

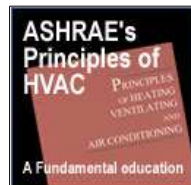
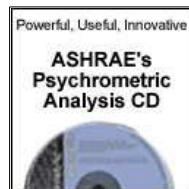
— Member Login —

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— Site Sections —

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Roadmap for the ASHRAE Web Site

Revised June 25, 2001

This Roadmap for the ASHRAE website has been produced by the Electronic Communications Subcommittee of the ASHRAE Special Publications Committee with input and participation from other interested ASHRAE members and staff.

The intent of the Roadmap is to provide background information and a discussion of issues associated with integrating the ASHRAE website with improvements in all of the functions and operations of the Society. The purposes of the Roadmap are to:

- Document the broad goals for the site: What do we want the site to do?
- Identify the primary functions that the website must perform to meet the goals, and describe desirable capabilities in each of the functional areas.
- Establish the benefits and costs of the desired capabilities
- Identify the issues associated with implementing desired capabilities, including
 - effects on ASHRAE revenues – publishing, courses, standards, advertising, membership.
 - current ASHRAE policies – commercialism, members' privacy, TC and Chapter websites, etc.
 - structure of existing ASHRAE information infrastructure – member database, Handbook, e-Journal, etc.
- Provide guidelines for planning and prioritizing improvements to the site.
- Identify and prioritize specific desirable capabilities and features.

This document should be considered a work-in-progress, which will be updated and refined in a "continuous maintenance" process as we receive feedback and input from various groups within ASHRAE.

Background

Electronic communications are transforming all aspects of ASHRAE, including meetings, publications, operations, member services, and public review. Like other organizations, ASHRAE is attempting to make use of new and emerging electronic technologies. Many ASHRAE groups and committees have established task groups dedicated to website integration. However, to date these efforts have not been coordinated with each other.

This document seeks to articulate a roadmap and vision for an integrated e-ASHRAE that provides:

- Centralized operations with an integrated database and website
- International accessibility through the web
- Reduced operating costs through reduction of paper, postage, and handling
- Reduced burden on staff and volunteers by streamlining operations through webbased planning, deployment, and data gathering
- Increased revenue through new marketing mechanisms and increased outreach
- Increased visibility by offering better access to technical information
- New and improved services to the membership

Our members have come to expect "seamless" access to information. For example, a member who changes jobs expects to update his or her contact information by logging in once to the ASHRAE Website and then having all subsequent communications with ASHRAE reflect the current information. The Handbook has traditionally been a fourpart, 5 kg (11.02 lb.) bible on our members' shelves. Now it is a 10 g (0.35 oz.) searchable CD, effortlessly carried with the member's computer, with near-instant search capability. Members who thumbed through the Journal every month now want to skim the articles' abstracts monthly and to effortlessly search past issues for specific topics.

For ASHRAE, this change in expectations means we need to transition from paper to electronic publications and communications. It also means we need to formulate a business strategy to preserve or enhance the revenues traditionally garnered by selling advertising in the paper Journal.

The Electronic Communications Subcommittee was established to help ASHRAE adapt to this new e-commerce environment. Specifically:

- How should ASHRAE update its functions to take advantage of computer-based services and capabilities?
- What e-services should ASHRAE offer its members?
- How should ASHRAE publications and products be designed, distributed, and sold?
- How does the electronic environment affect ASHRAE policies and procedures (e.g., commercialism policy)?

If ASHRAE is to continue to fulfill its mission of service to its members, the HVAC&R industry, and society, it must function efficiently while maintaining its fiscal health.



This document is intended to provide some guidance to ASHRAE staff and committees on the ASHRAE website – its philosophy and functions, and their fiscal implications.

We hope that this document will provide a structure for discussion, debate, and proposals within the Society. Therefore, it is not a fixed guideline, but a flexible framework within which members' ideas and requests can be considered. A major goal of this effort is to identify design and policy decisions that must be made in the early stages of the evolution to "e-ASHRAE" as they may enable or limit the functions that can ultimately be supported.

Broad Goals For The Website

The website should support ASHRAE's vision, which is that ASHRAE wants to be:

- The global leader in the arts and sciences of heating, ventilation, air-conditioning, and refrigeration
- The foremost, authoritative, timely, and responsive source of technical and educational information, standards, and guidelines.
- The primary provider of opportunity for professional growth, recognizing and adapting to changing demographics and embracing diversity.

What should the site do to support this vision? We have identified the following goals:

- Enhance ASHRAE's image
- Improve the flow of information between ASHRAE members, staff, volunteers, customers, sponsors, and the general public
- Attract new members and customers
- Increase revenue
- Reduce the costs of communication
- Improve service to our members
- Reduce the burden on staff and volunteers

To meet these objectives, the site should be:

- Pleasing to the eye
- Easy to navigate and find desired information
- Designed to eliminate redundant information
- An integrated part of Society, Regional, and Chapter operations
- Easy to maintain and update

Functional Areas

We have identified the following major functions of the ASHRAE website. These functions are not mutually exclusive categories but are cross-cutting areas that together make up all the functions of the site.

- *Access to technical information.* Providing or improving access of the membership and the general public to ASHRAE's information products.
- *Information Architecture.* Organization of and access to data on the site.
- *Member services.* Update member information, pay dues, bookstore, chapter support, etc.
- *E-Commerce.* Providing or facilitating revenue through advertising, publication sales, content licensing, links, market research, other revenue sources.
- *Framework.* Structure and usability of the site.
- *eMeetings.* Registration, scheduling, agendas, minutes.
- *Operations.* "Back office functions," staff, intranet, manuals of procedures, policies.
- *Web content.* Articles and features, columns, community building, forums, threaded discussions, "What's New," newsletters.

The following sections summarize each of these functional areas. More detailed discussions are provided in the attachments.

Access to Technical Information

Background

The website should be ASHRAE's primary vehicle for providing and improving access to its information products, by the membership and the general public. Development and distribution of technical information is extremely important to ASHRAE's mission. Members consistently identify technical information as one of the most important benefits of ASHRAE affiliation. Fully integrating the distribution of technical information with the website will:

- Help attract new members and retain current members
- Reduce the costs of distributing information
- Increase sales revenue
- Attract visitors to ASHRAE's site, and expose them to the Society's other

offerings

Some examples of information products include ASHRAE Journal, Transactions papers, standards and guidelines, bulletins, special publications, Professional Development Seminar information, committee information, vendor directory, public review documents, links to regulations, upcoming meeting topics, research project information (RTARs, work statements, and reports), etc.

Capabilities

The design of the site should encourage people to come to the site to find technical information and make the information as easy as possible to find and to download or otherwise use.

The site should allow the user to develop a customized "My ASHRAE" homepage with links to their most frequently used pages within the site.

Users should be able to find specific answers to technical questions. These answers could be offered with increasing levels of detail: first a Frequently Asked Questions list, then technical data, finally contact-an-expert (such as a TC chair or College of Fellows member).

The site should offer dynamic, customized serving of related content. For example, a visitor looking for Standard 62 would also be offered links to additional information and publications related to indoor air quality.

Implementation Issues

This function will require advanced search engine capabilities and an integrated database that indexes all publications and other information products. New standards will be needed for development of information products, including the assignment of appropriate metatags and keywords to each piece of information.

The information server will allow different levels of access to the information on the site, according to assigned access rights. The Information Architecture section discusses database and access permission functions.

Much of the information content offered through the site will be developed specifically for the web medium, as discussed in the Web Content section.

Links to other sites could be an important part of the ASHRAE site's information services. To provide visitors with a complete range of information, and to take advantage of opportunities to increase revenues to ASHRAE, these links may include sites with varying degrees of commercial content. The newly formed Ad-Hoc Committee on ASHRAE's Commercialism Policy should consider how ASHRAE can take full advantage of the web medium to provide the best service to its members and visitors while remaining true to its noncommercial status. In particular, ASHRAE will need a policy governing links from ASHRAE websites.

Prioritized Needs

The most important high-level needs for this function are:

- Coordinate with database development to include capabilities to index all information on the site and to provide various levels of access permission.
- Determine how the ASHRAE commercialism policy can be adapted to allow linking to information resources that may have some commercial content.

