

A QUARTERLY INDUSTRY PUBLICATION

# JOB SCOPE

FOR KEY FIELD AND OFFICE PEOPLE IN MECHANICAL CONTRACTING • Winter/Spring 2006



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It starts with commitment and cooperation. What else has to happen to make it work?

## Major redesign helps float America's largest casino boat

By Don Doherty



This open section of the Blue Chip Casino ship, built in Michigan City, Ind., shows some of the heavy duty mechanical

In all their years in business, International Piping Systems (IPS) has taken on all types of jobs. There were a few characteristics about this one, however, that distinguished it from the others. For example, Greg Maus, IPS's lead man on the project, was very involved before any detailed drawings were made — even before the owner officially hired IPS. He and a couple others in his firm had meetings with the marine architect, in Seattle, Wash., and the shipbuilder, in Boca Raton, Fla., flying from one coast to the other to assist in a late-inning series of value

*(Continued on page 6)*

## The team approach to job site planning

By Norb Slowikowski

Managing the job site is a team activity.

While experience as a project manager is certainly important, it is obviously not the whole answer to successful job site management. An ability to assess the needs and requirements of a project is essential. Few people alone know all that must be accom-

plished to complete a major project — so it is essential that the foreman knows who to turn to for assistance.

The first step is to form your planning team, which would consist of your foreman, the superintendent, project manager/estimator, and any other staff people who are relevant to the project.

The Project Manager should lead the team through a review of the project, identifying objectives to be accomplished during each major phase of the work. Listen carefully to members' ideas and encourage participation — for if you selected your team well, you have before you the solutions to

the problems you will soon face. More money is made in these preconstruction planning sessions.

As your team develops a game plan, be sure someone accurately records it. Then distribute each session's minutes to all members before the next meeting. Spend a lit-

*(Continued on page 9)*

## Michael Cullinane is new MCAA President

Michael Cullinane assumed the office of president of the Mechanical Contractors Association of America, Inc. (MCAA) at the association's 117th convention in March. Cullinane is president/comptroller of Bert C. Young & Sons Corporation, located in Bellwood, Ill. He is active in the association on both the national and local levels.

A past president of the MCA of Chicago, Mike also serves on the Apprentice and Government Affairs committees. In addition, he is a trustee for the Piping Education Council and Pipe Fitters Local 597's 401(k) plan. He also is a past president of the Chicagoland Better Heating & Cooling Council.

Cullinane was appointed to the MCAA Board of Directors in 2000. At the national lev-



Michael Cullinane addresses MCAA convention floor after assuming role as association's new president.

el, he serves on the Executive Committee and the Board of Directors. He is a past chairman of the Investment Advisory Committee and the Industry Improvement Funds Committee. In addition, he served on the Advanced Leadership Institute Committee and the Association Executives Council Marketing Committee.

## Wisconsin lawmakers pass mandatory drug test bill

Wisconsin Governor Jim Doyle recently signed a bill into law that will ensure safer public construction work sites by implementing substance abuse testing programs for all trades workers. The landmark construction safety bill, *AB 736*, upgrades a previous recommendation for testing on state projects to a requirement for testing on all public works projects.

Labor and management organizations worked with Wisconsin lawmakers to pass the bill. The Wisconsin Pipe Trades Association (WPTA) and the Mechanical Contractors Association of Wisconsin (MCAW) had already established a substance abuse testing program for their employees. Despite the success of that program, they believed this bill was needed to help curb the problem of substance abuse by other workers on the job.

"Construction is a hazardous industry," said Kevin La Mere, Wisconsin Pipe Trades Associa-

tion (WPTA) President. "The safety of our members and the public is critical to a successful construction project. For that reason, labor and management worked together to bring this legislation to the forefront."

Ed Tonn Jr., president of the Mechanical Contractors Association of Wisconsin, said "Passage of this bill is another fine example of labor and management working together for the safety of our construction industry. Since the inception of our testing program in 2000, we have a joint goal to achieve a drug free work place. The passage of this bill goes a long way towards achieving that goal."

Studies have shown that drug testing, along with responsible safety practices, can help construction companies slash work-related injuries and the resulting worker's compensation cost and claims by as much as 51 percent. It has been shown that substance abusers incur nearly 300 percent more medical costs than non-users. Requiring drug testing will also reduce health insurance costs for employers.

"These testing programs are a huge deterrent to drug use," added La Mere. "This legislation was critical to protect our employees who are already being tested. When working alongside people not subject to testing, our employees are still at risk."

The bill had no opposition during the public hearing process and received bipartisan support throughout.

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# JOB SCOPE

FOR KEY FIELD AND OFFICE PEOPLE IN MECHANICAL CONTRACTING

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ments affecting their work, help them handle their jobs most effectively and help increase their personal job satisfaction. JobScope is committed to the view that contractors and employees share a common interest in (1) good customer service, (2) efficiency and productivity, and (3) company and industry growth.

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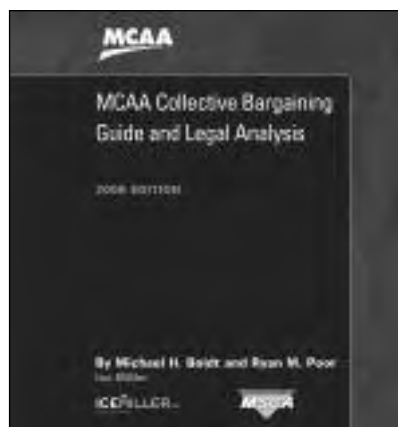
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# It's a small world

## New MCAA guide puts collective bargaining in plain English

The complexity of collective bargaining in the specialty construction industry



is unrivaled. That's why the Mechanical Contractors Association of America (MCAA) and the Mechanical Service Contractors of America (MSCA) developed the 2006 Edition of the *MCAA Collective Bargaining Guide and Legal Analysis*.

