

Request for Proposals for Preparing and Presenting at SimBuild 2010 a Half-Day Workshop on Building Energy Modeling (Lighting and Daylighting Emphasis)

IBPSA-USA is requesting the services of an expert or experts in the energy modeling of lighting and daylighting application to prepare the content for a half-day (three-hour) workshop and to present the workshop in early August 2010 at the SimBuild 2010 conference in New York City. The target audiences are engineers and architects with knowledge of energy concepts and basic introductory knowledge of energy modeling as applied to lighting and daylighting systems.

1 Workshop Objectives

The objectives of the workshop are to:

- Improve the quality of building energy modeling, especially lighting and daylighting applications as they apply to high performance, low energy buildings that substantially exceed the requirements of the current 2007 version of ASHRAE Standard 90.1.
- Use ASHRAE Standard 90.1-2007 Appendix G as a modeling protocol.
- Add to the body of open-source learning resources that can be used and refined by the wide community of building energy modelers and educators.

2 General Approach of the Workshop

The workshop is to demonstrate how to develop and apply building energy models that address lighting and daylighting strategies applied to several example new and existing building situations (e.g., office, retail, hotel, warehouse) using primarily one or more energy simulation tools that meet the modeling tool requirements of ASHRAE Standard 90.1-2007 Appendix G and are available to general users at no cost or low cost. The workshop should emphasize the application of energy models by modelers in team situations that occur during building delivery (e.g., predesign, design, documentation, construction, functional testing) and during building O&M, monitoring, tenant improvement, renovation, and addition.

The workshop should be developed for expected participants with a college degree, 1 to 2 years experience within the building industry, and knowledge of energy concepts and basic introductory knowledge of energy modeling, especially for lighting and daylighting applications. Thus, the course will not focus on presenting basic energy concepts but rather on presenting concepts, approaches, and techniques that will improve the quality of energy modeling of lighting and daylighting under a variety of situations.

The workshop should cover the following aspects of building energy modeling of lighting and daylighting:

2.1 Developing Building Energy Simulation Models for Lighting and Daylighting Applications:

For proposed building designs, and for actual buildings, describe how to generate:

- Building and space geometries
- Zoning of lighting functions
- Daylighting zoning for side lighting and top lighting
- Integrating lighting and daylighting zoning with thermal zoning
- Positioning, dimensioning, and describing windows and skylights for daylighting
 - These should be consistent with NFRC test procedures (U-Factor, SHGC, VT, etc.)
- Use of space function categories consistent with the categories in the ASHRAE Standard 90.1-2007 Building Area Method and Space-by-Space method.
- Developing lighting schedules appropriate for the building
- Simulating lighting and daylighting controls
- Exterior and interior means of glare control
- Modeling of interior shapes and surface reflectances, including walls, ceilings, partitions (opaque & translucent), etc.
- Energy rates
- Etc.

How to modify the various features of the proposed design to produce a baseline building that meets ASRHAE Standard 90.1-2007 mandatory and prescriptive requirements, including:

- When a lighting system exists
- When a lighting system has been designed but not yet installed
- When a lighting system is planned but not yet designed

2.2 Applying Building Energy Simulation Models for Lighting and Daylighting Applications at Key Points in a Building's Life Cycle:

Discuss key modeling objectives, challenges, approaches and methods in situations such as:

- Pre-design and schematic design
- Design development
- Construction documentation
- Recalibration during construction and functional testing
- Recalibration during building O&M
- Building renovations and additions, including occurring issues during tenant improvements (TI)
- Benchmarking against short-term or long-term building monitoring data
- Applying IPMVP methods B and D to M&V situations, as in evaluating the effectiveness of utility DSM incentive applications to specific buildings

Provide modeling examples as workshop time permits.

2.3 Include Case Study Examples:

The case study examples used in the workshop should be selected to encompass as broad a range of case study building situations as possible, within the available time and resource limitations, including:

- A new building and an existing building
- Variations in lighting systems such types of direct and indirect ceiling mounted systems and task-ambient systems
- Impact of lighting and daylighting systems on other building systems
- Various types and sizes of buildings, such as office, retail, education, warehouse, etc., that are located in a range of climate conditions

3 Project Tasks, Schedule, and Deliverables

Task 1. Develop Outline for Workshop

This can be an outline either in MS Word or in PowerPoint (or similar tools).

Deliverables: Submit proposed detailed outline for the revised outline.

Due Date: April 15, 2010

Compensation: 20% of total contract amount to be paid upon completion.

Task 2. Revise Outline in Consultation with IBPSA-USA Review Panel

Review outline with IBPSA-USA Review Panel via one or more web meetings.

Deliverables: Submit revised outline.

