

# SMART SOLUTIONS

WINTER 2012

Helping contractors save money and enhance productivity

## Gallo Mechanical Tackles Superdome Renovation with Efficient Sloan Plumbing Fixtures

To take on the major renovations needed to restore New Orleans' famed Superdome to its former glory, Gallo Mechanical chose Sloan Valve Company plumbing systems. Not only does Sloan provide the high-efficiency fixtures and technology the job required, but it offers a manual override system in case of power outages that addressed project planners' concerns.

The Mercedes-Benz Superdome, memorialized through Super Bowls and Hollywood movies, was one of

many casualties of Hurricane Katrina. When the devastating hurricane hit in 2006, thousands of people fled to the Superdome, which served as a makeshift shelter. Even though water from the broken levees never touched the Superdome, the structure was left in such disrepair that major renovations were necessary.

Flash forward to June 2011, and the last phase of renovations for the Superdome

continued on page 16



Gallo Mechanical used Sloan's high-efficiency plumbing systems and manual override technology to address planners' concerns for the restoration of New Orleans' Superdome.

## TSI Tools Key to MCAA Members' Joint Venture

### BIM Aids Collaboration on ARRA-Funded Hospital Project

MCAA members A.O. Reed & Co., Pan-Pacific Plumbing & Mechanical, and Murray Company united with Monaco Mechanical (a member of the National Certified Pipe Welding Bureau, an MCAA subsidiary) to form a joint venture (Monaco/RPM) to design and install the total mechanical package of the Camp Pendleton Replacement Hospital, taking advantage of Technical Sales International (TSI) software and technology to enhance the collaboration.

continued on page 3



By employing BIM modeling using TSI tools, Pan Pacific downloaded information directly to their pipe fabrication facilities, improving quality and reducing costs. Murray Company calculated that prefabrication saved 20 percent in costs and increased speed and productivity by 30 percent.



13



6

## WHAT'S INSIDE

- North Mechanical Counts on Viega When Timelines Are Tight .... 5
- Victaulic Helps Rado Enterprises Maximize Efficiency ..... 6
- Johnson Controls Offers Tips for Choosing Air-Handling Units .... 8
- Alliantgroup Shows You How to Save Big on Taxes ..... 9
- Airco Expands Energy Services, Increases Revenue ..... 10

Manufacturer/Supplier Council  
**MCAA**  
Adding Value to  
Your Supply Chain



8

## 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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## Tax-Savings, Tips, and Other Smart Solutions



In this issue of *Smart Solutions*, you'll find tips to help you run your company as efficiently as possible. For example, the tax specialists at *alliantgroup* explain how you can earn lucrative federal and state research and development tax credits for the kinds of things you're already doing to improve efficiency and enhance marketability. Our friends at *Johnson Controls* describe how to select an air-handling unit that provides the best fit for your client while saving you time and money on installation. You can learn about *Entech's* hands-on training for maintaining

older A/C equipment, which will give your service and maintenance technicians a leg up on the competition.

Many of our supplier partners offer new technology that increases productivity by enhancing communication, improving accuracy, and eliminating waste. *McCormick Systems* outlines important features that will help you choose the ideal estimating software for your company, while *Maxwell Systems* describes how *Dorvin D. Leis Co., Inc.* uses such programs to develop more successful bids. *WennSoft* shows us how *Egan Company* put customer relationship management programs to work to improve service and hone its competitive edge. *AirAdvice* demonstrates how *Airco Commercial Services, Inc.* increased its energy services revenue by giving clients real-world estimates of the savings from installing more efficient products.

We've seen many examples of how building information modeling (BIM) can improve coordination and communication, but it's particularly apparent in the case study from *Technical Sales International*, which shows how a group of MCAA members forged a joint venture and are using BIM to take on a massive military hospital project. We also see how collaboration benefits communities in the feature story describing how *CNA*, the MCA of Georgia, and others organized a large volunteer effort to renovate the facilities of a youth services organization in Atlanta.

Blending high-quality products and high-tech approaches was a winning combination for *Rado Enterprises*, which used *Victaulic's* grooved products and partnered with their project management experts to incorporate lean principles into the fabrication process. In this issue, you can also learn why *North Mechanical* relies on *Viega* pipe fittings to speed up installation as much as 60 percent and why *Sloan Valve* high-efficiency fixtures were the go-to choice of *Gallo Mechanical* for restoring the *Superdome*.

I hope you'll take advantage of the insights in this issue to improve productivity and increase efficiency at your company. For even more tips on maximizing your company's success, visit our exhibit at *MCAA 2012*. Also, a sincere thanks to our sponsors for their contributions to *MCAA 2012*.

A handwritten signature in blue ink that reads "William G. Bartley".

**Bill Bartley**  
Chairman

## TSI

continued from page 1

The Camp Pendleton Replacement Hospital is a design/build project managed by Naval Facilities Engineering Command Southwest. It is one of the largest American Recovery and Reinvestment Act (ARRA) projects within the Department of Defense—and the largest ARRA project awarded in the Department of Navy.

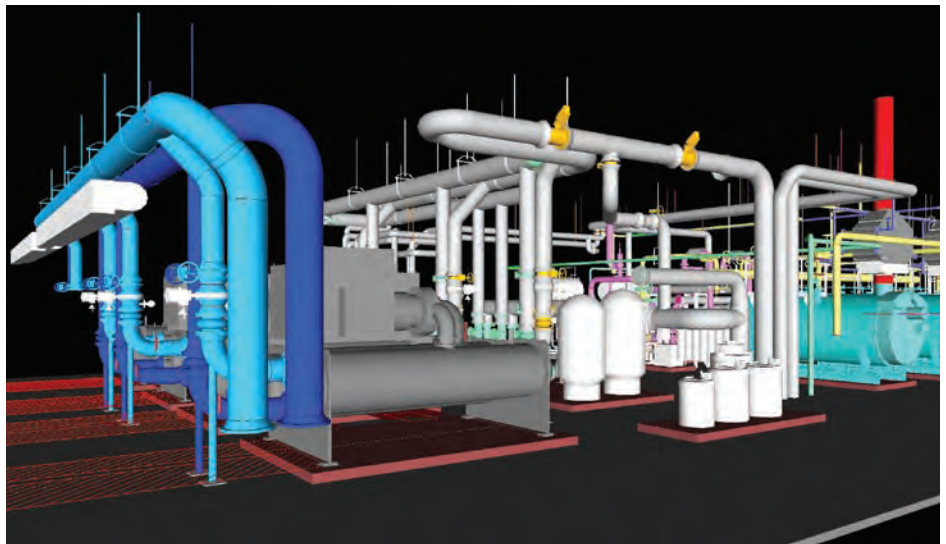
### *Recovery Act Funds Major Renovation*

Located in San Diego County and overlooking the Pacific Ocean, Camp Pendleton is the largest military training facility on the West Coast. The new hospital replaces an existing hospital that is nearly 40 years old. It will be staffed by more than 2,100 military and civilian health care workers serving a population of about 150,000 Marines and members of other branches of service, as well as their families, veterans, and the public when in need of emergency care.

