COMPUTER MODELING WORKSHOP FOR WALL DESIGN AND PERFORMANCE

May 3 - 5, 2004

San Diego, California

HEAT AND MOISTURE TRANSFER IN BUILDING ENVELOPES

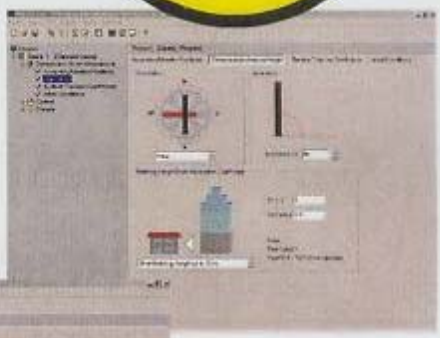
Sponsored by the U.S. Department of Energy

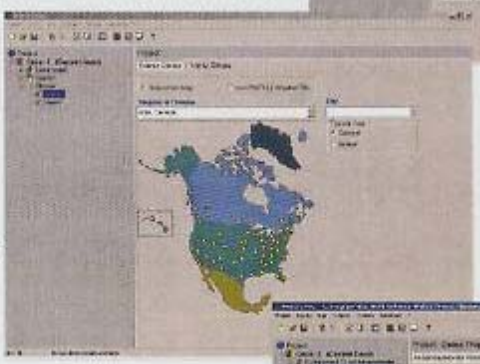
Join us for this 3-day symposium and workshop, co-sponsored by the U.S. Department of Energy (DOE), through Oak Ridge National Laboratory (ORNL), in collaboration with the Fraunhofer-Institut fur Bauphysik (IBP) and the National Building Science Corporation (NBSC).

Earn CEUs

Two back-to-back events:

Event 1: Monday,May 3, 7:30 - 12:00 - a half-day symposium, New Strategies for Energy Efficient Building Design - a.k.a. What's New and Really Works. - dealing with strategies in proper wall design. Dr. Achilles Karagiozis, Mr. Andre Desjarlais, and Dr. Andreas Holm will convey the latest and best new strategies on building envelope design with an emphasis on heat and moisture transfer. This symposium will be open to all individuals in the building and design community, and will precede a 2-1/2 day training session.





Event 2: Monday, May 3, 1:00 - 5:00, Tuesday, May 4, 7:30 - 5:00, and Wednesday, May 5, 7:30 - 1:15 - After the morning symposium, a 2-1/2-day training session will begin for 30 students. Students will be trained to use the most powerful computer modeling program available for building envelope design.

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OAK RIDGE NATIONAL LABORATORY

Each student will receive a free copy of the modeling software. Join us to learn the next generation of building science.

Bay Club Hotel and Marina,

Shelter Island, San Diego

The workshop provides:

- Basic building envelope design principles
- Heat and mass transfer fundamentals
- Validation of modern hygrothermal simulation tools
- Necessary input data: where can I get them and what accuracy is required?
- The Do's and Don'ts of WUFI-ORNL
- What do the results tell me – performance predicting
- Model growth predictions – new post-processing modules
- Development and future extensions of WUFI-ORNL, future standards and guidelines

Event 1 - Day 1 - Symposium Overview –

Drs. Karagiozis, Desjarlais, and Holm will walk the audience through modern and revolutionary new building envelope design concepts. The audience will be exposed to the conditions and remedies of moisture, both liquid and vapor, that have had devastating effects on modern construction. New techniques will be shown, and the audience will be introduced to new material application to eliminate moisture-related problems in buildings, such as mold and decay. The overview will end with an extensive question-and-answer session that will allow the audience to interact with the presenters.

Event #1 - Monday, May 3, 2004

7:30–8:15	Continental Breakfast & Registration
8:15-8:30	Introduction – Welcome and How to Get Around Town
8:30-9:30	Thermal Performance of Walls and Roofs (Cool Roofs) - Andre Desjarlais
9:30-9:45	Coffee Break
9:45-10:45	The Importance of Modeling for Heat and Moisture Transport in Building Envelopes – Achilles Karagiozis
10:45-12:00	Mold Predictions and European Design Perspective – Andreas Holm

U. S. Department of Energy

Event 2 - Modeling Training Session –

30 students will be tutored collectively and personally by our three distinguished presenters. Each student must bring with him/her a laptop computer. The student will be provided with a complete copy of the program and a licensing agreement to use this powerful modeling program. Every student will be walked through every aspect of the modeling sequencing, allowing each individual to understand and create wall designs that would be most appropriate for the geographical location. The student will be able to integrate weather data that has been collected for generations by NOAA, and the program will allow each wall design to be specifically engineered for its intended location and its orientation on the building site. Students will be able to create buildings with a variety of different wall configurations that best suit the elevations and locations of the walls. Point-and-click, and you can pick a material. Point and click again, and layer your wall with a huge variety of building materials that can be selected and evaluated simultaneously for the most energy and thermally efficient walls. Point and click, and change walls using your evaluation instead of materials. Point and click your energy requirements, and then view walls that meet your requirements. Each student will understand liquid water, vapor transfer, thermal transfer, the effects of humidity, drying, and the cause and elimination of vapor and

condensation within walls. Whether the student is building in a hot, humid environment or cold and dry, or mixed because of seasons, this powerful modeling tool uses modern wall science to model every wall condition in the contiguous USA. Point and click on your location, and weather orientation will appear.

