From Demonstration Projects towards Volume Market: Innovations for One Stop Shop in Sustainable Renovation

Erwin Mlecnik (PHP/ OTB TU Delft)
Work Programme

The project aims to raise both energy efficiency by high performance renovation strategies and thermal comfort by proved solutions for ventilation and protection from heat of school buildings in the following European partner countries:

Belgium, Denmark, Switzerland and Austria

in cooperation with
• The City of Antwerp (AG VESPA),
• LIG (Styrian school building owner),
• the project smartTES

And much more…
Overview

• Project background, idea & partners
• Work programme
• Intermediate results WP’s
• Conclusion
Project background

Idea based on conclusions of previous research

- **Low Energy Housing Retrofit (LEHR)**  [www.lehr.be](http://www.lehr.be)
  Belgian Federal Science Policy
  Partners: PHP, BBRI, UCL Architecture & Climat

- **IEA SHC Task 37**: Advanced Housing Renovation with Solar and Conservation: Subtask A: Marketing, Subtask B: Demonstration projects [www.iea-shc.org/task37](http://www.iea-shc.org/task37)

  Deliverables: Booklet ‘From Demonstration to Volume Market’
  and international project files
- **Creation of ‘One Stop Shop’ recommended!**
Idea

Eracobuild-project ‘one-stop-shop’: goals

• Supply side:
  • Develop solutions (companies) for total renovation

• Demand side:
  • Less effort for the client: make ‘shopping’ available + quality assurance

= Project
  :: Case study: Flemish Construction Federation (VCB) as model for innovation supply side

ERACOBUILD Joint Call for proposals on Sustainable Renovation
Dec. 2009/ June 2010
Budget: Total Project 1.234.811 EUR (based on national funding)
Contact: irena.kondratenko@passiefhuisplatform.be
Partners

Coordinator:

Passiefhuis-Platform vzw

Partners:

Segel AS, Norway, consulting company
DTU, Technical University of Denmark
VTT, Technical Research Centre of Finland
BBRI (WTCB), Belgian Building Research Institute
VCB, Vlaamse Confederatie Bouw
(key organisation of the Flemish Case Study)
WP1 State-of-the-art Technologies and products, optimal execution methods for renovation, exemplary projects

WP7 Project Coordination

WP2 LCA and LCC in Sustainable Renovation


Flemish Case Study

WP4 White Book development for one stop shop and testing pilots.

WP5 Development of One Stop Shop Tool in Sust. Ren.

WP6 Communication and Dissemination

Project Start Month 1 (Sept 2010) 6 12 18 Project End Aug. 2012

Report

Working Document

Report

Report Methodology

Report Clustering

White book for SMEs

Report New business models

One Stop Shop Web Tool

Post Project Plan
Intermediate results

Interview VCB, WTCB, PHP (3812 addressed, 139 respondents)

- Expected business share of highly energy-efficient renovation now still small, but expected significant within 5 years!
Intermediate results

- Companies active in renovation are mainly micro-enterprises!
## Intermediate results

<table>
<thead>
<tr>
<th>company/alliance</th>
<th>bare brickwork</th>
<th>installation</th>
<th>finishing</th>
<th>design</th>
<th>not interested</th>
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</thead>
<tbody>
<tr>
<td>bare brickwork</td>
<td>26.32%</td>
<td>10.53%</td>
<td>10.53%</td>
<td>26.32%</td>
<td>26.32%</td>
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<tr>
<td>technical</td>
<td>11.11%</td>
<td>41.67%</td>
<td>2.78%</td>
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<td>full buildings</td>
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<td>8.33%</td>
<td>25.00%</td>
<td>25.00%</td>
<td>33.33%</td>
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<tr>
<td>others</td>
<td>10.00%</td>
<td>20.00%</td>
<td>20.00%</td>
<td>30.00%</td>
<td>20.00%</td>
</tr>
</tbody>
</table>

Who is looking to team up with whom?
- Those who are willing to team up prefer an alliance within the own sector of with a designer.
Intermediate results

What focus is needed for highly energy-efficient renovations?

