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#### PUBLISHER'S COLUMN



Welcome to the Spring Issue of Construction Today ®. Our Green issue is the issue that focuses on the future, in more ways then one.

In the past I have mentioned that our industry is at a crossroads. We face many challenges, but we are lucky that we face these challenges with good people who dedicate long hours to ensure we look beyond the next paycheck or election.

Now that our contract negotiations are over, we can see who is looking to the future and who is not. I salute the basic trades who, with reasonable increases dedicated toward health care and unfunded pensions, sent the message that we can remain competitive. On the other hand, we must look at the specialty trades who, with large increases, are pushing wage rates further away from what the market will bear. What will contractors and owners think of these settlements? I believe they are pricing themselves into a fate of decreasing market share, lower man-hours and increased liability for unfunded plans. The future will be uncertain for those who fail to recognize their own market.

I am certain the path ahead for our contractors is clear. We will give our customers what they want -- a better-trained workforce with drug testing, green training, competitive benefits, and high productivity, at a fair cost. Discussions are underway to ensure contractors and tradesmen are the most competitive for our clients today. We will answer the call of universities, hospitals, and public and private developers, to provide a more competitive price. Unfortunately, for those who do not share this vision, that road is just as clear. The market forces will do their job, just as they have already done around the nation. I would like to think though that several in this region have chosen a different path. That path to the future is filled with new technology, efficient use of construction materials, and modern work rules.

The GBCA and our contractors continue to move forward. We are training contractors, apprentices and tradesmen and women in the new technology of green construction. We believe that investing in people is the way forward. Our basic trades are teaching for the future and not desperately holding on to the past. The Carpenters Apprentice School of Philadelphia and Vicinity is at the nexus of this process. Contractors and union leaders believe that delivering a qualified man to the jobsite is our best asset. In fact, all apprentices are trained in green technology. We will continue to upgrade our men and women so that we can deliver to our customer the best, most efficient worker, for the best use of our customers' dollars.

After all, isn't that what is asked of us?



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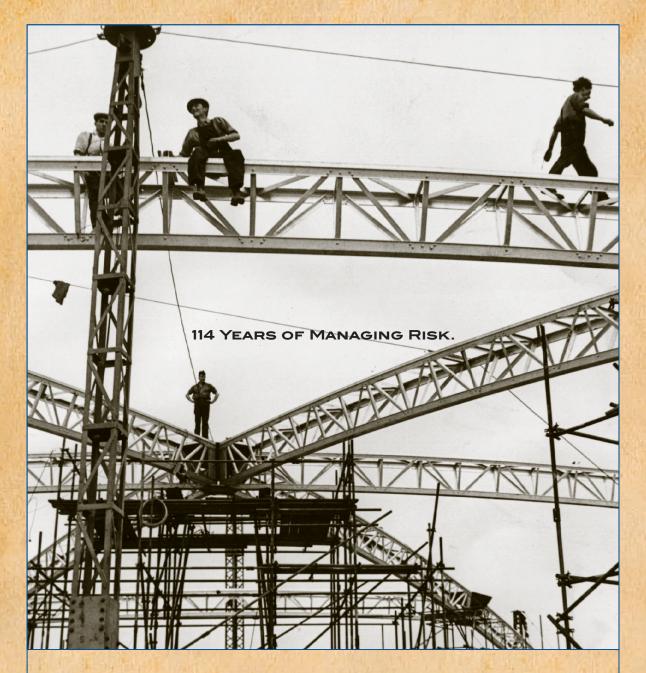




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Cover Photograph: ©David Fonda

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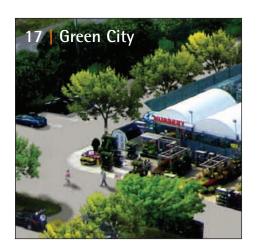
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## T.N. WARD COMPANY



T.N. WARD COMPANY specializes in construction for not-for-profit clients. They are currently underway with The Salvation Army Ray and Joan Kroc Corps Community Center in Philadelphia, a two story steel framed, 130,000 SF state-of-the-art community center set on a 12 acre site. In addition to the generous gift by Joan Kroc, the Salvation Army has received grants and donations from the city, state and individuals. Designed by MGA Partners and PZS Architects, the project features a worship and performing arts center, community room, daycare, classrooms, interior and exterior gathering spaces, café, gymnasium, leisure pool, competition pool, multi-purpose exercise rooms, two level fitness center, social services, community farm and athletic fields. T.N. Ward Company is proud to be the Construction Manager for this very exciting project that will transform its neighborhood when complete in 2010. To learn more about this project email Campaign@SalvationArmyKrocCenter.org.

Founded in 1918, T.N. Ward Company has been involved in all types of construction including healthcare, multi-family housing, industrial, entertainment and higher education. Their considerable success in working with many types of not-for-profit clients as well as federal, state and city funding agencies led to their award of The Salvation Army Kroc Center.

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b u i l d e r s

# Limiting Liability Evolving Environment

Shana McMahon

to construction, there is no denying that eco-consciousness has gone mainstream. However, one would be foolish to dismiss green construction as a popular fad. The green building movement is currently setting the stage for what will become standard construction practices in the near future. Contractors are wise to get up to speed now on the potential green liability issues that may affect their businesses in this evolving environment.

In typical fashion, legal precedent has lagged behind the rapid increase in green construction. To date, there has been just one notable lawsuit, and it was settled prior to a ruling. In Shaw Development, LLC v. Southern Builders, Inc., a case arising out of Somerset County, Maryland, the developer sued its general contractor after the project failed to achieve the desired LEED certification. The developer claimed damages of \$635,000 relating to lost green building tax credits. The AIA 101-1997 standard form agreement used on the project incorporated a project manual into the contract documents. This manual contained the only reference to LEED certification, stating that the project was designed to comply with LEED Silver Certification requirements. While it is unclear whether the court would have held this language sufficient to impose a duty on the general contractor to provide a LEED Silver building, the Shaw case demonstrates potential new areas of liability on green projects.

Construction contracts have taken a marginal step forward to address green issues. The new AIA form contracts create an affirmative obligation upon the architect to discuss sustainable building options with the owner at the outset of a project. The ConsensusDOCs go one step further and create procedures for collaborative decision making with regard to green directives and measures, risk allocation, and document retention on green projects. Regardless of which form contracts are used on the project, the parties should at the very least make sure the following areas are addressed on the project:

- First, the contracts should clearly delineate between design and construction and state who is responsible for select ing the measures and systems to achieve the desired green results.
- Second, LEED certification is a document intensive process. It should be

#### LEGAL UPDATE

- clear what documentation is required, how it should be provided, and who is responsible for retention and review of the required documentation.
- Third, distinctions between adhering to project plans and specifications and the design of plans and specifications must be clear. The responsibility for achieving the desired certification must be properly allocated. Contractors should be
- wary of any warranty language imposing an obligation on the contractor to attain the anticipated certification level.
- Fourth, think long and hard before allowing final payment to be tied to certification. LEED certification can be a lengthy process and doing so may permit an owner to withhold final payment many months after substantial compliance and occupancy take place.

Moreover, delay remains a source of concern. The relative infancy of the sustainable materials industry makes green materials hard to find and even harder to replace. Suppliers may not adequately anticipate the turn around time at bid submission. Early investigation into the availability of specified or necessary products and materials can prevent project delays and increased costs down the line. Further, lack of familiarity with new technologies and materials may create delay and coordination issues as the project progresses. The parties should address potential impacts to the schedule early on and consider float or excusable delay allowances if appropriate.

Preparation goes hand in hand with education and experience in reducing possible legal exposure and leading to successful green construction projects.

