Projects in the PUBLIC EYE
Community Relations Programs Can Protect a Company’s Reputation with Those Who Have a Stake in Big Projects
Power of the People

Protests are sweeping the world in 2011, from the Arab Spring to the occupation of Wall Street. Citizens, armed with Internet investigations and Twitter technology, are prepared to speak out — potentially about your construction project.

That doesn’t have to spell doom for your plans or delay your schedule. A clear, organized and active approach to communicating with the stakeholders affected by a transmission line, power plant, road construction or other project can help.

Beginning on Page 9, learn how a well-executed community relations plan can help your in-house team defuse public opposition, educate stakeholders and protect the reputation you’ve built with your customers and communities through years of hard work and good service.

Our boots on the ground can put your best foot forward.
What’s Sustainable?

Sustainability permeates everything we do today — at work, at home, on our commutes. At Burns & McDonnell, we understand that sustainability is important to you, our clients and partners. That’s why we’re making it easier for you to find how sustainability impacts every topic we write about in BenchMark. Look for the leaf icon throughout the publication to see how our work is contributing to sustainability on all fronts.

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Technical Q&A: Charette Process

Q: How can the charette process benefit municipal infrastructure planning and construction?

A: Most people think of a charette as a brainstorming session. When planning municipal projects, charettes can be used to bring in representatives of all stakeholders to be sure that all needs and points of view are considered. However, the charette process can be tailored to meet other goals.

For a client faced with a state water quality deadline, Burns & McDonnell used a charette to speed delivery of a wastewater treatment plant design. This charette was structured specifically to shorten the design schedule. It relied on a concentrated effort involving key decision makers in a series of highly focused meetings — no cell phones or other interruptions allowed.

In this type of charette, there is a clearly defined agenda for each meeting. The group makes design decisions and continuously moves forward without reversing or altering previous decisions.

Because key decision makers reviewed, commented and signed off on each aspect of the project — and designers put in extra hours to make sure any revisions were ready for the next meeting — the complex treatment plant will be completed six months earlier than the normal sequence of design presentation, revision and acceptance would have allowed.

Charettes are a valuable tool for the right project. However, they involve a large time commitment from clients’ senior staff. If the need and the commitment is there, charettes can save time, allow clients to provide more input and be more satisfied with the end result.

For more information, contact R.J. Hope, CPP, ABCP, 816-822-4371.

Jeff Keller, PE, is a project manager in the Burns & McDonnell Infrastructure Group in Kansas City, Mo.

On-demand security consulting helps businesses with questions about Department of Homeland Security regulations or other security matters get fast, knowledgeable answers. At Burns & McDonnell, the on-demand service affords immediate access to a certified security professional on an as-needed basis.

Professional associations or other groups may negotiate agreements for on-demand security consulting as a benefit for their members. The sponsoring association selects a consultant to provide services according to specific guidelines. To help its members meet complex Chemical Facility Anti-Terrorism Standards (CFATS) and other Department of Homeland Security regulatory directives, the National Association of Chemical Distributors (NACD) chose Burns & McDonnell as its strategic partner for regulatory compliance. NACD members receive free on-demand security consultation with a credentialed Burns & McDonnell security consultant for up to 30 minutes each quarter. Association members also receive free updates on regulatory changes and discounted rates for any additional security consulting services.

“Many compliance questions can be resolved fairly quickly over the phone, since the questions often center around understanding a particular CFATS directive,” says R.J. Hope, a senior physical security analyst and project manager in the Burns & McDonnell global security services group. “It has been beneficial for callers to have a knowledgeable source, outside of government, from which to gain the clarity to move their effort forward.”

Hope holds ASIS board certification as a Certified Protection Professional, recognized as the highest certification in the security industry worldwide. He is also certified as an Associate Business Continuity Planner.

“Our agreement with NACD is for questions regarding regulatory compliance,” he says. “But when a NACD member calls and has other security questions, we advise as we can to get them on the right track.”

For more information, contact R.J. Hope, CPP, ABCP, 816-349-6754.
Exposure Assessments Aim to Improve Hazardous Workplace Conditions

Maintaining a healthy workforce is a priority for every employer, including providing a safe work environment that doesn’t expose employees to unnecessary health risks.

