



# Inspiring good practices: a database to trigger energy efficient renovations of historic buildings

**eurac**  
research

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Buildings of Historical Value*



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Instagram: Daily Overview

# ENERGY EFFICIENT HISTORIC BUILDINGS

# 2020

# OUT TO 2050

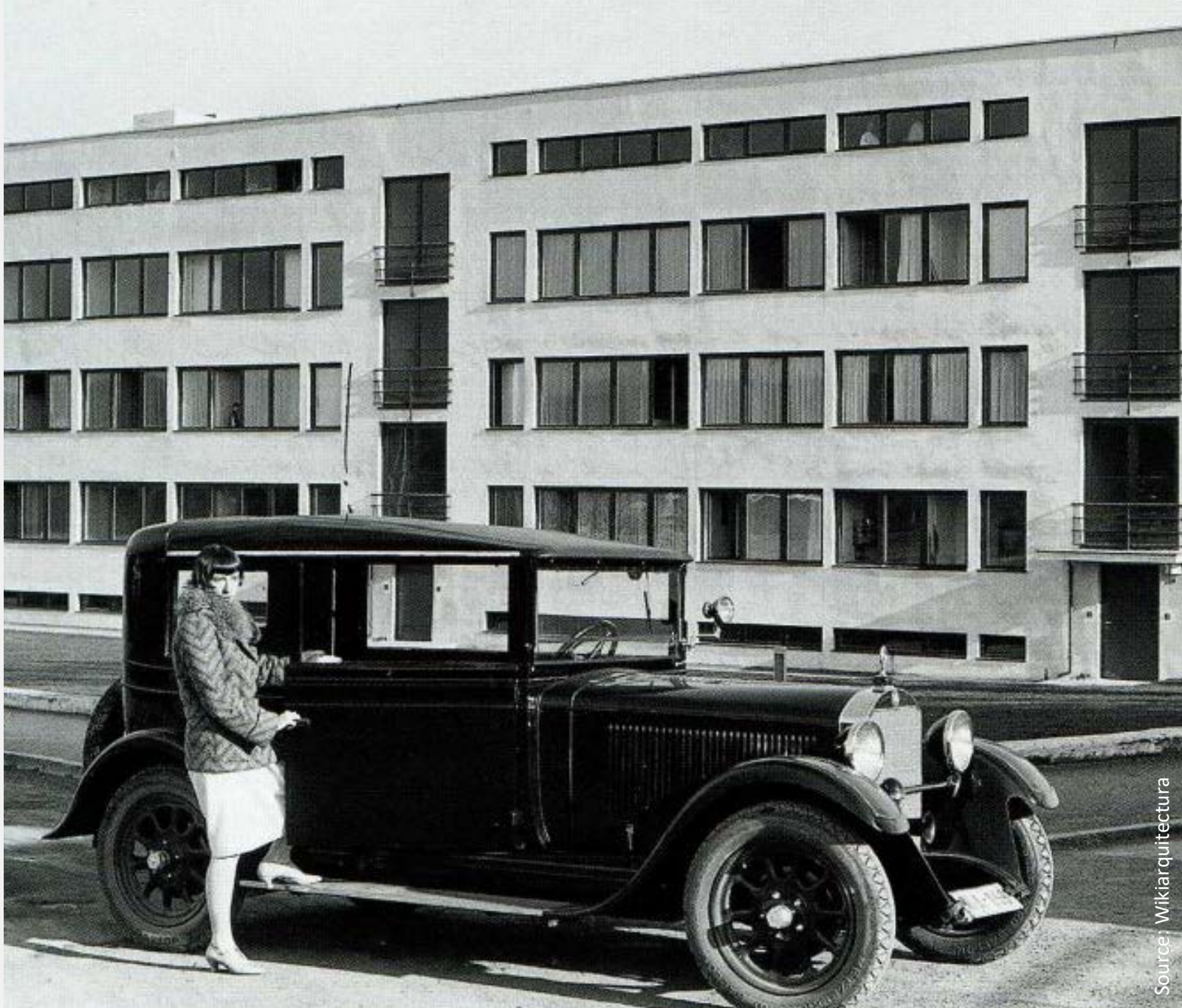


# ENERGY EFFICIENT HISTORIC BUILDINGS

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**< 1%**

Renovation rate



Source: Wikiarquitectura



# A BEST PRACTICE DATABASE FOR ENERGY EFFICIENT RENOVATION OF HISTORIC BUILDINGS

The Historic Building Energy Retrofit Atlas compiles cases of building renovation that are exemplary both in terms of heritage conservation and energy efficiency in order to inspire and foster energy retrofits.