Preparation goes hand in hand with education and experience in reducing possible legal exposure and leading to successful green construction projects. Taking an active approach now will lead to a better understanding of the potential risks and create an advantage when conducting your evaluation and negotiations on future projects.



Shana McMahon is an associate at Jacoby Donner, P.C. in Philadelphia, Pennsylvania. Ms. McMahon is a graduate of Villanova University and the University of Pittsburgh School of Law. She concentrates her practice in the area of construction litigation.



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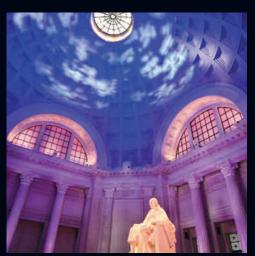
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# Teaching our Jeachers about Green





Bruce Offner

#### Redesigning curricula to help sustainability

ODAY'S HIGH SCHOOL STUDENTS ARE the next generation who will redefine our future and help make our built environments greener and more sustainable. However, to create this "generation green" we need to give students the knowledge and introductory skills that will stimulate and enable them to pursue careers in sustainable design and construction. The curricula and materials which currently exist for educating high school students about design and construction does not include the foundation for understanding sustainability. Our students should have the core, plus some advanced concepts of sustainability introduced to them in high school in order to help them succeed in the changing construction industry. Our emerging builders can learn about sustainable design and construction through modifications of the current curriculum taught in the classroom, and the insertion of these techniques, can be done by our teaching staff supplementing what is already in place. There is no need to go out and spend thousands of taxpayer dollars on new books. Books are not the solution.

Creation of new curricula has been resisted by most educators, so even contemplating the insertion and teaching of sustainable design and construction is disruptive to the norm. Moreover, some teachers perceive that they lack the skills to convey the

complexity of the topic. Many think that in today's market most courses about sustainability are focused upon models of environmental degradation and technological energy models. Basically, the topic scares them, and if approached in that vein, it definitely should!

Truth be told, ecological systems can be understood through other means and methods, ranging from the environmental to the aesthetic, the biological to the ethical, the practical to the theoretical. Our teachers can explore using many perspectives to send the message. I would recommend starting with the human aspects and you won't find these hidden within their current construction technology syllabus.

#### Here are some ideas:

#### Teach Regionally:

Schools need to base their teachings on the immediate environmental conditions that drive design and construction decisions. There are many strategies which may be a fit for most climates and locations, but many do not. For example; a rain garden or storm water retention basin shouldn't be designed in an arid climate. Educating about sustainability requires teaching systemic thinking and engagement with local and regional conditions and then connecting their impact on global issues.

#### Teach Big Picture:

Teaching with a perspective in anthropology, or "cultural ecology" is an approach which examines the "how" we live and considers our material accumulation, and the space with which we store it. This presents the understanding of why people desire a particular built environment. Why and how so many square feet of space are planned for what kind of action. Also, it is about how we covet that space (restoring it, re-configuring it, and re-conceptualizing it) essentially, all to store all of our "stuff"!

#### Teach Basic Human Needs:

Teaching with an environmental sociology approach brings to life one aspect of the "why" in design and construction. Students get the basics of how regional and community planning and design is used to strengthen the relationships between individuals. Our current development trends have alienated these basic social drivers from our lifestyle and have resulted in disconnected communities. We have designed habitats which have us living in isolation in our communities, homes and cars. We need to get back to building

neighborhoods that foster personal relationships, pride in place and accountability.

The curricula and materials which currently exist for educating high school students about design and construction does not include the foundation for understanding sustainability.

#### Teach Involvement and Leadership:

We will need to encourage students to take a contributory leadership role in their community, perhaps as volunteers through their Environmental Advisory Councils. As their career path adapts to support sustainable systems, they will be prepared to succeed in it and have a capacity to respond to the institutions that resist change. Promoting environmental literacy and community service and encouraging the broad accessibility to the public will go a long way in providing the generation "X and Y" a greater opportunity for employment and give them a voice in the green world.

How we design and build relies on our desire to configure it in a manner that suits the basic needs of existence. Teaching them the basic tenants, we will help them design and construct buildings that are responsibly built and that have a minimal impact on the environment during the building process and for the life of the building. Conveying these perspectives to students may not be commonplace, but awareness of human influences on the environment serves as the starting point. Also, with these initial approaches, the answer to the whether or not an environment is sustainable question becomes clearer. Regardless of our comfort level in the incorporation of this sustainability perspective into our curriculums, it is imperative that we do so, and do so successfully, to insure our youth have the knowledge base and tools to succeed in the marketplace.

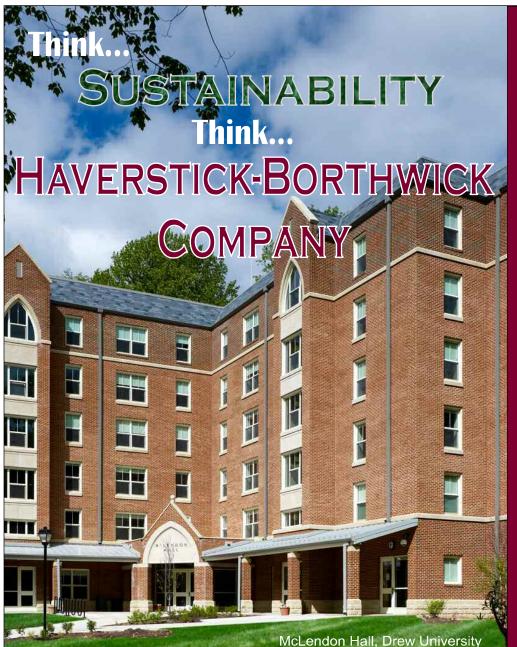
So, how can our Administrators and Board of School Directors, elected officials and others make these programs successful? First and foremost there must be a commitment to train the teachers in green concepts. Once the teachers are educated, they will be better equipped to modify their curriculums. And then by executing this plan in a green learning environment, the teaching will also be by example.



Bruce Offner has authored curriculum for LEED® Core Concepts and Green Associate, Generic Green Collar training, and coauthored the Residential "Building the Green Home" curriculum.

Bruce is an active member of the Delaware Valley Green Building Council and holds a LEED® Green Associate and both Green Advantage® Commercial and Residential certificates.





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# Green City, Clean Waters

Tiffany Ledesma Groll and Glen Abrams

### The Philadelphia Water Department's new approach to stormwater management

MAGINE A CITY THRIVING WITH LIFE a place where residents are surrounded by trees and gardens on nearly every street block; a place where local waterways are clean and support diverse fish populations and where nearby parks provide refuge for migrating birds. This is the vision supported by the Philadelphia Water Department (PWD). The agency wants to create a green legacy for future generations and unite the City with its waterways, while balancing ecology, economics and equity. The agency's ambitious Green City, Clean Waters plan details how the City will transform this vision into a reality by investing approximately \$1.6 billion over the next twenty years to improve the health of Philadelphia's waterways. The plan also relies upon local development regulations and billing mechanisms to encourage wise investments by the private sector.

Land development has resulted in the replacement of once pervious areas with impervious surfaces, such as roadways, parking lots and roofs. Impervious surfaces

repel water and prevent stormwater from soaking into the ground. For this reason, PWD's key to realizing the Green City, Clean Waters Plan is in managing stormwater as a resource. Treating stormwater as a resource represents a major paradigm shift for PWD since traditional approaches to managing stormwater consider runoff a waste product to be collected and transported away from a site as quickly as possible.

