PUBLICATION

# Challenging energy renovation of buildings

**By youris.com GEIE**

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Energy consumption in the construction sector is a key issue in the fight against climate change. It is often approached when planning new buildings, but there is **little tendency to renovate the existing stock**.

“According to the 2012/27/UE Directive on energy efficiency**, Europe has set the goal of renovating 3 percent of public buildings. However, we are currently running at about 1 percent**,” says Matteo Orlandi, from Arup, an Italian consulting firm that provides engineering and design services. Youris.com met him at a meeting of the European Buildheat project, where experts gathered to discuss the issue.

One of the key aspects dealt with was **the need to improve the energy efficiency of multi-apartment buildings in an integrated manner**. This means adopting interconnected technologies rather than just replacing individual parts such as boilers. Another theme was about **finding innovative financial solutions to cover the total cost of works**. **And finally, the social aspect**: effective communication is necessary to help people understand that such measures mean not only greater living comfort and healthier homes, but also savings on their energy bills.

Structural renovations are a real challenge. First of all, **obtaining the required permits often takes too much time**. “The time factor is of the utmost importance. There are projects that wait for years to get an authorisation. **But the financial calculations made today will not remain the same over time**,” points out Stefano Rocchi, who heads Ri.Ge.N.E.R.A, which deals with energy upgrading solutions for buildings.

Moreover, there is the **discomfort to tenants caused by the works**. This should be a little as possible so that the project is deemed worthwhile, not just economically, but also because the works are not overly invasive, without long timescales or the need to move people elsewhere.

For example “the technological solutions that have been tested under the Buildheat project, involve **prefabrication** [the elements are built in the factory and then assembled on site, *ed. note*], which reduces the time required. They are also **preferably installed outside of the building**, whenever possible,” explains Roberto Fedrizzi from the Research institute for renewable energy EURAC.

The project’s demo buildings are located in different social and regulatory contexts, in Rome (Italy), Zaragoza (Spain) and Manchester (UK). Among the leading technologies adopted is a “**ventilated façade**”. “It is a dry-cladding of outside walls, where an insulating layer and an air gap interrupt the physical continuity between the cladding and the wall of the building,” says Stefano Terletti of Halfen in Italy, a company that is active in anchorage, hoisting and reinforcement systems in construction. “The ventilated façade protects from water, it has an excellent thermal, humidity and energy saving performance, and ensures acoustic absorption, while improving aesthetics and reducing the maintenance costs.”

**The technologies implemented allow a continuous monitoring, with data that can be used by households to control consumption and costs**. “The data produced must be made available to everyone; they must not be owned by closed platforms. In this way further services can be studied to reduce consumption and energy bills,” says Ivan Mangialenti from Schneider Electric, specialised in energy management and automation.

Finally, who should pay for all these works and innovative technologies? Sergio Olivero from SiTI, a research association set up by the Polytechnic University of Turin and the banking foundation Compagnia di San Paolo, presented the financial mix of the Buildheat project, which is given “by the savings on the electricity bill, the greater value of the house after the renovation works, the government tax measures, the investment funds available and the contribution of the European Union”.

For instance, the current Italian legislation, concludes Olivero, envisages tax deductions for energy saving interventions in the building sector, incentives for the production of thermal energy from renewable sources, and the white certificates that depend on the energy saved.

Speaking about tax deductions, through the so-called “ecobonus”, citizens may recover from 50% to 70% of costs incurred to improve the energy efficiency of their homes. Moreover, the 2017 Budget Act envisages that

 

taxpayers, whose annual tax owed is less than the deductions they are entitled to, can have access to the incentive. This is possible thanks to the mechanism whereby “credits can be transferred” to bodies that instead do have this possibility.

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