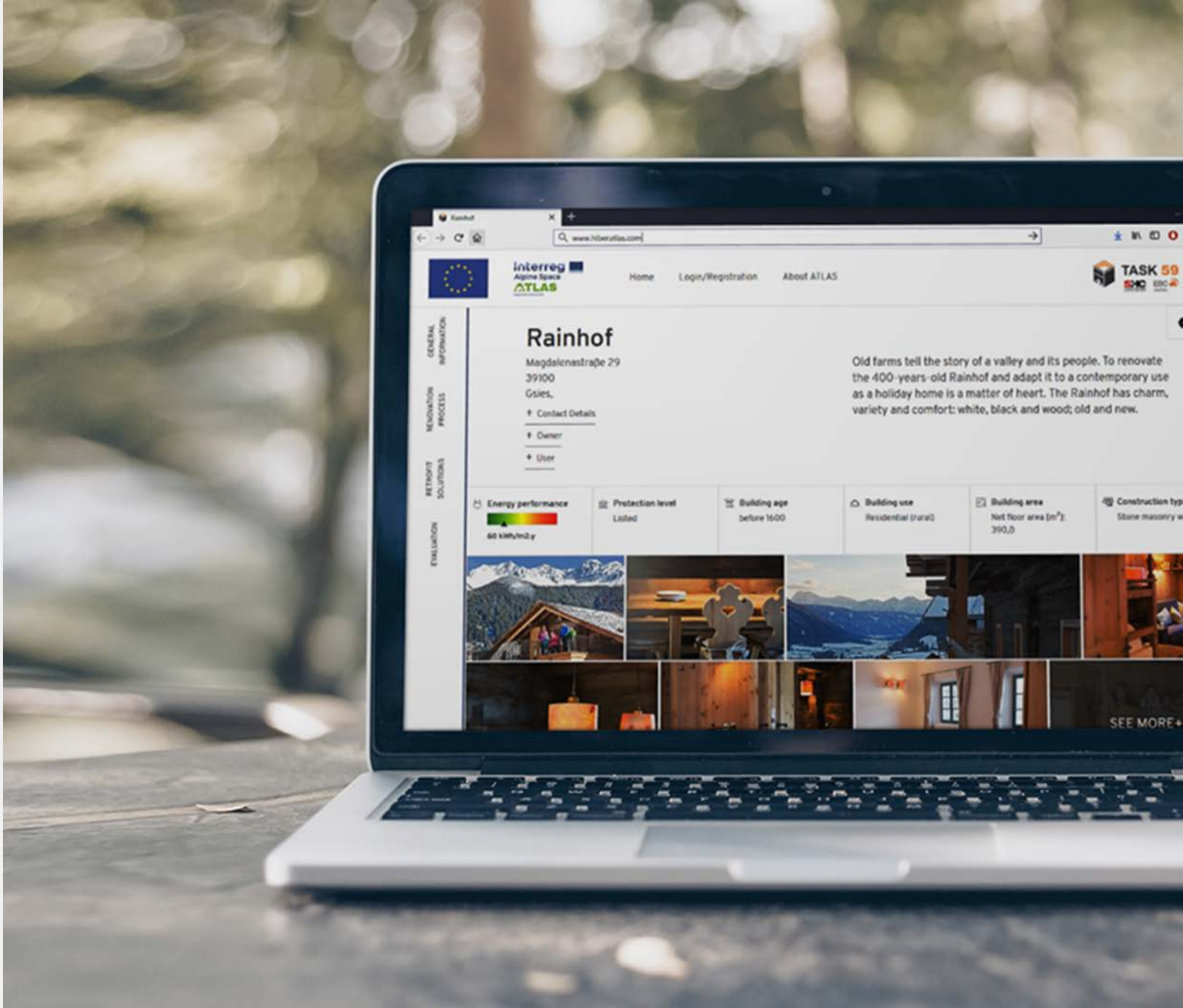
