



PIERCE

News & Notes

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Employee Newsletter

September 2009

Message From Steve

Do you have a plan for the future?

Here at Pierce Associates we create plans and work from them daily. We have every step clearly mapped out to make sure we complete our jobs successfully. Why, then, don't many of us take the same care with our personal financial plan?

The current recession has prompted many American families to re-examine their spending and household budget. Many Americans have been spending too freely for years, and we have not been putting enough effort into saving for short-term emergencies (such as a major medical expense or a job layoff) or for longer-term needs (such as college tuition and retirement). Some experts recommend we should be saving as much as 20% of our income, although many factors come into play in determining the proper amount each of us should save (including such things as our age, the number of dependents, our retirement goals, etc.).

It is never too late to begin saving. Of course, the sooner you start the better. The more time you have before needing money for your retirement or another goal, the more time your money has to grow.

Continued on page 3

Job Spotlight: Department of Interior

The Main Interior Building (MIB), located at 1849 C Street NW, has been undergoing a major renovation since November 2002. The building, which encompasses more than 1.3 million square feet, is receiving a major overhaul and will be completely modernized in all areas including mechanical, electrical, life safety; accessibility; technology; security; and environmental responsibility. In Fiscal Year 2000, Congress authorized funding for General Services Administration to begin construction. In August 2001, Grunley Construction Company along with Pierce Associates, Inc. was awarded the contract for the first of six phases. The total renovation costs for all options is approximately \$220 million dollars.



The project is being completed in six major phases, each lasting approximately 18 months.

	Start	Finish
Phase I (Wing 6)	11/2002	Complete
Phase II (Wing 5)	10/2004	Complete
Phase III (Wing 4)	05/2006	Complete
Phase IV (Wing 3)	08/2008	01/2010
Phase V (Wing 2)	01/2010	07/2011
Phase VI (Wing 1)	08/2011	02/2013

Continued on page 3



Bad times have a scientific value. These are occasions a good learner would not miss.

- Ralph Waldo Emerson



Pierce Experience Helps Shape Virginia Tech Program

Pierce Associates, in conjunction with fellow Mechanical Contractor's Association of Metropolitan Washington (MCAMW) contractors Limbach, Inc. and Dominion Mechanical, hosted a visit from Virginia Tech Building Construction Professor Dr. Georg Reichard during the week of June 15, 2009. Professor Reichard applied for the MCAMW Virginia Tech Faculty Fellowship program through the Myers-Lawson School of Construction at Virginia Tech. As a result, he was offered the chance to spend a week with local mechanical contractors in an effort to better understand the challenges and opportunities that are involved with the mechanical contracting industry.

The goal of the program is to help ensure that the topics covered and courses offered by the Department of Building Construction at Virginia Tech are current with the issues

faced in the industry today. In addition, the insight gained by Dr. Reichard as well as the host company will hopefully help to influence the industry in a positive manner.

After spending two days with Limbach, Inc., Dr. Reichard joined PAI on Wednesday, June 17. He began by spending a considerable amount of time at the (0706) NCE project with Mike Stauffer, Mike Spears and Dave Raulerson in order to get a detailed look at the jobsite and to learn how the industry is utilizing Building Information Modeling (BIM).

Dr. Reichard spent the following day getting a first-hand look at the (0701) Constitution Center jobsite with Dan Donaghy, paying particular attention to PAI's quality control, commissioning, project procurement and subcontracting strategies.

Dr. Reichard noted that the experience was worth more than he ever imagined and he is excited to bring some of the experiences back into his classroom. The MCA Faculty Fellowship experience was also extremely helpful in reassessing potential research areas and topics, which range from knowledge management systems to the integration and adoption of BIM in the mechanical contractor world. He hopes that MCA will continue this Fellowship and that other (VT) faculty members will recognize the value and participate in the program in the future.

The Pierce Associates team enjoyed hosting Dr. Reichard and hope that this experience helped him prepare for the upcoming semester. We also greatly appreciate the feedback that he provided to our organization.

United Association Mechanical Trades School Opens

After years of careful research and planning, the new satellite location for the United Association Mechanical Trades School (UAM) is open at 7552 Accotink Park Road, Springfield, Virginia. From its inception, the officers of Pierce Associates, Inc., along with many other members of the Mechanical Contractors Association of Metropolitan Washington, wholeheartedly supported this effort to establish a training school in the Northern Virginia area.

With the opening of this new facility, the UAM now offers a second convenient location to professionally train the plumbing, heating and air conditioning workforce in the Greater Metropolitan Washing-

ton DC Area (the main headquarters for UAM continues to operate in Landover, Maryland).

