RENEW SCHOOL

Sustainable school building renovation promoting timber prefabrication, indoor environment quality and active use of renewables

Awareness raising school projects

RENEW SCHOOL

www.renew-school.eu

Co-funded by the Intelligent Energy Europe Programme of the European Union

INTRODUCTION

SCOPE

Taken collectively, schools are major consumers of energy, paper, food, water, cleaning products, and other resources, and generate waste, pollution, and greenhouse gas emissions. They also have the potential to use resources efficiently, become producers of their own power, and serve as models of environmental sustainability for their communities. This potential, combined with their ability to teach the next generation and communities of families by example, makes schools strategic actors in the drive to transform the world's energy and resource consumption from a destructive model towards more sustainable patterns of development.

Schools can be a powerful force in driving change towards sustainability within our communities.

Students should be allowed in taking the lead in developing eco-friendly projects in school and the local community engages them in green issues and teaches them soft skills.

Sustainability may be the 21st century word, but in many years few were talking seriously about separating waste or composting. After years of tireless campaigning, however, students are striving to become the next generation of "warriors for the ecosystem".

Teachers are supporting children in generating their own ideas for improving the places in which they learn and live, whether that's clearing litter from the playground or cultivating the school's green spaces.

It's not just about giving students a fun, but hands-on learning experience. Sometimes by providing children with ownership of a project, they value it much more.

Students also play a vital role in reducing the school's carbon footprint and, importantly, its bills, with energy monitors patrolling the classrooms, making sure lights and equipment are switched off when not in use.

MAIN OBJECTIVES

- To show and discuss measures and technologies for the retrofit of school buildings with the school users, both the pupils and the teachers;
- To involve students on sustainability themes like building energy efficiency, use of renewable energy sources and the use of wood as building material;
- To sensitize children about the themes above mentioned, let them know through the direct experience and knowledge;
- To give them instruments to measure the level of sustainability of their classroom and of their habits at home;

- To raise awareness of the positive role that each individual has in determining the quality of the territory in which they live and, globally, the future of the Earth, identifying and testing strategies for a sustainable living;
- To feed the curiosity and interest in the mechanisms by which nature sustains life on the planet;
- To support the development of the necessary skills to enable people to build a sustainable relationship with the environment: autonomy, creativity, sense of responsibility, the spirit of initiative, collaboration, the ability to design, ask yourself and solve problems .

METHODOLOGY AND MEANS USED

The overall objective of the school projects carried out within Renew School is to offer tools and opportunities to bring the younger generations to the issues related to sustainability of the development, support the growth of school communities with respect to the environment and the territory in which they are located, to support a cultural shift towards change of lifestyles and consumption aware, enthuse young people to issues of science and innovation, to develop the knowledge and skills needed for sustainable development for our planet.

In this context, our educational and teaching actions aim to accompany students and teachers along a path of discovery and of personal and collective growth, in the belief that everyone, regardless of age and role in the community, can become protagonists of concrete changes and help the emergence of a community capable of a future.

SCHOOL PROJECTS

Partner: HCS – Holzcluster Steiermark GmbH

NAME OF THE SCHOOL:
NMS 2 Schwanenstadt Secondary School

LOCATION:
Schwanenstadt, Austria

DATE OF SCHOOL ACTION:
28th April 2016

Number of pupils involved: 265

DESIGN OF THE ACTIVITIES

Interviews with mayor Karl Staudinger, school director Martina Decker, Architect Ingrid Domenig Meisinger and director of wood building company Hans-Christian Obemayr who participated in the school retrofit. We have asked them about their opinion regarding this kind of retrofitting method and what they think about the performance of the school after retrofitting.
We also had a presentation and workshop for the pupils about energy efficiency in buildings, life cycle and carbon reduction by using wood.