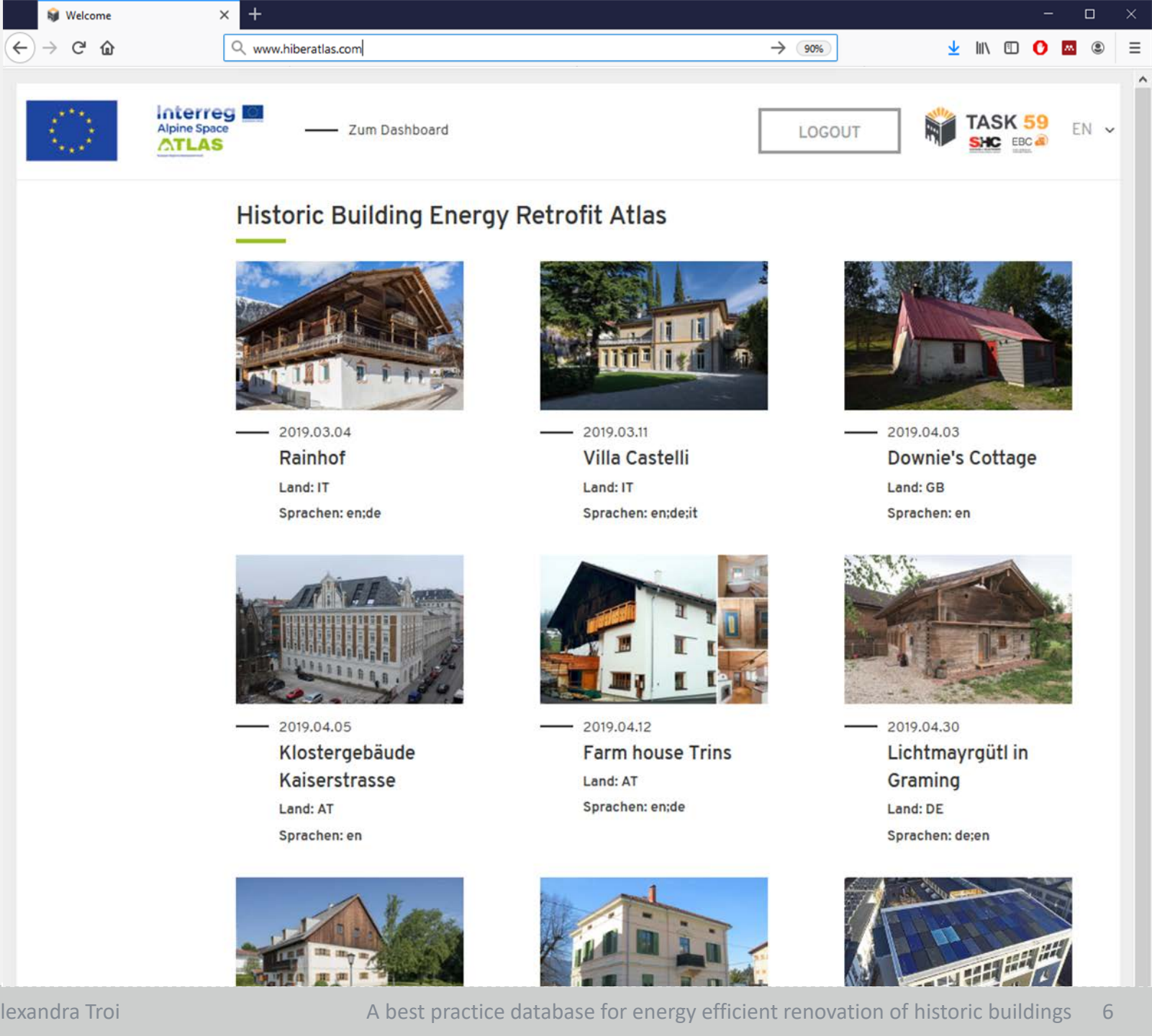


