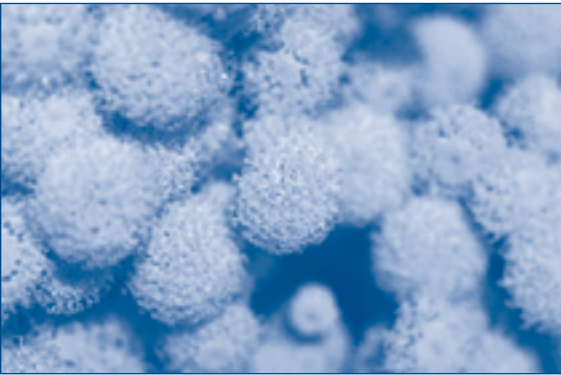


Helping contractors save money and enhance productivity

Awareness of Mold Issues Can Help Protect Your Bottom Line



Building materials like drywall and plywood, when wet, provide a conducive environment for mold growth.

Mold and its impact on health and property recently have been the subject of significant media attention. Experts have not come to a definitive conclusion as to the health effects of certain molds, although several high-profile media stories have highlighted what are characterized as their potentially dangerous implications.

Unfortunately, too much misinformation about the health impact of mold—and a selective interpretation of the facts regarding insurance coverage for mold—is being disseminated to the public. This situation, created by the media and overzealous plaintiffs’ attorneys, has promoted a heightened level of anxiety and misunderstanding

among policyholders regarding the insurer’s contractual obligations under General Liability or Commercial Property insurance policies.

In response, the American Insurance Association (AIA) has put out certain public statements, some of which are incorporated in this document, because the AIA believes it is in the consumer’s best interest to eliminate any misunderstandings about mold and insurance coverage. This is an assessment of the mold issue, and an explanation of the responsibilities of the various parties involved in its remediation.

Increase in mold claims is a recent development

Mold is an ever-present fact of life and can be found outside and inside all types of residential and commercial structures. There are hundreds of different strains of mold that have been growing in buildings for a long time.

Although mold does occur in older buildings, some believe mold is starting to appear with greater frequency in residential, commercial, and public buildings due, in large part, to the introduction of building techniques and materials over the last 30 years that allow structures to be built “air-tight” for the sake of energy efficiency.

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Automated Estimating Helps Tweet/Garot Grow

Tweet/Garot, a leading mechanical construction and service company based in Green Bay, WI, is a long-time member of MCAA that has experienced dramatic growth in recent years. Ten years ago, Tweet/Garot chose QuickPen software to automate their estimating function, and in that time, their business has increased from \$10 million a year to around \$50 million. Steve Schneider, a 20-year estimator with Tweet/Garot, says much of the credit goes to their estimating software: “There’s no way we could have had that increase without automated estimating.”

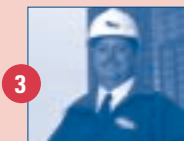
Why automate?

Steve was part of the original team that decided to automate the estimating function, and the number one goal was speed—doing bids more quickly. But they soon discovered other benefits, as well: more consistent bids, increased bid volume, and more accurate and faster compiling of bids on bid day. Steve says that with automated estimating software, “The time required to get the reports compiled is less than half.”

In fact, QuickPen’s automated solution was so much better than manual estimating that it caused some interoffice

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SMART SOLUTIONS

Helping contractors save money
and enhance productivity

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

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Ongoing partnerships enhance competitiveness...

Dear MCAA member:

With this second issue of *Smart Solutions*, we introduce the new Manufacturer/Supplier Council logo, featuring the concept of "supplier partner." Many of the articles illustrate the fact that a partnership with one of our M/SC members can provide some very smart solutions to the common—and uncommon—challenges that confront you. If you take a few moments to read the stories, and look over the new products and services offered by M/SC members, we're sure you will have a greater appreciation for the numerous possibilities these partnerships provide.

We're also introducing here the logo for MCAA's 2003 convention (March 2-6 in Palm Springs, California). The logo focuses on the Joshua tree, a plant that thrives in a harsh environment through cooperative relationships with other desert inhabitants. In the current economy, contractors could well learn from this enduring plant that one of the most important survival strategies is found in partnering. At the convention, you will have opportunities to develop closer relationships with the supplier partners exhibiting there and to learn more about the products and services that can help you enhance your overall competitiveness. You can anticipate receiving details about the convention program—including information on the Manufacturer/Supplier exhibit—in late September.



We welcome your comments and suggestions on this publication.

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Borg Mechanical Switches to CSST Mid-Project, Reduces Installation Time by 70%

Towering over the banks of the Chicago River in that city's trendy River East neighborhood, the luxury RiverView Condominiums have a clear view of Lake Michigan and are only steps away from the glitzy neighborhood known as the "Platinum Coast." This premier site predictably demanded the very best in design, materials, and amenities for its upscale residents and retail tenants.

A less noticeable, but no less critical, facet of the RiverView project is the use of a gas distribution system made of Gastite® corrugated stainless steel tubing (CSST). CSST wasn't specified for the job, and the installing contractor, MCAA member **Borg Mechanical Contractors Inc.** (Hillside, IL), switched to it only after the gas-piping part of the project was well underway. But Gastite flexible tubing played a crucial role in helping the Borg crews complete their portion of the Riverview project on time and within budget.

