TABB TALK

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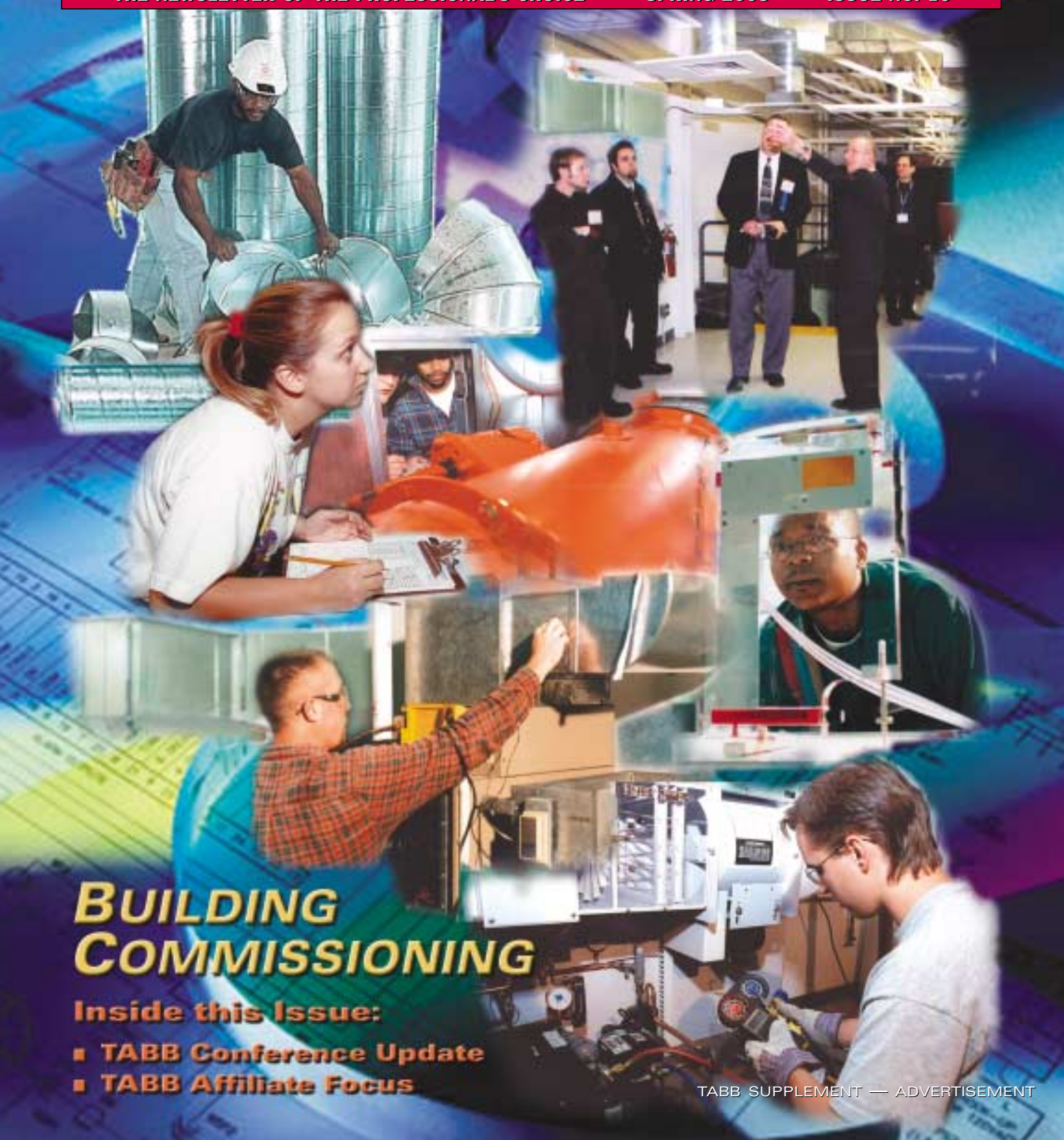