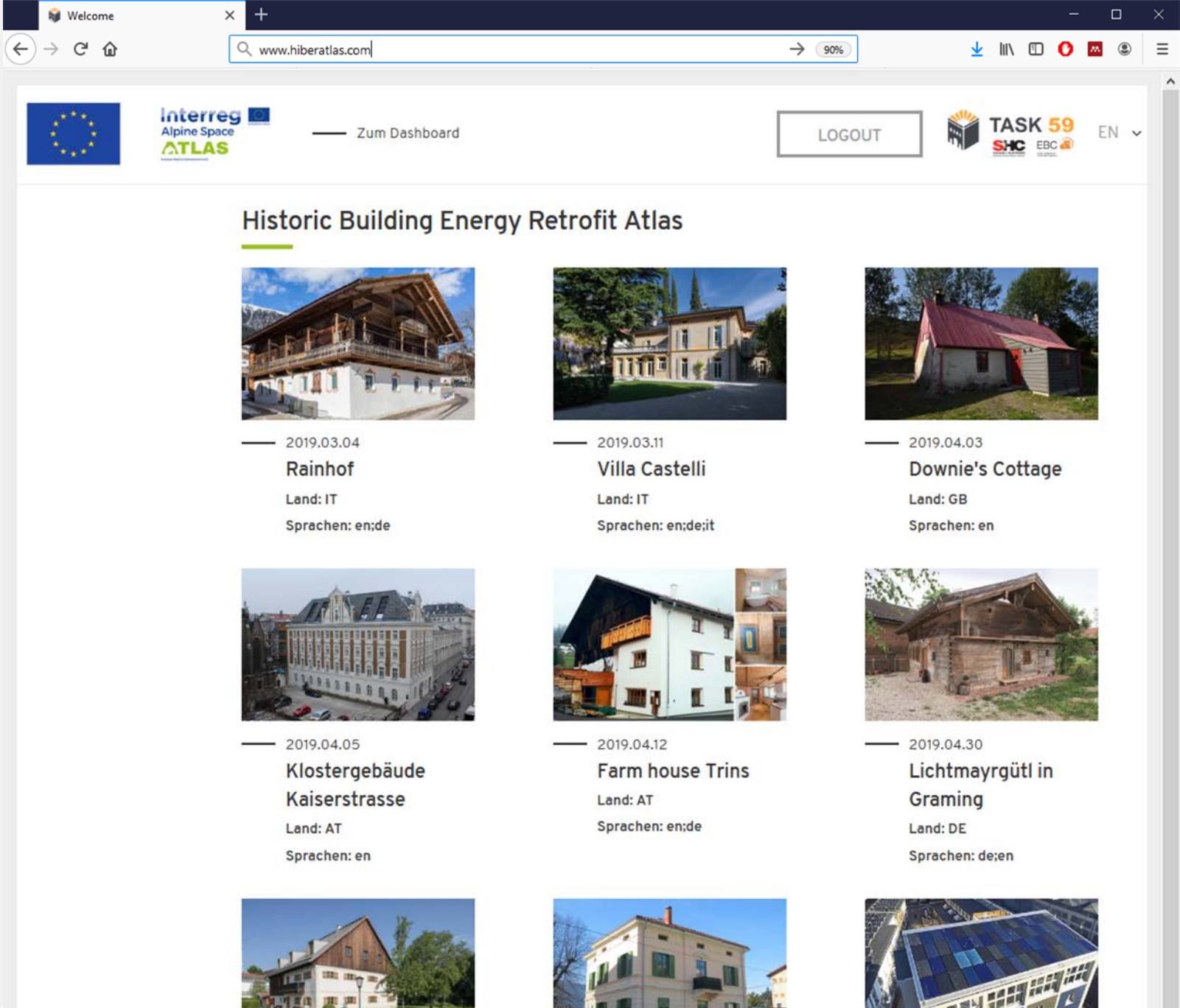


Photo credits available at [www.hiberatlas.com](http://www.hiberatlas.com)



# WHAT is documented?

Any building of historic and/or cultural value **independent of the level of protection** is considered - from medieval buildings over buildings from the 1920s to post WWII architecture.



# WHAT is documented?

The basic requirements for best-practices are

- ✓ Implementation of the project **completed**
- ✓ Renovation of the **whole building**
- ✓ **Significant reduction** of energy consumption (towards “lowest possible energy demand”)
- ✓ Evaluation of the **heritage compatibility** of the solutions
- ✓ Available **documentation** of technical solutions



# HOW is it documented?

Second level of detail data and information

1. images of the building and key figures of the intervention
2. a description of the context and the rationale behind the solutions adopted
3. the different retrofit solutions implemented
4. evaluation of the intervention in terms of energy efficiency, internal climate, cost and environmental impact.

Interreg Alpine Space ATLAS

Zum Dashboard

LOGOUT

TASK 59 SHC EBC

EN

GENERAL INFORMATION

## Rainhof

Magdalenastraße 29  
39100  
Gsies.

+ Contact Details  
+ Owner

Old farms tell the story of a valley and its people. To renovate the 400-years-old Rainhof and adapt it to a contemporary use as a holiday home is a matter of heart. The Rainhof has charm, variety and comfort: white, black and wood; old and new.

RETROFIT SOLUTIONS

Energy performance 60 kWh/m2.y	Protection level Listed	Building age before 1600	Building use Residential (rural)	Building area Net floor area [m²]: 390,0	Construction type Stone masonry wall
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EVALUATION