True luxury

The massive mixed-use development consists of two 28-floor towers, with approximately 100 condo or town-home units in each, as well as a number of retail shops at street level. The multi-level residential units measure from 1,200 to 5,000 square feet, at a cost of \$500 per square foot and up.

A project of this size and complexity presents a demanding construction environment for the contractor installing the mechanical equipment. For that reason, Borg Project Manager Mike Sorley chose to make a momentous switch in the piping material he was using for gas distribution. "We started the first tower using black iron pipe," he recalls, "and each floor was

taking about 10 days to finish. Because of the fast-paced schedule for each floor, we needed to do something different, without adding more people."



Project Manager Mike Sorley's quick thinking saved Borg Mechanical time and money.

So Sorley opted for Gastite CSST, in the hopes of finding a quicker and more economical method of gas distribution. He wasn't disappointed. "While it was our company's first exposure to flexible tubing, the system is so easy to learn to install, we had no trouble making the changeover," he comments.

Packaged in easy-to-use disposable reels and marked by the foot for speedier length measurements, Gastite had Borg's mechanics off and running in no time. In fact, thanks to CSST's reduced tooling and workspace requirements, Sorley was able to assign extra mechanics to accelerate the installation.

"Right away, we had dramatic time-savings," he says. "Instead of each floor taking 10 days, suddenly we needed only three. That makes a huge difference in a 28-floor project."

Easy does it

Sorley praises the simplicity of the Gastite system, which requires substantially fewer fittings than black iron: one connection at the manifold and a second at the appliance is usually all that is needed.

"We set up a four-wheel cart similar to an electrician's spool cart," explains Sorley, "to pull the tube into each unit. We had a spool of 3/4" and 1/2" CSST on one cart, with the fittings in easy-to-reach bins. We also mounted a box on the cart with all the necessary tools." The box wasn't all that elaborate because the Gastite requires no special installation tools, just a standard tube cutter and a few wrenches.

Overcoming obstacles

On a large high-rise project, an installer inevitably encounters numerous obstacles running gas tubing to the cook tops, clothes dryers, fireplaces, and other appliances. These obstructions typically take the form of structural shapes as well as utility lines for the other mechanical systems. RiverView proved no exception. But the flexibility of Gastite CSST made it easier for Sorley and his crews to maneuver around these obstacles, while also permitting more options in the placement of gas appliances.

"Bottom line," says Sorley, "Gastite flexible gas tubing ended up saving us lots of time on the first tower, which is why we chose it for the second phase of the project. For high-rise, concrete buildings like RiverView, I can't see using anything else."

*For more information on Gastite products, visit www.gastite.com. **

Mold

continued from page 1

The downside of airtight buildings is that they may not allow for an exchange of fresh air. This, in turn, can allow moisture to build up, providing a potential breeding ground for mold. Also, building materials like drywall and plywood, when wet, provide a conducive environment for mold growth.

Health impact of mold

Public health experts say it could be years before research proves or disproves whether certain molds (and there are hundreds found indoors) cause the kind of severe health problems being alleged in recent litigation. In some instances the *stachybotrys* form of mold, one of the most well-publicized of the so-called “toxic molds,” has been blamed for a range of physical ailments.

Unlike many other known toxins, such as lead, mercury, or cadmium, there are no standards for levels of mold toxicity and no known permissible mold exposure limits for the indoor environment. No state or federal agencies currently offer testing of mold samples.

While indoor air quality (IAQ) investigations have an established protocol and guidelines, mold remediation is a new industry. There are no government-mandated guidelines for proper mold remediation, and remediation contractors are not licensed in any way.

What is covered?

Insurance policies are contracts that expressly cover certain injuries and damages caused by occurrences and explicitly exclude certain losses from coverage. Policyholders who have questions about the coverage under their General Liability policy should call their agent or broker.

General Liability policies cover defense costs and damages where the contractor’s business activities caused bodily injury

or property damage to someone other than the contractor. To be covered, the bodily injury or property damage must be of a type described in the policy, and not excluded by the policy.

The standard General Liability policy insures against damages caused by the contractor’s ongoing operations or by products sold or work performed by the contractor in the past. General Liability policies are not warranties, and don’t pay to replace poor quality products or work. But they will pay to replace other property that is damaged by poor quality products or work. For example, a contractor puts a poor quality roof on a customer’s warehouse, and the leaking roof damages warehouse contents and warps the warehouse floor. It is probable that the warehouse owner will sue for the cost of repairing or replacing the roof, for the value of the damaged contents, and for the cost of fixing the floor. A General Liability policy will likely pay to replace the damaged contents, and to fix the floor, but it won’t pay for the cost of replacing the roof.

More and more insurers have started attaching mold exclusions to the General Liability policies they sell.

The “liability” in General Liability policies means they only cover situations where the contractor is alleged to be liable under tort law to the party bringing a claim. Tort liability typically springs from breaching a common law duty, or from selling a defective product. Generally speaking, a contractor or building product supplier won’t be considered liable for mold caused by a building owner’s failure to properly

maintain the building. General Liability policies will pay to defend groundless claims, so long as the claims are of a type that would be covered if the allegations were true.

