

SMART SOLUTIONS

WINTER 2003

Helping contractors save money and enhance productivity

B-G Mechanical Takes the BAC Series 3000 to the Hall of Fame



Baltimore Aircoil Company's Series 3000 Cooling Towers are part of the HVAC system at the Naismith Memorial Basketball Hall of Fame.

B-G Mechanical Contractors, Inc. of Chicopee, MA, recently completed HVAC installations for the new Naismith Memorial Basketball Hall of Fame in downtown Springfield. Cooling the impressive center, which opened in September 2002, required an equally impressive HVAC system. This project called for evaporative cooling equipment that could meet the heat rejection needs of the 80,000 square foot, interactive museum. Along with providing reliable, year-round operation and maximizing energy efficiency while minimizing the time and cost of installation, it was critically important for the equipment's sound levels to be kept to a minimum.

To meet those requirements, B-G Mechanical chose the innovative Series 3000 Cooling Towers from Baltimore Aircoil Company (BAC). The selection called for two Series 3000 cells, each rated and certified for 350 nominal tons of heat rejection at 76° wet bulb. Each cell operates independently with one

or both chillers. The units are constructed of corrosion-resistant materials for long life, including fiberglass-reinforced polyester (FRP) casing panels and air inlet louvers, and Type 304 Stainless Steel cold water basins with BAC's exclusive welded construction. The modular design of the Series 3000 allowed the cells to be shipped in one piece and multiplexed together easily, reducing field assembly time and saving B-G Mechanical on installation costs, compared with other alternatives.

The EASY CONNECT® water inlet piping with BALANCE CLEAN® Chamber further reduced installation costs by eliminating overhead piping and support requirements, and provides maintenance benefits to the equipment operators.

The specially designed low-sound fan system provides reliable, year-round performance and trouble-free maintenance, while reducing sound by 4 dB below conventional fan systems.

*For more information on BAC products, please call 410-799-6393. **

BAC, a major sponsor, is a cosponsor of the always enjoyable Dessert Party at MCAA's 2003 convention in Palm Springs.

Brandt Engineering Project Manager Increases Personal Productivity by 50% with Constructware

Brandt Engineering Co. based in Dallas, TX, is a leading mechanical contractor in the Southwest and has been a long-time member of MCAA. Brandt specializes in complex institutional projects, such as healthcare and university facilities, industrial piping, and other high-end lump sum, GMP, and design-build mechanical projects. Recognized for providing innovative engineering solutions on fast track projects, the company has an in-house engineering group, a complete sheet metal, piping, and plumbing fabrication

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SMART SOLUTIONS

**Helping contractors save money
and enhance productivity**

Smart Solutions showcases new technologies and promotes cost-saving and productivity-enhancing applications available from members of MCAA's Manufacturer/Supplier Council. *Smart Solutions* is published biannually for contractor members of MCAA and its subsidiaries.

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See smart solutions in person...

Dear MCAA member,

With this issue of Smart Solutions, we are once again bringing you real-life examples of the extensive benefits made possible by working cooperatively with your manufacturer/supplier partners.

These partners work hard to exhibit their support for your endeavors throughout the year. As we get ready to enjoy the 2003 MCAA convention in Palm Springs, I want to call your attention to the once-a-year opportunity presented by the annual Manufacturer/Supplier Exhibit. Scheduled for Tuesday, March 4, from 8:30 a.m.–11:30 a.m., the exhibit will give you the chance to meet with the executives of the more than 90 exhibiting members of the Council. Believe me, they are eager to discuss their products and services with you, to listen to your suggestions and offer new solutions to many of your ongoing challenges. Each year, Council members look forward to introducing you to the many ways in which they can help improve the efficiency of your operations, enhance productivity, and reduce costs.

I assure you that investing your time in the annual exhibit will repay you handsomely throughout the year, and I urge you to take advantage of this opportunity.

We welcome your comments on this publication and any suggestions you may have for looking into specific applications in future issues. In the meantime, I look forward to seeing you in Palm Springs.

Tim Facius

Chairman

Manufacturer/Supplier Council



Corrigan Company Teams With Johnson Controls To Help Missouri University Slash Energy Costs

Two industry leaders have joined forces to help Southeast Missouri State University (SEMO) save a projected \$20 million over the next 10 years in energy and operational costs. This self-funded project involves the combined strengths of MCAA member Corrigan Company, a mechanical firm based in St. Louis, and Johnson Controls—one of the nation's leading performance contracting firms.

SEMO faced major mechanical infrastructure problems due to budget constraints and projected enrollment growth. Through a competitive bid process, Johnson Controls was awarded a contract in November 2001 to oversee a \$13.4 million construction and service project that would:

- completely refurbish two campus chilled water loops;
- renovate the central heating plant;
- repair a steam turbine generator so the university can once again produce its own electricity;
- replace lighting systems with more energy-efficient ballasts and fixtures;
- convert constant volume air handlers to variable air volume; and,
- replace toilets with low-flow technology to conserve water.

Johnson Controls selected Corrigan as its mechanical contracting partner as soon as it decided to pursue the project. The two firms have worked together for 50 years, and understand how they can best combine their expertise to benefit their customers. Even before

Johnson Controls had a signed contract with SEMO, Corrigan committed the resources to explore the mechanical scope and develop pricing. It's an example of the trust that the two companies have developed over the decades.

The groundwork paid off during the first phase of the performance contract—completing a chilled water loop expansion in less than four months. It had to be ready by April 2002 in time for the warm summer months in Cape Girardeau, the southern Missouri city where SEMO is located.

The second chilled water loop renovation has been equally challenging, but in a different way. The scope has changed a few times since initial plans were drawn up, which means both contractors have had to remain flexible.

**“Everybody
brings something
to the table
to help
our customers.”**



Corrigan Company employees at work on a chilled water loop renovation project at Southeast Missouri State University.