Building a career in today's highly technical air conditioning, heating and plumbing fields requires solid professional training. The UAM offers such training, while also providing employment for trainees at a Washington area mechanical contracting firm. When applicants are accepted into the program, they begin classes at UAM and also begin working as an apprentice, earning good wages and working side-by-side with experienced members of the trade. While enrolled as an apprentice in the program, they are also eligible for promotion and increased pay. Along with this in-

valuable on-the-job training, they attend classes at the UAM training facility, which has long been recognized as one of the finest institutions of its kind in the country.

Recently, the trustees of the Heating, Piping, Refrigeration Training Fund of Steamfitters Local 602 began a "Virginia School Capital Campaign" to defray some of the costs associated with opening and maintaining this new training facility in Springfield, Virginia. In support of this worthy endeavor, Pierce made a substantial contribution to this capital campaign which will soon be recognized by the placement of a plaque on the wall of one the workshops at the Virginia facility.

Message From Steve

Continued from page 1

For our non-union employees, we offer a 401(k) pension plan. If you are a member of one of the unions, you have access to your union's pension and retirement plans. Either way, I can not urge you strongly enough to participate in your retirement plan and focus on saving for retirement. Retirement comes sooner than we expect, and one of the best ways to prepare is to take advantage of the matching contributions and tax savings available through our company's 401(k) plan or one of the union's pension and retirement plans.

At the same time, do not neglect having some non-retirement savings set aside for other goals, like your child's college education or a vacation home, or emergencies, like a car accident or an injury that keeps you out of work for some time.

Where to begin?

- Set a budget. Look at your income and expenses each month, and set limits on your spending.

- Carefully examine your spending habits. What expenses can you cut out each week or month? Even small changes can add up – not buying coffee on the way to work and packing a lunch each day can easily save you \$30-\$40 a week, or over \$100 each month. Explore making larger lifestyle changes – if your children have grown-up and moved-out consider downsizing into a smaller home where you will have lower utility bills and maintenance costs.
- One of the first steps most experts recommend is paying off any credit card debt. Due to the high interest rates, having credit card debt wastes a lot of money you could otherwise be saving.
- Next, set goals for your savings. A financial advisor can help you determine how much you need to save for retirement, or to reach other goals. They can also help you decide the best way to invest your money, de-

pending on your comfort with risk and how much you have to invest. You don't need to be rich to seek out the recommendations of a financial advisor! Many work for a relatively low initial cost, and get paid a small commission from the products they help you buy. They expect to work for you for years, so the more successful you are, the more successful they are. Ask around for recommendations, and find someone you are comfortable with.

Many people think financial planning is too difficult, not for them, or not worth doing. Think how much easier your job is when you are working from accurate, well-thought-out plans. Successfully completing even the most simple of jobs at Pierce would be nearly impossible without good plans. How can we hope to plan for something as complex as our financial futures without a goal and plan?

Job Spotlight

continued from page 1

To date, the construction team has modernized over 50% of the building, and is closing in on the completion of Wing 3. Wing 6 was originally completed as part of the base bid contract, and each wing phase/option includes about 200,000 SF of building space, with the existing heating, air conditioning, electrical, plumbing and life safety systems being replaced or upgraded. The current Wing 3 includes the cafeteria remodel, which is being coordinated using Building Informational Modeling (BIM). GSA/DOI has the funding for Wing 2, and Grunley expects award of Option

#4 to be forthcoming.

Pierce's current construction team includes Superintendent/Sheet-metal Foreman John Cumberland, who has been involved in the project since its inception, Steam-fitter Foreman Ronnie Stokes, and Plumbing Foreman Brian Sonon. The mechanical work included in each phase/option within each wing includes the renovation of seven floors of office space, including new HVAC piping risers and outside air ductwork for the 400 new fan-coil units. Additionally, Pierce is providing a complete upgrade of each wing's me-

chanical mezzanine infrastructure, including new air handlers, fan, HVAC piping, and ductwork. Not to be forgotten, we are additionally modernizing the plumbing systems as well.

Pierce values the assistance of Grunley's construction team on-site, and looks forward to continued success on this ongoing project.

Pierce Associates: Employee Notes

Welcome Anne Brodfuehrer!

Pierce Associates is pleased to announce the arrival of Anne Brodfuehrer. Anne has been assigned to the (0902) MedImmune project as an Assistant Project Manager. She is currently located in the main office, but will be located on-site with the rest of the 0902 project management staff once the jobsite office trailer is up and running.

Anne graduated from The University of Notre Dame in May with a degree in Mechanical Engineering. She is from the Springfield, VA area and is excited to be back at Pierce after working for us as an intern last summer.

Please extend a warm welcome to Anne.

It's a Boy!