The nearly half-a-billion-dollar complex, which is scheduled to open in January 2014, includes a 70-acre site that will support the approximately 500,000-square-foot multilevel hospital. The project also entails site development and construction of a 20,600-square-foot central utilities plant, a multilevel parking structure with 1,500 spaces, an additional 1,000 surface parking areas, and associated supporting facilities. The new structure is a key piece of a more than \$4-billion makeover that is transforming Camp Pendleton into one of the most modern bases in the United States.

### *Extremely Efficient Execution*

The project is on track to be one of the fastest executed hospital design/build projects in the United States. The aggressive schedule reflects the objectives of the ARRA program and implements an extremely efficient execution plan. A. O. Reed & Co., Pan Pacific, and Murray Company are all using TSI's CAD-Mech



TSI BIM software is helping Monaco/RPM design the new hospital at Camp Pendleton to meet LEED Gold standards; the building includes heat recovery chillers, boiler flue stack economizers, and high efficiency chillers among the many features contributing to energy efficiency.

software (now called CADmep+) along with Trimble Total Station robots for field layouts to ensure coordination and keep up the pace of the project.

Patrick George, manager of building information modeling (BIM) at Pan Pacific, explained, "The Camp Pendleton project has many unique parts, one being the speed at which we are designing and constructing the building. Pan Pacific was designing in traditional 2D AutoCAD, but almost simultaneously we were converting those 2D drawings into 3D construction drawings using CAD-Mech components of CADmep+ from TSI. Multiple detailers were working on the design side and on the construction side of the drawings and were in constant communication to make sure the proper design was being coordinated in the process. All of this was made easier with the comprehensive data and report features inherent in CAD-mep+."

Monaco Mechanical is handling a great deal of the submittals and providing a portion of labor for the project, while A.O. Reed & Co. is detailing and installing the ductwork. Pan Pacific and Murray Company have split the design of the plumbing systems: Pan Pacific designed the gravity systems (sanitary

and storm), while Murray Company designed the pressure systems (water and medical gas). A.O. Reed & Co. is detailing the ductwork, Pan Pacific is detailing the plumbing (all systems), and Murray Company is detailing the mechanical piping—all of which is being done with CADmep+.

"This division of responsibility in designing, detailing, and installation—combined with the efficiency of using software solutions provided by TSI—is proving to be highly productive and effective," said Timothy Allison, P.E., LEED® AP, senior professional engineer at Murray Company.

### *Prefabrication Reduces Cost, Increases Speed*

All of the underground piping was spooled and prefabricated using the spooling tools in CADmep+, allowing for incredible precision on shop drawings for prefabrication. "Our BIM modeling using TSI tools allows us to download information directly to our pipe fabrication facilities, resulting in higher quality and reduced costs. Our service department also benefits from our BIM shop drawings for use in plumbing

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Monaco/RPM is a joint venture of four MCAA members collaborating to design and build the Camp Pendleton Replacement Hospital in San Diego—one of the largest ARRA projects within the Department of Defense—using TSI BIM software to coordinate efforts around the mechanical, electrical, and plumbing systems.

continued from previous page

system service and maintenance,” said Pan Pacific’s George.

Further, Murray Company has proven that prefabricating material in their shop versus in the field provides the following advantages:

- 20-percent cost savings
- 30-percent increased productivity
- 30-percent increased speed
- High quality

“The 340-foot-long tunnel piping is an installation worthy of a museum if there were one large enough to hold it,” said Major General Anthony Jackson, who oversees all Marine Corps installations west of the Mississippi River from his office at Camp Pendleton.

Monaco/RPM is also using the Trimble Total Station for field layout—some days running as many as seven stations at a time. The Trimble units allow for laser-pinpoint-accurate layouts, reducing the time and manpower typically required in conventional methods. Furthermore, the Trimble unit layouts integrate with CADmep+ software and are being used for canning; hangers; seismic anchors, braces, and restraints; wall penetrations; underground plumbing; and riser verification.

#### **Prefabrication Contributes to Safety**

To date, the combined project teams on the hospital at Camp Pendleton have clocked more than 250,000 man-hours

over the past 14 months with zero lost-time incidents. The project is currently one month ahead of schedule.

In addition to the corporate cultures of A.O. Reed & Co., Pan Pacific, and Murray Company that promote and insist on safety protocols and education, part of that safety record is due to the prefabrication of mechanical systems. The warehouse environment enhances quality control through greater accessibility to project and executive supervision, and it lessens the time required for scope issues and problem resolution.

#### **Aiming for LEED Gold Certification**

The U.S. Green Building Council has acknowledged the importance of engineered mechanical and plumbing systems in green building design by dedicating a significant percentage of LEED Certification points for new construction to plumbing and piping systems. The hospital at Camp Pendleton is designed and constructed in line with California’s seismic safety standards and is expected to receive LEED Gold certification. A.O. Reed & Co., Pan Pacific, and Murray Company all employ LEED-certified experts and people with BIM/3D CAD proficiency and Big Room (i.e., multidisciplinary collaboration) experience who provide advice in construction means and methods and sustainability issues.

The Camp Pendleton Replacement Hospital LEED Gold Certification design features include efficient mechanical and electrical controls, such

as CO<sub>2</sub> sensors, occupancy sensors, variable frequency drives on all motors, and a solar hot water panel system (725,643.1 kBtu). Photovoltaic panels (170kW total) provide three percent of the project’s overall energy needs. The project uses reclaimed water, low-flow plumbing fixtures, building materials made from renewables or recycled content, heat recovery chillers, boiler flue stack economizers, and high efficiency chillers. These features combined will result in a 33-percent energy improvement over ASHRAE standards.

#### **BIM Improves Coordination, Saves Time and Money**

By using BIM, the project teams are able to coordinate efforts around the mechanical, electrical, and plumbing systems. Before BIM, spatial conflicts during installation might not have been detected until the systems were installed. With BIM, these design challenges can be avoided, saving time and cost. As a result, the biggest advantage of BIM is the improved construction efficiency.

Murray Company’s Allison concluded, “TSI products, specifically CADmep+, have been the products of choice for Murray Company’s detailing and fabrication of approximately \$500 million worth of piping installations over the past six years. TSI has empowered us to perform BIM since before the acronym became the popular catch phrase in the construction industry that it is today.”

For more information, visit [www.technicalsalesinternational.com](http://www.technicalsalesinternational.com).