“Value engineering ideas on this project have come from our project managers, project engineers, and our experienced craftsmen in the field,” said President Dennis Corrigan. “Everybody brings something to the table to help our customers.”

The successful Johnson Controls-Corrigan partnership on the performance contract has led to a new campus project—extensive renovation of SEMO's Regional Crime Lab.

Corrigan Company, established in 1896, is in its third generation of family ownership. The diversified firm has 300 employees and is among the top 20 mechanical contractors in the United States.

Johnson Controls is a Fortune 150 company based in Milwaukee, with full-service offices in St. Louis and other major cities. Johnson Controls offers a wide range of facility-related products and services, and has more than 770 active performance contracting projects in North America.

For more information, call 414-524-5237. *

MCAA thanks Johnson Controls, a major sponsor, for sponsoring the Monday morning breakfast at the 2003 convention in Palm Springs.

Baker Group and Anvil International Partnership is Like Money in the Bank

MCAA member Baker Group of Des Moines, IA—one of the country's leading full-service mechanical contractors—approaches each project with a keen awareness of its specific challenges and opportunities. The 10-story, 333,000 square foot Wells Fargo Financial building, a \$7.6 million project located in the heart of downtown Des Moines, was no different.

Responsible for the job's HVAC systems, Baker Group's challenges on the design-build project included an extremely tight construction schedule and limited onsite storage space.

Hitting the Groove with Gruvlok®

Baker Group selected Anvil International, Inc., and its Gruvlok® pipe fittings, valves, and couplings to assist in meeting the project's HVAC requirements. Anvil and its Omaha distributor, Central States Industrial Supply, provided the flexibility required to keep the project on time, even agreeing to custom fabricate 10-inch and 12-inch 90-degree long radius elbows to meet project specifications.

Gary Walter, Baker Group project manager and estimator commented that “not only was Anvil's price acceptable, they also put a premium on service that made us feel confident they would be responsive to our tight schedule and limited space on this design-build job.”

Just-In-Time Delivery

The project's design-build schedule was ambitious and, to complicate matters, the job was in the middle of the city with no laydown area for

materials and extremely tight space for storage in mechanical rooms. To offset these potential challenges, Baker Group called for just-in-time product delivery.

Baker worked with Anvil to deliver the Gruvlok® pump packages—standard and rigid couplings, butterfly valves, check valves, and suction diffusers—in three main phases to coincide with the delivery of Baker's grooved piping and the rented crane. “Anvil and Central States were flexible in working with us to deliver product on time, every time,” said Walter. “Without them working closely with us, the schedule for this project could have been jeopardized.”

Anvil International Marketing Manager Phil Schechinger added, “Baker has a well-earned reputation for providing superior mechanical work on time and on budget. It was our job to be there when they needed us.”

Bagged and Tagged

Due to the tight schedule and limited space, Baker also asked that some Gruvlok® products be sorted as a complete package and delivered to the floor where that particular work would take place. The Anvil team



Anvil's Gruvlok® helped the Baker Group reduce time and labor costs in the field.

provided a form of “bag and tag” service, packaging product for specific applications. For example, the entire Gruvlok® product for chiller number one was crated and tagged, eliminating the need for field personnel to search for the parts or refer back to the mechanical drawings.

“This service made it easier for us to access and identify the materials once they arrived,” said Baker Field Superintendent Mike Jackson. “It helped keep construction on schedule by allowing workers to plan ahead, determine what they were going to work on in the afternoon or the next day, and grab the appropriate crate or skid.”

Pleased with the Product

Baker Group personnel were pleased with the grooved piping. “The Wells Fargo project is another example of taking advantage of grooved pump packages to reduce time and labor costs in the field,” said Walter. The company's field personnel were especially pleased with how the Gruvlok® 7012 flange adapter's tab bolt helped in the ease and speed of installation. They also liked the user-friendly drain plug feature of the 7800 Series Gruvlok® check valves for its convenience.

Banking on a Future Together

“The Wells Fargo project was a great success,” concluded Walter. “Being the mechanical contractor, we build things and then go away. I'm pleased to say we've had no piping-related callbacks.” What are the prospects for another Baker Group and Anvil partnership? It's safe to say it's like money in the bank.

*For more information, contact Ernie Chuter at Anvil International, Inc. at 603-422-8034. **

MCAA thanks Anvil International, Inc., a major sponsor, for sponsoring the Fun Run/Walk at MCAA's 2003 convention in Palm Springs.

Summary: 2002–2003 U.S. Markets Construction Overview

Abstracted from *The 2002–2003 U.S. Markets Construction Overview*, © 2002, FMI Corporation

Once again, the U.S. economy has demonstrated the ability to sustain much of its overall momentum even as certain sectors have slowed. The disappointing performance of the stock markets has led many investors to real estate. Whether for personal use or for rental income, this action has been repeated often enough to give residential construction a stronger performance than the overall economy would warrant.

Overall, we have been expecting construction to be down 1 percent in 2002 compared to 2001; however, a strong finish in certain sectors in the final months of the year indicates that the final numbers may be .2 percent higher than 2001. The FMI forecast for 2003 and 2004 indicates that the recovery that began in mid-2002, while tenuous due to the uncertainty and anxiety inherent in coping with worldwide terrorism, will gain momentum over the next several quarters. We are more optimistic than many pundits are.

Until clear recovery is signaled, however, we expect some of the typical behaviors of a soft market—cost cutting aimed at preserving profitability at lower revenues; increased efforts to preserve margins by demonstrating differentiation to customers through value-added solutions; and, inevitably, low prices aimed at building backlog to preserve growth plans and to keep workforces busy.

As in any softening market, owners are likely to increasingly make their selec-

tions based upon price, even though recent years have demonstrated the advantages of negotiated work and even strategic alliances. Additional financial pressures this year are the increased cost of insurance and the reduced availability of surety credit.