About 60% of Philadelphia is served by a combined sewer system in which both sewage and stormwater are collected and conveyed in a single pipe system. Our sewer system and treatment plants lack the capacity to transport and treat the enormous volume of stormwater runoff generated in Philadelphia. As a result, our combined sewers overflow into nearby waterways, discharging untreated sewage mixed with stormwater runoff. Combined sewer systems and overflows are not unique to Philadelphia and are indeed common in many older cities across the country. Separate storm sewers, in which stormwa-

#### FEATURE

ter is collected and conveyed in its own piping system, also create significant problems. Stormwater runoff becomes polluted as it flows across the urban landscape, picking up contaminants such as sediment, bacteria, heavy metals, and hydrocarbons. Discharges from both combined and separate sewers not only contaminate our waterways, making it unsafe and difficult to recreate alongside the creeks, but the volume and the intensity of the stormwater wreaks havoc on the waterways themselves - causing streams to flood, banks to erode, and fish and insect communities to be displaced.

Conventional approaches to reducing combined sewer overflows rely on underground infrastructure investments to detain the excess volume of sewage combined with stormwater and pump it back into the sewer network when treatment capacity is available after the rain event.

Green Stormwater Infrastructure: includes a range of soil-water-plant systems that mimic nature by intercepting stormwater, infiltrating a portion of it into the ground, evaporating a portion of it into the air, and in some cases releasing a portion of it slowly back into the sewer system.

Philadelphia, meanwhile, proposes to devote most of its resources toward a green stormwater infrastructure network on the surface where it is visible and distributed throughout the city. Green stormwater infrastructure includes a range of soil-water-plant systems that mimic nature by intercepting stormwater, infiltrating a portion of it into the ground, evaporating a portion of it into the air, and in some cases releasing a portion of it slowly back into the sewer system. PWD plans to use green stormwater infrastructure to manage at least one third of the impervious cover within the combined sewer drainage area of the City.

The public investments outlined in Green City, Clean Waters will not only result in clean and beautiful waterways and meet Philadelphia's obligations under the Clean Water Act, but they also provide



Renderings created by WRT and provided by the Philadelphia Water Department.

These PWD renderings highlight several of the proposed elements in Green City, Clean Waters including: green roofs, soil-water-plant systems, and surface network systems to handle stormwater runoff. Groves of trees also help to absorb and distribute stormwater.



many additional tangible benefits to the citizens of the City. Outcomes associated with the cumulative impact of green stormwater infrastructure include multiple environmental, social and economic benefits, such as improved air quality, increased recreational opportunities and higher property values, especially when compared to traditional underground infrastructure approaches. In fact, a costbenefit analysis conducted in support of the plan indicated that over 40 years the City will realize over \$2 in benefits for every \$1 invested.

Behind the implementation of this land-based green approach are policy changes, regulatory tools, and incentives. For instance, most land development activities are subject to the City's strengthened stormwater regulations that require management of runoff from

For more information on Green City, Clean Waters, please visit: http://www.phillywatersheds.org/ltcpu.

all impervious surfaces that result from development. A recent policy change to PWD's billing structure creates a more equitable stormwater charge reflects a truer cost of service for individual customers. Currently, PWD's non-residential customers are billed for stormwater management services based on the size of the water meter serving the property. Starting in July, 2010, a new billing structure will be phased in over a fouryear period based on the size of the customer's property and the amount of impervious surface on the property. Properties that manage stormwater onsite in accordance with the City's regulations will be eligible for a credit on the stormwater charge portion of their water bill. This incentive-based approach will encourage customers to take inventory of their properties to determine the most cost-effective means to manage stormwater onsite.

PWD is also offering free conceptual design and engineering services to customers that are most impacted by this billing change.

The Philadelphia Water Department's Green City, Clean Waters plan offers a refreshing, holistic and environmentallysensitive approach to managing stormwater runoff and to improving the health of our waterways. Indeed, this is a bold plan and realization of the ambitious vision will require changes in behavior and understanding throughout City government and our community. However, PWD, with support of its partners and the citizens of the City, believe this approach can lead Philadelphia toward being a model for urban sustainability in the 21st century.

Tiffany Ledesma Groll is an outreach specialist and program coordinator with D.S. Winokur Associates, where she has spent the last seven years working as a contract employee with the Philadelphia Water Department (PWD), working on their Watersheds Planning Team. Ms. Ledesma Groll helped lead the public participation process behind "Green City, Clean Waters."

Glen Abrams is the watersheds planning manager for PWD. Mr. Abrams has fifteen years of experience in municipal planning. He leads the Integrated Watershed Management Plans Team, in addition to the team responsible for creating the green stormwater infrastructure programs that are the cornerstone of Philadelphia's innovative Combined Sewer Overflow Long-Term Control Plan, "Green City, Clean Waters."



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# Bottom

Lisa Godlewski

#### Green certification program prepares workforce for sustainable building

CCORDING TO THE US ENVIRONMENTAL Protection Agency (EPA), buildings account for 39% of the nation's total energy use, 12% of the total water consumption, 68% of total electricity consumption and 38% of the carbon dioxide emissionsmore than either the transportation (33%) or industrial (29%) sectors. The built environment has a lasting impact on the natural environment, human health, and the economy. Building owners are quickly learning that by adopting green building strategies, it is possible to maximize both economic and environmental performance.

As a result, there are a growing number of building owners demanding high-performance, sustainable buildings. Owners are looking for buildings that enjoy environmental benefits such as improved air and water quality, reduced waste, and conservation of natural resources, as well as economic benefits such as reduced operating costs, improved occupant productivity and optimized life-cycle economic performance.

Green construction methods can be integrated into buildings at any stage, from design and construction, to renovation and deconstruction. It is therefore critical that everyone involved in the planning, designing and construction of a green building be skilled in green building techniques. Our union construction industry is making sure we are prepared.

#### WHAT OWNERS WANT

To be successful, the owner must have an idea of what green building features will enhance the building and what features may not fit with the type of building to be built. Owners must consider the potential time, cost, and complexity issues that accompany new technologies. Projects most likely to succeed require a team of engaged participants whose vision is translated into tangible performance goals early in the process. This team, consisting of the owner, architects, engineers, contractors and tradesmen and women, must communicate effectively and use



the right technology and tools to meet the owner's requirements. This team approach allows for joint ownership of solutions and allows for the identification of any problems prior to the final design.

#### RESPONDING TO OWNERS' NEEDS

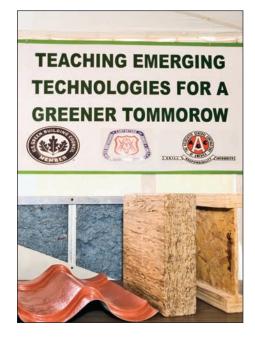
Architects, engineers, and contractors have responded to building owners' needs by educating themselves on principles and products of green building through several types of LEED Professional Credentials. For example, the General Building Contractors Association (GBCA) continues to offer its Green Advantage Training to help contractors stay current with the changing green building environment. The building trades have also increased their dedication to green training through various new programs.

For starters, the Carpenters Joint Apprenticeship Committee of Philadelphia and Vicinity (JAC) is a proud member of the U.S. Green Building Council (USGBC). The JAC is also a member of, and an active participant in the Delaware Valley Green Building Council (DVGBC).

Also, in the past year and a half alone, the JAC has been successful in securing \$700,000 in grants to provide training for journeymen and apprentices in green construction. All of this training is offered at no cost to the Philadelphia Metropolitan Regional Council of Carpenters members.

For example, the Carpenters JAC has most recently been awarded an INCUMBENT Worker Training Grant from the Chester County Smart Energy Partnership. These







funds will be used to train currently employed, PA resident carpenters in construction sustainability by offering two industry-recognized certifications. These are a total of 32 hours of training, which includes certification in the UBC Green Awareness Program. This certification, which is valid for four years, indicates that a carpenter has completed an introductory course in sustainable building concepts developed by the United Brotherhood of Carpenters. The second certification is Green Advantage ® Certification-Commercial which is valid for three years.