## North Mechanical Counts on Viega When Timelines Are Tight

*Ease of Installation Makes New Quad Close Trap Seal a Good Fit for Campus Construction Site*

When the J.W. Marriott Indianapolis required some fundamental building systems to be completed ahead of the rest of the building schedule, **North Mechanical Contracting, Inc.** knew it could count on **Viega ProPress®** pipe fittings to get the job done. North Mechanical installed Viega ProPress for domestic water and hot water heating applications on all copper piping systems sizes 2" and below in the prestigious hotel. The 34-story J.W. Marriott opened its doors in February 2011; it is both the largest and tallest hotel in Indianapolis, with more than 1,000 rooms.

"We had a portion of the building that had to be done within about 10 months," said Rod Foley, project manager with North Mechanical. "And then we had an additional year for the rest of the building on top of that. The infrastructure fed another property—one of their adjacent sister hotels. And we had to have the infrastructure up and running."

Foley has been in the industry for 11 years and first used Viega ProPress six years ago. He prefers to install Viega ProPress because of the time savings the product offers.

"I think Viega ProPress is a great product," Foley said. "It really has good applications and we've found good success with using it in the past."

### *Viega Cuts Installation Time Dramatically*

Viega press technology provides a secure connection in less than seven seconds on sizes 1/2" to 4" pipe. The patented Viega Smart Connect® feature also helps installers to identify unpressed connections easily, adding an additional level of security



Because the new J.W. Marriott hotel is part of a large complex in downtown Indianapolis, it needed some infrastructure completed on an accelerated schedule. North Mechanical used Viega ProPress fittings to speed installation and meet the tight timeline.

with each connection. As a result, installers can save anywhere from 30 percent to 60 percent on installation time using Viega ProPress.

North Mechanical is one of the top full-service contractors in the Indianapolis metropolitan area. Since incorporating in 1976, the company has expanded to include commercial, institutional, and life sciences clients.

North Mechanical is so confident in the time they can save by installing Viega ProPress that they offer their customers an opportunity to switch if Viega ProPress isn't already being installed.

"We feel like it does save time," Foley said. "Almost every project we bid on, if it's not in there, we offer it as an alternative cost savings for the owner."

Viega ProPress is engineered for use in many different applications, whether heating, potable water, natural gas, propane, fire protection, or solar. Because it trims installation time, Foley said, "We've found it to be a more economic option. We definitely intend to use Viega ProPress again."

Thanks in part to North Mechanical and Viega ProPress, the new J.W. Marriott joins three other Marriott-branded hotels on a seven-acre, \$450-million complex in downtown Indianapolis.

*For more information, visit [www.viega.com](http://www.viega.com).*

*MCAA thanks Viega LLC for being a major sponsor of MCAA 2012 and for sponsoring the student chapter outings.*

# Victaulic Helps Rado Enterprises Maximize Efficiency

## Grooved Piping, Project Management Yield 'Drastic Increase in Productivity and Throughput'

To maximize the benefits of using building information modeling (BIM), and to keep the Penn State Hershey Medical Center expansion project on schedule, Rado Enterprises of Bloomsburg, PA, turned to Victaulic. With proven experience installing grooved products in various HVAC systems since they began fabrication shop operations more than 15 years ago, Rado Enterprises knew that Victaulic grooved products provided a number of benefits over welding, such as ease of installation and maintenance, ability to meet demanding schedules, and decreased liability. What they learned with this project was the benefit of Victaulic's project management services.

With its new, ultra-modern, 252,000-square-foot, five-story Children's Hospital, Penn State Hershey Medical Center is part of a growing movement toward green health care facilities that relies on advanced 3D modeling to guide the building process. Dave Zeitler, president of Rado Enterprises, knows that, in order to remain competitive, his company must adapt to new construction techniques and continue to find the most efficient ways to do business. The firm has been in the mechanical contracting business for more than 75 years, serving commercial, institutional, and industrial customers.

"Victaulic couplings have the highest quality of grooved products and services in the market," said Zeitler. "Their offering is very innovative and, as a leader, they stand by their offerings to make sure everyone is satisfied."

Those offerings go beyond grooved mechanical couplings to the expertise of the Victaulic Construction Piping Services division, which provides project management services ranging from

pre-planning to efficient piping layout drawings and project implementation.

"We trust Victaulic grooved couplings, so we knew we could trust their project coordination services to help find new efficiencies in the Hershey Children's Hospital project," said Zeitler.

### Increasing Shop Throughput

By working closely with Rado Enterprises' 3D models and Victaulic product models, the team was able to provide drawings and isometrics that could be broken down into manageable sections so that employing lean principles in the fabrication shop was even more efficient. This breakdown of the isometrics made it possible to schedule pipe and product delivery to the fabrication shop as needed. Through these coordinated shipments, all pipe-work and components from Victaulic were labeled with dimensional data for



Rado Enterprises used both Victaulic's high-quality grooved mechanical products and their project management services to help maximize efficiency and increase productivity in the construction of a new Children's Hospital at the Penn State Hershey Medical Center.

ease of identification. In addition, the pieces were uniquely itemized so that all materials could be allocated exactly where they fit within the mechanical system installation.

To achieve even greater levels of efficiency, Rado Enterprises incorporated additional lean concepts into its fabrication shop by implementing Victaulic fabrication principles, which consist of a layout plan for tooling, assembly tables, and lifts in the shop that maximize the throughput of the shop. "Grooved has changed the prefabrication strategy in our shop," said Zeitler. "Victaulic changed our building strategy on the Hershey project. They provided us with the loading strategies to successfully implement lean principles while increasing jobsite safety."

As a result, Rado Enterprises was able to facilitate faster assemblies more accurately than ever before. This systematic approach also helped to reduce waste and material handling. Moreover, Victaulic made it easy for Rado Enterprises' fabricators to provide the prefabricated pieces and for installers on the jobsite to complete the installation.

"The installation was quite easy once we got into the field because of the accuracy of the detail in the isometrics," said Richard Karns, Rado Enterprises project manager, who was responsible for the Hershey Medical Center project. "In fact, we saw a drastic increase in productivity and throughput using Victaulic grooved systems because it's just so much easier and it far exceeds the production that we'd get in welded piping systems."

Karns went on to say that the 3D isometric drawing and fabrication work also helped on-site workers navigate challenging radius structures and meet the necessary angles of swing



Rado Enterprises and Victaulic teams worked together to provide project drawings that could be broken down into manageable sections so that employing lean principles in the fabrication shop was even more efficient.

joints—something that would have been much more challenging had such efficient prefabrication strategies not been in place.

### **Improved Control Over Project Schedules**

According to Zeitler, the drawings implemented from the BIM process made piping fabrication in the shop more widely accepted and allowed fitters to meet schedules on the jobsite more easily. Rado Enterprises enhanced its ability to improve control over logistics and scheduling installations at the Hershey Children’s Hospital. Zeitler said that it is even possible to have piping fabricated prior to building foundations.