Legal interpretation of the insurance contract can vary by state. While broad coverage is provided by the current ISO General Liability policy, certain provisions may preclude coverage for a given mold claim based on the facts of the claim and policy language. For example, the pollution exclusion and the “owned or rented” property exclusion may defeat coverage for mold. Several carriers are invoking the pollution exclusion to deny claims arising out of mold exposure. While courts have examined the applicability of the pollution exclusion to other IAQ issues, there has been little case law developed as to mold exposure. In addition, the state and federal courts that have looked at other IAQ issues have split as to whether the pollution exclusion applies to those claims. Some courts have held that the language applies and is unambiguous while others have ruled that the intent of the exclusion was not to exclude “indoor” claims but rather that the exclusion should only apply to “traditional environmental pollution.”

Until the courts begin to rule on the applicability of the pollution exclusion to mold exposure, uncertainty remains as to the effect of this exclusion on mold claims under a General Liability policy.

Prevention and remediation

Time is critical in responding to water damage, moisture, or humidity issues. Mold starts to develop quickly. Contractors should make sure their customers are able to reach them easily with complaints or notices of loss. Contractors need well-documented complaint handling procedures, including giving their insurance companies prompt notice of a loss, and taking steps to prevent further damage. The key to mold control is moisture con-

trol. Solve moisture problems before they become mold problems.

- Pre-inspect the jobsite for potential signs of water damage or mold growth during the bidding process or prior to beginning the project.

Document any visible signs of prior water damage or mold growth with the building owner. Potential signs of mold growth can include:

- Musty odor;
- Dark spots/water stains on ceilings, walls, or floors;
- Peeling/curling vinyl floors/wallpaper; and,
- A high level of condensation on windows and other surfaces.
- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.
- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60 percent relative humidity (RH), ideally 30–50 percent.
- Perform regular building/HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 48 hours.
- Provide drainage and slope the ground away from the foundation—don't let foundations stay wet.

The goal of mold remediation should be to remove it, not just kill it. A dead mold spore is still an allergen. The issues of mold toxicity and remedia-

tion are scientific issues. The scientific experts themselves have not reached a consensus on many key mold-related issues. See the checklist on this page for more remediation suggestions.

What's Next?

Given all the scientific and legal unknowns, many insurers have decided it's impossible to accurately price for mold liability exposures. Accordingly, more and more insurers have started attaching mold exclusions to the General Liability policies they sell. When a contractor knows that its General Liability coverage won't apply, and decides to hire a mold remediation contractor—or any other provider of professional services—the contractor should take time to carefully review the professional's credentials and experience. There are currently no generally accepted mold remediation standards and no licensing or professional requirements for someone who says they can remove mold.

Mold is an emerging issue for the contracting industry. Water damage claims will cost more in the future because of mold remediation and the possible bodily injury claims associated with mold. Review your insurance coverage conditions and respond quickly to complaints from customers, particularly when water damage is involved.

Additional information & resources

The EPA has published a comprehensive guide entitled "Mold Remediation in Schools and Commercial Buildings" which discusses mold prevention, possible mold health effects, and mold remediation procedures. The guide is available online at www.epa.gov/iaq/molds/index.html.

*Brian Fischer, ARM, national program director for CNA, has worked in the insurance industry since 1986. He can be reached at CNA Plaza 37 South, Chicago, IL 60685; phone 312-822-7573; fax 312-755-2394; or e-mail brian.fischer@cna.com. **

CHECKLIST FOR MOLD REMEDIATION

Investigate and evaluate moisture and mold problems

- Assess size of moldy area (square feet).
- Consider the possibility of hidden mold.
- Clean up small mold problems and fix moisture problems before they become large problems.
- Select remediation manager for medium- or large-size mold problems.
- Investigate areas associated with occupant complaints.
- Identify source(s) or cause of water or moisture problem(s).
- Note type of water-damaged materials (wallboard, carpet, etc.).
- Check inside air ducts and air handling unit.
- Throughout process, consult with qualified professional for medium to large projects.

Communicate with building occupants at all stages of process, as appropriate

- Designate contact person for questions and comments about medium or large scale remediation as needed.

Plan remediation

- Adapt or modify remediation guidelines to fit your situation; use with professional judgment.
- Plan to dry wet, non-moldy materials within 48 hours to prevent mold growth.
- Select cleanup methods for moldy items.
- Select Personal Protective Equipment (PPE) (protect remediators).
- Select containment equipment (protect building occupants).
- Select remediation personnel who have the experience and training needed to implement the remediation plan and use PPE and containment as appropriate.

Remediate moisture and mold problems

- Fix moisture problems, implement repair plan and/or maintenance plan.
- Dry wet, non-moldy materials within 48 hours to prevent mold growth.
- Clean and dry moldy materials.
- Discard moldy porous items that can't be cleaned.

Partnership with Invensys Means Success for Mechanical Inc.