Lee Ann and Gerald Green are the proud parents of John Mitchell (pictured below) who arrived on July 15 at 7:57 a.m. at Alexandria Hospital!

He weighed in at 6 lbs, 15 ounces and measured 18" long. Congratulations to the happy family!



MCAA Project Performance Conference

Matt Hopkins and Steve Griffith attended the MCAA's 2009 Project Performance Conference in Baltimore, MD in June. The curriculum was interactive with team based discussions covering several topics such as managing manpower, opportunities for LEED, Productivity Management, Short Interval Planning, Project Changes, and Commissioning/Retro-Commissioning.

A real-world case study was used to try out what was learned, as their team addressed the project challenges presented. Working with a team of contractors, Matt and Steve were exposed to skills that will help prevent problems before they occur and strategies and solutions to help get the project operations back on track quickly and efficiently.

Mike Griffith Retirement

Mike Griffith has just announced his retirement after 39 years in Local #100. Mike served his apprenticeship with us and has been with Pierce for 21 of those 39 years! Enjoy your retirement Mike!

Bat Boy

Joe Lonchar's 12 year old son, John, submitted an entry form at Giant Food in Bristow, VA hoping to be selected as an honorary batboy at the Monday, August 31 Orioles home game vs. the New York Yankees. Imagine John's surprise when he received a letter in the mail notifying him that he had won, and to arrive at the Orioles Park at 4:30pm on game day!

John was led to the Orioles dug-out area by an Oriole's representative and was able to get more than 15 autographs from the ballplayers.

John's dad hopes to see his son on the field again in about 12 years when he makes the majors!!!



Wishing a Happy 1st Birthday !!! to:

Ashley Corrigan - 7/5/08

Jake Sheppard - 8/31/08

Joseph Payton - 9/16/08

Safety Department

Throughout the construction industry, most companies' corporate logos, merchandise, and literature include a simple mission statement: "Safety First".

Here at Pierce Associates, the safety and well-being of our employees and subcontractors is at the very forefront of our policies for an effective safety program which translates to increased worker productivity, improved job satisfaction, reduction in waste and delays, and the mitigation of costly health and accident expenditures.

Still, while those financial considerations obviously help the company as a whole, at its most basic level, our strong safety program exists to keep our valued employees out of harm's way, and to ensure that each and every one returns to their loved ones at the end of each work day. To achieve this most vital goal, Pierce has a dedicated safety department whose sole mission is to safeguard personnel and property against any dangers that may befall our work and workers in this dangerous industry.

As President of Pierce Associates, Steve Pierce is the corporate Safety Officer and ultimately bears responsibility for the company's safety program. In order to ensure the most comprehensive and serviceable program is achieved, Steve meets and develops our corporate safety policies with Larry Aley and Adam McConnell, PAI's field safety directors. It is then, via Larry and Adam, that the Pierce Associates Safety Program is brought to the field for implementation and evaluation.

As anyone on a PAI worksite probably knows, there is a corporate safety manual that enumerates a variety of procedural issues and pol-

icies available in all managers' and foremen's offices. That said, the real strength of PAI's program lies not in a binder, but in the qualifications, care and training provided by the safety staff to our field managers. As part of a renewed focus on training, Pierce has instructed 34 foremen and superintendents in OSHA's 30 hour Construction Industry Outreach program, a comprehensive multi-part seminar that provides guidance for OSHA's safety requirements in our hazardous construction environment.

To further the classroom instruction received, the Safety team has worked hard to modernize the information, records, and resources available to those enacting the program in the field. Recently, a Job Hazard Analysis (JHA) catalog was developed, creating a database of worksheets that foremen and supervisors can refer to whenever a new constructive task is started. With each JHA, a list of typical safety considerations for a specific activity is provided, and areas for site and condition specific safety issues are available to tailor the sheet to the unique needs of the job. The JHA is then presented to the field as training, and posted for reference in the work area. By autumn of 2009, this catalogue will be able to be directly accessed via the company web site.

Other efforts to expand training are on-going as well. Site-wide formal Fall Protection trainings have become common place, and task-specific safety trainings include fire watch, flag man, and rigger I, II, and III. In-house aerial work platform, forklift and scissor lift training programs have also been successful.

Moving forward, there are a variety of initiatives being worked on for introduction to the field in the coming months. The Material Safety and Data Sheet (MSDS) pro-

gram is being upgraded in order to increase our company knowledge base in Industrial Hygiene, with the ultimate goal of producing a comprehensive written blood borne pathogens procedure.

PAI's safety orientation is being enhanced, and a new iteration of the Pierce Safety Incentive Program will soon be introduced. The Safety department will also be seeing an expansion in personnel with the creation of a new field position, the Safety Watch, whose duties will be to monitor and document safety related issues while performing inspections onsite.