Additionally, the organization of building materials and the timely delivery coordinated with Victaulic made a significant impact on compressing the project schedule because of the cleanliness of the jobsite. Once on the jobsite, the additional grooved products and accessories were provided “bagged and tagged” with location and date information for maximum coordination. Without the extra materials laying around waiting to be used, installers and other contractors were able to move around the jobsite easily without handling the product multiple times.

### **Decreased Project Risks**

Another significant benefit, noted Karns, was a decrease in liabilities on the project. There are risks with any installation, but welding involves the risk of arc flash and fire hazards. For Hershey Children’s Hospital, the project specifications called for three firewatchers whenever welding took place. By using grooved mechanical piping systems, Rado Enterprises minimized the risk and eliminated the need for firewatchers, thus gaining additional control over the installation schedules. There was no need to take precautions typically associated with welding.

Rado Enterprises plans to engage the Victaulic Construction Piping Services

team in assisting with future mechanical systems layouts and material shipments, as the benefits have been exceptional.

“When it comes to maximizing efficiencies and increasing productivity, enlisting the help of experts at Victaulic is a good place to start—and to end,” said Zeitler. “We utilized Victaulic products and services, beginning with their couplings all the way to the end with their project management services.”

Victaulic delivered a smooth transition, he said, that helped Rado Enterprises achieve lean building requirements that reduced material handling costs and sped up the process. By working with Victaulic on the Hershey Children’s Hospital project, Rado Enterprises was able to increase shop throughput, have more control over the installation, and increase jobsite safety.

“In our eyes, Victaulic started as a trusted manufacturer of grooved mechanical couplings,” said Zeitler. “Their Construction Piping Services team proved they are so much more.”

*For more information, visit [www.victaulic.com](http://www.victaulic.com).*

***MCAA thanks Victaulic for being a major sponsor of MCAA 2012 and co-sponsoring the golf tournament.***



Victaulic grooved mechanical piping systems coupled with Victaulic fabrication principles helped Rado Enterprises work more efficiently by improving control over project schedules, increasing shop throughput, and decreasing risks.

# Tips for Choosing the Best Air-Handling Unit for the Job

With lots of air-handling units to choose from, such as YORK® Solution units from Johnson Controls, HVAC contractors have the flexibility to find the best unit for some of the most demanding applications, including hospitals, theaters, schools and universities, government facilities, and office buildings. Contractors can customize the size and components of air-handling units to accommodate a building's space constraints, performance needs, and budget. Choosing the right unit can make installation simpler and faster, saving you time and money. When selecting air-handling units for a project, consider the following questions:

## 1. Overall, what should I keep in mind when choosing an air-handling unit?

Consider the needs and requirements of the building or facility, as well as the features, benefits, and installation options of the air-handling unit. A unit specifically designed and manufactured for a certain application ensures speedy installation, reliable operation, and a satisfied customer.

## 2. Where will the unit be installed?

An air-handling unit in an office building, for example, requires different functionalities and levels of maintenance than one that's located in a hospital operating room. Air-handling units designed and optimized for particular applications will perform more efficiently in the designated spaces.

## 3. What functions are required for the customer's space, and what energy sources are available?

Depending on the application, various components can be added to the air-handling unit to address specific functions, including heating, cooling, filtration,



Choosing the right air-handling unit for your customer's setting (such as this YORK Solution XT unit from Johnson Controls) makes installation simpler, saving you time and money.

humidification, and energy recovery. In addition, the unit can be designed to accommodate various energy sources to distribute conditioned air in the most cost-efficient way possible.

## 4. What size must the air-handler unit be for the customer's application?

For the greatest degree of flexibility and ease on the jobsite, choose an air-handling unit that can handle the project's architectural, mechanical room, and space constraints. If you use building information modeling (BIM), find out whether the manufacturer offers unit-specific digital models so designers can confirm in advance that the air handler will accurately fit the space.

## 5. Is the unit easy to install?

An efficient, smooth installation ensures that the job gets done on time without incurring any additional costs. Should the unit arrive at the jobsite in one piece, or should it be assembled onsite? If it will be assembled onsite, is it easy to put together?

## 6. Does the unit simplify the coordination of the controls' installation?

Air-handling units with integrated controls that are tested and packaged at the factory eliminate the need for

additional programming and extra hassle that contractors can sometimes encounter during installation. Available controls include intuitive sensors that measure the temperature, humidity, and service status; key diagnostics to measure the efficiency of the various components of the system; actuators that drive dampers and other components; and motors that control the fans and adjust fan speed to whatever the application requires.

## 7. What kind of installation, maintenance, and service support are available?

Besides the features and benefits of the air-handling units, consider the expertise and service that the manufacturer provides. Will you require assistance when installing the product? How does the manufacturer handle requests for additional parts or service?

## 8. How will the right air-handling unit help me as a contractor?

The ideal air-handling unit will be cost-efficient and reliable for both you and your customer. It will be designed and manufactured specifically for your customer's application. Factory-installed and tested controls and a flexible configuration will simplify installation and offer reliability and efficiency for your customer.

*Rob Tanner and Kevin Weaver of Johnson Controls® provided the information for this story. For additional information about YORK Solution air-handling units by Johnson Controls, please visit [www.johnsoncontrols.com](http://www.johnsoncontrols.com).*

*MCAA thanks Johnson Controls for being a benefactor of MCAA 2012 and for sponsoring the opening breakfast.*



## How Contractors Can Save Big on Taxes

The steps your company is already taking to remain competitive may qualify for federal and state research and development (R&D) tax credits, which can mean significant financial benefits for your company. Examples include increasing your use of building information modeling (BIM) and other 3D modeling techniques to avoid conflicts onsite and improve efficiency and expanding your services to increase your marketability.

Because of common misconceptions, the R&D tax credit is often overlooked by contractors because they do not realize that it is applicable to them. In fact, this tax incentive applies to many activities you may consider routine, and not taking full advantage of this incentive can mean leaving substantial dollars on the table.

### *Excellent Candidates for Tax Credits*

The R&D tax credit applies to much more than revolutionary inventions and highly innovative ideas. In fact, R&D includes many activities aimed at developing and improving products, processes, and techniques to meet project-specific requirements under contract with clients. Some examples that often result in R&D tax credits for mechanical contractors are as follows:

- Improving installation efficiencies through design participation on jobs under a design/build project delivery method
- Developing job-specific installation plans and layouts for LEED® and other sustainable construction projects
- Coordinating efforts, under any project delivery method, around buildings and facilities' mechanical, electrical, and structural systems using BIM, layouts, and other techniques to improve construction and installation efficiencies
- In-house engineering design of HVAC, piping, and other mechanical systems for site-specific requirements and conditions
- Determining the optimal solution for

mechanical systems' installation through iterative pre-installation planning, including work on more traditional plan/spec and hard-bid jobs.

