

FP7 Project School of the Future -Towards Zero Emission with High Performance Indoor Environment

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The aim of the “School of the Future” project is to design, demonstrate, evaluate and communicate shining examples of how to reach the future high performance building level. School buildings and their primary users pupils - the next generations - are in the focus of the project. Both, the energy and indoor environment performance of 4 demo buildings in 4 European countries and climates will be greatly improved due to holistic retrofit of the building envelope, the service systems, the integration of renewables and building management systems.

Societal values are strongly formed by public models, this is also true for buildings. It is easier to gain people’s attention for the need for change, to significantly increase the quantity and quality of energy efficient retrofits in Europe, when public authorities have a good approach. It is therefore important to demonstrate exemplary solutions at frequently used public buildings like schools. Europe is dependent on having high-quality education spaces for its future generation. The use of public buildings as frontrunners will help to increase the market penetration of high performance retrofit approaches. The 100% carbon-free school building has to become the standard of the future.

The objectives of the project are as follows:

- Develop people’s consciousness to save energy by exemplary realisations of highly energy-efficient retrofit projects of school buildings. These will lead the way to carbon-free approaches whilst improving indoor environment. This approach will be promoted as the school of the future
- Demonstrate that significant energy savings can be achieved with limited additional costs (<100 €/m²). This will motivate other actors in the sector to multiply the concepts

- Cut back on reservations against innovative energy saving retrofit concepts in public building administrations by providing reliable information on energy saving potentials and costs
- Develop national and European benchmarking systems including estimation of potentials for innovative, cost-efficient energy retrofit strategies

The concept of the School of the Future project consists of 3 main parts. Firstly, the design, demonstration and evaluation of highly energy efficient retrofitting of schools in 4 different European countries with different climates. After that the project will develop guidelines and tools building upon existing knowledge and tools applicable throughout the EU countries. At the end of the project the emphasis will be on dissemination of results, guidelines and tools including also training activities. The design, demonstration and evaluation of the school retrofits will tackle 2 major challenges at the same time: energy saving and indoor environment quality.

Already at the start during the collection of existing knowledge the 2 different impacts of the retrofit have been taken into account. A knowledge database and a community at BUILD UP have been set up within the project starting phase.

The Schools of the Future project will deliver:

- Insight into the energy level that is achievable by retrofitting schools and other types of buildings – high performance is possible and feasible
- New up-to-date guidelines and tools for energy-efficient and high-indoor-environment-quality renovation of school buildings
- Increased awareness about energy- efficient building renovation and the important issue of indoor environment to improve pupils' performance

The expected impact of the project is as follows:

- Large-scale market deployment before 2020: it can be expected that the high performance school building retrofits will be multiplied within the next decade. Demonstration projects are essential to the further tightening of minimum energy performance requirements to develop the building practice.
- Acceleration of the uptake of retrofitting: success stories presented in demonstration building reports, the information tool, the project website and other dissemination channels will motivate other actors to start similar projects on energy efficient retrofits.
- Offering cost-efficient highly energy- efficient retrofit practices: the demo buildings, technology screening, retrofit guidelines, information tools, training sessions, website, presentations at conferences, etc. disseminate the cost and energy- efficient retrofit practice. The guidelines will even show ways for further steps towards zero-emission schools.
- Creation of best practice examples: the 4 demonstration buildings will be best-practice examples. Additional national best-practice examples and beyond will be used as

background information and also presented in the information tool. Those case studies will be taken from national programmes which also include energy-surplus schools.
