

# Building on The Shoulders of Giants

*The text of the inaugural address delivered at the ASHRAE Annual Meeting in Orlando, Florida*

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*1994-95 President*

*American Society of Heating, Refrigerating and Air-Conditioning Engineers*

**O**n September 10, 1894, 75 engineers joined together to form The American Society of Heating and Ventilating Engineers. Their bylaws stated their intentions:

- Improve the mechanical construction of apparatus.
- Establish a clearly defined minimum standard of heating and ventilation for all classes of buildings.
- Read, discuss and publish professional papers and exchange knowledge and experience.
- Favor legislation compelling the ventilation of all public buildings in accordance with the standards of the Society.

Today, our phrasing may be different, but the needs of the public are much the same: quality products and workmanship; acceptable performance criteria; dissemination of information; and responsible government.

But there is at least one way in which our world of today is different from the world of those 75 engineers who met in 1894.

In their world, technology was considered optional. Electricity, the motor car and the Brooklyn Bridge were accepted as

engineering marvels — marvels you could choose to live with or without. Not today. The engineering giants of the 19th Century set humanity on a journey from which there would be no turning back.

#### About the President

Billy R. Manning, P.E., is president of SBCCI Public Safety Testing and Evaluation Services, Birmingham, Alabama. He is well known in the HVAC&R industry for his experience in building codes and standards for energy conservation, thermal envelope and smoke control. Manning, an ASHRAE Fellow, joined the Society in 1978 and has served on numerous committees. He has been chairman of the Standards Committee and the Technology and Member Councils, served on Technical Committee 9.6 (Systems Energy Utilization) and Standards Project Committee 105 (Standard Methods of Measuring and Expressing Building Performance). Manning has been a member of the ASHRAE Board of Directors since 1986 and on the Executive Committee since 1990. His ASHRAE awards include a Presidential Citation of Honor for his contributions to standards development and a Distinguished Service Award. He has also received a Distinguished Service Citation from the US Department of Defense and the Dr. Neil Frank Award from the National Hurricane Conference.

Today, our socio-economic structure demands reliance on technology. Some of our cities might not exist were it not for air conditioning. Without refrigeration, the world's demand for food could not be met. In the past, our cars and our buildings were just machines, bricks and blocks, not today they are computers — all of their functions interrelated and interdependent. This is how the machine achieves maximum efficiency and buildings provide maximum occupant satisfaction, that can result in increased productivity.

The *good hands* people of the 21st Century will not be selling insurance. They will be engineers and others who harness the power of technology. These masters of technology will hold the key to humanity's progress and survival in the 21st Century. The responsibility entrusted to these *good hands* people will be awesome.

In our industry of building comfort and controlled environments, ASHRAE is by far the best knowledge resource for those willing to accept the challenges of leadership that lie ahead.

ASHRAE's process of leadership development begins with the individual whose first decision is to join the Society and whose second is to participate in it. For 100 years, ASHRAE's leadership has continually put new technologies within our grasp.

## Building on the Shoulders of Giants

Sir Isaac Newton, in a letter to a friend, wrote: "If I have seen further, it is by standing on the shoulders of giants!"

As we start the second century of our existence as a Society, we stand on the shoulders of ASHRAE's founders and those thousands of others since then who have advanced our technology for the benefit of humanity. We stand as individuals, each bringing our own vision of the future. Together we forge an alliance that will take us further than we could ever hope to go alone. Ours is a partnership among people.

So what is our future to be? To describe our journey forward, I have selected these words:

### Building On The Shoulders Of Giants

If ever there was a time when society needs our industry, it is now. The reason, of course, is that we must respond to the world's need for controlled indoor environments economical in both original investment and operation; controlled indoor environments that provide a high degree of reliability and safety with no adverse impact on the world environment.

Who are the individual members of ASHRAE who will build on these shoulders?