Even using known principles of engineering to develop or improve a design or process that has similarities to previous projects can qualify if it entails a technical evaluation process aimed at eliminating an unknown with respect to design, capability, or method. Some activities may not meet the required thresholds, but many others will pass the tests—making nearly all mechanical contractors excellent candidates for R&D tax credits.

### *Sizable Savings*

As one of the most powerful business tax incentives, the R&D tax credit can mean significant financial benefit by reducing your tax payments or allowing you to recoup taxes already paid. For the federal credit, every \$100,000 a company pays to employees to conduct qualified R&D activities translates into \$6,500 in tax savings. The credits can often quickly add up to considerable tax savings on an annual basis for work you are already doing just to remain competitive.

One mechanical contractor with \$300 million in revenues was able to qualify numerous activities for R&D tax credits across many jobs the company performed. On a commercial office building project, the contractor used BIM to identify potential conflicts between the HVAC system and the electrical and structural systems before beginning installation. For the identified issues, they developed and evaluated several options to improve installation efficiency without negatively impacting the energy performance required of the completed building. By qualifying these activities and many others, the contractor was able to claim \$1.2 million in R&D tax credits over four years.

Even smaller mechanical contractors with

less formal accounting records can receive big benefits from R&D tax credits. A \$30-million mechanical contracting company earned R&D tax credits for its design/build services, building automation design, chiller services, and commercial heating and air conditioning services. The contractor's qualified R&D involved developing and improving mechanical system plans and installation processes while taking into account multiple factors, such as site location, building orientation, construction methods, and optimum energy utilization. The company's designers used BIM software to identify clashes with other building systems and modified designs to resolve these issues. Additionally, the contractor improved installation processes with layout techniques of microprocessor-based networkable systems for the control and monitoring of HVAC equipment. By ensuring that it qualified all eligible costs with a study conducted by [alliantgroup, LP](#), a specialty tax service, the contractor was able to capture \$100,000 in R&D tax credit dollars.

### *Expert Assistance Available*

While mechanical contractors are excellent candidates for R&D tax credits, this incentive is highly specialized and requires a unique combination of tax, legal, and engineering expertise to maximize supportable claims. Even the most experienced and knowledgeable tax accountants often lack the specific expertise to appropriately identify all available benefits. By consulting with specialty tax service firms, such as [alliantgroup](#), that specialize in R&D tax credits and work with your CPA, contractors can realize the full potential of the credits.

Mechanical contractors across the country are already taking advantage of the lucrative rewards from claiming R&D tax credits. For the contractors who have yet to reclaim these funds, seeking assistance from experts is critical to maintaining competitiveness.

*Justin DiLauro, BSE, JD, and Angela Dunn, BSE, of alliantgroup, provided the information for this story. For more information, visit [www.alliantgroup.com](http://www.alliantgroup.com).*

# Airco Expands Energy Services, Increases Revenue Thanks to BuildingAdvice

With **AirAdvice** training and **BuildingAdvice™** technology, **Airco Commercial Services, Inc.** amped up its energy services program, adding five to seven percent to their annual revenue in 2010. In 2011, revenue from energy services doubled to comprise 10–15 percent of total company revenue.

Bruce Wright, Airco's Bay Area vice president and general manager, said, "I see our energy services revenues very easily becoming 25 percent of our total revenue in the next five years. Within that, there are two aspects: the tangible proof of project retrofits, as well as the intangible value-add of providing energy services as part of our preventative maintenance agreements. Already, we are seeing a substantial uptick in business that we can link directly back to our decision to aggressively pursue an energy services approach."

### Call Them Clairvoyant

With a combined 50+ years in the industry, Airco Commercial Services' two vice presidents, Wright and Rick Cooke, had seen it before. In 2008, they recognized the turn the industry was taking, projecting a significant downturn in commercial construction. From past experience, Cooke and Wright knew that a soft construction market inevitably leads to increased competition for service as contractors scramble to keep technicians busy and trucks on the road. The leadership at Airco projected that energy services would begin to play a larger role in the coming years.

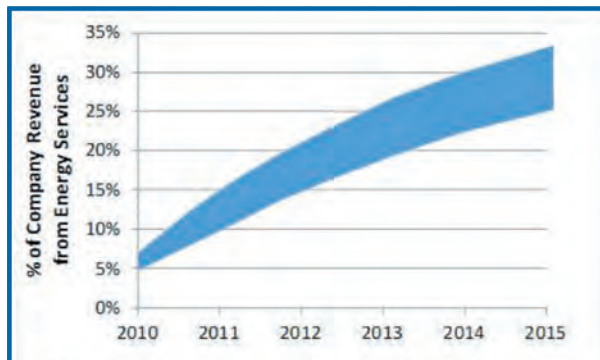
Cooke put together an Energy Services Committee with Airco employees from all areas of the business—management, sales, operations, and trades—to discuss how each would play a role in shifting

their business to stay on the cutting edge of the industry.

Wright recalled, "In 2009, I was on an MSCA roundtable panel with Thom Brazel, MSCA Board Vice Chairman, who was buying his third AirAdvice energy services platform kit for Hill York. I invited AirAdvice to present to our committee, and we began to focus on how we could accelerate the launch of an energy services offering using their BuildingAdvice program. We didn't feel we could justify the investment in time and money to build our own program when something as complete as this was immediately available."

### Implementing an Energy Services Program

Most of the Airco staff participated in the BuildingAdvice webinars offered through the MSCA, which helped them better understand the sales approach and the technical elements of an energy services offering. Later, AirAdvice representatives met with Airco's management team to develop a business plan and conduct training for Airco's sales and technical teams on the specific steps to implement the program.



Using BuildingAdvice technology, Airco projects energy services will continue to grow, comprising over 25 percent of total company revenue in the next five years.

"Our energy services approach provides substantiated information that quantifies potential cost savings from reducing energy waste," said Wright. "Providing measurable savings changes what was before a qualitative decision into justifiable proof for moving forward with specific projects or services. Using BuildingAdvice, energy savings is no longer conceptual."

As with any new program, implementing an energy services program required some adjustments. But the management team at Airco was convinced that changes were necessary to effectively compete in a challenging economy. Wright said, "The biggest hurdle we faced was creating a culture shift in how we execute a sale." Airco found the support that AirAdvice provided in helping to make this shift invaluable. "Even if technical tools are available, we would have struggled to implement them without the sales training and ongoing coaching that comes with the BuildingAdvice program," said Wright.

Wright explained how Airco changed its approach. "With the old sales strategy, a project salesperson might come into a building, identify an old chiller, and quote a replacement at \$325,000. Under current financial conditions, building owners and managers are feeling the pinch of tight capital budgets and wonder whether spending money now is a good idea," he said.

