



ERA-NET Eracobuild project

One Stop Shop - “From demonstration projects towards volume market: innovations for one stop shop in sustainable renovation”

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Project Report WP 3 – Implementation Phase

Innovation in Supply Side Collaboration

**Development of a public actor list for promoting sustainable housing renovation
in Flanders and Brussels**

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Project partners



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1. Introduction

Today's new-built housing market focuses on higher energy performances. While a market niche emerges for highly energy-efficient new-built houses – such as passive houses -, improving the existing building stock appears to be more difficult. For renovations to remain competitive with future new-built houses, the awareness grows that renovations will need to develop beyond the implementation of single energy-saving measures towards integrated energy renovations. There is a huge theoretical potential for reducing the energy consumed in the existing building stock, especially when energy efficiency in individual integrated renovation is targeted, but in most countries this issue is still dealt with mainly on the demonstration project level. But how do we speed up the transition from demonstration projects to volume market, looking both at a traditional market development perspective and interventions by public actors? The overall aim of the “One Stop Shop” project was to facilitate market penetration (volume market) of whole house renovations for single-family houses to very high energy standard while providing superior comfort and sustainability to occupants.

During this research it was detected that substantial innovation is still needed on the supply side, especially regarding collaboration between different craftsmen and experts. In a growing market of deep renovation, a homeowner can no longer be expected to coordinate the whole renovation process, to find all information concerning deep renovation solutions and examples, to find, contact, contract and coordinate different individual craftsmen, architect and/or project manager, to ensure quality while keeping control of cost and energy performance, while having a lot of administrative burden and uncertainty regarding financing the whole project. In order to prepare for a growing market, deep renovation companies must be aware that the clients expect unburdening.

An important challenge remains to shape regional supply chain collaboration to effectively increase the number of such renovations taking place. For successful market development, it will be necessary that different actors cooperate to stimulate supply and demand. Those saying that the market is not ready for this - or that the homeowners are not asking for integrated renovations - are quite right if they mean the majority of the market. Any new product or service has to be adopted first by the innovators in the introduction phase and thereafter the early adopters in the growth phase before it can reach the early majority in the volume market. To fully exploit the market development potential, the innovator activities should serve as input for a strategic reflection by actors which consider taking an active part in developing the market for advanced housing renovation.

The big challenge is, how service can be kept high-quality and independent, while maintaining and developing partners' and customers' trust. Before a full integrated renovation service can be provided, one has to think of marketing and market differentiation. One possible channel that was studied in the One Stop Shop project is using the Internet, because it is ideal for information-sharing of technologies, solutions and demonstration projects. One can also share experiences online. On the other hand, various interviews with clients and public actors showed that there is a specific need for clients and procurers to easily find experienced actors, particularly architects, contractors, consultants and installers. This report describes how such a public actor list could be organized for marketing and selection of innovators in renovation services, using the situation in Flanders, northern Belgium, as an example.

2. Development of a public actor list for promoting sustainable housing renovations

Collective research in the One Stop Shop project used the proposition that customer demand of integrated energy renovations can be stimulated with specific tools (such as web platforms integrating supply and demand) which can also provide a link with available technologies and actors. For example, a demo web platform can be developed to inform and convince owner-occupants to choose for holistic and integrated retrofit solutions. Such a tool can guide house-owners throughout their (investment) decision for the adoption of a whole house renovation, integrating basic information, information to persuade clients to choose for integrated renovation (compared to single measures), and tools to select actors that demonstrated their know-how in quality-assured demonstration projects. These tools can in turn use the developed listing of innovative technologies, demonstration projects and also related actors.

To develop such a One Stop Shop web platform is still a large effort. In general executing actors/contractors for renovation projects are still fragmented in partner countries and rarely offer integrated and/or sustainable renovation as a service or product. For realizing integrated renovation, usually collaboration occurs with some architect, consultant, contractor and/or installer who have previously shown experience with demonstration projects or in previous reference projects. In general, there is an urgent need to make these innovators visible on the market. A first opportunity to stimulate collaboration with innovators therefore lies in listing them and making them visible in the wider market.