So what has been the upshot of all this effort? In 2008, Pierce Associates had only 5 incidents during 715,000 man hours of work that resulted in lost work days for employees. By extension, our safety rating, measured in an insurance industry calculation called the Incidence Rate, fell to 3.92. By comparison, the average rate for HVAC and Plumbing companies is 6.3, and amongst all construction companies is 5.1 (based on available 2007 data).

By the numbers, our results to date have shown Pierce to be one of the safest companies to work for in the region and in the industry. Still, putting numbers aside, the mission and goal of the Safety Department is not complete until all hazards are identified, all practices are performed appropriately, and all employees can return home each day safely. Here's hoping you all will continue to support the Safety Department in its never-ending goal to achieve "Safety First".

EMPLOYEE highlights



Lonnie DelMedico

Lonnie DelMedico has been at Pierce Associates nearly 19 years, and has worked in several areas of the company. Originally, he completed his sheet metal apprenticeship at Pierce and then worked several years installing ductwork. He then transferred over to the Test and Balancing group, where he

continues to work today. As a balancing tech in the TAB department, Lonnie adjusts the air handlers and HVAC water systems to ensure that the right flows are maintained through pumps, fans, valves and grilles. Of all the projects that Lonnie has worked on with Pierce Associates, his favorite was the IBM building. "I was young and I loved the fast-paced environment of that project," Lonnie said.

Pierce Associates is the only company Lonnie has worked for, and he wouldn't have it any other way. "Pierce is a great family-oriented business," Lonnie commented. "You can talk to any one of the members of the Pierce family any time and they treat you like a friend." He really likes the family aspect of Pierce and the way company events are focused around activities for the whole family.

When not at work, Lonnie loves spending time with his beautiful wife Michelle and his four children, Austin, 14, Matthew, 11, Kaitlin, 7, and Ella, 3, doing things that they like. The family especially likes to go out on Lake Anna in Lonnie's 22' Bayliner, and they also enjoy going to the beach and amusement parks together. When he gets a little time to himself, Lonnie enjoys riding his motorcycles and working out.



Chris Vougioukles

Chris Vougioukles has been with Pierce Associates for ten months and works as a pipe fitter on the New Campus East project. Chris was born in Maryland, but now lives in Virginia with his wonderful wife of five years, Angie. He has two daughters, one who is 15

years old, and one who is 4 years old.

When not working, Chris is passionate about extreme sports, and participates in everything from skateboarding to BMX biking. He especially enjoys racing four-

wheelers professionally, and he is a member of the American Motorcycle Association. Chris is also an avid bow hunter and fisherman, and he often likes to go out rock fishing in his 28' Marinette boat.



Donald Howard

Crane/boom truck operator Donald Howard has been with Pierce Associates for three years. Donald commented that he "does it all in the trucking department," and that as a crane/boom truck operator it is his responsibility "to put the construction material in

the building." He is currently working at both the NASM Air & Space and the New Campus East projects. Donald gets along with everyone at Pierce Associates, and says that enjoying what you do every day and getting along with the people around you helps to make the job satisfying.

Donald has two boys, 14-year old Christopher and 8-year old Tyler, who are the main focus of his life. He spends as much of his time with them as he can, and their favorite pastime is going to drag races together. "It is our father-son activity," he commented. In addition to spending time with his boys, Donald enjoys spending time with his girlfriend, Jennifer, watching the Washington Redskins and playing basketball.

Donald's friends all call him "Channel 4." He explains that he earned this nickname after appearing on the station during a news segment that asked what he did to stay cool when working outside during the extreme heat of the summer.



Joshua Pfeiffer

Joshua Pfeiffer joined Pierce Associates as a plumbing mechanic just over two years ago. Joshua explains that his job is to install various plumbing systems – waste, gas, water – depending on the job site at which he is currently located. Joshua was

introduced to the plumbing industry nine years ago by a friend who knew that he was looking for a change. He learned the trade on-the-job, completing his apprenticeship with an-

Employee Highlights

Continued from previous page

other DC-area mechanical contracting firm.

Joshua is currently working on the MedImmune project assisting with the storm water and sanitary piping. "Pierce is a good company," Joshua comments, "They take good care of me. They make sure I have the tools I need to get the job done and they are concerned about my safety."

Joshua and his wife Sarah were married 13 months ago and live in Waynesboro, PA. They have two children, daughter Molly, 3, and 8-mo. old son, Shawn. In addition to spending time with his family, Joshua enjoys rifle hunting in Pennsylvania and western Maryland for deer, rabbit, squirrel and groundhog, and fishing in Big Pool, Maryland.