DESCRIPTION OF THE ACTIVITIES DONE:

The school project was about

- Presentations and discussions in classrooms about energy efficiency in buildings, life cycle and carbon reduction by using wood – pupils were very interested in the workshop.
- Participating in the Renew School Video, expert interview about indoor climate

The results about the work are available on the project website and they have been found as very satisfactory for all involved pupils of the school.
The video can be seen here: http://www.renew-school.eu/ or https://www.youtube.com-/watch?v=FhgRAisDUsk

Partner: WIC – Wood Industry Cluster

NAME OF THE SCHOOL:
Primary school Louis Adamic Grosuplje

LOCATION:
Kopanj, Velika Račna 43, 1290 Grosuplje, Slovenija

DATE OF SCHOOL ACTION:
5th May 2016

Number of pupils involved:
27 (22 children, 5 teachers)

DESIGN OF THE ACTIVITIES

We have made a short presentation of Renew School project, with children we have talked about how they can save the energy, we have shown them short movie about that. We have also been taking about renewable energy sources, we have shown them what different kind of houses (new houses, public houses, prefabricated houses…), then we have presented them different energy efficient houses with their main characteristics (passive house, low energy house,…) – the "houses of the future". We were talking about construction materials (wood, steel, brick, stones,…). We have shown the children what can be made of wood (bridge, bike, toys, houses, musical instruments,…).
After the presentation we have made a physical experiment with white and black bottle, they were making solar models, and at the end they were making toys from wood.
We have also shown them a prefabricated wall of one of the Slovenian wooden house producers.

DESCRIPTION OF THE ACTIVITIES DONE:

It was very interesting for the children because they could touch the wood and they were comparing it whit stone (the wood is nice to touch, it is warm). It was a great experience for them and this kind of project should be used more often. There were 22 children involved.
We have shown them this two movies: "Wood is good!" and "Energy, let save it".

Partner: WIC – Wood Industry Cluster

NAME OF THE SCHOOL:
Walfdor School Maribor

LOCATION:
Valvasorjeva 75, SI-2000 Maribor, Slovenija

DATE OF SCHOOL ACTION:
12th January 2017

Number of pupils involved: 60

DESIGN OF THE ACTIVITIES

We have prepared interesting topics from PPT presentation's, because at school they don't use electronic devices. The workshop was performed in a classroom for carving. We have presented the Renew School project, there was a lecture about that, then we have also shown a variety of building materials, which are used in wooden building construction – boards, insulation (focus on natural materials – wool, hemp, wood fibers, various wooden boards, …).
The workshop was performed in classes from 7th grade to 9th grade, from 8:00 am to 1:30 pm and the activity involved 60 persons. The workshop was also attended by the Principle of the school who was very impressed and said that he would like to have the same lecture for the teachers' council. One teacher declared that she had not seen children so interested in a topic like this for such a long time.

DESCRIPTION OF THE ACTIVITIES DONE:

It was very interesting for children because they could touch different materials. It was a very great experience both for them and the teachers and this kind of projects should be used more often (not just for children, but also for teachers).

Partner: NAPE – National Energy Conservation Agency

NAME OF THE SCHOOL:

5th Secondary School
Liceum Ogólnokształcącego

LOCATION:

Ruy Barbosy w Warszawie, Poland

DATE OF SCHOOL ACTION:

26th April 2016

Number of pupils involved: 242

DESIGN OF THE ACTIVITIES

As the activity was during the science day, we had a stand with a screen presenting Renew School ideas and other info.
During the day we also provided several workshops:

- walking through the school building and looking for proper day lighting for green walls,
- measure lighting intensity proper for reading and writing across a class (distance from window, height, etc.)
- identifying problems with overheating and interaction with day lighting,
- explanation of thermal comfort and human body thermal balance,
- measurements with the thermal camera (as outside weather was too warm for thermal bridges identifying, we showed some "funny" tricks like: looking for signs of heat, body temperature, solar gains, fridge profile of temperature, and so on).

DESCRIPTION OF THE ACTIVITIES DONE:

The main subject was lighting, so team from NAPE provided lessons and workshops about visual comfort, technics of measure, infrared technology together with infrared camera presentations. During presentations the thermal comfort issues were also covered, including problems of overheating during summer and lack of ventilation during winter.