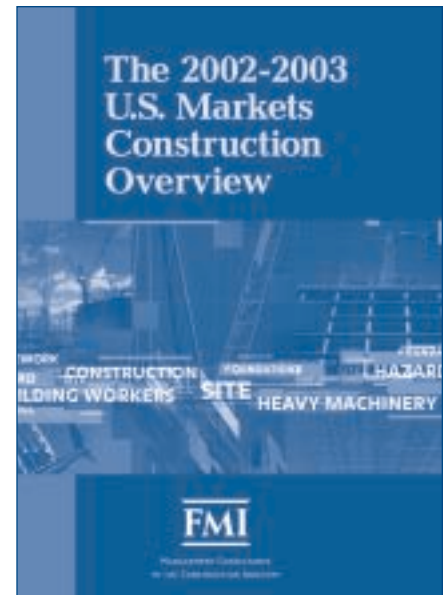
Smart money will continue to be spent on technology to enhance productivity and on training solutions for both productivity improvement and employee retention purposes. Tapping into the greater wealth of human potential continues to be the aim of those companies making significant investments in leadership development.

Market Issues for Specialty and Trade Contractors

Mechanical and electrical contractors are battling in the marketplace with manufacturers to determine who will “own” the building technology package. The combination of technology—security, controls, fire protection, etc.—bring an overlap of expertise with these three groups. Manufacturers see the building technology package as an opportunity to grow market share and expand service offerings. Mechanical contractors see it as an extension of their traditional work. And electrical contractors view it as a growing piece of low-voltage work.

Field software utilization remains primarily focused on scheduling, e-mail, spreadsheets, and word processing. Substantial investments in systems and software in the field remain a tough sell. For many subcontractors, real-time field information for costing and payroll remains a future promise.

Cell phones, pagers, e-mail, personal digital assistants (PDA), and digital



FMI's 2002-2003 U.S. Markets Construction Overview is just one of FMI's research and consulting services.

cameras lead the list of field technology tools. E-mail remains mostly tied to desktop applications, but the introduction of PDAs is taking the handheld tools from an electronic to-do list to a real-time productivity tool tracking materials, labor, and time.

Human assets are the key building blocks for all specialty contractors. Balancing the needs of generations, overcoming the labor shortage, and developing their people in today's competitive market are key challenges.

However, specialty contractors' approach to developing their human assets remains diffused and too often ineffective. Craft labor training grew in success and importance in the past decade of economic expansion. The same can be said for safety training. What continues to lag is the growth and development of management, leadership, and customer-relations skills for field and office personnel.

Corporate “universities” are becoming the battle call of subcontractors large

and small. More than a training class, corporate universities are focused on creating an ongoing process to grow the skills of the organization. With the continuing flattening of corporate organizational structures, growing peoples' abilities is a key to ensuring a competitive advantage in the marketplace and achieving high levels of retention.

Labor-intensive subcontractors are leveraging small percentage improvements in labor savings to yield significant improvements in bottom-line results. Proper planning and elevated communications lead the list of techniques generating the greatest bottom-line impact. Material-intensive specialty contractors gain on productivity through proper planning to minimize the time crews spend waiting for materials. An example is an electrical contractor whose motto is "eight hours of materials within 10 feet of the workers that need them." Another contractor slogan is "Keep the welder welding."

Keeping field forces informed, trained, and motivated helps improve productivity. It's now commonplace for field foremen to have access to full cost

estimates and installed work to date. Subcontractors are thinking of ways to continuously keep the field informed on the progress being made on the job—both when ahead and when behind budget.

Post-job reviews are once again gaining in use. The focus of these reviews is to ensure that challenges, lessons learned, and best practices are captured and used on future projects. Also a routine part of the process is a review of what the customer wanted and their level of satisfaction at the end of the project.

Some customers, also impacted by the soft economy, are asking subcontractors with whom they've had long-term negotiated relationships to bid jobs. Budget crunches have encouraged some customers to ask general contractors to bid on projects that would have been negotiated in the past. Motivated by the bid competition, general contractors and construction managers are putting additional pressure on subcontractors to cut profit margins and shorten the construction timeframe. Competition and productivity are key factors in the growth of our economy.

Companies that focus on improving productivity and keeping their costs down will be more competitive in the marketplace. That shouldn't mean a company should have to lower its profit margins. Doing market research and strategic planning will help determine the best markets to target and the best strategies to achieve your goals. The companies that succeed in an uncertain economy will be the ones that don't wait around for things to get better, but go out and make things better.

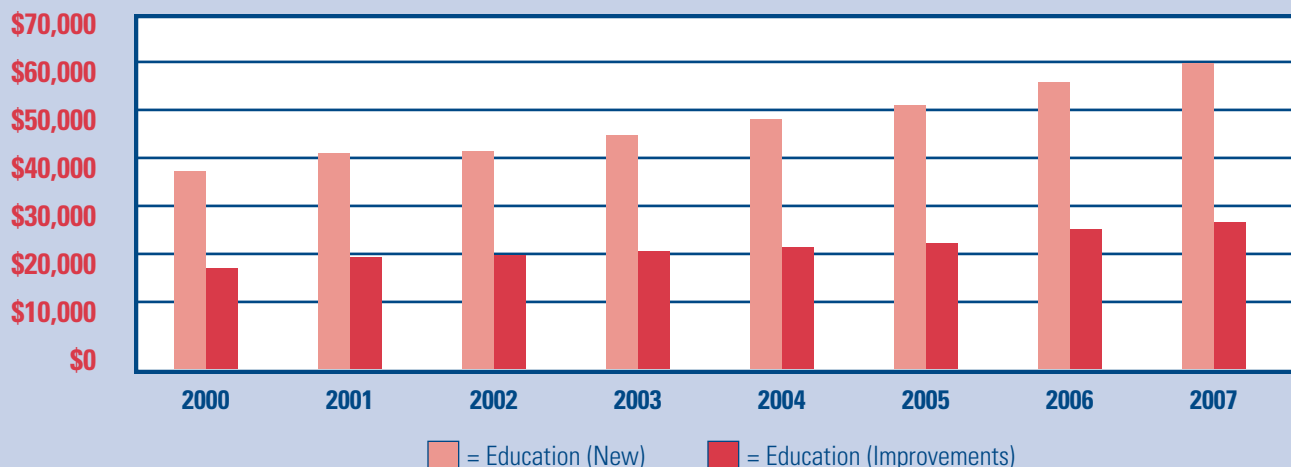
To learn more about FMI's 2002-2003 Construction Markets Overview or other research and consulting services provided by FMI, contact Stuart M. Deibel, senior consultant, at 919-785-9239 or sdeibel@fminet.com.