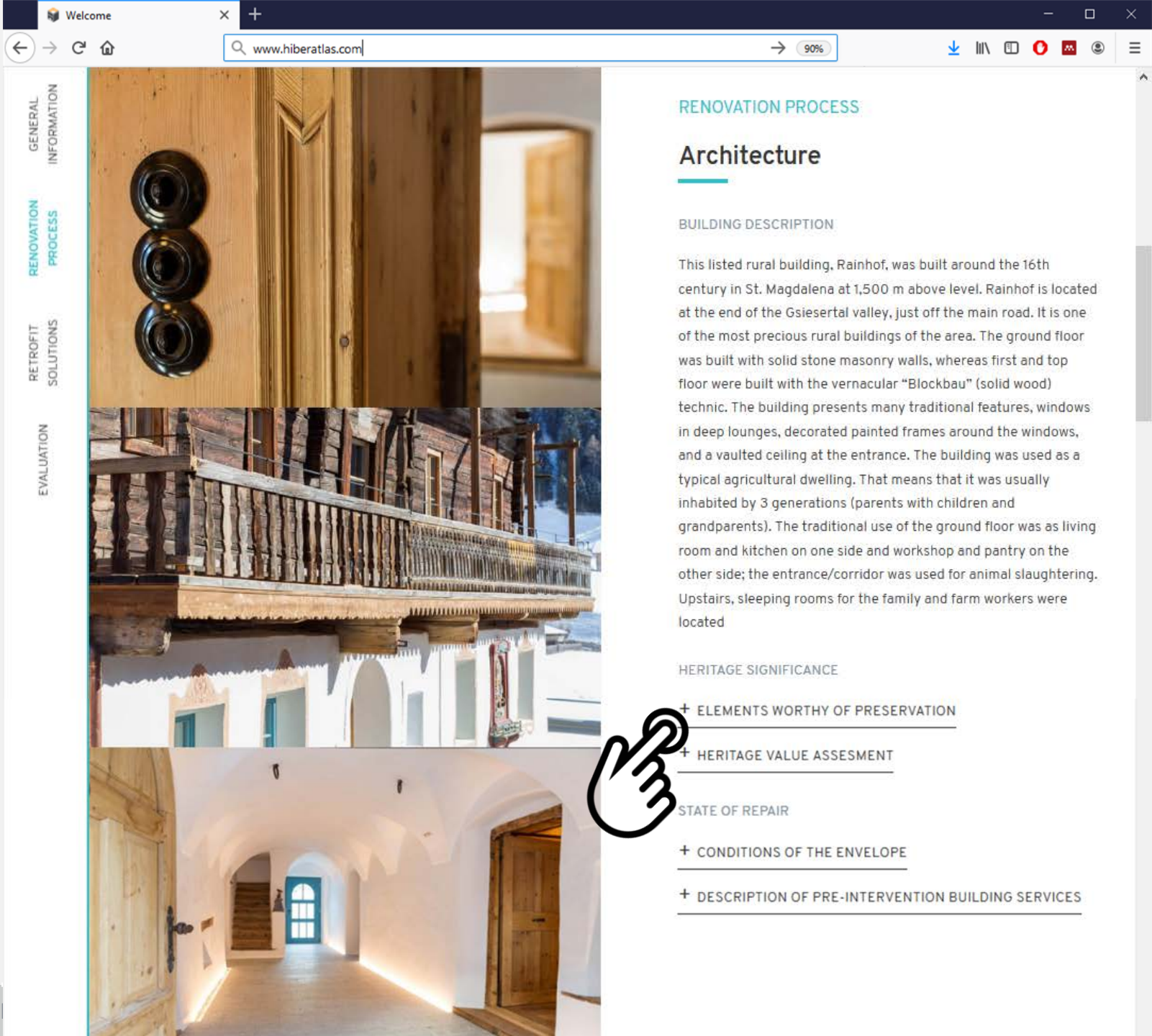
SEE MORE+



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The screenshot shows a web browser displaying the 'hiberatlas.com' website. The page is titled 'RETROFIT SOLUTIONS' and is divided into sections for 'External Walls' and 'Windows'. A sidebar on the left contains navigation links: 'GENERAL INFORMATION', 'RENOVATION PROCESS', 'RETROFIT SOLUTIONS', and 'EVALUATION'. The 'External Walls' section is currently active, showing three categories: 'GROUND FLOOR - EXISTING STONE WALL', 'GROUND FLOOR - EXISTING STONE WALL "STUBE"', and 'GROUND FLOOR - EXTENSION'. The first category is selected, and its details are shown, including a description of the insulation process and a photograph of a bedroom. Below the text, there are two boxes for U-value data: 'U-value (pre-intervention) [W/m2K]: 2,39 W/m²K' and 'U-value (post-intervention) [W/m2K]: 0,87 W/m²K'. A 'More Details' button is visible next to the post-intervention data, with a hand cursor icon pointing to it. The 'Windows' section is partially visible below, with the 'ALL WINDOWS' category selected. It includes a description of window substitution and a photograph of a window installation.



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The screenshot shows a web browser window with the URL www.hiberatlas.com. On the left is a vertical navigation menu with four categories: GENERAL INFORMATION, RENOVATION PROCESSES, RETROFIT SOLUTIONS, and EVALUATION. The EVALUATION category is highlighted in red. The main content area is divided into four quadrants, each with a title and a list of sub-items:

- Energy Efficiency:** ENERGY PERFORMANCE, ENERGY USE, MEASURED PARAMETERS.
- Internal Climate:** TEMPERATURE, INDOOR AIR QUALITY, DAYLIGHT, ACOUSTIC COMFORT, ARTIFACT CONSERVATION.
- Costs:** FINANCIAL ASPECTS, INVESTMENT COSTS, RUNNING COSTS.
- Environment:** GREENHOUSE GAS EMISSIONS, LIFE CYCLE ANALYSIS, WATER MANAGEMENT, TRANSPORT AND MOBILITY.

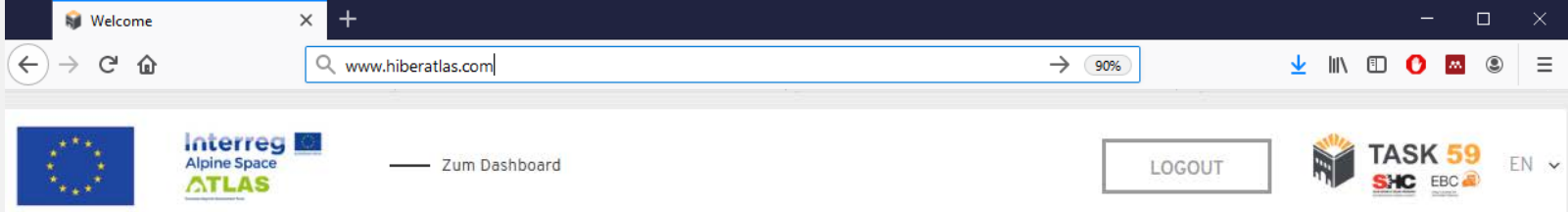
A hand cursor icon is positioned over the 'MEASURED PARAMETERS' item in the Energy Efficiency section.