Another grant given through the Philadelphia Workforce Development Corporation (PWDC) is designed to help unemployed, Philadelphia residents that are members of the Metropolitan Regional Council (MRC). This grant will provide the same 32 hours of green training as the Smart Energy Partnership grant and will

"We're prepared to build green, are you?" -Walter P. Palmer, President GBCA

educate men and women on local LEED ordinances, and will help make these unemployed carpenters more competitive as work picks up.

The JAC is also offering green training and energy efficiency in residential construction as a part of its Occupational Training & Recovery Program, sponsored by a grant from the State of Pennsylvania Dept of Labor and Industry (L & I).

The PWDC and L&I grants will run at the JAC from July through August. For more information contact the JAC at 215-824-2300.

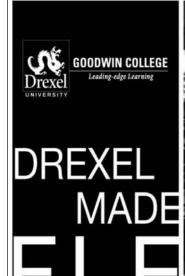
#### WAY OF THE FUTURE

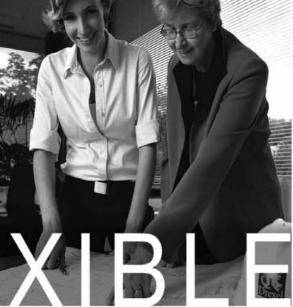
The Carpenters JAC remains committed to helping contractors help owners achieve their green building goals. "This is the way to go in the future, we want to be prepared," said Charles Brock, Director of the Carpenters JAC. In addition to it being "the right thing to do,"

having tradesmen and women who are certified help owners achieve LEED certification. There are points given to projects that utilized trained workers.

Owners must realize that in order to reduce future operating expenses, they must first collaboratively develop performance goals and use them as a guide for future decisions. To prevent compromising longterm sustainability principles, all those involved with building projects must engage in honest dialogue, commit to continuous learning and improvement and invest in shared responsibility for the ultimate outcome. The trades are no exception.■

Charles Brock, Director of the Carpenters Joint Apprenticeship Committee Philadelphia & Vicinity and Robert Smith, Carpenter Instructor contributed to this article.





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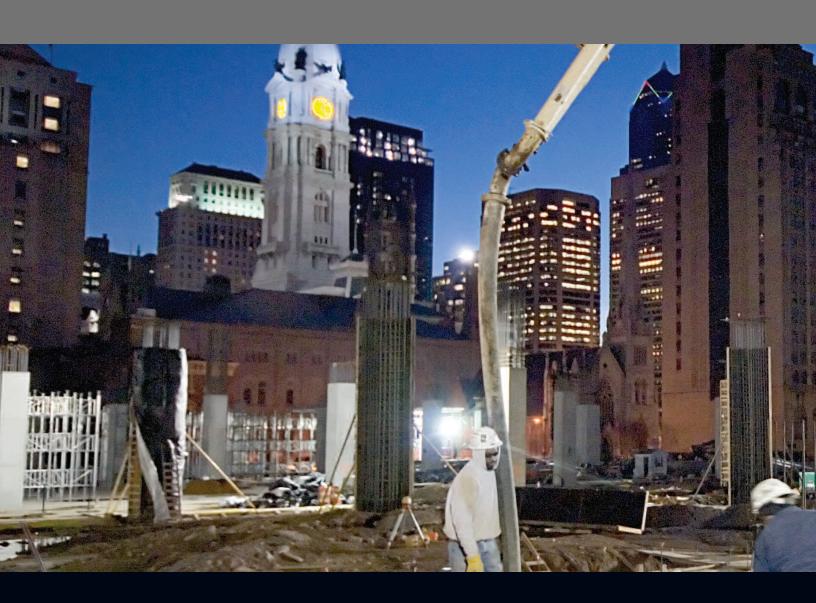
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# Greenworks Philadelphia

Alex Dews

#### Making Philadelphia the Greenest City in America

N May of 2009, THE Mayor's OFFICE OF Sustainability (MOS) launched Greenworks Philadelphia, a comprehensive sustainability plan to make the Philadelphia the Greenest City in America. Over the last year, MOS has made substantial progress on the 150+ initiatives set out in the plan, thanks to the hard work of its many partners, both within and outside of City government. We are excited about the release of the Greenworks Year One Progress Report, due out in May.

Philadelphia is making a commitment to energy-efficient green building. To demonstrate this, the City government is focused on reducing energy usage and helping to drive market transformation on green building, In January, Mayor Nutter signed legislation into law introduced by Councilwoman Blondell Reynolds Brown that requires all new construction and major renovations of large City government buildings to meet Silver Certification in the Leadership in Energy and Environmental Design (LEED) rating system of the U.S. Green Building Council. This exemplifies the City's new approach to energy use, which carefully considers life-cycle costs of construction choices and payback on investments in energy infrastructure.

One of the key Greenworks goals is to reduce the amount of energy Philadelphians consume. Target 2 of the plan sets an ambitious goal of reducing citywide building energy consumption by 10% by the year 2015. In April 2010, City Council passed a law, introduced by Councilman Kenney, requiring all new construction in the City to use highly reflective roofing materials that meet or exceed Energy Star cool roof standards. Cool roofs are constructed or coated with a reflective material that deflects the sun's light and heat, reducing indoor temperature on hot days, extending the life of the roof, and reducing the outdoor air temperature of the surrounding area. Cool roof installations are typically cost neutral when compared with traditional roofs, but ultimately lower building maintenance costs by extending the life of the roof and by reducing cooling expenses by up to 20%.

Last fall, Philadelphia's Weatherization Assistance Program received nearly \$30 million through the American Recovery and Reinvestment Act of 2009. The City is deploying funds through the Philadelphia Housing Development Corporation and the Energy Coordinating Agency to weatherize

#### **GOVERNMENT UPDATE**











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thousands of homes by 2012. In January of 2010, the Greenworks Loan and Rebate Fund was launched in partnership with the Philadelphia Industrial Development Corporation and The Reinvestment Fund (TRF). The goal of this initiative is to help businesses finance energy-efficient building practices, materials, and equipment for major renovations and new construction projects. The Greenworks Loan Fund is a \$9 million capital pool blending funds from the City's Energy Efficiency and Conservation Block Grant and public and private dollars through TRF.

While focusing internally on building to the LEED Silver standard, the City is promoting accessible, affordable design and construction practices with the Cool Roof legis-

One of the key Greenworks goals is to reduce the amount of energy Philadelphians consume. Target 2 of the plan sets an ambitious goal of reducing citywide building energy consumption by 10% by the year 2015.

lation and an existing Green Roof Tax Credit available to business owners in the city. Recognizing that the majority of our building stock is at least 50 years old, the City is also focused on efforts to retrofit existing buildings by aligning investments with energy efficiency in mind. By designing and construction of new high-performance buildings and the weatherizing of row houses across the city, Philadelphia continues to make significant progress on the goals set out in Greenworks, advancing sustainable design, construction and building maintenance along the way.

Alex Dews is a Policy and Program Manager for the Mayor's Office of Sustainability, City of Philadelphia.

# ASafety Incentive Program that Works

Lisa Godlewski

for a job done safely is not new to the construction industry. Employers have long struggled with how to get workers to care about their safety and the safety of others.

While many different incentive programs exist, one General Building Contractors Association (GBCA) member believes its program has been proven to help build the "culture of safety" that employers strive toward.

#### A CULTURE OF SAFETY

Employers work hard to make sure safety is a top priority for all employees. From slogans, to Toolbox Talks, to safety training, it is about keeping the workforce informed and safe. Not just because it is the "right thing to do," but because safety records impact quality of life and the bottom line.

In fact, Sean Healy, Vice President of the concrete company Healy Long & Jevin says some of his past and best superintendents were able to "stand a building up a lot

faster than estimated and they seemed very profitable on the front end. However, in actuality the jobs turned out to be some of the least profitable for the company due to injuries and claims that were sometimes not settled for years after the job was complete."

