Model Home 2020

Byens Netværk hos VELUX

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The challenge

- In the EU today, we spend 90 % of our time indoors, in buildings that consume over 40 % of the total energy consumption. Up to 30 % of the building mass does not contribute to nor provide a healthy indoor climate.

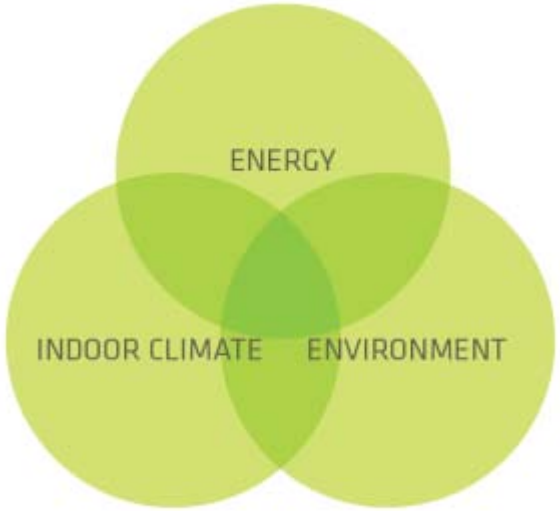
- Looking into a future perspective of how we construct and renovate buildings, it is necessary to consider climate changes, resource supply and human being

Active House

Buildings that give more than they take

activehouse.INFO
NETWORK AND KNOWLEDGE SHARING

Active House is a vision of buildings that create healthier and more comfortable lives for their users without impacting negatively on the climate and environment – thus moving us towards a cleaner, healthier and safer world.



Energy

Contributes positively to the energy balance of the building

Indoor Climate

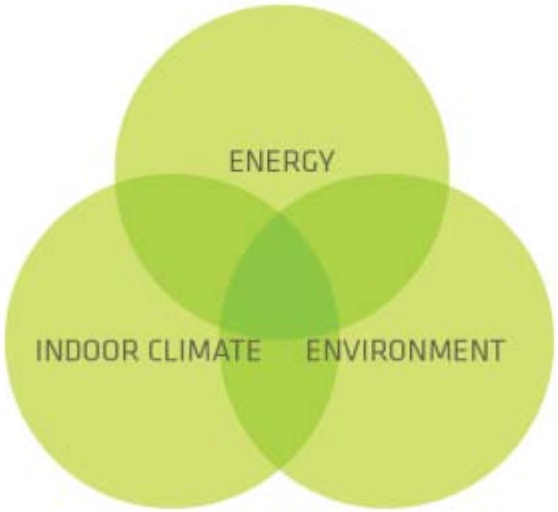
Creates a healthier and more comfortable life for the occupants

Environment

Has a positive impact on the environment

MODEL HOME 2020

- **Six 1-to-1 experiments** that demonstrate VELUX vision for **zero-carbon** buildings with a high **livability**, based on the **Active House** principles.
- **Each experiment** reflects and responds to three main Active House principles – efficient energy design, high degree of livability and minimum climate impact – as well as the different climatic, cultural and architectural conditions of the countries in which they are built.



MODEL HOME 2020

Home For Life 2009
Aarhus, Denmark

- *The principal architectural idea in Home for Life is to unite single-family house requirements to experience functionality and energy consumption in an integrated design.*
- Simonsens test family Year 1
- Daylight renovation of Simonsens 80´ies villa
- Results published – 5 key learnings
- Sold to Family Kristensen test family Year 2

Green Lighthouse 2009
Copenhagen, Denmark

- *Denmarks first carbon-neutral public building, built in a strategic Partnership as a lighthouse for public-private cooperation, to demonstrate a sustainable building with optimal balance between energy efficiency, architectural quality, healthy indoor climate and good daylight conditions*
- Operations handed over to University 2.10.
- Extensive use & visits
- Analogy to be built in Russia by 2012

Sunlighthouse 2010
Vienna, Austria

- *The vision is to build a carbon neutral house with exciting and appealing architecture focusing on the sloping roof. The house with an unusually high proportion of daylight has to be affordable in respect of dimensions and appearance.*