FMI is a workshop sponsor at MCAA's 2003 convention in Palm Springs.

*For more information about MCAA's outstanding management and leadership education programs, or to request a current Education Catalog or Resource Catalog, call 800-556-3653 or visit www.mcaa.org. **

Education Construction Put in Place Estimated for the United States

(Millions of Current Dollars, as of April)



Personal Attention Characterizes Ferguson-Shambaugh Relationship

More than three years ago, Ferguson Associates from South Bend, IN, approached Shambaugh & Sons, one of the largest mechanical contracting firms in the Midwest, asking for the chance to do business. The first indication that the company's branch/distribution network just might lead to a mutually beneficial business solution occurred when emergency truckloads of pipe from Ferguson's Fulton Distribution Center were shipped directly to a Shambaugh job in Louisiana.

Shambaugh, headquartered in Fort Wayne, is now a division of EMCOR, the largest mechanical contractor in the nation, with over \$4 billion in annual revenue. Joe Jackson, EMCOR's head of national purchasing, saw immediate possibilities in the Ferguson-Shambaugh relationship for reducing the number of suppliers, as well as the amount of inventory, and increasing job efficiencies.

Pinpointing the Potential

The first nine months of the relationship gave Ferguson the opportunity to prove itself through several other situations that provided the right product at the right time in the right place. As a result, both companies were ready to negotiate a national account contract that would prove to be a boon for all. For Ferguson, the obvious win was the opportunity to sell product to a large national account that had huge growth potential. For Shambaugh, the coordination Ferguson provided in the purchasing arena and the immediate availability of product promised improvements in both pricing and downtime reduction.

"It was the old 80-20 rule," says Jackson. "We were spending 80 percent of our time trying to manage 20 percent of our purchasing dollars. We were doing

an awful lot of faxing and bidding and going through a lot of rigmarole, only to find that we weren't having a real impact on our commodity pricing. In trying to determine how to best cut out as much red tape as possible, we realized that pipe, valves, and fittings offered us the greatest opportunity to streamline our purchasing function. Our Ferguson relationship has freed us up to concentrate more of our time on high-dollar negotiations for specialty items and equipment."

The Answer: One Point of Contact

According to Shambaugh buyer Jacque Spangler, financial strength, distribution network, and depth of product all contribute to the success of the relationship. But the real key is Shambaugh's designated Ferguson associate, Joe Cristofano, who works onsite at Shambaugh.

"Joe has made a big impact on our communications," Spangler explained. "Because he's here, he understands the urgency of the problems we face. He serves as one point of contact for all our jobs, which means that we don't have to become experts at dealing with a supplier at each of our job locations. He does it all—ordering materials, setting up accounts, negotiating individual market pricing, doing takeoffs, managing job surpluses, and, most importantly, troubleshooting jobs with our field managers. He keeps our people in the field happy because he keeps them rolling! And he's always willing to do whatever it takes to get the job done on time."

She cites one example of an emergency call Cristofano received at 9:00 p.m. the Saturday before Christmas: "Shambaugh was due to make weekend repairs at a manufacturing plant, but the job foreman forgot to order the

materials. Cristofano and his wife drove over two hours to Ferguson's South Bend branch to pick up valves, flanges, and fittings and delivered the products by 6:00 a.m. on Sunday morning, just in time for the shutdown. You don't often find dedication like that!"

Spangler goes on to say that the relationship has had a major impact on the firm's inventory. "We like to think of ourselves as a non-inventory company. Our ideal situation is to have guaranteed inventories of commonly used items bagged, tagged, and delivered on a just-in-time basis directly to our job sites. This cuts down on vandalism, theft, and excess material handling."

Making Sure It Works

Jackson and Spangler receive yardsticks that help them run the business more efficiently and measure the success of the program. Daily backorder reports provide input for more efficient decision-making. Monthly reports indicate specific commodities purchased by "who, what, and where," ensuring that national commodity pricing is being maintained. Total sales volume reports by business unit and branch show purchasing trends. Quarterly meetings pinpoint successes and problems that need work. But, according to both, the best indicator is the mood of the field managers.

"If our field people are happy," Jackson explains, "it means that we're doing something right. Their priorities are to keep our downtime to a minimum and to ensure that jobs are completed in a timely manner. If they're not complaining, that's a pretty good indication that we're also having an impact on our labor costs."

*For more information on Ferguson's capabilities, call 757-989-2480. **

Constructware

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facility, a strong operations and maintenance backlog, and a fast-growing building controls automation and electrical division. It is a full-service and profitable mechanical contractor.

At the same time, Brandt faces a common productivity challenge: how to leverage the talents of its project managers and operations staff to get more done in less time. The productivity factor, while always important, will become even more crucial given the business outlook for 2003 and beyond. In a recent cost report from *ENR*, the outlook means that “competition is intense and it is driving prices down, especially for electrical and mechanical work...The steep falloff in several private non-residential markets has contractors migrating to where the work is and cutting their margins to get it. While (national) volume is near its peak, the selling price of construction is more reminiscent of a recession.”

Given this climate, productivity is the key to profitability. Since Brandt project manager Kyle Holmes began using Constructware for the Subcontractor in early 2002, he estimates he has achieved a 50 percent increase in his personal productivity.

