



Conference 2011



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National Contact Point for
Research Programmes
of the EU



**Let's Construct Europe's Future
With Innovative Buildings and Infrastructures
*Construction and Societal Challenges***

**Radisson Blu Centrum Hotel - WARSAW
04 / 05 October 2011**

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**

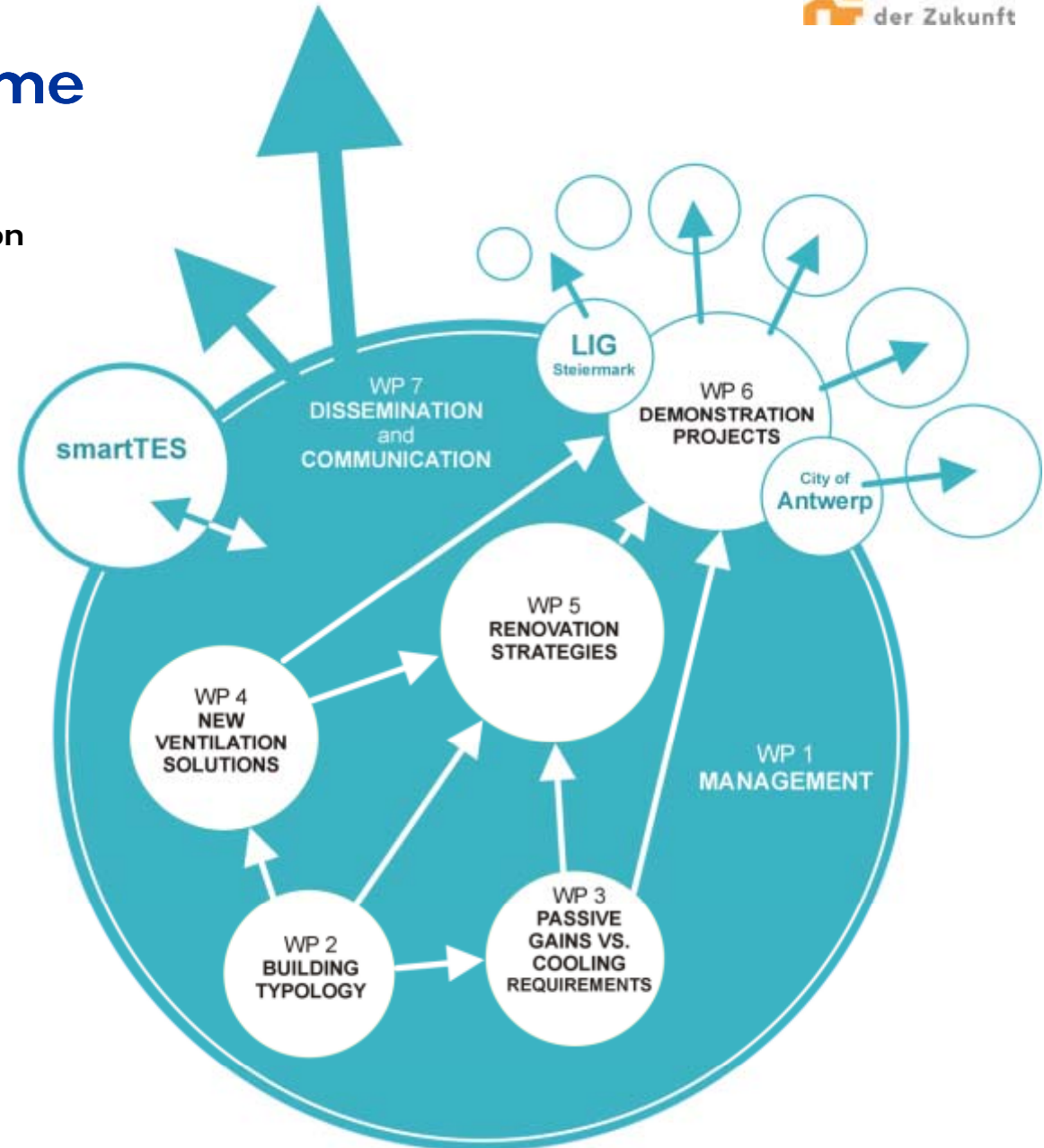
of school buildings in the following European partner countries:

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
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