The most desirable features for the short term include:

- Allow users to develop a customized "My ASHRAE" page
- Adopt a policy that all ASHRAE information will be available electronically through the website

Information Architecture

Background The most successful corporations today recognize the importance of integrating website and database functions. In an integrated design, the website functions as a tool to gather data from users to feed the underlying database and to retrieve, format, and present the requested data to the users. The design and integration of the database are critical for the success of virtually all the functions of the website.

A key feature of the database design is that each piece of data exists in just one unique data record. Each of these records, such as contact information, roster data, meeting schedules, policies and procedures, etc., is accessed through the database by the various functions that use the information. Information need be updated only once, and all related functions immediately have access to the up-to-date data. Access to information is controlled by access permission levels assigned to all users of the site.

An integrated website/database design will be necessary for the site to achieve its potential to:

- Improve services to the membership
- Reduce burden on members and staff
- Reduce the costs of distributing ASHRAE products and information
- Enhance revenues
- Improve communication and outreach
- Reduce errors caused by duplication of information

Important capabilities and implementation issues are summarized below, and [Attachment 2](#) provides additional discussion of this function.

Capabilities

The database structure should be designed to encompass all the functions that are performed through the website. There may be separate databases for different classes of information, such as member data, TC records, research, standards, etc. However, there would be no duplicate data. For example, a member's data should be centrally and securely located within the database in a manner that is accessible to all of the functions that use that data. If the member serves on a TC, the TC roster would link to the member's central database record. When the member buys a publication on-line, the shipping information defaults to the member's preferred address. If the member moves or changes his/her contact information, the changes cascade through all parts of the database that refer to that member.

Implementation Issues

The implementation of the database structure is the central task that enables all of the other capabilities discussed in this document. Developing this structure will require a careful planning and design effort to ensure that it is versatile and robust for the long term. The design should specifically include provisions for adding additional features and capabilities that are currently not completely defined.

The last decade has seen the development of a new corporate role to oversee the integrated website and database functions – the Corporate Information Officer. ASHRAE should likewise consider consolidating the Society's database and website responsibilities under a single lead.

The cost of implementing the integrated structure will need to be determined. It is quite likely that the structure of the new Oracle database will permit easy integration with the website. A functional specification for the integrated structure should be developed and prioritized. This specification can then be sent to vendors for cost estimates.

As previously noted, the benefits of this effort are significant. There will be direct benefits associated with increased staff productivity, reduced burden on volunteers, and reduced printing and mailing costs. However, the largest benefits will be the continued vitality and viability of ASHRAE. These benefits can perhaps be viewed in terms of avoiding the costs that would be incurred if we do not act: continued decrease in revenues from print publications, dissatisfaction of members and volunteers with the perceived inefficiencies of the organization, inability to attract new members, etc.

Prioritized Needs

The most important high- level needs for this function are:

- Consider assigning database and website responsibilities to a single staff member.
- Develop a functional specification that will allow implementation costs to be estimated.

In the near term, the membership data should be integrated into Society- level operations.

Member Services

Background

Member services are those services provided to members in connection with any of their ASHRAE activities, including:

- Purchasing publications
- Paying dues
- Registering for meetings and getting meeting information
- Updating contact information and biographical data
- Serving on TCs, SPCs, standing committees
- Participating in Chapters and Regions
- Accessing technical information
- Accessing educational services

ASHRAE members are increasingly accustomed to fast and efficient electronic

interactions in many areas of their lives, and these member service functions are of the type that are commonly delivered electronically. For example, members typically expect to easily store, retrieve, and edit their contact information in a central database through a web connection. They expect to accomplish organizational functions such as exchanging or updating rosters electronically without cumbersome conversions or paper transactions. It is essential for ASHRAE to meet and exceed these expectations if we are to maintain the commitment of our members and volunteers.

Important capabilities and implementation issues are summarized below, and [Attachment 2](#) provides additional discussion of this function.

Capabilities

Most of the website functions related to member services depend on developing an integrated relational database that stores and retrieves data, tracks permissions and preferences, and facilitates access to the desired information.

- *Integration of Database and Web.* All member or customer information is contained in a single record in the database. All ASHRAE activities are tracked through the central database and linked to the member information.
- *Website and Database Access.* On entering the website, a member logs on. The user name and password (or member number and PIN) are linked to their contact data, similar to the user name process utilized by many commercial websites such as Amazon.com, Expedia.com, and others. After login a user's permissions and access follows them through the website.

Database access is granted for creation of lists based on a member (or nonmember's) activities: for example, any chapter board of governors can access the entire chapter's database, any regional officer can access the entire region's database, any committee member can access the committee's roster.

Members are empowered to update their own contact information through the website. That information will cascade through all lists of which they are a part.

- *Assignment Rights.* Committee chairs, chapter presidents, etc., can assign members to roles. For example, chapter presidents can assign chapter members to the lists for committee chairs or Board positions. DRCs can assign regional members to positions such as RVCs and regional officers. TC, SPC, and SSPC chairs can assign members and nonmembers to proposed committee rosters, pending the appropriate review by Standards Committee or TAC. Members can assign themselves to as many chapters as they choose.
- *Automated Recording of Activities.* Members' activities are linked to the database and tracked for tallying of PAOE points, distinguished service awards, etc.
- *Centralized Dues Collection.* All membership dues (chapter and Society) are collected at the Society level either through the website or mail-in forms. Chapter officers can download current dues status for all chapter assigned members.
- *Centralized Registration.* Any member can register for a Society meeting, a PDS course, or a CRC meeting through the website (or by mail). Eventually provision should be made for website registration and dues collection for chapter meetings, seminars, and other events.
- *List Services.* Members (and nonmembers) can subscribe (or unsubscribe) to list services that are managed by Chapters, Regions, TCs, SPCs, and other Society committees.
- *Public Data.* Chapter members can select to make certain contact data public (e-mail, phone, fax, and/or address). Public contact data can be located through a search engine by member's name and city.

Implementation Issues

The implementation of these member service capabilities is closely related to the implementation issues discussed above under Information Architecture. Implementation depends on the appropriate design and execution of a database structure that provides the desired features.

Prioritized Needs

The most important high-level need for this function is to put into service a member database designed according to the key principle that each piece of

information exists in only one location and is accessed through the database by the functions that use it.

The most desirable features for the short term include:

- Allow each member to access and update their own contact information
- Allow committee chairs and chapter officers to access their groups' rosters

E-Commerce

Background As ASHRAE's traditional print-based revenue sources continue to decline, we will need to develop new sources based on electronic transactions or e-commerce. Development of these new revenue sources is critical to ASHRAE's ongoing viability as an organization. However, in addition to providing revenues, ASHRAE's e-commerce activities should be designed to maintain and strengthen ASHRAE's status as a primary provider of technical information.

Important capabilities and implementation issues are summarized below, and [Attachment 3](#) provides additional discussion of this function.

Capabilities

The e-commerce capabilities of the ASHRAE website could include the following features:

- Online information services by subscription or other fee arrangement, including chat rooms, threaded discussions, other services as described in the Web Content section.
- Banner advertising
- On-line directory listings and links for a fee
- Sale of technical content to other organizations for use on their own websites
- On-line learning

Implementation Issues

The most important issue for taking advantage of new e-commerce revenue sources is the Society's commercialism policy. The current policy governing commercialism on ASHRAE web sites was established when the transition from print to electronic media had just begun. The policy was purposely cautious and conservative, to ensure that the principle of noncommercialism would be maintained in the face of uncertainty as to how the transition would affect ASHRAE. It would be appropriate at this time to review the commercialism policy to determine how ASHRAE can use the web medium to provide the best service to its members and visitors and to take full advantage of potential revenue-producing features while maintaining its standing as a provider of objective, noncommercial technical information.