Different partner countries stressed the role of policy actors influencing volume market development. Typically, these are policy makers, grant providers, and so on. While their role is important to stimulate integrated sustainable housing renovation, it is unlikely that such actors will directly collaborate with actors to develop market infrastructure and an actor list of innovators. However, particularly non-profit and customer organizations were observed to be able to influence demand by providing neutral information about the benefits of integrated and/or sustainable housing renovation and the available market players, also towards policy actors.

The Belgian partner Passiefhuis-Platform vzw (PHP) – a non-profit organization – therefore took the lead to explore the opportunity of developing a public actor list for sustainable housing renovation using available information on regional/national demonstration programmes, projects and related actors.

A first challenge was to select the projects on a neutral basis. Various available sources and databases were detected to select projects like:

- the PHP database of Passive House renovation projects with a certificate
- an inventory of low-energy demonstration projects assembled by the Flemish Institute for Technological Research (VITO) and PHP during a research project for the Flemish Energy Agency (VEA)
- a listing of officially recognized sustainable demonstration projects in the Brussels Capital Region
- a database of low-energy housing and renovations developed by the non-profit organization Bond Beter Leefmilieu Vlaanderen which is currently being used to facilitate open-house days ('Ecobouwers')

- a listing of highly energy-efficient renovation projects assembled during the research project 'Low Energy Housing Retrofit - LEHR', which was supported by Federal Science Policy and IEA SHC Task 37.

Besides these sources, also more scattered information on demonstration projects was found from European demonstration projects, research institutes (Belgian Building Research Institute) and enterprise networks (for example the Cluster Eco-construction in Brussels). Also, some suppliers promoted their own low-energy renovation demonstration projects (for example Wienerberger renovation guide). Furthermore the Federation of Architects (Orde van Architecten) had established a more general source of architects' references on-line via the database that was made available to customers for the event 'My house, my architect' - 'Mijn huis, mijn architect', to promote architects' services during open house days. However, this source did not pay specific attention to energy or sustainable renovations.

Experiences of actors in deep renovation of apartments appeared to be to greater or lesser extent also applicable to single-family house renovations, and therefore such actors were also included in the listing. All these sources were initially explored for the selection of projects. Figures 1-3 show the number of projects found in total and their distribution:

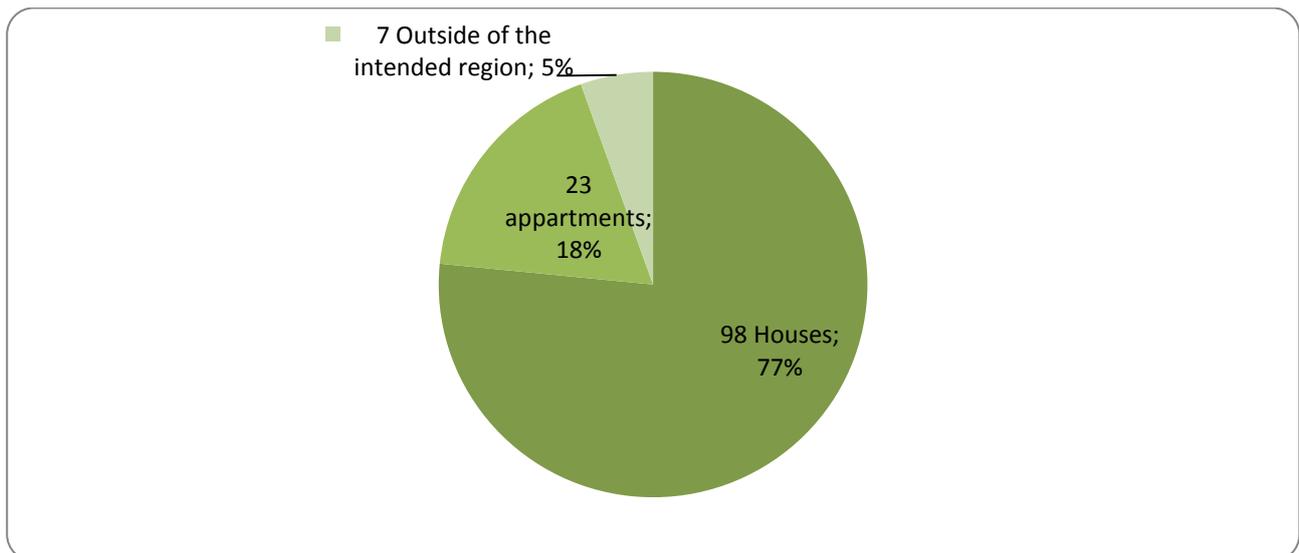


Figure 1: Number of houses and apartment buildings considered for listing.

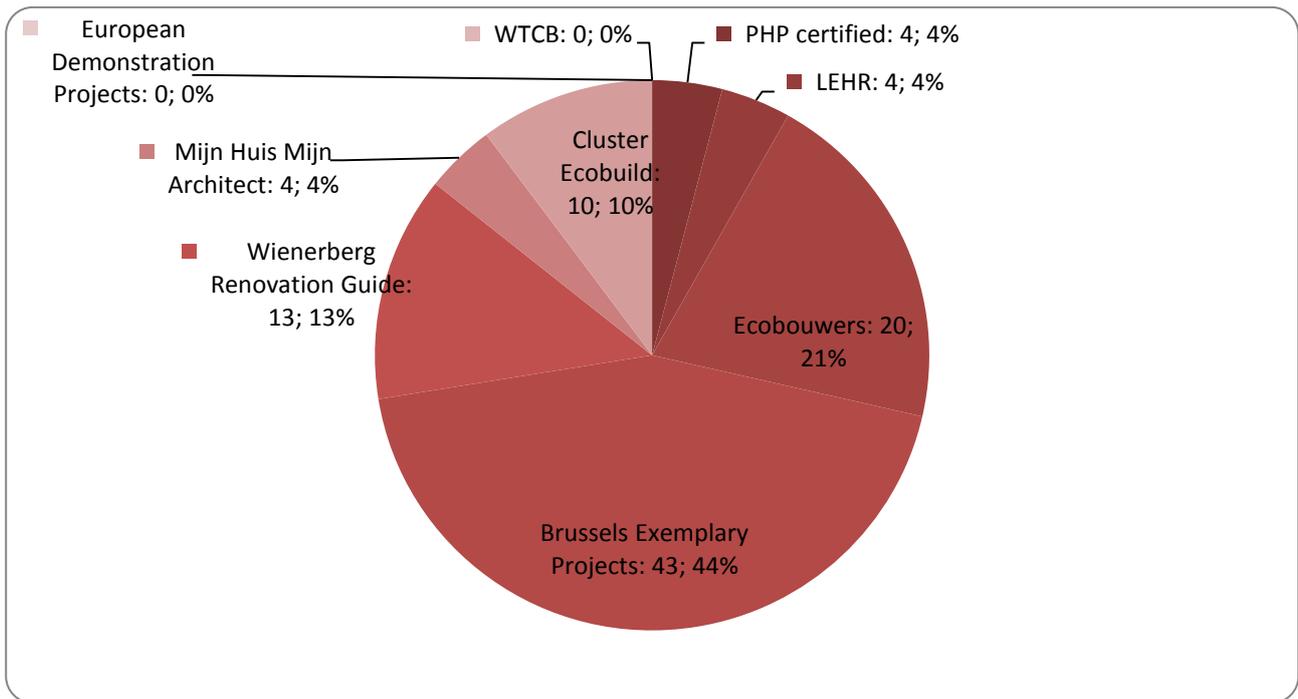


Figure 2: Sources for renovation of houses.

