

DEMO CASES

HEART Final Conference

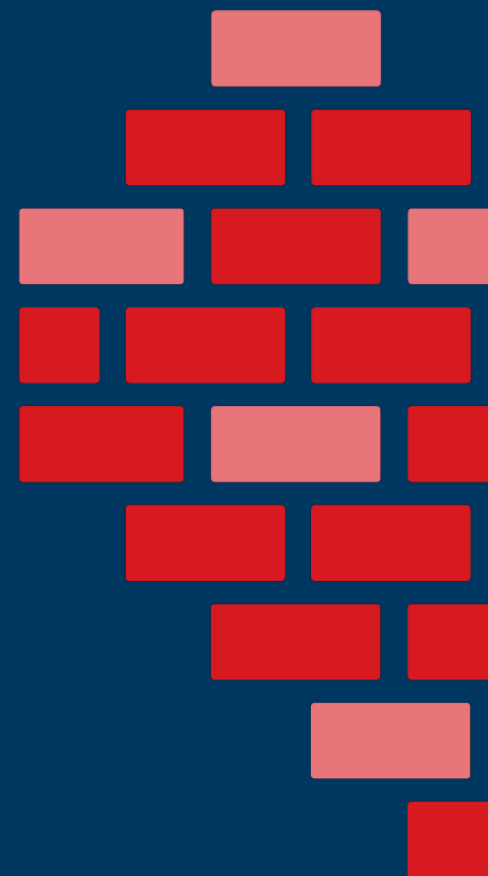
Alice Pittini - Housing Europe



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ITALIAN CASE STUDY

Bagnolo in Piano, ReggioEmilia



Italian Case Study

Location: Bagnolo in Piano, Reggio Emilia, Italy.

Year of construction: 1985

Type of building: large multifamily house

Distribution: on 2 staircases, 5 floors

(Ground level and attic no climatized. Levels 1, 2, 3 appartaments)

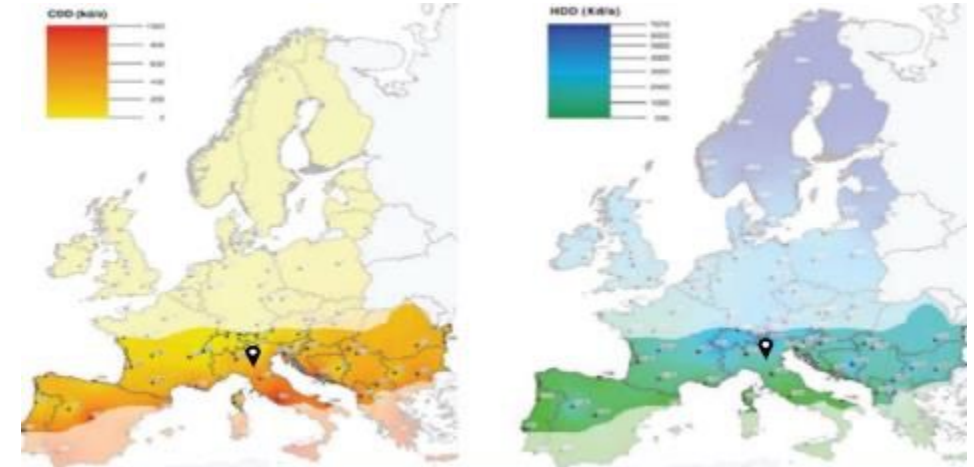
Gross heating volume: 2,340 m³

Net surface of about: 636 m²

Units: 12 units (6 units of 43 m², 6 units of 63 m²)