Partner: AEE INTEC

NAME OF THE SCHOOL:
HTL uVA Pinkafeld

LOCATION:
Meierhofplatz 1, 7423 Pinkafeld, Austria

DATE OF SCHOOL ACTION:
Two school activities there from 7th September 2015 to 13th June 2016

Number of pupils involved: 5 responsible pupils, 3 teachers (Judith Fenz, Rudolf Hochwarter, Franz Gremmel) and all pupils (1400) via different activities such as on site visits of buildings, measurements and presentations in different classrooms of the school

DESIGN OF THE ACTIVITIES

The school projects were planned as activities resulting in two school theses of two groups of pupils, who should involve other classes and technical professionals outside school in their work. First thesis was about different options of sustainable insulation material to be used in wall systems. The other thesis was about the indoor air quality in classrooms including measurements during lessons. There has been one meeting with the responsible teachers on 22nd April 2015 where these topics and the design was decided on and then the projects have been carried out during the school year of 2015/2016, with final public presentations on the 13th June 2016.

DESCRIPTION OF THE ACTIVITIES DONE:

The work for the two theses was structured in the following way:

- After planning the thesis structure, first there have been investigations and desk work analysis on what has been done in the field currently.
- Second was the field experiment, e.g. real building visits of pupils where insulation material was used or measurements in classrooms, and questionnaires among professionals.
- Third was the summarization phase of the results and findings, the compilation of the final written documents.
- Last stage was the public presentation for a professional commission in school at 13th June 2016.

Partner: AEE INTEC

NAME OF THE SCHOOL:
NMS Gleisdorf

LOCATION:
Alois-Grogger-Gasse 12, 8200 Gleisdorf, Austria

DATE OF SCHOOL ACTION:
From 8th September 2014 until 17th June 2016

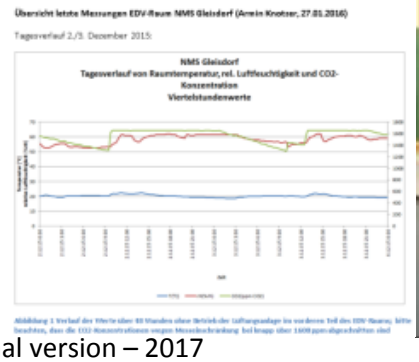
Number of pupils involved: responsible physics teacher Josef Wachter, principal Bernhard Braunstein, class of 4c and all pupils (255) and teachers (38) via different activities in the computer room, measurements and presentations in physics courses and school conference

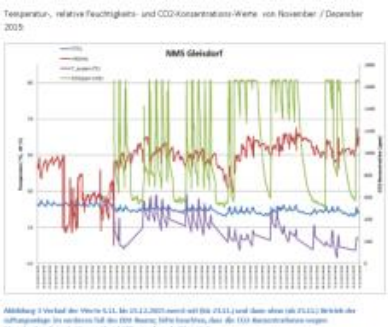
DESIGN OF THE ACTIVITIES

The school project was planned to result in more practical knowledge for the school owner and the school users about what is necessary to understand and keep high indoor air quality and operate mechanical ventilation units in existing school buildings. For this in the preparation phase measurements in classrooms have been carried out by AEE INTEC. Then decentralized ventilation units were mounted in one classroom and one computer room. In the next step measurements of CO2-concentration, temperature and humidity were carried out by the pupils under the supervision of the teacher during one school year. After that in the second school year 2015/2016 the ventilation units were switched on and off in a specific period to see if there is any reaction by the teachers. The experiences on that have been discussed with the principal, the ventilation units' companies and the school financier, the municipality of Gleisdorf.

DESCRIPTION OF THE ACTIVITIES DONE:

Very interesting feedback of the teachers was that they are more sensible about the smell in classrooms than on CO2-concentrations; they mostly did not feel better with (measured) low CO2-concentrations when the "OLF-values" have been high. The pupils were asked to measure comfort parameters (temperature, humidity, CO2-concentration). It was very helpful for every involved person that it is important to think about what good air quality is about and how one can invest in, run and maintain mechanical ventilation in practice.