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

Start 1 Sept. 2010 – 31 Aug. 2012

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

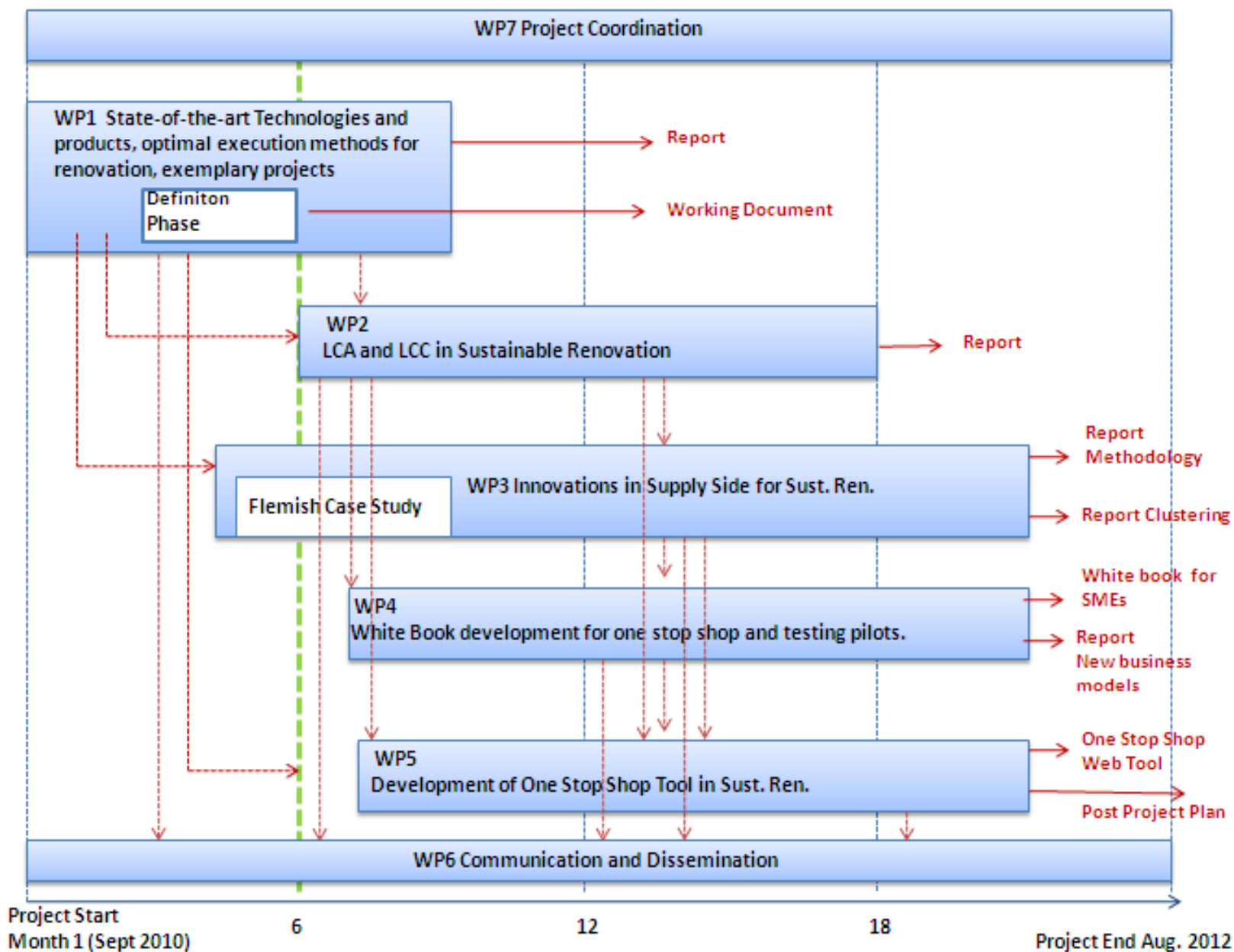


BBRI (WTCB), Belgian Building Research Institute



VCB, Vlaamse Confederatie Bouw

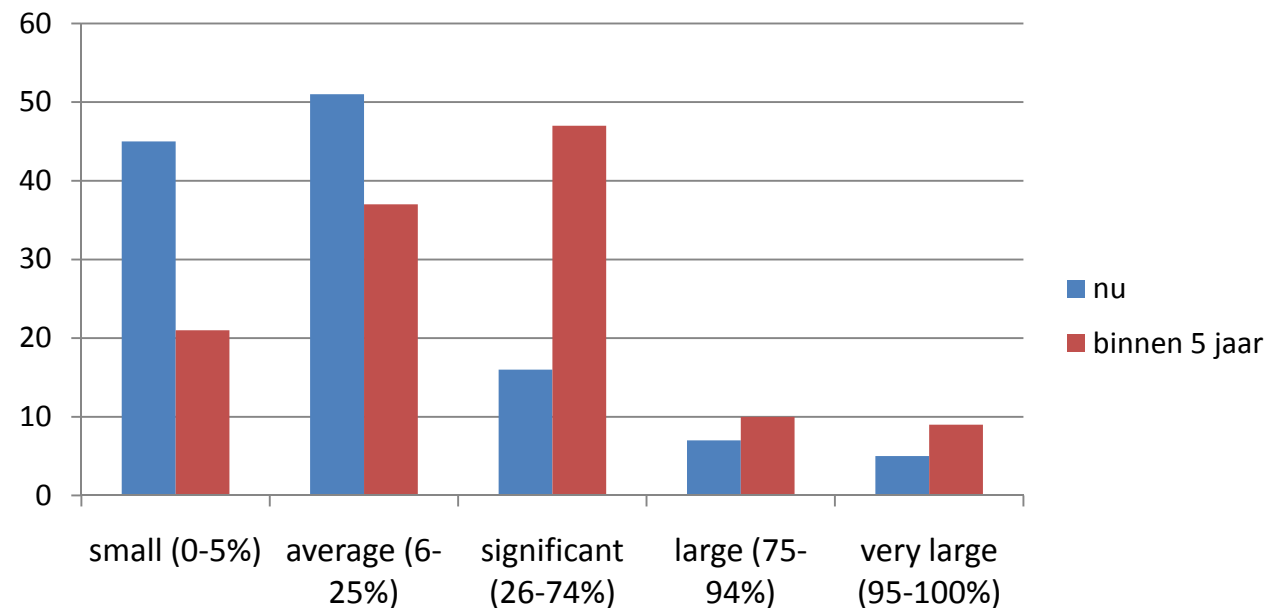
(key organisation of the Flemish Case Study)





Intermediate results

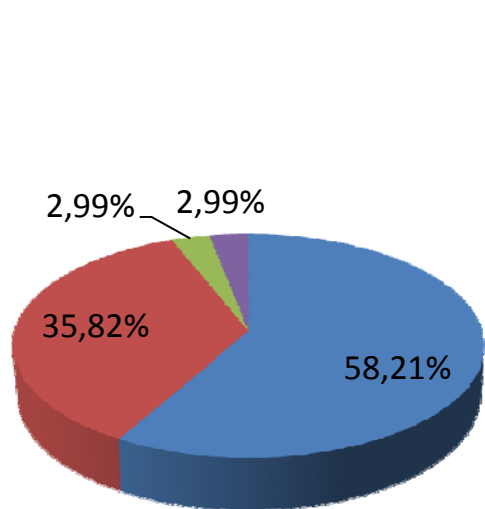
Interview VCB, WTCB, PHP (3812 addressed, 139 respondents)



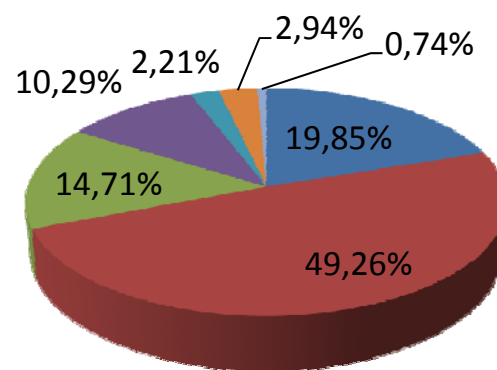
- Expected business share of highly energy-efficient renovation now still small, but expected significant within 5 years !



Intermediate results



- revenue < 500,000
- 12,500,000 > revenue > 500,000
- 25,000,000 > revenue > 12,500,000



- 0 employees
- 1-5 employees
- 6-10 employees
- 11-20 employees

- Companies active in renovation are mainly micro-enterprises!



