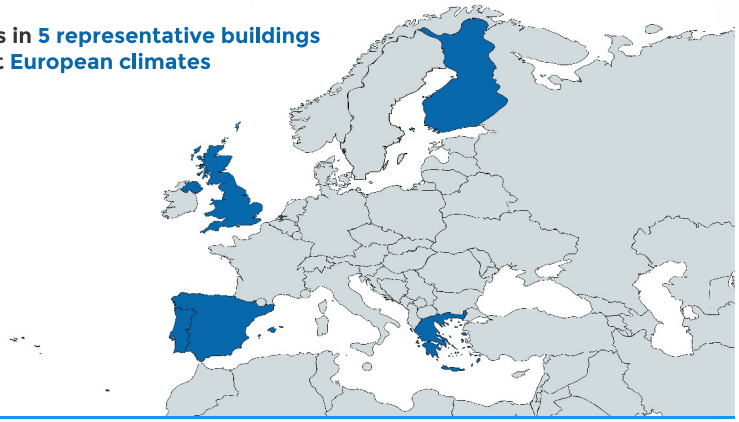
PARTNERS

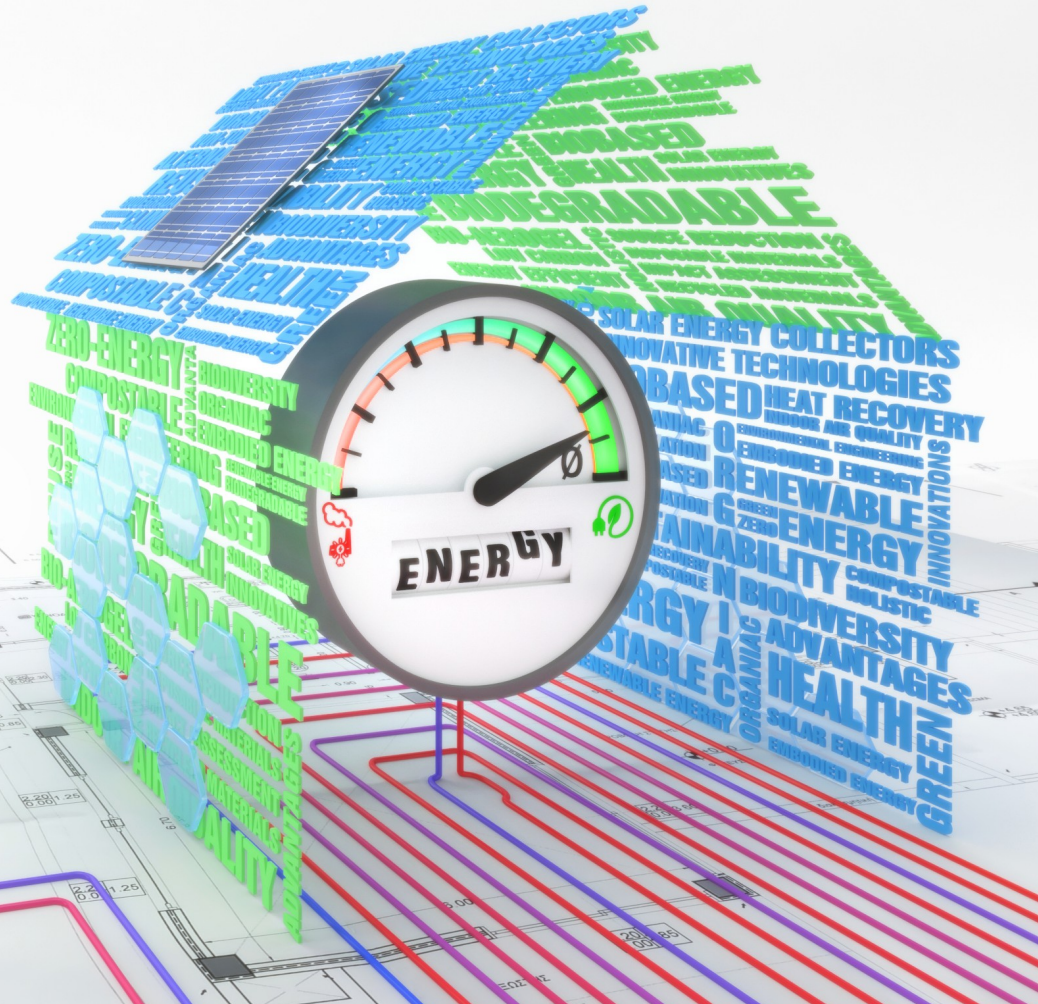
Demo Sites in 5 representative buildings in different European climates



ISQ	Instituto de Soldadura e Qualidade (ISQ),Portugal
AMS ADVANCED MANAGEMENT SOLUTIONS	Advanced Management Solutions Ltd (AMS), Greece
The University of Nottingham UNITED KINGDOM · CHINA · MALAYSIA	University of Nottingham (UNOTT), UK
PCM	PCM Products Limited (PCMP), UK
WINCO technologies	Winco Technologies (WINCO), France
CJR CÂNDIDO JOSÉ RODRIGUES, SA	Cândido José Rodrigues (CJR), Portugal
SOLIMPEKS Solar Energy Corp.	Solimpeks Solar Energy Corp. (SOLIMPEKS),Turkey
KÖSTER LICHTPLANUNG	KÖSTER Lichtplanung Ltd (KOST), Germany
Santa María la Real fundación	Fundación Santa María la Real (FSMLR), Spain
oncontrol	Oncontrol Technologies, LDA. (Oncontrol), Portugal
Aalto University	Aalto University (AALTO), Finland

Research Program funded by the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 894511.