Window to Wall Ratio: 18%

S/V: 0.63



Italian Case Study - Envelope technologies

DEMO CASES

Requalification of the opaque envelope

building site

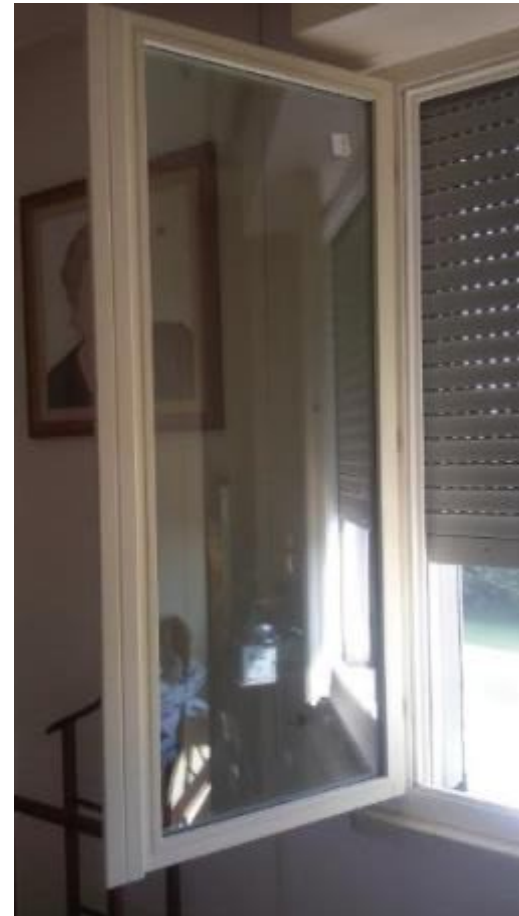


construction activity



Requalification of the transparent envelope

replacement of the existing glass with a new one



gaskets substitution



roller shutter box insulation

Italian Case Study - Technical systems

DEMO CASES

Heat pump and thermal storage

indoor unit



outdoor unit



Thermal storage with PCM



Hydronic and electrical distribution

hydronic distribution



electric distribution



PV tiles



Power conversion and management (MIMO)



IoT Devices



Smart fan coil units and smart DHW



South



West



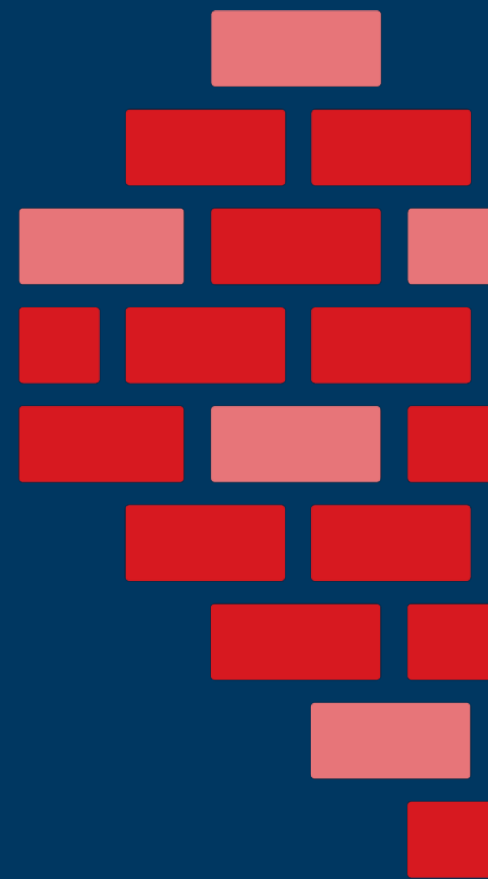
North



East *ongoing activity*

FRENCH CASE STUDY

Lyon



French Case Study

Location: Saint-Priest, Lyon, France.

Year of construction: 1960

Type of building: multifamily building

Distribution: on 2 stairwells, 2 floors

(Underground level and attic no climatized. Levels Ground, 1 appartamets)

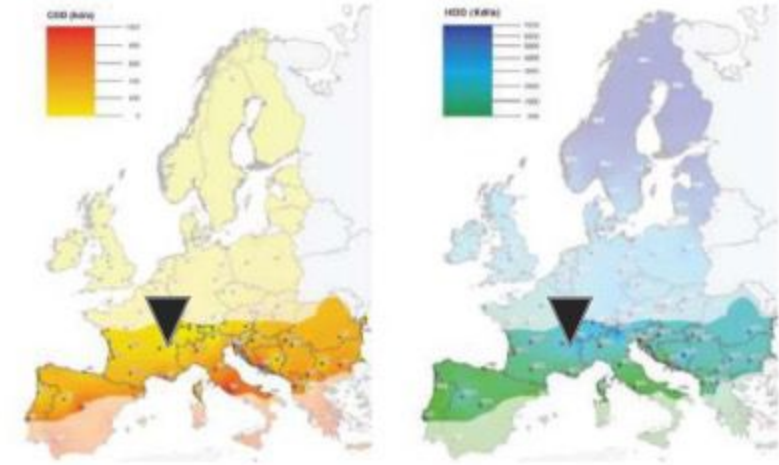
Gross heating volume: 4,200 m³

Net surface of about: 1'118 m²

Units: 26 units (dwelling average are 43 m²)