One of the greatest challenges employers have is to create a real company safety culture and buy-in that all employees are not only responsible for themselves, but also responsible for those around them. "A properly constructed and run incentive program can help create and sustain that culture," says Healy.

#### POSSIBLE PITFALLS

Skeptics of incentive programs ask, why give an incentive for something employees should be doing anyway? Isn't it the employee's job to work in a safe and timely manner? "Not so," says Bill Cobb, President of Haverstick-Borthwick and Chairman of the GBCA Safety Committee. "Employees may be concerned for their

#### SAFETY UPDATE

own safety but a culture of safety that makes them care about everybody around them requires reinforcement."

Another traditional argument against safety incentive programs is the punitive side. If there is an accident, employees are left wondering who "messed up our safety program?" The injured employee becomes the bad guy," says Cobb "because he is taking away their reward." Furthermore, a safety department could try to downplay an incident in an effort to avoid losing incentives or filing a claim.

Finally, many traditional programs often rely heavily on a reward such as a raffle or a drawing that takes place after a determined period of time. The main issue is that one person gets rewarded, not the total company.

#### A SUCCESSFUL PROGRAM

Sean Healy struggled with these issues. "The big question I always tried to answer was how do we as a company incentivize all employees to do a safe job, and more importantly have each employee look after one other?"

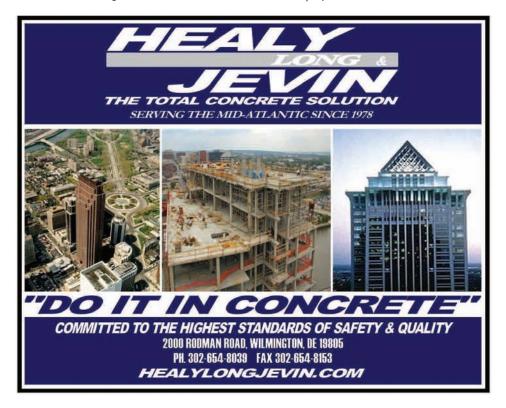
That question was answered for Healy following a casual dinner with Jim Shanahan, a friend and principle of a new credit / debit card business called Maverick Network Solutions. "We discussed a company safety incentive program utilizing a debit card where safety performance would be rewarded over the entire company." From the CEO to a delivery driver, each employee has a card.

Two and a half years into the program, Healy is thrilled with the results. "Our employees were skeptical at first but ultimately they bought into the program and we created the culture we set out to build."

#### PROGRAM DETAILS

The program accrues \$.20 cents per man hour worked over an entire month and places the money in a separate safety

"Employees may be concerned for their own safety but a culture of safety that makes them care about everybody around them requires reinforcement." - Bill Cobb





account. At the end of the month if there are no OSHA recordable accidents, jobsite violations, at-fault traffic accidents and a few other obtainable goals are met, the accrued amount is distributed equally among all of the employee's cards.

New employees have a 60-day probationary time period before they are eligible, however their safety performance counts towards the total company incentive immediately. "We have found that our employees evaluate new hires quickly and make sure they adopt our program. If an employee is laid off, the card is still active but only carries the balance rewarded when he was working. We will place them back on the incentive program when they return to work," says Healy.

The cards are re-loadable prepaid debit MasterCard® cards and are accepted anywhere MasterCard is accepted. They are unique to Healy Long & Jevin and feature the company's logo across the top of

Technology has really allowed this program to work. Healy Long & Jevin can activate cards and add money electronically. Additionally, employees can login to check their balance and manage their account. The cards have proven to be more flexible for the company than just for safety. They can add per-diem money to an individual's account if an employee is traveling on company business or even add bonuses.

#### IN CASE OF AN ACCIDENT

Healy, Long & Jevin insists that any safety incentive program continues to be supportive during an accident. It is never "we

"Attention to safety has definitely increased, I personally watched one of our delivery drivers jump out of his truck and inform another employee on proper ladder safety!" - Sean Healy

have 1,0000 hours here, don't break the streak." Instead we say, "despite our best efforts, we had an accident, we're handling it and we're using this as an opportunity to learn. We know accidents are going to happen," says Joe Abbonizio, Risk Management/Safety Manager, Healy Long & Jevin.

Healy, Long & Jevin sends out a payroll insert informing the employees if the company reached the incentive and how much each employee will receive on their card. The company also highlights safety accomplishments and performances. If the company did not make the incentive, the insert explains what happened, less the specifics of who and where. The company then performs additional train-



The cards are re-loadable prepaid debit cards. They can be customized to be unique to a company and can feature the company's logo across the top.

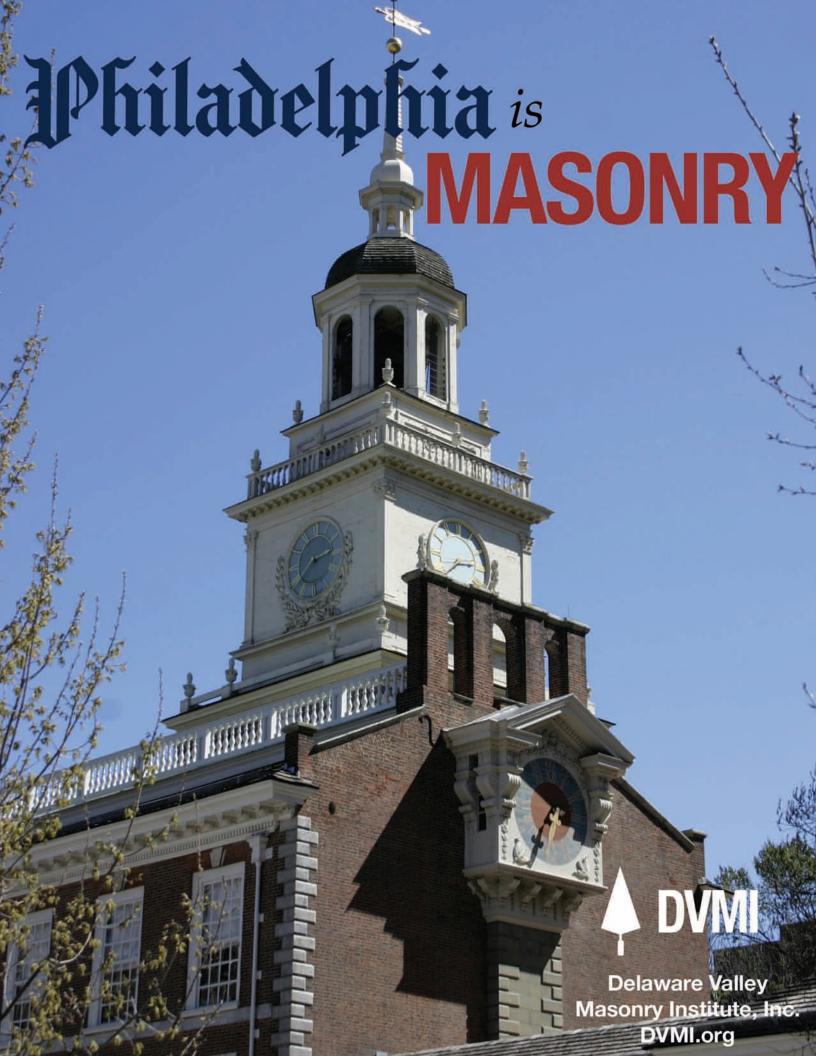
ing to all employees at all job sites including the office.

#### TOTAL COMPANY BUY-IN

"Attention to safety has definitely increased," says Healy. "I personally watched one of our delivery drivers jump out of his truck and inform another employee on proper ladder safety! Benefits for the company have included improved productivity, better morale and more importantly fewer injuries which has translated to less workers' compensation claims and reduced insurance premiums.