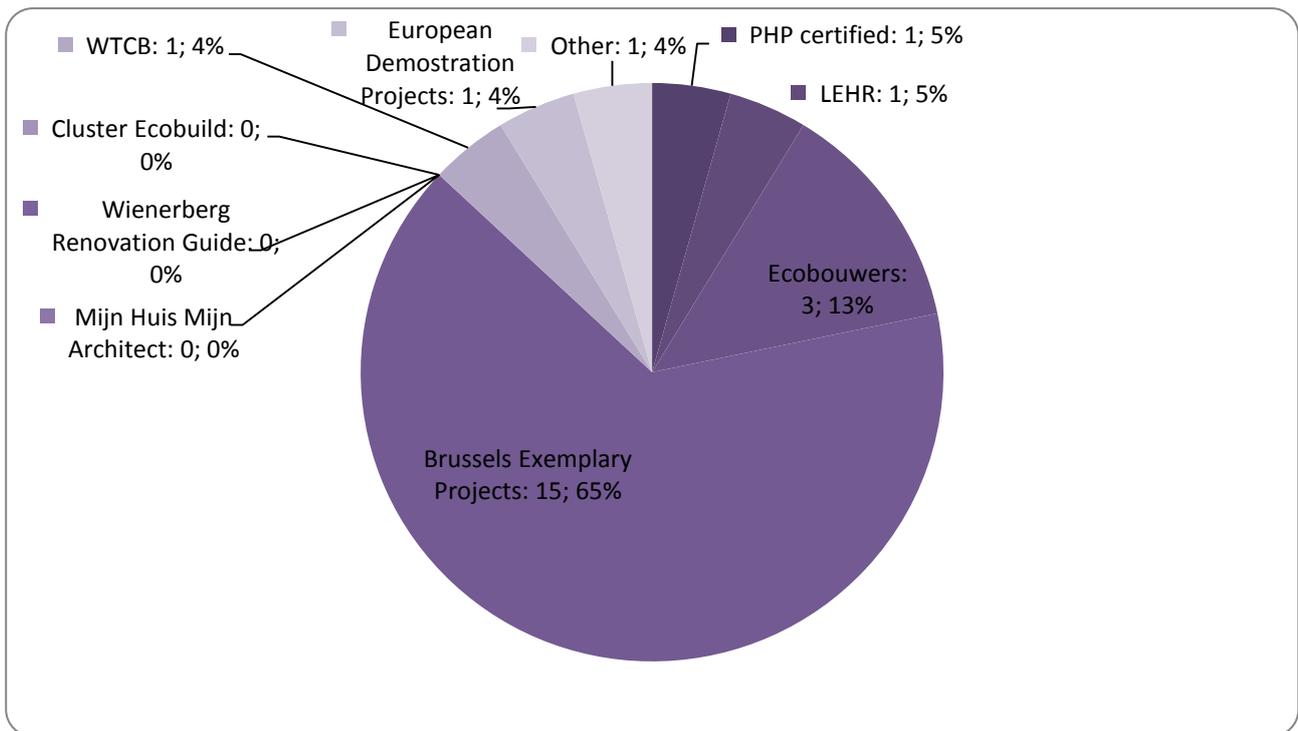


Figure 3: Sources for renovation of apartments.

Especially the Brussels Exemplary projects programme provided a larger list of demonstration projects, both for houses and apartments. This is because the policy initiative in Brussels directly promotes low-energy and sustainable houses as demonstration projects. For example, it offers grants for clients, grants for architects and visibility for partners involved in projects that are accepted by the regional services as

demonstration projects. The policy programme now runs for several years and is very successful. Brussels has more and more sustainable projects, not just in the energy aspects, but also in the eco-friendly style. The challenges are enforced regularly and this leads to more creativity in the projects each year. The Region steadily grows in amount of interesting projects and the policy initiative makes Brussels a frontrunner Region in Europe (see also the Intelligent Energy Europe project 'PassREg': http://eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2541). On the other hand, actors designing and implementing the projects achieve status, fame and possibilities to be involved in more sustainable projects. Finally, the clients benefit with eye-catcher projects and a reduction of project cost. Although the various demonstration projects are promoted, a specific list for actors involved in energy or sustainable home renovations was still missing.