Prioritized Needs

The most important high-level needs for this function are:

- Review of the Society's commercialism policies
- Evaluation of the costs and potential revenues of the various e-commerce opportunities

Framework

Background

This functional area addresses those features that comprise the structure and usability of the website. The key principle for the website framework is that the site should be as ASHRAE Web Site Roadmap 10 Draft, June 25, 2001 easy as possible to navigate and use and that users should find the keyboard functionality and features that they typically expect to find in other sites and applications. [Attachment 4](#) provides additional discussion of this functional area.

eMeetings

Background

Currently, ASHRAE uses the web page to assist in the meeting registration and the posting of ASHRAE meeting registration documents, scheduling information, agendas, and meeting minutes. In the future, an ASHRAE eMeeting would be capable of incorporating some or all of the following new capabilities: on-line scheduler, on-line interactive VRML facility map, an on-line "meet-me" facilitator, web-based meeting and a robo-expo viewer.

Development of the ASHRAE eMeeting could accomplish the following:

- Increase revenue for ASHRAE by increasing meeting attendance

- Decrease ASHRAE costs by making ASHRAE staff more efficient at meetings and/or reducing the number of ASHRAE staff at meetings
- Create new revenue for ASHRAE by developing new eMeeting paradigms
- Create new revenue for ASHRAE by developing new mechanisms for "pay-for-viewing" advertising, etc.
- Increase manufacturers' interest in ashrae.org as a resource for their organizations, thereby increasing visitors to the site and, potentially, the number of ASHRAE members

Development of the ASHRAE eMeeting is central to the functionality of the ASHRAE web page because it can reduce ASHRAE staff costs and increase the value of ASHRAE meetings to ASHRAE members.

Important capabilities and implementation issues are summarized below, and [Attachment 5](#) provides additional discussion of this function.

Capabilities

In the future, an ASHRAE eMeeting would be capable of incorporating some or all of the following new capabilities:

- *On-line scheduler.* This function would allow ASHRAE members to browse the meeting schedule, select those agenda items that they would like to attend, and have them posted to a member's meeting schedule. This schedule could then be printed, updated, or transferred to a member's PDA or laptop.
- *On-line reservation of meeting rooms and A/V equipment.* ASHRAE members would be able to reserve meeting rooms and A/V equipment on-line through the web page. Currently, this function is handled by ASHRAE staff on a case-by-case basis.
- *On-line hotel reservations.* Currently, the ASHRAE web page lists hotel information on the web page. ASHRAE members must then submit a reservation to a hotel booking service. Reservations are then made by the conference bureau and are FAXed, or emailed to the ASHRAE members. A future version of this would incorporate more on-line features, such as are available for airline reservations.
- *Hyperlinked agendas, minutes, and on-line schedule.* ASHRAE members would be able to pass information between agendas, link to minutes from previous meetings, and/or post information to their personalized schedule – all of which would be handled by the ASHRAE web page.
- *Paper abstracts and ordering information hyperlinked to the technical sessions.* ASHRAE members could view paper abstracts and download PDF files of papers directly from the web through links to the technical sessions.
- *Virtual committee meetings,* allowing ASHRAE business to be conducted by members in different physical locations.
- *ASHRAE Headquarters Room print services accessible through the web.* Currently, many hours of staff time are spent printing documents for committee members at the semiannual meetings. This process could be streamlined by allowing members to print files directly via a web connection to the printers.
- *Audio recordings of the session to be linked to the technical papers after the meeting.* ASHRAE meetings could be audiotaped and the sessions digitized and attached to the meeting papers for purchase by ASHRAE members as part of the technical paper. ASHRAE members' technical presentations could also be made available for attachment to the papers.
- *On-line interactive VRML facility map.* ASHRAE members could tour a meeting site using an interactive VRML viewer. This would allow them to locate sessions and determine how to navigate to a session using the web page or a download from the web page onto their PDA or laptop.
- *On-line "meet-me" facilitator.* ASHRAE members could make their meeting schedule "public" to be viewed by other ASHRAE members. Such a service would be highly valuable to manufacturers who might want to plan special advertising booths, meetings, promotions, etc.
- *Web-based meeting facilitator.* ASHRAE members could attend meetings via the web using a web cam. This could expand the participation of ASHRAE members to ASHRAE chapters, etc., who could view the meeting from the office PC or ASHRAE chapter meeting room.
- *Robo-expo viewer.* ASHRAE members could "tour" the exposition using a robotic camera that they could control from the PC. This function could be

implemented using a canopy of cameras posted at the exposition that ASHRAE members could visit and control to tour the exposition site, visit vendors' booths, etc.

Implementation Issues

Implementing new electronic meeting capabilities and migrating current processes to the electronic medium will require a substantial investment of staff time, volunteer effort, and programming resources. However, the benefits of this investment, in terms of reduced staff costs, increased attendance, and improved engagement of volunteers, will provide a quick payback. On the other hand, delaying the transition will result in increased frustration on the part of staff, volunteers, and meeting attendees.

Several of the features described will require development of new capabilities. The online scheduler will require a database to store meeting records for ASHRAE conference visitors and to display records for members upon request. The VRML meeting map will require creating an interactive 3-D digital map of each conference site. The Robo-expo viewer will require an array of cameras, set up to broadcast images from the expo. Cameras could be pre-aimed at the various booths to allow for "go to" panning capabilities.

Prioritized Needs

The most important high- level needs for this function are:

- A commitment to identify the meeting functions currently accomplished by paper and surface mail and to accomplish those functions using the electronic medium.
- A recognition of the long-term savings in staff costs and volunteer effort, and the improvement in attendee satisfaction, resulting from the use of electronic capabilities

The most desirable features for the short term include:

- On-line scheduler
- On-line reservation of meeting rooms and A/V equipment
- On-line hotel reservations
- Hyperlinked agendas, minutes, and on- line schedule
- Paper abstracts and ordering information hyperlinked to the technical sessions
- ASHRAE Headquarters Room print services accessible through the web
- Virtual committee meetings
- Robo-expo viewer

Operations

Background

Integrating ASHRAE's operations with the website, using the principles described in the Information Architecture section, will enable ASHRAE to reduce costs and improve service to members, volunteers, and the general public. This integration is necessary if ASHRAE is to operate efficiently while continuing to expand its activities.

The database architecture provides the framework for rationalizing ASHRAE's operations and making more efficient use of staff and volunteer time. The website allows staff and volunteers to access and exchange information quickly and efficiently.

The integration of operations with the website and its database structure will require careful planning. The database must be designed to accommodate the operational requirements, and operations will need to be adapted to take advantage of the capabilities of the website.

Capabilities

The integrated structure maintains master copies of all documents in the central database. Staff and volunteers access the database through the website or the headquarters intranet, according to their permission levels. Updates and version control are handled through the database system. The database also contains committee rosters and mailing lists and generates mailings as needed. Most information is distributed electronically, drastically reducing labor and postage costs for mailing. The public review process for standards is administered electronically through the website, as are annual Handbook updates and peer reviews of technical publications.

Implementation Issues

The integration of operations with the website will require extensive planning and allocation of staff and budget resources. This integration also offers enormous potential to reduce costs and increase ASHRAE's effectiveness. Achieving these benefits requires continued development of the headquarters

database to incorporate the capabilities required for web integration. Preparation should begin as soon as possible for design of the upgraded database to provide the structure for eventual complete integration of ASHRAE's web and operational functions.

Prioritized Needs

The most important high-level needs for this function are:

- Establish a strategic objective to fully integrate the Society's operations with the website and the underlying database.
- Identify the specific database capabilities that are required to integrate with the Society's operations and establish a phased database development plan.

The most desirable features for the short term include:

- Increase the use of the website as a communication tool between staff and volunteers.
- Implement a system of access permission to ensure that information available through the website is accessible only to authorized users.

Web Content

Background

The web content aspect of the ASHRAE site encompasses useful information that is offered to attract visitors to the site. The web content function can be seen as an expansion of the role that is currently played by the ASHRAE Journal, with additional features that are made possible by the electronic communication medium.

We want our members and the general public to be in the habit of accessing ashrae.org (1) to be alerted to timely events in HVAC&R and energy and (2) to be able to answer questions or learn more about news items, issues, or topics they have heard about elsewhere. This means providing news stories, relevant ASHRAE position papers, Journal articles, and links to stories on other websites. To provide such information, ASHRAE will have to use staff resources to identify and monitor news sources and update the Web page "News" section and its links. However, keeping track of the visits to the ASHRAE Web site (and the visitors' demographics) should enhance the incentive for other organizations to provide news and information to ashrae.org in the expectation that the links back to their Web sites will bring them the e-traffic they desire.

