

Solar Air Heating

For comfortable and healthy living, homes require heating and ventilation. Solar air heating systems use air instead of water to circulate the heat collected by roof mounted solar panels in order to provide space heating and ventilation simultaneously.

They are particularly effective in well insulated houses which are built airtight and, when used in combination with a heat recovery ventilation unit (see SEI-REIO's leaflet "Solar Homes Catch the Sun"), can reduce your heating bills to a minimum. They can also be used to produce hot water through an air-to-water heat exchanger.



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SOLAR CENTRAL HEATING
for the home



Tapping the Sun

Heating my house with the sun, in Ireland?

Heating your house and your hot water is the main element of your energy bills. Today, the sun can help you reduce your heating bills substantially without straining your budget. Believe it or not, every year one square metre on your roof receives the equivalent of more than 100 litres of oil in free solar energy. As a matter of fact, this is more than in Paris.

A solar central heating system transforms sunlight into heat through its solar panels and that heat is then used to warm up water stored in a large tank. The heated water is circulated into your radiators or underfloor heating to distribute warmth around the house, and is also used to produce hot water for your bath, showers, etc. A control system ensures the regulation and safety of the whole equipment.



Saving money, all year round

A solar central heating system is a simple and reliable way to tap into the sun's free energy to increase your comfort and save money every day of the year. Such a system is generally designed to cover between 30% and 40% of your annual space and water heating requirement, and reduce your fuel bills by as much.

Solar panels can work even when the sky is overcast, which means they can make a useful contribution even during the winter by pre-heating the water in the storage tank. Your boiler or heat pump will boost the water temperature automatically when required to ensure constant comfort. In the summer, lots of sunshine means an abundance of hot water and generally spare capacity for possibly a swimming or plunge pool.



What size and what investment?

You should get a solar specialist to advise you on the optimum system size for your house, based on how much of your combined space and water heating requirement you want to cover with solar energy. Generally 30% to 40% offers a good compromise between initial investment and long-term savings. A typical system has a solar panel area of between 10 and 20 square meters and a storage tank between 800 litres and 1500 litres. The initial investment ranges between €8000 and €15000, including installation.

The solar panels should be installed on a roof area or a suitable structure close to the house which provides good orientation (between south-east and south-west) and tilt for the panels (usually the steeper the better to face the low winter sun, 60 degree above horizontal is optimal).

Buying & Installing a System

Installing a solar space heating system is not a do-it-yourself job. There are some important decisions and it is important to know what works best for your home.

How well the solar space heating system performs depends on effective siting, system design, and installation, and the quality and durability of the components. The collectors and controls now manufactured are of high quality. The biggest issue is finding an experienced supplier who can properly design and install the system.

Quality is of paramount importance when choosing a solar space heating system and installer. To ensure a high level of performance, reliability, and eco-friendliness SEI REIO maintains a list of suppliers using systems of certified quality.

Once the system is installed, it has to be properly maintained to optimize its performance. Different systems require different types of maintenance, but you should figure on 8–16 hours of maintenance annually. You should set up a calendar with a list of maintenance tasks that the component manufacturers and installer recommends.