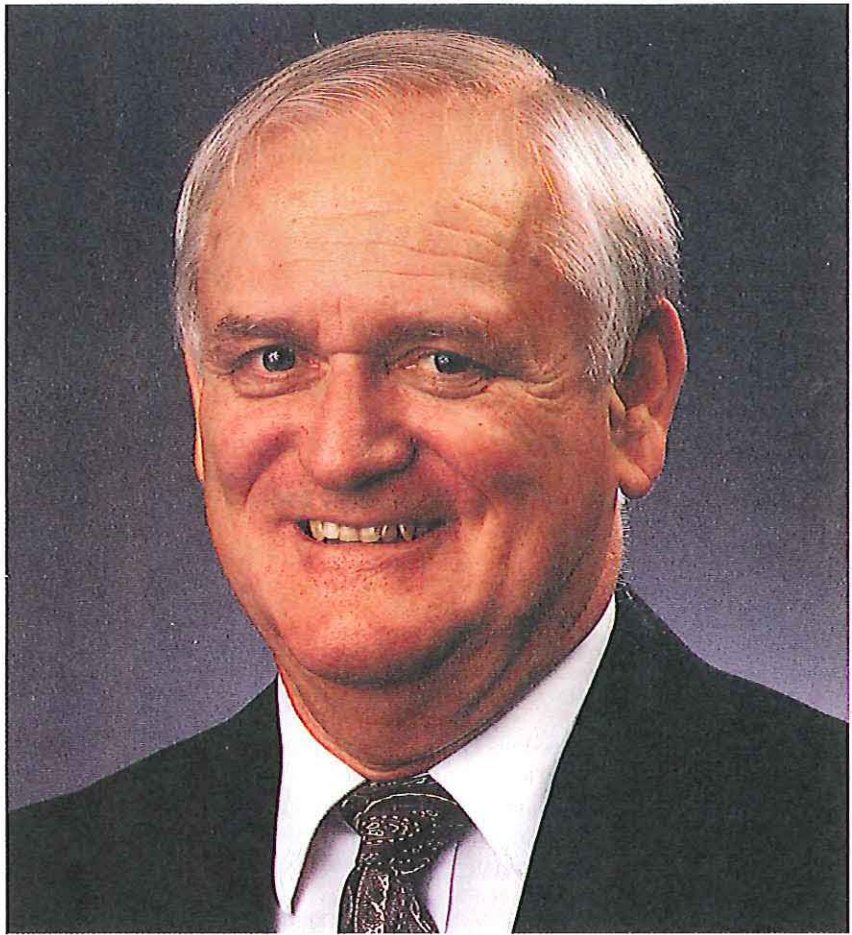
It is you. And all the people who will attend technical sessions at ASHRAE meetings and sit with you in committee meetings. It's also those who actively participate in our 154 chapters.

You and your fellow ASHRAE members are activists. I agree with those who say the activist is not the person who says the river is dirty; the activist is the one who cleans up the river.

ASHRAE members have always been doers and we must continue that tradition. Our mission as members is to turn innovative ideas into real products and systems that provide simple solutions to the problems that people encounter — problems in their everyday lives and problems they meet as they push into the new frontiers that technology presents — problems such as ozone depletion.

As we start this second century of progress and achievement, I offer a simple solution for success: Stand tall. . . Increase the recognition of ASHRAE. . . Build on the shoulders of those giants who have stood tall before us.

During this Centennial year, I charge each member, each committee and each chapter to increase recognition of ASHRAE within our communities, within our companies, and among our peers.



ASHRAE President Billy R. Manning, P.E.

What it comes down to is marketing. Take the example of McDonald's, an institution now known worldwide.

You may be wondering what a Big Mac® has in common with a thermal storage tank. There are several important things we can learn from McDonald's and about how they market their services and products.

First, they have visibility. The golden arches not only are ever-present on our highways, they have become a common sight in inner cities, shopping malls and even in college student centers.

Second, they have consistency. When you order food, you know how long it will take to be served; you know how your order will be taken; you know the basic menu; and you know where to go when you receive your food. The people at McDonald's know what their customers want and expect, and that's what the customer gets. "What you want is what you get" is even their slogan.

Third, they adapt to change and to new markets. When a trend emerged for

Americans to lower their fat intake, they introduced the McLean® burger and more recently, the grilled chicken sandwich. In San Antonio, you can order a burrito along with a Big Mac® and a milkshake. In China, you can have a Coke and an egg roll if you are not in the mood for an Egg McMuffin®.

What is the message for ASHRAE?

Each committee *member* and chapter *member* needs to focus on the value of the service they provide to the membership, to the potential member and to the public.

If people want information fast, let's get information to them fast. Give them what they want.

As we have for 100 years, let's maintain our consistently high level of quality. ASHRAE's technical information is known for reliability. People come to ASHRAE for assurance and credibility. Let's never lose sight of that. Let's adapt our products to new markets. What does ASHRAE need to offer to become more accessible to an engineer in Europe or in

Asia or to a young engineer in our own Midwest?

And of equal importance, we need to become more visible. Let people know where to find us. Let's seek out customers for our services, whether they're in the engineering community, in the building community, in government or in the private sector.

With success in this area will come our greatest rewards. We will increase membership, we will raise awareness of the value of our research program, and we will increase acceptance of the technologies advanced by our Society.

