



## BUILDING RENOVATION PASSPORTS

# Customised roadmaps towards deep renovation and better homes

### Summary version

The European Union is facing a double challenge: increasing building renovation rates while aiming at achieving “deep renovations”. Increasing the current EU renovation rate from 1.2% per annum to 2-3% is essential to meet both the EU 2020 targets and the commitment undertaken in Paris in December 2015<sup>1</sup>. About 75% of the EU's 210 million buildings are not energy efficient, and 75% to 85% of them will still be in use in 2050. Ensuring a highly-efficient and fully decarbonised building stock by 2050 is a major challenge. The quality of the energy renovation of our building stock is, therefore, of paramount importance. Despite the proven economic and technical feasibility of building renovation, and despite the societal and environmental benefits it could bring, renovation rates are still low and considerably below the expected level.

Building owners and potential investors face multiple barriers to improve the energy performance of their buildings. Together with difficulty to access finance, one of the most often quoted barriers is the lack of knowledge about what to do, where to start, and which measures to implement in which order.

The implementation of Energy Performance Certificates (EPCs), which were introduced with the aim to make the energy performance of individual buildings more transparent, varies significantly across Member States in terms of scope and information available, with limited market penetration or acceptance by the users due to low reliability and lack of user-friendliness. The required recommendations for measures improving energy performance are mostly scarce, too general or non-existent in most national EPC versions. Additionally, EPC

-related services such as energy consultancy and audits for residential buildings differ significantly between Member States and programmes.

As a result, the relevance of EPCs for owners and their stimulating effect for the renovation of buildings is limited<sup>2</sup>.

Among the most important benefits of renovation are increased thermal comfort and air quality, better daylight entry and improved health of occupants. Those benefits, even if they are the main drivers for renovation, are not covered by the current EPC formats.

EPCs could be the appropriate tool to provide the information in a meaningful and comprehensible way to the individuals who are making decisions about renting, buying or investing into a property. To become more relevant, EPCs could contain useful, tailor-made and understandable information directly related to the decision-making criteria of potential investors and building owners.

Thus, two main issues should be solved for EPCs to have a higher impact on energy performance of buildings and renovation: the concerns about reliability and compliance, and their relevance in the decision-making process of building owners.

While an amendment of the EPBD in favour of enforcing stricter compliance and triggering a further evolution of EPCs would certainly be very welcome, some initiatives have started to develop in the past few years, with the aim to establish a more comprehensive and user-friendly instrument to support

<sup>1</sup> Keeping the long-term increase in global average temperature well below 2°C above pre-industrial levels, with the aim to limit the increase to 1.5°C.

<sup>2</sup> According to the ZEBRA2020 survey: the real-estate market does not see a link between the improvement of the energy performance of buildings and EPCs.

building owners with personalised instructions on their renovation options. At their core is the idea that renovation plans are very often limited by factors such as financial constraints, the need to reduce the time of renovation, discomfort during the works and the lack of knowledge regarding the best solutions available<sup>5</sup>.

The aim of the report is to provide an overview of initiatives currently developed: three of them were selected, in Flanders, France and Germany, all revolving around the concept of “building renovation roadmap or passport”. These

initiatives were chosen for their advanced phase of development (they will soon enter the implementation phase), as they provide a good overview of the process supporting the creation of a Building Renovation Passport and as they cover the main issues that need to be addressed for its development and implementation. In the three cases, public authorities have shown interest for this concept (France) and have supported or driven (Flanders and Germany) its development.

<sup>5</sup> E.g. energy consumption, daylighting, indoor air quality, health conditions, thermal comfort, acoustic comfort, cost.

## WHAT IS A BUILDING RENOVATION PASSPORT?

A Building Renovation Passport is defined as a document - in electronic or paper format - outlining a long-term (up to 15 or 20 years) *step-by-step renovation roadmap* for a specific building, resulting from an *on-site energy audit* fulfilling specific quality criteria and indicators established during the design phase and in dialogue with building owners. The expected benefits in terms of reduced heating bills, comfort improvement and CO<sub>2</sub> reduction are a constitutive part of the BRP and are explained in a user-friendly communication. The renovation roadmap can be combined with a repository of building-related information (*logbook*) on aspects such as the energy consumption and production, executed maintenance and building plans.

On-site data gathering is the first step towards the creation of a BRP. The data processing can change according to each model (e.g. by using a dedicated software or by adapting the existing energy audit software). The outcome of step 1 and 2 is a comprehensive step-by-step renovation roadmap, with tailored solutions aiming at achieving deep-staged renovation.

### STEP-BY-STEP RENOVATION ROADMAP (OR STAGED RENOVATION)

A renovation plan with a horizon of up to 15-20 years that, by looking at the building as a whole, suggests the installation of selected measures in a certain order to avoid that at any stage of renovation the installation of additional measures is precluded.

### DEPTH OF RENOVATION

There is no common definition for “deep renovation”, “staged renovation” and “deep-staged renovation”. Each of the examples analysed uses a different definition of what a deep renovation is.

**There are, however, common features among all initiatives, like the will to raise the level of ambition for achieved energy performance, to ensure consistency between short and long term measures and to align the target for the performance of individual buildings with the long-term target for the entire building stock.**

### FIVE COMMON GUIDING PRINCIPLES AT THE BASIS OF THE BUILDING RENOVATION PASSPORT

**LONG-TERM PERSPECTIVE:** the integration of a long-term thinking is essential for the success of building renovation passports.

**TIMING AND SEQUENCING OF ACTIONS:** building renovation passports include both short-term and long-term measures and clearly indicate the correct order in which to install them (e.g. sequencing of the measures’ installation over time) to avoid lock-ins, increase building owners’ confidence and enhance the rate of deep renovation.

**CUSTOMER ENGAGEMENT AND CONSIDERATION OF THE INDIVIDUAL RENOVATION CONTEXT:** the wishes, needs - in particular expectations regarding comfort - and the financial situation of the occupants must be considered.

**ATTRACTIVENESS AND MOTIVATION:** BRPs should be very attractive and user-friendly both for the auditors and the users, to help them confidently take action without being discouraged by the complexity of the renovations.

**AUTOMATION:** experts should be able to perform the audit, input data and deliver the results as easily as possible (modular blocks, indicate default values and highlight errors in case of wrong inputs, etc.)

Find the full report at <http://bpie.eu/publication/renovation-passports/>