Intermediate results

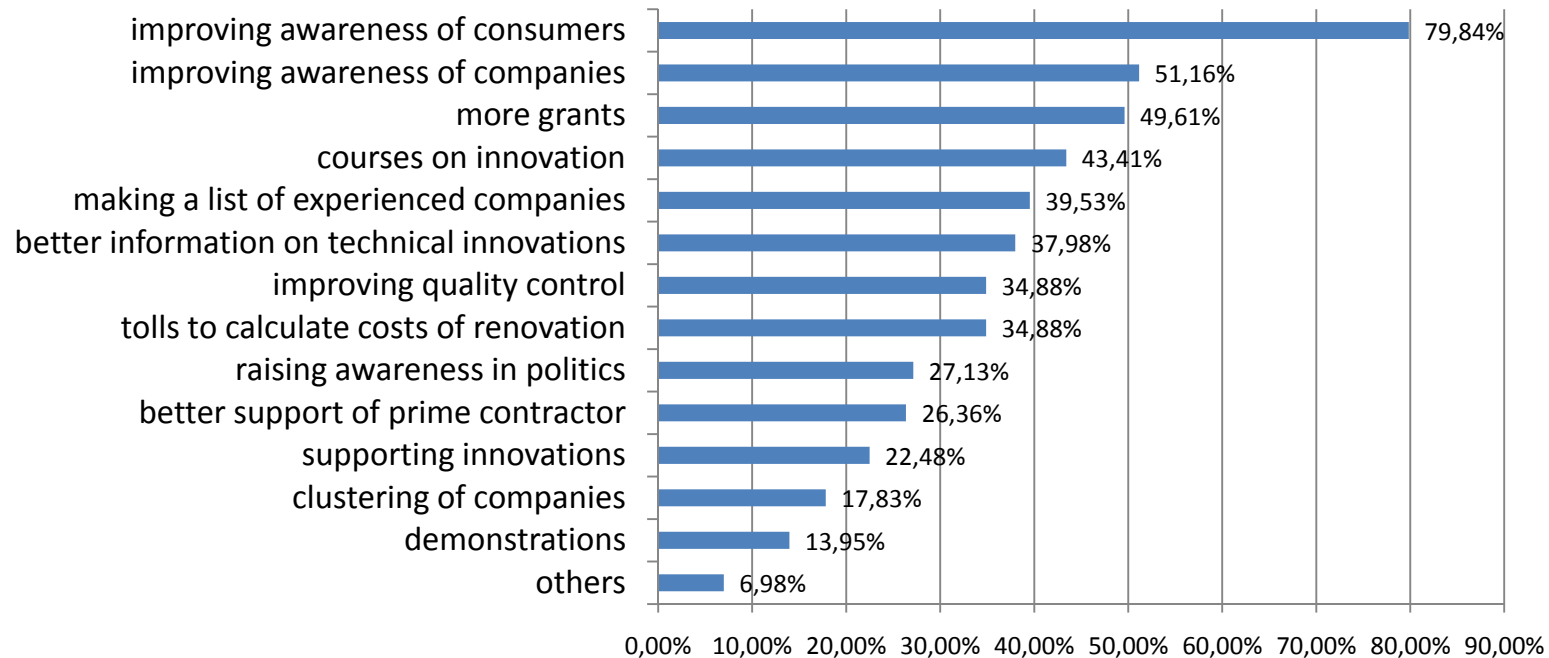
company/alliance	bare brickwork	installation	finishing	design	not interested
bare brickwork	26,32%	10,53%	10,53%	26,32%	26,32%
technical	11,11%	41,67%	2,78%	27,78%	16,67%
finishing	5,88%	11,76%	44,12%	17,65%	20,59%
full buildings	8,33%	8,33%	25,00%	25,00%	33,33%
others	10,00%	20,00%	20,00%	30,00%	20,00%

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

Category: Interior Insulation with humidity control

Interior Insulation with Humidity Control

General description



IQ Therm, product of REMERS Company is a modular system of 1200mm x 600mm 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 hundred of little canals which are filled with hygroscopic material.

The plate is fixed to the wall with special composited glue that allows 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 texturize the wall. A coat of capillary active paint is applied as finish.

Figure 1: Example of application of the product
(www.remersbouwchemie.nl).

Availability on the market

In Belgium: **Available**

Abroad: (waiting for the answer of the company)

Advantages

- Regulate interior humidity.
- Insulation.
- Allows exterior non-ventilated wall to dry out to interior and exterior of the house, which is not the case with common interior insulation.
- Possibility to texture the wall in different ways with an optional hygroscopic material.
- 3 different thicknesses of modules, 30mm, 50mm and 80mm, to reach the insulation where wanted.
- Easy to apply.