Partner: AEE INTEC

NAME OF THE SCHOOL:
VS Engelsdorf

LOCATION:
Liebenauer Hauptstraße 177, 8041 Graz, Austria

DATE OF SCHOOL ACTION:
School project from 17th to 22nd June 2016

Number of involved pupils: responsible teacher 1, 20 pupils of the class 3a and info to the director.

DESIGN OF THE ACTIVITIES

The school project was planned to sensitize pupils on sustainability themes, like sustainable building, passive cooling and air quality. Measurements on the indoor air quality, temperature and humidity of the classrooms have been organized and made by a group of pupils in the classroom of the 3A.

DESCRIPTION OF THE ACTIVITIES DONE:

The resulting measurement data has been presented to the pupils on the 24th of June 2016 and they have been found interesting for all pupils of the school. The measurement results showed medium air quality and a tendency to overheating. Basing on the results, possible remedies to the problems were discussed with the pupils and the teacher. These were then proposed to the director of the school.

Partner: DTTN – Trentino Technological Cluster

NAME OF THE SCHOOL:
Scuola Media Ciro Andreatta I

LOCATION:
Via Monte Cristallo, 9, 38057 Pergine Valsugana (Trento), Italy

DATE OF SCHOOL ACTION:
15th November 2016

Number of pupils involved: 6 classes of pupils aged 13 (115 pupils), 6 teachers involved, 1 vice-principal.

DESIGN OF THE ACTIVITIES

The school project has been prepared developing a power point presentation which contains the most important topics regarding the sustainability, renewable energy sources, and focusing in particular in the best practices that each child can use to sensitize himself to the safety of the environment and the sustainability, respectively.

DESCRIPTION OF THE ACTIVITIES DONE:

The classes have been introduced by the vice-principle of the school Mr. Giovanni Zampiero to the representative of Habitech Dr. Micol Mattedi, who showed to the pupils the aim of the Renew School Project through a brief introduction. Then a power point presentation on the themes of sustainability, RES and the use of wood has been shown. It was very interesting for children to understand how they can help the environment and how they can contribute in saving water and energy, recycling and separating waste. Possible solutions to the current environmental problems have been discussed and proposed by the children themselves, through the analysis of the best practices to use in everyday life (both at home and at school).
Also a game has been proposed to the classes: to complete a crossword puzzle on the most important sustainability themes with the help of the definitions showed during the presentation.

Partner: DTTN – Trentino Technological Cluster

NAME OF THE SCHOOL:

Scuola Elementare Ic Chiese,
Plesso di Pieve di Bono

LOCATION:

Via Fiera, 1, 38085 Creto, Pieve di Bono (Trento), Italy

DATE OF SCHOOL ACTION:

6th December 2016

Number of pupils involved: 2 classes of pupils aged 9 (27 pupils), 2 teachers involved.

DESIGN OF THE ACTIVITIES

The school project has been prepared with the cartoon videos which show the bad behaviors and good practices on the themes of energy savings and the environment, focusing on some specific aspects like the good conducts that children can have both at home and at school. Then, it has been prepared an image of a house which shows many ways people waste and save energy, asking children to find them all. Finally, the theme of recycling different objects has been structured in the following way: firstly, it will be asked to pupils to write their own idea on the time to decompose; secondly to compare their idea in groups and finally the scientific data will be revealed.

DESCRIPTION OF THE ACTIVITIES DONE:

The classes have been introduced by the English teacher to the representative of Habitech Dr. Micol Mattedi, who welcomed the pupils in this activity. Then the cartoon videos have been showed on the themes of energy, water and environment, catching pupils' attention. It was then asked them to repeat the good and bad actions that they have seen in the cartoons. At the end the image of a house – which shows different ways that people waste and save energy – has been given to children, asking them to find all these behaviors. The last activity was the presentation of the theme of recycling. The names of different objects has been written on the blackboard for drawing students' attention to their time of decomposing. It has been provided to children the printed list, asking them to think on their own about how long each of the items on the list might last when buried in a landfill. At the end they have been arranged into small groups to share their lists and discuss what they believe. After having provided students with data about the longevity of the displayed items, the relevance of the environment, the importance of recycling and separating waste at home and at school has been discussed.

