

Guide to Improving Energy Efficiency

The quality of the thermal insulation of your property can easily be seen through a thermographic image. We use this method routinely as a means of identifying the areas that are contributing most to your total energy cost. Concentrating on the improvement of these critical areas gives you the highest return on investment.

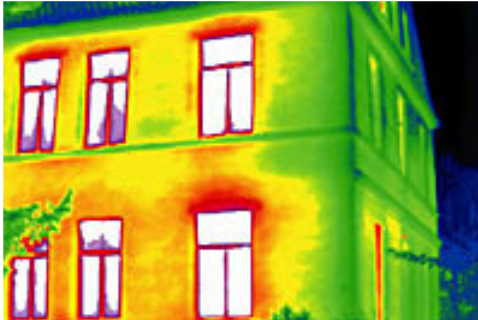


Fig. 1: Thermographic image of house. Red areas indicate high heat loss.

Benefits beyond cost

Improving energy efficiency, however, is not only about saving cost. A well executed thermal improvement of your property also gives you a draft-free and comfortable interior climate. It avoids the formation of condensation on walls and windows and the subsequent build-up of mould.



Fig. 2: Mould formation on walls and ceiling as result of poor thermal insulation and ventilation.

Properties of the highest standards use active ventilation systems which ensure that the heat provided is effectively distributed throughout the property, often taking advantage of geothermal preheating and heat recovery. Active ventilation systems can further be equipped with pollen filters to avoid allergies.

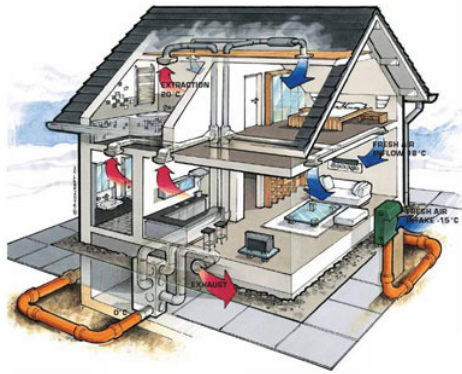


Fig. 3: Concept of active ventilation system with heat recovery.

Sustainability

The use of natural and/or renewable sources of energy is also preferred to the burning of fossil fuels or nuclear energy. Adding supplementary heating systems to your main system allows you to take advantage of natural energy sources at a relatively low environmental cost. Such systems include

- solar cells
- solar heat collectors
- heat pumps using geothermal, ground water or ambient air, and
- wind energy driven generators.

The actual benefit that you can draw from any one of those systems depends largely on your specific location, but may also be restricted by local building regulations.



Fig. 4: Roof-mounted solar cells.

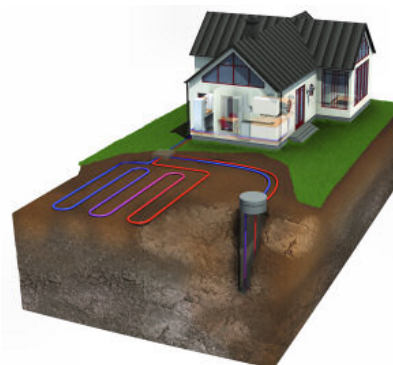


Fig. 5: Geothermal heat pump system.

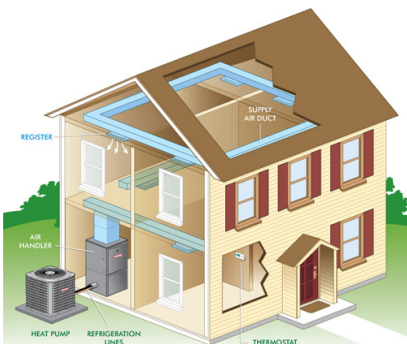


Fig. 6: Ambient air heat pump system.

Even if you are unable to take advantage of natural energy sources, the energy efficiency class that is stated in the energy pass recognizes the portion of renewable energy that is used for your primary heating. For instance, you can achieve higher classes of energy efficiency if your heating system uses wood or wood pellets.



Fig. 7: Wood pellet boiler.

Government subsidies

Whether you are building a new property or whether you are planning to improve an existing property, the Luxembourg government provides a large range of financial incentives to help with improving the overall standard of energy efficiency in the Grand Duchy.

These incentives are subject to change and the latest information can be obtained through www.emwelt.lu, www.eco.public.lu/energyefficient , www.ael.lu and www.logement.lu .



Fig. 8: Government issued brochures describing financial aids.