Important capabilities and implementation issues are summarized below, and [Attachment 6](#) provides additional discussion of this function.

Capabilities

Ultimately, the web content of ashrae.org should include the following features:

- News stories, with links to sources
- Announcements of published codes, regulations, standards, etc.
- Frequently asked questions, HVAC&R glossary, and/or "Ask Jeeves" type of service
- Threaded discussions
- List server
- Columns and newsletters
- ASHRAE or chapter news
- Selected ASHRAE publications
- New product announcements

Implementation

We want many visitors to our website, including the nonmember public, but to achieve this our content must be current, informative, authoritative, and entertaining. In addition to the labor needed to effect this, increased traffic will require hardware and the communications links to support it.

Regular updates and maintenance of threaded discussions will require significant staff effort. There will be an initial large effort to identify news sources and links (e.g., state regulatory agencies have often been mentioned) and negotiate the agreements with them. Maintaining such relationships and links will not be too time-consuming, but we should not underestimate the initial staff time needed to establish any of these functions. A key to supporting these functions, and obtaining revenues from them, will be maintaining good records of the numbers and characteristics of visitors to ashrae.org. Some of the features listed above may be offered on a subscription basis. Offering some services only to members (for example, the "Ask Jeeves" function) could encourage membership or at least reinforce current members' feelings of positive value from ASHRAE. Links to the ASHRAE Bookstore – to "learn more" about this topic – must be very

focused and specific, but this also is an important source of revenue to support the functions.

Ideally, the current functions of print publications such as the Journal and Insights would be expanded and migrated into new electronic versions, and these functions would be integrated into the new website.

Prioritized Needs

The most important high- level needs for this function are:

- A reevaluation of the Society's commercialism policies to take advantage of potential revenue-producing features while maintaining ASHRAE's standing as a provider of objective, noncommercial technical information.
- An examination of the roles and functions of ASHRAE print publications and a plan for making these functions an integrated part of ashrae.org.
- A means to encourage sign-ins, with a user name and password, or a "cookie management policy," to obtain the necessary demographics on the website traffic. This information is important to help ASHRAE generate the revenue from advertising, links, etc., to support the web content and other website functions.
- A feedback mechanism to (1) see how many people are using these services and (2) give website visitors an opportunity to tell ASHRAE what topics and services they value on the site.

The following features, listed with easy-to- implement capabilities first, are desirable for content on the ASHRAE site:

- Basic news story summaries and links to the full story on the news service web page, mostly updated weekly, with some daily items
- HVAC&R glossary
- New product announcement
- List of State Agency Regulations (building codes, etc.) and links to each agency's web site giving its address and telephone
- Trial of one threaded discussion
- Feedback/suggestion page

Attachment 1 - Discussion Of Users

The users of ASHRAE's website can be classified as external and internal users.

External users include ASHRAE members and nonmembers, who use the web site to access ASHRAE information products. Many are members of the general public who have little or no involvement in the HVAC industry or individuals who are involved in the industry but have not participated in or are not familiar with ASHRAE activities. Nonmember external users are likely candidates to become members. External users may come to the site to get:

- Standards and other publications for purchase
- Information on Standards and other publications
- General information about ASHRAE or HVAC&R-related issues
- Specific information about an HVAC&R-related topic

Internal users are ASHRAE members and staff who use the web site to help conduct ASHRAE business, including activities of Chapters, Regions, Technical Committees, Standing Committees, and Standards Project Committees. They use the site to download and to upload meeting schedules, agendas, and minutes; draft documents; ASHRAE policies and procedures; and information specific to the activities of the particular ASHRAE groups.

The same individual might be considered an external or internal user depending on how they are using the site at a given time.

Attachment 2 - Information Architecture And Membership Services

Integration of Database and Web

There is no duplicate data. All member or customer information is contained in a single record in the database. All contact information, sales information, roster... link back to that unique data record.

This same philosophy holds for forms (like speaker information forms, PAOE forms...), policy statements (such as the current commercialism policy), membership bios and manuals (like the CRC planning manual, the manual for chapter operations, MPAS...).

All ASHRAE activities are tracked through the central database and linked to the member information. Examples include the chapter information questionna irre, ship to information for publication sales, speaker information for programs at Society meetings, rosters for committees and membership dues collections.

Website and Database Access

On entry in the website, a member logs on. Non members can create a user name and password that is linked to their contact data (similar to the user names utilized by many commercial websites like Amazon.COM, EXPEDIA.COM and others). Upon login a customer's, non-member's or member's permissions and access follows them through the website. From filling a shopping cart at the on-line bookstore to downloading chapter data for a Chapter or Regional officer permissions are ultimately linked to the user name and password (or Member # and PIN).

Database access is granted for creation of lists based on a member (or non-member's) activities: for example any chapter board of governor can access their entire chapter's database, any regional officer can access the entire region's database, any committee member can access their committee's roster... In all cases an empowered individual may download an electronic database version of the contact information for the lists to which they are granted access.

Members are empowered to update their contact information through the website. That information will cascade through all lists that they are a part of.

Assignment Rights

To the extent possible (and appropriate) people in charge can assign members to roles.

Examples include:

Members can assign themselves to as many chapters as they choose

Chapter Presidents can assign chapter members to the lists for committee chairs or Board Positions (the Chapter CIQ).

DRCs can assign regional members to regional positions (RVCs and Regional Officers) TC, SPC and SSPC chairs can assign members and non-members to proposed committee rosters (pending the appropriate review by Standard's Committee and TAC)

As appropriate an individual's rights may be time limited (e.g. a Chapter President's assignment rights expire each year on June 30th).

Automated Recording of Activities

Activities that are linked to the database will be tracked. This includes activities that generate PAOE points like # of new members, # of student members, etc. It also includes tracking of the volunteer service of members and non-members for their ASHRAE biography and distinguished service tally form. The database should also track ASHRAE awards, ASHRAE publications (articles, papers) and presentations (seminars, forums...).

Centralized Dues Collection

All membership dues (chapter and Society) are collected at the Society level either through the website or mail- in forms. Chapter officers can download current dues status for all chapter assigned members.

Centralized Registration

Through the website (or by mail) any chapter member can register for a Society meeting, a PDS course or a CRC meeting. Eventually provision should be made for website registration and dues collection for chapter meetings, seminars and other events.

List Services

Members (and non-members) can subscribe (or unsubscribe) to list services that are managed by Chapters, Regions, TCs, SPCs and other Society Committees.

Public Data

Chapter Members can select to make certain contact data public (email, phone, fax and/or address). Public contact data can be located through a search engine by members name and city.

MIA

Chapter members' records can be listed as "deceased" or "unable to locate" by Chapter Presidents or DRCs.

**Attachment 3 - E-Commerce
Draft Specification - Ecommerce Possibilities For ASHRAE.org**

Description

We want to both:

- Increase revenues for ASHRAE, and
- Get manufacturer's more interested in ashrae.org as a resource for their organization, thereby increasing visitors to the site and (theoretically) the number of ASHRAE members

One way to accomplish both objectives is to develop ways to conduct some sort of ecommerce or other commercial use of ashrae.org while still maintaining the ASHRAE standards of noncommercialization. This would be in ADDITION TO the ongoing commercial transactions conducted through the ASHRAE bookstore (and CD-ROM sales) for such things as sales of the ASHRAE Handbook, etc.

There are several business models of web site revenue streams that have been put into practice by other organizations with varying degrees of success. Keep in mind, however, most organizations have "sales and profits" as their primary goal, and an organization such as ASHRAE must be very careful when considering adopting some of these strategies.

The key features of these website revenue streams and my own assessment regarding their applicability to ASHRAE are listed below:

- **Online chat room – hosted**

- For an added fee (monthly or annual subscription fee), give website visitors access to a technically based online chat room. In a hosted room, a person with technical proficiency in the given subject area is the "editor" of the group and the person to which all questions are sent.
- Analysis – the potential liability to ASHRAE of someone giving out incorrect or misused information is too great to consider this an option. Besides, it would be difficult to find a completely objective technical person to be the host.