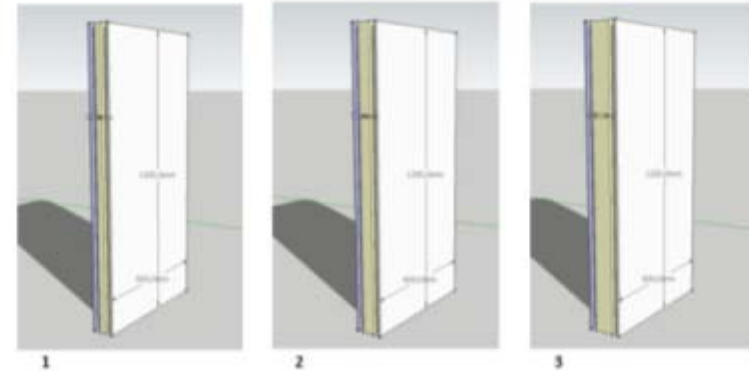
Disadvantages / Constraints / Related issues

- This system has the same disadvantage as other types of interior insulation systems, namely, minimizing the thermal bridges may be difficult without using additional insulation in places.

References

- www.remersbouwchemie.nl

Technical performance



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

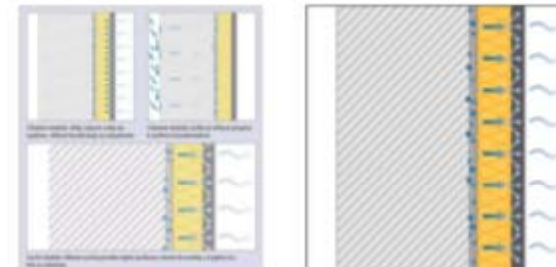
Maintenance / Lifetime

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.premiebezoeker.be

References and additional information



Humidity behavior, it shows the permeability of the humidity thru the different layers.
More info: www.remers.de/html/de/downloads/7962006.pdf

Intermediate results WP1

		Buitenmuren					Buiten- of binnenmuren			Dakconstructie		Vloerconstructie		Gevelconstructie	
		Interne isolatie	Externe isolatie	De isolatie van de opening	Luchtdichtheid	Draagplichtigheid	Maatregelen tegen opstijgend vocht	Plasterwerken	Schilderwerken	Dakconstructie	Dakconstructie	Vloerconstructie	Vloerconstructie	Gevelconstructie	Gevelconstructie
<p>What to take into account for the future</p>		<p>Possibilities compared to existing situation</p>													
		<p>Interaction</p>													
<p>Interactie met andere onderdelen</p>		<p>als externe isolatie gepland is, moeten de raandegelen goed geïsoleerd worden gemaakt</p> <p>ondersteuning van de ramen tenzij de isolatie nog niet geplaatst is (verkleemmen)</p> <p>voortbrenging van de constructie met de buitenste laag bij plaatsing van het achthoek</p> <p>voortbrenging van de constructie met de binnenste laag bij plaatsing van het achthoek</p>													
<p>Verwarming</p>		<p>nieuw verwarmingsysteem moet eigentijdig geplaatst worden op de afbreidbare isolatiegraad</p> <p>nieuw verwarmingsysteem moet eigentijdig geplaatst worden op de draagplichtigheid</p> <p>nieuw verwarmingsysteem moet eigentijdig geplaatst worden op de draagplichtigheid</p>													

see paper: Vrijders et al., PassiveHouse 2011



Intermediate results WP3

Innovation requires network (supply side)

Scenario's for business development (case studies WP4)