**Footer Navigation title**

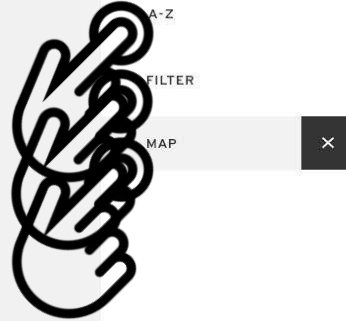
- Contact
- Privacy
- Impressum

**Footer second column title**

Brennerstraße 16B,  
39100 Bozen,  
Montag -Freitag von 8:00 bis 17:00  
[info@teamblau.com](mailto:info@teamblau.com)



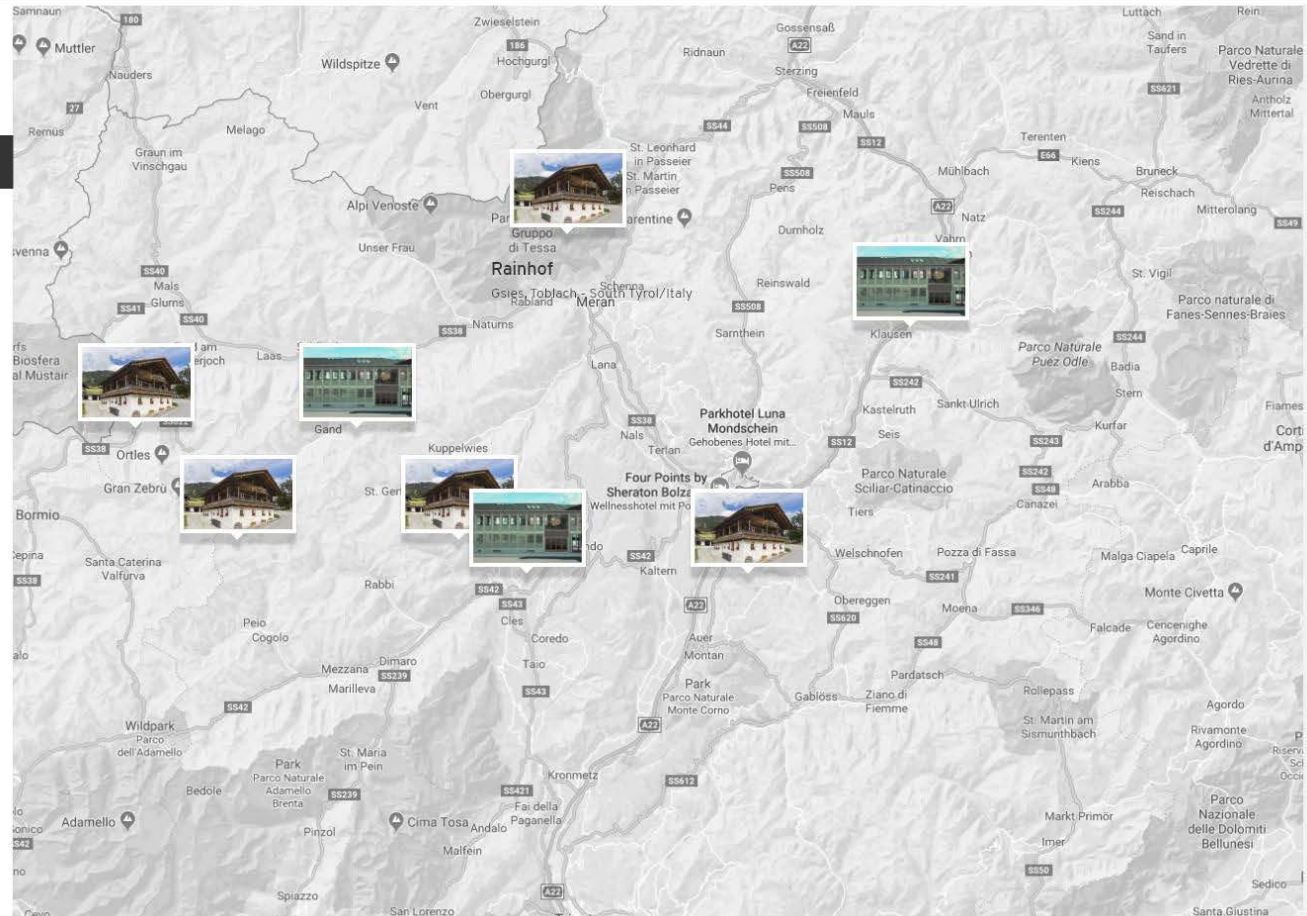
# HOW is it documented?