Written by law experts, the guide tells bargaining personnel just what they need to know when it comes to collective bargaining and labor contract administration.

The guide includes:

- Concise lists of subjects
- Quick and concise definitions
- An explanation of why the topic is important
- Practical tips for hard bargaining situations
- Information to help you plan bargaining objectives
- A variety of forms, including tips on how to make the best use of them
- Troubleshooting help, with a CD digest of all the federal labor and employ-

ment laws that have bearing on the employment relationship

- Legal compliance assistance.

To order, visit MCAA's online store at [www.mcaa.org/store](http://www.mcaa.org/store). The Guide is \$60 for MCAA members and \$120 for nonmembers.

## Kentucky unions win fight to preserve Prevailing Wage

An attempt to repeal Kentucky's prevailing wage was recently dashed when

the House Committee on Labor and Industry voted to table two anti-union bills. House Bill 217 called for eliminating the program altogether; HB 64 would have exempted educational buildings.

Some 3,000 protesters marched to the State Capitol to rally for protecting the prevailing wage law. Larry Roberts, state director for the Kentucky Building & Construction Trades Council, led the rally calling for a defeat of both anti-labor bills. "Blue-collar working families already struggle enough as it is," Roberts said.

This action for all intents and purposes kills both measures for this session and is a major victory for the union forces.

"Kentucky's prevailing wage law has guaranteed that workers on publicly funded construction projects – union and nonunion alike – receive a fair and

decent wage. It is an important law that is clearly constitutional," Roberts said.

*(From Building Construction Trades Dept. web site)*

## Owners, contractors, labor taking joint online survey

Have a few minutes to participate in a survey? What about a survey designed to improve greater cooperation and success on the job site? The Building Construction Trades Dept., AFL-CIO is joining contractor groups and owners in the Construction Users Round Table (CURT) in a 3-way initiative to gather information related to several job site matters from all segments of the construction industry.

The views expressed will be tabulated, summarized and shared with everyone. The ideas gained from the survey will be used to develop nationwide educational programs that foster better, more productive working relationships.

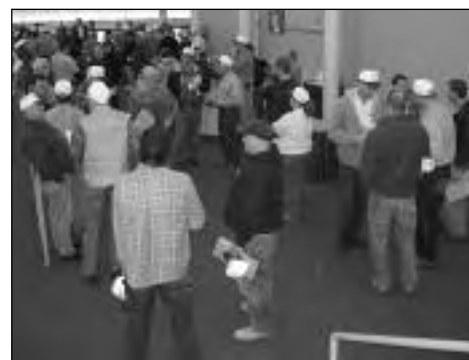
To participate in the survey, visit <http://www.buildingtrades.org/homeindex/curt.html>.

## Water's Off expanding to more cities April 2006

The Minnesota Mechanical Contractors Association (MMCA) had such great results with the *Water's Off* project in past years in the Twin Cities area, they plan to expand their coverage into Rochester, Mankato, St. Cloud, and Duluth,

Minn. The *Water's Off* project services plumbing needs of low-income seniors and disabled homeowners who normally wouldn't and couldn't afford to call a plumber to fix a dripping sink or a running toilet.

The key to its success has been the large turnout of volunteer plumbers from LU #15, and #34 to service approximately 250 homes. The MMCA will sponsor



More than 150 volunteers crowded the Earle Brown Center in 2005 for the "Water's Off" breakfast.

breakfasts around the state to kick off the event on April 8. Besides free meals several lucky volunteers will win prizes.

The day-long event usually receives wide coverage from television, radio, and newspapers across the state. The industry hopes the event will help send the message that plumbers are good neighbors.

## MSCA announces new STARs

The Mechanical Service Contractors of America (MSCA) said seven more contractors have qualified as MSCA STARs, bringing the total number of STAR-Qualified Contractors to 47. Each contractor designated as an MSCA STAR

has proven that they are an experienced service contractor, employ the best trained and most qualified workforce including UA STAR certified technicians, maintain a superior safety record, offer outstanding customer service, and focus on continuing education and training for all employees.

The STAR program assures building owners or operators that hire a con-

tractor with the STAR designation that their buildings' systems are in the hands of the most qualified and competent contractors available.

The seven newly qualified MSCA STAR contractors have

proven that they have attained or exceeded the high standards required for MSCA STAR qualification. They are:

- AMS Mechanical Systems, Inc., Burr Ridge, Ill.
- Berg, Inc., Shreveport, La.
- Current Mechanical, Fort Wayne, Ind.
- Design Mechanical, Inc., Kansas City, Kan.
- Metro Air Conditioning Co., Lenexa, Kan.
- Monroe Plumbing & Heating Co., Monroe, Mich.
- United Cooling and Refrigeration, Roselle, N.J.

For additional information on MSCA STAR qualification and a complete listing of the 47 MSCA STARs, visit [www.mscastar.org](http://www.mscastar.org).

## Tips from pros

### Technician first, salesman second

Why should service people sell? They really do not have a choice, says Monroe Porter, the service sales pro and trainer from Proof Management Consultants. Technicians are reluctant to sell mainly for three reasons:

1. They don't see selling as part of their job. Many field people see themselves as technical repair people.
2. They do not know how to sell and are uncomfortable selling.
3. While they may know how to fix the problem, they are uncomfortable with the price because they do not know how it was calculated. They are also afraid the customer will ask them to justify the charge.

