Hva er nytt fra forskningen?

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Norsk bygningsfysikkdag 2010, 23.november, Oslo

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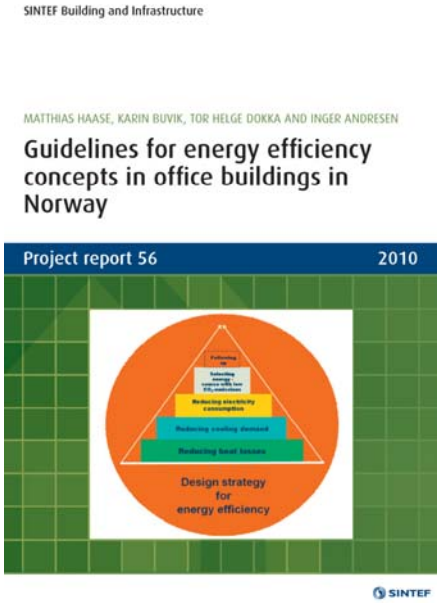

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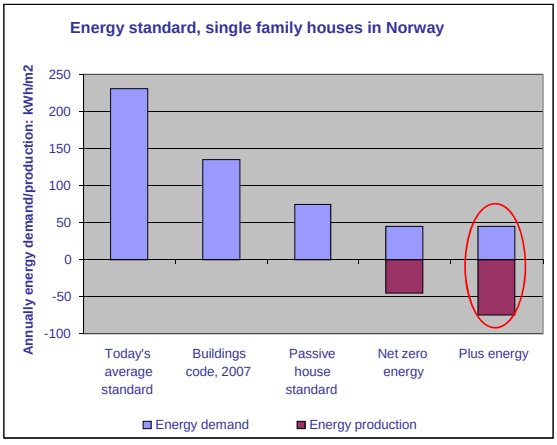
FME-ZEB: Zero Emission Buildings

A national research centre that will put Norway in the forefront with respect to research, innovation, and implementation within the field of energy efficient Zero Emission Buildings.

www.zeb.no

The challenge:

Compensate for CO_2 emissions from the production of materials and construction by producing more energy than the building uses for operation.

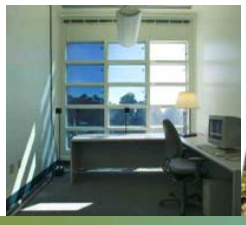


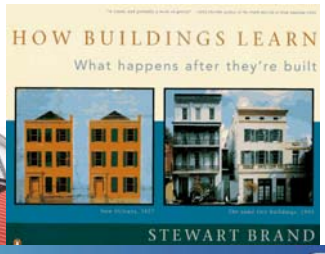
Source: SINTEF Byggforsk

The ZEB research activities

ZEB will focus its work in five areas that interact and influence each other:

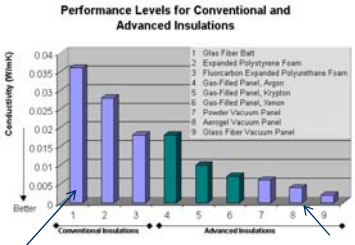
- WP-1: Advanced materials technologies
- WP-2: Climate-adapted low-energy envelope technologies
- WP-3: Energy supply systems and services
- WP-4: Use, operation, and implementation
- WP-5: Concepts and strategies





Vakum isolasjonspaneler (VIP)

- Etterisoleringssystemer
- Robusthet og aldring
- Fuktproblematikk



Tradisjonell mineralull

VIP

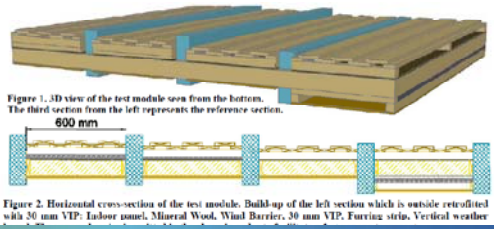


Figure 1. 3D view of the test module seen from the bottom. The third section from the left represents the reference section.

Figure 2. Horizontal cross-section of the test module. Build-up of the left section which is outside retrofitted with 30 mm VIP: Indoor panel, Mineral Wool, Wind Barrier, 30 mm VIP, Furring strip, Vertical weather

PhD-study (by Birgit Risholt)

Rehabilitering av 80-tallshuset til ZEB standard !