What’s the lesson for other project managers? As Kyle Holms learned, technology can improve your company’s performance as well as your own. In his own words:

As most project managers know, paperwork eats up a large amount of your day. I am currently managing four projects totaling about \$10 million in contract volume. I don’t have an assistant and I am responsible for handling all the paperwork on my projects.

I estimate that in the last four months after getting up to speed on

Brandt Engineering Co.
Dallas, TX

Profile:

- Mechanical Contractor
- Revenues about \$100 million in 2001
- Ranked #157 on ENR Top 600 list of Specialty Contractors

Constructware facts:

- Started: January 2002
- Number of Users: 23

www.brandteng.com

Constructware, my productivity has increased by at least 50 percent. What I mean by this is that my productivity in terms of handling paperwork has more than doubled, and this has allowed my overall productivity to rise by at least 50 percent. I get a lot more work done in a day and I can focus on the high-end part of my job. Here are some examples of what I mean.

Job Setup

Beginning new projects often requires vast amounts of paperwork, particularly because of the submittal process, purchasing, and the discovery process, which includes requests for information and revising contract documents. The submittal module in Constructware allows me to quickly make a submittal schedule, create and log transmittals of my submittals, and even generate purchase orders once the submittal has been approved. This streamlines my initial buyout process and allows me to keep excellent records of my progress—automatically.

Keeping Pace with Fast Track Designs

With today’s fast track jobs, Brandt is often contracted to do work when the design is less than half, sometimes less than 25 percent, complete. It’s just a fact that more and more design work is being done during the construction phase. The process of clarifying the drawings and helping with suggestions is really where the rubber meets the road for us.

What slows this down is the paperwork. You may have great ideas in your head, but it doesn’t do any good if you can’t get them down on paper and distributed to the parties involved. With Constructware, I can crank out more paperwork and get it to people *quickly*.



Standard letter templates speed up the correspondence process and maintain a centralized paper trail.

At the same time we have to keep our own ‘paper trail’ during this process to protect our interests. The time I used to spend filing and logging pieces of paper can now be used much more productively, which impacts my bottom line and my ability to serve my client.

Request For Information (RFI) Processing

Brandt has built its reputation by providing better solutions, but we have to keep our paperwork straight. The idea is to keep a legal paper trail with the least amount of effort.

A key feature within Constructware that helps us do this is the RFI module. I can write an RFI, e-mail it to everyone, track the responses, and record the engineer’s response all from within the application. With that paper trail in hand I can e-mail copies of answered e-mails to the other trades and to my own project team.

What’s different about this software is how fast I can get the work done. I write an RFI once and e-mail it and I’m done. If you’re doing this by hand, it



RFIs can be quickly created in a consistent but flexible format and faxed to multiple parties.

can take you half the morning just to get everything faxed out. At the same time, owners have told me they appreciate the consistency and professionalism of our paperwork. It's an intangible that owners pick up on—the professionalism of the documents we turn out. It shows the owner that we are committed to solving MEP problems in a consistent, well-documented, concise manner.

Keeping Owners Happy and Getting New Business

The things I've talked about above help me to get more out of my day. But the real payoff for getting the paperwork under control is something any project manager can appreciate: I'm in a position to focus on my clients. I can spend more time developing real solutions, getting the ideas approved, and getting them out to the field.

Another benefit of the software package is helping secure new business. Owners are more interested now in HOW you work and what kind of systems you use. It's not good enough to say, "Yes, we have systems"; they want to see the systems and see HOW you manage the work.

For us that's an advantage because we can show the owner that we add value by cutting down the amount of time it takes to create a well-documented paper trail; by speeding up our ability to pass information to our entire project team, our own support staff, and our subcontractors; and by making our project managers more efficient.

The Software Evaluation/ Selection Process

We spent a considerable amount of time evaluating and testing different programs. There were many very robust database programs that had the ability to store, log, and track all of the paperwork a large construction job generates, but most of them seemed to be meant for general contractors. Constructware ranked high on my list because it has the ability to handle the sheer amount of data, but its user interface is simpler and it has some nice features that are definitely designed for subcontractors. And, as far as "selling" the product to my co-workers, Constructware is simple enough that I could readily show members of my team how we could all start improving our productivity by implementing this software solution.

*For more information on Constructware, call 813-903-9446. **

MSI Mechanical Improves Productivity with FlowGuard CPVC Piping

MCAA member MSI Mechanical (Quaker Hill, CT) was selected to install the plumbing system in the Mystic Marriott Hotel and Spa in Groton. It features six floors, 285 guestrooms, 26 suites, and 30,000 sq. ft. of meeting space. The construction management firm, Wolman Construction, was especially interested in installing a more efficient plumbing system.

MSI President Ken Aspinwall was aware that there were some water quality problems in the Mystic area that caused copper plumbing systems to corrode. The costs of maintaining and replacing copper pipe and fittings in the local environment led MSI to consider using an alternative to copper.

Before installation began, Aspinwall was introduced to FlowGuard Gold® CPVC plumbing systems by a company consultant who explained the benefits of CPVC plumbing systems.

Aspinwall believed that FlowGuard, manufactured by Noveon, "would provide all the benefits we needed without any problems under tough environmental conditions." As it turned out, after receiving training at FlowGuard Gold® University, MSI employees found the installation of the CPVC system was much easier than a copper plumbing system. "We were able to improve our productivity and provide a cleaner installation with fewer tools," said Aspinwall. "The installation process is simple; we just cut the pipe with a hand cutter, solvent cement the fittings using the one-step joining system, and move on."



MSI Mechanical's Ken Aspinwall chose a FlowGuard Gold CPVC plumbing system for a recent hotel project.

Aspinwall also found other benefits. The insulation properties of CPVC plumbing systems reduce condensation and sweaty pipes, thus reducing the chance for drip damage to ceilings or personal property. In addition, CPVC systems offer a system that is four times quieter than copper. "Noise abatement was a big factor in the decision to use FlowGuard Gold," said Aspinwall. "When the plumbing system is properly installed, there is no water hammer."