Sean Healy of Healy, Long & Jevin and Bill Cobb of Haverstick Borthwick contributed to this article.





# Come WindoShine

Vincent Finn

### Canadian Companies Working to Harness and Use Renewable Energy

of wind and the sun, it can be easy to take them for granted. But when you consider the benefits of these infinite sources of clean power, it's also easy to see why they are garnering more attention.

First, unlike fossil fuels, clean and sustainable energy doesn't emit pollution-causing and climate-changing greenhouse gases. Beyond their planet-saving potential, though, green and sustainable energy is also an economic engine. In 2007, for example, more than \$100 billion was invested in renewable energy worldwide. That significant outlay of funding went toward building capacity, research and development, and manufacturing.

Currently, organizations around the world are working to harness and put renewable energy to efficient use. And many Canadian companies are among that contingent of forward thinkers. In fact, if these companies have their way, their technologies will eventually help the global population breathe a little easier.

#### THE WINDS OF CHANGE

One of the fastest-growing sources of electrical generation worldwide, wind is not only abundant, but also free. Based in Hamilton, Ont., Cleanfield Alternative Energy makes a vertical axis wind turbine

(VAWT) that can generate 3.5 kilowatts or 9,000 kilowatt-hours per year (depending on wind conditions). But juice isn't the only thing that the VAWT delivers. It also provides a hefty wallop of convenience all while silently, efficiently and cost-effectively harnessing the moderate and turbulent winds found in urban settings.

"Our turbines are flexible and can be situated almost anywhere, including condos, high-rises and schools," says Cleanfield's Chief Executive Officer Tony Verrelli. "They can be rooftop mounted on buildings or ground mounted. They also require fewer permits and less infrastructure to operate, and can be connected easily to the power grid."

#### SOAKING UP THE RAYS

Solar radiation provides a powerful source of energy, and two efficient types systems enable homeowners to put those rays to use: solar thermal collectors and solar photovoltaic (PV) systems.

Based in Dorchester, Ont., EnerWorks delivers high-quality, reliable and cost-effective solar energy technologies to the North American market. Fully certified, and Energy Star® qualified, the EnerWorks residential system complements existing waterheating systems, and provides users with energy savings and clean power. This turnkey product, which can be used in new-

#### OUT OF TOWN

build and existing homes, also features two unique and patented technologies.

The first is an anti-stagnation device that vents excess heat during times when less hot water is required - for instance, when a homeowner is on vacation. The second innovation is a back-flush valve that prevents mineral scale build-up. It's all part of EnerWorks's "appliance" approach to residential solar thermal systems - providing every part in an integrated energy station and simplifying installation.

In contrast to solar thermal systems, solar PV systems directly convert the sun's rays into electricity. Safe, reliable and low-maintenance, PV systems have a life expectancy of 40-plus years. What's more, they incur few operating costs and are easy to install on

Solar radiation provides a powerful source of energy, and two efficient types systems enable homeowners to put those rays to use: solar thermal collectors and solar photovoltaic (PV) systems.

most homes. Used on their own or in combination with other systems, PV systems are effective in most dwellings. And while the majority of solar-electric installations consist of "off-grid" applications, increasingly PV systems are being used in homes already connected to utility power. Canadian Solar can accommodate the needs of both users.

One of the fastest growing companies in the solar industry, Canadian Solar is a vertically integrated provider of ingot, wafer, solar cell, solar module, other solar applications and complete turnkey solutions for residential, commercial and solar-farm markets. Based in Kitchener, Ont., the company is constantly devising new ways to convert unused and unwanted surface areas into green-energy production sites.



Complete and ready-toinstall hardware solution packages exist for homeowners seeking solar photovoltaic systems.

A vertical axis wind turbine is flexible and can be situated almost anywhere, including condos, high-rises and schools.



The company's solar modules, which are suitable for extreme weather conditions and various climates around the world, are used in everything from rooftop and residential solar power systems to large, groundmounted solar power plants. These on- and off-grid power systems range from 25 kilowatts to over 15 megawatts.

For the residential market in particular, Canadian Solar has designed complete and ready-to-install hardware solution packages. In fact, the company's latest innovation for residential use is SunGarden™, a complete and easy solar photovoltaic solution that offers clean and trouble-free power generation. The SunGarden™ system consists of Canadian Solar's high efficiency, high quality, and cost-effective solar panels, and is backed by the company's stringent quality-control standards, industryleading warranties and best-in-class installation partners.

For more information on these or other Canadian renewable energy products contact Vincent Finn at the Canadian Consulate in Philadelphia at (267)207-2887 or Vincent.finn@international.gc.ca.

Vincent Finn is the Trade Commissioner for the Canadian Consulate in Philadelphia.



## STEEL ERECTORS ASSOCIATION **METROPOLITAN PHILADELPHIA** AND VICINITY

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# Captive 101: Controlling your Destiny

Bill Selman and Roger Ladda

ONTROL. FOR MOST BUSINESS OWNERS and CFOs, it's not a word that comes to mind when insurance is the topic. But through captive insurance companies, business owners are provided with the unique alternative of owning their own insurance company. This translates to control over claims handling, professional partners, stabilization and reduction of the cost of risk, risk management and loss control, and ultimately, control over underwriting profits and investment income.

Before making the leap from traditional to captive insurance, it's best to understand your options.

#### WHAT IS CAPTIVE INSURANCE?

A captive is an insurance company created with the specific objective of financing the risks of its owners/insureds.

#### **TYPES OF CAPTIVES**

There are many types of captive insurance companies, including:

- Single Parent Captive This type of captive insures the risks of its owners/insureds. For example, the captive could provide cover age for a beverage company and its subsidiaries. As a rule of thumb, single parent captives need to have at least \$2 million of premium to be viable.
- Rental Captive In a rental captive structure, participants "rent" a "cell," or a portion of a captive, for their own use. Rental

captives allow individual companies, or a group of companies, with eligible premiums of \$1 million or more to participate in a captive structure without having to set up their own.

In regards to single parent and rental captives, it's important to note that IRS requirements demand the participating company to have enough separate sources of risk (usually seven) to qualify for risk pooling.

• Group Captives - When you don't have enough premiums or separate sources of risk to qualify for a single parent or a rental captive, then group captives can be a good alternative. These captives are collectively owned by a group of companies, either homogenous (from the same industry) or heterogeneous (from a variety of industries). In this structure, members of the captive band together to provide primarily three types of insurance coverage: Workers' Compensation, General Liability and Business Automobile.

#### CHARACTERISTICS OF CAPTIVE **OWNERS / INSUREDS**

Regardless of the size of their organization, captive owners / insureds should have:

- An entrepreneurial spirit
- A desire to take control
- Financial ability to take risk at least \$250,000 per occurrence

- · Commitment to loss control and safety improvement
- Financial sophistication to understand the value of the captive over the long term, as a captive is not a short-term investment

#### THE BENEFITS OF A CAPTIVE

#### **Greater Control**

- Professional partners are hand-selected by captive owners
- · Captive members control how their specific claims are managed
- · Loss control services are customized to meet members' needs and reduce risk
- New members are identified and approved by captive owners

#### Reduced overall costs

- · Contributions are based on your company's expected losses
- Premiums are likely to be more stable from year to year
- · Members have the ability to retain investment earnings and underwriting profit
- · Fixed costs are controllable and can be reduced

#### Improved stability

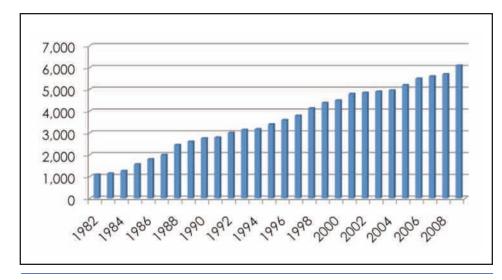
- · Enhanced coverage, marketability and cost control
- · Forum for exchange of ideas; learn from fellow members' experiences
- No surprises in the renewal process; no bidding upheaval

#### **GROUP CAPTIVE STRUCTURE**

Group captives are structured to minimize member-to-member loss-sharing obligations. The goal of the structure is for each member to fund for expected losses to the greatest extent possible and to reinsure for the rare catastrophic loss. Losses falling within the captive retention, usually \$300,000 per occurrence, will be paid from the member's funds from an actuarially established allowance for projected losses.

