

# The ASHRAE Promise: A Sustainable Future

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# Sustainability

- Concept of maximizing the effectiveness of resource use while minimizing the impact of that use on the environment
- ASHRAE is the technical foundation of the sustainability movement in the United States

# ASHRAE

- *We*, the members of ASHRAE, are entering a time of great opportunity:
  - A new “spirit of the age” – electric with possibilities and invention – is permeating ASHRAE
  - *We* are challenged to properly organize and pull ourselves up by our own bootstraps
  - *We* must have a sense of collective purpose and be the pioneers of a re-awakening of the Society

# ASHRAE

- Because **we** are here now, *we* are “on duty” and **we** are responsible for achieving a sustainable future
- *We* are the leaders the world has been waiting for
- *We* are the innovators and entrepreneurs the world has been seeking
- *We* can get there together if **we** clearly see ahead “a sustainable future”

# Strategic Research

- Guide for a sustainable future
- Emphasizes sustainability and renewable energy applications
- IAQ; tools and applications; and equipment, components and materials included

# Energy and Resources Goals and Challenges

- Provide guidance on techniques to achieve 30%, 50% and 70% reduction of building energy usage
  - Complete 30% guidance for new and existing buildings by 2007
  - Complete 50% guidance by 2010
  - Complete 70% guidance by 2012

# Energy and Resources Goals and Challenges

- Initiate 30%, 50% and 70% guidance for new and existing high-rise residential buildings having the same completion dates as the commercial AEDG series
- Achieve net-zero energy use buildings guidance for all types of buildings by 2015

# Energy and Resources Goals and Challenges

- Develop economically viable applications of renewable energy
  - achieve 25% reduction in conventional energy use by 2010
  - achieve 50% reduction in conventional energy use by 2015
- Develop systems that reduce energy use in supermarkets
  - Complete 30% AEDG guidance by 2010

# Energy and Resources Goals and Challenges

- Develop evaluation methods that allow reductions in energy, cost and emissions
  - Complete evaluation metric of building performance evaluation of energy and water consumption, IAQ and comfort by 2008
  - Complete the building performance rating system of using “carbon equivalent” basis by 2008

# Energy and Resources

## Goals and Challenges

- Provide an optimal indoor environment for buildings with respect to comfort productivity, health and safety
  - complete optimization for commercial buildings by 2010
  - complete optimization for healthcare facilities by 2012
  - complete optimization for industrial facilities by 2015

# Sustainability Roadmap

- Develop and maintain productive relationships with other organizations in the sustainability field.
- Raise public awareness of ASHRAE's contributions to sustainability.
- Aggressively market ASHRAE's sustainability profile in the industry.

# Executive Summary Goals

- Expand our efforts to foster sustainable buildings.
- Conduct our affairs in a sustainable manner.
- Lead in researching technologies that enable the design and application of sustainable HVAC&R equipment and systems.

# Executive Summary Goals

- Integrate building sustainability principles, effective practices and emerging concepts into appropriate ASHRAE resources.
- Partner with appropriate sustainability advocacy organizations where our strengths are complementary.
- Develop materials and programs related to sustainability to educate and inspire the current and next generation of members.

# Executive Summary

## Recommendations

- “Walk the Talk” by practicing what we preach.
- Develop educational products that assist in sustainable building design, building operation and evaluation.
- Implement the sustainability-oriented objectives in the Society’s Research Strategic Plan.
- Accelerate development of the *Advanced Energy Design Guide* series.
- Implement sustainability certification.
- Act on sustainability-related strategic directions included in the Society’s Strategic Plan.

# Executive Summary

## Milestones

- 2006 Winter Meeting – Liaisons appointed to organizations with whom ASHRAE partners on sustainability initiatives.
- Calendar Year 2006 – Implement public relations and marketing initiatives, including creating the Green Team, exploring sustainability as a component of the AHR Expo, re-focusing the ASHRAE Technology Awards on sustainability achievements, and writing articles for related industry publications describing sustainability practices and which provide ASHRAE guidance.

# Executive Summary

## Milestones

- 2006 Annual Meeting – Conduct as a sustainable meeting, conforming to accepted sustainability guidelines for meeting organization and operation.
- 2006 Annual Meeting – Make the ASHRAE Headquarters renovation project a LEED EB project.
- 2006 Annual Meeting – Technology Council to move sustainability-related research projects up in priority and monitor their implementation to ensure timely completion.

# Executive Summary

## Milestones

- 2007 Winter Meeting – TC 2.8 to review ASHRAE materials and literature and make recommendations to councils regarding needed projects and publications.
- 2007 Annual Meeting – Offer online based learning for sustainability and certification program.
- 2007 Annual Meeting – Funding provided such that publication of the Advanced Energy Design Guide series is accelerated by one year.

# Executive Summary

## Milestones

- 2008 Winter Meeting – Develop rating systems to certify building operational performance for sustainability.
- 2008 Annual Meeting – Offer publications that provide sustainable design guidance for all types of buildings.
- 2009 Winter Meeting – Partner with organizations to develop standards on all aspects of sustainable building design and operation.
- 2009 Winter Meeting – Publish guides for building owners that emphasize the benefits of decision making based on life-cycle-cost analysis

# Challenges to Membership

- Develop a performance-based version of Standard 90.1
- Develop a water conservation Standard in collaboration with USGBC and ASPE
- Create a Global Green Speaker's Bureau
- Form and train a Global Green Team for presentations:
  - develop consumer-based green resource guides
  - develop engineering for sustainability presentations for global audience

# Challenges to Membership

- AHR Exposition will focus on green technologies and net-zero applications beginning in 2007
- Develop ASHRAE certification programs for:
  - HVAC&R design for sustainable buildings
  - HVAC&R design for healthcare facilities
  - Building operation and management
- ASHRAE meetings at all levels will be green-oriented and sustainability-based relative to resource use and conservation
- Modify ASHRAE Technology Awards include a focus on sustainable building applications

# ASHRAE Strategic Plan

*ASHRAE will lead the advancement  
of sustainable  
building design and operations.*

# Challenges to Membership

- ASHRAE meetings will become a training ground toward achieving a sustainable future
- ASHRAE Headquarters will become an example of how to economically make existing buildings more energy efficient
- ASHRAE regional and chapter meetings will demonstrate how to conduct environmentally responsible activities for members

# Challenges to Membership

- ASHRAE's sustainable activities will require collaboration with other organizations globally – the Associate Society Alliance will be a vehicle by which these collaborations take place
- ASHRAE will provide its membership with individual, building and operations certification programs that will make our members more valuable to the construction and building management industries
- ASHRAE will be the engineering engine of the global sustainability community

# Challenges to Membership

- ASHRAE's Engineering for Sustainability  
Global Target Audience:
  - + Young Engineers
  - + Construction Professionals
  - + Architects
  - + Building Managers & Operators

# The ASHRAE Promise: A Sustainable Future

- ASHRAE's Research Strategic Plan
- ASHRAE's Sustainability Roadmap
- ASHRAE's Strategic Plan

*“The Beginning”*