SUREFIT



ABOUT SUREFIT

SUREFIT will demonstrate fast-track renovation of existing domestic buildings by integrating innovative, cost-effective, and environmentally conscious prefabricated technologies. This is to reach target of near zero energy through reducing heat losses through building envelope, and energy consumption by heating, cooling, ventilation and lighting, while increasing the share of renewable energy in buildings. This will be achieved through a systematic approach involving key stakeholders (building owners/users, manufacturers, product/services developers) in space heating, cooling, domestic hot water, lighting and power generation, as well as a demonstration phase in 5 representative buildings in different European climates.

CONCEPT

Buildings represent about 40% of the EU energy consumption, and 36% of the total CO2 emissions. A major part of these is due to heating and cooling, to maintain comfortable indoor conditions. In 2012, energy consumption for residential space heating in the EU was 200 Mtoe 2. The EU has committed to meet 20% of all energy demand through the use of renewable energy sources by 2020, and a further target of 100% by 2050 is already underway. Rational use of energy and integration of renewable energy technologies can substantially reduce the conventional energy demand in new and existing buildings and assist the EU in meeting the climate change objectives under the 2015 Paris Agreement.

SUREFIT

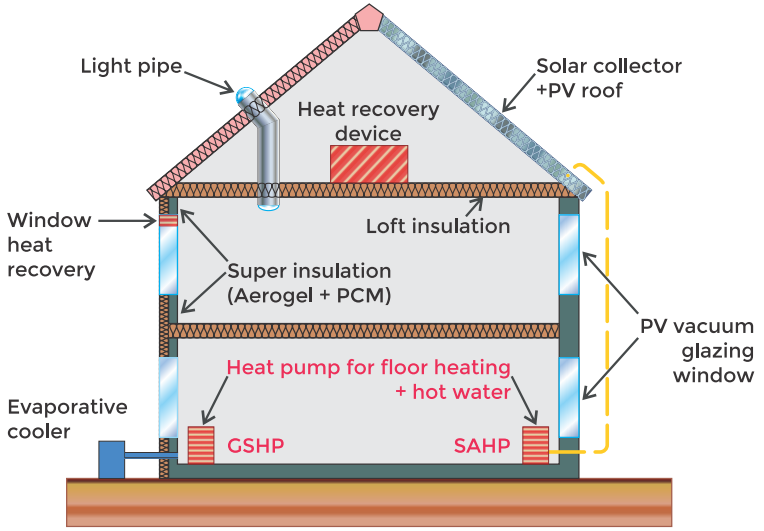
•Technologies
SUREFIT will address technologies that include bio-aerogel panels and their integration with phase change materials (PCM), photovoltaic (PV) vacuum glazing windows, roof and window heat recovery devices, solar assisted heat pumps (SAHP) and ground source heat pumps (GSHP), evaporative coolers, integrated solar thermal and photovoltaic systems and lighting devices.

•Retrofitting
The technologies are to be manufactured by the industrial partners of the project consortium and demonstrated under real-life context in five existing buildings under three different European (Mediterenean, Atlantic and North) climates to ensure their excellence in operation (Portugal, UK, Greece, Spain and Finland).

•Installation
These will be prefabricated for rapid retrofit with minimal disruption to occupants, ensuring high levels of occupant comfort/indoor environmental quality as well as low risk of moisture-related problems/summer overheating.

The work programme will involve optimal sizing and prefabrication of technologies tailored to building design/requirements; retrofitting/monitoring buildings in different climates with support of advanced building energy management systems; analysing indoor environment quality, energy use, user behaviour/acceptance of the solutions; developing methodology, guidelines/effective operational tools for rapid retrofitting and decision-making; and developing business model involving all relevant actors including, public authorities/investors/users and holistic integration of disciplines across the value chain.

These outcomes will be delivered by a consortium comprising leading companies, research/public institutions from European countries.



OBJECTIVES

- Fast track renovation of domestic buildings
- Prefabricated technologies
- Target on near zero energy buildings
- Increase the share of renewable energy in buildings
- Innovative technologies involving heating & cooling systems, hot water, lighting, power generation
- Smart control systems
- Demonstration in **5 buildings** in different climates
- Development of guidelines and operational tools
- Innovative business models