Fina

Partner: DTTN – Trentino Technological Cluster

NAME OF THE SCHOOL:
Scuola Primaria di Caldonazzo

LOCATION:
Via dell'Asilo, 3 Caldonazzo
(Trento), Italy

DATE OF SCHOOL ACTION:
15th December 2016

Number of pupils involved: 2 classes of pupils aged 9 (47 pupils in total), 2 teachers involved.

DESIGN OF THE ACTIVITIES

The school project has been prepared with the cartoon videos which show the bad behaviors and good practices on the themes of energy savings and the environment, focusing on some specific aspects like the good conducts that children can have both at home and at school. Then, it has been prepared an image of a house which shows many ways people waste and save energy, asking children to find them all. Finally, the theme of recycling different objects has been introduced and discussed.

DESCRIPTION OF THE ACTIVITIES DONE:

The classes have been introduced by the English teachers to the representative of Habitech Dr. Micol Mattedi, who welcomed the pupils and explained the reasons of this activity. Then the cartoon videos have been showed on the themes of energy, water and environment, catching pupils' attention. It was then asked them to repeat the good and bad actions that they have seen in the cartoons. At the end the image of a house – which shows different ways that people waste and save energy – has been given to children, asking them to work in small groups to find all these behaviors and then to identify them with the interactive blackboard. The last activity was the presentation of the theme of recycling. The names of different objects has been written on the blackboard for drawing students' attention to their time of decomposing, asking them to think about how long each of the items on the list might last when buried in a landfill. They have been reflected on the importance of recycling in order be more sustainable.

Partner: HCS – Holzcluster Steiermark GmbH

NAME OF THE SCHOOL:
NMS II Feldbach secondary School

LOCATION:
Ringstraße 23, 8330 Feldbach, Austria

DATE OF SCHOOL ACTION:
11th November 2016
Number of pupils involved: 130 in total

DESIGN OF THE ACTIVITIES

Meeting and expert talk with school director Gerhard Walter. Mr Walter contacted us after receiving Renew School e-newsletter and informed us that his school is supposed to be refurbished. He explained, there is first project idea of retrofitting 6 schools in one joint school campus in Feldbach for overall about 1.000 pupils. The next steps in development of this idea in order to open public competition needs to be undertaken.
Mr. Walter was interested about renew School method and technologies.
After talking to director we had presentation and workshop for pupils about forestry, wood processing industry, building with wood, energy efficiency in buildings, life cycle and carbon reduction by using wood.

DESCRIPTION OF THE ACTIVITIES DONE:

The school project was about:

- Expert talk with director of the school that needs to be refurbished providing information about Renew School method of retrofitting (Technical, financial aspects, existing frontrunners, lessons learned etc.);
- Presentations and discussions in classrooms about forestry and building with wood, energy efficiency in buildings, life cycle and carbon reduction by using wood – pupils were very interested in and they worked with in the workshop;
- The results about the work are available on the project website and they have been found as very satisfactory for all involved pupils of the school – 150 pupils in total;
- Next steps: meeting with mayor, workshop and technology talks + frontrunner visits with decision makers from Feldbach.



Partner: AGSO – Stedelijk Onderwijs Antwerpen

NAME OF THE SCHOOL:

Stedelijk Lyceum Topsport Antwerpen

LOCATION:

Edegemsesteenweg, 100 – 2610 Wilrijk-Antwerpen

DATE OF SCHOOL ACTION:

15th April 2016

2 groups of secondary school pupils, consecutively:

- 1 group of 20 pupils (13-14 y.o.)
- 1 group of 14 pupils (17-18 y.o.)

DESIGN OF THE ACTIVITIES

The pupils were introduced to the Renew School project representative Marc Van Praet by the principal of the school Mr. Frans van den Wyngaert. These pupils who are highly talented in their respective sports, are send by the Flemish Sport Federations of different sports from many schools belonging to all school networks in Flanders (state-, regional-, city- and free catholic schools) to this specialized school for top sport education. They are very serious about their education and also about their health. The school is renowned for its high moral and educational standards.