Exposure assessments can manage those health risks and reduce the incidence of issues from exposure within the workplace. The process identifies areas of concern, evaluates the potential for and magnitude of exposure, and recommends options for remediation.

Industrial hygienists at Burns & McDonnell follow the American Industrial Hygiene Association (AIHA) strategy for exposure assessments. “One of the key points of the AIHA process is that business owners need to know with certainty whether their employees are overexposed to chemical or physical hazards,” says Eric Wenger, an associate industrial hygienist at Burns & McDonnell. Exposure assessments evaluate airborne chemicals and harmful dust, noise hazards, heat stress, and other harmful conditions.

The process begins with a qualitative assessment during which an industrial hygienist gathers information and observes each process and task. Potential hazards are classified as acceptable, unacceptable or uncertain. Screening data may be collected using real-time monitoring instruments.

Based on assessment data, owners may elect to proceed with immediate corrections of unacceptable exposures or opt for additional sampling of uncertain exposures. This initial prioritization helps owners use limited resources to comply with exposure limits.

“Through this process, for example, we can pinpoint where a chemical is being generated and focus on specific areas that need to be addressed,” Wenger says. “It could mean the difference between replacing an entire local exhaust control system and merely implementing administrative controls.”

To streamline the assessment process, Burns & McDonnell’s industrial hygienists use Medgate, a program that provides access to sampling information in a single database.

For more information, contact Eric Wenger, 816-822-3894.

News in Brief

**Power Magazine Honors KCP&L’s Iatan 2 as Plant of the Year**

*Power Magazine* recently named Kansas City Power & Light’s (KCP&L) Iatan 2 generation station Plant of the Year for the development and execution of an “innovative energy plan that reduced overall fleet emissions, ensuring the region’s future electricity supply.”

The plant went online in August 2010 in time for the summer 2010 peak load. Designed with a supercritical steam boiler for maximum electrical power, Iatan 2 emits 1.3 million tons less carbon dioxide per year than the average for U.S. coal plants while supplying an additional 850 megawatts of reliable power. Burns & McDonnell provided permitting, design, procurement, construction management and startup services for the project.

**Design-Build Wastewater Treatment Project to Handle New Development**

The city of Mulvane, Kan., recently awarded the joint venture team Burns & McDonnell/ CAS, LLC a contract to design and build Phase I of the Mulvane wastewater treatment plant improvements. Following a series of studies performed by Burns & McDonnell in spring 2011, the city gained funding to construct facilities to handle wastewater flow from a new casino development. This phase of improvements includes primary treatment — screening, grit and grease removal, and equalization — of the casino development flow; expanded aeration capacity; a selector basin for improved biological nitrogen removal; and chemical feed facilities along the pipeline route. Phase I was scheduled to be completed by mid-December 2011.

**Burns & McDonnell Wins BC Hydro NTL Project**

BC Hydro of British Columbia recently selected the team of Burns & McDonnell and Valard Construction for design-build services for its new Northwest Transmission Line (NTL) project. The 344-kilometer, 287-kilovolt NTL is part of BC Hydro’s regeneration strategy, which is renewing and expanding the province’s electricity system. The project will provide a secure interconnection point for clean energy generation projects and supply clean electricity to support future industrial developments in the area. The NTL project is scheduled to be in service by December 2013.

For more information about Burns & McDonnell, visit www.burnsmcd.com/news.
New to Burns & McDonnell, Architect Is No Stranger to Engineering

Pat Edwards lives for bold adventures. Whether it’s flying airplanes or presenting in front of a Fortune 500 board, Edwards just can’t seem to pass up an opportunity for excitement.

On the surface, becoming regional manager of Burns & McDonnell’s Phoenix office might not seem consistent with Edwards’ other adrenaline-loaded activities, but to him, it’s his favorite hand.
"I have always been impressed with Burns & McDonnell’s quality and culture," Edwards says. "Coming here is like divine intervention. Burns & McDonnell is the perfect fit for me, and I hope I am the same." Since he joined Burns & McDonnell in March, Edwards’ energy and optimism for his group’s growth has become contagious.

