Intressant från konferenserna
12DBMC
NSB2011

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Byggnadsfysik

12DBMC
Äger rum vart tredje år
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3-6 parallel sessions

Åtta olika teman

1. Building Physics and Durability (Byggnadsfysik och hållbarhet)
   - Degradation mechanisms
   - Environmental characterisation
   - Natural and accelerated ageing tests
2. Service Life Prediction Methodologies (Metoder för förväntad
   livslängd)
   - Predictive models
   - Field studies
   - Risk analysis
3. The Durability Approach for Historical and Old Buildings (Hållbart
   tillvägagångssätt för historiska och gamla byggnader)
   - Durability of traditional materials
   - Durability of refurbishment
4. Building Pathology vs. Durability (Sjuka hus versus hållbarhet)
   - Methodologies of research
   - Case of failure
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5. Asset and Maintenance Management
   • Service life planning
   • Inspection routines and repair actions

6. The Durability of Material, Systems and Components
   • Mortars and cement based materials
   • Concrete (strength and durability)
   • Waterproofing systems
   • Masonry walls and external coatings
   • Innovative material and external coatings

7. Life Cycle Analysis and Durable Construction

8. Information Technology as a Tool for Durable Construction Design

Diverse om fukt:

T11 Degradation mechanisms
   • Control of Moisture Safety Design by Comparison Between Calculations and Measurements in Passive House Walls Made of Wood. (Sweden, LTH)
   • Watertightness of Masonry Walls: An Overview (Belgium & Canada)
   • Hygric Performance of Different Interior Insulation Systems: an Experimental Comparison (Belgium)
   • Thermal Diffusion of Water Vapour in Porous Materials: a Critical Review (Denmark)
   • Reducing the Risk of Microbial Growth on Insulated Walls by PCM Enhanced Renders and IR Reflecting Paints (Germany)
   • Development of a Risk Assessment Procedure Applied on Building Physics: Part One; Model Development (Sweden, CTH)
   • Full-Range Modelling of Heat and Moisture Transfer Coefficients in Damaged Building Materials (France)
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Diverse om fukt:

T12 Environmental characterisation
• Wireless in Situ Measurements of Moisture Content and Temperature in Timber Constructions (Sweden, SP-Trätek)

T13 Natural and accelerated ageing tests
• Effects of Ageing and Moisture on Dynamic Thermal Performance of ETICS Cladding (Italy)
• Accelerated Test Procedure to Assess the Microbial Growth Resistance of Exterior Finishes (Germany)
• Hygrothermal Behaviour Testing of External Thermal Insulation Composite Systems with Rendering in Nordic Climate (Finland)

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Diverse om fukt:

T21 Predictive models
• Biological Defacement of ETICS - A Risk Assessment Methodology (Portugal). ETICS= External Thermal Insulation Composite Systems
• Mould Growth Modelling to Evaluate Durability of Materials (Finland)
• Improving the Durability and Service Life of Wooden Components in Outdoor Applications: the French Approach (France)
• Development of Service Life Model for Wooden Structures (Finland)

T22 Field studies
• Moisture Conditions in Coated Glulam Beams and Columns During Weathering (Sweden, SP-Trätek & LON)
• Retrofitting of timber frame walls by application of vacuum insulation panels and investigation of moisture robustness (Norway)
Diverse om fukt:

**T23 Risk analysis**
- Moisture risk assessment related to energy retrofitting of existing buildings: method and case studies (France)

**T31 Durability of traditional materials**
- Characterisation of Damages of Ceiling Joists Caused By Wood-damaging Fungi (Czech Republic)
- Application of the “Moisture Buffering” Approach to Improve the Durability of Historical Wooden Elements (Italy)

**T32 Durability of refurbishment solutions**
- Case Studies: Preliminary Investigation on Diagnosis and Repair Measures to Prevent Capillary Water Rise in Historical Buildings (Portugal)
- Degradation Control of Walls with Rising Damp Problems: Numerical and Mathematical Analysis of the Evaporative Process (Portugal)
- Field Study of Hygrothermal Performance of Log Wall with Internal Thermal Insulation (Estonia)
- Performance and Durability of External Post-Insulation and Added Roof Constructions (Denmark)

