



LICEUL TEHNOLOGIC "SFÂNTUL PANTELIMON"

Str. Hambarului, Nr. 12A, Sectorul 2, Bucharest, Romania

Telefon/Fax: +40/21-255-9943

Email: liceul.sfantelimon@yahoo.com

EUROPEAN SCHOOL PARTNERSHIP FOR SUSTAINABILITY

Agenda 21 for our school

MOTTO:

„We can do more!”

The ESPS project team from Liceul Tehnologic "Sfantul Pantelimon" analysed some essential parts of such a huge document as it is Agenda 21 and tried to develop a small scale Agenda 21 for our school. We started from the problems identified in the school and propose some measures in order to reduce the School's Global Footprint. In approaching this challenge we used not only the knowledge acquired at school, but also the knowledge and the competences developed during a year and a half in this project. Visiting and working together with our friends from other European countries we gained experience, we found good practice examples and we understand that "we can do more".

Our school is located in the middle between the city centre and its limits, in a neighbourhood built more than 40 years ago, in a moment of an intense development of the city. The school were created as an annex of an important factory, "Electroaparataj", in order to prepare the future qualified workers. After the Revolution in 1989, the school became separated from the factory, but some tights remained, for example, the pipes for water alimentation and for the heating system etc.

This connection created a long tradition of wasting resources, since these resources came from the factory and what the school consumed were diluted in the ocean of the consume of the entire factory. Eventually, in the last 10 years all these connection were cut, and even the factory was demolished in order to be taken out of the city as the EU imposed. As such, we needed to pay for our utilities and the long tradition of careless wasting became an expensive negative point of our school organisational culture.

Unfortunately, in our research we discovered that the wasting habits are shared both by the majority of the students and by many employees of the school. We saw a lot of small and easy to avoid gestures which produce a lot of waste of any type.

The building of our school is 40 years old. In that period, saving energy during the lifetime of the building was not a priority. It respect a blue print used for hundreds of schools from all the country:

- Built from concrete and bricks,
- No walls insulation,





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- 3 levels,
- 7 classrooms + 1-2 annex rooms + toilet rooms for each level,
- Big windows,
- At least three big outside doors.

1. ENERGY.

1.a. Gas

10 years ago, our school had been connected to the water public pipe and to the gas public pipe. For both the school pays its own bills. Regarding the heating system, we needed to change the system: instead of the public one (heating provided by the city hall) we use now the gas in order to produce our own heat and hot water. This change was a significant improvement in the quality of the environment in the school, which is now pleasantly warm during the winter, but the gas is now the main expenditure of the school budget.

In 2015 we used 118675 m³, which means 248.27 m³/student. Regarding the gas consume, the heating of the water is a negligible component because, excepting the gym, only cold water is available in the school.

During our observation for the present Agenda we noticed some important ways of wasting the heating and, as such, of wasting the gas, which can be easily avoided:

- more than 25% of the windows in the classrooms have problems with the opening system: the insulation is missing or damaged, the window does not close properly etc.
- the windows remain opened for too much time. After a class finish the lessons, the students do not care to close the windows and, in many cases nobody check the classrooms in order to close all the windows.
- when it happened that a window is broken, the replacement is not done quickly;
- the door from the students' entrance is not insulated (made of steel) and, because it has no automatic closing system it remains opened with hours. During the cold days, in the hall of the first level, the temperature falls often near 0° C even if the heating is working hard.
- also often, the heating is working at a temperature too high and the students need to open the windows in order to cool down the classrooms;
- the working schedule of the administrative staff: this one finish the working day before the finish of all the classes and, as such, nobody check the doors, windows, lights, taps etc. in the school. Even in the middle of the frozen winter there remained opened windows during the night!





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Our project team analysed the problem and propose some solutions to it:

- the reparation of the closing system and the replacement of the insulation for all the windows;
- the replacing of the exterior doors with a model insulated and with automatically closing system;
- the installation of an environmental thermometer (with more operating programs in order to control the temperature during the night, week-end, holidays), which will control the heating system on/off. Its place can be in a classroom on the first floor;

Beside all of this, three common measures against wasting energy and water are these:

- a person from the administrative staff to have the task of controlling all the buildings for doors, lights, windows, taps etc. which remained opened or turned on;
- putting stickers in visible places and on the exit doors, asking for switching off lights, taps, computers, projectors, closing windows and doors etc.
- educational campaigns, contests for students awareness;
- volunteers campaigns organised by the students involved in the project;

1. b. Electricity:

In 2015 we used 97680 kWh, which means 204.35 kWh/student, more than 1 kwh/student/working day. We consider it is a huge quantity because the construction allows a good natural lighting for the classrooms; we work only in the morning shift (no need for lights as it is the case with a schedule in shifts) and we don't have important energy-intensive didactical means.

Our project team analysed the problem and propose some solutions for the reduction of the electricity consume:

- the replacement of the bulbs-lights with energy efficient ones.
- the IT technician should program all the computers and other machines, were possible etc. in the school to shut down automatically after a time of no use.





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2. WATER.

In 2015 our school used 4824 m³, which means 10.09 m³/student, exactly 10090 l/year/students, or 60 l/day/student. We have to keep in mind that our school does not have intensive consuming activities for water (like a kitchen, for example) or huge surfaces of terrain to be irrigated. This huge amount is related to many sources of wasting water, which our school provide:

- leaking taps or toilette water reservoirs;
- taps which remain on;

The main proposals our group have for the water wasting problem need a financial effort, which is not high, but it is not negligible, either:

- replacing the taps with ones with auto closing system;
- replacing the toilette water reservoirs on which you can choose the amount of water according to your needs;
- replacing on time the aerators of the taps (which mix the water with air, reducing the quantity of water for the same flowing debit).





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3. WASTE.

Waste is an increasing problem for Bucharest. The solution for evacuating the garbage become more and more ineffective and the European Union regulations regarding waste prove to be very difficult to implement properly.

In 2015 our school "produced" 66492 kg of garbage/year, meaning 139,12 kg /year/student. This huge amount was in part due to the fact that until now the initiatives for recycling were missing almost entirely. Everything which is considered useless goes to the garbage bins.

All the garbage in the school is carried out daily by the cleaning personnel. In every room there is a bin and everything is collected arrive in the garbage bins from the school yard. Weekly, this bins are empty by the district garbage truck

Analysing the problem, our team propose the following measures in order to reduce our school global foot print regarding waste:

- The project team asked the president of the Students' Council to make an official request to the City hall of the district for bins for selecting waste in the school yard. As such, on 21st of March these bins were installed!
- contacting various NGO-s with ecological activity in order to help the school in reducing waste: training courses, selective bins for the interior, contests etc.;
- training the maintenance personnel in order to verify the interior selective bins content in order not to mix the materials putting in the major bins from the school yard; the wrong selection will be announced to the teachers responsible to those classes in order to take measures and to insist on the proper use of the selective bins.
- organising constantly contest for the classes which recycle materials which can be sold to the recycle centres. The money obtained will be used for offering prizes to the winners (like tickets for movies, or Aventura park);
- discussing with the leadership of the school of a list of measures for wasting paper: printing if necessary, printing on both sizes, selecting the paper etc.;