Mechanical Inc. (Freeport, IL) has been partnering with Invensys Building Systems (Loves Park, IL) for many years to service local area customers with their building automation needs. Mechanical Inc., part of the Helm Group, is the 25th largest firm in the United States. Serving primarily northern Illinois and the Chicago suburbs, it specializes in providing service and installation for HVAC systems, process piping, and plumbing.

Invensys is a global leader in the automation and controls industry. The company's products and services range from advanced control systems and networks for automating industrial plants and controlling the environments of buildings, to electronic devices and controls found in residential buildings and light commercial applications. Committed to **innovation**, **invention**, and **systems**, as the name suggests, new product offerings such as DuraDrive, I/A Series Niagara, and Erie Zone Valves have strengthened the company's drive for excellence.

Mechanical Inc. has worked with Order of St. Francis (OSF) St. Anthony Medical Center in Rockford, IL, for the past several years servicing and adding to the initial Network 8000 system originally installed 10 years ago.



Mechanical Inc. partnered with Invensys on a medical center's new ambulatory care unit.

As industry needs shift, OSF St. Anthony Medical Center faces a challenging environment since several types of operating systems are used. In meeting these challenges, Mechanical Inc. and Invensys Building Systems provide a high level of expertise and product offering. "The Network 8000 system saves us time and is easy to use. We don't have to physically check if everything is running smoothly. Any problems are identified quickly. The overrides are a great benefit to this system," remarked Karl Meintz, plant operations supervisor.

The most recent project was adding a new Ambulatory Care Center. "We wanted to standardize our automation system working with one place, one person. We have been happy with what we have and the service we have received from Mechanical Inc. and Invensys" says Meintz.

The primary applications used for the project paralleled the hospital's current operation. They installed air handling units to supply conditioned air throughout the buildings, pneumatic actuation for operating dampers and valves, along with the use of various other products used for their chillers and some Direct Digital Controls (DDC). Despite recent trends in the market toward the use of direct coupled actuation for controls, pneumatic actuation still is favored at the hospital due to its high reliability, cost efficiency, and ease of repair.

With a growing number of satisfied customers, the future only seems to get brighter for Mechanical Inc. and Invensys as they face new challenges and opportunities together.

*For more information about Invensys Building Systems, call 815-637-3000 or visit www.invensysibs.com. **

New Software Helps PMs Save Time, Track Progress

MCAA member **Sycamore Engineering** has developed a reputation for delivering quality work to its clients in the city of Terre Haute, IN, and surrounding areas. The company offers heating, air conditioning, refrigeration, electrical control, carpentry, concrete, plumbing, and high voltage work. Its diversification, employee expertise, and commitment to excellence have kept the company at a competitive advantage.

To ensure that the business is organized and runs smoothly, Sycamore Engineering relies on its software solution.

Just a few years ago, Sycamore had nothing but trouble with its software. "The system that we were using was not working up to the standards that we wanted," said Stephen Butwin, Sycamore's vice president of operations. "We were not able to get the reports we needed, and errors in the system were holding our work back, decreasing our efficiency."

With no relief in sight, Sycamore started to look for a new software solution. "In our search for a new software supplier, we came across several vendors at the MCAA trade show, one of them being Gary Jonas Computing Ltd.," Stephen said.

While looking at vendors and their demonstrations, Stephen said there were three factors that affected their decision-making. "We are a specialty construction company doing mechanical and electrical work. We also have service departments: plumbing, HVAC, electrical, and sheet metal.

The system had to be able to maintain the different divisions.”

The second deciding factor dealt with their service department. “Our service department was not computerized. Everything was done manually, using the card system. It was cumbersome and slow. We were late getting bills to people and dispatching was time-consuming.”

The third factor was price.

Several demonstrations later, Sycamore Engineering decided to implement the Jonas system in its organization. “Jonas fit all of our needs. The price was right. It is definitely one of the best systems out there,” Stephen announced.

Managers are able to view the progress of a job from start to finish and get a really good feel for where they stand on both labor and material.

On January 1, 2001, Sycamore Engineering went live on the Jonas system. It is making full use of all the accounting, job costing, purchase order, change order, dispatch board, subcontract, and service contract modules.

Construction made easier

When working on a big construction job, Sycamore can have as many as 125 to 250 workers on the payroll. Currently working on a complete mechanical and electrical construction job for a large hospital building, Sycamore is using its Jonas system to coordinate the work. “There are three departments involved: the plumbers, pipe fitters and sheet metal workers on the mechanical side and the electri-

cians. Each department is responsible for setting up their job costs. They also supply their labor hours and material costs by code. We set all three departments under one job number. As this job progresses, labor is posted against the job number and materials are charged against the cost codes,” Stephen explains.

“We use the AIA billing form that matches the cost codes that we set up in Jonas for billing purposes. Purchase orders are written against cost codes. If we are buying equipment, we pay the bill and charge it against a purchase order. This whole process is done on the Jonas system.”

Because of the detail the Jonas systems provides, “managers are able to view the progress of a job from start to finish and get a really good feel for where they stand on both labor and material. They are able to spot and address issues or problems before they arise,” said Stephen.

Company president Thomas Dinkel is also using the Jonas system, although he seldom used previous systems. With Jonas, he said, “I like to look at jobs and their details. With the quick format, I don’t have to read between the lines.”