	Beregnet som bygd*	TEK 2010	Passivhus NS 3700:2010
Energiramme	215 kWh/m^2	126 kWh/m^2	74 kWh/m^2
Romoppvarming	145 kWh/m^2	56 kWh/m^2	15 kWh/m^2
Energimerke	E	C	A

* Beregnet i henhold til NS 3031

ZEB The Research Centre on Zero Emission Buildings

Nylig oppstarta PhD-arbeider i ZEB på tema

Energy performance of Advanced Transparent Facade Systems

PhD candidate Steinar Grynning
Department of Architectural Design, History and Technology, NTNU

PhD candidate Francesco Goia
University of Torino/NTNU

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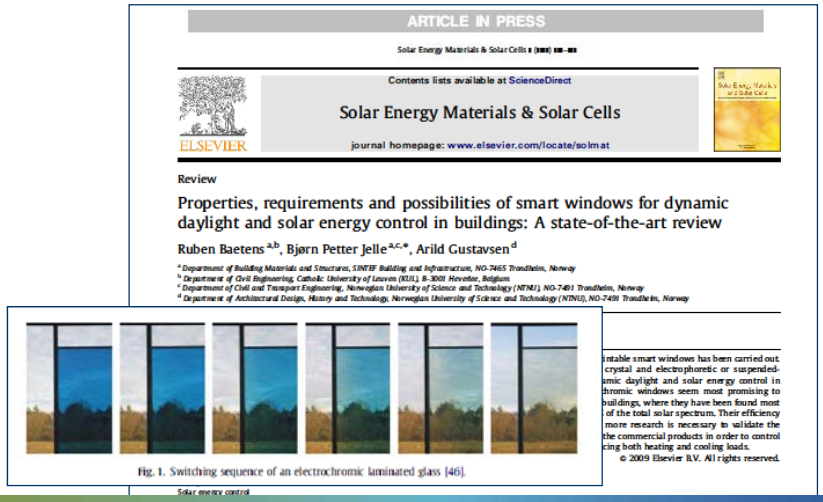
Smart windows (adaptive and controllable) state-of-the art



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Solar Energy Materials & Solar Cells

Contents lists available at ScienceDirect

Solar Energy Materials & Solar Cells

journal homepage: www.elsevier.com/locate/solmat

Review

Properties, requirements and possibilities of smart windows for dynamic daylight and solar energy control in buildings: A state-of-the-art review

Ruben Baetens [a,b], Bjørn Petter Jelle [a,c,*], Arild Gustavsen [d]

[a] Department of Building Materials and Structures, SINTEF Building and Infrastructure, NO-7465 Trondheim, Norway
[b] Department of Civil Engineering, Catholic University of Leuven (KUL), B-3001 Heverlee, Belgium
[c] Department of Civil and Transport Engineering, Norwegian University of Science and Technology (NTNU), NO-7491 Trondheim, Norway
[d] Department of Architectural Design, History and Technology, Norwegian University of Science and Technology (NTNU), NO-7491 Trondheim, Norway

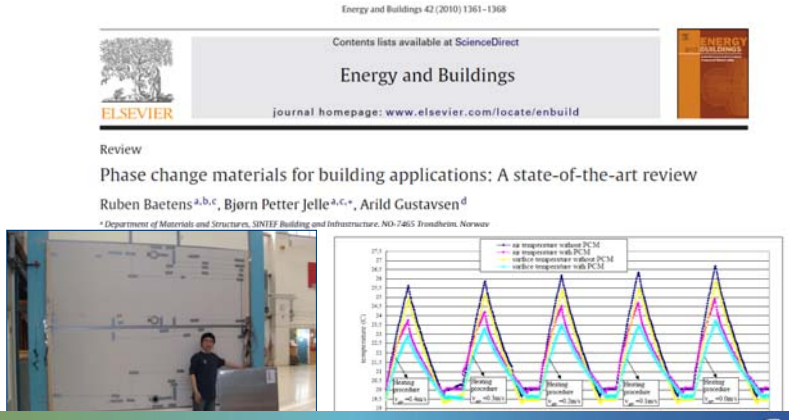
Fig. 1. Switching sequence of an electrochromic laminated glass [46].

Solar energy control

Phase Change Materials

–state of the art review

-hot-box measurements to evaluate the effect of a PCM board in traditional norwegian constructions – obvious effect on indoor temperature



Energy and Buildings 42 (2010) 1361–1368

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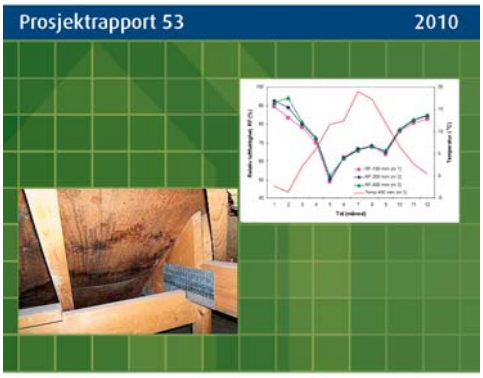

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Hva skjer i Sverige på fuktsiden?

http://www.fuktcentrum.lth.se/

http://www.fuktsakerhet.se

Seminarer i 2011

Norsk Murdag 2011 – 16. mars:

- Arrangeres i Trondheim på Dokkhuset, www.dokkhuset.no
  - Det vil bli utdeling av Murverksprisen 2011 med påfølgende middag på Rockheim, www.rockheim.no

Nasjonalt fuktseminar 2011 – 7. april:

- Arrangeres i Oslo på UBC, Thon Hotel, Ullevål, www.ubc.no


TAKK FOR NÅ –
OG PÅ GJENSYN NESTE ÅR!!