"He brings a high level of enthusiasm and excitement to the office," says Paul Fischer, Burns & McDonnell senior vice president of regional operations. "He is passionate about making our clients and employees successful, and has the leadership to facilitate growth."

Being the only architect in an office full of engineers is a bit ironic to Edwards. He entered college at the University of Nebraska-Lincoln with the intent of becoming an engineer himself, but his artistic influences pulled him in another direction.

"I loved engineering, but I was passionate about architecture," Edwards says. "I just felt it fit my personality better." He soon switched fields and went on to receive bachelor’s and master’s degrees in architecture from UNL.

**Life Imitating Art**

Shortly after starting work for Leo A. Daly, an Omaha-based architecture and engineering firm, Edwards was transferred to the firm’s Honolulu office, where he started a CADD department and worked on aviation, hospitality and entertainment venues, including casinos.

Working in those industries fed Edwards’ two passions — cards and flying.

Edwards has been playing a weekly card game for the past 18 years. He learned to play the game growing up with his five brothers on the family’s farm in Ord, Neb.

"It was cold. We used to play cards to see who would have to go out and do chores in the morning," Edwards says. "You either got good or you got frost bite ... and I still have all my toes."

His love of flying didn’t come quite as easily. Although Edwards logged more than a quarter of a million international airline miles each year, he had a deep fear of getting on planes.

"I was a white knuckle flyer — scared to death," he says.

When he moved with Daly to Phoenix in 1993, his wife bought him an introductory flying lesson that changed him forever.

"Ten minutes after takeoff, I was hooked and have been flying ever since, though I don’t get up near as much as I used to," he says.

**Lasting Impressions**

Aviation projects have had a deep impact on Edwards’ career as well. His work on the design of a new airport in Mindanao in the south Philippines was especially rewarding.

"We flew into an abandoned World War II landing strip on a small plane, and flew out of a new airport on an A320," Edwards recalls. "As I looked below, I could see the economic impact that project was going to have on an impoverished area. When you build an airport where one didn’t exist before, you know you’ve worked on something special."

Allan Seaman, director of construction for US Airways, has worked with Edwards on numerous projects for the airline. Seaman says Edwards is the kind of guy you want to work with. "He’s a very fair, honest person who knows his stuff," Seaman says. "He was able to bridge the gap between the architects and the owners’ representative."

Edwards’ achievements earned him recognition in 2003 by the *Phoenix Business Journal* as one of their top 40 under the age of 40 business leaders.

**A New Role**

Since joining Burns & McDonnell, Edwards has learned a lot about the company culture from his mentor, Renita Mollman, a Burns & McDonnell vice president and the general manager of the company’s Southern California region. Mollman is looking forward to teaming with Edwards.

"Pat’s a great addition to the company and the office down there," she says. "He is strategically looking at growing the practices and how he and I can work together approaching opportunities as a region."

Although Edwards’ office primarily serves energy clients and is a center for excellence on solar-related business, his background opens the door for additional work in the aviation and facilities industry.

In his 23-year career, Edwards has seen much success as an architect. Now he is embracing his new role as Phoenix office manager.

"I’m just a simple farm boy who happens to be an architect in a big city," Edwards says. "I’ve made my living out of doing what I love to do best — relating to people."

Contact Pat at 480-337-6537.
Access to affordable healthcare is a highly debated topic in the United States. It has been used as a political platform and debated between candidates for offices at all levels of government. But no matter where one stands on how access to healthcare is provided, most agree it’s needed.

In Brownsville, Texas, the Brownsville Community Health Center (BCHC) has taken politics out of the equation. Brownsville and surrounding areas needed more medical care, and the BCHC took a giant step forward in providing that healthcare with the recent opening of the New Horizon Medical Center.

One for All
A 47,000-square-foot clinic building, New Horizon Medical Center, designed by Burns & McDonnell, is the first building in a campus master plan developed by Burns & McDonnell. The campus is expected to feature additional buildings that could be used for training and allied healthcare services.

It complements BCHC’s three existing facilities by adding specialized clinics for obstetrics and gynecology, pediatrics, primary care, behavioral health, dental, radiology, laboratory, and visiting physicians. The facility also features a drive-up pharmacy and a mechanical system that allows individual areas of the building to be open outside normal operating hours.
“That’s the kind of symbol this building is for the community. It’s not just for personal health, but for the well-being of the entire community.”