Allowing focusing only on those buildings that are most relevant.

According to:

- Geographical area
- Building use
- Construction period
- Typology
- Construction material
- Solutions applied



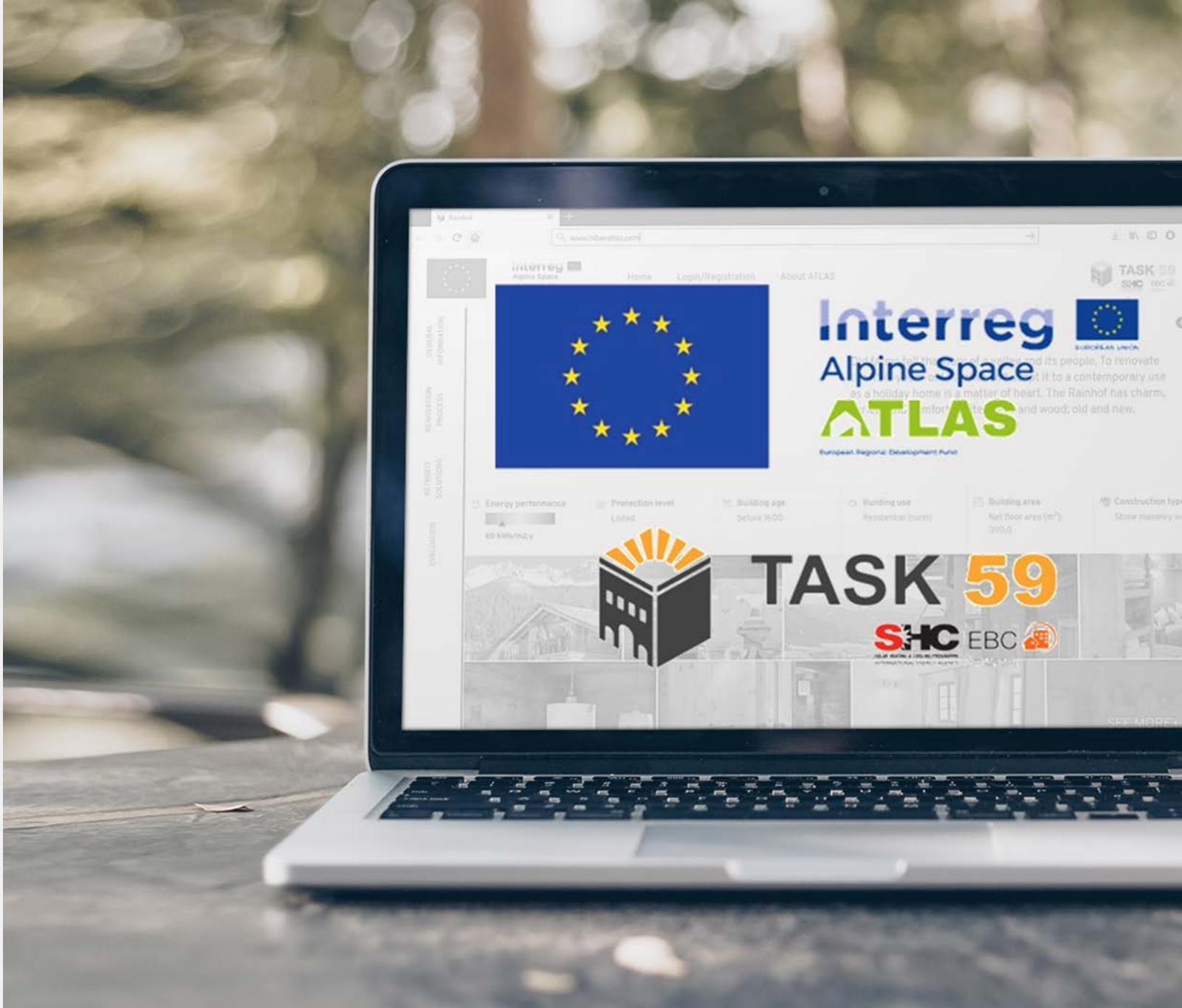


## WHO is documenting?

This is a **joint development** of two research projects:

- The European Interreg Alpine Space project “**ATLAS**”
- The International Energy Agency (IEA) project “**IEA-SHC Task 59**”.

Initially, the partners of both projects are contributing with evaluated case studies. In a **second stance, owners and designers** of suitable example are invited to participate.





