



## Press release

### Longlife Result



## Polish Longlife Partner presents as a result of the project Longlife the Thermal Barrier technique as an innovative technology of indirect heating and cooling for residential buildings

The Polish partners developed in the project Longlife a concept of an indirect heating and cooling technique of residential buildings driven by solar thermal radiation called Thermal Barrier. This system is composed of polypropylene U-pipes located inside of external walls. Fluid flows inside a U-pipes system with a variable mass flow rate and variable supply temperature. This creates a semi-surface parallel to wall surfaces and a spatially averaged temperature almost constant and closes to the reference temperature of 17 °C all year round. The Thermal Barrier technique is used to stabilize and reduce heat flux normal to the wall surface and to maintain its direction from internal air out to ambient air during the entire year. This limits temperature variations in the external walls, or energy losses. The Thermal Barrier technique combines a roof-collecting solar energy and ground heat storage system to heat polypropylene U-pipes placed inside external walls. This technology will be used in the Polish Longlife pilot project which is under construction.

**Keywords:** Thermal Barrier; Passive heating and cooling system; Gain-scheduling; Renewable energy source; solar wall, energy efficiency.

**Longlife** – Sustainable, energy efficient and resource saving residential buildings in consideration of unified procedures and new and adapted technologies - aims to optimize methods for buildings and construction, adapt and implement new technologies and harmonize building procedures between countries. These will lead to reduction of the energy consumption during the building's lifecycle. Partners from Poland, Denmark, Germany, Lithuania and Russia are working together three years. The Project will finish in January 2012, more: [www.longlife-world.eu](http://www.longlife-world.eu)

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