Using BuildingAdvice, Airco found a better way: partner with the building owner/manager to look at what the building is currently spending on energy and why it is more than it needs to be. "Then you take that information and develop a strategy of how you, working as partners, can reduce the energy consumption together. It's about changing the focus of the conversation from the price of the project or service to an apples-to-apples comparison of what they're spending now to what they

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# Software Cuts Estimating Time in Half

## McCormick Systems Provides Tips on Useful Features

Because not all contractors estimate projects in the same way, software developers such as McCormick Systems have created programs tailored for electrical, plumbing, and mechanical contractors. Often, product changes and enhancements are added to meet specific requests of contractors. Here are some of the features that contractors should look for when choosing estimating software.

- **Time Savings:** Estimating software tailored for MCAA users can save at least half of estimating time compared with standard ways of estimating. Estimating software should be easy to use and increase speed and accuracy during takeoff.

- **Ease of Collaboration:** Estimating software can improve communication between estimators and project managers. Programs can be obtained as a single-user model or one that works on a local area network or wide area network. As you grow your business, the software should allow an upgrade path, giving you even more flexibility.

- **Meaningful Features:** Software that includes MCAA labor units, for example, minimizes effort on your end. Look for additional, management-focused features, such

as graphing software that helps you turn data into presentation-ready graphics, scheduling software that assists you in manpower planning, and customizable reports to help in the project planning and executing phases.

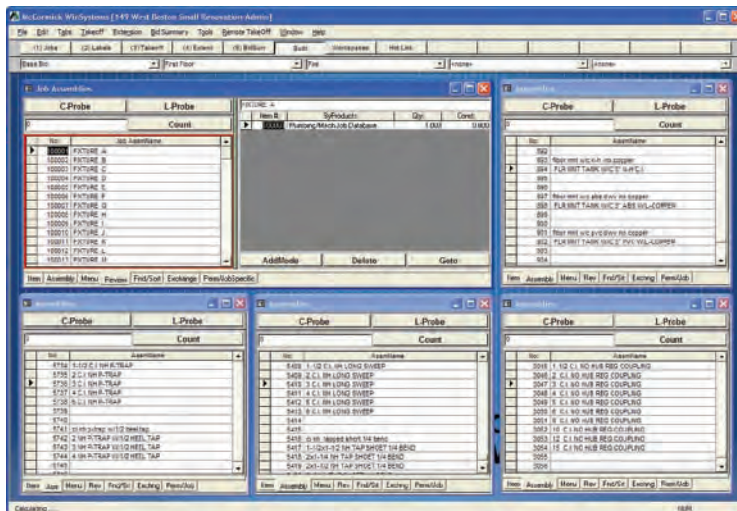
- **Automation:** Estimating software should let you get pricing updates available from suppliers or pricing services. With automatic pricing updates, you can save time and produce a more accurate quote.
- **Customizability:** Software should allow you to customize your estimating processes by user or company-wide. For example, estimators at the same company may be working on the same job at the same time; one estimator

might prefer to have three of the system's takeoff windows (views into the database) open at the same time, while another might opt to have 11 open and readily available. A flexible system greatly increases speed and accuracy during takeoff. Both estimators can do the work as they wish, and the end-product is the same.

- **Wrapping up the Bid:** At the end of the process, estimating software should assist you in generating a professional looking, accurate, instant proposal that can be e-mailed or faxed to the client.

- **Takeoff Options:** Estimating software should provide an interface with other vendors' software that allows speedy takeoff of various electronic files. A good interface will allow you to take the data you produce during takeoff and automatically feed it into your estimate.

- **Customer Service:** Estimating software should come with helpful, reliable support. Ideally, customer support is bolstered by a solid background in construction contracting.



Software tailored for MCAA users (such as this McCormick Systems program) can save at least half of estimating time compared with standard ways of estimating.

For more information, visit [www.mccormicksys.com](http://www.mccormicksys.com) or call 800-444-4890.

MCAA welcomes McCormick Systems as a new member.

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will spend in the future if they move forward with our recommendations. You've changed the whole discussion."

As revenues demonstrate, the new tack is paying off. "Now, the way we approach problems and how we

articulate the solutions is as an energy services provider, rather than as a mechanical contractor. If you're not looking at energy as a major driver of your business, then you're not paying attention." Wright said.

If you're a contractor seeking to enhance your energy services, MSCA

offers education to help its members become the energy service providers of choice. Visit [www.msca.org](http://www.msca.org) to download webinars and learn more.

For more information, visit [www.airadvice.com](http://www.airadvice.com).

# Maxwell Systems Software Cuts Estimating Time at Dorvin D. Leis

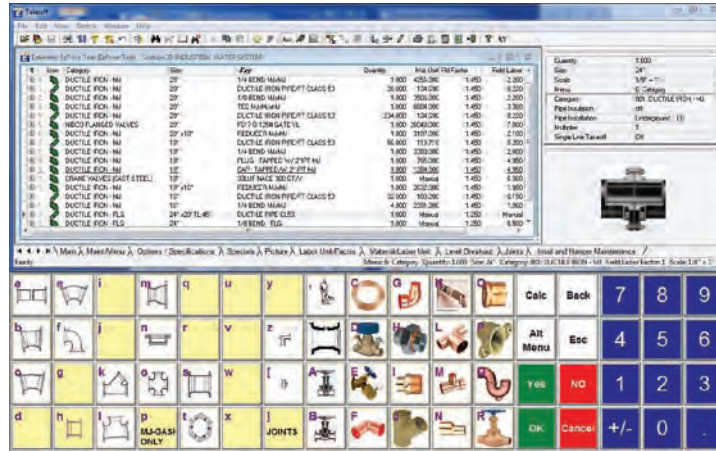
To increase productivity, keep costs low, and achieve optimal profitability, Dorvin D. Leis Co., Inc. (DDL) turned to Maxwell Systems™ Estimation® software to automate its estimating and procurement process. With Estimation, DDL is able to tie together estimates, labor needs, and cost analyses and so bid more quickly and accurately to win more jobs. And, once a job is won, DDL can leverage Estimation to take control of their entire procurement process—achieving greater efficiency and cost savings.

With more than 300 employees and more than \$75 million in revenues, DDL is Hawaii's leading mechanical contractor. DDL works closely with its clients and design teams to provide a complete mechanical system that encompasses plumbing, HVAC, fire protection, and architectural sheet metal for a wide range of projects. The company provides services for commercial, light commercial, health care, institutional, high-rise, condominium, and residential projects across the Hawaiian Islands, as well as state, county, and federal projects, including military facilities.

## Improving Speed and Accuracy

Curtis Goertz, one of DDL's two HVAC and sheet metal estimators, has been using Estimation since 2005. He appreciates that it is specifically designed for mechanical, plumbing, and HVAC contractors and uses the software on a daily basis for ductwork and sheet metal estimating. Two other estimators use Estimation for plumbing and mechanical piping projects.