Due Date: May 8, 2010

Task 3. Develop Draft Workshop Content and Case Study Examples

Develop case study example I-O files, PowerPoint (or similar) slides, etc.

Deliverables: (1) Draft syllabus, (2) Workshop content presented in PowerPoint slides and/or other similar presentation media, (3) draft electronic I-O files of case study examples, including associated weather files.

Due Date: June 15, 2010

Compensation: 40% of contract amount to be paid upon completion. (60% cumulative)

Task 4. Develop Final Workshop Content and Case Study Examples

Develop final versions of the PowerPoint (or similar) slides, the case study example I-O files, etc., and deliver to IBPSA-USA for final review.

Deliverables: Final syllabus, PowerPoint slides and/or other presentation media, final electronic I-O files of case study examples.

Due Date: July 15, 2010

Task 5. Present Workshop at SimBuild 2010

Develop case study example I-O files, PowerPoint (or similar) slides, etc.

IBPSA-USA will cover preparation of and costs for the presentation room at SimBuild, the audio-visual equipment, and the administration to the workshop.

Deliverables: Present workshop at SimBuild 2010.

Due Date: August 2, 2010

Compensation: 40% of contract amount to be paid upon completion. (100% cumulative)

4 Consideration

IBPSA-USA shall pay Contractor according to the schedule specified in the Tasks and Schedule, as defined above, for all work performed and products delivered in accordance with the terms and conditions of this Contract.

5 Intellectual Property Rights

The product of this work will be the property of IBPSA-USA. Prior to the completion of Task 4, the contractor must obtain clearance to use any copyrighted materials.

It is understood, and will be incorporated as part of the contract for this work, that IBPSA-USA will release the workshop and its contents under the terms of the Creative Commons Share Alike 3.0 license terms. In practical terms, this means that the developer of the workshop (and anyone else) is free to further develop and modify the content under the terms of the Creative Commons license being used.

IBPSA-USA will reserve the right to charge a royalty fee to individuals or organizations that use the product of this work as part of income-producing documents, live workshops, or online workshops.

6 Proposal Submittal and Contents

6.1 Due Date and Delivery

The proposal in response to this RFP must be delivered in PDF format to the IBPSA-USA Secretary, Shanta Tucker, not later than March 22, 5 pm EST, at the following address:

Shanta Tucker, PE
Associate
Atelier Ten
Environmental Design Consultants + Lighting Designers
45 East 20th Street, 4th Floor
New York NY 10003
T +1 (212) 254 4500 x210
F +1 (212) 254 1259

Proposals may also be delivered in PDF format via email, so that Shanta Tucker receives the email at shanta.tucker@atelierten.com not later than March 22, 5 pm EST.

6.2 Proposal Organization and Content

The proposal in response to this RFP must contain the following sections:

6.2.1 Approach to Developing Workshop Content

Describe your general approach to developing the content for the workshop. Include your approach for producing presentation material that can provide solid learning experiences for workshop participants with a range of experience and expertise.

Page Limit: No more than 3 pages for approach to developing workshop content.

6.2.2 Discussion of Major Topics in Workshop

Discuss your approach to the major topics in the workshop, and describe how much time and effort would be allocated to addressing each topic area. The proposer is encouraged to consider and describe the topical content in the context of a broader training program on energy modeling, identifying needs and opportunities for advanced workshops to expand on the content developed here. Discuss the deliverables you will produce.

Page Limit: No more than 5 pages for allocation of workshop time approach.

6.2.3 Approach to Selecting and Developing Case Study Examples

Describe your approach to developing and presenting case study examples. This should include general estimates for:

- The number of examples
- Which simulation tools will be used and whether the approach would require examples from software providers
- The building types
- The building life cycle situations
- The possibility of putting examples on the IBPSA website in a wiki format to encourage others to upload additional examples

Page Limit: No more than 5 pages for approach to case studies.

6.2.4 Qualifications

Please describe your experience and expertise relevant to developing and presenting the desired workshop.

Page Limit: No more than 5 for any corporate qualifications, if they are submitted. Additional pages can be used for resumes but each resume must be 2 pages or less.

6.2.5 References

Please list the name, title, organization, address, phone number and email address of at least two (2) references who can attest to your experience and capabilities for developing and presenting the workshops.

6.2.6 Fees

Indicate your lump sum fee for developing the workshop content and for presenting the workshop at SimBuild 2010 in New York City in August. Travel and expenses are to be included.

6.3 Criteria for Evaluation of Proposals

The IBPSA-USA proposal review committee will use the following evaluation criteria to review the proposals submitted.

Evaluation Item	Weight
Approach to developing Workshop Content	20%
Discussion of Major Topics in Workshop	20%
Approach to case study examples	20%
Qualifications	20%
Cost Estimate	20%
Total	100%