Since Noveon's development of CPVC plumbing systems over 40 years ago, more than three billion feet of pipe has been installed in homes, condominiums, apartments, and hotels.

*For more information on the FlowGuard Gold plumbing system, call 888-234-2436, ext. 7393, or visit www.flowguardgold.com. **

Unique Science and Art Center in Harrisburg Called for the Best in HVAC Equipment

Whitaker Center for Science and the Arts is a unique learning and entertainment site in Harrisburg, PA—the first facility in the United States to combine a science education center and a performing arts venue under one roof.

The priorities established by Whitaker Center's Board of Directors were that the facility should be designed for maximum comfort, high operating efficiency, and that a particular emphasis be placed on acoustic performance. The building's three major components—Sunoco Performance Theater, IMAX Theater, and Harsco Science Center—all rest on independent foundations so that building vibration and acoustic transfer are eliminated. MCAA contractor G.R. Sponaugle & Sons of Harrisburg was an integral part of the construction team. And, The Trane Company was selected to provide chillers, modular air handlers,

and the Trane Tracer Summit™ building management system.

The chillers selected, with an eye both to operating efficiency and very low acoustic signature, were two Trane CenTraVac™ Model CVHE chillers—an exceptionally quiet design with low vibration levels.

Trane Modular Climate Changer™ air handlers were selected to meet the acoustic and efficiency requirements. Because the modular design of the units allowed them to be brought into the tight spaces in sections and assembled in place, field personnel had no trouble placing them in the three small mechanical rooms provided.

The building control system is a Trane Tracer Summit building management system. Assistant facility manager Andrew Shughart finds it “a great tool for getting a complete understanding

of the system. With the Summit system, we've learned how to cut our electric billing in half by optimizing the chillers and scheduled the use of the HVAC system to meet actual building needs.”

*For more information on Trane products, call 651-407-3921. **

Trane, a major convention sponsor, is providing portfolios and pens, and cosponsoring the final program for MCAA 2003 in Palm Springs.

Evaluating Your Service Management Needs

Service management software can help you dispatch work orders in a controlled, efficient fashion while ensuring smooth customer service. But before investing in service management software, it's important to consider your company's unique needs. To help in your software selection, here are some key points to consider:

1. The dispatch board.

Make sure the software can handle the workload, tracking all technicians and the number of work orders your company handles. From the dispatch board, you should be able to quickly and easily access information ranging from warranty and installation information to customer call history. And you should be able to simultaneously see all technicians and their assignments. Software that offers multiple dispatch boards provides the most flexibility.

2. Work order history.

You need to know who worked on certain equipment and what was done in the past. This includes equipment tracking and preventive maintenance. Having this information instantly



Trane Company's chillers, modular air handlers, and the Trane Tracer Summit™ building management system were selected for the Whitaker Center project.

available at the click of a mouse saves you from having to take the time to manually look it up in the files.

3. Equipment history.

The software should allow you to track by model number, serial number, and warranty information. This is the type of information that often gets lost in the shuffle, but is important to providing efficient service.

4. Within the customer view, access to service agreements, invoices, and accounts receivable history.

The dispatcher needs to know whether a customer has an outstanding balance or whether service is included under a service agreement so payment can be arranged, if necessary, before a technician is sent out on the call.

5. Market analysis.

Can the software use information to generate reports on how money is being made or lost? The software also should be able to merge information by automatically using data already entered in a work order or customer file. In addition, it should filter that data by equipment, warranty, and other pertinent categories.

6. Preventive maintenance scheduling.

Does the software automate preventive maintenance scheduling? This feature ensures that contracted service calls are never lost or forgotten; failing to keep up with preventive maintenance agreements can be costly to your business.

7. Advanced billing.

With the right software, service agreements can be billed automatically in advance so they can be amortized. This allows you to maximize profitability of customers with annual contracts by spreading the tax burden over the year, instead of the quarter in which revenue is received.

8. Automated billing.

You should be able to price a job by

a small job fixed rate, flat rate, or markups and discounts. You should also have the option of customizing each call type to include its own labor rate. And, with the ability to automatically price parts based on an item or markup file, price updating is simple.

9. Advanced scheduling.

Being able to schedule technicians in advance gives you flexibility and an idea of how busy your company will be while giving your customers a choice of future dates for their convenience.

10. Integrated software.

Service management software that can communicate with your accounting, estimating, and job cost software can save you time and money by allowing you to enter data a single time and have it automatically post to other software applications.

For service contractors who already have service management software, it's important to evaluate whether your software is really fulfilling your needs, or whether other software could do a better job. Here are four points to consider when evaluating your existing software:

1. Is the dispatch board easy to navigate and is the information easily accessible?

From the dispatch board, you should be able to retrieve critical information about your customers without having to open half a dozen or more windows. When the telephone rings, you should be able to enter the service call within 30 seconds; if it takes longer than that, it's costing more than it should to run your business.

2. Does your service management software communicate with your accounting software?

Information entered on a work order should automatically go to accounts receivable, the general ledger, and payroll without taking additional steps or

entering data a second time. Integrated software increases efficiency and accuracy, and significantly cuts down on the number of people necessary to run the office.

3. Does your service management software communicate with job cost and estimating software?

Data collected during an estimate can be sent to the service or purchasing department without having to be re-entered.

4. Does the software provider have a stable company history?

Look at the longevity of the company, the number of users and the type of support it offers. You don't want to invest in expensive software just to have the company stop upgrading the software or even fold a year or two later. Choosing a company with a history of outstanding support means you can depend on getting the help you need, when you need it.

With these guidelines to consider, you can be sure you get software that is flexible enough to serve your company's needs, giving you instant access to service information that helps you communicate with both customers and technicians in the field.

This guide was prepared by Larry Goddard, national sales manager, service management, for Timberline Software Corporation.

For more information on Timberline, e-mail him at larry.goddard@timberline.com.

