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the Community of ASHRAE

By Richard H. Rooley, FEng, 2003–04 ASHRAE President

It is in creative brilliance, diversity and confrontation that great buildings are created. It is for harmony, sensitivity and in use that great buildings are judged.

Like great buildings, it is from diversity and confrontation that communities are born. They give communities energy, vitality.

But to become strong, a community needs more. Millard Fuller, the founder of Habitat for Humanity International, said, “For a community to be whole and healthy, it must be based on people’s love and concern for each other.”

Our ASHRAE is a community. Our community, actually the many communities that are ASHRAE, is diverse. More importantly, it is strong. It is achieved through harmony and through our members’ concern for one another and for those in the world around them.

Our ASHRAE is one of the strongest communities in the world. And it is one of the communities that has had the greatest impact on the human condition. Our objective as volunteer

leaders of our Society, of our ASHRAE, is to ensure that the harmony that brings us together responds to the changes ahead.

Our ASHRAE Enables

Civilization marches forward. The march would not have been possible without the enabling skills of the engineer. To make fire, a wheel, a sailing ship, a steam ship, a nuclear driven ship, the skills of engineers were needed. To heat Roman baths, to ventilate houses for heating and cooking, to live and work productively in hot and humid climates, to process and deliver our food, the skills of HVAC&R engineers were needed.

We live as we do today because engineers enabled our civilization to march forward. Our ASHRAE has been at the forefront of this journey.

In just over 100 years of life, ASHRAE has enabled engineers, the leaders of our industry, to change our way of life. As Presidential Member Jim Wolf reported several years ago, the National Academy of Engineering recognized air conditioning as one of the top ten engineering achievements of the 20th century.

This places the ASHRAE member, not only in the United

About the President

Richard H. Rooley, FEng, Fellow ASHRAE, is principal of Rooley Consultants in Stoke Poges, Bucks, England. He is the first person from outside the United States and Canada to be elected president.

He has chaired many Society councils and committees as well as serving on the Board of Directors and the Board Executive Committee.

He has received the ASHRAE International Activities Award, The Distinguished Service Award and an Award of Merit.

He is a Fellow of the Royal Academy of Engineering. He has authored many papers and articles.

Rooley was awarded a BAI in civil engineering from Trinity College Dublin.

States but worldwide, in a unique and powerful position. Our ASHRAE, while perhaps not a household word, has achieved all of this for us. More important than being recognized as leaders, we are recognized as enablers.

Every politician, every leader of industry and commerce, every school teacher and pupil, every office worker recognizes the influence of ASHRAE every time he or she walks into an air-conditioned building or is treated in a hospital, eats food which has been preserved or enjoys ice cream.

Few other professions worldwide enable so much of civilization to continue its march forward than the HVAC&R engineer. Our ability to empower, to achieve, to enable is much more lasting than an organization or profession that simply catches the public's attention for a few years. We are not a comet racing across the sky. What we provide to humanity is apparent every day. It is a foundation upon which our civilization has been built.

Diversity Is Our Fuel

From where do we gather our ability to enable? Our ASHRAE draws its energy from its members around the world. The members of our ASHRAE are thousands of individuals who make ASHRAE their community through participation in chapters, service on committees, and contributions of literature and training.

The diversity of our ASHRAE is as broad as the 128 nations in which we have members, as wide as the spectrum of professions that create and maintain environmental conditions and as varied as the industries that rely on our technology.

The people you see at your ASHRAE meetings are only a small slice of the whole that is ASHRAE. The reality is that there are many ASHRAEs in many parts of the world.

Look at our technical and standard project committees. Each of the over 200 is different, reflecting a different technical interest, just as each of our members is different. Upon careful examination, however, you will see that each of these committees has balance among interests, turning diversity into a community, and thereby giving ASHRAE its strength.

Go to a chapter meeting. We now have more than 160 chapters in 18 countries. Every chapter I have visited worldwide demonstrates our diversity of technical specialization, job function and personal skills, both technical and human. The age range is great.