BUILDING COMMISSIONING

Inside this Issue:

- TABB Conference Update
- TABB Affiliate Focus

In this Issue

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TABB Hall of Fame

Join us on Saturday May 21 at the Palmer House Hilton in Chicago to celebrate the newest inductee into the TABB Hall of Fame. The luncheon begins at 12:00pm with the awards ceremony to start promptly at 12:45. The Inductee this year will be Tom Wilton, retiree from SMWIA Local 28 in New York, who will be inducted by John Harrington, Business Manager of Local 28. Bill Freese, President of International Testing and Balancing, and retiring member of the International Certification Board will be honored as well.

It's not too late to register for the TABB Conference and luncheon. Please visit www.tabbcertified.org or call 703-299-5646 for more information. Don't miss out on a fun afternoon honoring the stars of TABB!

Free Back Issues of TABB Talk

You can find details on the TABB program — including downloadable specifications and more at www.tabbcertified.org. Also found there: Previous issues of TABB Talk, going back to 2002.

Visit: www.tabbcertified.org/tabbtalk/tabbtalk.shtml ■

All You Needed to Know About HVAC Expertise Certification

The International Training Institute's (ITI) certification of an HVAC mechanic, technician and master mechanic ensures that these HVAC professionals are competent, reliable and qualified craftspeople. To be certified, each individual must exhibit knowledge and expertise in all areas in which a certified professional will have oversight responsibilities. The professional must be able to install an HVAC system and ensure that it is operating to its design specifications. Other areas in which a certified professional must be proficient:

Core Requirements:

1. Interpersonal Relations
2. Tools & Measurements
3. Safety
4. Principles of Heat Transfer and Total Comfort Electrical

Specialty Requirements:

1. Basic Systems & Components
2. Installation Procedures
3. Service & Repair
4. Controls
5. Regulations, Codes and Safety Design

Like other Certification programs conducted by the ITI and TABB, the HVAC Expertise Certification holds its professionals to a Code of Conduct. The Code of Conduct includes the general standard which certification represents — Certified HVAC Mechanics, Technicians, and Master Mechanics should practice their crafts consistent with applicable HVAC standards and procedures and the highest quality of workmanship.

For more information about HVAC Expertise Certification, please contact the ITI at 703-739-7200 or visit www.sheetmetal-iti.org or the Testing, Adjusting and Balancing Bureau at 703-299-5646 or www.tabbcertified.org. ■

Successful Building Commissioning Requires Special Skills and Experience —

The TABB Commissioning Certification Program is Announced for Spring 2005

Building Commissioning — an Expanding Market

Building Commissioning is a systematic methodology that documents the entire building process from the owner's inception and design to construction, and occupancy. It is a quality-oriented process for achieving, verifying, and documenting that the performance of facilities, systems, and assemblies meets defined objectives and criteria. Tests are performed on the mechanical systems to measure their energy output and efficiency.

Building commissioning has received increasing attention from policy makers, regulators, environmental officials and building owners and operators since the early 1990s. Early government funded studies indicated commissioning to be an effective tool to reduce energy use and costs of operating buildings — as well as a means to ensure a more healthy and comfortable building environment. The Federal Government, and the States of California, Oregon, Washington and New York have been particularly active in supporting and promoting building commissioning. A web search on the words "building commissioning" illustrates the broad interest and activity in the field. It also reveals a number of excellent publications and other technical resources on commissioning new as well as existing buildings.

Partly as a result of the government's interest and support, private building owners, developers and managers are also beginning to understand the important benefits that can be achieved by commissioning. These include:

- Increased energy efficiency;
- Improved building equipment performance;
- Improved indoor air quality, occupant comfort, and productivity;
- Decreased potential for owner liability;
- Reduced operation and maintenance costs
- Improved building system control.[1]

This increased attention and understanding of the positive impacts has helped to expand the market for commissioning services substantially. An analysis conducted by the National Energy Management Institute concluded that the need for competent, qualified specialists to lead and participate in the commissioning process will continue to expand.