“With Estimation, we are able to bid on more work because of the speed that it



“Using Estimation, we can quickly run footages of ductwork; count fittings, dampers, air devices, and accessories; and easily summarize it to calculate the totals,” said Curtis Goertz, HVAC and sheet metal estimator, DDL.

can provide when doing takeoffs and summaries,” explained Goertz. “We are also able to section out duct systems within the takeoff, which then allows an itemized review of those systems. In addition, the sectional takeoff also provides a quick and easy method to change duct types and construction for potential cost savings that can be passed along to our clients to work with the owner's needs and budget.”

Estimation has definitely helped speed up the estimating process. “Before, with our manual takeoff and summary methods, the process could be very time-consuming. We would takeoff ductwork and fittings, then count equipment, dampers, air devices, and other accessories,” explained Goertz. “Now, using Estimation, we can quickly run footages of ductwork; count fittings, dampers, air devices, and accessories; and easily summarize it to calculate the totals.”

Estimation also allows DDL to share the information from the estimate among team members by providing easily generated and customized reports, so they can target and extract specific information requested by the operations and purchasing departments. “If we are buy-

ing large quantities of materials or need to evaluate labor for productivity in a specific area, for example, Estimation can summarize those items, saving us valuable time,” said Goertz.

## Gaining Control over the Procurement Process

DDL's purchasing executive, Lincoln Leong, has been using Estimation for 11 years for the procurement process to produce and track purchase orders (POs), manage materials and back orders, access purchasing history, and manage vendor pricing.

Before Estimation, DDL's entire process was handled manually, and they had no historical details on purchases. Record-keeping was a real challenge and it took quite a bit of time to create POs. Now, with the Estimation database populated with up-to-date materials and pricing data, it is easy to find needed information and purchase materials.

“Having instant access to our purchasing history really helps with the follow-up process,” explained Leong. “Using Estimation, we are able to more easily locate materials, determine when they came in, and keep all the necessary details in the system.” If someone has a question, they can simply pull up the PO by searching by vendor, by item, or by other criteria, and review the associated notes to determine the status of a purchase.

“Everything in Estimation is really a plus,” said Leong. “Before having this software, we had no way to capture, track, or manage our procurement data. Estimation provides us with a peripheral tool to see all of our procurement operations.”

For more information, visit [www.maxwellsystems.com](http://www.maxwellsystems.com).

# Egan Company Hones Competitive Edge with WennSoft Solutions

## CRM Improves Service, Drives Sales

While some contractors are focused on weathering the storm of the current economic environment, others—such as **Egan Company** in Brooklyn Park, MN—continue to grow their business aggressively. To improve customer service and become a more sales-oriented company, Egan turned to its longtime partner **WennSoft®** for an integrated customer relationship management (CRM) system. Now, Egan is improving relationships with current customers, better identifying new prospects, and honing its competitive edge.

Egan has 700 employees across four divisions: mechanical, electrical, cladding, and building automation. In addition to providing new construction expertise, Egan also has a service group. Based on his belief that having the strongest possible operational solution will support Egan's continued success, Jim Nonn, chief information officer, has always implemented solutions that give his company an edge in productivity and customer service. Beginning in 1998, Egan partnered with WennSoft for operational solutions that control costs, increase operational efficiency, and improve profit margins.

Over the years, Nonn and Chief Financial Officer Jim Johnson have worked with WennSoft to implement Signature Job Cost and Service Management, as well as Microsoft Dynamics GP. These solutions have resulted in significant increases in invoicing speed and service dispatch efficiency while also accommodating the company's growth. Egan has nearly tripled in size over the past 13 years to become a \$150-million company.

### *Filling a Communication Gap*

As the company grew, Egan struggled with its internal communications. Customer records were only kept for accounts payable and receivable pur-



With WennSoft solutions, Egan Company employees communicate better, which drives business. "CRM helps our business groups cross-sell," said Chief Financial Officer Jim Johnson. "It helps them feed off each other."

poses, so key project management personnel had limited information on the customers they served. Johnson said, "I've heard of instances where one business group would call on a customer, not knowing that the customer was just contacted by a different business group."

Nonn added, "Oftentimes, the right hand didn't know what the left hand was doing." Egan determined that a CRM system would help keep everybody on the same page.

When considering solutions, Egan's goal was to have a unified customer database that could be accessed and updated by all of the company's groups. In addition, "We wanted to have a more proactive sales approach, rather than wait for calls to come in," said Nonn.

To find the best solution, the company did its research. "We went to peer groups and spoke to people who were using different CRM solutions with different levels of success," Nonn said. Eventually, they decided that Microsoft Dynamics CRM® would be the best fit for the company. Not only did it provide the desired functionality, but it also integrated

seamlessly with the company's existing WennSoft Signature solution.

With the solution in place, Egan has created a unified database that contains information on more than 2,100 companies. Perhaps most important, Egan employees throughout all divisions can access the database, so everybody can work together to enhance customer service and drive sales.

### *CRM Improves Customer Service*

Now, before making contact with any customer, Egan employees can research the case history, so they aren't gathering information from scratch each time. And an employee from one business group can be mindful if the customer was recently contacted by another group. "Basically, it helps us to understand our customers' needs better," said Nonn.

Furthermore, the implementation of Microsoft Dynamics CRM has helped every Egan employee become more sales-focused. "CRM helps our business groups cross-sell," said Johnson. "It helps them feed off each other." For instance, while an electrical contractor is on a job, he may

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## CNA and MCA of Georgia Work Together to Renovate Atlanta Youth Home

Global business insurer CNA, the Mechanical Contractors Association (MCA) of Georgia, and several other construction trade associations partnered with the nonprofit community revitalization group Rebuilding Together to celebrate the 123rd anniversary of Atlanta's Carrie Steele-Pitts Home (CSPH), one of the nation's oldest child-caring homes. On October 15, approximately 100 volunteers gathered for a day of major repairs to renovate and transform CSPH.

Since 2004, the CNA Foundation has partnered with Rebuilding Together to help improve homes and community centers of veterans and elderly, disabled, and low-income residents in Chicago's most challenged neighborhoods. Rebuilding Together and CNA expanded this relationship to assist communities nationwide, with the help of volunteers from CNA's construction partners representing the plumbing/HVAC, roofing, electrical, and lawn/landscape specialties.

Individuals representing Rebuilding Together, CNA, MCA of Georgia, the National Roofing Contractors

Association, and the Land Improvement Contractors of America spent the day painting, upgrading electricity, providing plumbing and carpentry repairs, and enhancing the landscaping of two CSPH residential apartments. These critical modifications will help in the preservation and safety of the apartments while ensuring that CSPH continues to operate and provide its residents with the highest living standards.

"CNA and all of our construction association partners are proud to provide the elbow grease for these rebuild day renovations," said John Tatum, vice president of construction for CNA. "The repairing of damaged roofing, replacing windows and doors, installing new bathroom facilities, flooring and interior walls will serve as a wonderful commemoration for all of the work and the strong impact CSPH has had on the children of Atlanta."