Of our membership 85 percent live in North America, a significant number do not have English or English American as their primary language, 58 percent are qualified to degree level, 1.5 percent are engaged generally in education and research, 18 percent in contracting, 8 percent in manufacturing and 33 percent in consulting. There are 2,700 students in the United States, 450 in Canada and 1,400 overseas.

What a wonderful diversity, but every single one uses the ASHRAE community of technology to enable their companies,

to enable their clients, to enable their communities and their nations to live in buildings. It is **The Community of ASHRAE**, enriched by diversity that bonds our industry together.

The Strength of Our Community

ASHRAE is primarily a technical community.

Each member of ASHRAE has three distinct but linked roles. Our members write our technical information, purchase our technical information and use our technical information.

Ask an HVAC&R engineer anywhere in the world about ASHRAE. Every one of them, be they a member or not, knows about ASHRAE, identifies with the technical community and has an opinion about it. Where two or three HVAC&R engineers are gathered together, they will talk of technology, they will talk of the systems, they will talk in a common language, which soon progresses from shared technology to shared humanity. Chapters, Associate Societies around the world and ASHRAE committees provide the basis of the technical community.

But along with this technical community there are the other communities of our ASHRAE. These other communities build the love and caring that give ASHRAE its strength. Friendships and professional associations built through ASHRAE forge bonds that last lifetimes.

Our ASHRAE is one community comprised of many communities, each interlocked with the other. As a whole our ASHRAE moves each of us forward, assisting us in our efforts to better humanity. It is what makes us strong.

The Personal Communities

The chapters of ASHRAE bind the members of ASHRAE together as individuals. They provide a fertile community from which not only technology grows but also fellowship grows. From professional interaction grows personal interaction, individuals sharing a similar vision of the world around them.

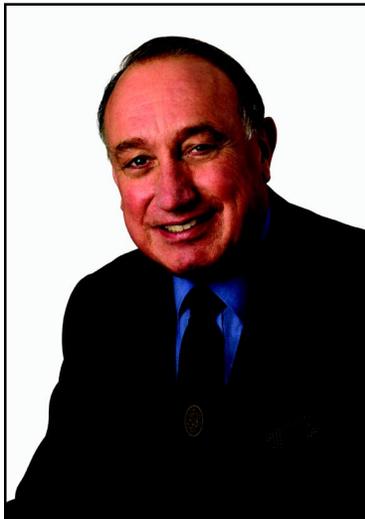
Our ASHRAE provides a community, actually a collection of personal communities, where we interact with related organizations and professions. We inter-

act with associations of contractors, building owners, architects, plant engineers and facility managers, plumbing engineers and electrical engineers. ASHRAE provides the framework for these communities to thrive.

And our ASHRAE gives us opportunities to become involved in the larger community in which we live. Our members reach out to schools and universities to prepare young people for careers in our industry. We participate in various charitable and social events in our local communities. Through our work with ASHRAE we promote the awareness of, and the value of, engineering to the public.

Challenges to Our Community

To remain strong, a community must change. We must identify our strengths and recognize the way that the world is chang-



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ing around us. We must use our diversity as a catalyst for change that better enables us to meet new demands for our services.

The industry that constructs and operates our buildings is changing. If we do not change with them to meet these demands, our tradition of being the great enablers will suffer.

Over the years, I have spoken about our changing building industry. Our technology, our speed of communication, the evolution of our technical equipment will drive by 2020 a design and construction team performance that may be as great as the difference between using a slide rule and a computer, the difference between using a ruling pen and computerized drafting.

It is probable that within a very few years companies of designers, manufacturers and contractors who operate as they did in the latter part of the 20th century will be looked upon as a living museum.

But how will ASHRAE enable these changes? How will the current diversity in our technology and membership rise to the challenge? How will we make our communities stronger?

Problems in construction projects that have led to disputes are based on technical matters. We must produce information in ASHRAE literature to enable our members to tackle, with the best possible available knowledge at the correct level, any problem that their client legally presents.

