

At a glance

Title: Energy Efficiency for EU Historic Districts' Sustainability

Instrument: Collaborative Project FP7

Total Cost: 6.791.437 €

EC Contribution: 4.988.422 €

Duration: 48 months

Start Date: 1/09/2012

Consortium: 23 partners from 13 countries

Project Coordinator: Tecnia Research & Innovation (Spain)

Project Web Site: www.fffesus.eu

Key Words: cultural heritage, historic urban districts, energy efficiency, renewable energy generation, decision support system, European historic building stock



The Challenge

EFFESUS is researching the energy efficiency and sustainability of European historic urban districts and is investigating measures and tools to make significant improvements whilst protecting heritage values.

Historic urban districts are an integral, important part of European cultural identity and heritage. Improving their energy efficiency sensibly will help to protect this heritage for future generations.

The term historic urban district means, in the context of EFFESUS, a significant grouping of old buildings, built before 1945 and representative of the period of their construction or history. These buildings do not necessarily have to be protected by heritage legislation.

Project Objectives

Europe can become the leader in CO₂ emission reductions by applying innovative solutions to its cultural heritage. EFFESUS will therefore develop new technologies; produce a software tool to inform decisions on improvement measures; provide training and awareness activities; and demonstrate its project results in real case studies in seven historic urban districts.

The project will also ensure that any technical and non-technical barriers, preventing the implementation of the project results, will be overcome and will engage with as large an audience as possible, so that the research results will be widely disseminated and exploited throughout Europe.

Methodology

EFFESUS will develop, as its main output, the Decision Support System, a software tool to help make informed decisions about improvement measures suitable for historic urban districts. EFFESUS will therefore collect and analyse data to categorise European historic urban districts and to develop a multiscale data model. The project will also create repositories of technologies which are suitable for use within historic urban districts and which will improve their energy efficiency or generate energy from renewable sources. These repositories

will include technologies either available today or near-application. EFFESUS will also support new or adapted cost-effective technologies to get ready for the market.

The Decision Support System will balance location specific data on building stock and historic urban districts (including data on heritage values, climatic conditions and energy generation and energy use) with information on improvement measures.

The applicability and suitability of the Decision Support System and the technologies developed through EFFESUS will be demonstrated at real scale in seven case studies, located in the historic districts of European cities of very different building traditions, climatic conditions and cultural contexts.

Expected Results

The main output of EFFESUS will be the Decision Support System. This software tool will help prioritise improvement measures, suitable for use within historic urban districts, to achieve significant energy efficiency improvements and carbon emission reductions.

EFFESUS will also support the development of technologies suitable for use within historic urban districts. These technologies will include: aerogel insulation products, thermal insulating renders, secondary window solutions,

radiant reflective coatings, intelligent energy management systems and systems for energy generation from renewable sources.

EFFESUS will validate the Decision Support System through trialling in case studies at real scale. Similarly the technologies developed through EFFESUS will also be tested in case studies to demonstrate their applicability and suitability. EFFESUS will organise case studies in the historic districts of seven European cities: Bamberg, Budapest, Genoa, Glasgow, Istanbul, Santiago de Compostela and Visby. All case studies, except for Glasgow, are located in UNESCO World Heritage Sites.

EFFESUS will encourage an active stakeholder dialogue with the heritage sector, the construction industry and local, national and international policy makers as well as building owners and occupants and will provide training courses for students and advanced training for construction and heritage professionals.

To find out more about EFFESUS, its publications, future events and training opportunities, please visit EFFESUS online at www.effesus.eu where you can sign up for a regular newsletter.

| Project Partners | |
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| Tecnalia Research & Innovation (Project Coordinator) | ES |
| Fraunhofer-Gesellschaft (Scientific and Technical Coordinator) | DE |
| A. Proctor Group Ltd. | GB |
| Acciona Infraestructuras S.A. | ES |
| Active Space Technologies S.A. | PT |
| Advanced Management Solutions | GR |
| Bofimex Bouwstoffen BV | NL |
| Consortium of the City of Santiago de Compostela | ES |
| D'Appolonia S.p.A. | IT |
| Delap & Waller EcoCo Ltd. | IR |
| Dennis Rodwell | GB |
| EURAC research | IT |
| Gotland University | SE |
| Historic Scotland | GB |
| HOR-BER Ltd. | HU |
| I2S | GR |
| National Research Council - Institute of Atmospheric Sciences and Climate | IT |
| Norwegian University of Science and Technology | NO |
| R.E.D. s.r.l. | IT |
| SAMPAŞ Nanotechnology | (Turkey) TR |
| SAS Gouas | FR |
| Snekkeriet Verdal AS | (Norway) NO |
| University of Stuttgart - Materials Testing Institute | DE |