CSPH is dedicated to the comprehensive care, education, and shelter of Atlanta's children and young adults with the goal of fostering success and independence. Over 20,000 children have received educational services, tran-

sitional assistance, and residential care through CSPH.

"These residential buildings are a critical element of the services CSPH provides to our young adult residents who are preparing to transition into lives outside of this community," said Evelyn Lavizzo, PhD, executive director of CSPH. "Here, our youth learn the value of independent living, while still experiencing a caring, family atmosphere—that many of them may not have had otherwise—that will better position them to succeed in adulthood."

The celebration of the CSPH anniversary also marked the kick-off of the second annual Rebuilding Together Tradesperson of the Year campaign. Tradesperson of the Year is a national contest recognizing persons in the skilled-trades industry who are leaders in their trade and give back to the community.

*For more information, please visit CNA at [www.cna.com](http://www.cna.com).*

*MCAA thanks CNA for being a benefactor of MCAA 2012, sponsoring the Final Program, and co-sponsoring the dessert party.*

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notice that the customer also needs service on a mechanical system. Then, he can update the information within CRM for Egan's mechanical group, which can then sell its services to the same client.

Additionally, Microsoft Dynamics CRM has allowed Egan to run targeted marketing campaigns. The first campaign centered on a green energy conference at the company's facility. Nonn wanted to get the word out to all customers, so he used the solution to create lists for targeted mailings. He also used it to track pros-

pects from the conference. "CRM was a great tool for this, and we had great attendance at the show," he said.

### *Improving the Competitive Edge*

WennSoft solutions have not only helped Egan keep better track of its customers and prospects, but they have also helped the company monitor its competition better, thanks to CRM. Every time the company bids a job, it records the outcome. "If we lose a job, we track who we lost it to, and for how much," said Nonn. "We also keep track of the jobs we win. Over time, this information will help us accurately determine what margins we need

to bid against different competitors." Now, Nonn's goal is to refine how the employees enter data into Microsoft Dynamics CRM, which will help lead to more measurable results and a better understanding of its customers and competition. And as Egan continues to improve the process, the company continues to grow. Egan's backlog is larger, and its relationship with its customers is closer than ever. According to Nonn, "WennSoft solutions are a big part of our overall success."

*For more information, visit [www.wennsoft.com](http://www.wennsoft.com).*

## Entech Offers Hands-On Service Training for Older A/C Equipment

Where do you turn when an aging A/C unit needs service but the original manufacturer no longer supports the model? Entech provides hands-on training for technicians to enable them to dismantle and repair such equipment. Each week-long class is dedicated to products by a single manufacturer (Trane, Carrier, York, or McQuay). Field technicians with years of experience pass along knowledge and tricks of the trade that make service and troubleshooting easier.

Rick Klopfer of **EMCOR Services/Mesa Energy Systems** appreciated the opportunity for advanced, practical education. "The class size was perfect," he said. "We had nine gentlemen from all over that had some experience with centrifugals, which made it nice. The instructors did not waste a bunch of time going over the basics. Not only did it seem like on-the-job training, all were able to participate without feeling left out."

Darren Goodwin of **McQuay International** agreed. "It was like being taught by one of the guys not some teacher who had no real-life experience," said Goodwin. "They stayed late to help us understand the product and even since being back from school have communicated with us and helped us over the phone and e-mail. The manuals and literature that we received along with the class are priceless. To have a book with step-by-step pictures and information to go along with it is an A+."

Entech believes that the industry is better served when contractors are well trained and provide service in a professional manner. Knowing that a 10- or 20-year-old chiller can be maintained gives the end-users more choices, because they don't have to rely only on the original equipment manufacturer for service.



Students at Entech's courses get instruction and hands-on experience in maintaining older A/C equipment.

Classes are taught in the winter months to accommodate contractors who cannot afford to have their technicians gone during the busy summer season, and they fill up quickly. Teardown classes are designed for those who have a good working knowledge of refrigeration theory.

"The training on the dismantling the units was exactly what we had wanted," said Kevin Simard of **EMCOR Services Northeast, Inc. CommAir/BALCO**. "There were three stations of compressors, all different styles and sizes. This was great due to the fact you could see the differences and similarities of each compressor."

Simard added, "The overall knowledge of the three instructors was very impressive. They knew these compressors in and out. Also, they went into full detail about the overall operation of the machines and troubleshooting techniques."

Entech instructors are always looking for ways to update the classes to stay current. On the basis of student suggestions, some classes will add a running unit so that students can log the operating parameters and make diagnoses.

"The single most important thing about this training is it is not a sales class," said Erik Basner of **Chiller Systems Service**. "It is 'real-world' from guys that are working on these machines daily."

More than 80 students were scheduled to take classes from October through January. The schedule of classes beginning fall 2012 will be published in July.

*To learn more, visit [www.entsales.com](http://www.entsales.com). To receive a schedule of classes to begin in the fall of 2012, e-mail [Pat.Giles@entsales.com](mailto:Pat.Giles@entsales.com).*

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and surrounding structures has been completed. Gallo Mechanical installed Sloan plumbing systems with each renovation phase, showcasing Sloan's water-efficient technology.

The Superdome planning department could easily see the advantages of purchasing vitreous china fixtures for the Superdome restrooms from Sloan, which had long supplied them with reliable, high-performing flush valves. For the first phase, the Superdome installed sensor-activated, hardwired Royal® 111 ES-S flushometers.

Shortly after putting in the plumbing order for the final phase, the maintenance supervisor voiced his concern that

a power outage could leave the flush valves unusable, which would be an unacceptable problem in such a large public facility. Fortunately, Sloan had introduced TMO (true mechanical override), which enables the electronic flush valve to operate manually when there is no power. The manual override was so important to the Superdome that they changed their order from standard ES-S valves to the new TMO units.

Next to the Superdome, Champions Square hosts bands, food vendors, and more. Gallo Mechanical installed Sloan's 0.25-gallons-per-flush (gpf) High-Efficiency Urinal (HEU) fixtures and 1.28-gpf High-Efficiency Toilets (HETs) in Champions Square's restrooms.

Also connected to the Superdome and Champions Square is Benson Towers,

a 20-story office tower owned by New Orleans Saints' owner Tom Benson. Gallo Mechanical installed Sloan vitreous china fixtures in that building as well, with battery-powered G2 Optima Plus® flushometers for the 0.25-gpf HEUs and 1.28-gpf HETs.

The Mercedes-Benz Superdome, Champions Square, and Benson Towers represent a new chapter in New Orleans' history and show just how far the city has advanced since Katrina.

For more information, visit [www.sloanvalve.com](http://www.sloanvalve.com).

*MCAA thanks Sloan Valve Company for being a benefactor of MCAA 2012 and for providing the convention souvenir.*