Office building of Elia (Energy Transport Network)

A2M

private housing

A2M
Does it work?

Total consumption of 14 families before and after their moving to passive building.

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2008</td>
<td>230,000</td>
</tr>
<tr>
<td>2008-2009</td>
<td>220,000</td>
</tr>
<tr>
<td>2009-2010</td>
<td>210,000</td>
</tr>
<tr>
<td>2010-2011</td>
<td>70,000</td>
</tr>
<tr>
<td>2011-2012</td>
<td>50,000</td>
</tr>
</tbody>
</table>

BatEx Passif in BxL

CONSOMMATIONS 12/2011 → 12/2012
Rue Loosens - Jette

- Duplex 1 (1 adult + 4 enfants): 8,710 kWh
- Duplex 2 (1 adult + 3 enfants): 6,030 kWh
- Total: 14,740 kWh
- Production PV (...m²): 7,300 kWh
- Consommation Energie Finale: 7,440 kWh
- Consommation annuelle / m²: 27 kWh/m².an

Pour rappel:
Consommation Energie Finale = énergie pour chauffage, ECS, ventilation, auxiliaires et électricité domestique.
Les 15 kWh/m².an = besoin énergie pour le chauffage.
It works! If you keep in mind:

• Choice and dimensioning of installations:
  • Heating system: individual vs. collectif, relaunch after absence, easy control by inhabitant
  • choice of fuel: if electricity \( \rightarrow \) bill
  • Ventilation system: individual vs. collectif, maintenance

• wiring: parabola, cable television, phone, …

• Understanding of inhabitants

• …
No panic on the Construction sites

Airtightness > 95% successful construction!

Over 90% didn’t get specific training
Commitment of the public authorities

Since 2010:

Contrats Quartiers Durables
- 130,000 ft²/year (120 housing units)
- 8 collective facilities

SDRB
- 580,000 ft² (P) + 270,000 ft² after 2014
- 285,000 ft² (P) urban industry

SLRB
- 2,5 Mio ft² (P, VLE, LE)

Bruxelles Environnement
- 180,000 ft² (P)

MRBC
- 480,000 ft²

Local authorities
- stimulating effect

Also boosting the private sector!

- In Brussels there will be much more than 5,4 Mio ft² of Passive House buildings built by 2015!
Major studies to gather necessary knowhow

2008 – applicability of passive concept in the Brussels’ context

2011 – definition of passive criteria for tertiary sector

2012 – Successful passive house skyscrapers


11 – definition of passive criteria for tertiary sector
*Situation of the Brussels Region

*Building foundations
A match between demand and supply
Exemplary Buildings
Commitment of Public Authorities

*And next …

*Conclusion
6th Call for projects
“Exemplary Buildings 2013”

Launched February 19, 2013
Application deadline: June 27, 2013
Jury: 11-13th September, 2013
Budget: 5 million € - 6,5 Mio $
And next …

*Brussels is one of the Front runner regions
  PassREG – Serpente –…
  EUSEW.eu Award 2012 !

*Technical feedback
*Monitoring
*Studies & Surveys
And next …

In the face of all the uncertainty about the future, is it possible to imagine a city becoming more beautiful, more practical and more economical to live in, while at the same time becoming more sustainable?

This was the challenge the Brussels-Capital Region set itself in 2007 – and its response was to launch the Batex call for projects targeting everyone wanting to build or refurbish a building in Brussels. The term “Batex” is the abbreviation for “Bâtiments exemplaires” or “exemplary buildings”, and the whole idea is to leverage each project, whether large or small, whether private or public, to spread the word about eco-construction, what it involves and how it can help transform the city, building by building.

Exemplary Buildings: Success Stories from Brussels
Bernard Deprez and Jean Cech
29,95 € | october 2012 | Soft cover with flaps | Colour illustrations
247 x 247 mm | 232 pages | ISBN en 978 2 87386 800 0 | ISBN fr 978 2 87386 798 0
ISBN NL 978 2 87386 799 7
Mandatory for each building permit for new buildings or important refurbishment (>75% of building shell) from 2015:

- Unthinkable in 2004
- The exemplary buildings showed technical and financial feasibility
- First positif feedback of building users
- Public authorities showing the example
- **Negociared agreement with belgian building federations (construction, architects, promotor, engineers)** – 19 octobre 2012
- Brussels, pioneer, international interest
Passive will be mandatory from 2015 for housing, offices, schools

<table>
<thead>
<tr>
<th>housing</th>
<th>offices + schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific space heating demand</td>
<td>≤ 15 kWh/(m²·a)</td>
</tr>
<tr>
<td>Airtightness (from 2018)</td>
<td>0.6 Volume/h under 50 Pa</td>
</tr>
<tr>
<td>primary energy demand</td>
<td>45 kWh/m²·Year</td>
</tr>
<tr>
<td>overheating</td>
<td>maximum 5% of time &gt; 25°C</td>
</tr>
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<td>Overheating</td>
<td>maximum 5% of time &gt; 25°C</td>
</tr>
</tbody>
</table>

**Overriding rule**, if bad compactness or orientation

**Heavy refurbishment**: > 75% of loss surfaces and all installations are replaced

→ same requirements x 1.2 (except overheating)
Training for excellence

- Energy management
- Passive and low energy concept
- Acoustics
- eco-materials
- Water
- Waste
- Territory and environment

Nearly 15,000 hours of training to professionals in 2012
Tools for professionals

**SUSTAINABLE BUILDING” QUALITY LABELLING**
Evaluate the environmental and energy performance of Belgian buildings with a view to international recognition

**TECHNICAL GUIDE FOR SUSTAINABLE BUILDINGS**
Guide for good practice and technical solutions for sustainable construction and refurbishment
What?
Stimulate transition of construction firms to sustainable construction

Why?
150,000 new inhabitants by 2020
70,000 new lodging units
Interest for building renovation works increases

How?
Unite Brussels actors that can influence supply side – over 110 participants
Identification of 44 actions

Goals?
30,000 hours of training, 2,500 new local jobs
Content

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   Commitment of Public Authorities

*And next …

*Conclusion
And would they do it again?

I would certainly start again..

We are doing it again, with the advantage of more knowledge and more available companies. I would also build the wooden frame with my own hands.

I would do it again! It was long, complicated and tiring but the result is great and really comfortable to live in. It was really worth it.

I would start all over again!

Off course, it needs to be repeated!

Probably, with more knowledge this time...

Yes, but better... Making the building more airtight isn’t that complicated, it’s just (very) long to do.

Quotes from the satisfaction survey
Conclusions – Why should YOU go passive?

- Up to 90% energy savings
- Decrease of energy dependance
- Excellent choice for social housing

![Comfort](image1.png)

Professional skills of the future:
1. Reduce the demand for energy by avoiding waste and implementing energy-saving measures.
2. Use sustainable sources of energy instead of finite fossil fuels.
3. Produce and use fossil energy as efficiently as possible.

![Using proven technologies](image2.png)

Cost:
- Passive = concept → free choices
Questions?

More informations:  www.bruxellesenvironnement.be/batimentsexemplaires