The Benefits of Commissioning

A number of case studies has documented the benefits of building commissioning. Benefits include lower operating costs, fewer breakdowns and emergency repairs, increased equipment operating life, and improved comfort. Some estimates suggest that the operating cost for commissioned buildings is 8 - 20% less than the cost of operating a non-commissioned building. Commissioning costs typically range from 0.5 - 2% of the total building cost. When combined with the benefits, this reflects a good value to the building owner.

It is estimated that only 5% of the existing building stock has been commissioned. "Retrocommissioning" also has potential for significant savings. Retrocommissioning involves commissioning the building after it has been in operation, often for a number of years. A 1996 study of 44 buildings that were commissioned after construction[2] found that the payback on retrocommissioning costs was typically under two years, often less than a year, and only rarely exceeded four years. The energy savings alone typically ranged from 5 to 15% of the total energy use. The cost ranged from 5 cents to 43 cents per square foot. Retrocommissioning also represents a good value for many building types.

Commissioning Guidelines and Standards

The need for standard procedures and practices has been recognized by the government as well as private organizations. Several organizations have published standards and guidelines for commissioning and retrocommissioning practices. A few of the common ones for commissioning are:

- The American Society of Heating Refrigerating and Air-Conditioning Engineers. 1996 *ASHRAE Guideline 1-1996, The HVAC Commissioning Process*
- Sheet Metal Contractors National Association (SMACNA). 1994. *HVAC Systems — Commissioning Manual*
- The New York State Energy Research and Development Authority (NYSERDA) has published a set of guidelines, checklists, forms and other resources on the website at www.nyserda.org.
- Portland Energy Conservation, Inc. (PECI), has published several excellent guidelines and guide specifications for commissioning of new and existing buildings, including:
  - *Commissioning Resources: Model Commissioning Plan and Guide Specifications*
  - *Commissioning to Meet Green Expectations*
  - *A Practical Guide for Commissioning Existing Buildings*

  These and other documents can be accessed at www.peci.org
- The Association of Higher Education Facilities Officers (APPA). 1996. *The Building Commissioning Handbook,* John Heinz and Rick Casault (ed.).
- U.S. Army Corps of Engineers, 1995. *Engineering and Design Systems Commissioning Procedures* (ER 1110-345-723)
- C-2000 Program, Canada, 1995. *Commissioning Specifications.* C-2000 Program, Energy Mines & Resources, Energy Efficiency Division

Commissioning Skills

Just as in construction, regardless of the practices and procedures that are followed, it

is ultimately the quality and skill of the individual commissioning team members who determine the success of the process. Building commissioning involves a broad mixture of technical capabilities as well as personal skills and aptitudes. As the process involves a number of different building systems and their interaction under all possible operating conditions, it requires technical knowledge and experience that is both broad and deep. Individuals with a *solid theoretical knowledge* of building technologies, *design experience* with building systems and an *understanding of the practical aspects* of building systems operation are needed.

The commissioning agent must not only understand the operation of each of the building system components but also how they interact as a system.

In addition to technical skills, a commissioning practitioner must also have strong interpersonal and communication skills. He or she must be:

- a problem solver
- organized and capable of planning what could be a complex and detailed process
- attentive to detail — as the "devil is in the details" in the commissioning process
- a persuasive leader who can assemble, initiate the activities and gain consensus of a diverse group
- capable of "thinking on the run" to develop creative solutions
- have good written and verbal communication skills
- be professional and impartial

In summary, a successful commissioning specialist must have strong technical skills and experience as well as the right mix of personal attributes to use his capabilities effectively.