Be Alert This Flu Season

H1N1, the so-called "Swine Flu", had a major outbreak in Latin America this past spring and then seemed to fade away. But is the worry over? Scientists around the world say no, and by referencing the Influenza Pandemic of 1918, researchers have announced that the worst may still be to come. That's because the first signs of the 1918 pandemic emerged in the spring of that year. The sickness then seemed to fade into obscurity over the summer, only to reemerge as one of the most devastating epidemics in world history. Figures are sketchy, but the death toll has been estimated between 20 and 40 million worldwide. In America, 28% of the population was infected and at least 675,000 died.

So what can we do to defend ourselves this time? That's a difficult question to answer. H1N1 is a virus, and frankly, the normal preventa-

tive measures like washing your hands with soap and water and avoiding touching your mouth, nose and eyes are just about all you can do to avoid getting sick.

The CDC also recommends that you stay home from work for 7 days after symptoms begin, or until you are symptom free for at least 24 hours, whichever is longer. It sounds severe, but limiting contact with others is the only sure fire way to keep from infecting them. So this fall, let's all be especially mindful of any flu like symptoms and not take any chances with working sick. The lives and well beings of all of our families and coworkers may depend on everyone's willingness to follow the CDC's recommendations.

For more information please visit: <http://www.cdc.gov/h1n1flu/> or <http://www.flu.gov>.

Good Luck to 2009 Summer Interns

Pierce Associates employed two excellent interns during the summer of 2009: Kayla Gavin from Penn State and Craig Thompson from Virginia Tech. Both Kayla and Craig began working for Pierce shortly after their classes ended in mid-May. Each of the interns took advantage of the intern housing program at George Mason University, where many companies' summer interns from other regions are housed while in town for the summer. The goal of the Pierce Associates internship program is to expose each intern to a variety of management-related tasks within our organization, including project management, estimating, coordination and commissioning. As such, Kayla and Craig spent only a few weeks in each department before moving on to another discipline.

Craig began his summer at Pierce Associates working in the Alexandria

office, assisting the Special Project Division with estimating. He then spent the next several weeks with the Pierce project management team at (0701) Constitution Center, and concluded his summer at the (0706) NCE jobsite. Regarding his summer internship, Craig said, "My experience this summer has been one-of-a-kind. I was able to be a part of two construction teams, while learning valuable tools of the mechanical contracting world that will be rewarding in my future career. Thanks for letting me be part of a wonderful company."

Kayla started her summer by helping the (0706) NCE staff distribute the large number of RFI's that are received daily. Kayla then moved on to spend a couple of weeks in the estimating department where she assisted with several bids. She then finished up the summer by helping with (0902) MedImmune submittals and other duties at (0806) Air &

Space Museum. In between processing RFI's and submittals, Kayla was even given the opportunity to participate in a golf lesson that was sponsored by the Professional Women in Construction (<http://www.pwcusa.org/>). As for Kayla's experience this summer, she offered the following, "I'd like to thank everyone for making my experience at Pierce Associates so positive. My time at NCE, Air & Space, and in the Estimating department was really great. I learned a lot about the different aspects of mechanical contracting, and I'm definitely leaving here with valuable knowledge."

Both Craig & Kayla helped tremendously during their relatively short time with Pierce Associates this summer and we wish them the best of luck in the upcoming semester!

Job Update

MedImmune P95 - Area 6 Lab (0902)

Owner: MedImmune, LLC

GC: Tompkins Builders, Inc.

Engineer: Kling Stubbins

Pierce is pleased to announce that Tompkins Builders Inc. has informed us of their intention to award Pierce Associates the mechanical/plumbing package for the MedImmune P95 Area 6 – Lab expansion.

The P95 Area 6 Project is a 308,000 sf LEED Silver Certified Laboratory Building located in Gaithersburg, Maryland. The building consists of nine (9) levels: Penthouse, Six levels of labs, Loading Dock/Vivarium level and a Basement.

Pierce would like to thank the Estimating Team of Robert Gatton, Mike Rzechula, Steve Wiggins and John Balon for their efforts in making this a successful bid. Additionally, we would like to thank Mike Smearman, Lou Spencer and Dale Sheppard for their assistance with our proposal.

We look forward to this being a successful project with Tompkins Builders, Inc.

Arlington County Water Pollution Control Plant (0704)

Owner: Arlington County

GC: Alberici Constructors

Architect: Malcolm Pirnie, Inc.

Engineer: Malcolm Pirnie, Inc.

The Pierce Arlington County team is in the process of working with Alberici and Subcontractors on the milestone one punch list items. Milestone one includes the Operations Control Building, West Secondary Services Pump Station and Surface Waste Building. NFP, our fire protection sub, is currently working in the Blower Building at this time.