Saving time in service

On the service side of the business, Sycamore Engineering is benefiting

from considerable time savings. During the busy season, they average 30 to 40 work orders a day among their 13 HVAC plumbing service technicians and their five electrical technicians.

“Before, the service manager did all the dispatching. It took up a lot of time. Now we have staff that do the dispatching within minutes and the manager can keep an eye on the technicians by looking at the dispatch board,” said Stephen. “In all, Jonas’ Service modules improved our whole service work flow. The same service technicians are doing more service work per day than they did before because we are a lot more organized.”

With the help of Jonas, Sycamore keeps a detailed history of clients. “We are able to look back at a client’s history and resolve issues or answer any questions that a client may have on a past job,” said Office Manager Erika Reedy.

With all these improvements, Stephen Butwin is very optimistic about his continued relationship with Jonas. “We look forward to expanding our business with the help of Jonas. So far we have actually increased our volume by more than 30 percent, with the same staff. This is in part thanks to the Jonas system.”

*For more information on Jonas software, visit www.jonassoftware.com. **



Sycamore Engineering increased volume by 30 percent with the same staff thanks to the Jonas Software system.

Save Time and Money with Pre-Planning

By Alison Carrara and Scott Kimpland

You often spend months or even years working on a single project, and planning is crucial to success. Pre-job planning, short interval planning, and the foreman's daily huddle are critical processes that help you work smarter. If you do these three things well—and consistently—you can expect to see a substantial productivity advantage over your competitors.

The first step

Once a construction project begins, your ability to impact the total cost of the project diminishes quickly. The greatest opportunity to plan and affect cost exists in pre-construction. Within the pre-construction phase, pre-job planning has the single largest impact on productivity, and it's the first critical step for improving productivity.

Working smart with pre-job planning includes a pre-job planning checklist and a commitment to planning. Each contractor will have a different pre-job plan based on the answers to the following four questions:

- What should be done before the initial pre-job planning meeting?
- Who should be involved in the initial pre-job planning meeting?
- What should be discussed with the field manager?
- What should we physically hand off to the field manager?

The answers to these questions should produce the pre-job planning checklist. The checklist is a visual reminder of the items needed to begin a project and is used in the formal planning meeting to make sure all items are discussed.

PRE-JOB PLANNING CHECKLIST		
Job: _____		
Job Number: _____		
Estimator: _____		
General Superintendent: _____		
Operations Manager: _____		
Superintendent: _____		
Project Manager: _____		
TANGIBLE REQUIREMENTS	Was this item discussed?	
	Yes	No
1. Plans and specs		
2. List of subs, contacts, and phone numbers		
3. Scope of sub's work		
4. List of suppliers, contacts, and phone numbers		
5. Start date		
6. Job duration		
7. List of long lead items and ordering responsibility		
8. List of other materials and ordering responsibility		
9. Original estimate		
10. Engineer and phone numbers		
11. Testing lab and phone numbers		
12. Pit location(s)		
13. Safety requirements and possible hazards		

PRE-JOB PLANNING CHECKLIST

DISCUSSION REQUIREMENTS	Was this item discussed?	
	Yes	No
14. Site visit		
15. List of equipment needed to start the job		
16. Labor requirements (crew size and mix)		
17. Design problems (errors in plans and specs)		
18. Material storage plan		
19. List of tools		
20. Special payroll requirements		
21. Sequence of construction		
22. Overall job schedule		
23. Initial short interval schedule		
24. Special coding requirements		
25. Pre-construction meeting		
26. Check topographic survey		
27. Change order procedures		
28. "Rocks in the road"		
29. Budget		
30. Strategy for beating the budget and schedule		
31. Undocumented sales promises		
NOTES:		

Finally, a pre-job planning action plan lists the critical items that need to be done before ground is broken, as well as the individuals responsible for those actions and the deadlines for getting them done. Together, these planning tools structure communication and define the pre-job planning process. Every person involved in the job should understand the process and be required to follow it.

Short-interval planning

Once the project is underway, planning continues. The short-interval plan lists specific activities, production goals, materials and equipment needed, alternate plans, and issues that need resolution. It is the key to minimizing resource-related delays.

This planning also stretches the length of time in the future that field managers are thinking about and planning for. The average foreman thinks ahead about two hours; the average superintendent thinks ahead approximately two days. However, foremen should be thinking two days ahead, and superintendents should be thinking two weeks ahead.

The short-interval plan is a vehicle for doing this, and it takes just 20 minutes a week to complete. Some managers plan in their heads and may be resistant to this planning. The problem with a "head plan" is that the plan can change quickly, and no one is accountable for it. A written plan raises accountability and motivates field personnel to meet the plan.

Daily planning and goal setting with the foreman's daily huddle

Industry research shows the crew may spend as much as 6 percent of the day waiting for the next task. By sharing the plan in the daily huddle, much of the time crew members spend asking, "What's next, boss?" can be eliminated and turned into productive time. Through the foreman's daily huddle,

continued on page 10

Pre-Planning

continued from page 9

each crew member learns the daily plan and production goal. The morning crew meeting involves the crew in setting the goal and ensures that every person working in the field knows the plan.