Until you overcome these objections, it is tough to improve your field sales effort. So where do you start?

1. Call a few car dealers or com-

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It's time to take a serious look at JobScope, the industry newspaper for field personnel in the mechanical contracting business. We believe the useful information and tips you'll gain from reading JobScope will convince you to become a regular reader for the low subscription price of only \$12 per year (includes four quarterly issues). For information about group subscriptions, call (708) 636-5819.

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- Madison Area Mechanical & Sheet Metal Contractors Association
- Mechanical Contractors Association of Central Wisconsin

COMMENTARY

# “We’re in this together,” IBEW President says

**W**ill those jokers in the office ever stop reminding us we need to work faster, do more work, be more productive every hour on the job? Are our company and our union-paid jobs really going to evaporate if we don't pick up the pace? Or is this a retelling of the “big lie,” perhaps nothing more than a veiled, cynical attempt to increase profits? Ever since the perennial warning was first heard, hasn't it been easy shrug it off and go back to business as usual? More recently, however, the same warning came from the lips of one union's international president — so this time, brothers and sisters, shouldn't we sit up and listen?

IBEW International President Edwin D. Hill wants his union's members to get the message that their backs, and not only those of their employers, are against the wall. Owners today not only know they have other choices, they are making them and choosing non-union.

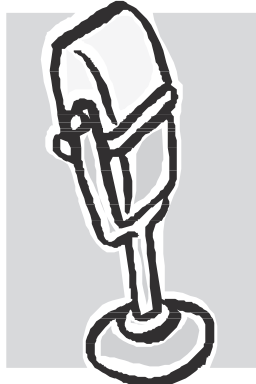
“We can become the choice again if we go out and prove we are the best deal for the customer. Your actions in your current job will go a

long way towards getting hired in the next job...” Hill recently told IBEW members. During the lengthy heart-to-heart, recorded on DVD for industry-wide dis-

tribution, he said while owners still recognize the union sector's superiority when it comes to training, this virtue has become outweighed by various negative productivity issues.

Regarding late starts, early

**We can become the choice again if we go out and prove we are the best deal for the customer. Your actions in your current job will go a long way towards getting hired in the next job...**



quits and extended breaks, Hill said they may not seem to be much but they add up quickly when you look at the numbers.

“Let's take a range and benefit package of \$40 an hour as an example. Let's say you've taken 5 minutes here, 10 minutes there, to the point that you would have a hard time accounting for an hour of work for which you've been paid that day. That \$40 dollars a day quickly becomes \$200 a week,” he said. “Now multiply that by 50 weeks, and the contractor has just given you an annual donation of \$10,000. Multiply that by, let's say, 100 workers. Would you pay someone a million dollars a year for nothing?”

“Your actions as an individual do affect the big picture,” he emphasized. Hill told members the keys to success for the union lie in

helping their contractors stay competitive and profitable. “He needs us, and we need him. That's why the sooner we realize we're all in this together, the better off we'll be,” he said. None of the above negatives is insurmountable, Hill said, but they will take everyone's part to overcome. “Even if the vast majority of our members deliver the goods every day, it only takes a few that don't to bring the whole ship down,” he said. “When a few workers don't produce, it gets noticed and we all pay the price.” Some contractors have told the IBEW leader if they could just bid on jobs knowing they are going to get that extra hour a day in work, the industry would be well on the road to recovery. “The battle to insure our success starts right here, on this job and on your job, on every single job.” He told union members: “We must prove ourselves today and every day we strap on the tools. It's a battle we can win.”

“Don't just stand there. Go get a couple of elbows.”



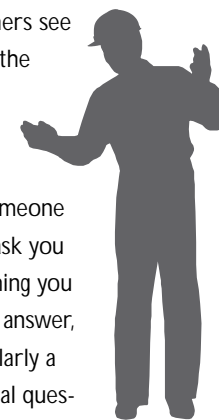
## Tips from pros

(Cont'd from page 4)

puter repair companies. Compare yourself with these services and you will probably find you are a bargain. Good service work is expensive with a lot of overhead.

2. Learn to ask questions and then offer the customer options for solving his or her problem. Most customers see you as the expert.

3. Don't worry that someone might ask you something you cannot answer, particularly a technical question. You know



more about your trade than the customer. Simply communicate with them openly and clearly, much as if you were explaining the problem to your Mom or neighbor.

Selling is nothing more than communication and they are the people most likely to communicate with the customer. They are the doctors of our profession. (From past JobScope)

## Pipe down the noise!

Entrained air is probably the biggest noise culprit when dealing with hydronic systems. Why do we have air problems? Simply because water absorbs air and does so differently depending on temperature and pressure. As temperatures increase, or when pressure decreases (i.e. a pump shuts off), air comes out of solution and makes a hissing or even a gurgling sound.

Of course, when cooling or when put under pressure, the

(Continued on page 9)

## Casino boat *(Continued from page 1)*

engineering and planning meetings to find a ship design and related equipment package the owner could afford.

Boyd Gaming of Las Vegas wanted to build the country's largest casino boat operating on inland waters. The first hazard the ship encountered — albeit long before its hull entered the water — appeared when estimators actually put their calculator to work on the plan. About \$200 million should do it, it was estimated, a cost nearly twice as high as initially thought. Before the project could get off the ground everyone needed to find a way to cut the price tag nearly in half. Clearly they wouldn't get there by buying less furniture and cheaper wallpaper. In the end, one of the ship's initial five decks had to go.

