Attractive, Acceptable and Affordable deep Renovation by a consumers orientated and performance evidence based approach
Contract No.: 784972

Report: **D4.4: Visualization of completed projects (web-based software)**

Work Package: WP4 – Task 4.4 Visualization of realized deep-renovated buildings
Deliverable: D. 4.4

Status: public

Revision and history chart:

Prepared for:
European Commission
EASME
Project Advisor: Rebecca Kanellea

Prepared by:
BRAMO: Massimo Monacelli
UNIBO: Annarita Ferrante, Davide Prati

31/10/2019

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S H2020 FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION UNDER GRANT AGREEMENT NO 784972.

VERSION	DATE	EDITORS	COMMENT
Version 00	2019-10-31	BRAMO	First version provided
version 01	2019-12-02	COM	Revision
version 02	2019-12-03	BRAMO	Final

Table of content

1 Introduction

This document contains a short description of the software developed to show a space in which the interventions already carried out with the relevant parameters are advertised: the current consumption, the post-intervention consumption, the costs before and after renovation, the evaluation on improved indoor air quality and well-being, information on the monitoring of interventions, references to those who have realized the deep renovation, etc. This space is accessible to everyone and is designed to promote and disseminate the outcome and the results of the TripleA-reno community.

This software is included in TAR (TripleA-reno) platform, so it will be developed and modified during the development of the project.

The software version developed up to month 18 is available at:

https://www.triple-a-reno.eu/alfa/showcase

The description of the module is shown in the following chapter.

2 Showcase of completed projects

This is a space in which the interventions already carried out with the relevant parameters are advertised: the current consumption, the post-intervention consumption, the costs before and after renovation, the evaluation on improved quality, information on the monitoring of interventions, references to those who have realized the deep renovation, etc. This space is accessible to everyone and is designed to promote and disseminate the outcome and the results of the TripleA-reno community.

The parameters to display could be:

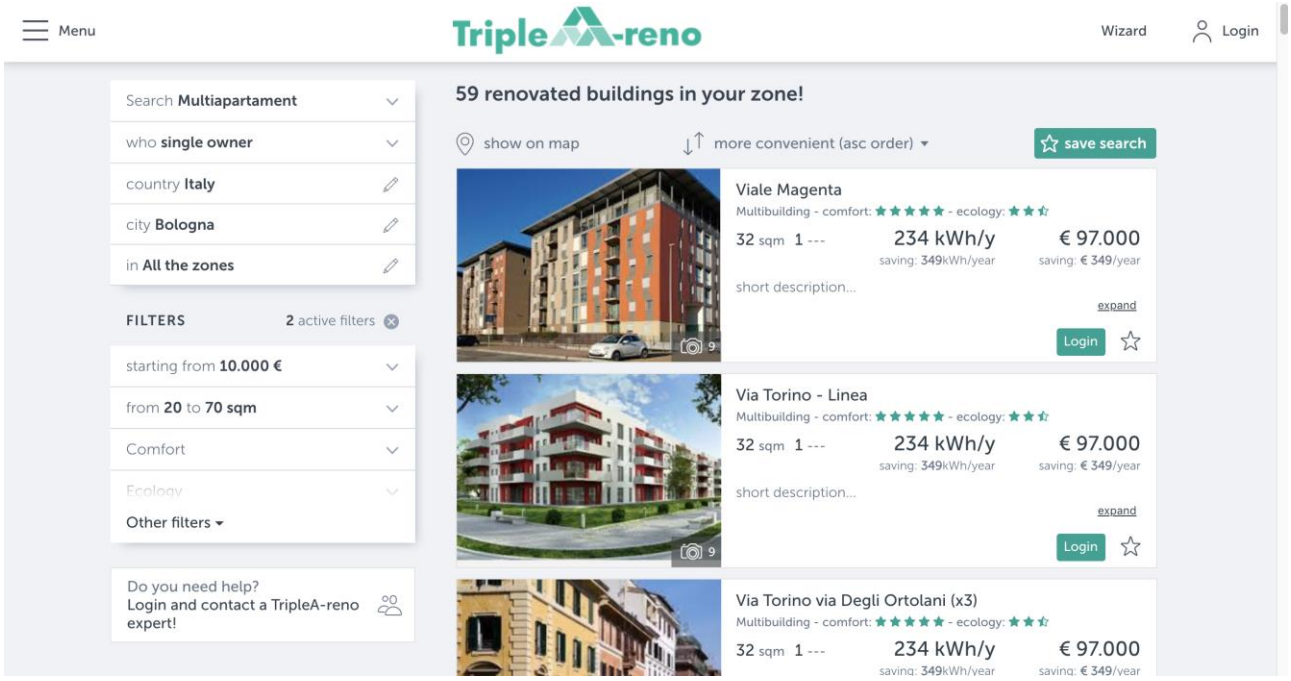
- savings in euro per year;
- annual energy savings (kWh / y);
- annual CO2 reduction (tons / y or kg / y);

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S H2020 FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION UNDER GRANT AGREEMENT NO 784972.

- value of the building after the deep renovation;
- payback time (payback time);

figures of TripleA-reno combined labelling The parameters could change depending on the chosen strategy, so, i.e., if the strategy ‘low cost’ is chosen the parameter ‘savings in euro per year’ will be displayed, while if the chosen strategy is ‘ecological’ then the parameter ‘annual CO2 reduction’ will be shown.

Below is a sample of the interface and a possible visualization of the showcase.



It is important to underline that the data present for renovation project are taken both from the data coming from the calculations performed in the design phase and from real data provided by the realized tested cases. The workflow should be as illustrated in the following sections (4.4.1.1 and 4.4.1.2).

2.1 The planning phase

In the planning phase renovated building shall reach certain performances in terms of:

- savings of energy consumption and therefore in annual operating costs for heating, cooling and DHW production;

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION’S H2020 FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION UNDER GRANT AGREEMENT NO 784972.

- increase of internal comfort, obtained by choosing specific measures that will generally lead to an increase in renovation costs;
- increase of the quality of the building in general, as it replaces items that are presumably worn with new components;
- increase of the value of the building: the benefits brought about will not only lead to a reduction in operating costs but will also produce an increase in terms of the building's value .

The opportunity to consider the payback time among the important parameters is being discussed, as it is assumed that it is not of great importance for the end user, who would prefer to consider other parameters; during the project it will be decided whether it makes sense or not to consider this parameter. The economic values and benefits, however, should be verified in order to assess or justify the renovation costs.

2.2 The verification phase

At the end of the entire renovation cycle (design, construction, after renovation start-up phase), in the spirit of the TAR project, these services should be verified; a higher rating will be assigned to buildings that present performances more similar to those declared in the design phase.

The verification will be executed as follows:

• monitoring of energy performance and comparison with project data;

• measurement of indoor air quality parameters for TripleA-reno combined labelling;

• request for an inspection to verify that the installation was successful;

• request for an evaluation of the property, to verify that indeed there has been an increase in its market value;

• request for a questionnaire to verify the satisfaction of the renovation process.

These verification activities should be foreseen in the planning phase, so as to predict all the expenses of a TAR certified renovation. In other words, the "best renovation project" should be the one whose performances are more similar to what expected, and not the project that predicts a high performance improvement without this improvement being verified and certified.

This is a very important point that is still under discussion and therefore will be considered, and possibly implemented, in the following phases of the project.

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S H2020 FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION UNDER GRANT AGREEMENT NO 784972.