The daily goal can be a big motivator, or its opposite, for the crew. The goal shouldn't be set based on the job estimate, but rather by the specific conditions that you are working under each day. A dry erase board can be used to communicate the goal and plan for the day. Then, if the foreman has to leave the job site or isn't accessible, there is a plan to carry on production. It also keeps paperwork to a minimum.

Together, the crew and field manager can work to eliminate any controllable obstacles keeping them from meeting the goal. For example, perhaps the materials are 500 yards from the work site, making crew members travel and wasting time.

Making a game plan

Map out the game plan on your next project by using the three levels of planning—pre-job, short-interval, and daily. Together, these critical processes structure communication and help to ensure that the project runs smoothly.

*For more information, contact Stuart Deibel at 919-785-9320 or sdeibel@fminet.com. **



Pre-job planning helps structure communication to ensure the project runs smoothly.

Change Order Software Improves Contractor Confidence

On today's increasingly complex and sophisticated construction projects, you are expected to complete work in less time and with greater accuracy than ever before. Consequently, the detail of your estimate becomes crucial in establishing a realistic price with an acceptable profit margin.

Offering estimating and change order solutions—along with education, training, and consulting services—Accubid is a total solution provider to the over 3,500 companies actively using our products.

Accubid's family of estimating solutions offers power and flexibility. The live extension lets you quickly and easily sort the extended bill of materials by system, area, drawing, phase, location, labor factor, sort codes, unit price, or item to perform reasonable checks. Project management features allow you to analyze materials for efficient purchasing and handling.

Accubid's ChangeOrder software helps you assess the "big picture," pricing not just labor, material, and equipment, but also cleanup, material handling, overtime, relocation delays, and additional supervision and project management. ChangeOrder guides you beyond direct costs and defined scope of work to assess indirect costs and consider the full impact of contemplated changes.

Dave Hoare, project manager with MCAA member **Adelt Mechanical** (Mississauga, ON, Canada), believes Accubid's ChangeOrder program has allowed his company to submit change orders with greater confidence, and has made change orders "less of a burden and more of a profit opportunity."

Both the Estimating and ChangeOrder products include a proven material

database perfect for contractors engaged in plumbing, process piping, sprinklers, heating, air conditioning, ventilation, refrigeration, gas piping, or compressed air. The products contain material pricing and labor units including MCAA labor units, labor tracking codes, and cost codes.

As part of Accubid's corporate mission is "to be a highly valued partner committed to the success of clients and the betterment of the construction industry," we offer professional development courses and product training labs conducted by industry professionals with extensive experience. These offerings include seminars on estimating, change orders, time and material billing, and labor productivity.

As a partner sharing in the success of its clients, Accubid is constantly at work improving its software solutions, and developing new products to address new requirements. We actively solicit suggestions and feedback from our clients to ensure that our software meets the needs of both the beginner and the advanced user.

Accubid endeavors to establish long-term mutually beneficial relationships with every client. Completing a sale doesn't signal the end of a relationship, but the beginning. Once a prospect becomes a client, the client joins the Accubid family and becomes part of a team that includes industry experts, technical advisors, and product support representatives.

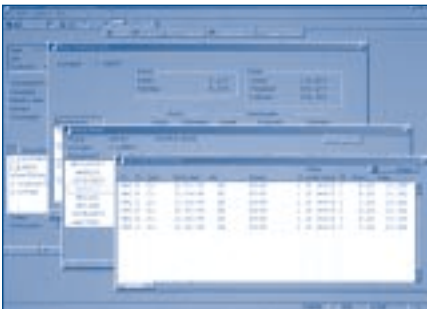
*For more information, contact John Marcelli, Jr. (product manager, mechanical industry), Accubid Systems Ltd., 7725 Jane Street, Concord, ON, Canada 74K 1X4. **

New Products Confront Common Challenges

Get greater visibility and control...

Dexter + Chaney's enhanced job overview inquiry for its Forefront® Construction Management Software allows mechanical contractors to get detailed job progress information—including job-to-date costs and billings, change requests, and original contract details—in a single screen. A tie-in to Forefront Document Imaging takes the detail one step further by allowing the user to view the actual documents relating to a job.

For more information, contact Brad Matthews, vice president of sales and marketing, Dexter + Chaney, 9700 Lake City Way NE, Seattle, WA 98115-2347, phone 800-875-1400 or 206-364-1400, fax 206-367-9613, e-mail info@dexterchaney.com, www.dexterchaney.com.



Save time in drain installation...

Zurn's TOP-SET® Roof Drain Deck Plate can save you time since it permits the entire roof drain assembly to be installed from the topside of the roof. By eliminating separate underdeck clamps and roof-sump receivers, you need only connect the pipe from the underside of the roof. The deck plate, constructed of 14-gauge steel with a corrosive resistant finish, comes in three sizes and can be pre-assembled.

For more information on Zurn products, visit www.zurn.com.



Protect against low water cut-off...

A new line of conductance activated level controls from ITT Industries McDonnell & Miller offers low water cut-off protection and level control for steam and hot water commercial/industrial boilers. The M&M Series 750B product line, available in two models, provides reliable control of pumps, motor starters, and electric valves for liquid level control applications.