TABB Commissioning Certification Program

Recognizing the special mix of talent skill and experience that it takes to practice commissioning, TABB has developed a training and certification program for commissioning contractors, supervisors and technicians. After extensive development work by the TABB Technical Committee, John Hamilton, TABB Chief Operating Officer, and Gary Andis, the TABB Director of Certification, are putting the final touches on the *TABB Commissioning Certification Program.* To qualify for this program participants will have demonstrated several years of practical experience in testing, adjusting, and balancing of HVAC systems. The program, which is expected to be initiated in 2005, is intended to provide the necessary information, skills and training for *TABB Certification in HVAC Commissioning.* Courses will be offered for contractors and supervisors as well as technicians. The training, will involve classroom instruction and field practice. ■

1 Portland Energy Conservation, Inc. 1998. "National Strategy for Building Commissioning," Portland, OR: Portland Energy Conservation, Inc
2 Gergerson, J. "Cost Effectiveness of Commissioning 44 Existing Buildings," in *Proceedings of the National Conference on Bulding Commissioning*" (California, April 28-30,1997)

The New TAB Procedural Standards — Written for the TABB Professional

Designed for the experienced testing and balancing professional, SMACNA has developed a new standards guide to be utilized for any on-site job. The *TAB Procedural Standards* guide is derived from Chapters 12 through 16 of SMACNA's *HVAC Systems Testing, Adjusting & Balancing.*

While the *HVAC Systems* guide serves as a comprehensive catch-all for every aspect of the building HVAC envelope, *TAB Procedural Standards* is a condensed, working document that includes the basic elements needed to conduct TAB service.

This guide is not for the novice apprentice. End-users should be well versed in all aspects of HVAC design and equipment/instrument usage involving the fundamentals of airflow, hydronic flow, refrigeration and electricity. This includes the ability to evaluate design data versus operating data to determine the efficiency of a building's overall energy system — not a problem for any TABB Certified Professional.

The *TAB Procedural Standards* provides the TABB professional with both the basic elements required to conduct TAB service and the tools needed to ensure that HVAC systems are performing as the designer intended.

Today's HVAC systems are more highly developed and innovative than the use of water chillers for cooling and boilers for heating. They are being designed with individually controlled temperature zones and variable-speed fans and pumps to provide maximum comfort and minimal energy usage. The guide contains general as well as specific guidance for both air-and water-side HVAC system adjusting and balancing — the most up to date and state of the art guidance for these systems. It includes:

- Preliminary and General Air System TAB Procedures
- Variable Air Volume (VAV)
- Multi-Zone
- Dual Duct
- Induction Unit
- Variable Volume Flow
- Basic Hydronic
- Piping Systems
- Summer/Winter Systems