Maus, IPS's vice president of sales, worked with the marine architect, Guido-Perla Associates, and shipbuilder, Jamestown Metal Marine Sales, Inc., to downsize the mechanical systems for the smaller boat. He was joined by IPS's president, Robert Lempa, and estimator, Brian Lecea. Helping the IPS team was KJWW Engineering, a mechanical engineering firm in Naperville, Ill. "We fine tuned everything related to HVAC on the vessel," Maus said. When a commitment for the new

design came from the owner, IPS assigned a project manager, Dave Sawtell, to the job.



Boilers and other heavy components had to be set in the hold deck before erection of the top deck.

Much of the project's design phase overlapped the construction phase. In other words, IPS was building one part of the ship before other parts were even on the drawing board. This was another unusual characteristic of the project. Sawtell said while the ship's main deck was getting built, drawings for what would be above weren't yet seen. "We never really knew the whole scope of the job until 6 or 7 months later," he said.

All the drawings and submittals were done onsite, Maus said. "All our submit-



Large fabricated pipe waits to be lifted and set into the ship's hold.

tals and drawings were done electronically. We would have to submit information to the

marine architect; they would then approve it."

When it opened to the public on Jan. 30, the new Blue Chip Casino boat in Michigan City, Ind., still claimed the title of "America's largest floating casino." Two key characteristics of the ship could raise the bar for competitors. One is a far roomier, more stylish casino deck than is typically seen on gambling boats; the other is its heavy-duty, state-of-the-art HVAC system, which operates with 100



"Lulls" were widely used to move fabricated pipe from the shop to the ship.

percent outside air capable of 15 air changes each hour. Maus said the HVAC system is on a par with a hospital operating room for air quality. "Smoking seems to go hand in hand with gambling," he said, noting that air quality has been the number-one complaint of patrons of gambling vessels. The owner was careful to make sure it wouldn't be a problem in the new boat.

IPS was the lead mechanical contractor on the job, having contracts not only for HVAC and process piping but also sheet metal, plumb-

ing, fire protection, and insulation. Being able to coordinate the trades gave the contractor a big advantage; however, it didn't enable them to decide when it was time to get to work. Installation of mechanical systems had to follow construction of the ship's hull. The vessel was built entirely in place in a man-made slip alongside a waterway connected to nearby Lake Michigan. The pit remained dry

while boilermakers welded sections of steel plate to form the ship's hull.

Chicago Bridge & Iron Co (CB&I), constructed the ship. As the vessel took shape, IPS went to work as completed areas in the lower hold deck became available.

There were boilers, chillers, compressors, pumps, air handlers and their related piping and ducts; also process piping for water intakes, bilge removal, ballast tanks — the normal marine systems found aboard ships — and generators the size of automobiles that could supply 100 percent of the ship's power if it should go to sea:

much, if not all of it, had to be in place before the deck was covered. Mechanical equipment, ballast tanks, and other large components were laid out symmetrically on both sides of the ship's centerline, or keel, to balance the vessel.

Sawtell said the piping, because it was high up, went in first. Behind this came the plumbing, fire protection and ductwork. Crews began in the aft end of the vessel and worked from one side to the other. "As we finished here, another trade moved in. It worked out well," he said. When the insulators finished, the interior joiners put up the walls and ceilings.

Keeping in step with the ship builders required getting materials delivered on time and in the right sequence. Sawtell and Maus worried about delivery of big-ticket items like boilers and chillers, but they said it worked out well in the end. On the flip side of the coin, there was plenty of space onsite to store things that arrived weeks



Greg Maus (left) and Dave Sawtell review plans in the job site trailer.



The casino boat's high end HVAC equipment will normally operate using 100 percent outside air.

before needed. Piping assemblies were prefabricated as much as possible with all the 8-inch and smaller pipe fabbed onsite.

“One of the biggest concerns we had was material handling,” Maus said. “It was making sure the equipment arrived on time, as everything needed to be scheduled with the cranes.” A rubber tire fork truck, or “Lull,” proved an able work-horse for the task, running virtually non-stop ferrying everything to areas alongside the boat for hoisting by either the main crane or two tower cranes.

“We were able to do take-offs, have multiple items fabricated, and have it in place,” Maus said. IPS managed to use the crane, when available for prolonged periods, to set sections of large pipe on temporary supports inside the ship’s hold, avoiding a second, more arduous lift

when the deck from which it would be hung was finally in place.

However, this was more



This large fan duct is needed to supply combustion air below deck for generators and other equipment.

the exception than the rule, Frank Camasta, project superintendent for IPS, explained. “No matter what, CBI or the boilermakers were not going to stop hanging steel. We had to fit everything in between crane lifts.

That was the biggest challenge and obstacle,” he emphasized.

At one stage of the job, the dry pit in which the hull was built had to be filled with

water. To accomplish this, the two tower cranes had to go, leaving only one crane from

that point on. This affected everyone’s schedule.

During a month when IPS installers were going strong and access to cranes was particularly tight, overtime was necessary a couple days a week just to use the cranes, Camasta said. “We never had free rein of the cranes,” he said. “We were always at the beck and call of [ship-builder] CB&I.”

Inside and outside the Blue Chip Casino boat there was plenty of work for welders, all of whom had to be U.S. Coast Guard certified. Frank Camasta, a former welding instructor for UA Local 597 in Chicago, said there are two kinds of welding tests for this type of qualification. One uses a box and the other a restriction ring to simulate the tight welds normally called for in shipyard work. For this project they used the latter test, Camasta said, “because it’s actually more of an obstacle than the box and more feasible in this day and age.” The Certified Welding Bureau administered these tests.