# CONNECTIVITY

Combining efforts - Linking online resources

Interreg Alpine Space ATLAS

Case studies from 6 countries

Theodore

partners

21 observers

60 case studies

CNSD - National Center for Defense Sports

Atlantis Sanya

100+ examples



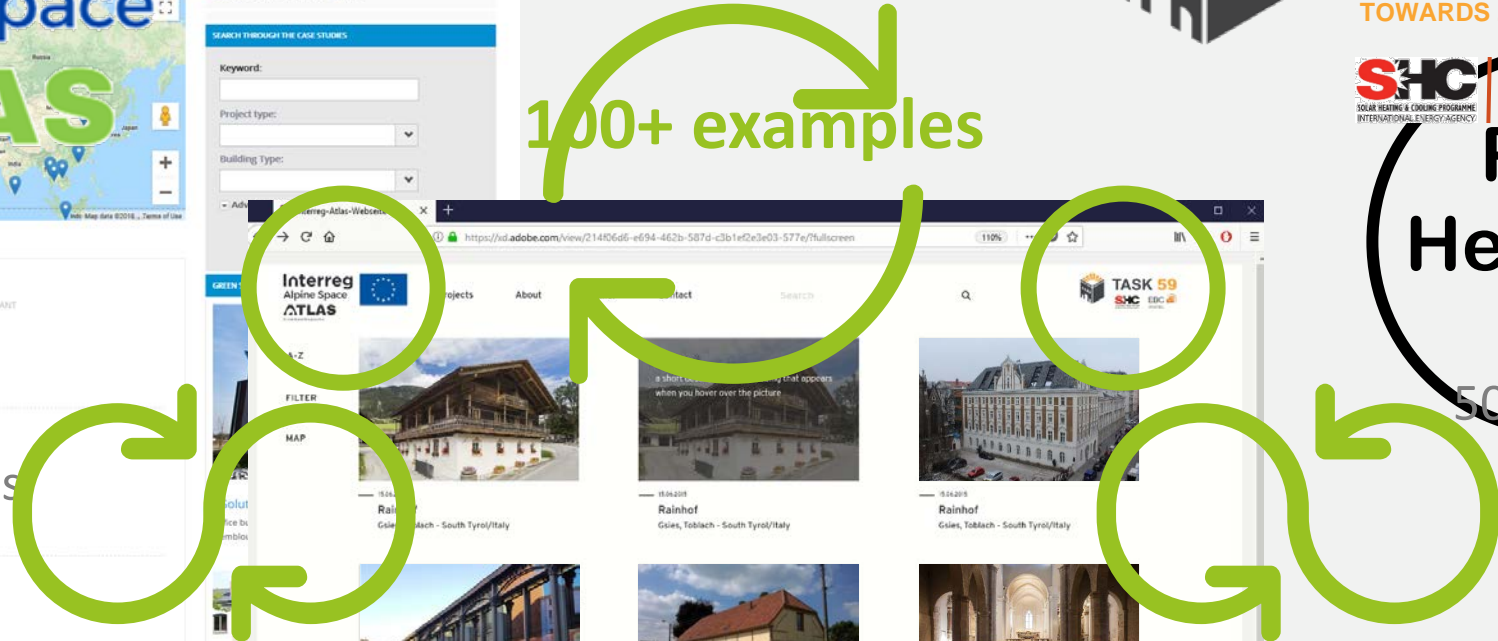
TASK 59

RENOVATING HISTORIC BUILDINGS  
TOWARDS ZERO ENERGY



PRO  
Heritage

12 countries  
24 partners  
50 case studies





# IEA Task 59 | SHC programme

Deep renovation of historic buildings towards lowest possible energy demand and CO<sub>2</sub> emissions (NZEB)



Develop a **solid knowledge base** on how to save energy in historic buildings in a cost efficient way

Assess **replicable procedures** for multidisciplinary collaboration and promote **tools** for the implementation of EN16883

Identify and assess **conservation compatible retrofit** solutions and approached in a “whole building perspective”



# ATLAS | Interreg Alpine Space

Advanced Tools for Low-carbon, high-value development of historic architecture in the Alpine Space



Develop a **knowledge base** looking at the historic building stock, existing guidelines and **good practice building renovations**

Identify, assess and optimise **conservation compatible retrofit solutions**. Develop tools to guide their application.

Support **municipalities** in the implementation of **strategies** leading to robust solutions for historic buildings

Exploit **knowledge** gained from the best practice examples to **policy, research, practitioners and general public**

# THANKS FOR YOUR ATTENTION!



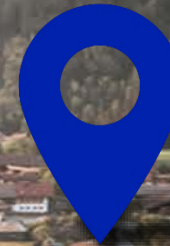
Interreg  
Alpine Space  
**ATLAS**  
Cooperation between mountain regions

<https://www.alpine-space.eu/projects/atlas/es/home>



**TASK 59**  
**SHC EBC**  
Supporting the transition to a low-carbon economy

<http://task59.iea-shc.org/>



[WWW.HIBERATLAS.COM](http://WWW.HIBERATLAS.COM)



The ATLAS Project is co-financed by the European Regional Development Fund through the Interreg Alpine Space program.