My study of disputes has led to the identification of the fuzzy edge disease. Throughout the construction process, each practitioner, be he or she engineer, architect, designer, installer, structural engineer or operator, is each generally very good at doing his or her own work. Problems arise when these practitioners try to communicate with one another – when they approach the fuzzy edge that lies between.

At a recent meeting with a large consulting engineer, we debated how much time during a week that an engineer directly uses ASHRAE technical material. A realistic estimate was given of a half day per week or 10%. Say this is even as much as 20%. The remainder of his or her time is spent in communication, negotiating, writing, argument, programming, consideration of special requirements and a knowledge of finance, and in sales and legal matters.

How is the engineer educated and trained in those subjects that take up the majority of their time? The answer is generally by osmosis, mentoring or learn-it on the job. The opportunity to educate and train for this soft 80 percent is a challenge to ASHRAE. Our hard technologies fail in buildings when skill levels in the soft areas are deficient.

The Opportunity for Our ASHRAE Community

I have 10 challenges.

Internal Goals and Organization

To remain, strong, the ASHRAE community must change.

The Board of Directors has developed the report of its Planning Committee and voted to redefine the Society goals and

redefine the organization and structure. During this year, the whole Society will become familiar with these proposals and given the opportunity to adopt them for improved effectiveness. This is the first part of the continuing planning process so,

• I challenge the community of ASHRAE councils, committees, and chapters, within one year, to identify with and take ownership of the redefined structure within an ongoing change process.

The internal technical community is composed of many individual parts. Every member of ASHRAE is different from any other. We must enable the various communities within our organization to fulfill their objectives. How do we enable manufacturers in our industry to design, manufacture and construct their products? How do we enable government to set codes that enable safe, reliable and economic production? How do we publish data as guide material, special publications, guidance notes, standards, etc., to enable practitioners to give reliable and a relevant service? How do we take forward the charge by President Don Colliver to consider a suite of guidance materials?

ASHRAE's program of nonproprietary research is a model for any industry. It has led to countless advances. We do however tend, as engineers, to work in isolated groups. If overall policy in research and publication of technical material was developed on a matrix basis, it is

possible to drive single items of research through a matrix of knowledge reflecting the true diversity of our Society so,

• I challenge our technical committees and the technical 'hard' wing to cooperate in developing a matrix planning and management structure to achieve effective and efficient work so that our research effort is better targeted to achieve objectives.

The first edition of Standard 90 on energy conservation was written and published in 18 months and was a prescriptive, check-box type of standard. At the level of awareness of the ASHRAE engineer of the 1970s, this was an essential method. At the present time, the code authorities in the United States generally are based on prescriptive standards. I question whether this approach can continue in multi-disciplinary standards.

In the United Kingdom and in Europe, current energy or sustainability standards in the United Kingdom part 'L' of the Building Regulations, set a performance standard for the total building with self-certification of the whole design, construction and operations team. A performance standard in energy terms will describe the carbon consumption of a building, not the detailed way in which energy consumption will be reduced.

• I challenge ASHRAE make much better use of performance standards in parallel with prescriptive standards.

At the present time, a period of approximately five years is taken to write and obtain approval for a standard. This compares with the original 90 days for Standard 90. We have developed in ASHRAE an extremely fair and open approval process. This process is significantly more rigorous than American National Standards Institute requirements. We welcome

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and have full representation from all the diverse interested parties on our standards committees and allow comments at several successive stages of drafting.

- I challenge ASHRAE to develop a standards writing process that allows full and fair comment, but with a target of this occurring only once during the process and shorten the development of standards from five years to two years.

Inter-reaction with Other Groups and Communities

Construction is an inter-reactive changing process among all its diverse parts. The HVAC&R engineer is a key professional participant in a correctly integrated design, construction and operating process. At chapter level, in a local community, our members work closely with architects, contractors and owners. At Society level, ASHRAE must build its relationships with other professional and trade societies and groups. Internationally we must learn from the structure and the methods of construction.