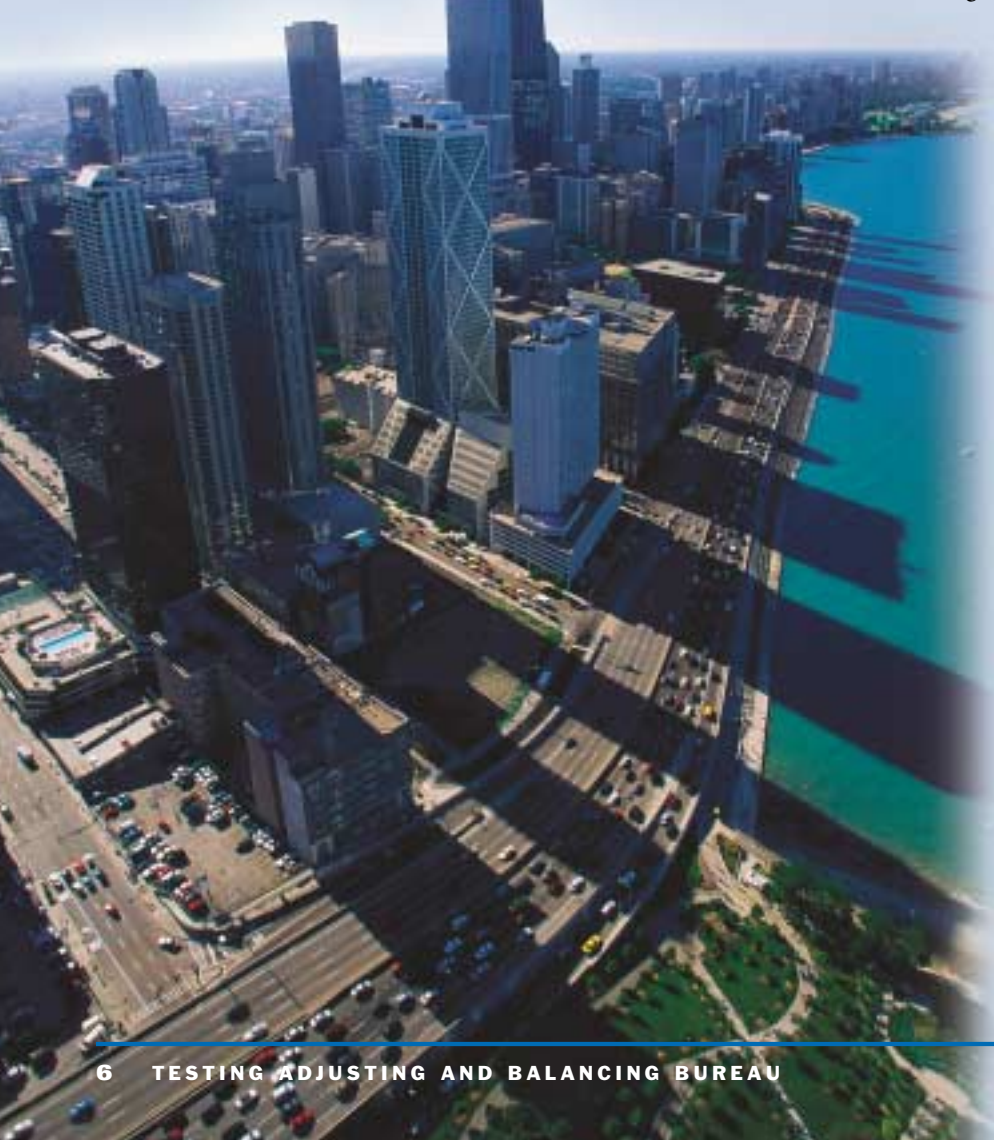
By providing the tools, the training and the certification, SMACNA and its partner, the Testing, Adjusting and Balancing Bureau are working together to maximize the effectiveness of these state of the art systems, ensuring the systems perform as specified. To purchase a copy of this manual, call TABB at 703-299-5646 or visit the SMACNA Publications Store at www.smacna.org. ■

Be Blown Away by the TABB Conference in the Windy City

The fourth annual TABB conference is just around the corner. The past three years have been a huge success, and this year promises to be even more impressive. Representatives from labor, management and the engineering/architectural communities will join together from May 20-21 at the Palmer House Hilton in Chicago, IL to review the certification process and other pertinent aspects of the testing, adjusting and balancing of HVAC systems.

"In just four short years, the TABB conference has become the seminal event for HVAC professionals to learn about the latest technologies and the hottest new products," said TABB Chief Operating Officer John Hamilton. "The sessions at the TABB Conference go a long way in helping HVAC professionals design and manage their building systems for greatest energy efficiency and maximum occupant comfort," he continued.

On tap for this year is the TABB Trade Show to be held Friday night in conjunction with the opening reception. The event will be held at the Chicagoland Sheet Metal Contractors' Association's (CSMCA) state-of-the-art TABB lab. The CSMCA has long been known as a leader in the testing, adjusting and balancing field, noted Hamilton. "They have a magnificent training facility. It is great to be able to showcase it during this year's TABB Conference."