Window to Wall Ratio: 11%

S/V: 0.66



DEMO CASES



French Case Study - Envelope technologies

DEMO CASES

Requalification of the opaque envelope

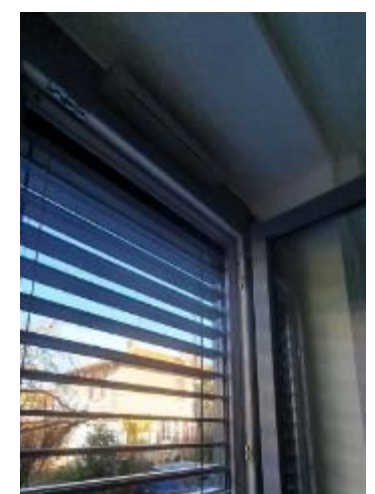
building site



construction activity



Windows refurbishment



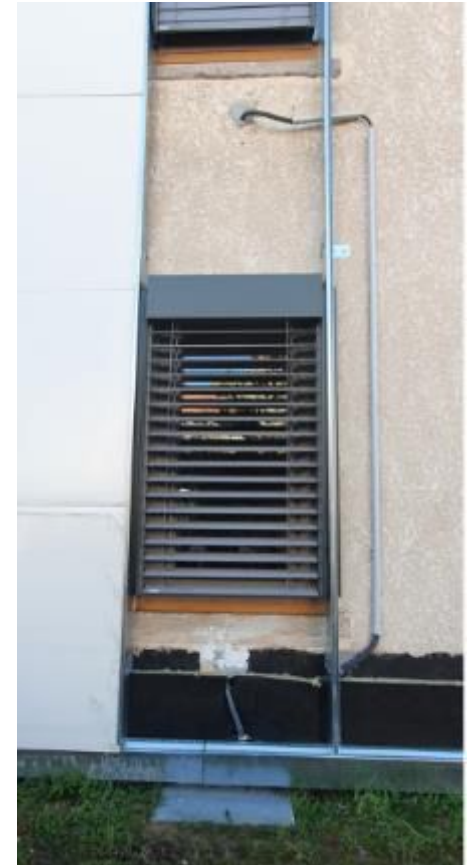
Heat pump and thermal storage



thermal storage: *ongoing activity*

indoor unit: *ongoing activity*

Hydronic and electrical distribution



PV tiles



Power conversion and management (MIMO) *ongoing activity*

IoT Devices *ongoing activity*

Smart fan coil units and smart DHW *ongoing activity*

French Case Study - Results of retrofit intervention

DEMO CASES

South



North



East



West



Main takeaways

From point of view of social housing companies

- High expected **energy savings** (reducing energy poverty)
- **Experimentation and cooperation** with residents to explain the needs/impact on daily life
- **Renovation on wide scale** is the ultimate goal
- Working on highly innovative projects one has to **‘expect the unexpected’** including increase in costs/time
- Consortium based in **different countries** meant dealing with many open questions and **complex issues**
- the project was affected by conditions created by Covid19 (interruptions and delays, prices and availability of materials and components...) - learning how to **navigate through crisis**

‘energy efficiency is a very important topic but for a renovation project to be successful it has to enhance satisfaction of residents, which means also comfort, aesthetics ... respond to needs of people’

Main takeaways

From point of residents

- Too early to say, but some already see an **increase in comfort from better insulation**
- **residents feedback on their experience is key** for acceptance and also very helpful to adjust 'product' (residents as experts in their own homes)
- very important to have a **clear timeline from the start and avoid delays** as residents are the ones facing the inconvenience (problems with temporary solutions put in place and not knowing when renovation will be completed rather than with the works)
- also key is to have a **dedicated team/contact point that people feel familiar with**, as building trust and communication flow can help a great deal solving problems

'workers were foreigners like me - we chatted and laughed together, they were polite and cleaned every day before leaving'

Main takeaways

From point of residents

- Most of the people interviewed think on the long term the project will bring benefits to them in terms of comfort and costs - but don't have clear expectations for lack of technical knowledge, some are concerned they won't have control on their energy use. SH companies planning further meetings and guides/information material
- Increase in comfort, potential reduction of energy bills are strong motivation for residents but **also ecological concerns**. Benefits should be clearly explained also in these terms

'If our building can consume less energy, and use more solar energy which is a natural resource and doesn't impact climate, it's a way our building can help the planet. It's better if everyone does his part, no matter how small'

About HEART

The Holistic Energy and Architectural Retrofit Toolkit (HEART) brings together different components and technologies that can transform existing buildings into smart buildings, thus contributing to the Renovation Wave in order to decarbonise Europe's building stock. In developing this toolkit, the project advances and improves energy efficiency and the use of renewable energies in buildings across Europe, particularly in Central and Southern Europe, where climate change is leading to increased electricity consumption during the summer and winter seasons.

Get in touch



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