An example of a technology that must be advanced for the public's benefit is the concept of total building design. In thinking of a complete building, consider the sum of all components of construction and those electrical and mechanical systems that contribute to energy use: the envelope, lighting, HVAC systems, domestic hot water, and other auxiliary building services. ASHRAE members have expertise in all of these areas.

Made possible by microprocessor technology, total building design is a concept driven by economics and the well-being of occupants. It is a trend so compelling, it will occur whether we lead this movement or whether we tag along behind others.

We have already made great strides in this direction, by developing energy standards for new construction, energy standards for existing buildings, and BACnet™, a protocol for building automation systems — standards that address total building design. At the international level, we have led the effort for the International Organization for Standardization to form a technical committee on building environment design, taking into account energy, comfort and indoor air quality, and we have been assigned the leadership role as secretariat.

Our progress has been too great to step aside at this critical juncture in the evolution of building design, construction and operation. Placing ASHRAE at the forefront of the total building design movement is the only way that we can maximize our influence on the total consumption of energy in buildings. In doing this, ASHRAE will remain the world's premier purveyor of technology in our industry.

I quote a presidential member and giant of ASHRAE: "Overshadowing everything else is the question of conservation of natural resources. For how much

longer may we waste stored heat resources to save first-cost only? We refine the artificial heating plant, spend time and dollars and skill and genius in elaborating... the fuel consuming devices with no more than cursory investigation of the type of construction of the building, and with no effort to influence it so as to reduce the heat losses. Many of us, I believe, stand convicted of crime in this regard against future generations."

Were these the words of ASHRAE President Hugh McMillan in 1979 when the Society undertook the task of developing building energy regulations for the Department of Energy; or of Rod Kirkwood in 1973 when ASHRAE began its development of *Standard 90*? No. ASHVE President S.R. Lewis spoke them in 1914.

The challenge I put to our chapters, committees and members is to identify and to seize those opportunities for increased activity in pursuing the objective of total building design. During the coming year, I hope you will join me in taking up the challenge of developing programs to establish ASHRAE as the focal point of information that guides total building design.

Another way to increase ASHRAE's recognition and visibility is to expand our work in converting our standards into code language.

Many of our current standards contain permissive language that is not suitable language for adoption by reference by model code organizations, states or local governments. This has resulted in the rewriting and adoption of our standards as code requirements without ASHRAE's involvement or acknowledgement for its efforts.

Code language standards adopted by reference will bring tremendous attention to the value of our research, our technical committees, our standards project committees, our chapters, and to you as ASHRAE members.

Consider the issues of indoor air quality and ventilation effectiveness. With our development and continual revision of *Standard 62*, ASHRAE has already contributed greatly to the improvement of occupant health and well-being. But our job is not complete. We need to assist engineers, building owners and managers, and government officials by providing additional guidance in application of *Standard 62*, and we need to promote its use voluntarily by our industry and by government in

building codes. If there are problems in the application of *Standard 62*, who better to resolve them than ASHRAE?

ASHVE President and giant Andrew Harvey said in 1905: "Within the next ten years, the people of every state of the Union will have become so well informed of the necessity for properly ventilated schools and public buildings that it will be considered as great a crime to construct these buildings without providing for sufficient and proper ventilation as it would be to erect a building without a proper foundation."

Ninety years later, we still have an obligation to better inform the public.

Albert Einstein said, "We live in an age characterized by a perfection of means and a confusion of goals."

While ASHRAE will have many programs, activities and objectives this year — objectives such as approval of BACnet™; membership growth; code version development of *Standards 90.2*, *62* and *15*; and greater involvement with international organizations and improved service to our global membership — we have only one goal: To advance technology for humanity.

I believe in this instance the old proverb holds, "It's okay to look back, but don't stare."

We have much more to achieve—we must move forward in:

- Developing improved energy efficiencies.
- Producing safe, efficient and environmentally friendly refrigerants.
- Creating more comfortable and healthful environments.

These are the same challenges that faced us as we began our century as ASHVE and ASRE. What we have, as Einstein said, is perhaps more perfect means to achieve the same goals. Let's not lose sight of them. Seize this opportunity to provide the leadership for a better tomorrow.

Yes, we gain a better perspective from standing on the shoulders of giants. As S.R. Lewis observed in 1914, "By the inspiration of this Society's contact, many of us may climb the heights enclosing our narrow valley and view the distant peaks of achievement in a perfect perspective."

This, too, is my vision for ASHRAE this year!

I thank you for the honor of being elected to serve as your president. I look forward with great excitement and with great anticipation to this year and to the start of our next century. ■