This year's Conference will offer pre-conference training classes in the form of a two-day Sound and Vibration session (May 19-20) and a Customer Care program (May 20). At the Conference, look for leaders in our industry such as Jim Rosier of Equal Air Balance (California) and Rich Peppin of Scantek (Maryland) to present. Also scheduled is a discussion on Leadership in Energy and Environmental Design (LEED) Buildings and TAB Requirements. There will be presentations on IAQ, and the ICB (International Certification Board) will again hold an Open Forum, during which, attendees have a productive question and answer session with members of TABB's governing body.

Another highlight of the conference will be the TABB Awards Luncheon on Saturday, May 21. TABB will induct SMWIA Local 28 retiree Tom Wilton as this year's Hall of Fame Award recipient. TABB also honors Bill Freese President of International Testing and Balancing (NY), as he retires from the ICB. Former Director of Certification, Jack Webster, retired December 2004, will be the Master of Ceremonies. "I can't think of two more deserving people than Bill and Tom to honor this year. Their dedication and commitment to excellence in the HVAC industry has been an example for all TABB professionals. It's been a great honor working with them," remarked Webster.

Registration is still open for the TABB Conference! Please visit www.tabbcertified.org or call 703-299-5646. ■

TABB Salutes

Linda Hughes
TABB Affiliate

Linda Hughes, executive director of Orange Empire SMACNA, was one of the first TABB Affiliates on board, representing Riverside, San Bernardino and Orange Counties, in California, and her story is an example of how the TABB Affiliate program was designed to work.

As a TABB Affiliate, Linda's first priority is raising awareness locally for TABB. As a skillful and experienced lobbyist, educator, and relationship builder, Linda works tirelessly to convince local engineers and California state officials to ensure TABB Certified Professionals are written into the specifications, and we're lucky to have her on our side.

"I've been in this business for a while — I grew up in the business — and it's been clear to me for a number of years that TABB Certified means quality for the contractor, for the engineer, and ultimately for the customer."

SPECIFICATIONS, SPECIFICATIONS, SPECIFICATIONS

As a SMACNA Chapter and a TABB Affiliate, Orange Empire SMACNA's approach to winning acceptance of TABB certification is two-fold. First, Linda spends considerable time contacting and engaging state officials to ensure TABB is part of Title 24 specifications. This ongoing process is vital to TABB's success in California, and her work provides an example of how TABB is going to succeed nationally.

"TABB certified means quality for the contractor, for the engineer, and ultimately for the customer."

The second facet of her role as a TABB Affiliate is to get local engineers on board. In March of this year, John Hamilton, Chief Operating Officer of TABB, visited Orange County, and the two met for five days with local engineering firms to convince the engineers of the advantages of using TABB certified professionals in their specifications.

According to Hamilton, "We're all on the same page. We all believe in TABB and know that TABB Certified Professionals represent the best in the HVAC TAB business. But with Linda's help, we got our foot in the door locally, and the meetings went even better than we had hoped. We're still hammering out the details, but we're confident that, with Linda's help, we've attained significant buy-in with several Southern California engineers."

"The meetings were a tremendous success," Linda agreed. "It's been great working with John, the process of becoming a TABB Affiliate has been seamless, and now it's starting to pay off. After all, sheet metal is in my blood."

THREE GENERATIONS OF SHEET METAL

It's not by chance Linda represents SMACNA in Orange County. Coming from three generations of California-based industry professionals — and being all but raised in a sheet metal shop — Linda has been on a lifelong course with destiny.

After serving his country in World War II, Linda's grandfather, C. Forrest Baxter, found himself in San Diego, California, with a wealth of knowledge of sheet metal. Before long, he started his own business and opened a union shop, Lemon Grove Sheet Metal Works.

His son — Linda's father — graduated from San Diego State University and soon bought a share of the business from his father. The two ran a successful business together for years, and eventually Linda began spending countless childhood hours running around the shop.

