

PRESIDENTIAL ADDRESS

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‘We’re most effective when researchers, consultants, contractors, owners and users are connecting and collaborating.’



Making Connections

BY DAVID UNDERWOOD, P.ENG., CPMP, PRESIDENTIAL MEMBER/FELLOW ASHRAE

My presidential theme focuses on an important goal of the ASHRAE strategic plan: *Making Connections*. As Nietzsche observed, human connections are the “invisible threads that are the strongest ties.” Forging stronger connections amongst ASHRAE’s 54,000 members is a priority for me, especially when it comes to our volunteers and new members.

Making Connections goes well beyond membership. It means connecting with industry, communities, governments and the public. Our mission is to advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world. For us to succeed, we have to build connections.

ASHRAE is changing the world. We support research and innovation and are leaders in developing industry standards. We connect thousands of people who participate in research, design, construction and operation. Each and every one of us benefits from ASHRAE’s investment in HVAC&R research, standards and the sharing of knowledge.

These are ASHRAE’s three value propositions!

Research positions ASHRAE as the industry leader. We attract the brightest minds in solving our challenges. I’m excited to witness the changing landscape of research that is not simply done for owners, but with owners. We’re most effective when researchers, consultants, contractors, owners and users are connecting and collaborating.

Second, our standards link research to the real world. Thanks to ASHRAE’s leadership, standards introduce a new way of thinking. It was once thought that North American technical knowledge was sufficiently developed and only needed to be tweaked to fit any climate conditions. More often, it turns out, they have to be

reworked—not because the technology is wrong, but because local context changes how it will work.

We found this out in Kuwait. Our standards were adopted, but the hotter climate, different building materials and different construction techniques triggered the need for significant modification. This was an important lesson for us when applying ASHRAE standards globally. It underscores how important it is for us to ensure international partnerships are strong and nurtured. Our standards must apply globally if we are to be global.

Third, we're taking the latest evidence from research and standard developments to accelerate the spread and use of that knowledge to where it counts—the front line. Our extensive education programs as well as our Handbooks and design guides make our knowledge and research efforts available worldwide. Our collective knowledge sets us apart!

Our imaginations are literally changing the world. We've made decisions to invest in top talent—and big, bold ideas. Imagine improving the quality of life for everyone. John Lennon said “A dream you dream alone is only a dream. A dream you dream together is reality.” Our reality at ASHRAE is making connections that advance our world through viable, affordable, green technology.

No one individual can do this presidential role on their own. Just like ASHRAE cannot do its job without the creativity and passion from all its members, connecting colleagues within our industry and beyond.

Ralph Waldo Emerson said “*Life is a journey not a destination.*” As we know, all journeys require a beginning. My journey into the world of engineering began when I was only 11 years old.

The new Trans-Canada highway and a bridge were being built near my village of 750 people in the great plains of southern Saskatchewan. I was captivated that hot, dry summer by the machines, the people working together, and the way dirt was transformed into an

important thoroughfare for our country. I remember how patient that site engineer was in answering my many questions. Reflecting back, it doesn't surprise me. Mentoring is part of the DNA for engineers; it's how we pass on our legacy.

After completing my degree in engineering at the University of Manitoba, fate brought me to my first employer. They were a major manufacturer who provided extensive training. That training set me on a career path leading me to this great opportunity to serve as your president.

As the fourth president from Canada, I'd like to relate a short engineering story from my country. In 1907, the Quebec Bridge collapsed into the St. Lawrence River killing 75 people. Engineers around the world were devastated. Engineering mistakes, shortcuts and oversight were the cause. The disaster was avoidable—easily

avoidable—making matters worse.

Soon after, several smart people led by a University of Toronto engineering professor, inspired a unique idea to constantly remind engineers about their obligation to society. An iron ring was designed. Legend has it that the rings were fabricated from the salvaged steel from that collapsed bridge.

The famed British writer Rudyard Kipling had travelled extensively around North America and written several poems about engineering marvels. Kipling was glad to respond to the request to write another poem specifically for Canadian engineers. “The Ritual of the Calling of an Engineer” is recited at engineering class graduations across Canada.

The poem is the centerpiece of the Ring Ceremony. The significance of the ceremony is not just for new engineers. It reminds long-time engineers of their responsibilities in receiving, welcoming and supporting young engineers. I have worn the ring every day of my working life, connecting myself into a community of service to humanity. It's my daily reminder of the obligation to practice engineering by ethical and professional standards.