Intermediate results WP3

Collaboration is key

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

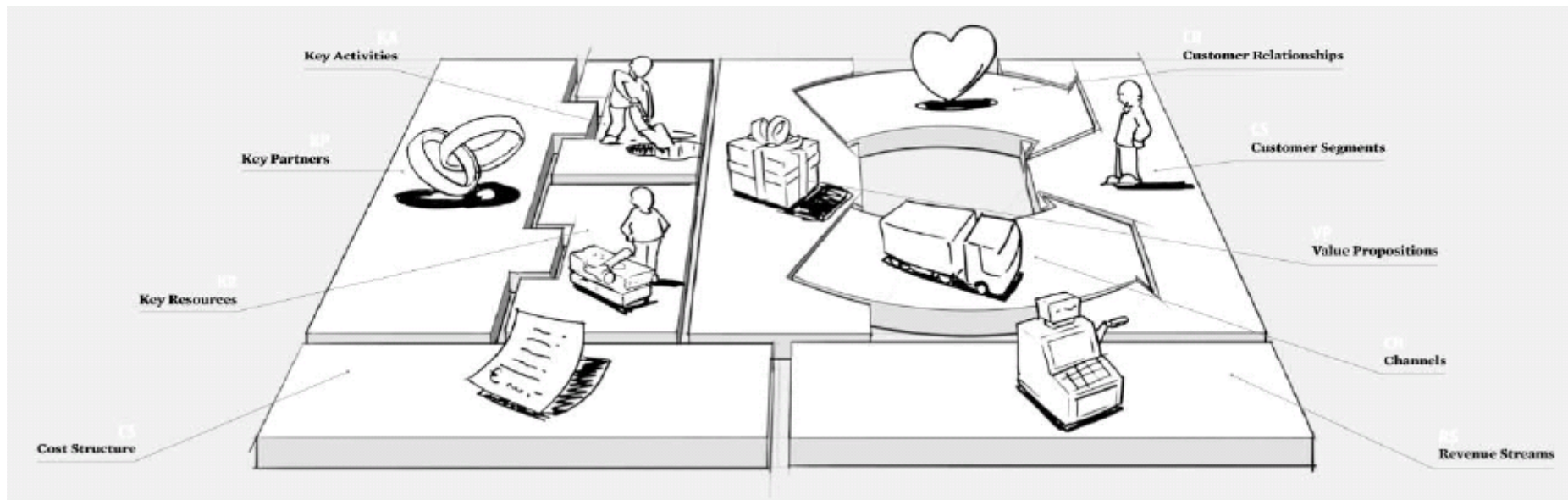


see paper: Mlecnik et al., Passivhus Norden 2011

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

.BE	.DE	.DK	.FI	.NL	.NO	.UK
ikzoekenvakman	modernus	goenergi	K-rauta	verbouwkompas	enovaanbefaler	tzero.org
ecobouwers	effizienzhaus	energibolig	rautia	energiebesparingsv erkenner	energiraadhuset	
passiefhuisplatform			korjaustieto		entelligens	
renovatie2020			kuluttajavirasto		alttilbolig	
zoekeenarchitect						



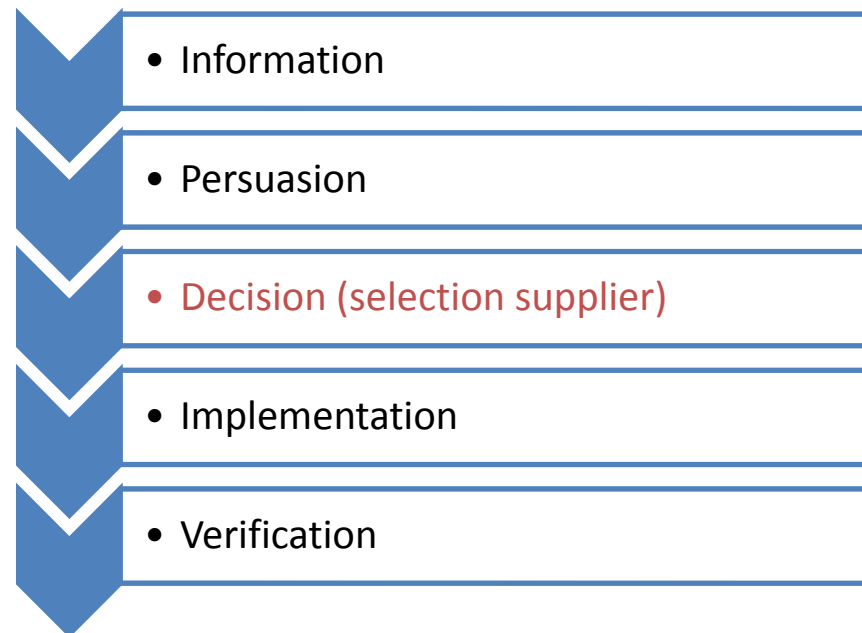
Intermediate results WP5

.BE	.DE	.DK	.FI	.NL	.NO	.UK
Federation contractors	Private enterprise	<i>Public organisation</i>	Private enterprise	Policy and private enterprises	<i>Staatsbedrijf</i>	Policy/private collaboration
<i>Non-profit organisation</i>	<i>Public organisation</i>	Group companies	Private enterprise	Policy	Private enterprise	
<i>Non-profit organisation</i>			Policy		Private enterprise	
Group companies			<i>Consumer organisation</i>		Private enterprise	
Federation architects						