- Opened October 2010
- Donau-Universität Krems & IBO
- Family moving in 2012

LichtAktiv Haus 2010
Hamburg, Germany

"How can energy-efficient architecture and high living quality ideally be combined in modernising old houses? First carbon-neutral renovation of a "Siedlungshaus". From 350-liter house to 0-liter house in three modular steps

- Opened November 2010
- IBA Hamburg 2014
- TU Darmstadt & DGNB

Carbonlight Homes 2011
Rothwell, United Kingdom

- *The vision of CarbonLight Homes is to become a benchmark for future housing design, both at the local level (families) and the wider level (communities).*

- Opened August 2011.
- House Builder focus
- Market replicable

Maison Air et Lumière 2011
Paris, France

- *The vision is to build a detached house with a positive energy balance and a neutral environmental impact, with the living conditions of the residents at the focal point.*

- Opened October 2011
- House Builder focus
- Fifth facade in modular sections

Learnings outline

Human behaviour:

- Residents of the buildings and their patterns of life play an important role in the performance of the building.
- Predictions base on theoretical and generalized assumptions.
- Compliance tools do not reflect / include users influence

Controls / Technologies:

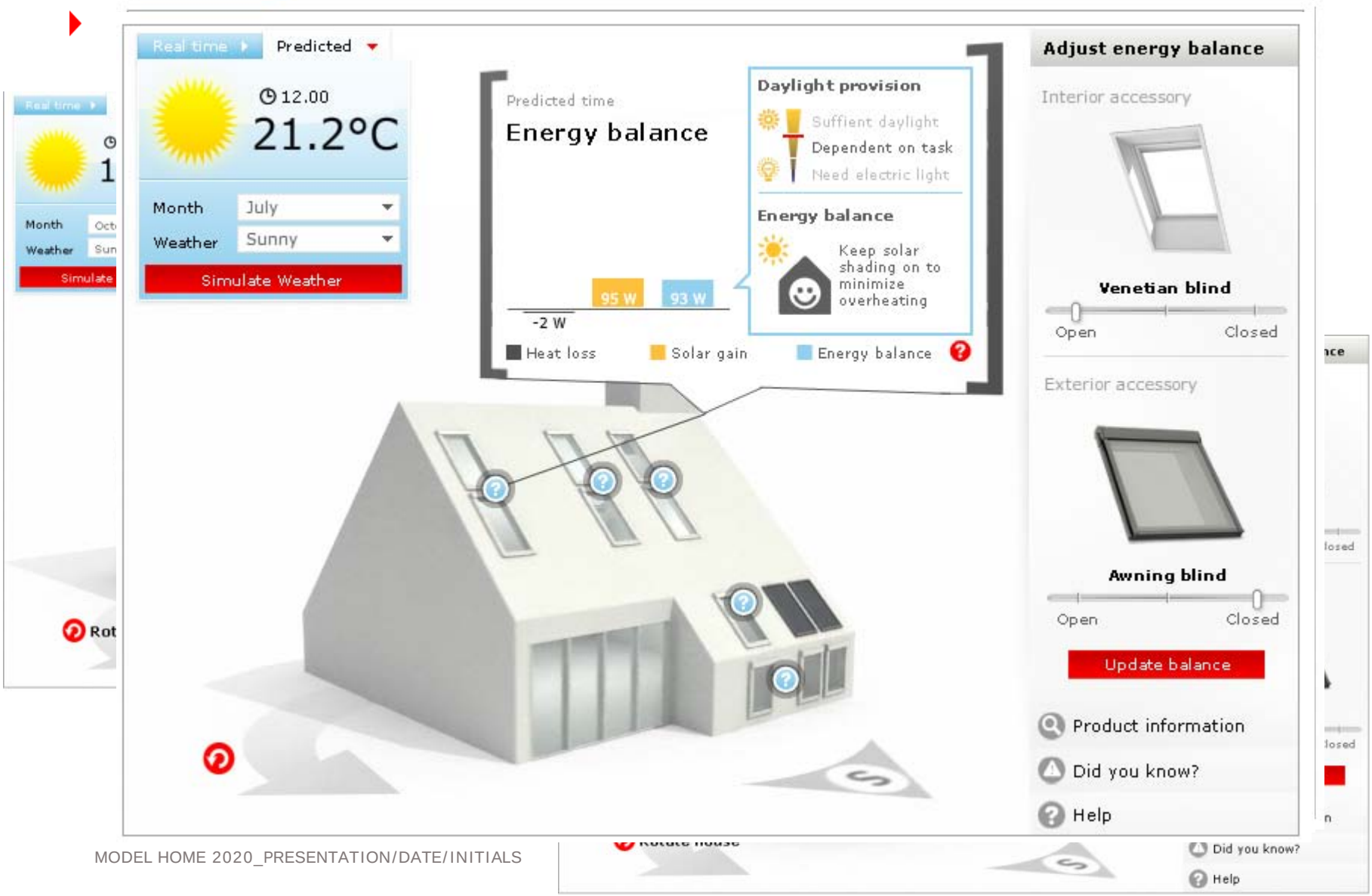
- Climate controls and comfort parameters are interlocked and with a high degree of complexity
- Little experience and share of knowledge on how technologies work in practice
- Lack of consensus on communication protocols, hierarchies and functionalities with several interfaces and products

