RENOVATING HISTORY

How to bring historic buildings into the 21st century

Monday 11 July 2022
10:30 - 11:30

Event moderated by
Céline Carré, President of EuroACE

Speakers

Marco Mari, Italian Green Building Council
Alexandra Troi, Eurac Research

MEP Marcos Ros Sempere (S&D, Spain)
Introduction

Céline Carré
Saint Gobain – President of EuroACE
Instructions

Please send your questions via the Q&A box.
EuroACE – Energy Efficient Buildings

• The European Alliance of Companies for Energy Efficiency in Buildings
• Formed in 1998 by Europe’s leading companies involved with the manufacture, distribution and installation of energy saving goods and services
• A business association working together with the European institutions to help Europe move towards an efficient use of energy in buildings (new and renovated)
EuroACE – Energy Efficient Buildings

Our members provide the products, equipment, and services that go together to provide energy efficient buildings for the peoples of the EU.
We know that improving the energy efficiency of buildings, especially renovating existing buildings, is the most cost-effective method of:

• Creating employment and securing economic growth
• Alleviating energy poverty over the long-term
• Achieving energy security
• Providing people with comfortable and healthy homes
• Meeting carbon reduction targets
2022 EPBD Webinar Series

Series of webinars focusing on different aspects of the EPBD which have the potential to considerably increase energy renovation rates in the EU.

The topic of the energy renovation of historical buildings is linked to the EU Fit for 55 agenda (EED & EPBD).

First episode: https://youtu.be/Q831ueWSszY
Today’s agenda

10:30 | Introduction and guidance to participants – Céline CARRÉ, President of EuroACE

10:40 | Energy Efficiency of Historic Buildings in Legislation, National Plans and Projects
       Adrian JOYCE, Secretary General of EuroACE

10:50 | Practical solutions and strategies for the renovation of historic buildings

• The GBC Historic Building certification scheme
  Marco Mari, President, Italian Green Building Council

• The IEA EBC Annex 76 on renovating historic buildings and the HiBERatlas project: Inspiring good practices: a database to trigger energy efficient renovations of historic buildings
  Alexandra Troi, Vice Head of the Renewable Energy Institute, Eurac Research

11:10 | Discussion

11:30 | End
Energy Efficiency of Historic Buildings in Legislation, National Plans and Projects

Adrian Joyce
Secretary General
EuroACE
The Challenges

• Multiple definitions across the EU
• Some sources say 30% of stock is historical or heritage
• Perception that these buildings cannot be touched
• Raising awareness of extensive knowledge on EE in historic buildings
The Reality

- There are many examples of successful energy renovation
- They are spread across the EU
- All types of buildings are represented
- Multiple guidance documents exist
- Many MS are funding energy renovation of heritage buildings
Long Term Renovation Strategies

• **DE:** KfW provided subsidies for heritage buildings
• **SI:** Specific categories of protected buildings to be renovated
• **HR:** By 2040 annually 4% of buildings with cultural value to be renovated
• **MT:** Specific grants for privately owned heritage buildings included
National Recovery and Resilience Plans

• **SK**: €130m for historical and protected buildings
• **HR**: €40m allocated to energy renovation of heritage buildings
• **BE**: €40m allocated to energy renovation of public heritage buildings
• **RO**: Reforms to devise non-invasive approaches to renovation of heritage buildings
EU Legislation (1)

EPBD

• **Commission Proposal**: Deleted blanket exemption for heritage and historical buildings
• **Cuffe Report**: Requires quantification of protected buildings; Specifically calls for protected buildings to reach Class “D” level
• **Kanev Report**: Calls for specific guidelines to be developed for protected buildings
EU Legislation (2)

EED

- **Commission Proposal:** Deleted blanket exemption for heritage and historical buildings
- **Fuglsang Report:** Exemption only if works would unacceptably alter the character and cultural value of building
- **Council:** Option to exempt historical buildings from reaching ZEB level
Examples of Energy Renovation (1)

Spain: Mercado del Val

75% reduction in energy demand

Constructed in 1880
Renovated in 2016
Examples of Energy Renovation (2)

Italy: Viale Murillo

80% reduction in energy demand

Constructed in 1905
Renovated in 2019
Examples of Energy Renovation (3)

Netherlands: LocHal

54% reduction in energy demand

Constructed in 1932
Renovated in 2019
Guidance (selection)

Ireland:
• EE in Traditional Buildings (2010)
• Shaping the Future (2012)
• Deep Energy Renovation of Traditional Buildings – Addressing Knowledge Gaps and Skills Training

France:
• Effinergie label for heritage buildings:

UK:
• Sustainable Traditional Buildings Alliance (STBA): Guidance on responsible renovation
The GBC Historic Building certification scheme

Marco Mari
Green Building Council Italia, President
HERITAGE & SUSTAINABILITY
A new holistic paradigm for cities regeneration

Marco Mari
Green Building Council Italia President
GBC Italia is a non-profit association with the mission of guiding the entire building chain in the sustainable transformation of buildings for a healthier, safer, more comfortable and efficient build environment.
Building Impact

40% Material
14% Potable Water
38% Emissions CO₂
30% Waste
72% Energy

Design for PEOPLE (comfort – health)

CULTURAL HERITAGE
A new paradigm: Heritage & Sustainability

We need to extend the useful life of the building as a whole, or by facilitating the continuation of the intended use

- life extension of the building

- renewal of historical and traditional buildings and heritage (re-design)
in Italy CIRCULAR THINKING ... is not a new concept
A new paradigm: Heritage & Sustainability

how can we bridge the gap between

1. energy and environmental efficiency

2. heritage preservation
A new paradigm: Heritage & Sustainability

SUSTAINABILITY

RESTORATION

“Restoration is sustainable when allows future generations to recognize the same cultural and environmental values that we recognize today”

