Project structure

The project consists of four work packages:

> **Knowledge base**
led by e7 Energy Markets Analysis, Austria

Collect best practice case studies following the approach of *IEA SHC Task 37 on Advanced Housing Renovation with Solar & Conservation* and *IEA SHC Task 47 on Solar Renovation of Non-Residential Buildings* and promote them online

> **Multidisciplinary planning process**
led by Uppsala University, Sweden

Investigate how existing guidelines for improving the energy performance of historic buildings can be enhanced and complemented in order to better meet the needs of the end user by providing an integrated design platform

> **Conservation compatible retrofit solutions**
led by University of Innsbruck, Austria

Identify, from case studies, replicable retrofit measures, including those currently under development, and assess technical retrofit measures from both energy performance and conservation perspectives

> **Knowledge transfer and dissemination**
led by Historic Environment Scotland, United Kingdom

Strongly building on the other three packages, the knowledge created in this project will be disseminated to a variety of the relevant stakeholders, including building architects and building surveyors, owners and users, real estate developers and construction contractors, heritage professionals and policymakers.

2018 EUROPEAN YEAR OF CULTURAL HERITAGE #EuropeForCulture

Organizational details

Full project title
Deep Renovation of Historic Buildings Towards Lowest Possible Energy Demand and CO_2 Emission (NZEB)

Project sponsor
International Energy Agency's
> Solar Heating & Cooling Programme (SHC) Task 59
> Energy in Buildings and Communities (ECB) Annex 76

Duration
September 2017 – February 2021

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SHC SOLAR HEATING & COOLING PROGRAMME INTERNATIONAL ENERGY AGENCY

EBC Energy in Buildings and Communities Programme

Image © Trimmel Wall Architects

Renovating Historic Buildings *Towards Zero Energy*

Historic buildings constitute a considerable part of our building stock and are the trademark of numerous cities.

Historic buildings will, however, only survive if kept in use. To save this heritage for future generations, we need to find conservation compatible, renovation approaches and measures that preserve the heritage values of these buildings while improving user comfort, lowering energy bills and minimizing environmental impacts.

Now is the time to identify and promote good renovation approaches.

Image © Valentina Cari

Conventional energy-saving measures are often not compatible with preserving the special character of historic buildings.

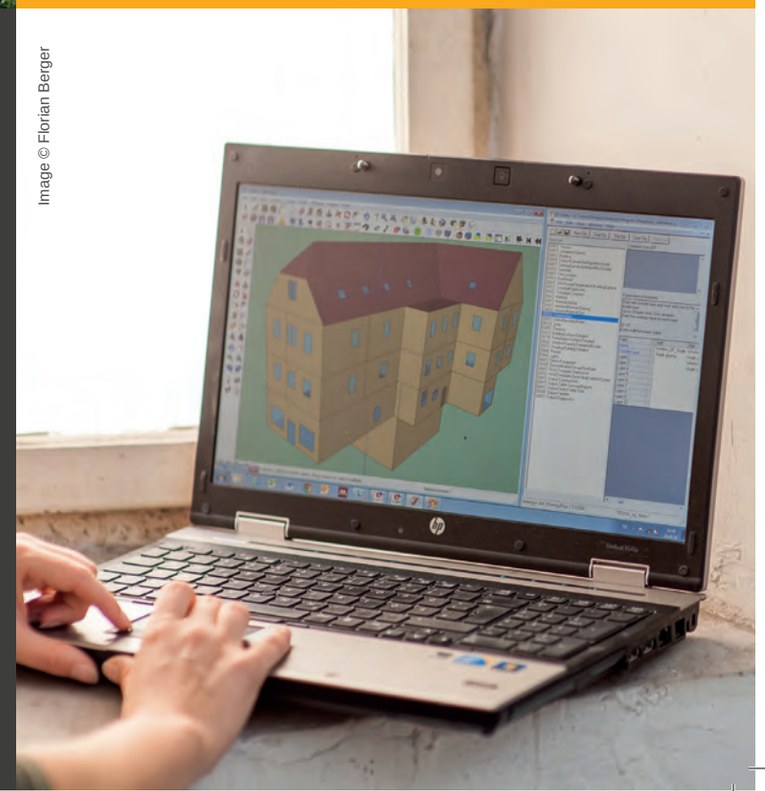
Nevertheless, the energy performance of historic buildings can be improved considerably if the right package of retrofit measures is identified. This can include the use of solar energy to heat and cool historic buildings. Examples of energy-related renovations show that, for many historic buildings, the energy demand can be reduced by 75% or more while preserving the buildings' heritage values.

Well-planned renovations will allow historic buildings to move towards zero energy.

Image © Uppsala University

Project objectives

- Develop a knowledge base on how to renovate historic buildings towards their lowest possible energy demand
- Identify their energy saving potential
- Assess multidisciplinary procedures to maintain their heritage value while improving the energy performance
- Advance the existing support tools used in integrated design processes
- Identify the potential for solar energy use and promote associated best practices
- Transfer the knowledge gathered to the stakeholders involved in the renovation process



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