The U.S. Coast Guard also had a hand in the approval process for selection of the vessel’s mechanical equipment, as virtually everything from screws to life jackets and from pumps to welded pipe aboard ships must be U.S. Coast Guard-approved and able to withstand the rigors of the marine

environment. However, the boat’s heavy-duty chillers and air handlers — far above what you’d normally find on this size ship — escaped the Guard’s watchful eye. “I’m

not sure what they use on boats at sea, but they don’t have anything like these chillers,” Sawtell said.

There were U.S. Coast  
*(Continued on page 11)*



Frank Camasta (right) and project foreman Kevin Kilcoyne discuss plans for testing boilers.



IPS field crew (left to right) Bryan Burke, John McGrath, Bob Mann, Nick Todorovich, David Muniz, Mike Mullen, Greg Knull, Gary Yahasz, Tom Lawler, Greg Maus and Dave Sawtell.

## America’s Largest Casino Boat

- Massive supply air system to provide combustion air for boilers and generators.



- Ballast tanks, 28 ft. x 30 or 40 ft. line both sides of vessel, needed to maintain ship’s balance while hundreds of visitors move about boat.
- Generators and chillers are installed on vibration isolation pads. Pumps welded straight down.
- City water tapped from shore while boat is moored; 8,000 gallon hot water tank aboard, 15,000 gallon sewerage tank with offshore connection.
- Same with fuel oil; tank trucks fill boat’s supply tank.
- Generators and boilers are fuel-oil fired (a Coast Guard requirement), calling for additional air compressor pump to facilitate firing of boilers (no natural gas pilot here).
- Chillers and generators are cooled on vessel by water in 4 huge sea chests, instead of cooling tower. Cooling water drawn from raw water in channel. A 16-inch diameter pipe is used at raw water intakes.

**Owner:** Boyd Gaming, Las Vegas, Nev.  
**Marine Architect:**

Guido-Perla Associates, Seattle, Wash.

**Ship Builder & GC:** Jamestown Metal Marine Sales, Inc., Boca Raton, Fla.

**Landside G C:** Walsh Construction, Chicago  
**Vessel Construction:** Chicago Bridge & Iron, Plainfield, Ill. (Midwest Office)

**Mechanical Contractor:** International Piping Systems Inc., Schaumburg, Ill. and Merrillville, Ind.

**Plumbing:** Keough Mechanical, Merrillville, Ind.

**Sheet Metal:** Area Sheet Metal, Hobart, Ind.

**Fire Protection:** Global Fire Protection, Valparaiso, Ind.

**Temperature Controls:** Johnson Controls Inc., Calumet City, Ill.

**Other Key Subs:** MG Electric, Arlington Hts., Ill.

**Insulation:** M&O Insulation, East Hazel Crest, Ill.

### IPS Supervisory Team

**Lead Contacts:** Robert Lempa, President  
Gregory Maus, V.P. Sales

**Project Manager:** David Sawtell

**Project Superintendent:** Frank Camasta

**Project Foremen:** Kevin Kilcoyne  
Andy Klees

# How “green” is your building?

## Your guide to becoming LEED literate.

This article is not about getting more money for your house or decorating it for St. Patrick's Day. “Green building” is a phrase people in construction are hearing more and more, especially owners, architects and engineers. The “green” here relates to the impact that our buildings have on the environment.

In the U.S. buildings use up about one third of the nation's total energy supply — in the case of electricity it's two thirds. It's taken one third of the country's raw materials to get them built.

And once operational, buildings collectively generate 30% of waste taken to landfills and the same amount of greenhouse gas emissions released into the atmosphere.

Now for the world picture. Per capita, Americans consume 8 to 9 times more energy than Asians, twice as much as Europeans. It's been estimated that if everyone on

Earth con-

sumed energy at the same rate as Americans, it would take 4-5 planets to meet the demand. As we all notice, the demand for energy lately has been increasing, and so has the price!

The Green Building movement is in response to the above economic and environmental challenges; it's a joint statement by government and the building industry that, yes, something has to give. It's time to take a fresh look at how we design, build and use buildings, to provide buildings that:

- reduce waste and conserve resources
- are more energy efficient
- accommodate, not displace, natural habitat
- control pollution and promote clean air and water

- enhance the comfort, health and productivity of occupants
- improve their life cycle eco-

building industry, according to the United States Green Building Council (USGBC).

The USGBC is a coalition of building industry leaders formed in the 1990s to provide environmentally responsible buildings that are also profitable and healthy places to live and work. It seeks to “transform the built environment

through strategic alliances with key industry, research and government members.”

### Blending in

Energy efficiency is only one characteristic of the “Green” building. The LEED system also calls for buildings to blend into the natural habitat where it rests and not replace it. Buildings earn LEED credits for stormwater management to control soil erosion during and after construction, controlled lighting systems that emanate less light at night, and alternative reflective materials for roofs that reduce the heat island effect in urban areas — “green roofs” covered with lots of cultivated plants offer another alternative for reducing roof heat. Surrounding landscapes are designed to

be water efficient and sustainable, opting for native species and plants that can survive without additional water, fertilizer and pesticides.