- **Online chat room/threaded discussion – not hosted**, but edited for vulgarity and appropriateness of content

- Same concept as the hosted chat room except in this case visitors are allowed to create their own "thread" and the editor's role is not technical but for behavior purposes only.
- Analysis – this option doesn't get into the liability problems associated with the "hosted" option, but firm rules about use of this forum for commercialization (otherwise known as "spamming") would need to be enforced. If done correctly and in association with some other items on this list, this idea could work (as part of a monthly/annual subscription plan for additional ashrae.org services).

- **Links for A Fee**

- If there a comprehensive online directory of all businesses associated with the HVAC industry (for free) and additional services (such as a hotlink back to the companies' websites) were available for a small annual fee (collected one month before the annual meeting), I don't think too many companies would turn down the offer. As long as the fee is reasonable, that is, such as in the following scenario:
 - Listing only...free
 - Hotlink to company's website...\$100 per year
 - Hotlink + logo or brief company description (max 25 words)...\$250 per year
 - All above + company logo and small photo...\$500 per year
- Analysis – I think this is something that should be pursued. Costs to

implement would be minimal and it would not in any way undercut the impartiality and noncommercialization aspects of the ASHRAE mission statement.

■ **Banner advertising**

- This is the most common form of revenue-generation on websites, and should be fairly easy to accomplish. However, companies and other organizations who will advertise will want complete, historical documentation of number of visitors to website, which sections they visited, what they downloaded, what their role is within the industries covered by ASHRAE (this is vital), as well as the number of page views of the part of the website on which the company is advertising. They will need to have at least as much information as they receive when they decide to place a print advertisement in a magazine.
- Price breaks and preferential treatment can be given to companies who also advertise in the ASHRAE Journal, where additional promotion of the website (and company link information) can be provided.
 - An excellent example can be seen by watching Penton Publishing, publisher of several industry-related magazine BUT ALSO owners of HVACShowplace.com, a virtual tradeshow for the HVAC industry. In every issue of their magazines they have a separate insert discussing the ongoing developing of the internet and its role within their industry – along with a listing of new information and sponsors now on their own website at HVACShowplace.com
 - Another good example taken from the pump industry is that of Randall Publishing. Randall publishes many different magazines, including Pumps and Systems magazine, a very high quality magazine dealing with issues and events in the pump industry. Randall Publishing also manages the Pump-Zone.com, and offers very attractive advertising rates which allow for mix-and-matching combinations of print and online advertising, as well as ongoing promotion through trade show participation, etc.
- Analysis – I think this is something worth pursuing, especially in those areas where greater flexibility in ad rates and placement can be given to advertisers who participate in both the ASHRAE Journal and the website. I believe if a comprehensive ad rate card with applicable online visitor data (described previously) was produced and put in the hands of the right people (this in itself could be a trick since online advertising is fairly new and some companies split online activities out of their normal marketing/advertising budget), it would be an easy way to generate revenue. There would, of course, need to be some review of the content used in these banner ads to make sure they do not imply an endorsement from ASHRAE...as an example, you would probably not want to allow banner advertising on any page where technical how-to or similar information is communicated, since it might give the reader/viewer the opinion an ad on that same page was endorsed by ashrae as THE solution or A CORRECT solution to the given technical problem discussed on that page.

■ **Sale of training/technical content to companies for use on their website**

- I think this has some promise, but the first step would be communicating the types of information currently available from ashrae.org to the potentially interested companies who might use this content on their site. There is also nothing to legally stop these same companies from hot linking over to the ashrae.org site today to give this information to visitors on their own website, so some sort of value-added proposition would need to be developed.
- Analysis – Not being an expert in all the fields for which ashrae.org offers information and solutions to technical issues and problems, I don't have a feel for the uniqueness of this information nor for its possible value to other companies/organizations. This is a question for the technical committee - perhaps they could view a report of the types of visitors who download certain types of information from the website and attempt to draw some conclusions regarding trends and businesses or industry segments which might benefit from a more wide scale distribution of this technical information.

■ **Hub/Portal for the coming boom in online learning**

- I believe this option offers the greatest possibilities for long term success and revenue growth, and more than any other organization or company I can think of, ASHRAE's role in the industry makes it uniquely qualified to

lead this effort. Online learning – either by itself or in association with traditional classroombased instruction – is going to be one of the biggest changes in our culture over the next several decades.

- Using special online-based-instruction software, classroom curriculum is converted into web-based training. This can be augmented by classroom training or by use of a CD-ROM, but the software being used today by universities and large companies is getting so good that in many cases all the training and testing is done completely online. ASHRAE's history and position as an impartial hub for technical information makes it a prime candidate to lead in this area.
- For more information about the software required, check out www.webct.com as an example. Also the Learning Resources Network at www.lern.org is a great resource.
- Analysis – I think this is something that should be pursued, although I am not sure the Electronic Communications Subcommittee is the correct place. I certainly see a huge future for ASHRAE in this area and a great possibility for long-term revenues without undercutting the values ASHRAE stands for.

Business Case

- **This is a key part of ASHRAE's mission:** to increase the number of ASHRAE members as well as (in the case of the online learning scenario) more completely fulfill its role as the primary source for technical information (and training) for issues in the HVAC industry.
- **Costs:** Minimal in terms of design time and programming required. The biggest cost may be the potential loss of ASHRAE's industry role as an impartial, non-commercial "exchange house" for technical information. As with other types of organizations and media (take, for example, a magazine covering the personal computer industry), it is very difficult to draw a distinction in the minds of customers/users where the commercial part of the venture begins (in this example, the selling of advertising space to computer vendors) and the impartial reporting of information.
- **Benefits:** The benefits to doing this will be twofold: the revenue increase will offset the minimal costs involved in setting up some of these ideas, and the links and banner advertising from companies will lead them to take a bigger interest in ASHRAE and perhaps increase the ASHRAE membership as a result.

Design Implications

- **Links**
 - This can be done through standard HTML and is quite easy to do, although a databasedriven link listing would be easier to keep updated and more effective
- **Database of Visitor History** (with or without cookies)...any prospective advertisers to the website will require this
- **Customizable (by user) homepage for ASHRAE.org**
 - Not previously discussed in this paper, this is, however, an effective way to get visitors to make your website their homepage. If you give them the ability to modify the links on the page (such as their favorite sports news site, their favorite search engine, etc), they will be more likely to make ashrae.org their default homepage. For examples of this, see excite.com and yahoo.com, both of whom offer an exotic and comprehensive way to do this. I am not suggesting anything this expansive for ASHRAE.org, but adding a weather link, news feed, plus the ability to customize a few other links on the homepage might lead to greater "stickiness".
- **Subscription services for access to special website features**
 - This could be done either through an expansive content management system or by a master web editor who keeps track of all the major changes/editions to a site over the course of a week and drafts a weekly email (with links back to appropriate sections of ashrae.org). This would lead to increased web traffic which would lead to higher ad rates for banner advertising, etc.
- **Online chat/forum**
 - I believe this capability already exists in the software currently used to run ASHRAE.org, but it does not there are several very good off-the-shelf programs you can buy to accomplish this.
- **Online learning**
 - I would suggest this has both design and "branding" implications: ASHRAE needs to advertise and promote itself more as the source for technical information AND training...maybe this could be done through creation of a separate .com called something like ASHRAEUniversity.com or something like that whereby the continuous learning aspect of the program would be highlighted and not lost on the main ashrae.org website.

Attachment 4 - Framework

This memo represents the specification for the Framework of the ASHRAE Web site. This is just a part of an overall functional specification addressing the entire ASHRAE Web site. This initial draft specification does not address the priority of development for the items identified.

A. Input Framework

1. Input

- a. For activities requiring personal information, the web site should draw upon the membership database. This would reduce amount of information an individual would have to input. There should be an opportunity for the site visitor to change the information being used for the transaction. This might help ASHRAE identify the extent to which non-members are using member discounts and privileges.
- b. Web pages soliciting information should use the tab button to navigate between input fields.
- c. Examples of input provided by a visitor include data required for a business transaction, information required making a submission (forums, seminars, symposiums, articles).