Large losses exceeding the captive's retention levels will be offset through the purchase of A-rated reinsurance and umbrella coverage; it is the members of the group captive who select the reinsurance company.

In the event a member's cumulative losses exceed their total loss allowances, these losses will be shared with other captive members. This risk distribution methodology will be determined based on the needs of the captive members and set forth in the captive incorporation agreement. As a last



Source: Captive Insurance Company directory

Captive insurance has been around for nearly 60 years, and its growth over that time period is a striking indication of just how successful this non-traditional approach can be. There were 1,000 captives in 1982; 3,400 in 1996; and over 6,000 today. Captives have continued to prove the test of time, growing in both hard and soft insurance markets and through economic cycles. There are a total of 70 worldwide domiciles that authorize/regulate the formation of captives. Some of the leading domiciles include Bermuda, the Cayman Islands, Barbados, Vermont, South Carolina and Arizona.

resort, financial support would also be forthcoming from an A-rated insurance carrier that the captive will select to "front" the overall program.

#### **RETURNING PROFITS**

Profits from a group captive are returned to the owners after a period of at least three years from inception of the insurance policy. This allows enough time for most claims to have been resolved (in some cases it may take longer depending on actual claims experience). While owners are waiting for all of the claims to be closed out, they are earning investment income on their premiums that have not been used to pay for losses. This is an added benefit of a captive structure - not only do owners receive returns when their actual losses are less than the premiums paid to their loss funds, but they also earn investment income on those dollars.

Bill Selman is the Vice President for The Graham Company and Roger Ladda is the Assistant Vice President for Innovative Captive Strategies, Inc.



#### **MINORITY CONTRACTORS** HELP BUILD HOSPITAL, OWN FUTURE

Jacques Pierre, of JP Painting in Lawrenceville, has always worked hard to make his painting business a success. Now that he has been awarded a contract for his services, he is getting the opportunity to prove himself.

Pierre was recently awarded a contract to complete painting services - paint doorframes and



stair towers - at the new Capital Health hospital construction site in Hopewell Township for Schnoll Painting of Philadelphia.

The work is part of a commitment Capital Health made to funnel work on its \$550 million hospital toward minority- and womenowned businesses.

"It's great to get this contract," says Pierre. "I have been in the painting business for several years but I had never gone through the bidding process. With the help of the QWIC office and Jay Rebock from Schnoll Painting, I was able to understand the different steps required to put in a bid on such a large project."

Schnoll Painting is the prime contractor for painting on the project and awarded a portion of the painting work to J.P. Painting of Lawrenceville.

"Schnoll Painting has a long and positive track record in the utilization of small, minority and women business enterprises on its projects. We want to use more minorities on our projects," says Jay Rebock, project manager and estimator for Schnoll Painting. Rebock states that JP was a perfect fit for what we were looking for on this project.

The bid process took on a different aspect, according to Rebock. Not only did Capital want a certain percentage of minorities to be awarded contracts, they also wanted them to be local. Without such a commitment, Pierre and other minority business people could have missed out on the opportunity to prove they could do the same kind of quality work as larger, established businesses.

Not only was JP's bidding process in line but he also backed it up with on-the-job performance.

A big factor that helped JP get the larger job was being a member of the local union. "JP handled himself very professionally on a previous job and I heard a lot of positive feedback on his work skills," says Rebock. "I interviewed over five painters and JP turned out to be the most qualified and his pricing was right in line."

"It's very important to have a contract and to have this employment during these very difficult economic times," Pierre said. "And there is the chance for more work. It makes me feel great."

#### MAKING HVAC MOTORS SUSTAINABLE

There is a widespread problem with HVAC motors — electrical bearing damage. The problem is all too common in motors controlled by variable frequency drives (VFDs), now widely used to save energy. Many centrifugal fans and pumps run continuously, and their motors use less power if the input is modulated by VFDs. A 20% reduction in fan speed can reduce energy consumption by nearly 50%.

Unfortunately, much of the savings from these systems have been wiped out by maintenance costs because VFDs induce powerful, unwanted currents that discharge from a motor's shaft to its

Without an effective shaft-grounding device, high-frequency VFD-induced currents can wreak havoc with bearings, causing

premature motor failure. One of the newest devices uses the principles of electron tunneling and ionization to safely and efficiently bleed off damaging currents. Installed on a motor's shaft, the AEGIS™ SGR Bearing Protection Ring provides a very-low-impedance path from shaft to frame, bypassing the motor's bearings. To boost the electron-transfer rate, conductive microfibers line the ring's entire inner circumference.

VFDs hold the promise of sizable energy savings, but without effective, long-term bearing protection those savings could be wiped out by high motor-maintenance costs. By making VFD energy savings sustainable, the AEGIS™ SGR provides a "green" solution.

For more information, contact: Adam Willwerth, Electro Static Technology at (866) 738-1857 or www.est-aegis.com.



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- Your company logo published on the 14th Annual Excellence Awards website. The logo will remain on the website through out the year.
- Company recognition on Awards signage thanking all sponsors.
- 2 Complimentary tickets to the event on November 2, 2010 at the Chemical Heritage Foundation.

Visit: www.awards.gbca.com or call (215) 568-7015 for more information.

#### KROC CENTER NEARS COMPLETION

Located at 4200 Wissahickon Avenue in the Nicetown/Tioga section of Philadelphia, the 130,000 SF Kroc Center will be the community center for recreation, fitness, and healthy lifestyle education.

On a team with MGA Partners, PZS Architects designed the public recreation amenities including the Aquatic Education Center, Gymnasium and Fitness Center.

The Aquatic Center will house a ten-lane Competition Pool available for year-round use by high school, college, and intramural teams, including seating for 300 spectators; and a Family Water Park of 10,000 SF containing a zero entry leisure pool featuring a 20-foot slide, two warm water lap lanes, and a directed current "Lazy River" used for entertainment and exercise. Also included in this area is a separate warm water jet pool.

The Wellness and Fitness Center will be a state-of-the-art facility featuring free weights, treadmills, ellipticals, stair-steppers, and a circuit of strength training machines.

The Gymnasium at 7800 SF contains one full basketball court, two half-courts and dividers & baskets that can permit 16 games at once. The gym can accommodate volleyball, fencing, gymnastics, yoga, dance and any sports that serve the interests of the community. Seating for 250 spectators is available.

Philadelphia is one of 30 cities in the nation selected for a Salvation Army Kroc Center. The North Philadelphia Center is expected to serve between 750-1,000 people per day, doubling the amount of services that The Salvation Army currently provides in the city.

General Building Contractors Association (GBCA) members involved in the project include T.N. Ward Co. and CVM Structural Engineers. MGA Partners, in association with PZS Architects, led the design. Other project team members include H.F. Lenz MEP Engineering; Andropogon Landscape Architecture; and Ohlson Lavoie Collaboratives Aquatic Engineers.



#### SHOEMAKER/PERRYMAN TO BUILD ADDITION TO WEST OAK LANE CHARTER SCHOOL

The Ogontz Avenue Revitalization Corporation has retained Shoemaker/Perryman, a Joint Venture, to manage the construction of a 60,500 SF addition to the West Oak Lane Charter School located at 7109-7173 Stenton Avenue in Philadelphia.