Building Quality

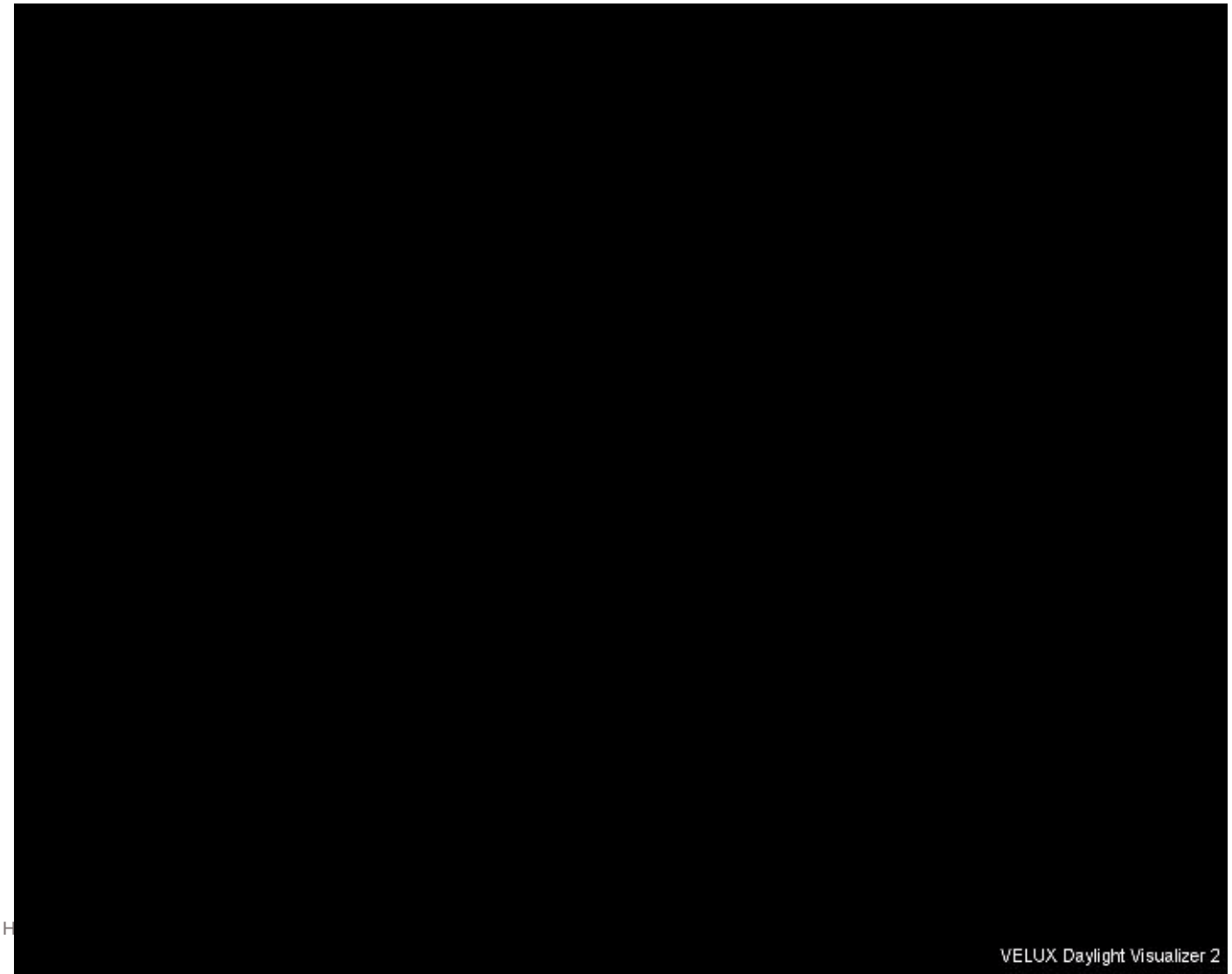
- The performance of the building is fundamentally depending on a correspondance between planning and delivery
- Commissioning of final building often neglected and not paid for
- High demands for tightness and logic sequential processing