**T41 Methodologies of research**
- Technical Condition of Prefabricated Concrete Large Panel Apartment Buildings in Estonia (Estonia)
- Characterization of Wood Mould Fungi by FTIR – A Valuable Step for Prediction of Initiation of Decay (Norway)
Diverse om fukt:

**T42 Case of failure**
- Reduced Service Life of Bathrooms Due to Leaks Around Floor Gullies and Pipe Penetrations (Denmark)

**T52 Inspection routines and repair actions**
- In Situ Testing Techniques for Evaluation of Water Penetration in Rendered Facades - the Portable Moisture Meter and Karsten Tube (Portugal)

**Sammanfattning:**
Mycket om tilläggsisolering, skador, riskanalys, utvändig mikrobiell påväxt, riskbedömningar, material (trä, puts, betong)och hållbarhet (t.ex. mögel).

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**NSB2011**
Äger rum vart tredje år

NSB 2011
9th Nordic Symposium on Building Physics
Tampere, Finland 29 May – 2 June 2011
Keynote session 1
Forty years of building physics research – for what benefit?

• För att få byggnader som uppfyller våra krav på god komfort, energieffektivitet och till rimliga kostnader så har de blivit mer och mer komplicerade.
• Ju mer vi forskar, desto fler skador får vi i våra byggnader.
• Har vi haft fokus på rätt problemområden, dvs. har forskningen varit relevant och har resultaten kommit branschen tillgodo?

A1 - Air-tightness of buildings
A2 - Regulations and air-tightness of constructions
A3 - Validation of calculation methods and results
A4 - Roof and floor simulations
A5 - Roof solutions in lab and field experiments
A6 - ETICS and new wall solutions
A7 - Walls in field measurements
A8 - Wall simulations
A9 - Walls in lab tests
A10 - Simulation methods and snow-on-roof models
A11 - Night-time cooling and moisture buffering experiments
Volume 2

Sessions
B1 - Computational fluid dynamics simulations
B2 - HAM transport in porous material
B3 - Material properties and determination methods
B4 - Hysteresis effect
B5 - Water vapour transport
B6 - Material damages and durability
B7 - Moisture problems and design solutions
B8 - Moisture problems and technical solutions
B9 - Effects of climate change simulations
B10 - Mould growth models
B11 - Durability of structures

Volume 3

Sessions
C1 - Thermal bridge calculations
C2 - Thermal bridge standards and calculations
C3 - Energy standards and life-cycle analysis
C4 - Thermal comfort
C5 - Indoor climate
C6 - Cooling and other low energy systems
C7 - Energy efficiency in office buildings
C8 - Energy efficiency in schools and day-care buildings
C9 - Windows and solar shadings
C10 - Energy efficiency in residential buildings
C11 - Energy efficiency in single-family houses
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Diverse om fukt:

A1 - Air-tightness of buildings
• Important factors to achieve an airtight building (Sweden, CTH).
• Measurements and modelling of airflows in houses using passive sampling and HAM software (UK).

A2 - Regulations and air-tightness of constructions
• Air leakage through cross laminated timber (CLT) constructions (Norway).
• Experimental testing of rain tightness of wind barrier and sealing of window joints (Norway).

A3 - Validation of calculation methods and results
• Comparison of measured and calculated temperature and relative humidity with varied and constant air flow in the façade air gap (Sweden, LTH).
• Importance of moisture transport, snow cover and soil freezing to ground temperature predictions (China & US).

A4 - Roof and floor simulations
• Vapour control design of wooden structures including moisture sources due to air exfiltration (Germany).
• Frost insulation of the Finnish slab on ground foundation (Finland).
• Probabilistic analysis of hygrothermal conditions and mould growth potential in cold attics (Sweden, CTH).