2. Navigation

- a. There should be a site map for navigation. This map should show the nonmember and member parts of the site.

3. Search

- a. A site search engine must be available to all visitors. Access to the items located by a search will be restricted according to membership status. Some information is for members only.
- b. The search engine will provide the opportunity to perform more narrow searches on previous search results.
- c. Searches can be narrowed to different parts of the web site. An example of search limit options included Specifications, Guidelines, Policies, Procedures, Research, Transactions, and Articles.

B. Output Framework

1. Printing

- a. The web site must provide the means to print in an acceptable format. This means the print output should not be cluttered with the Internet browser frame, navigation thumbnails, book marks or other operational tools within the web site. Only the useful content information should be printed.
- b. Information to be printed includes but is not limited to ASHRAE forms of any type, ASHRAE Journal articles, policies, collection of abstracts, results of site searches, membership information, and event schedules.
- c. Unless the information to be printed already includes similar information, the print copy should include the time, date, URL, and topic title. For example the topic title might indicate search results, membership information or abstract listing.
- d. The web site should also provide a print preview function for the user. This particular feature need not be part of an initial offering.

2. Acknowledgements

- a. For all transactions that involve some form of commitment between ASHRAE and a visitor to the site requires an acknowledgement of the transaction.

- b. When a member or non-member makes a purchase from the ASHRAE site there should be an immediate acknowledgement from the site. This includes the purchase of hard items (books), soft items (i.e. electronic versions of specifications), training tuition, and event sign-up.
- c. When an individual submits a presentation for a symposium, seminar, or forum there must be confirmation that the submission was successful. The same is true for any other type of submission where an individual is making a commitment of time or money. This implies operation issues. For example, the "last chance to change your mind" questions that are posed on sites like Amazon.com just before executing a purchase.
- d. There must also be an email acknowledgement of the transaction thanking the individual for their patronage or a summary of the time commitment made by an individual. This implies operational issues such as obtaining email addresses, providing purchase confirmation numbers through email, and summaries of the submission for items like seminars.

C. Industry Relationship Framework

1. Links to Industry Related Web sites

- a. There should be a section with links to other industry-related web sites that are independent and/or professional in nature. Examples include SMACNA, AHR, NIST and other independent organizations.
- b. Depending on the ASHRAE policies related to commercialism, there should be links to organizations dominated by "for profit" organizations. Examples include BACnet Manufacturers Association, LonMark Association, BACnet Interest Group – North America.
- c. Depending on the ASHRAE policies related to commercialism, there could be links directly to "for profit" organizations. This would be a revenue generating opportunity if ASHRAE. Examples include Trane, Bentley Systems, and Johnson Controls.

2. Training

- a. There should be a site for ASHRAE sponsored training. This should include the ability to register for training.
- b. There should be a listing of training provided by other independent organizations with links to these sites for additional information.
- c. Strong consideration should be given to a section for training provided by "for profit" organizations in line with ASHRAE policies.

D. Membership Relationship Framework

1. Email lists

- a. There should be a member section for the development of email groups in support of chapter and committee communications. The originator of the email group should be the only one to add members to an email group. Removal from the group should be automatic and initiated by a return email requesting removal from the list.

2. Update Notification

- a. Members should be able to sign up for notification of information updates. Examples include drafts of standards, Journal articles on a particular topic, policy changes, and new posting to committee sites.

3. Newsletter

- a. Members should have the opportunity to sign up for newsletters. There could be different newsletters. Some of which may require a subscription payment. Examples include ASHRAE Insights and ASHRAE Journal. These email newsletters could be complete or only contain abstracts.

E. Operation Framework

1. *Measurements of usage*

- a. The site needs to measure the number of visitors to the site. There should be measurements of the number of visitors to the major topic areas. For example, bookstore, Journal, Standards, Meeting Information, and Training.
- b. Comparisons should be made as to the number of visitors and the number of people providing their membership numbers and pin numbers. This will give some indication of the use by non-members.
- c. There should be a record of the number of different members that visit the site. This will give an indication of how much of the membership uses the site.
- d. There should be a measurement of the number of times a page is visited and length of stay. This should be broken down into members and non-members. This will give an indication of the most useful pages for the membership and non-members.
- e. The system should use membership information as the default for purchases made on the web site. The system should measure the number of times the shipping information, name or address, gets changed before the transaction is completed. This would give an indication of how many are using someone else's membership to get discounted pricing.

2. *FAQs*

- a. There should be a FAQ page. As the number of answers increase, the FAQs should be broken down into topic areas.
- b. Members should be allowed to submit questions that could then be considered for inclusion to the FAQs.

3. *ASHRAE Flow charts (content issue)*

- a. This might be considered a content issue. Sometimes it is very difficult to understand how ASHRAE works. Flow charts would be very helpful. It would help the membership understand the mechanisms within ASHRAE if they were presented with flow charts. Sections of the flowchart would be linked to detailed instructions, policies, detailed procedures or relevant forms.

4. *Download estimates*

- a. Before any download of a form, policy, or procedure there should be an estimate for time it will take for download.
- b. Before completing a bookstore purchase in an electronic format, the page should provide an estimate of the time it will take for downloading.

5. *Surveys*

- a. Feedback surveys should be available in every major section of the web site. This will lead to site improvements.

6. *Contact information*

- a. There must be an opportunity to contact the web master from each page.
- b. Each major section of the site should have an email link to the ASHRAE staff member responsible for the content in that section. For example Administration-Board/Directors, Administrative Services, Communications/Programs, Communications & Publications, Education, Journal, Meetings, Member Services, Research, Special Publications, Standards.

**Attachment 5 - E-Meetings
Draft Specification - EMeeting Possibilities For ASHRAE.org**

DESCRIPTION

ASHRAE would like to accomplish the following with eMeetings:

- Increase revenue for ASHRAE by increasing meeting attendance,
- Decrease ASHRAE costs by making ASHRAE staff more efficient at meetings and/or reducing the number of ASHRAE staff at meetings,
- Create new revenue for ASHRAE by developing new eMeeting paradigms,
- Create new revenue for ASHRAE by developing new mechanisms for "pay-for-viewing" advertising, etc.
- Get manufacturer's more interested in ashrae.org as a resource for their organization, thereby increasing visitors to the site and (theoretically) the number of ASHRAE members

WHAT COULD AN EMEETING ACCOMPLISH?

An eMeeting could incorporate some or all of the following: on- line scheduler, an on- line interactive VRML facility map, an on- line "meet-me" facilitator, web-based meetings, and robo-expo viewer.

The "on- line" meeting scheduler would be similar in function to the table on the following page.

ASHRAE members would use the on-line scheduler in the following way:

1. ASHRAE members would visit the ASHRAE web page, select the different meetings that they would need to go to and load them into their schedule. Schedules could be translated and downloaded into different formats, including formats for PCs, PDA, etc. Schedule would also remain "on-line" at ASHRAE HQ, accessible via the web page by the ASHRAE member.
2. ASHRAE members could mark their schedule "private" or "public". Marking their schedule "public" would allow others to "find me".
3. When an ASHRAE member tries to "find me" on the schedule an interactive VRML map of the meeting would appear that would show the location of the visitor and the room where the ASHRAE member is scheduled to be in, in a similar fashion to some already available web-based "gaming" facilities.