For more information, call 773-267-1600, or visit www.mcdonnellmiller.com.



Get the bugs out...

A more reliable technology for controlling the spread and growth of many types of bacteria, mold, mildew, and other fungi is now available with McGill AirFlow Corporation's new SilverGuard. With its proprietary AgION™ antimicrobial coating, SilverGuard ductwork is a perfect solution for hospitals, schools, and other locations where indoor air quality is especially important.

For more information, contact the McGill Airflow location in your area or visit www.mcgillairflow.com.



Integrate construction and service financial data...

With the rules-based management functionality of Data-Basics' SAM Pro Enterprise software, you can monitor day-to-day expenses and gain instant access to the integrated service and construction data that you need. Coupled with Data-Basics' ReportAnywhere, you will be able to control costs as jobs progress, monitor project milestones, and implement active notification of pending/past due work orders by e-mail, fax, or pager.

For more information, call Data-Basics at 800-837-7574 or visit www.databasics.com.

New Products Confront Common Challenges



Keep the noise down...

Greenheck's QEI, billed as the quietest fan in the industry, is now available for use in higher-pressure systems where quiet operation and superior efficiency are necessary. Perfect for supply air applications in hospitals, concert halls, libraries, offices, and educational buildings, QEI Class II fans feature heavier construction and fan blades specifically pitched to handle higher pressures.

For more information, visit www.greenheck.com.

Double your air options...

A new twin fan option available on McQuay Vision™ Air Handlers allows easy replacement of old style air handlers. The two housed forward curve fans mounted on a single shaft provide air volumes that are comparable to larger fans, but occupy less vertical space.

For more information or the name of your local McQuay representative, call 800-432-1342 or visit www.mcquay.com.



Insulate pipes and prevent corrosion...

DriTherm, Inc. makes DriTherm® waterproof underground pipe insulation and corrosion protection for the district energy market. It is installed directly from its packaging around underground piping to form a dense, closed cell barrier between the district energy piping and the surrounding soil. With six facilities in the U.S. and three in Canada, enough product to insulate and protect several hundred feet of underground piping can be shipped to arrive anywhere in the continental U.S. within 24 hours.

For more information, call DriTherm, Inc. at 800-343-4188 or fax 973-428-3391.



Stop fire and water...

The Metraflex Company's MetraSeal 120 fire stop seals—recently chosen as part of a retrofit project for a fire sprinkler system in a Purdue University dormitory—offer many advantages to contractors. Both fire-proof and waterproof, the seals also provide an instantly verifiable thickness and can be installed in any weather. They also dramatically reduce noise and vibration throughout the system.

For more information, visit www.metraflex.com.

Conquer power reliability problems...

To meet the pressing need for reliable, high-quality electric power in non-residential buildings, Johnson Controls now offers Power Assurance Services through a strategic alliance with Eaton Corporation's Cutler-Hammer business unit. Because power requirements differ from building to building, Johnson Controls and Eaton's Cutler-Hammer unit will offer customized solutions that deliver the highest quality and most reliable power for a given industry and customer.

For more information on Power Assurance Services, visit Johnson Controls' website at www.johnsoncontrols.com.

New Products Confront Common Challenges, continued

Get the smartest prices on sinks...

Sinks from Advance Tabco offer smart prices, along with shorter lead times and easy installation. The company manufactures and stocks its complete line of sinks in seven locations within the U.S., so you can get the sinks you order quickly.

For more information, visit www.advancetabco.com or fax requests to Cathy Kuethman at 631-242-7791.



Make service inspections a snap...

Honeywell has introduced a powerful new diagnostic tool for commercial service technicians—the HVAC Service Assistant. It combines multiple gauges and meters into a single tool to provide advanced data management capabilities and offer expert diagnostic assistance. Collecting temperature and pressure data from HVAC equipment, the service assistant displays measured parameters on a Palm OS user interface and automatically calculates the parameters to help service techs evaluate performance.

For more information, call 800-345-6700, ext. 7247.



Resist corrosion in venting...

Selkirk, L.L.C., a leader in venting technology, has introduced Metalbestos Model CV, the first gasketed and butt-welded vent system for high efficiency gas and oil fired equipment. Proven to be safe and reliable, easy to install, and cost effective, Model CV has been tested and listed by Underwriters Laboratories. It's manufactured from AL29-4C®, a super-ferritic stainless steel designed for superior corrosion resistance and structural integrity.

For additional information, visit www.selkirkinc.com or call Tim Rothgeb, director of marketing, at 972-560-2147.

Enjoy oil-free technology...

Trane has introduced a new CenTraVac™ chiller that eliminates the use of oil. It has a simpler design that achieves high efficiency, reduces environmental emissions, and lowers the total cost of ownership for optimal performance over the chiller's life-time. Trane will incorporate this oil-free technology in its new S-Series EarthWise™ CenTraVac chiller in 2003. The HCFC-123 refrigerant used in the chiller not only enables a direct-drive design, it allows for 5 to 20 percent greater chiller efficiency and provides the lubrication for the unit.

