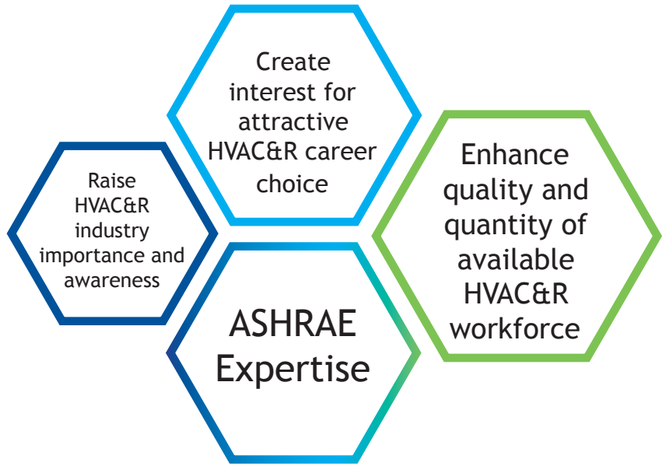
Workforce Development in Canada

There is a pressing need in the HVAC&R industry to meet employer demand for highly-skilled, well-paying jobs. By 2022, an estimated 115,000 HVAR&C technicians will be needed to fill openings as a result of industry growth and retirements. In response, ASHRAE banded together with the organizations below to form the HVACR Workforce Development Foundation. The Foundation consists of several organizations with Canadian members (such as ASHRAE) including:

HRAI — YOUR ENVIRONMENT OUR EXPERTISE

BUILDFORCE CANADA



ASHRAE's Canadian and Global Alliances

ASHRAE works closely with several Canadian organizations, including the Canadian Green Building Council, the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI), and the Building Owners and Managers Association (BOMA) of Canada. The Society also has a strong relationship with the United Nations Environmental Programme (UNEP) and works with professional organizations in over 50 countries through the ASHRAE Associate Society Alliance. The technical expertise generated by this global network helps foster innovation around the world.

Supporting Women & Minorities

ASHRAE is focused on encouraging minorities and women to enter careers in the HVAC&R industry. ASHRAE is a supporter of Women in HVAC&R, an organization formed at the 2002 AHR Expo in Chicago, Illinois, which is cosponsored by ASHRAE and the Air-Conditioning, Heating, & Refrigeration Institute (AHRI).

Elementary and Secondary Education: The Need for Science, Technology, Engineering, and Mathematics

As professionals focused on design, construction, operation, and maintenance of the Canada's buildings and infrastructure, and as educators of future generations of engineers, ASHRAE members recognize the importance of a solid foundation in science, technology, engineering and mathematics (STEM), and as a result, many are active in their local communities and national programs, bringing exciting science and engineering programs to students.

ASHRAE strongly believes that education in STEM subjects is needed at the elementary and secondary school levels to develop the future supply of technicians, engineers, and scientists to meet future workforce needs and ensure our future standard of living. We further believe that parents, educators, governments at all levels, and the private sector have important roles in ensuring that future generations possess the skills and critical competencies necessary to be successful in a highly competitive, global, and technologically sophisticated economy. We must work cooperatively to ensure that children receive the STEM training essential for future success.

ASHRAE®

Shaping Tomorrow's Built Environment Today

Consulting engineers
Contractors
Manufacturers
College Students
University Professors
Architects

ASHRAE MEMBERS

Canada is home to
5,900+
ASHRAE Members,
16 Chapters and
36 Student Branches

Founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 55,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today.

Public Policy Priorities: Taking Action on Shared Values

ASHRAE's Role in Climate Change Mitigation and Environmental Stewardship

ASHRAE believes the overwhelming scientific research that climate change is the most formidable environmental challenge faced by the global community today.

ASHRAE's Adaptation to Climate Change

Fund scientific research on the impact of greenhouse gases (GHGs) and climate change through our expertise in heating, ventilating, air conditioning and refrigerating (HVAC&R) technologies and applications.

Analyze the impact of climate change through lower global warming potential (GWP) refrigerants and energy efficient HVAC&R technology.

Contribute to the successful phase out of ozone-depleting chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).

Promote responsible use of refrigerants and efforts to advance technologies that minimize impact on the environment while enhancing performance, cost effectiveness, and safety.

Integrate energy efficient HVAC&R systems and building designs to lower GHG emmissions and make progress towards climate change goals.