Tim Aley's crew is installing exhaust fan curbs and dampers on the Aeration Tanks Pipe Gallery, while continuing to assist with the installation of fire extinguishers in all buildings. FRP Duct (foul air) installation will take place in the next three weeks, and we have received the final mechanical inspections on the West Secondary Services Pump Station and the Surface Waste Pump Station. We have also received plumbing final inspections in West Secondary Services Pump Station, Aeration Tanks Pipe Gallery and Surface Waste Pump Station Building.

Meanwhile, Brian Sonon and the plumbers have been performing some change work for Alberici, but most of their time has been devoted to preparing for the turn over of all buildings to Arlington Co.

All trades have been doing a fine job at completing their assigned tasks and anticipating what lies ahead at (0704) Arlington Co. WPCP.

NCE (0706)

GC: Clark/Balfour Beatty – NCE, A Joint Venture

Architect: RTKL / Kling

Engineer: RTKL / Kling

Work at NCE has reached its highest level yet, and the first Anchor point "B" for segment "H" was met on July 25 as scheduled. Currently, the field manpower consists of 107 Fitters, 34 plumbers, 73 sheet metal, 25 laborers, and 12 for QC/Cx. Piping risers are installed on the south bar and floor piping is continuing as the areas are signed off. TR rooms are completed in segment "H" and segment "G" was scheduled to be turned over August 28.

Mike Stauffer, Mike Spears, and the coordination team are keeping the pressure on, and Scott Sheppard is heading up the FWS and Cloud Issues. Meanwhile, ductwork instal-

lation is on schedule in the south bar, and rooftop AHUs "H" and "G" were set during the week of June 9. "H" AHU was scheduled for start-up on August 24. Plumbing rough-in on the south bar has been on-going and staying with, or ahead, of schedule. Management continues to offer their praise and thanks to foremen Scott Sisk, Tony Davis, Porter Neese, Mike Taylor, and Jeff Horsmon, for their leadership.

FDA Building #130 (0804 & 0903)

Owner: General Services Administration

GC: Unicon Development Corporation / AND Contractors, Inc.

Engineer: RTKL / Kling

FDA personnel have moved into the FDA Building #130 Machine Shop (PAI #0804) on the White Oak, MD campus, and Pierce is now gearing up to begin work on the tenant fit-out scope of work on the upper floors of the building (PAI #0903) with Unicon/AND and the GSA, Heery-Tishman group. This tenant fit-out involves the construction of core bathrooms from a plumbing perspective and a substantial amount of sheet metal and refrigeration work from a HVAC perspective. Substantial completion for this work is scheduled for January 1, 2010.

NASM Air & Space (0806)

Owner: Smithsonian Institution

GC: Hensel Phelps Construction Company

Architect/Engineer: HOK

Progress continues on schedule at the National Air and Space Museum Udvar Hazy Phase 2 Project located at Dulles Airport in Chantilly, VA. Structural steel is nearing completion and both the roof and exterior skin activities are in full swing, with the expectation that the building

will be dry and watertight come the cold winter months. Also, now that the spray on fireproofing of the steel is on the move, our mechanical activities and crews are rapidly building up. Ken Hollingshead and his plumbing crew are hard at work on the rain leaders while John Tatro and his steamfitting crew are setting hangers and preparing for tie ins to the existing systems. Cody Cain and the sheet metal crew are now preparing to install the large duct located up in the high bays of the restoration hangar. Project management is led by George D'Amore, who has very capably and cooperatively worked with the staff of Hensel Phelps, the project's General Contractor. NASM is a "partnering project" and, to date, both Hensel Phelps and the Pierce teams have worked together to resolve many issues. It is fully expected that this mutual cooperation will extend throughout the life of the project.

One Skyline Tower Addition (0807)

Owner: VORNADO Charles E. Smith

GC: Davis Construction

Architect: WDG Architecture

Engineer: GHT Limited

The project has come to an end with only the punch list items left to do. Both Davis Construction (GC) and VORNADO (owner) seem to be very happy with both the quality of our work as well as our performance. Project Manager Brian Meisowitz would like to thank everyone involved with the project, for the success of this project could not have been possible without the following people as well as their crews: Wayne Alt, Sheet Metal Foreman; Joe Royce, Plumbing Foreman; and Andrew Broglie, Steamfitter Foreman.

Inova Alexandria Lab Fit Out (0808)

Owner: Inova Alexandria Hospital

GC: Dominion Construction

Architect: RSg Architects

Engineer: Leech Wallace Associates, Inc.