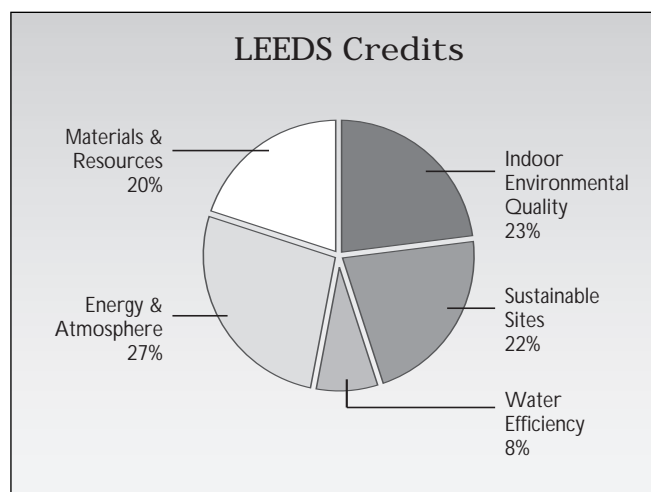
The LEED method calls for protecting, even restoring, damaged or contaminated sites during construction. Builders can gain points for limiting site disturbance to 40 feet beyond the building perimeter, for example, or facilitating use of alternative transportation by workers by locating sites near commuter railroads or busses, offering bicycle storage and preferred parking for carpools.

LEED points are earned by implementing any or several of the above criteria.

Up to now we've mentioned new commercial buildings. Are they the only ones covered by LEED standards? No. LEED also applies to existing buildings, neighborhood developments and individual homes.

### Who's in charge?

Who is responsible for all the planning, decisions and



### Green Building Benefits

#### Environmental benefits:

- Enhance and protect ecosystems and biodiversity
- Improve air and water quality
- Reduce solid waste
- Conserve natural resources

#### Economic benefits:

- Reduce operating costs
- Enhance asset value and profits
- Improve productivity and satisfaction of occupants
- Optimize life-cycle economic performance

#### Health and community benefits:

- Improve air, thermal and acoustic environments
  - Enhance occupant comfort and health
  - Minimize strain on local infrastructure
  - Increase overall quality of life
- Source: U.S Green Building Council ([www.usgbc.org](http://www.usgbc.org))



documenting that goes with green building construction? While they mainly fall in the laps of the owner and architect/engineer, contractors and their personnel should be familiar with the processes and products since they will have a partnership role in construction. They'll not only need the expertise to build green buildings but also have a hand in things like cost estimating and commissioning. Additionally, it's the people in the field who can offer creative alternatives when something in the plan doesn't work.

The contractor is an integral part of the *Green Building Team*. Ideally, all

members — owner, design team, contractor, commissioning authority and building operator — work interactively on the project. During the design phase, the contractor can identify material sources, estimate cost, and contribute to value engineering. When construction is underway the contractor's knowledge of what LEED points are being pursued and which are connected to their core responsibilities will help the certification process go smoothly. In design/build projects or contracts that involve construction management, the contractor's role is a key one.

### About to get greener

Still the new kid on the block, LEED projects number comparatively few. However, their numbers may be about to radically increase. In Jan. 2006, for example, only 7 LEED-certified projects existed in Chicago, but at the same time the city recorded 136 new registered projects working to become LEED-certified.

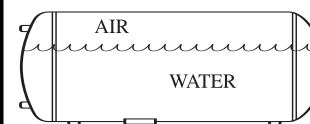
This could spell the beginning of a trend and important new opportunity for LEED-literate contractors ready to gain more experience in green building construction.

### Tips from pros

(Cont'd from page 5)

water again reabsorbs the air. While out of solution, the air can cause all sorts of noise problems, including the noise it makes while coming out of solution and cavitation at the pump. You can and should get most of the air out of a hydronic system on start-up, but that depends on how long you want to stay there — and there is also make-up water to be considered.

Compression tanks should help reduce air problems if they are properly sized and installed. Compression tanks should be installed right before the pump (suction side). If you install the tank on the discharge side of the pump, you will force a



Compression tank

reduction in the pump suction and cause air to come out of solution after the tank. The air then will be reabsorbed before it reaches the tank again and there will be no chance to get it out of the system.

Many systems also have an air separator. Sometimes an internal *air separator* in the boiler is relied upon for all air separation needs. This does not usually work well if you have more than one circulator or pump, because the flow rate is high enough to keep the air from being trapped and vented. You should also use an Airtrol fitting to prevent gravity circulation between the tank and the system. Without the Airtrol, the colder water in the tank (which has absorbed air from the tank) will drop into the system and

## Team approach to job site planning *(Continued from page 1)*

the time at each session reviewing the ideas of the last meeting, discarding those that no longer make sense.

When the team feels good about the project plan, have a major review of all that has been decided — a dress rehearsal, if you will, of the building of the project. Look for omissions or weaknesses. Do not fail to correct any suspect operation. Review the plan until it sounds right — until it works. Distribute the plan to everyone who will be involved on the project. Then, as the work advances, make everyone adhere to the plan. The key is to follow up.

Your planning should have resolved some key issues about the project:

- You should have identified the job site staff, the general superintendent, other superintendents, project engineers, office managers, etc.

- You should have assigned major project responsibilities. Remember... responsibilities are not always defined by titles or job descriptions.

- You should have identified all long lead time materials and services and arranged for timely procurement. Sort materials if necessary, and make contracts early with those firms upon which the schedule depends.

- You should have created your progress schedule, if not in ultimate

detail, at least in general form.

- One important item often overlooked in the planning stages is the flow of men, materials and equipment around and through the job site. A few minutes lost each day can greatly impair a tight schedule, especially if the time is lost

from a cycling activity such as forming typical structures.

- You should have planned for safety. Preliminary plan-

ning should recognize potential safety hazards. If your planning has been thorough, progress should occur without too many problems. However, be attentive to the following warning signs so you can make adjustments to the plan as necessary:

1. Poor or negative attitudes of job site personnel can indicate confusion with or misunderstanding of the project game plan.

