Can You See the Forest for the Green?

Navigating the Multitude of Sustainability Standards

Presented by
Claire Ramspeck
Director of Technology
ASHRAE

Open Forum for Standards Developers
October 6, 2009

Part of the World Standards Week 2009 series of events
Agenda

- ASHRAE overview
- ASHRAE sustainability standards
- Other key activities
- Learning more/keeping up
- Resources
ASHRAE Overview

- Founded in 1894
- 51,000+ members worldwide
- Includes consulting engineers, manufacturers, government, researchers, universities, utilities, and regulators
- Mission: To advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world.
ASHRAE’s Standards Experience

- Developing ANSI standards since 1978
- ANSI Audited Designator (one of five ADs)
- Hundreds of ANSI-approved documents
- ASHRAE policy to develop all our standards through ANSI consensus process (no cherry picking)
- Secretariat to several ISO TCs, SCs, and U.S. TAGs
Why an ANSI Process?

- ANSI process is a true, open, consensus process
- Balanced committee
- Lack of dominance (e.g., no more than one vote from any organization)
- Consensus must be reached by materially affected parties
- All comments (committee and public review) must be responded to in good faith
- Appeals options at ASHRAE and again at ANSI
Key ASHRAE Sustainability Standards

- Standard 55, *Thermal Environmental Conditions for Human Occupancy*
- Standard 62.1, *Ventilation and Acceptable Indoor Air Quality*
- Standard 100, *Energy Conservation in Existing Buildings*
- Standard 191P, *Standard for the Efficient Use of Water in Building, Site and Mechanical Systems*
BSR/ASHRAE/IES/USGBC Standard 189.1

- Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings
- Being developed in model code language
- Provides minimum requirements for high-performance, green building
- Targeted for January 2010 approval; spring 2010 publication
BSR/ASHRAE/IES/USGBC Standard 189.1

- Roster includes:
  - Consulting engineers
  - Lighting experts
  - Architects
  - EPA
  - Materials experts
  - Code enforcement
  - DOE
  - Public health experts
  - Water experts
  - Building owners
  - Equipment manufacturers
  - Related organizations
Standard 189.1 Topic Areas

- Sustainable Sites
- Water Use Efficiency
- Energy Efficiency
- Indoor Environmental Quality
- Building’s Impact on the Atmosphere, Materials & Resources
- Construction and Operations Plans
Goals for Standard 189.1

- Establish mandatory criteria in all topic areas
- Provide simple compliance options
- Complement green building rating programs
- More stringent than 90.1-2007
- Energy measurement for verification
- Includes plug/process loads
Standard 191

Standard for the Efficient Use of Water in Building, Site and Mechanical Systems

- Purpose: To provide baseline requirements for the design of buildings, site, and mechanical systems that minimizes the volume of water required to operate HVAC systems, plumbing systems, and irrigation systems.
Beyond Standards – Supporting the Users
Advanced Energy Design Guides

- Office Buildings
- Retail Buildings
- K-12
- Warehouses
- Highway Lodging
- Health Care
Indoor Air Quality Guide

- Practical guidance on achieving good IAQ in commercial buildings
- Joint effort of ASHRAE, AIA, BOMA, EPA, SMACNA, USGBC
- Available late 2009
DOE Commercial Building Energy Alliances

Informal associations among building owners and operators who want to reduce energy consumption by sharing best practices and ideas

- Current Alliances
  - Retailer Energy Alliance
  - Commercial Real Estate Energy Alliance
  - Hospital Energy Alliance
- 8.6 billion square feet of commercial building space total
- Supplier’s Summit
  - January 28, 2010: Orlando, FL
  - http://www.ashrae.org/events/page/2478
Retailer Energy Alliance Members
Commercial Real Estate Energy Alliance Members
Hospital Energy Alliance Members

- NewYork-Presbyterian
- Catholic Healthcare West
- Partners Healthcare
- Providence Health & Services
- ANS
- HCA
- Cleveland Clinic
- UPMC
- ASHE
- TECO
- HEALTHSOUTH
- Kaiser Permanente
- Dartmouth-Hitchcock Medical Center
- MetroHealth

ANSI Open Forum for Standards Developers | October 6, 2009
Sustainable Design eLearning

- Full courses – 5 to 35 hours each on topics including
  - Standard 90.1
  - Small Retail AEDG
  - Small Office Building AEDG
  - Data Center Energy Use
  - Fundamentals of Sustainable Buildings and High Performance System Design
- Short courses – 1 to 5 hours each
  - Stand-alone modules based on the full courses
  - Dozens of courses
Certification