The representative then had a 20' open class discussion with the pupils on indoor air quality and energy use in their previous schools. Their input in the discussion was very interesting and relevant because of their different experiences in the past.

The discussion led to an almost unanimous decision of the pupils that the indoor air quality in their previous schools was overall bad, certainly in winter because of draught and bad smells but also in June at the end of the school year, when temperatures in class rooms were rising over 25°C. After the discussion the pupils viewed the Renew School video created as an introduction for the digital survey and they were of course allowed to ask questions to clarify where necessary the information in the video.

DESCRIPTION OF THE ACTIVITIES DONE:

At the end of each of the two 60' sessions, the pupils were asked to complete the survey and send it to the Survey Gizmo Renew School website. Although they were not obliged to do so, 29 pupils decided to send their answers to the survey.



Partner: DTU Technical University of Denmark

NAME OF THE SCHOOL:
Sjælsø school

LOCATION:
Birkerød, North of Copenhagen

DATE OF SCHOOL ACTION:

January 2017
Number of pupils involved: One classroom with 24 pupils (age 7-8) and two teachers

DESIGN OF THE ACTIVITIES

- Short introduction to air, temperature, and noise
- Play with indoor climate smiley'o'meter and get feedback on different interventions
- Play with smoke and light will show them air general nature of air, i.e. turbulence, viscosity, convective airstreams.

DESCRIPTION OF THE ACTIVITIES DONE:

- With an indoor climate meter using a smiley to show the acceptability of the different parameters, and different interventions, the effect on the smiley from noise, heating and opening of windows, will be shown to the pupils. The pupils are planned to participate by generating the different interventions;
- Smoke and a small laser light sheet will be used to show the flow of air and turbulence and the viscosity of air. The pupils will be able to generate turbulence and view the effect on air vortices.
- Measurements comprised CO2, temperature, relative humidity and illuminance for the period of 2 months;
- Surveys comprised collection of rating of indoor environmental quality among teachers and pupils (survey data comprise responses from 133 pupils in 6 schools – 6 classrooms – and the responses from 94 teachers in 11 schools);
- Instructing children to open windows in accordance to the feedback provided by the apparatus measuring the concentration of carbon dioxide;
- One class (24 pupils) was equipped with a visual feedback that showed concentration of CO2 by different color of light (LED). The children were instructed (trained) to open the windows when LED turned yellow and leave the classrooms when LED turned red. The feedback was used by the children for the period of about two months in the classroom where windows were otherwise opened manually to achieve airing of the class. The behavior of the children (effectiveness of using the feedback) was monitored by the independent CO2 monitors.

Partner: NAPE – National Energy Conservation Agency

NAME OF THE SCHOOL:
Public Primary and Middle School

LOCATION:
20 Jana Pawła II Str., 05-807
Podkowa Leśna, Poland

DATE OF SCHOOL ACTION:
22nd October 2016

Number of pupils involved: 31

DESIGN OF THE ACTIVITIES

The school project was about:

- sensitize pupils on sustainability themes, like the use of wood, RES, air quality, recycling, with the use of documents and exercises,
- investigation on different options of sustainable insulation material to be used in the renovation of school buildings and their surroundings.

DESCRIPTION OF THE ACTIVITIES DONE:

Ideas were promoted during the school time allowing pupils in doing exercises, workshops and working with documents, pictures and images. After working together with pupils, the thesis and ideas emerged have been summarized and presented in a public school day.

Partner: Informest

NAME OF THE SCHOOL:
Udine University

LOCATION:
Via Palladio 8, 33100 Udine

DATE OF ACTION:
18th January 2017

Number of students involved: 8

DESIGN OF THE ACTIVITIES

The lesson ""Details for passive buildings: the passive house construction standard over the last few years and refurbishment of existing buildings according to passive standards" was held within a master course of the Architecture and Engineering Master course of Udine University, that is addressed and focused on sustainable energy efficiency and sustainable construction. Being a very specific course, the lesson was attended by 8 students, that represented a most representative part of the total number of enrolled to the master course.