Note: For additional information about deciding which service management software will best meet your company's needs, see *A Service Contractor's Guide: Selecting the Right Service Management Software for Your Organization*, available from MCAA for \$15 member/\$30 non-member. *

Using Accurate and Detailed Estimating Increases Project Success

Securing sufficient and timely work to meet or exceed the company budget has always been a priority of the greatest importance for contractors. In an expanding economy, there is greater demand for the contractor's services, and contractors can get lots of potentially good work and good margins. Conversely, in a regressing economy, the bidding success ratio decreases and margins are eroded.

A contractor's long-term viability and success is based on its ability to secure sufficient work to cover overhead and make a profit.

Best Practices

What makes a contractor more profitable than his competitors, or profitable at all, for that matter? Although we can't answer this question completely, we can unravel some of the common causes and best practices that can generate good results day after day, job after job.

- ☛ A good place to start is having capable and well-trained personnel coupled with a company culture committed to education and accuracy.
- ☛ Your sales are down, you are not getting enough work, what do you do? Start with a realistic assessment of the work available for the next 12 to 18 months. If there is going to be less work available in your area of expertise and you cannot find new niches, then you must make the necessary adjustments—including cutting back.
- ☛ Avoid engaging in price wars with the competition. These can get out of hand and result in a critical mistake quite easily.

Over the years, I have noticed that, when under enormous pressure to secure work, contractors resort to the shotgun approach, reasoning that since estimating is a numbers game, the more we bid, the more work we get. There is some truth to this; however, what is ignored is the fundamental fact that increasing the number of poor and inaccurate estimates increases our chances of landing bad jobs at a very

Having a good plan and a strategy to execute will afford your people the time to focus on managing the job.

low price. The better approach would be to focus on fewer projects that are within the realm of your expertise, and therefore stand better chances of securing. Augment your success ratio with value-added engineering, accuracy, and details so as to land projects at potentially profitable prices.

Follow up on your bid and do not assume that the lower price is going to win the job; your persistence and negotiating abilities can make a big difference in the outcome of your success. If you are armed with a detailed and accurate estimate, you will be better able to negotiate a profitable contract while affording the owners professional service on time and on budget.

Well-Estimated Jobs Are More Likely to be Profitable

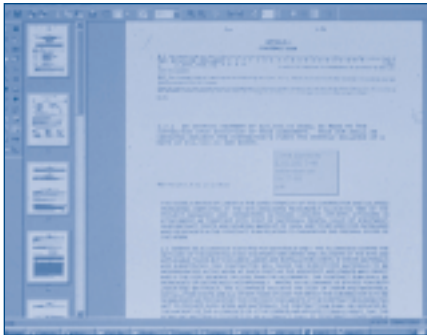
A well-estimated job stands a much greater chance of being a profitable one. If you have secured a job at the right price, a detailed and accurate estimate tells you that all known costs are under your control and that you have a good plan of attack. Since your estimate has defined a reasonably accurate bill of materials and schedule, as you sign the contract and become acquainted with additional information, you will be able to refine your estimate and make more value-added engineering revisions with the help of your team, including your estimator, project manager, purchasing, superintendent, scheduler, and foreman. A good brainstorming session may identify new cost saving features and produce a solid buy-in from field people while giving them plenty of very useful information to manage the project efficiently and effectively.

This approach does not guarantee the successful outcome of a project, as there are too many variables that cannot be controlled. However, having a good plan and a strategy to execute will afford your people the time to focus on managing the job, the owners, and the general contractors, and to be on the alert for possible problems in a proactive way. Your people need to be managing the job—not putting out fires.

This article was prepared by Accubid Systems President Giovanni Marcelli. Accubid Systems is a leading North American supplier of PC-based cost estimating software for electrical, mechanical, and structured cabling/VDV contractors.

*For more information, call 800-222-8243 or visit their website at www.accubid.com. **

NEW PRODUCTS AND INFORMATION



Dexter+Chaney's Forefront document imaging boasts more than 2,400 users...

The document imaging component of Dexter+Chaney's Forefront Construction Management Software, now used by more than 2,400 companies, incorporates documents electronically into the contractor's workflow—eliminating the need to fax, overnight, or courier documents.

Introduced three years ago, the document imaging component is fully integrated with the contractor's accounting, job costing, human resources, and project management software. It gives management, office staff, and project managers the fast access they need to important documents like AP invoices, change orders, payroll timecards, and contracts. Contractors who purchase Forefront receive support and training directly from Dexter+Chaney's staff.

For more information about Dexter+Chaney or Forefront, call Brad Matthews at 800-875-1400 or e-mail him at info@dexterchaney.com.

Making indoor air quality (IAQ) a breeze...

With Carrier's new COBRA™ high efficiency energy recovery rooftop unit, building owners and managers no longer need to make a choice between good IAQ, adequate ventilation, occupant comfort, and energy efficiency. COBRA, part of Carrier's Weathermaster® series, incorporates exclusive features that allow building owners to exhaust poor quality return air directly outside without risk of contaminating their fresh air supply. At the same time, COBRA reclaims the exhausting air's energy and uses it to precondition the fresh supply air, providing cost-effective comfort for both building occupants and owners. When used in combination with Carrier's MoistureMi\$er™ dehumidification package, COBRA can boost latent capacity on

demand by up to 40 percent. This allows building owners to simultaneously control temperature and humidity levels, ensuring a comfortable environment for a single unitary rooftop unit. And, Carrier's one-piece COBRA arrives on the jobsite completely assembled, having already undergone a complete factory run to ensure it meets stringent quality and reliability design requirements.

For more information on COBRA or other Carrier products and services, visit the company's website at www.carrier.com; e-mail contact.carrier@carrier.utc.com; or call 800-CARRIER. Carrier, a major convention sponsor, will provide tote bags for MCAA 2003 in Palm Springs and host the student chapter luncheon.



Reed cuts pipe, wrapped or unwrapped...