- Improving awareness supply and demand is essential!
- Need for information and learning
Intermediate results WP1

**Interior Insulation with Humidity Control**

**General description**

IQ Therm, product of REMERS Company is a modular system of 1200mm x 500mm comprising 3 basic elements. All layers have heightened capillarity, allowing passage of humidity from the outside wall to the inner space and vice versa.

One of the layers has humidity regulating system as well.

The insulating element is a modified PUR plate, which is perforated by hundreds of little canals which are filled with hygroscopic material.

The plate is fixed to the wall with special comosited glue that allow humidity from the wall to pass thru the PUR plate or comes from the house interior.

A thin optional layer can be used to further restrict the wall. A coat of capillary active paint is applied as finish.

**Technical performance**

1. IQ panel with insulation of 30mm
2. IQ panel with insulation of 50mm
3. IQ panel with insulation with 80mm

**Maintenance / Lifetime**

As a material composed by mineral elements and PUR, the lifetime is long and the maintenance is low, according with the finishing selected.

**Financial aspects**

- Cost: (waiting for the answer of the company)
- The Subsidies varies per city and region. More info in: www.premiebouwer.be

**References and additional information**
Intermediate results WP1

What to take into account for the future

Possibilities compared to existing situation

see paper: Vrijders et al., PassiveHouse 2011
Intermediate results WP3

Innovation requires network (supply side)

Scenario’s for business development (case studies WP4)

Supplier X
Innovation Y
Intermediate results WP3

Collaboration is key

A OSS (company) is preferentially a team of actors for each phase:

- Consumer organisations, federations, non-profit organisations, knowledge centers, policy
- Energy advisers, financial advisers
- Architects, turnkey suppliers
- Suppliers, (sub)contractors, installers
- Consumers, certifiers

see paper: Mlecnik et al., Passivhus Norden 2011
Intermediate results WP4

Development of holistic business models

- Business model generation ref. Osterwalder and Pigneur

see paper: Haavik et al., Passivhus Norden 2011
## Intermediate results WP5

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<th>.NL</th>
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<th>.UK</th>
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## Intermediate results WP5

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<th>.NL</th>
<th>.NO</th>
<th>.UK</th>
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</thead>
<tbody>
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<td><strong>Federation contractors</strong></td>
<td>Private enterprise</td>
<td><em>Public organisation</em></td>
<td>Private enterprise</td>
<td>Policy and private enterprises</td>
<td><em>Staatsbedrijf</em></td>
<td>Policy/private collaboration</td>
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<td><em>Public organisation</em></td>
<td><strong>Group companies</strong></td>
<td>Private enterprise</td>
<td>Policy</td>
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<tr>
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<td><em>Public organisation</em></td>
<td></td>
<td>Policy</td>
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<td>Private enterprise</td>
<td></td>
</tr>
<tr>
<td><strong>Group companies</strong></td>
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<td>Policy</td>
<td>Consumer organisation</td>
<td>Private enterprise</td>
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<tr>
<td><strong>Federation architects</strong></td>
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</tr>
</tbody>
</table>
Intermediate results WP5

5 layers of information (demand side)

- Information
- Persuasion
- Decision (selection supplier)
- Implementation
- Verification

see paper: Mlecnik et al., Passivhus Norden 2011
Intermediate results WP6

International event “BUSINESS ZOO”
Antwerpen, Belgium, 18 April 2012
In collaboration with Enterprise Europe Network

- Pitches of emerging business development (integrated renovation)
- Intervision meetings (help developing/ clustering/ finding partners)
- Dedicated speed-dating

Cluster building & innovation stimulating events
- Demo project visit (e.g. 134 renovations towards the PH standard)
- Innovation parcours (on building fair)
- Master classes (business development)
- Dedicated workshops renovation
e.g. on the international symposium Passive House 2011, Brussels, 7 October 2011: www.passivehouse.be
Conclusion

Demo projects → Neutral information

Feedback information

Actor selection → Quality assurance

http://www.one-stop-shop.org