MO	DAY	YEARSTART	STOP	DTIME	STRT	STOP	MEETING	LOCATION
1	26	101	16.0	20.0	36917.7	Fri	04:00 PM 08:00 PM	Fly to Atlanta
1	27	101	11.0	15.0	36918.5	Sat	11:00 AM 03:00 PM	ASHRAE Web
1	27	101	16.0	19.0	36918.7	Sat	04:00 PM 07:00 PM	IBPSA Software Demo
1	27	101	18.5	21.0	36918.8	Sat	06:30 PM 09:00 PM	IBPSA Dinner
1	28	101	7.0	8.0	36919.3	Sun	07:00 AM 08:00 AM	Energy+ breakfast
1	28	101	10.0	11.0	36919.4	Sun	10:00 AM 11:00 AM	Student Advisor
1	28	101	11.0	12.0	36919.5	Sun	11:00 AM 12:00 PM	RP1004 meeting
1	28	101	12.0	14.0	36919.5	Sun	12:00 PM 02:00 PM	RP1050 PMSC
1	28	101	15.0	16.0	36919.6	Sun	03:00 PM 04:00 PM	TC 4.11 Tech.Devel.
1	28	101	16.0	17.0	36919.7	Sun	04:00 PM 05:00 PM	TC 4.11 Comm/Int
1	28	101	17.0	19.0	36919.7	Sun	05:00 PM 07:00 PM	TC 9.6 Perf/Mon
1	28	101	17.0	18.5	36919.7	Sun	05:00 PM 06:30 PM	RP 1017 PMSC
1	28	101	17.0	18.0	36919.7	Sun	05:00 PM 06:00 PM	TC 4.11 Main
1	28	101	18.5	20.5	36919.8	Sun	06:30 PM 08:30 PM	TC 1.5 Research & Pr
1	28	101	19.5	21.5	36919.8	Sun	07:30 PM 09:30 PM	TC 4.6 Research
1	28	101	23.0	18.0	36920.0	Sun	11:00 PM 06:00 PM	TC 4.11 Testing/Eval
1	29	101	7.0	8.0	36920.3	Mon	07:00 AM 08:00 AM	RP1093 PMSC
1	29	101	8.3	12.0	36920.3	Mon	08:15 AM 12:00 PM	GPC XML
1	29	101	8.5	12.0	36920.4	Mon	08:30 AM 12:00 PM	GPC14P
1	29	101	13.0	14.3	36920.5	Mon	01:00 PM 02:15 PM	RP665 PMSC
1	29	101	13.5	15.0	36920.6	Mon	01:30 PM 03:00 PM	TC 1.5 Internet
1	29	101	14.3	18.3	36920.6	Mon	02:15 PM 06:15 PM	SPC 149P SMCOT
1	29	101	15.5	17.0	36920.6	Mon	03:30 PM 05:00 PM	TC 9.6 Handbook
1	29	101	16.3	18.5	36920.7	Mon	04:15 PM 06:30 PM	TC 4.6 Main
1	29	101	17.0	19.0	36920.7	Mon	05:00 PM 07:00 PM	TC 9.6 Research
1	29	101	17.0	18.0	36920.7	Mon	05:00 PM 06:00 PM	TC 4.7 Handbook
1	29	101	18.0	19.5	36920.8	Mon	06:00 PM 07:30 PM	TC 4.7 Sim & Comp
1	29	101	19.5	21.0	36920.8	Mon	07:30 PM 09:00 PM	TC 4.7 Applications
1	30	101	13.0	15.5	36921.5	Tues	01:00 PM 03:30 PM	TC 9.6 Main
1	30	101	15.5	17.0	36921.6	Tues	03:30 PM 05:00 PM	TC 4.7 Inverse Method
1	30	101	18.0	20.5	36921.8	Tues	06:00 PM 08:30 PM	TC 4.7 Main
1	31	101	15.1	20.0	36922.6	Wed	03:04 PM 08:00 PM	Fly back to B/CS

4. ASHRAE manufacturer's could "mine" the scheduler to see where customers are to help them schedule locations of sales booths, meeting rooms, etc. Such a capability could be "sold" to a vendor and therefore generate revenue for ASHRAE.
5. ASHRAE members could find where their next meeting is by using the on-line VRML facility viewer that would allow them to navigate a 3-D wire-frame representation of the building floor plan. The on-line VRML viewer would indicate their current room location and their next meeting location and show them a suggest path on how to get there.
6. ASHRAE could sell advertising to be tucked into the VRML viewer. For example, food stands, coffee shops, etc.

7. ASHRAE could also offer "web-based" meetings where either audio and/or video could be "broadcast" from a meeting room via cell-phone to the ASHRAE webserver. Such meetings could be sponsored by an ASHRAE member to reduce costs to ASHRAE. ASHRAE members could then "visit" the meeting electronically (for a fee) by going to the ASHRAE web-page meeting server. ASHRAE would allow advertising of who sponsored the meeting on the meeting viewer.
8. ASHRAE could reduce costs of sending staff to meetings by being able to have staff at HQ answer some questions about meeting "on-line" via the on-line facilities. Also, some functions currently handled at the meeting might be transferred electronically back to HQ. Staff at meetings would be more efficient by using the on-line scheduler and meet-me facilities.
9. ASHRAE could develop a "robo-expo viewer". Such a robo-viewer would consist of a series of robotic cameras that an ASHRAE member could control from the web page that would allow the viewer to electronically visit the expo. Robo camera would be strategically located at points throughout the expo floor and would be capable rotation, zooming, etc. to change their viewing perspective. Exhibitors would be assigned to the nearest robo-camera so that an ASHRAE member could go directly to a shot of their booth on the web page. Use of the robo-expo could be for a small fee.

BUSINESS CASE

- **This supports ASHRAE's mission:** to increase the number of ASHRAE members at meetings.
- It will also make going to an ASHRAE meeting more efficient by ASHRAE members which could increase the number of people going to meetings.
- **Costs:** Substantial programming costs will be required to set up and prototype this capability. On-going costs will also be required to maintain the capability. For each meeting digital maps of the facility will need to be loaded into a VRML viewer. Costs for setting up and maintaining the robo-viewer would also be substantial and could be offset by revenues to offer this service.
- **Benefits:** The benefits to doing this are substantial: ASHRAE members will save time at ASHRAE meetings which will allow them to get more out of their meeting, new capabilities and advertising opportunities will help offset costs. Web-based meetings and robo-expo visits (for a fee) would increase the number of ASHRAE members that attend meetings.

DESIGN IMPLICATIONS

- **On-line scheduler.** This would require the development of a substantial database to store meeting records for ASHRAE conference visitors and simultaneously display records for members upon request.
- **VRML meeting map.** This would require the digitizing of each conference site into an interactive 3-D digital map. Linking the digital map to the on-line scheduler would also be required.
- **Robo-expo cameras.** This would require the set up and broadcasting of images (probably snap-shots at first) from an array of cameras located at the expo. Cameras could be pre-aimed at the various booths to allow for "go to" panning capabilities.

Attachment 6 - Web Content

Scope

What will be included on the ASHRAE Web site, and what functions will the Web site support.

Philosophy

Ultimately, ASHRAE exists to serve its members. To do so, and to attract more members, ASHRAE must also serve society – our members have joined both to further their own careers and to promote best practices and standards of excellence in the HVAC industry that will improve the health, comfort, safety, and prosperity of the general public. Therefore, the Web site must address and balance three objectives:

- Serve our members – facilitate their interactions with and within ASHRAE, provide convenient and timely access to information, preserve their privacy, enhance their professional and career development.
- Attract new members – motivate the public to look to ASHRAE for state-of-the-art, current and unbiased information about energy, comfort, health, and cost of conditioning the built environment; enhance the prestige of ASHRAE membership and ASHRAE activities.
- Maintain financial viability – use the Web site to enhance ASHRAE's revenues and reduce costs.

Background

We want our members and the general public to get in the habit of accessing ASHRAE.org to 1) be alerted to timely events in energy/HVAC&R and 2) to be able to answer questions or learn more about news items, issues or topics they have heard about. This means providing news stories, relevant ASHRAE position papers, Journal articles, and links to stories on websites of news organizations, government agencies, etc. To provide such information, ASHRAE will have to use staff resources to identify and monitor news sources and update the Web page "News" section and its links. However, keeping track of the visits to the ASHRAE Web site (and the visitors' demographics) should enhance the desirability of other organizations to provide news and information to ASHRAE.org, in the expectation that the links back to their Web sites will bring them the e-traffic they desire.