GBC Historic Building

Manuale GBC Historic Building
Per il restauro e la riqualificazione sostenibile degli edifici storici
Edizione 2015
GBC Historic Building – protocol structure

- Historic Value
- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Innovation in Design
- Regional Priority
GBC Historic Building - applicability

PRE-INDUSTRIAL (TRADITIONAL) ARCHITECTURE

- PRE-INDUSTRIAL BUILDING PROCESS
  PHASES, OPERATIONS AND OPERATORS

- PRE-INDUSTRIAL MATERIALS AND TECHNIQUES

- PRE-INDUSTRIAL BUILDING ELEMENTS
Heritage: GBC Historic Building applications examples
MEIS - Museum of Judaism and Shoah (FE)
Heritage: GBC Historic Building applications examples
Palazzo Santander (TO)
Heritage: GBC Historic Building applications examples

Palazzo Gulinelli (FE)
Heritage: GBC Historic Building applications examples
Castello Estense (FE)
Heritage : GBC Historic Building applications examples
Chiesa di Denore (FE)
Heritage: GBC Historic Building applications examples
Chiesa di S. Giuseppe dei Falegnami (Roma)
Heritage: GBC Historic Building applications examples
Museo Galleria Borghese (Roma)
Heritage: GBC Historic Building applications examples
Palazzo Silvestri Rivaldi (Roma)
Green Building examples: TO SMALL COMMUNITIES

Circular Small Village in Historic Monaster: Rocca of S. Apollinare
GBC Historic Building - Certified Gold Level (first example in the world)

Smart & Circular

The 15 minutes-city prototype

Historic Villages

«BORGHI STORICI»
GBC historic Building - internationalization process

GBC Historic Building® Internationalization process

GBC Italia is defining the GBC Historic Building internationalization process on projects promoted by a leading international partners. The main objective of GBC Historic Building International Pilot Project submission is to ensure that this innovative rating system is feasible and guides the market in order to create a meaningful, fair and effective way to encourage green development of the historic heritage. The internationalization process will be carried out in an inclusive way and GBC Italia is available to organize webinars to deepen topics.

To participate, partners can register Pilot Project submitting the form INTERNATIONAL PILOT PROJECT XPRESSION OF INTEREST (asking by mail to certificazioni@gbcitalia.org). Here follows the main information of the protocol in the version currently applied in Italy.
GBC Historic Building®
Internationalization process

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GBC historic Building - internationalization process

CUBA08

ESCUELA EN OBRA

AÑO 03 | OCTUBRE 2018

CENTRO DE FORMACIÓN PARA LA RESTAURACIÓN Y EL DISEÑO

carr San Ignacio 314, La Habana Vieja, Cuba
Thank you for your attention

HERITAGE & SUSTAINABILITY
A new holistic paradigm for cities regeneration

Marco Mari
Green Building Council Italia President
E-mail presidente@gbcitalia.org – mob. +39 3356961892
Inspiring good practices: a database to trigger energy efficient renovations of historic buildings

Alexandra Troi
Eurac Research,
Vice Head of the Renewable Energy Institute
The IEA EBC Annex 76 on renovating historic buildings and the HiBERatlas project

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

Alexandra Troi
alexandra.troi@eurac.edu
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.
A BEST PRACTICE DATABASE FOR ENERGY EFFICIENT?
RENOWATION OF HISTORIC BUILDINGS?

Renovating toward NZEB by bringing together design, efficiency and local use of renewable energy. According EN 16883 all buildings with elements “worthy of preservation” all types & ages, not just listed/protected buildings.
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.

Actually, 50% of the documented best practice cases are protected – either directly listed or as part of a conservation area. → the other 50% are “voluntary”
**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

We should not just discuss how to treat listed buildings in the EPBD, but how we **make sure the big number of buildings worthy of preservation is not lost!**
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.

Keeping historic buildings in use – showing that they are attractive living space is the best way to protect them.
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4. evaluation of the intervention in terms of energy efficiency, internal climate, cost and environmental impact.
The variety of applied solutions is very large – the important point is to find the right solution for the specific building, taking into account multiple values, which include heritage values, but e.g. also whole life cycle considerations.
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.
Asking for a “minimum requirement” has drawbacks:
→ it might be too demanding for some buildings
→ and not ambitious enough for others

We need a negotiation space!
HOW can you use it?

Allowing focusing only on those buildings that are most relevant.

According to:

- Geographical area
- Building use
- Construction period
- Typology
- Construction material
- Solutions applied
HOW can you use it?

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HOW can you use it?

Allowing focusing only on those buildings that are most relevant.

According to:
- Geographical area
- Building use
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- Typology
- Construction material
- Solutions applied

Conservation compatible energy retrofit is possible! The number of documented buildings is high – and there are still many other good examples which should and could be documented in the HiBERatlas, to be made available to the others!
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 were contributing with evaluated case studies. In a second stance, owners and designers of suitable example are invited to participate.
Task 59

Case Studies Assessment Report
June 2021

IEA SHC TASK 59 | Renovating Historic Buildings Towards Zero Energy
one of the greatest challenges the continent faces is converting the historic buildings in Europe's centuries-old cities for a sustainable future

European climate commissioner and EU executive vice-president Frans Timmermans

We will set up a new European Bauhaus – a co-creation space where architects, artists, students, engineers, designers work together to make that happen

Ursula von der Leyen, State of the Union Address 2020
Alexandra Troi
alexandra.troi@eurac.edu
7th April 2022, Graz.
ISEC – International Sustainable Energy Conference

THANK YOU FOR YOUR ATTENTION!
Discussion
Wrap-up

Céline Carré
Saint Gobain – President of EuroACE
Thank you!