The project has come to an end with only owner supplied equipment to be set and the punch list items left to finish. Both Dominion Construction (GC) and Inova (owner) seem to be very happy with both the quality of our work as well as our performance. Project Manager Brian Meisowitz again would like to thank everyone involved with the project, for the success of this project could not have been possible without the following people as well as their crews: Wayne Alt, Sheet Metal Foreman; Nelson Lazo, Plumbing Foreman; and Andrew Broglie, Steamfitter Foreman.

BEST practice

"Bag & Tag" is a term associated with a specific quantity of material being ordered, shipped, packaged and marked for a unique location or task on a job. The term could represent packaging of any type, from small bags to individual boxes to large pallets or skids. This method is effective in minimizing material handling, wasted material, non-productive time, and often can reduce our risk of accident and injury.

"Bag & Tag" is a method which managers and foremen can use both in ordering from vendors or suppliers and with orders placed to our internal shops. Using this process allows Pierce to shift the burden of managing, sorting and storing materials from a jobsite location to a shop or warehouse

where conditions are more favorable. Some examples that have successfully been grouped in the past include:

- 1) Cut to length unistrut, rod, angle or channel iron.
- 2) Fittings and valves
- 3) Access doors
- 4) Hangers, sleeves and saddles
- 5) Plumbing fixtures
- 6) Trim items such as gauges and thermometers

There is no exact list of items that work for every job, so foremen should be open to exploring options on the packaging and delivery of all materials needed for their specific project. While this method

is not feasible for all items, its use will work well in conjunction with bulk ordering and pre-fabrication. And for the many times we hear people say they "won't" or "can't do that", keep in mind that extra work in the early stages of a project will save you time and make your job easier in the long run.



Soldering is defined as “a group of joining processes that produce coalescence of materials by heating them to a soldering temperature and by using a filler metal (solder) having a liquidus not exceeding 840°F and below the solidus of the base metals.” In actual practice, most soldering is done at temperatures from about 350° to 600°F.

To consistently make satisfactory joints, the following sequence of joint preparation and operation, based on ASTM Standard Practice B 828, should be followed:

- Measuring and cutting
- Reaming
- Cleaning
- Fluxing
- Assembly and support
- Heating
- Applying the solder
- Cooling and cleaning

The techniques described produce leak-tight solder joints between copper and copper alloy tube and fittings, either in shop operations or in the field. Skill and knowledge are required to produce a satisfactorily soldered joint.

Measuring and Cutting

Accurately measure the length of each tube segment. Inaccuracy can compromise joint quality. If the tube is too short, it will not reach all the way into the cup of the fitting and a proper joint cannot be made. If the tube segment is too long, system strain may be introduced which could affect service life.

Cut the tube to the measured lengths. Cutting can be accomplished in a number of different ways to produce a satisfactory squared end. The tube can be cut with a disc-type tube cutter, a hack-

saw, an abrasive wheel, or with a stationary or portable band saw. Care must be taken that the tube is not deformed while being cut. Regardless of method, the cut must be square to the run of the tube so that the tube will seat properly in the fitting cup.

Reaming

Ream all cut tube ends to the full inside diameter of the tube to remove the small burr created by the cutting operation. If this rough, inside edge is not removed by reaming, erosion-corrosion may occur due to local turbulence and increased local flow velocity in tube. A properly reamed piece of tube provides a smooth surface for better flow.

Remove any burrs on the outside of the tube ends, created by the cutting operation, to ensure proper entrance of the tube into the fitting cup.

Tools used to ream tube ends include the reaming blade on the tube cutter, half-round or round files, and a suitable de-burring tool. With soft tube, care must be taken not to deform the tube end by applying too much pressure.

Soft temper tube, if deformed, can be brought back to roundness with a sizing tool. This tool consists of a plug and sizing ring.

Cleaning

The removal of all oxides and surface soil from the tube ends and fitting cups is crucial to proper flow of solder metal into the joint. Failure to remove them can interfere with capillary action and may lessen the strength of the joint and cause failure.

Lightly abrade (clean) the tube ends using sand cloth or nylon abrasive pads for a distance slightly more

than the depth of the fitting cups.

Clean the fitting cups by using abrasive cloth, abrasive pads, or properly sized fitting brush.

The capillary space between tube and fitting is approximately 0.004 in. Solder metal fills this gap by capillary action. This spacing is critical for the solder metal to flow into the gap and form a strong joint.

Copper is a relatively soft metal. If too much material is removed from the tube end or fitting cup, a loose fit may result in a poor joint.

Applying Flux

Use a flux that will dissolve and remove traces of oxide from the cleaned surfaces to be joined, protect the cleaned surfaces from re-oxidation during heating, and promote wetting of the surfaces by the solder metal, as recommended in the general requirements of ASTM B 813. Apply a thin even coating of flux with a brush to both tube and fitting as soon as possible after cleaning.