The project will nearly triple the size of the existing school and more than double its enrollment capacity from 700 to 1,500 students. The addition, designed by JKR Partners, LLC of Philadelphia, provides for 31 new classrooms and a gymnasium on two floors. A partial basement will house a library, computer lab, conference area, storage and utilities. Building plans feature a 2-story atrium, acrylic dome skylights and a hydraulic elevator.

Shoemaker/Perryman will renovate 3,600 SF of the existing 32,800 SF school to enlarge administrative areas. Work also includes demolition of an existing 10,800 SF building on the lot to make way for the addition, a new playground and reconfigured parking and bus lanes.

#### **SAVE THE DATE: WRAP UPS:** THEY'RE GOOD FOR THE OWNER, **BUT WHAT DO YOU NEED TO CONSIDER?**

Third Forum in the GBCA Affiliate Member Council Six Pack Series:

Wrap Up Insurance Program presentations often focus on the Mechanics and Benefits that these programs can provide. However, as a Contractor, Wrap up's may leave you with unexpected surprises. These could include Uncovered Claims or Increased Costs. This presentation will explore Wrap Up Insurance Programs from the Contractor's perspective. How can you protect your organization when working under a Wrap Up?

MAY 20, 2010 8:00 am Registration & Breakfast 8:30 - 10:00 am Program The Center for Architecture 1216 Arch St. Phila., PA

#### **B. CHRISTOPHER LEE CERTIFIED BY** INTERNATIONAL MEDIATION INSTITUTE



B. Christopher Lee, a shareholder at Jacoby Donner, P.C., has been certified by the newly constituted International Mediation Institute headquartered in Hague, Netherlands. The Institute was created as international public policy initiative by three leading non-profit dispute resolution bodies the Netherlands Mediation Institute, Singapore Mediation

Center and the International Center for Dispute Resolution/ American Arbitration Association.

Mr. Lee spends a significant portion of his time mediating complex cases in the Philadelphia region and around the country. He is on the mediation panels for the American Arbitration Association International Dispute Resolution Center and the Chartered Institute of Arbitrators.

#### SPEAKING OPPORTUNITY: WHAT WILL BE REQUIRED IN 2020 TO MEET THE **FUTURE GREEN BUILDING STANDARDS?**

Bayer Material Science is a sponsor for the upcoming Chemical Development and Marketing Association (CDMA) conference on what commercial construction will look like in 2020. The conference will be the beginning of June in Philadelphia. Bayer MaterialScience is looking for senior level participants who have the vision of what will be required in 2020 to meet the future green building standards. If you are interested in giving a 30 minute presentation on the green building topic contact: Sharon Papke, Bayer MaterialScience LLC, (412) 777-4984 or sharon.papke@bayerbms.com.

#### **Bayer Material Science:** "The Future of Green Commercial Building"

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## ConstructionToday

#### STATUS OF THE INDUSTRY

This issue will focus on the current status of the union construction industry. The issue will include a wrap-up of labor negotiations, an overview of the International Foundation, and a look at how minority firms are weathering the economic storm. The issue will highlight techniques that construction firms have utilized to remain viable during this difficult time.

> For more information or to submit a press release or story idea, contact Lisa Godlewski, Director of Public Affairs, GBCA. Phone 215-568-7015

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#### **ATTORNEYS**

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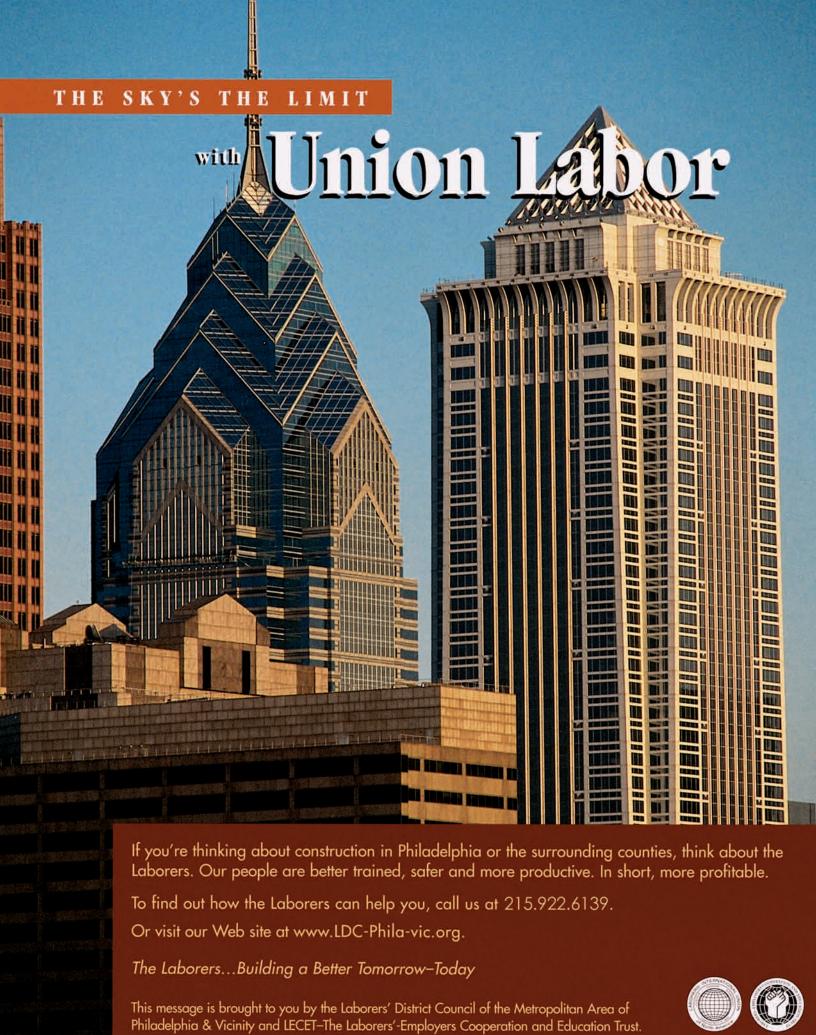
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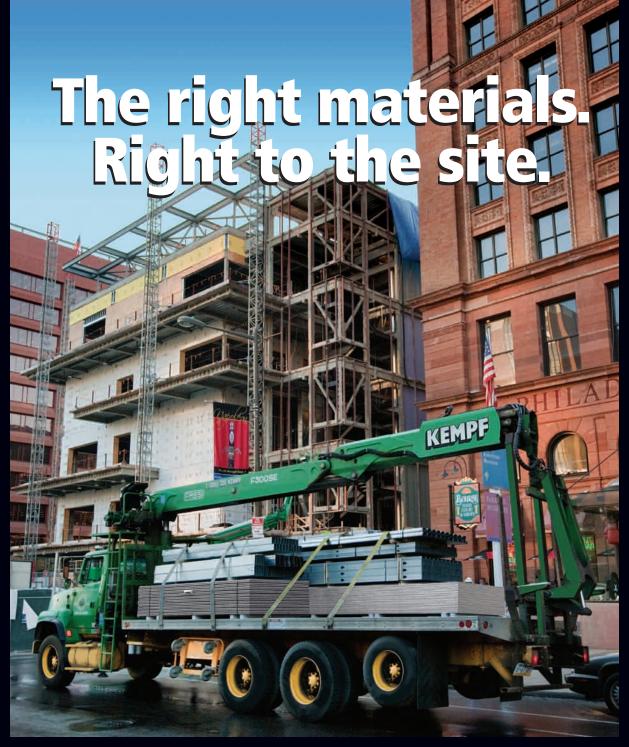
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