 2013.