Exploring this source provided a lot more references, but most of them situated in the Brussels Capital Region. Given its suitability for finding demonstration projects, the Flemish source 'Ecobouwers' was therefore also considered. A further motivation to include Ecobouwers was that the website of Ecobouwers allows customers to exchange experiences and to comment on actors' performance. It offers a virtual platform for discussion with more than 800 professionals where homeowners can ask in a blog about the problems they encounter in their renovation. It is the most visited blog in Flanders about energy and sustainability, covering 2 million entrances per year.

The number of certified Passive House renovations was in itself too low to establish a list with a significant number of related actors. Even here, we needed to be very careful if projects can be considered as a renovation, on the basis of how much of the existing building still remained variable.

In addition, we also looked at these available knowledge sources to classify demonstration projects into predefined typologies, in order for homeowners to be able to relate their own project with existing demonstration projects - and to demonstrate to companies the potential of available solutions for the segment of the building stock that the demonstration project represents.

1. Vernacular building (1 project, Walloon Region only)
2. Rural house (4)
3. Suburban villa (13)
4. Working class house (0)
5. Urban terraced house (46)
6. Large urban terraced building (5)
7. Sub-urban semi-detached house (8)
8. Post-war low-rise apartment (19)
9. High-rise apartment building (4)
10. The social housing neighbourhood (2)

11. The conversion of an industrial building (4)

At time of finalizing this work (August 2012), using all available resources not for all typologies reference demonstration projects could be found. For example, for working class houses and vernacular buildings suitable demonstration projects were not found in Flanders. The majority of projects consisted of renovations of urban terraced houses, which in a way is a reflection on the integrated renovations on the market at present.

Comparing these various sources, the Passive House certificates provided the only systemic source of information with an attached 'quality assurance'. This quality assurance implied verifying the energy performance as designed, minimizing the risk of overheating and verifying the air tightness of the building. Only in these cases we were able to ask the architects all the information about the project, and to test if the energy calculations - based on Passive House calculation software 'PHPP' - were according to requirements set forward for certified Passive Houses.

Regarding their direct attachment with regional or federal policy, the VEA inventory, the Brussels Capital Region demonstration projects and the LEHR projects were further considered as objective sources. To compile a more substantial list a actors for the Flemish Region, also Ecobouwers and PHP certified houses were further included as 'neutral' sources.

While consulting all these sources, we initially collected the names of the architects involved in the exemplary projects. The next step was to contact them to gain additional information. This was done via e-mail and follow-up phone calls, using an introductory letter as follows:

Passiefhuis-Platform is currently setting up a regional database of exemplary renovation projects for public use. We noticed that your renovation project "xxx" of the "xxx" achieved high energy efficiency and therefore we would like to consider it for official listing.

The intended Flemish/Brussels database will serve as a tool for customers to search architects and other players that have experience with highly energy-efficient renovation. In order for your project and your involvement to be listed, please provide us as soon as possible with the full information of the players involved in the above mentioned project. You can find a template attached to list the players involved. Please also attach a representative general street side picture of the building that we can use free of copyright in the intended database.

Further, we would like you to consider documenting your project in more detail in order to attract/convince new clients. If you provide further project details, this information will be made accessible through a web site (in Dutch) that will specifically target owner-occupiers of (mainly single-family) housing who wish to renovate. Please let us know as soon as possible if you can engage in this effort. If yes, we will send you a further template to fill in and schedule a telephone interview with you in the next week(s).

We would like to thank you in advance for your cooperation and hope that this mutual effort will contribute to your activity.

The mail had an attachment of two questionnaires, one about general aspects of the building and a second about specific aspects. The goal of this action was to compile information for concise project leaflets for

clients, covering various building typologies and technological solutions. Both the actor list and the project descriptions were considered to be essential elements for the further development of a One Stop Shop. However, only 16 architects (13% of all architects addressed) initially answered the mail and only three architects continued with their promise to deliver the needed information. This effort shows that it is very difficult to get detailed information about projects for public use. The researcher had to actively seek the architect during open house days like “Mijn house, mijn architect”, events like the presentation of the Brussels exemplary projects, and to engage in meetings and conversations with architects on professional fairs such as “Batibouw” and “Passive House”. Such actions were found to be useful and needed to gain additional information and to determine how architects envisaged their sustainability and energy saving ideas in projects. Some of the architects were not too open to say with whom they collaborated during the renovation process. Sometimes they were not too happy with the results or sometimes they just did not consider this to be useful. This means that in the end not all actors who have participated in the demonstration projects house renovations could be found, and therefore listed in the final public list.

