IT'S QUIZ TIME
How to make Energy Efficient Buildings more Visible and Attractive?

Introductory Remarks: Susanne Dyrbøl, President of EuroACE

Moderator: Geoff MEADE, Meade Davis Communications

Quiz Session 1: The Commission Buildings - Are they in line with EU Directives?
Gabor Toth, Head of Sector at the Unit 'Technical services, Building management' – Office des Infrastructures et Logistique à Bruxelles, European Commission

Quiz Session 2: Energy Performance Certificates—What role, challenges, future?
Bogdan Atanasiu, Head of Research, Buildings Performance Institute Europe

Quiz Session 3: Energy Efficient Buildings— Multiple benefits and need for ambition
James Drinkwater, World Green Building Council-European Regional Network
Ingrid Reumert, Vice-President, Public Affairs & Sustainability, Velux

Conclusions: Adrian Joyce, Secretary General of EuroACE
How to make Energy Efficient Buildings more Visible and Attractive?

“Quizzing the Stakeholders”

SUSTAINABLE ENERGY WEEK 23-27 JUNE 2014
Introductory Remarks:
Susanne DYRBØL, President, EuroACE
The Commission Buildings – Are they in line with EU Directives?

Gabor TOTH,

Head of Sector at the Unit Technical services, Building management in the Office for Infrastructure and Logistics in Brussels (OIB)

European Commission
The Commission buildings

ARE THEY IN LINE WITH EU DIRECTIVES

TÓTH Gábor

head of sector

Technical services, Building management
Are the Commission buildings in line with EU Directives?

YES
Commission building park

- 73 buildings (67 to 75)
- 1,000,000 m² useful area (above ground)
- mixed ownership structure
  - 10 buildings owned
  - 5 can be considered as owned
  - rest under more or less more exotic constructions
- 2 buildings in Flanders, rest in Brussels Region
- 370 GWh primary energy consumption
- 15 M€ annual energy cost
Total useful surface* managed by OIB

* useful surface: office area above ground
Evolution of the electricity consumption
Evolution of the gas consumption
Evolution of energy performance*

-32% in last ten years

* normalised primary energy consumption per PEB surface
Evolution of water performance

-56% in last ten years
Directive 2002/91/EC

- Energy Performance of Buildings
- Transposed in Brussels: May 2010
- 1st public body to certify a building: Commission (DM28)
- 1st public body to submit complete building park: Commission
Directive 2002/91/EC cont'd
Directive 2012/27/EU

- Article 5 covers 15 buildings
- annual requirement for the Commission
  - 7,851 m² to renovate
  or
  - 892,637 kWh to save (1%; Brussels → 0.13%)
- implementation plan submitted to EC in April
  - 4 buildings to renovate
  - 1 building to abandon without replacement
  - 3.6 GWh energy to save (plan foresees 7 GWh)
Conclusion

Are the Commission buildings in line with EU Directives?

Yes, they are.

The Commission walks in/with front.
Thank you

TÓTH Gábor, gabor.toth@ec.europa.eu
Energy Performance Certificates – What role, challenge, future?

Bogdan ATANASIU,
Head of Research, BPIE
Energy Efficient Buildings – Multiple Benefits and need for ambition

James DRINKWATER, WGBC - ERN
Ingrid REUMERT, VELUX A/S
Productivity Potential

**Mental Function & Memory**
- 10–25% better

**Call Processing**
- 6–12% faster

**Hospital Stays**
- 8.5% shorter

**Outside Views**

**Daylight**
- Students achieve 5–14% higher test scores
- More productive
- Learn 20–26% faster

**Systems**
- Productivity increases by 23% from better lighting
- 11% from better ventilation
- 3% from individual temperature control

**THE BUSINESS CASE FOR GREEN BUILDING**

[Image of cityscape with green buildings]
# Emerging Market Trends

## Table 1: Importance sustainability categories

<table>
<thead>
<tr>
<th>Position</th>
<th>2010</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Energy</td>
<td>Health and Well-being</td>
</tr>
<tr>
<td>2</td>
<td>Health and Well-being</td>
<td>Energy</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>Transport</td>
</tr>
<tr>
<td>4</td>
<td>Material</td>
<td>Waste</td>
</tr>
<tr>
<td>5</td>
<td>Waste</td>
<td>Pollution</td>
</tr>
<tr>
<td>6</td>
<td>Pollution</td>
<td>Water</td>
</tr>
<tr>
<td>7</td>
<td>Transport</td>
<td>Materials</td>
</tr>
<tr>
<td>8</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>9</td>
<td>Land use and ecology</td>
<td>Land use and ecology</td>
</tr>
</tbody>
</table>

Source: Jones Lang LaSalle, 2013

## Table 2: Top 5 most mentioned sustainability measures

<table>
<thead>
<tr>
<th>Position</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daylight access for visual comfort</td>
</tr>
<tr>
<td>2</td>
<td>Better internal (natural) air quality</td>
</tr>
<tr>
<td>3</td>
<td>Ability to measure and modify energy consumption</td>
</tr>
<tr>
<td>4</td>
<td>Flexible lay-out possibilities</td>
</tr>
<tr>
<td>5</td>
<td>Good public transport in immediate surroundings</td>
</tr>
</tbody>
</table>

Source: Jones Lang LaSalle, 2013
Health, wellbeing and productivity

A new WorldGBC project – measuring impact and sharing best practice

“...there is still some way to go before this kind of evidence informs investment decisions.”
Energy Efficient Buildings – Multiple Benefits and need for ambition

James DRINKWATER, WGBC - ERN
Ingrid REUMERT, VELUX A/S
Energy Efficient Buildings

- From a costumer perspective

Ingrid Reumert, VP Public Affairs & Sustainability, VELUX A/S
Energy consumption 2050 Buildings, globally

• Key Findings from the Intergovernmental Panel on Climate Change (IPCC, Fifth Assessment Report, June 2014):

- In 2010, buildings accounted for 32% of global final energy use.
- In 2010, buildings accounted for 19% of all GHG emissions.
- CO₂ emissions in the building sector could double or triple by 2050.