Event #2 – Day 1 - Monday, May 3, 2004

1:00-1:15	Register for Modeling Training Session – Barry Hardman
1:15-1:30	Introduction of Participants
1:30-2:00	Installation of WUFI-ORNL/IBP Software – Andre Desjarlais
2:00-2:15	History of WUFI-ORNL/IBP – Achilles Karagiozis
2:15-2:45-	Part 1 – Practical Application of Simulation Tools – Andre Desjarlais
2:45-3:00	Coffee Break
3:00-3:30	Part 2 – Practical Application of Simulation Tools – Andre Desjarlais
3:30-5:00	Meet WUFI – Achilles Karagiozis

Day 2 – Tuesday, May 4, 2004

7:30-8:15	Continental Breakfast
8:15-9:15	Fundamentals and Requisites – Andreas Holm
9:15-9:45	Boundary Conditions / Surface Condition – Achilles Karagiozis
9:45-10:00	Coffee Break
10:00-12:00	WUFI-ORNL Group Project – Achilles Karagiozis, Andreas Holm, Andre Desjarlais
12:00-1:30	Hot Lunch
1:30-2:15	Group Project – Presentation of Results – Achilles Karagiozis, Andre Desjarlais, Andreas Holm
2:15-3:00	Material Properties – Andreas Holm
3:00-3:15	Coffee Break
3:15-4:45	Assignment and Examples – Andre Desjarlais
4:45	End – Day 2

Day 3 – Wednesday, May 5, 2004

7:30-8:15	Continental Breakfast
8:15-8:45	Review of Example Cases – All Trainers
8:45-9:15	Evaluation of Results – Andre Desjarlais
9:15-9:30	Coffee Break
9:30-10:45	Features of WUFI-PRO – Achilles Karagiozis
10:45-11:15	Assignment of More Examples of WUFI-PRO – Andreas Holm
11:15-12:00	WUFI-2D – Andreas Holm
12:00-12:30	Future Standards and Guidelines and Mold Growth – Achilles Karagiozis
12:30-1:15	Limitations of Modeling – Achilles Karagiozis
1:15	Q & A

Fees and Registration

The cost of the Event 1 half-day symposium on May 3 is $130. If also registering for the Event 2 Training Session, May 3-5, the cost of Event 1 is $100. The cost of the Event 2 workshop is $595 per person. To register, please complete the registration form below and return it with your fees. We will confirm your enrollment in the program and provide information on travel and accommodations. The fee may be paid by check (made payable to National Building Science Corp.), VISA or MasterCard.

Attendees will receive a certificate of attendance and a copy of the WUFI-ORNL/IBP Software and software keys. Registration fees cover all instruction, software, continental breakfast each day, all breaks, and lunch on day two (May 4). Registrants are responsible for all other meals and for lodging. A block of rooms has been set aside at the Bay Club Hotel and Marina, (800) 672-0800 in San Diego. To reserve a room at the special rate of $119.00 per night for single/double occupancy, please request reservation identification **Oak Ridge**. Special rate cut-off date is April 12, 2004.

You will be notified promptly of any cancellations or schedule or program changes. If a program is cancelled or postponed, we will refund registration fees but cannot be held responsible for any other related costs, charges, or expenses, including cancellation/change charges assessed by airlines or travel agencies.

To register or for questions regarding the workshop, please contact:

Jacqueline Hardman
National Building Science Corp.
32244 Corte Chatada
Temecula, CA 92592-6320

Phone (909) 699-0116
Fax (909) 699-0876
Email: jackiebh@section08.com

Registration Form

This form may be duplicated for additional registrations.

Three easy ways to register:

(1) fax: 909-699-0876
(2) phone: 909-699-0116
(3) mail to: National Building Science Corp.
32244 Corte Chatada
Temecula, CA 92592-6320

Method of Payment: (check one)

- ❑ **$130 for Event 1**
- ❑ **$595 for Event 2**
- ❑ **$695 for Events 1 & 2**
  - ❑ **Check**
  - ❑ **Charge to:**
    - ❑ **VISA** ❑ **MasterCard**

(Add 10% if registration is received after April 15, 2004)

Last Name | First Name | Middle Initial

Title

Company/Organization

Business Address

City | State | Zip

Business Phone | Fax

E-Mail Address

❑ Check if we may e-mail you for future events.

Cardholders Name (please print)

Credit Card # | Exp. date

Signature

Fraunhofer IBP Institut Bauphysik

Fraunhofer-Institut für Bauphysik (IBP)

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