SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

2018 HIGHLIGHTS

Task 59 – Deep Renovation of Historic Buildings Towards Lowest Possible Energy Demand and CO_2 Emission

THE ISSUE

Historic buildings represent a large share of the existing building stock. They are the trademark of numerous cities, and they will only survive if maintained as a living space. In order to preserve this heritage, we need to find conservation compatible energy retrofit approaches and solutions, which allow maintaining the historic and aesthetic values while increasing comfort, lowering energy bills and minimizing environmental impact.

In the last 10 years a shift in paradigm could be observed: While in times of the first EPBD, a strong opposition from conservators and architects could be observed – "don't touch these buildings" – there is growing a new openness, a much more constructive approach – "let's find the right solutions together". Now is an important moment to identify and promote good approaches and solutions.

OUR WORK

Standard energy saving measures are often not compatible with preserving the historic buildings' character, nevertheless realized examples show that reducing the energy demand by 75% and beyond is possible also in historic buildings preserving their heritage value – depending however on the specific case. While defining a minimum performance as for "standard" buildings does not make sense when looking at the specific building, the design team should not "stop thinking" too early! A considerable reduction in demand – also thanks to the optimization of passive solar use – opens up the possibility to go with active solar contribution towards nZEB.

The expert group of IEA Task 59 pursues the above objective in a threefold way:
(a) developing a solid knowledge base, documenting and communicating good practice building retrofits, (b) supporting the interdisciplinary design process with the collection and appraisal of guidelines, procedures and tools, and (c) identifying and assessing replicable technical solutions for a conservation compatible retrofit of historic buildings. Finally, a specific subtask promotes the transfer of knowledge to architects, decision makers and other stakeholders.

IEA SHC Task 59 is run in collaboration (at the moderate level) with the IEA Energy in Buildings & Communities Technology Collaboration Programme, where it is referred to as Annex 76.

Participating Countries

Austria
Belgium
Denmark
France
Ireland
Italy
Spain
Sweden
Turkey
United Kingdom
United States

Task Period	2017 – 2021
Task Leader	Alexandra Troi, EURAC Research, Italy
Email	task59@eurac.edu
Website	task59.iea-shc.org

TASK 59

KEY RESULTS IN 2018

Best Practice Experiences and website to present them

The work on the development of a "Knowledge base" started with the definition of "best practice" and the experts agreed on the following criteria for the experiences to be collected, analyzed and communicated:

- Renovation of the whole building – not just a single small intervention
- Significant reduction of energy demand – lowest possible, which will depend on the case
- A heritage assessment has been done – and influenced the solution finding
- Project has been implemented – as typically problems arise only then
- Documentation of technical solutions (and basic monitoring data or other POE) available

For the presentation of the best practice to building owners and architects, to trigger their interest and inspire them, the architecture atlas of South Tyrol acted as a role model, as well as some magazine like presentations. The developed website combines good visual presentation to inspire and trigger demand with the necessary information to allow learning from experience and the possibility to find also details for deeper understanding. Guiding principle: achieve a "fun to read" effect. The first mock-up of the website was presented at the third expert meeting and the review process defined. In the upcoming months, the first 25 Best Practices will be inserted, by the end of the Task a number of 50 will be reached and the long-term objective is to keep the website alive and establish it as a focal point in the community.

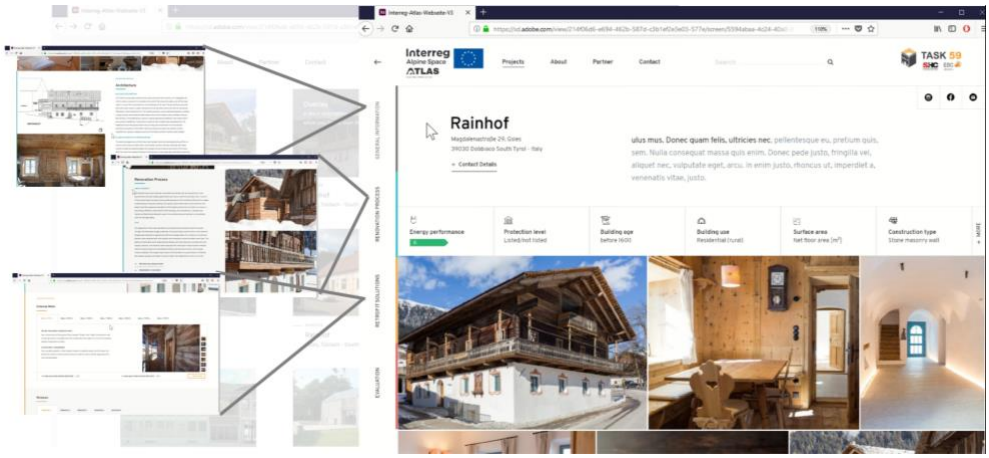

Figure 1: Mock Up of the scrollable website, with information on two levels of detail (+ buttons). The website will be programmed as "responsive" to whether it is called from a PC a tablet or a smartphone – adapting the presentation of photos and text and keeping it visually appealing.

European Year of Cultural Heritage Label

Task 59 applied successfully for the Year of Cultural Heritage Label, which was integrated into the Task's flyer and website. On the other side, Task 59 was promoted via the Year of Cultural Heritage website and communication means.

EEHB Conference 2018

The 3rd expert meeting took place in concomitance with the EEHB 2018 – the **3rd international conference on energy efficiency in historic buildings**, which is THE conference in the field and attracted around 150 participants from 25 countries. It took place in Visby (Gotland/Sweden), a UNESCO world heritage site. Task experts contributed to a total of 19 presentations at this conference – not necessarily strictly resulting from the Task's workplan (as to be expected at this early stage), but all of them related to work with which the experts are contributing to the Task.