Twelve years ago, I started with a few cross-disciplinary colleagues the Team Build Competition in the United Kingdom. This is sponsored by the United Kingdom Construction Industry Council. Teams of up to six, aged under 28, are drawn from architecture, structural engineering, building services engineering (HVAC&R, electrical, lighting, water and drainage) planning, landscape, cost control, contracting and operation. The winning team has always been the one whose members communicate with each other and demonstrate outstanding leadership.

The Mechanical Contractors Association of America uses the ASHRAE Student Competition as a base for its Young Contractor's Competition. This is a first of what we hope will be many competitions held jointly with our sister organization.

The Green Building Council, through the LEED Scheme, set standards for the efficient and ecologically sound construction and operation of buildings. This requires cooperation as among equal partners of architects, engineers, contractors, building users and others. ASHRAE must partner with the Green Building Council and others to develop future guidance so,

- I challenge the Society through outreach to develop relationships with other construction related organizations worldwide to further enhance ASHRAE's prestige.

- I challenge chapters and Associate Societies to develop relationships with other organizations, holding joint meetings and sharing common memberships to improve the quality of our buildings and to enhance the community of the construction industry in all its facets. There is recognition of this in my Presidential Award of Excellence (PAOE) points.

The Soft Side of ASHRAE

ASHRAE has written management and operations manuals for chapters, committees and all elements of ASHRAE activity. The seminars and publications of the task group on general legal education have been very well received by members with strong attendance at Society seminars. In chapters, any meeting on the soft side is well attended. Where HVAC&R members are well trained in the soft areas of our industry, effective buildings result and clients are satisfied. There are other groups that provide education and training in the soft areas.

This is a potential source of education and training material, but ASHRAE, to produce effective HVAC&R systems to our client's satisfaction, should develop programs that ensure that our excellent technology is correctly integrated into the construction process on time, on budget and to the performance specified in the brief.

- I challenge ASHRAE to develop programs and cooperate with outside bodies to develop those programs in all the soft aspects of ASHRAE members activities: business, law, project management, human skills and communication.

The 18th century poet John Donne wrote, "No man is an island." Each group of ASHRAE, be it chapter, technical committee, standards committee or Associate Society, is a human living community. It is a social structure of individuals who together, are greater in technical and human terms, than the parts. Members, as they develop through their careers, have different relationships to ASHRAE. Our ASHRAE is one of many communities to which our members belong. They have family, they have a workplace, they have ASHRAE, they may belong to other technical societies, they may belong to other social groups.

- I challenge ASHRAE to examine in each group that which makes the community of ASHRAE strong, both technical and social, and build upon this strength.

- I challenge, as in my PAOE, chapters to retain members during a career break.

In this diverse world of ASHRAE we must understand one another so,

- I challenge members to understand this Englishman's strategy and apply it worldwide.

And finally;

ASHRAE is like a fountain, one that sustains itself. As a fountain, ASHRAE puts out its knowledge, its guidance material, its structural strengths. This water of knowledge is captured by each individual ASHRAE member, committee, chapter and Associate Society worldwide, and used. Engineering is a closed loop profession. As each individual captures the water of knowledge, he/she develops it, and as in a fountain, pumps it back to the core to strengthen the central fountain to the benefit of the individual parts.

ASHRAE is a community of technology and people.

ASHRAE enables its members and society as a whole to grow.

ASHRAE as a community is enriched by the diversity of its members and those with whom it relates.

We adapt this to our needs and improve it to the benefit of all.

We build on the past. We build on the strength of our existing knowledge and the history of the great people who have supported our growth.

We cherish the present. We cherish our technology, we cherish our great friendships, we cherish the integrity in the way we work together, we cherish the opportunities to be part of a great industry worldwide.

We must be ready for the future: we must lay down foundations. The pace of change is rapid, it is only by recognizing the past and acting now that we can enrich the future through **The Community of ASHRAE.** ●