2. A faltering project start may mean there has been poor communication of the game plan to job site personnel, suppliers or subcontractors. If this is the case, review the plan with them and get their input.

3. A failure to meet scheduled activity

completion dates may mean those responsible for the plan's execution aren't following up. There is no substitute for constant and intense attention to detail. Review submittal logs, clarification requests and correspondence to see if information is flowing freely to all involved.

4. Constant failure of job site staff to complete work activities at or near predicted unit costs can

mean your budget numbers were wrong or there are labor inefficiencies.

Although no plan is perfect, it certainly makes sense to use the team approach in preparing your job site plan. By using the diverse talents of all job site planning team members, you will be in a better position to increase productivity and profitability on each and every project. Remember, the whole is still greater than the sum of its parts.

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***"By using the diverse talents of all team members you will be in a better position to increase productivity and profitability."***

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## JobScope Notebook

# Guidelines for safety success

By Damon Gowan Chairman, JWP Gowan

*The following article, from the pages of the JobScope Notebook, first appeared in the fall of 1993, but continues to offer useful, common sense ideas for building or improving a company safety program.*

What got me personally involved in safety was when I finally understood how workers' compensation insurance works, and could relate safety to the big dollars involved and to so many of the activities of a mechanical contracting company.

For example, I relearned the basic fact that safety is not an occasional thing. It must be planned into all work activities. You can't separate it, depending solely on a safety specialist who comes out to the job now and then. No, you have to plan safety just as you plan buying, delivering and installing pipe and valves. And while safety success hinges on superintendent and foreman involvement, it has to start (and continue) at the top.

Keep in mind that a company's costs go deeper than insurance and loss prevention expenses. Many costs are hidden. These include lost time by injured employees, the loss of earning power and the economic hurt to their families. But that's only the start — look at time loss by other crew members taking the injured to the clinic, efficiency losses when a crew is broken up, the cost of breaking in a new worker, damage to tools and equipment, possi-

ble fire or chemical damage, possible inability of the customer to fill an order, extra time and overhead costs for handling and reporting the accident, etc.

Thus, work accidents have a direct effect on future costs. Prevent accidents, and you reduce future workers' comp insurance premiums. It penalizes employers with poor safety records. It's that simple.

But establishing and making a safety program effective is hard, continuing effort. It's more than just accident prevention. It involves a company-wide commitment. As we've gone along, we have found that the big money isn't in the EMR classification itself, but in eliminating accidents.

### Program Elements

Here are the key elements in our company's safety program.

- **Start at the top.** Management must first accept responsibility for loss control. Management must make a firm statement to project managers, superintendents and foremen making them accountable for safety.

- **Safety manual.** We have our own manual. It is based on the excellent manual published by MCAA. But we feel certain sections should be written by our people, to make sure we use language that custom-fits our firm. In the process, your own internal training program gets underway.

- **Employment proce-**

**dure.** Our safety program starts the day an employee is hired. We avoid job-site employment. Instead, prospective employees come to our office. An application must be completed. We follow the law carefully in what questions we ask, but we do ask for a waiver of confidentiality. This permits us to get an individual's workers' comp record and their driving record. The latter is important, since most employees will eventually drive for us. We want to know about driving tickets and whether there's any DWI record. This procedure not only gives us information but makes it clear to the new employee that we're serious about safety.

- **Initial training.** If the worker is hired, we have two people who brief him on our safety rules, using our manual. We talk about our hazardous communications policy, and ask the new employee to sign that they have been oriented on Hazcom. This can avoid future complications with inspectors and others.

We keep this material updated, since all of us are subject to fines. We had our fourth OSHA inspection recently, each ending with compliments and no fines. This builds the credibility of our safety program.

- **Eye protection.** We have a prescription safety glass program. Every employee, whether in the field or in the shop, has to wear safety glasses with side shields. I don't

permit anyone, including myself, to go into the shop without adding side shields or putting a cover over them. We used to have a lot of eye injuries, but no longer.

- **Ladder safety.** OSHA now puts this on you. All employees, even if they have been on your payroll for 30 years, must be briefed on ladder safety. We record this briefing and put it in each worker's file. Complete record-keeping is part of any successful safety program.

- **Drug and alcohol policy.** We're a 100% drug-free company and, to keep it that way, all new employees are drug tested. They are re-tested periodically. Specifically, every employee agrees to be re-tested if they are involved in an accident.

Drug testing was a problem the first time around. About 6% of our people failed, and there was lots of concern. Slowly, nearly everyone found it was proper to drug test when others' safety was at risk. When our people realized that jobs are more important than drugs, the momentum turned.

The drug users don't work for us. One employee was struggling and, after a special program, turned his life around. Our crafts support our drug-alcohol program.

- **Asbestos policy.** If there's an abatement effort in an area, our employees can't work there. If

there's mechanical work to be done in an asbestos area, our people must wear masks. This means, in turn, a physical, an X-ray, and training in how to work in this type of environment. We now have complete records on our people and their asbestos exposure. Asbestos-caused cancer is infrequent but also incurable.

We have policies in all key areas, such as housekeeping, vehicles, and oxygen-acetylene bottle safety. This means we train new and old employees in each policy, and then re-train them regularly.

We have a safety poster and a first-aid kit on every job, even the toolbox level of job. We make certain emergency numbers are posted so there's no confusion or delay if there's an accident on the job site.