DAVID UNDERWOOD, P.ENG.
ASHRAE PRESIDENT, 2015-16

David Underwood, P.Eng., CPMP, Presidential Member/Fellow ASHRAE, resides in Oakville, Ontario, Canada. As ASHRAE's president, Underwood chairs the Society's Board of Directors and Executive Committee. Underwood was awarded a Bachelor of Science in Civil Engineering from the University of Manitoba. In 1975, Underwood founded Isotherm Engineering Ltd., an HVAC&R design-build enterprise, which continues to be operational. He is an ASHRAE Distinguished Lecturer and a member of Technical Committee 7.2, HVAC&R Construction & Design Build Technologies, and of the Building Performance Alliance Ad Hoc Committee. He has received an Exceptional Service Award, a Distinguished Service Award and the William J. Collins Research Promotion Award.

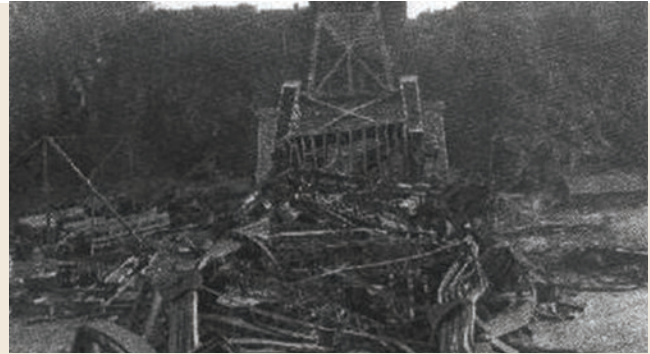
The Quebec Bridge Collapse

The Quebec Bridge began as an engineering marvel in the early 20th century and ended as one of the worst engineering failures in Canadian history. Longer and larger than any other structure of its day, its cantilever structure was selected based on being the “best and cheapest plan” by American engineer Thomas Cooper.

On a hot August day in 1907, eighty-six workers plunged into the waters of the St. Lawrence River when the bridge collapsed. Eleven survived. The force of the bridge's collapse could be felt 8 miles (13.5 km) away in Quebec City.

The bridge's engineers were found to have made fundamental errors of design and were criticized for trying to save money by designing the bridge to use less metal. According to the Royal Commission Report, there was also a massive failure in leadership.

The report's authors said, “It was clear that on that day the greatest bridge in the world was being built without



there being a single man within reach who by experience, knowledge and ability was competent to deal with the crisis.”

The collapse of the bridge is thought to have helped inspire the tradition of the Iron Ring that symbolizes the pride of the profession while serving as a reminder of humility and fallibility of engineers.

Sources: *The Canadian Encyclopedia* www.thecanadianencyclopedia.ca and matld.org/failurecases.

I know that other universities around the world, including some in the United States, have similar rituals. But as far as I know, ours is the only country-wide engineering ceremony. It's a significant and lasting example of *Making Connections*.

For ASHRAE members, making connections means using the partnerships that are our power tools. There are things we can do to strengthen connections. During my presidency, and with your help, I will focus on *Making Connections* in three areas: our volunteer members; our new and future members; and our HVAC&R enterprise communities.

Volunteerism is at the heart of ASHRAE. There's an old adage that we make a living by what we get, but we make a life by what we give. This certainly applies to ASHRAE members. Each year, ASHRAE receives hundreds of thousands of volunteer hours. But we must find ways to encourage expansion of our volunteer base by engaging more members, more effectively.

Imagine if every ASHRAE member attracted one new person to our Society? Impossible? Perhaps! But I can imagine it. We all know engineers and business people in our industry who are not members and we know what attracted ourselves to ASHRAE. We need to share that passion!

But we also need to explore new ways of making the best use of members' time. Life is busy and only getting

busier, especially for those with young families. With today's technology, it's almost impossible to escape the demands of work and its intrusion on our personal lives. Leveraging technology to make volunteer time more effective must be one of our priorities.

Presidential Member Tom Phoenix appointed an ad hoc committee to review the time commitment required for ASHRAE Winter and Annual Conferences. I look forward to implementing the recommendations from their findings.

Besides ASHRAE's three key value propositions, why become active in ASHRAE? Many active chapter members report their ASHRAE connection provides opportunities well beyond what is offered from the workplace. It provides them opportunities to build and reinforce their professional skill and knowledge. It offers networking opportunities to build important business relationships either with customers or other engineers.