DESCRIPTION OF THE ACTIVITIES DONE:

The lesson was introduced by Professor Anna Frangipane who gave students hints and references with main topics treated during previous lessons.
Ms Lia Gover from Informest continued the lesson with a general presentation of Informest and of main aims and activities developed within the Renew School project and then Mr. D'Agostino gave details and a technical overview on main technologies used in the construction and renovation of frontrunners, mentioning students also some regional legislative controls and regulations that must be taken into account in the designing phase, as the seismic legislation. The lesson continued with a comparison on materials used in the different frontrunners, and with technical explanations on differences that the use of different materials can have in the long period.

Partner: eERG-PoliMI

NAME OF THE SCHOOL:
Secondary School Alessandro Volta

LOCATION:
Via Alessandro Volta 13 – 20093
Cologno Monzese (MI) Cologno Monzese

DATE OF ACTION:
21st October to 14th December 2016

Number of students involved: 483

DESIGN OF THE ACTIVITIES

Game and training activities with students for a correct opening of windows using a CO2 sensor with a display. The activity aim to teach to pupils, teachers and school occupants to provide a proper natural ventilation in natural ventilated school building. The activity has been conducted in cooperation whit an environmental association in the construction field called "Energia di Classe" – www.energiadiclasse.com. The training activity is also called "Air@school – experiences and game for school children for a comfortable natural ventilation"

DESCRIPTION OF THE ACTIVITIES DONE:

All the steps for the activity in the two classrooms took from 21st October to 14th December 2016. After a first meeting to present the activity, the pupils with their teachers used to open the windows when the display showed a carbon dioxide (CO_2) concentration higher than a value, chosen equal to 1500 ppm. During the breaks between lectures, pupils can open the windows until the CO_2 concentration fall under proper values. After about 2 weeks, monitored data of CO_2 concentration were analyzed. The results were shown and discussed with pupils during a final meeting for each classroom. Data about air temperature, relative humidity and CO_2 concentration were measured thanks to sensors installed by us in the two rooms. At the end of the activity, a sensor with display was given as present to each of the classroom, so they can go on with the good practice. During the next years, pupils can pass the sensor to younger colleagues of the school. And they also can start the proper windows openings. Pupils and teachers showed interest and the achieved results demonstrated proper windows openings and improved indoor air quality thanks to natural ventilation, after the training activity.



OVERVIEW OF THE SCHOOL PROJECTS DONE

Responsible partner	Schools projects done	Dates of finalizing	Involved pupils
AEE INTEC	1	07/09/2015 - 13/06/2016	1400
	1	08/09/2014 - 17/06/2016	255
	1	14-22/06/2016	20
HCS	1	28/04/2016	265
	1	11/11/2016	130
WIC	1	05/05/2016	22
	1	12/01/2017	60
DTTN	1	15/11/2016	115
	1	06/12/2016	27
	1	15/12/2016	47
DTU	1	January 2017	24
NAPE	1	26/04/2016	242
	1	22/10/2016	31
AGSO	1	15/04/2016	34
eERG	1	21/10-14/12/2016	483
Informest	1	18/01/2017	8
Total	**16**		**3163**

ELABORATED AND WRITTEN BY:

Micol Mattedi – Trentino Technological Cluster (IT)

With contributions and internal reviews from project partners:

AEE – Institute for Sustainable Technologies (AT)

Holzcluster Steiermark GmbH (AT)

Wood Industry Cluster (SI)

Technical University of Denmark (DK)

Asplan Viak AS (NO)

National Energy Conservation Agency (PL)

Chalmers tekniska högskola (SE)

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (DE)

Informest – Centro Di Servizi E Documentazione Per La Cooperazione EC (IT)

Autonoom Gemeentebedrijf Stedelijk Onderwijs Antwerpen (BE)

Politecnico di Milano, Dipartimento di Energia (IT)

Passivehouse Platform, PHP Belgium (BE)

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