We spend up to 90% of our time inside buildings – living, working, learning and playing.
Save energy, the next holidays, new kitchen or child education?
We need a revolution

- But where is the ignition?
- How to trigger renovation of buildings in Europe?
- Without making the mistakes of the past
- We need a bottom up movement
- What do the customers want?
Our customers are all over the world
Mega trends influence consumers’ everyday life

**Global Mega Trends**
- Digitalisation
- Sustainability
- Urbanisation
- Globalisation
- Health & wellness
- Ageing populations
- Individualisation
- And the recession...

**Impact on everyday life**
- Home Security
- Expanding Protection from Unhealthy Air
- Reducing the Energy Bill
- Baby Boomers Future Proofing their Homes
- Children in Focus
- Do It Yourself DYI Health
- Good enough
- And many more areas...

**Impact on Consumers**
Consumers are still marked by the recession

- Recent global survey, Boston Consulting Group*

- 59% of consumers in developed economies are anxious about the future, and nearly half do not expect economic improvement in the next few years
- 43% either do not feel financially secure or believe they are in financial trouble

- However, consumer confidence has increased in 21 out of 32 European markets in Q1 2014**
- Household saving rate stable in Europe in 2013***

* Boston Consulting Group, October, 2013. Survey includes 23 000 respondents across Australia, Canada, France, Germany, Italy, Japan, Spain, the UK, and the US

** Nielsen Global Consumer Confidence Survey, Q1, 2014

*** Eurostat newsrelease euroindicators, 14/2014, 28 January 2014
Trends for consumers

Trading up “my home”

Trading up in areas related to home, family and health

Trading down on luxury and “frills”
Rising interest in home improvements across Europe

Q: “How often do you make home improvements?”
Chart shows percentage of respondents answering “several times a year”

Source: CEB Iconoculture Values and Lifestyle Survey, 2012
Comfort and health - key driver for trading up?

<table>
<thead>
<tr>
<th></th>
<th>Amount of 1st priorities</th>
<th>Amount of 2nd priorities</th>
<th>Amount of 3rd priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GERMANY</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort, Well being and Health</td>
<td>12</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>2</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Environmental concerns</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td><strong>FRANCE</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort, well being and Health</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>5</td>
<td>9</td>
<td>0</td>
</tr>
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<td>Environment concerns</td>
<td>1</td>
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<td>12</td>
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</table>

*Note: Preliminary qualitative research for VELUX among house owners in Germany.*

*Prioritisation of Active House principles*
What is at stake?

Health and indoor comfort

• 10-50 % of the indoor environments where people live, work and play in Europe are damp (estimated by WHO 2009*)

• Productivity & learning abilities
  • The learning abilities of children can be improved by up to 15%**
  • Improved productivity (the productivity of adults can be improved by up to 15%***

• Asthma/allergy
  – Humid buildings are known to cause health problems such as allergies and asthma****
  – 87% of Europeans think asthma and allergy are a serious problem (Eurobarometer, 2013)

• General well-being
  – Can be affected by dampness in buildings which among others cause *****
    • Cough, wheeze and bronchitis

***** Sundell, 1999; Bornehag et al., 2001
TOMORROW'S BUILDINGS TODAY

21 experiments 2005-2013
Energy, comfort & environment

"The Future Active House project is very much in line with our purpose to encourage initiatives with high ambitions and creative solutions."
Gry Kaspers, Senior Advisor at Novo Nordisk, about Future Active House

"It's especially great to wake up and see the world waking up with you. Not only is the sun rising, but people are starting to move around, dogs are barking and running in the distance and the shadows are disappearing."
Alisa Dansenskiaya, Russian Active House

"We can sit and relax outside as early as March because the wood absorbs the heat of the sun and releases it again."
Don't like being frozen. Sunlight house blog

VELUX®
MODEL HOME 2020

"I always say that our first impression when we moved into the house was an excellent air environment. One of the nicest aspects about the house was the incredible amount of daylight, which we get into this house. Rarely, do we turn on lights in the house during the day."
David Smith, Smith Residence
21 experiments 2005-2013
health improvement

I have a lot of allergies. I took antihistamines all year. Here I didn't need to.
A gap to be chased

Energy Efficiency and healthy buildings to go hand in hand

Customer wishes
Buildings that support consumers' health and comfort with low energy costs

EE and health go hand in hand
Indoor comfort to be further included in EPBD
Healthy buildings Green paper to come?

Existing building mass status
High energy consumption
Challenges with e.g. dampness & overheating

Legislative focus
Lack of requirements in EU and national regulation that support energy efficiency and healthy buildings
Read and view more

• Sustainable Living in Buildings
  www.velux.com/sustainable_living

• Facts & Figures CR Report
  crreport.velux.com

• Active House newsletter & community
  www.activehouse.info

• Daylight & Architecture #20
  http://da.velux.com/current_issue/tomorrows-houses-today

• Healthy Home guidelines
  http://thedaylightsite.com/circadian-house-principles-and-guidelines-for-healthy-homes

• Own words:
  http://press.velux.com/GLOBAL/STORIES/climate-renovation-demands-daylight/s/ce000d9a-84e6-4d65-980f-5471b8b543a1
Thank you for your attention

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Q & A

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See you next