New Members and Students

Our industry is people-based, and ASHRAE plays an important role in connecting people. Many of our members first learned about ASHRAE while students. They joined for many reasons: They knew someone in the industry who was a member and a mentor or some had a stimulating professor who encouraged

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membership or used an ASHRAE Handbook to support their lectures. This often resulted in opportunities to participate in a student branch.

Students and new engineers are the future of our Society. They need our encouragement and support. For example, Toronto had four student branches only a decade ago and now has seven, with more to come. The Southern Alberta Chapter hosts a “meet the graduates night” in early spring. The chapter encourages students to bring their resumes and get to know the industry players in a relaxed setting. Successes like this should inspire us to do more to recruit young people into ASHRAE and our industry.

Our Young Engineers in ASHRAE program, known by its acronym YEA, is vibrant and working well. Each of us can encourage YEA members to be even more involved in chapters, regions and Society. We should make sure that they are embraced after graduation. We must pay attention to their ideas. True to the concept of the iron ring, we are responsible to mentor and encourage their active participation in chapters, regions and our Society.

But what about our broader industry communities? My job as president—and your job as ASHRAE members—is to cultivate an environment that breeds excellence and encourages innovation to flourish. We will accomplish this through research and standards development and by making connections with organizations related to our industry and the public.

Research

We currently have 60 active research projects. They are generating global interest for their work in sustainable climate control. As we promote research investment, we need to show how that investment is going to deliver real, measurable and practical results that impact people’s lives. Continued success depends on this. We’re leveraging partnerships with associations and governments around the world. For example,

we’ve been successful in attaining government support of research for our standards and *Advanced Energy Design Guide* series.

HVAC Enterprise

The HVAC&R enterprise involves manufacturers, consultants, contractors, owners and operators. We can enhance our reach by providing more products and services for original equipment manufacturers and their sales engineers. We can step up our offerings to owners and facility users.

Our VITAL program (Value to Industry of Technical ASHRAE Leadership) is an initiative designed to connect employers with ASHRAE. VITAL shows employers that ASHRAE’s value is based on volunteerism and standardizing of industry practices. Committed companies encourage employees to join, often paying their dues and costs of participation. They recognize that employees involved in ASHRAE are more likely to know and contribute to state-of-the-art standards.

Public

In addition to communicating within our membership community, our connections with external communities help to reinforce our credibility with broader local, national and international audiences. We will continue to increase public awareness about why high-quality design and operation enhances everyone’s quality of life.

But none of this happens without you, the women and men who are ASHRAE members. In ASHRAE, we have some of the best minds in the industry, right here, right now. You are the reason organizations want to partner with ASHRAE. We’re catalysts for action, and the world is counting on us to make it happen.

What’s Next?

We need your skills, ideas, and continued investment so that together we can build an even stronger HVAC&R

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enterprise of research and education. I'm asking you to stay informed and stay connected.

A mobilized and empowered grassroots membership shows our partners who we are and how we can assist them with the success of their enterprise. I am going to expand the ad hoc work started last year focused on volunteer time spent at annual and winter conferences.

We're going to ask for participation of local members on the ad hoc committee to explore new effective ways of getting involved in chapter activities.

So, what will it take for our research, innovation and application engine to grow and continue to deliver phenomenal results? Our collective responsibility is to make sure that owners and users get the best value for the money they spend to support ASHRAE.

I am challenging each chapter to engage at least one more employer to support ASHRAE. At the same time, I want to assure existing supporters that we appreciate them. I am proposing an employer recognition event for chapters to pay tribute to employers supporting ASHRAE.

We simply must make better connections so that owners and employers understand the true value of ASHRAE membership. They need to be motivated to participate in our Society.

We're also acutely aware that some employers are struggling to engage their employees in taking advantage of their ASHRAE memberships. We'll work with our staff and volunteers to develop a strategy to support these employers.

In conclusion, making connections has been foundational in building ASHRAE's reputation as the industry leader. *But* we won't rest on our laurels; we will move forward with even bolder steps. We will make sure today's discoveries become tomorrow's design standards.

As I embark on my presidential year, I'm sincerely grateful to all of you for your warmth and your encouragement. And I invite and encourage all of you to participate—to *Make Connections*—from volunteering, to attracting members and to telling the ASHRAE story within our industry and beyond. ASHRAE and our global society will all reap the rewards. ■

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