- High-Performance Building Design Professional
- Commissioning Process Management Professional
- Operations & Performance Management Professional
- Healthcare Facility Design Professional
- Building Energy Modeling Professional (in development)

www.ashrae.org/certification
<table>
<thead>
<tr>
<th>ASHRAE References</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Energy Design Guides (free download)</td>
<td><a href="http://www.ashrae.org/technology/page/938">http://www.ashrae.org/technology/page/938</a></td>
</tr>
<tr>
<td>Building Energy Labeling</td>
<td><a href="http://www.buildingeq.com/">http://www.buildingeq.com/</a></td>
</tr>
<tr>
<td>Certification</td>
<td><a href="http://www.ashrae.org/certification/">http://www.ashrae.org/certification/</a></td>
</tr>
<tr>
<td>Education</td>
<td><a href="http://www.ashrae.org/education/">http://www.ashrae.org/education/</a></td>
</tr>
<tr>
<td>Engineering for Sustainability</td>
<td><a href="http://www.engineeringforsustainability.org/">http://www.engineeringforsustainability.org/</a></td>
</tr>
<tr>
<td>Government Affairs Update</td>
<td><a href="http://www.ashrae.org/advocacy/page/1344">http://www.ashrae.org/advocacy/page/1344</a></td>
</tr>
<tr>
<td>Headquarters Renovation</td>
<td><a href="http://images.ashrae.biz/renovation/">http://images.ashrae.biz/renovation/</a></td>
</tr>
<tr>
<td>High Performing Buildings Magazine</td>
<td><a href="http://www.hpbmagazine.org/">http://www.hpbmagazine.org/</a></td>
</tr>
<tr>
<td>Membership</td>
<td><a href="http://www.ashrae.org/members/page/589">http://www.ashrae.org/members/page/589</a></td>
</tr>
<tr>
<td>Online Learning</td>
<td><a href="http://www.ashrae.org/education/page/1476">http://www.ashrae.org/education/page/1476</a></td>
</tr>
<tr>
<td>Special Projects</td>
<td><a href="http://www.ashrae.org/technology/page/678">http://www.ashrae.org/technology/page/678</a></td>
</tr>
<tr>
<td>Standards - general</td>
<td><a href="http://www.ashrae.org/technology/page/548">http://www.ashrae.org/technology/page/548</a></td>
</tr>
<tr>
<td>Standards - project web sites</td>
<td><a href="http://www.ashrae.org/publications/detail/15373">http://www.ashrae.org/publications/detail/15373</a></td>
</tr>
</tbody>
</table>
### ANSI References

<table>
<thead>
<tr>
<th>Resource</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Standards Search Engine</td>
<td><a href="http://www.nssn.org">www.nssn.org</a></td>
</tr>
<tr>
<td>Procedures, Guides, and Forms</td>
<td><a href="http://publicaa.ansi.org/sites/apdl/Documents/Forms/AllItems.aspx?RootFolder=http%3a%2f%2fpublicaa%2eansi%2eorg%2fsites%2fapdl%2fDocuments%2fStandards%20Activities%2fAmerican%20National%20Standards%2fProcedures%2c%20Guides%2c%20and%20Forms">http://publicaa.ansi.org/sites/apdl/Documents/Forms/AllItems.aspx?RootFolder=http%3a%2f%2fpublicaa%2eansi%2eorg%2fsites%2fapdl%2fDocuments%2fStandards%20Activities%2fAmerican%20National%20Standards%2fProcedures%2c%20Guides%2c%20and%20Forms</a></td>
</tr>
</tbody>
</table>
## Other References

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Energy Codes Training</td>
<td><a href="http://www.energycodes.gov/training/">http://www.energycodes.gov/training/</a></td>
</tr>
<tr>
<td>Commercial Building Energy Alliance</td>
<td><a href="http://www1.eere.energy.gov/buildings/commercial_initiative/alliances.html">http://www1.eere.energy.gov/buildings/commercial_initiative/alliances.html</a></td>
</tr>
<tr>
<td>High Performance Buildings</td>
<td><a href="http://www.highperformancebuildings.gov">www.highperformancebuildings.gov</a></td>
</tr>
<tr>
<td>Environmental Protection Agency – Energy Star</td>
<td><a href="http://www.energystar.gov/">http://www.energystar.gov/</a></td>
</tr>
<tr>
<td>European (EN) Standards and Implementation</td>
<td><a href="http://www.buildingsplatform.eu">www.buildingsplatform.eu</a></td>
</tr>
<tr>
<td>National Institute of Building Sciences</td>
<td><a href="http://www.nibs.org">www.nibs.org</a></td>
</tr>
<tr>
<td>NIST Building &amp; Fire Research Laboratory</td>
<td><a href="http://www.bfrl.nist.gov/">http://www.bfrl.nist.gov/</a></td>
</tr>
</tbody>
</table>