For more information on the documented sustainability of the S-Series chiller, visit www.trane.com.



Hats Off to Delta Faucet Company

Delta Faucet Company was honored during the International Builders' Show with the 2002 American Building Product Award for design in the plumbing fixtures category for its Victorian Bath Collection. The American Building Product award, sponsored by *Home* magazine, is given annually to recognize products that reflect breakthroughs in technology matched with the influences of time-tested style.

New Sources of the Latest Information

Anvil International, formerly known as Grinnell, has just released its latest, most comprehensive catalog of pipe hangers and supports. It contains all the specs, illustrations, and four-color photos you'll need in designing a job. To get the new catalog, visit www.anvilintl.com and download it or contact the Anvil regional service center near you.



Seton, a leading global manufacturer of industrial identification products, has developed specification programs within Sweets, Architects First Source, and Arcat to make its product specifications easy to access, and to provide contractors and owners flexibility in obtaining them. Now the products and services many contractors use on a daily basis can be found on Seton's AEC Resource Center at www.seton.com/aec. This free resource center offers: downloadable submittals and specifications, easy to view guidelines, product information, and continuing education.

Red-White Valve Corporation provides useful, customized information for contractors on its website, www.redwhitevalveusa.com. Quality control specialist Mark Stahnke hosts "Technical Observations" on the site, as well as the "Ask the Expert" section. When questions about proper installation or correct valve usage arise, Mark can guide you to a successful solution. The site also features an online forum where contractors can keep up with daily challenges. In addition, the Red-White Valve catalog can be downloaded from the site.



Hudson Technologies Offers Tips on Oil, Refrigerant, and Vibration Testing

Over the past three years, while performing more than 2,100 refrigerant-side service jobs, Hudson Technologies discovered much inconsistency in the refrigerant, oil, and vibration testing in the marketplace. To address these problems, Hudson offers the following suggestions on sampling and testing practices.

- Oil and refrigerant samples should be taken simultaneously at a minimum of once a year. However, a testing program should correlate to the chiller's workload, performance, age, and size. This may require more frequent sampling and testing.
- Samples should be taken shortly after a chiller or refrigerant system is taken offline (not operating). This will ensure that a more accurate reading is achieved because the evaporator refrigerant

can easily be influenced by the flow of condenser refrigerant.

- Oil testing alone tells only part of the story. While oil analysis provides important information about the condition of the lubricant within the machinery, it doesn't reveal anything about the particles that may indicate imminent component failure. Wear particle analysis is necessary to identify the suspended particles in lubricated components and identify abnormal wear-related conditions at an early stage.
- Oil and refrigerants are classified as hazardous materials and require Environmental Protection Agency (EPA) and Department of Transportation (DOT) certification and training to handle and ship cylinders.

- Early detection is key to preventing costly premature services, repairs, and equipment/parts replacements. All oil and refrigerant testing programs should provide an interpretation of findings and, if necessary, recommendations for remedial actions. If contaminants are detected, it may be necessary to benchmark and track/trend changes in these contaminants levels over a period of time.

For more information call Hudson Technologies at 1-800-501-4376 or visit www.hudsontech.com.

Welcome New Manufacturer/Supplier Council Members

The Manufacturer/Supplier Council is pleased to welcome the following fine companies to its membership. These companies provide smart solutions to fill many of your product and service needs.

Capolavori Inc.

Provides companion software products to the Accubid Estimating line of products

ConstructJob, Inc.

Provides project documentation and bid solicitation systems

Crown Advisors Inc.

Provides executive search services

DriTherm, Inc.

Manufactures waterproof underground pipe insulation and corrosion protection

Temp-Air

Manufactures, rents, and sells equipment for construction, industrial, commercial, and special event applications

Timberline Software Corporation

Provides accounting, estimating, and service management software

Transair

Manufactures an aluminum pipe system for compressed air installations

In the Dog Days of Summer, A Tribute to Willis Carrier

In 1998, *Time* magazine named Willis Carrier one of the 100 most influential people of the 20th century. Even so, the great American inventor is still not as well known as Thomas Edison or Henry Ford. Yet, his invention—modern air conditioning—certainly matched theirs in its influence on how we live now.

One hundred years ago this summer, Carrier designed the first system that provided man-made control over temperature, humidity, ventilation, and indoor air quality as a solution to quality problems experienced at a Brooklyn, NY, printing plant. Twenty years after this breakthrough invention, in 1922, Carrier unveiled the centrifugal chiller. It brought comfort cooling to the masses, as well as industrial processes, and opened up whole new areas of the world for development.

We take air conditioning as a given today, and it's easy to forget that so many areas of our lives have been affected by it. When you consider the changes in shopping, food preservation, entertainment, and the development of high-rise glass-walled structures—all made possible by Willis Carrier's inventions—you begin to get an idea of the enormous impact made by this man.

The company Dr. Carrier founded, Carrier Corporation, continues to be at the forefront of the world's heating, ventilation, air conditioning, and refrigeration industry. In addition to its manufacturing activities, Carrier Corporation offers training to technicians, engineers, and educators. For more information on the history of air conditioning, Carrier products, and training, visit www.carrier.com or call 1-800-CARRIER.