Capabilities

Ultimately, the Web content of ASHRAE.org should include the following features:

- *News stories* – report events of interest to ASHRAE members, culled from general or HVAC&R-specific sources (WSJ, NY Times, News, etc.) Provide a summary and a link to the full story on the news agency's site. Topics published must go beyond the obvious ones directly related to HVAC&R. For example, the energy "shortage," deregulation, reliability, and real-time pricing issues affect facilities managers and should be included. ASHRAE membership and staff will have to develop an initial topic list, but it is probably a good idea to implement a feedback or suggestion process (on the Web or otherwise) so the users of this service can suggest topics of interest to be included.
- *Published regulations, codes, etc.* – as federal government agencies, state agencies, international standards bodies, European Union committees, etc. publish regulations or standards, release drafts for public comment, etc., these should be announced on the Web site, with a link to the cognizant organization. Since it is in the interests of these organizations to publicize the standards, rulemaking, etc., it should be easy to arrange for many of them to notify ASHRAE when something significant occurs. ASHRAE's effort will be in identifying and recruiting such agencies and in reviewing agency announcements to make sure they are really relevant to the ASHRAE community.
- *Frequently asked questions, HVAC&R glossary, and/or "Ask Jeeves" type of service* – to establish ASHRAE.org as a reference site, enable members and the general public to learn what terms mean and to ask questions. The ASHRAE Learning Institute could help prepare the FAQ list, but real-time inquiries would require significant staff and/or member resources, so this would have to be a low priority. An on-line glossary to define terms, equipment, etc. (together with links about where to go for more information) would be useful for members and the public in the "FAQ" area.
- *Threaded discussions* – such a vehicle is good for commenting on draft standards, etc., but such a capability would be part of "member services" or "standards/technical information." Discussions of a more general nature in this section would include non-member inputs. Topics such as "how are you choosing an energy supplier and negotiating contracts?" or "what comfort problems are you having in your office building?" may be useful for members and introduce non-members to the ASHRAE community. Obviously, a discussion moderator is required, and this will use staff resources.
- *List Server* – ASHRAE can send e-mail to interested persons alerting them to news stories, new products, release of standards, etc. While this may help spark a demand for ASHRAE publications as they are released, maintaining and operating such a service will require significant staff time and, more important, much larger communications capability for traffic to/from the Web site.
- *Columns and newsletters* – this gives ASHRAE Presidents and other officers an opportunity to address the membership and the public. However, it isn't clear how much a regular "letter" or column will be read. An interesting columnist (i.e., humorous, controversial, telling "war stories" instead of facts and opinions) would interest members and increase traffic to the site, but it is difficult to maintain high quality and interest for a regular column. One possibility is to post an interesting or humorous story every week chosen from those submitted by members.
- *ASHRAE or chapter news* – recognition from publicizing events of interest from ASHRAE, such as the Technology Awards or significant chapter activities (scholarships, community service projects, etc.) may increase participation in these activities.
- *Selected ASHRAE publications* – post an interesting Journal article or a lecture from a distinguished lecturer or a project description (from an ASHRAE Technology Award) every month.
- *New product announcements* – it's commercialism, but "What's New in Products" is the most direct way to generate revenues to support current Web content on ASHRAE.org.

Implementation Issues

Any kind of regular update (daily, weekly, monthly) or maintaining a threaded discussion will require significant staff effort. There will be an initial large effort to

identify news sources and links (e.g., state regulatory agencies have often been mentioned) and negotiate the agreements with them. Maintaining such relationships and links will not be too time-consuming, but we should not underestimate the initial staff time needed to establish any of these functions. A key to supporting these functions, and obtaining revenues from them, will be maintaining good records of how many – and who – visit ASHRAE.org. Some of the functions listed above can be offered on a subscription basis, but generally there isn't enough of a market to charge for the service. However, offering some services just to members (e.g., the "Ask Jeeves" function) may encourage membership or at least reinforce a feeling of positive value from ASHRAE in current members. Links to the ASHRAE Bookstore – to "learn more" about this topic – must be very focused and specific, but this also is an important source of revenue to support the functions.

We want many Web site visitors – including the non-member public – but to achieve this our content must be current, informative, authoritative, and entertaining. In addition to the labor needed to effect this, increased traffic will require hardware and the communications links to support it.

Prioritization

A subjective ranking, to offer easy to implement capabilities first. However, it is important to also implement a feedback mechanism to 1) see how many people are using these services and 2) give the Web site visitors an opportunity to tell ASHRAE what topics and services they would like to see on the site.

- Basic news story summaries and links to the full story on the news service web page. Mostly updated weekly, with some daily items.
- HVAC&R glossary
- New product announcement
- List of State Agency Regulations (building codes, etc.) and links to each agency's Web site give its address and telephone
- Try one threaded discussion
- Feedback/suggestion page

Immediately, we need a plan to encourage sign-ins, with a user name and password, or a "cookie management policy." This is needed to obtain the necessary demographics on the Web site traffic. Only with this information can ASHRAE generate the revenue – from advertising, links, etc. – to support the Web content and other Web site functions.

Miscellaneous List of Topics and Issues – assuming they are covered elsewhere in the Web site specification

Entry page – disable java/graphics

Links – chapters, vendors, other organizations, government agencies, international societies

Members-only section

Subscription section

Current events

Threaded discussion

Advertising, cookies, sign-in incentives

State energy regulations

PAOE submissions and tracking

Registration for courses, meetings

Paper submissions & reviews

Bookstore & e-bookstore

Presentations of distinguished speakers/college of fellows

ASHRAE position papers

FAQ

Attachment 7 – High-Priority Features For The ASHRAE Web Site

The Electronic Communications Subcommittee has identified a number of desirable features and capabilities for the ASHRAE website. The following list is not intended to be exhaustive, and some of the items are not defined in great detail. However, the list is useful to illustrate the capabilities that are contemplated for the website. We expect this list to be expanded and refined as we receive feedback from other groups within ASHRAE.

Publication Sales

- Advertising on website
- Enhanced publications (links + ads), (cookies)
- E-book enhancements on web (Electronic handbook)
- Research reports online
- Searchable database of all HVAC publications with referral sales (e.g. DOE,

- sister societies, other publishers, etc.)
- ASHRAE Handbook Chapters in .pdf format for sale

Operations

- Electronic downloads for students (lower mailing cost)
- Online handbooks and standards (HTML)
- Pay dues online
- Manuals of Procedures online
- online input by attendees on scheduling technical programs
- Allow committee chairs and Chapter Officers to access their groups' rosters
- Paper submissions & reviews online

Meetings

- Poster sessions online
- asynchronous education, seminars, forums, PDSs
- online webcast of meetings
- Virtual reality AHR show
- On-line scheduler.
- On-line reservation of meeting rooms and A/V equipment.
- On-line hotel reservations.
- Hyperlinked agendas, minutes and on- line schedule.
- Paper abstracts and ordering information hyperlinked to the technical sessions.
- ASHRAE Headquarters Room print services accessible through the web.
- Virtual committee meetings
- Robo-expo viewer.

Member services

- Customized "My ASHRAE" homepage with links to most frequently- used pages within the site.
- ASHRAE Institute/Professional Development online
- Everything online
- Relevant links
- TC websites on Society server?
- Archive of standing committee minutes from past meetings
- Allow each member to access and update their own contact information
- Find contact information by function (e.g. TC 9.1 chair)
- Member polling on website
- Access to experts for fee
- Translations to other languages
- List servers. Members (and non- members) can subscribe to list services that are managed by Chapters, Regions, TCs, SPCs or other Society Committees.
- "chat" room, virtual meeting

Chapter services

- CRC Region \$ flowback from ASHRAE
- Virtual chapter (by interest or location)
- Self-report PAOE activities (with auto tally)

Public relations

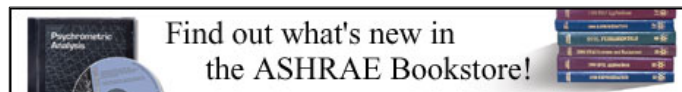
- free K-12 education modules
- Announcements: self promotion
- News, position papers
- Monthly e- mail of "what's new" by request

Other

- A means to encourage sign- ins, with a user name and password, or a "cookie management policy," to obtain the necessary demographics on the website traffic.
- A feedback mechanism to see how many people are using these services and to allow website visitors to tell ASHRAE what topics and services they value on the site.

Revised Date:

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