WARNING: Do not apply with fingers. Chemicals in the flux can be harmful if carried to the eyes, mouth, or open cuts.

Use care in applying flux. Careless workmanship can cause problems long after the system has been installed. If excessive amounts of flux are used, the flux residue can cause corrosion. In extreme cases, such flux corrosion could perforate the wall of the tube, fitting or both.

Assembly and Support

Insert the tube end into fitting cup, making sure that the tube is seated against the base of the fitting cup. A slight twisting motion ensures even coverage by flux. Remove excess flux from the exterior of the joint with a cotton rag.

continued on next page

Support the tube and fitting assembly to ensure a uniform capillary space around the entire circumference of the joint. Uniformity of capillary space will ensure good capillary flow of the molten solder material. Excessive joint clearance can lead to solder metal cracking under conditions of stress or vibration.

The joint is now ready for soldering. Joints prepared and ready for soldering must be completed the same day and not left unfinished overnight.

Heating

WARNING: When dealing with an open flame, high temperatures and flammable gases, safety precautions must be observed.

Begin heating with the flame perpendicular to the tube. The copper tube conducts the initial heat into the fitting cup for even distribution of heat in the joint area. The extent of this pre-heating depends upon the size of the joint. Preheating of the assembly should include the entire assembly up to a suitable preheat condition. However, for joints in the horizontal position, avoid directly preheating the top of the joint to avoid burning the soldering flux. The natural tendency for heat to rise will ensure adequate preheat of the top of the assembly. Experience will indicate the amount of heat and the time needed.

Next, move the flame onto the fitting cup. Sweep the flame alternately between the fitting cup and the tube a distance equal to the depth of the fitting cup. Again, preheating the circumference of the assembly as directed above, with the torch at the base of the fitting cup, touch the solder to the joint. If the solder does not melt, remove it and continue heating.

CAUTION: Do not overheat the joint or direct the flame into the face of

the fitting cup. Overheating could burn the flux, which will destroy its effectiveness and the solder will not enter the joint properly.

When the solder melts, apply heat to the base of the cup to aid capillary action in drawing the molten solder into the cup toward the heat source.

The heat is generally applied using an air-fuel torch. Such torches use acetylene or an LP gas. Electric resistance soldering tools can also be used. They employ heating electrodes and should be considered when an open flame is a concern.

Applying Solder

For joints in the horizontal position, start applying the solder material slightly off-center at the bottom of the joint. When the solder begins to melt from the heat of the tube and fitting, push the solder straight into the joint while keeping the torch at the base of the fitting and slightly ahead of the point of application of the solder. Continue this technique across the bottom of the fitting and up one side to the top of the fitting.

The now solidified solder at the bottom of the joint has created an effective dam that will prevent the solder from running out of the joint as the side and top of the joint are being filled.

Return to the point of beginning, overlapping slightly, and proceed up the uncompleted side to the top, again, overlapping slightly. While soldering, small drops may appear behind the point of soldering application, indicating the joint is full to that point, and will take no more solder. Throughout this process you are using all three physical states of solder: solid, pasty, and liquid.

For joints in the vertical position, make a similar sequence of overlapping passes starting wherever is convenient.

Solder joints depend on capillary action drawing free-flowing mol-

ten solder into the narrow clearance between the fitting and the tube. Molten solder metal is drawing into the joint by capillary action regardless of whether the solder flow is upward, downward, or horizontal.

Capillary action is most effective when the space between 0.002 inch and 0.005 inch. A certain amount of looseness of fit can be tolerated, but too loose a fit can cause difficulties with larger size fittings.

The amount of solder consumed when adequately filling the capillary space between the tube and either wrought or cast fittings may be estimated.

Cooling and Cleaning

Allow the completed joint to cool naturally. Shock cooling with water may stress the joint. When cool, clean off any remaining flux residue with a wet rag. Whenever possible, based on end use, completed systems should be flushed to remove excess flux and debris.

Testing

Test all completed assemblies for joint integrity. Follow the testing procedure prescribed by applicable codes governing the intended service.

From the Copper Tube Handbook

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Apprentice Graduates

Congratulations to the following Pierce employees who graduated from the 5 Year – UAM Apprenticeship Program!

Plus additional congrats to Cheung Lam and Clifton Tupaj who both received awards for perfect attendance!

PLUMBER - GASFITTERS:

Thomas Strong, III

STEAMFITTERS:

Clifton Tupaj

Ray Roberts

Cheung Lam

Jason Claiborne

Garth Salmon

Brittany Updike