Environmental Stewardship

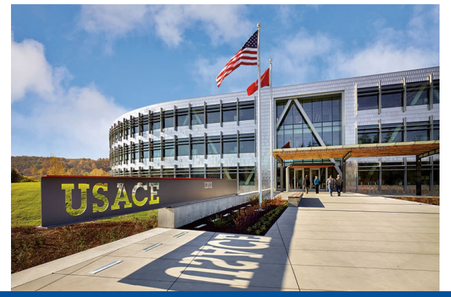
Living in Environmental Harmony without Compromise: The Promise and Reality of High-Performance, Green Buildings

High-performance, green buildings are in many ways the future of the built environment, as they bring together elements such as site sustainability, water use efficiency, energy efficiency, indoor environmental quality, and other elements that collectively take into consideration the building's full impact on the ecosystem. High-performance buildings foster better health, well-being and productivity.

Such buildings currently exist, but help is needed today to pave the way to the future. ASHRAE has developed and cosponsored a number of standards, guides, and professional certifications, some of which are highlighted below:

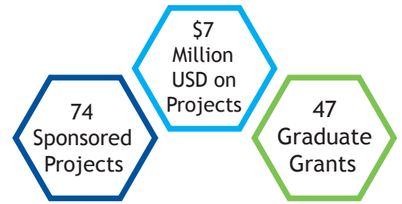
- ANSI/ASHRAE/USGBC/IES 189.1 Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings as an alternate compliance path to the International Green Construction Code.
- International Green Construction Code (IgCC)
- 2015 National Green Building Standard™ (NGBS)
- High-Performance Building Design Professional Certification

ASHRAE also promotes the use of cutting-edge best practices, practical solutions, and technologies in the building industry through case studies in High Performance Buildings Magazine, a quarterly, free publication.

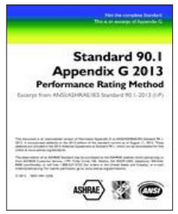


ASHRAE Canada Research

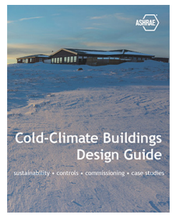
Since 1959, ASHRAE has a significant research presence in Canada. These research projects are funded in large part by donations from approximately 800 Canadian members and companies.



ASHRAE's role in Canadian standards development



The national Canadian government prepares the National Model Construction Codes. In developing the codes, Canada draws heavily from ASHRAE standards, such as ANSI/ASHRAE/IES Standard 90.1-2013 Energy Standard for Buildings Except Low-Rise Residential Buildings. The model codes are then adopted, modified if desired, and enforced by provinces and territories.



Designing for the Unique Challenges Posed by Cold Climate

ASHRAE's Cold-Climate Buildings Design Guide identifies strategies on how to meet the design challenges created by cold climate conditions, from initial planning to completion.

Indoor Environmental Quality

Improving Building Occupant Health, Comfort, and Productivity While Increasing Building Energy Efficiency

People spend about 90 percent of their time indoors, as a result, indoor environmental quality (IEQ) has a direct impact on health, comfort, and work productivity. IEQ includes factors such as the concentrations of indoor air pollutants, temperature, humidity, lighting, and noise. Well-established research has linked poor IEQ to illnesses such as Legionnaires' Disease, lung cancer, pulmonary tuberculosis, severe acute respiratory syndrome (SARS), carbon monoxide (CO) poisoning, and asthma attacks. HVAC&R and other building systems play a central role in IEQ.

Superior indoor air quality enhances quality of life while boosting the economy by improving health (thus reducing healthcare costs and absenteeism), school and work performance. ASHRAE has developed a number of standards and guidelines to address the need for good indoor air and environmental quality. In concert with these documents, ASHRAE encourages policymakers to act on the following recommendations:

- National, provincial, and territorial governments should support the adoption into codes of ASHRAE's ventilation and IAQ standards.
- A several fold increase is needed in government and foundation support for IAQ research to address the high priority research agenda described in this document.
- Sustainable building performance codes, programs and standards should be based on thorough consideration of the many parameters impacting IAQ to ensure that limited resources are used effectively and IAQ is not compromised for other goals.
- It is critical to maintain acceptable IAQ as significant changes are made to building design and operation to dramatically reduce energy consumption in response to the threat of global climate change.

In a move to further broaden the impact of IAQ expertise, ASHRAE also recently consolidated with the Indoor Air Quality Association (IAQA) – a large trade association with over 2,600 members and more than 20 local Chapters throughout Canada and the United States.

Indoor Air Quality ASSOCIATION INC. ®

IAQ Conference Held in Canada

In a move to deepen understanding of the balance between energy efficiency and IEQ, and provide direction for future research, education, and policy, in 2013, ASHRAE held a conference in Vancouver, British Columbia, Canada entitled "Environmental Health in Low Energy Buildings". The international conference brought together experts from a number of fields and was the 17th in the series of ASHRAE IAQ Conferences that began in 1986. The next such conference will take place from September 12 to 14, 2016 in Alexandria, Virginia, United States and is entitled "Defining Indoor Air Quality: Policy, Standards and Best Practices."