As a teenager, Linda spent afternoons with her father in the SMACNA of San Diego office. After following in her father's footsteps and graduating from San Diego State with a BA in English, she couldn't stay away and began working for SMACNA's Riverside Chapter (a.k.a Inland Air Conditioning and Refrigeration Contractors Association) as the office manager.

She jokes that, just after graduating from college, she was often introduced and greeted as Chuck Baxter's daughter. "Now," she quips, "When people meet my dad, they say, 'Oh… you're Linda Hughes' father?"

TABB APPRECIATION

According to Erik Emblem, Executive Director of NEMI and TABB Administrator, "The Affiliate program is starting out on the right path with Linda's assistance and diligence. She is out there hitting the pavement and spreading the word of TABB, and her work is exemplary of the kind of local and state penetration we're looking for and need."

Though the Affiliate program is still in its infancy, with Linda working with us, we're confident of its success and know the future is wide open. ■

Contractor's Corner:

Bill Freese

"If you ask me, the relationship between us, the contractor, and the TABB Certified Technician, has never been stronger. Nor has it ever been more important," remarked Bill Freese, President and Chief Executive Officer of International Testing and Balancing, Ltd.

"Everyday, we face serious issues regarding market-share, and it is incumbent upon us to resolve these issues together," continued Freese.

"We come up with all these fancy ideas about business development, but the TABB model can teach us all a thing or two: offer quality workmanship and skilled, certified professionals, and the choice between using union and non-union becomes a lead-pipe cinch."

Rewarding Service

Bill is a seasoned HVAC professional and a long-time supporter of TABB. He is currently the President and Chief Executive Officer of International Testing and Balancing, Ltd., a company he began in 1974.

While it's always helpful to have someone on the contractor side with such impressive credentials and affiliations, Bill's participation goes far beyond being a supporter of TABB.

Bill is on the NEMI Board of Directors, where he has served since 1999. He is also a former co-chairman of the International Certification Board (ICB), which establishes policies, standards, and procedures for certification to assure the advantages of using entities certified by the ICB, including TABB.

Currently, Bill is serving his 4th year on SMACNA's Board of Directors. He is also the current President of New York State SMACNA, the first TABB Affiliate office.

Freese recently retired from the ICB after five years of dedication. His long service to the board will be honored this May 20-21 at the TABB Conference in Chicago at the Annual TABB Awards Luncheon.

Upon being notified of his upcoming award, Bill said, "I am a little humbled by this honor, and I'm not a person who is easily humbled. It's just a good feeling to be recognized by your colleagues for your work, but I've always felt that the wins we've secured have been won as a team, and not by individuals."

Freese and TABB

Together, TABB and its TABB Certified Contractors have their finger on the pulse of the HVAC industry. Included in his many obligations, Bill has been working with TABB in emerging markets, such as building commissioning, energy management and indoor air quality.

"The ICB and the NEMI Board of Directors, together with TABB, have come up with some great ideas on emerging markets and, as contractors, we're with them all the way," he said.

"Getting out in front of a market such as building commissioning is something that is going to pay huge dividends in the near future for us and for TABB. And it was a process and an idea generated by our working together."

According to TABB Administrator Erik Emblem, "We can't say enough about the work Bill has done on the ICB and beyond.

"Making an informed decision to get into the building commissioning market and establishing a certification for commissioning is just a recent example of what we've been doing together for years," Emblem concluded.

> ***"Everyday, we face serious issues regarding market-share, and it is incumbent upon us to resolve these issues together…"***

The Future Together

While we cannot afford to slow down our efforts as technicians and contractors, and while we know we have to be out on the street pounding the pavement and in the bunkers, hunkered down and generating ideas, it's good to know that we have the support and vision we need from contractors like Bill.

"It's pretty simple: TABB means you're getting the best," said Bill. "Not all contractors know that or always want to admit that, but they're the ones who are going to be left behind." ■