In the end a sufficient number of actors could be listed, differentiated between architects, contractors, consultants (usually engineering offices) and installers (craftsmen):

Architects: 73

Contractors: 25

Consultants: 25

Installers:

-Insulation: 4

-Floors: 1

-Ventilation: 3

-Heating: 2

-Solar energy: 1

-Electricity: 1

-Project developer:1

3. Conclusion

“My husband and I are renovating an almost 100 years old urban terraced house in Gent, till the passive standard. It is difficult, you need to search and re-search till you end up with a little step.”

(statement of a Belgian homeowner d.d. August 2012).

There is still a lot to do to develop an advanced housing renovation market. Actors need to be convinced to build sustainably and with low-energy criteria, even when grants, research results and policy programmes are available. If innovators' experiences are not spread, the clients will not find opportunities to introduce innovation. All actors involved in demonstration projects need to be mobilized and made visible for future clients. In the end, the actors listing is eliminating the barrier of the difficulty for the homeowner to find appropriate and experienced actors, as step towards increasing demand for integral renovations by homeowners. Companies should answer with service solutions, amongst which the One Stop Shop approach is one of the possibilities.

For the development of a One Stop Shop, actors and clients should share information, in order for non-profit and customer organizations to help building a market infrastructure. If actors want a share of the future renovation market, they need to get involved in highly energy-efficient and sustainable housing renovation projects. Innovators can help them to take the first steps. Therefore these innovators should be easy to find. Once an actor was involved in a successful demonstration project, he can be considered as an adopter and provider of future renovation projects.

The public list of actors (Flanders/Brussels) will be launched and distributed in Belgium at the Passive House 2012 Professional Day on 7th September 2012 at Tour&Taxis in Brussels, where also the final workshop of the One Stop Shop project will be held. Given that that the workshop is organized by the Flemish contractor federation VCB, in collaboration with PHP and the Belgian Building Research Institute (WTCB), it is expected that the list will be recognized by professionals. In future, the aim is to use the public list as a reference tool. PHP will promote the list during contacts with homeowners - who regularly ask for experienced actors - and with procurers - who might consider referring to and using the public list as a neutral reference for evaluating contributions to tenders and requests for project developments. The list will also be handed over as a reference to the provincial network of sustainable building consultants.

The growth and continuation of the listing is still a challenge. A coupling with the development of Energy Performance Certificates for home renovations might increase the opportunities of adoption of such listing. A barrier observed for the further development of this public actor list is that widely accepted quality assessment schemes are missing for housing renovation. Only in exceptional cases some informing/consulting actors also offer quality assurance services - such as Passive House certification - or customer feedback opportunities - such as contractor experience blogs on their websites. Furthermore, it is difficult to obtain detailed information from architects. Introducing quality assessment schemes might therefore be an option for the future. This is important to increase customer confidence in the public list for choosing integrated housing renovation. A quality assurance scheme could also stimulate the market towards high quality renovation. Therefore in future, it should be considered whether various tools can be promoted or adapted as a tool for increasing the number of participants on the list, such as the Passive House certificate - originally designed for newly built homes which makes aiming and reaching this certificate difficult and unrealistic in many renovations -, the Energy Performance Certificate, the German 'EnerPHit' label, the Swiss 'Minergie' label, and so on. Another option that will be explored is how a specialized course could be developed to increase know-how and competencies for integrated and/or sustainable housing renovation. Participants who delivered a successful exam after the course could also be listed. The further maintenance of the list could also be coupled with the development of a regional One Stop Shop web platform. These opportunities will be explored in future projects.