Intermediate results WP5

5 layers of information (demand side)



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

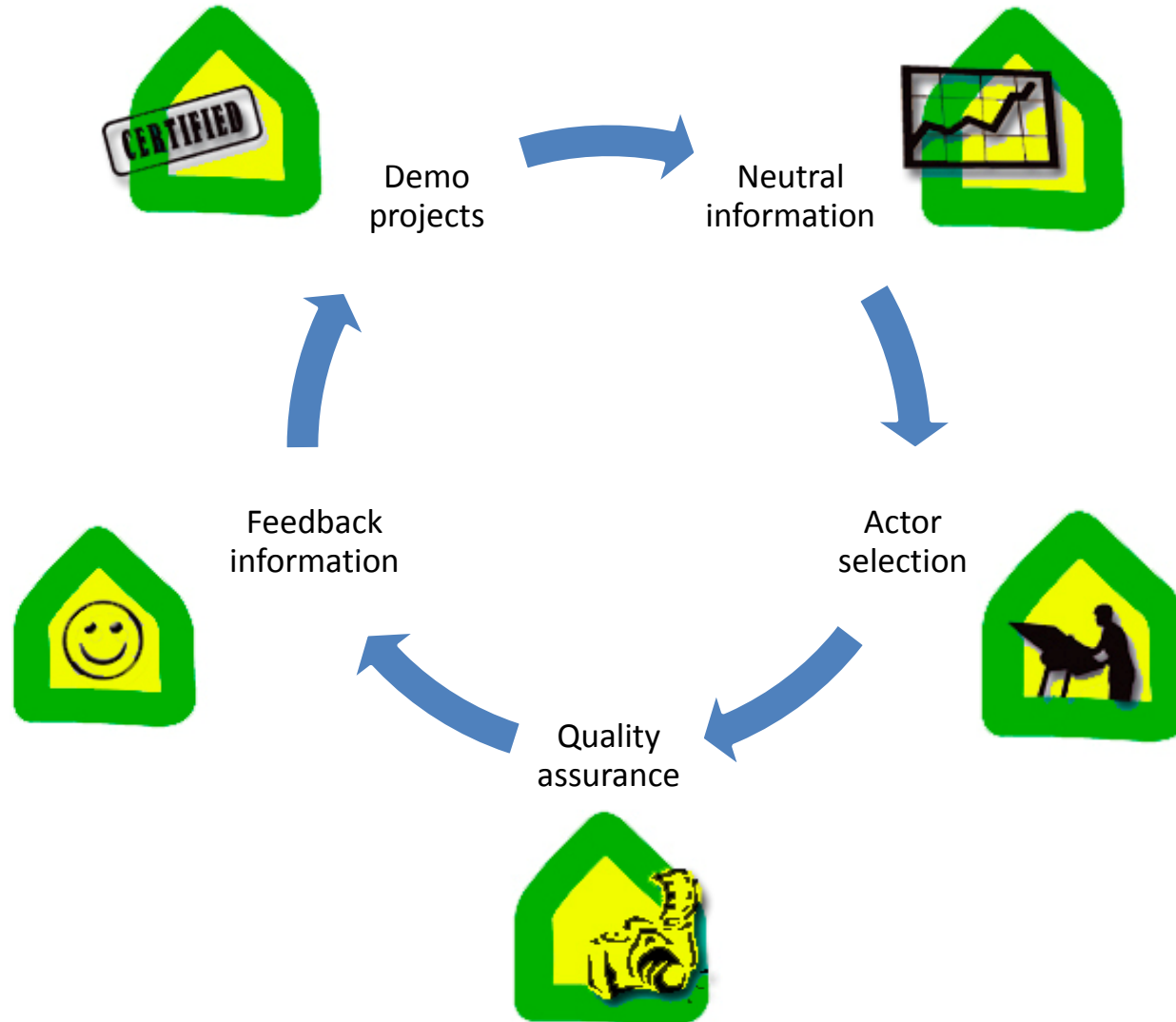
Cluster building & innovation stimulating events

- 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



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