A5 - Roof solutions in lab and field experiments
• Technical analysis of moisture transfer qualities of mildly sloping roofs (Finland).

A6 - ETICS and new wall solutions
• Hygrothermal behavior of ETICS – Numerical and experimental study (Portugal).
• Development of moisture safe connections for stud walls (Sweden, LTH).

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Diverse om fukt:

**A7 - Walls in field measurements**
- Rehabilitation of basement walls with moisture problems by the use of vapour open exterior thermal insulation (Norway).
- Long–term measurements and hygrothermal simulation consisting of reed panels and clay plaster (Austria).
- Moisture and mould in prefabricated timber frame constructions during production until enclosure of the house (Sweden, SP).

**A8 - Wall simulations**
- Assessment of the Risk for Mould Growth in a Wall Retrofitted with Vacuum Insulation Panels (Sweden, CTH).
- Walls with Rising Damp Problems: Predicting Water Capillary Rise (Portugal).
- Considerations to the Hygrothermal Behavior of External Walls in Timber Frame Construction with Direct Rendering (Germany).

**A9 - Walls in lab tests**
- Hygrothermal response of highly insulated timber frame walls with an exterior air barrier system: laboratory investigation (Belgium)
- Tensile cracking of ventilated rendered rain-screen cladding systems (Sweden, LTH & SP)
- An experimental method for assessing heat and moisture response of massive timber wall exposed to summer climatic conditions (France).
- Water penetration through clay brick veneer wall (Canada).

**A10 - Simulation methods and snow-on-roof models**
- Snow melting and freezing on older townhouses (Sweden, CTH & SP).
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Diverse om fukt:

B4 - Hysteresis effect
• Critical moisture contents – during water absorption and drying (Slovakia).

B5 - Water vapour transport
• Vapour permeability and water absorption of different exterior paint systems (Lithuania).
• A transient method for determination of water vapour diffusion coefficient of building materials as function of relative humidity (Czech Republic).

B6 - Material damages and durability
• Influence of moisture sorption on deformation of building materials (Lithuania).

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Diverse om fukt:

B7 - Moisture problems and design solutions
• Methods for investigation of technical status before renovation and evaluation of renovation measures for the building envelope (Sweden, SP).
• Interior Mould Growth Risk Reduction – Application of Nonlinear Programming for Envelope Optimisation (Portugal).
• Rising damp, a reoccurring problem in basements – a case study with different attempts to stop the moisture (Denmark).
• Testing methods for moisture content in concrete, dealing with floor coverings: State-of-the-Art in Finland (Finland).

B8 - Moisture problems and technical solutions
• Humidity Control in Historic Buildings through Adaptive Ventilation – A case Study (Sweden, Gotland University & CTH).
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Diverse om fukt:

B9 - Effects of climate change simulations
- Modeling multiple indoor climates in historic buildings due to the effect of climate change (Netherlands).
- Mould Growth inside an Attic concerning Four different Future Climate Scenarios (CTH).

B10 - Mould growth models
- Mould growth on building materials in laboratory and field experiments (Finland).
- Classification of material sensitivity – New approach for mould growth modeling (Finland).
- Modelling reliability of structure with respect to incipient mould growth (Sweden, SP).
- m-model: a method to assess the risk for mould growth in wooden structures with fluctuating hygrothermal conditions (Sweden, Skanska).
- Mould Growth in Attics and Crawlspace (Sweden, SP).

C5 - Indoor climate
- Indoor climate and Humidity Loads in Old rural Houses with Different Usage Profiles (Estonia).
- Investigation on Moisture and Indoor Environment in Eight Danish Houses (Denmark).

Sammanfattning:
- Mögel och mögelmodeller
- Ombyggnad, renovering, tilläggsisolering
- Byggnadssdelar (grunder, ytterväggar och tak)
- Kallt klimat
- Klimatförändring
Hemsidor

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http://www.fe.up.pt/12dbmc/

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http://webhotel2.tut.fi/nsb2011/