Reed has introduced a line of CSST tubing cutters, offering different models to accommodate cuts with the outer plastic wrapper jacket on or off. The cutters fit 1/4" up to 2 1/2" CSST flexible gas piping. They have been tested and are suitable for Fastite®, Parker Parflex™, WARDFLEX™, TracPipe®, and Pro-Flex®.

For more information, call 800-666-3691 or 814-452-3691, or visit www.reedmfco.com.

NEW PRODUCTS AND INFORMATION



Precision placement's no problem...

Contractors have found that the Erickson Air-Crane system is hard to beat for speed, power, and precision. In fact, Erickson has placed more than 20,000 HVAC units for MCAA contractors across the United States. Jobs requiring precision installation are completed in record time because of such innovations as Erickson's patented "anti-rotation device" and the aft seat pilot station found only on the S-64 Aircrane helicopter. From skyscrapers to warehouses, big cities to open plains, Erickson Air-Crane adapts the helicopter lift operation to accommodate a wide variety of operational scenarios.

For more information, call 541-664-5544 or visit the company's website at www.ericksonaircrane.com.

Field-forming tees saves money...

No matter what joining method is used—wrought fitting, grooved, or pressed—the tee is the most expensive, labor-intensive component of a copper tube system. Increasingly, a hybrid installation is used with the mechanically formed tee fitting on the outlet. Whether it is prefabricated or field-installed depends on the project and contractor. **T-DRILL** now provides contractors with the ability to form ½" outlets on ½" runs of copper tube up to 4" outlets on 8" runs—M, L, or K. MCAA's *Labor Estimating Manual* refers to this method of installation in Section 17 as the "copper pull tee." Other labor calculating methods refer to T-DRILL by name or use the code terminology, "mechanically formed tee fitting." As wholesalers shrink their fitting inventories, the ability to field-form a tee becomes more and more attractive, especially with T-DRILL's advertised 18 percent reduction in labor and material costs.

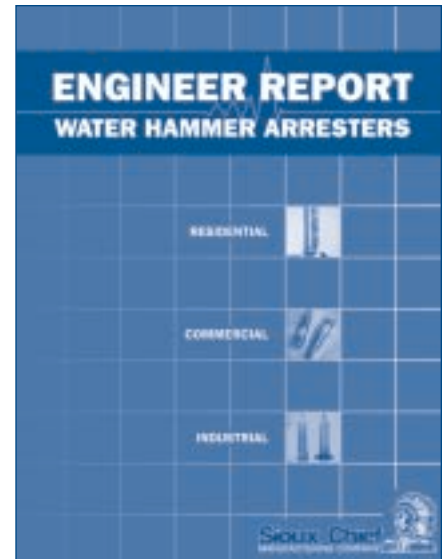
For more information, call Dick Nelson at 800-554-2730.



Red-White Valve's eastern connection...

Red-White Valve Corp.—helping to establish a presence in the U.S. for San-Ei, a Japanese high-end luxury kitchen and bath faucet line—found a winner when San-Ei's kitchen faucet model Mare #K8792J-BW received a first-place award in the New Product Showcase at the ISH North America Show in Toronto last fall. The faucet is one of many products manufactured by San-Ei, all of them with a unique contemporary look not found elsewhere.

For more information on San-Ei or Red-White Valve, visit www.redwhitevalveusa.com.



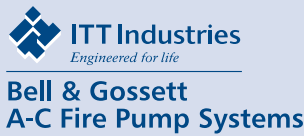
Everything you want to know about water hammer arresters...

Sioux Chief has just released the latest version of its *Engineer Report for Water Hammer Arresters*. Designed specifically for the plumbing engineer, the Sioux Chief report is a comprehensive guide to water hammer and water hammer arresters. It includes specification sheets for Sioux Chief arresters and product information on Sioux Chief Min-Rester, Hydra-Rester, and Mega-Rester water hammer arresters.

For more information, call Carol Flanagan at 816-776-6104, ext. 290, e-mail her at carol.flanagan@siouxchief.com or visit www.siouxchief.com.

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American Technical Publishers

Publishes technical training materials for the building, electrical, metals, and mechanical trades

ARGCO

Supplies quality products to the fire sprinkler, boiler, and plumbing industries

Acorn Engineering

Designs and produces quality plumbing products at a competitive price

Construction Forms, Inc.

Manufactures abrasion resistant piping systems to efficiently pump concrete and transport abrasive solids and slurries for a wide range of industries

East Coast CAD/CAM

Offers sheet metal CAD software that is widely used by mechanical and sheet metal contractors

i2 Trade Service

Provides content and pricing solutions for the electrical, plumbing/PVF, HVACR, industrial, and office products industries

Stockham Valve

Manufactures bronze and iron gate, globe, and check valves, including ball and butterfly valves

Viewpoint Construction Software

Offers a comprehensive suite of accounting and operations management applications for midrange and large firms

Bradford White Corporation

Manufactures water heaters for residential, commercial, and hydronic space heating applications

Exhibit Will Highlight Products, Services, and Technologies

You will have an opportunity to see, touch, and explore the latest products and discuss new services and technologies at this annual event showcasing the products and services of more than 90 of MCAA's Supplier Partners at the annual Manufacturer/Supplier Council Exhibit. Representatives of the 15 new members will join our long-term partners at this year's event. They are always eager to talk with you about the many ways their products and services can improve your productivity and profitability. They are also open to suggestions for improvements or comments on experiences you have had with their products.

In addition, you will also be able to learn about MCAA's latest programs and services, including the Advanced Leadership Institute; meet with students from MCAA-chartered student chapters; and learn more about programs offered by MCAA's specialty divisions.

The exhibit will be held Tuesday, March 4, in the Springs Ballroom, J.W. Marriott Desert Springs, Palm Desert, California, immediately following the session featuring Cal Ripken, Jr.

A continental breakfast will be available. Details are available online at <http://www.mcaa.org/palmsprings2003>.