### Steps for Safety

Our safety program began years ago, after I attended an MCAA safety seminar and found that our EMR multiplier was far higher than those of our competitors. It



took 23 years for me to learn how important safety was. That's when I took personal responsibility for safety within our company, and told those in my command chain that they were accountable in their areas.

We have a safety meeting twice a month now. The first involves all managers and superintendents. It starts at 7:30 a.m. and ends about 15 minutes later. We decide on a safety topic for the month, often based on problems we've had in recent weeks. We also use this meeting to bring everyone up-to-date on what jobs we've acquired, how the company's doing, etc.

The second safety meeting involves all superintendents. They report on any accidents and accident investigations. We

think everyone learns from this experience, even though no one likes to discuss accidents in their territory.

Finally, any safety program needs incentives. Some are positive, and others aren't. For example, no operational boss can have repeated accidents without a cut in his or her bonus — and in some cases, discharge. Your people have to know you are serious about safety.

We also have safety awards, given out each year to the teams with the best safety records. We let a committee of superintendents and workers select the awards, such as binoculars and radios. This isn't cheap, but it wasn't intended to be. We are recognizing our safety winners. We are also sharing savings with our employees.

We are now setting up job site programs where there's a monthly drawing for \$100 for everyone on the job, providing there have been no accidents that month. If there's an accident on that job, there's no drawing. Peer pressure is an important element in a solid safety program.

In the past few years, our company has saved more than money. We've helped reduce the number of injuries, and the amount of suffering. There are fewer lost fingers and major head injuries. Those are major gains for everyone.

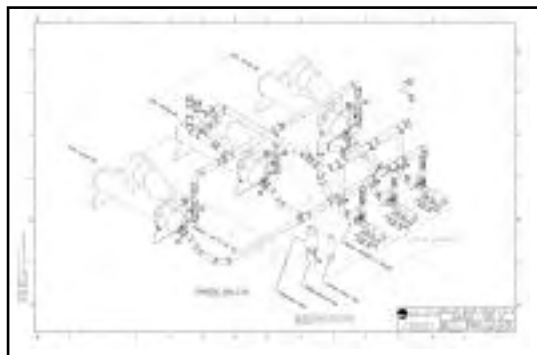
*Originally adapted from a seminar presentation at a past MCAA convention.*

## Casino boat *(Continued from page 7)*

Guard inspectors around also when commissioning of new mechanical systems aboard the vessel got underway. Here you not only had to satisfy the owner's requirements but also those of the Coast Guard, whose checklist covers mechanical as well as systems for fire protection, life saving, and bilge and ballast. "And they go by the book," Maus said. A U.S. Coast Guard inspector was on the job nearly full time, Maus said, but IPS did not deal with him directly. This responsibility belonged to Jamestown, the ship building company.

The general contractor role was a somewhat unusual one for Jamestown, said Patrick Loughran, the company's onsite production manager. "Normally we do the interior finish, the air conditioning and insulation — the parts the customer sees," he said. But because of

the nature of this boat, the owner had to decide whether to use a landside contractor or a marine contractor to build the vessel. Our thrust



These isometric drawings illustrate the ship's piping.

was that a landside guy wouldn't necessarily know all the applicable Coast Guard regulations. We generally do in our business."

The marine background seemed valuable at every stage of the project. "Anyone can decide they want to build a big vessel and start in their backyard if they want to," said Loughran. Unlike projects on dry land, which usually require permits and plans that are inspected ahead of

time, much of boat building takes place "on the fly."

"So a lot of the stuff here was designed after the fact," he said.

If you build things this way, you'd better be ready for lots of changes. Loughran guessed there were some 200 changes on the mechanical side alone (and as many on the non-mechanical parts). Most of the changes stemmed from the huge value

engineering effort, before construction began, to get the cost of the boat — initially targeted at \$85 million but later estimated at nearly twice that amount — value engineered back down to budget. To get there, a whole deck had to be eliminated in the plan, significantly altering the piping systems.

The casino boat is one of three phases of the project. A new, multi-level parking garage and an addition to an

existing landside pavilion brought the total project cost to around \$174 million.

The scaled-down version is still a very large boat. Inside the 400 x 200 foot vessel, the casino deck will provide 65,000 square feet of mostly wide-open space on one floor. The grandiose gaming area, with large chandeliers hanging from the 30-foot ceiling, may fool visitors into believing they are in a major Las Vegas hotel rather than a gambling boat. "People will be able to walk around without having to dodge people who are sitting chairback to chairback," Judy Campbell, an executive of Blue Chip commented in an article published by *The News-Dispatch*, a Michigan City, Ind. newspaper.

Visitors should appreciate the more spacious, comfortable and breathable environment aboard the new Blue Chip Casino, even though they won't see the supersized HVAC system that helps make it possible.

## Tips from pros

*(Cont'd from page 9)*

put the air right back. *(From past JobScope)*

### Leadership and Its Effect on Productivity

Effective job site leaders know how to use goals effectively to improve productivity.



They incorporate the input of all affected players in developing project goals. The process of having the input of team players has been to gain increased "buy-in" and acceptance of project goals. When the team is given the opportunity to provide input on establishing the project goals, the impact on productivity has been dramatic.

Research and industry observation validates the correlation between highly motivated teams and their ability to perform work at a productive rate. The leader's role is to ensure that the work team is able to work at its highest levels.

If construction industry leaders are shortsighted, they can overlook simple solutions to labor productivity problems such as worker involvement and goal setting. The current concept of leadership presents a significant challenge to leaders who, for one reason or another, can't adjust to new situations

What happens to those who run their jobs by the seat of their pants.



manon  
TOWNSEND

"Oops!"