All seasons and full life cycle perspective

Energy Balance



From plan to reality



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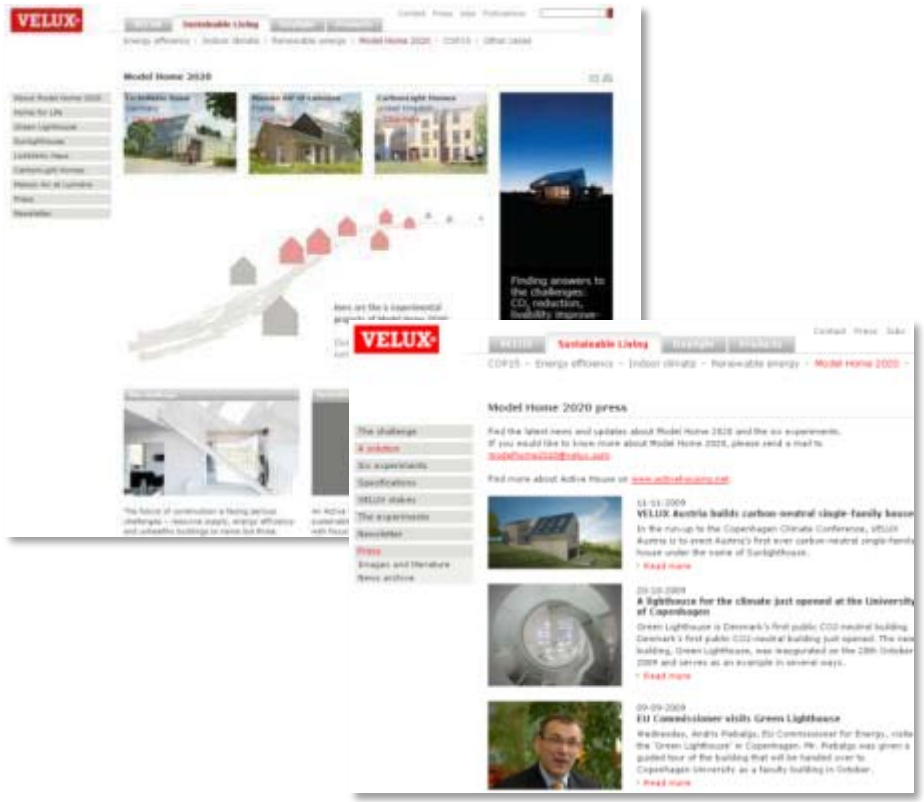
- Follow the experiments online
  - Sign up for newsletter
  - Press section
  - Videos and films



Spørgsmål?

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