“Patients now have local access to many of the preventive and diagnostic healthcare services they need in a modern, more efficient setting,” says Mark Kohles, Burns & McDonnell project manager, who led the master plan and design services for BCHC. “Physicians and other healthcare professionals will also benefit from the improved facilities.”

Because of the cultural mix in Brownsville, which sits on the border with Mexico, all signage within the facility is bilingual. But designers took an extra step toward easy way finding by color coding each waiting area and coordinating floor tiles to direct visitors to the appropriate area. The waiting areas also feature half-height walls between the waiting room and the corridor, giving the space a more open feel. The entire facility is a reflection of the diverse population of the city.

“The BCHC leadership wanted a design that reflects the traditional Fort Brown style of architecture, as well as the Mesoamerican history of many Brownsville residents,” says Rick Keeler, senior vice president and general manager of the Burns & McDonnell Healthcare & Research Facilities Group. “The entry feature is a stylized representation of such sites as the Temple of the Warriors at Chichen Itza and has become a recognizable feature in the city’s landscape.”

On its opening day in July 2011, the clinic welcomed more than 80 new patients to BCHC services. That’s a testament to the need New Horizon Medical Center fills, especially considering its clinics are available for everyone, from insured residents to the underserved and uninsured. Filling that need by providing a modern facility with the unique features required for the region is a dream come true for Paula Gomez, BCHC executive director.

“‘That’s the kind of symbol this building is for the community. It’s not just for personal health, but for the well-being of the entire community,’” Kohles says. “We were able to do some redesigning during those two years to allow for added generation capacity, showers, emergency backup power and other features to make it suitable as a community shelter during weather emergencies.”

A Sustainable Community

Part of the BCHC’s mission was to create a sustainable facility that lends itself to a sustainable community. The facility features a large auditorium that can be divided into six smaller conference rooms, including a kitchen where families can receive nutrition training. It has already hosted a grand opening carnival, and the BCHC board members hope it will be the site of other events.

The extra time provided another advantage — adding design elements for Leadership in Energy and Environmental Design (LEED) certification. The building is designed to LEED Silver levels, and it has the potential to achieve LEED Gold if the BCHC secures a grant to install solar panels. The facility already has the framework and electrical system for the solar panels, which would provide enough energy to heat water for the facility and power its outlets — one more way the facility can better serve the community.

“The delay helped provide the sustainable, multifaceted facility that exists today,”

For more information, contact Mark Kohles, 816-822-4234.
Utility companies invest time and budgets in building a positive relationship with their customers. In most cases, it takes years of hard work by a team of dedicated customer service and community relations professionals to earn the desired reputation — one of a concerned, involved and responsive member of the communities where the utility provides services that play a critical role in quality of life.

These hard-won reputations are on the line as electrical utilities embark on new and upgraded transmission lines that touch many customers right where they live and work. Managing the personal impact of construction projects is a difficult balancing act no matter the size of the project. For today’s mega projects, it’s an extreme challenge.

“The only sure thing is that the relationship will change. Our group is here to help make sure the change is for the better,” says Chuck Bell, manager of stakeholder relations for Burns & McDonnell. “Many utilities’ customer relations teams don’t have the capacity to tackle multiyear, megascale programs. These efforts are a built-in, funded opportunity that can either improve or harm what a company has built over the years.”

From permitting through construction and energization of the line, community relations (CR) initiatives can be the difference between success and shutdowns. On the Maine Power Reliability Project (MPRP), Burns & McDonnell has two dedicated professionals in the office and nine in the field.

“The CR group from Burns & McDonnell is instrumental in its efforts to keep the construction of MPRP moving forward and avoiding costly delays as a result of unhappy abutters. Their efforts on the MPRP have maintained a very positive image for Central Maine Power,” says Doug Herling, vice president of special projects for CMP “They took ownership of dealing directly with abutters and municipalities in the path of MPRP. As we moved into construction, the CR group effectively resolved several very complex abutter issues to the satisfaction of both parties while timely enough to avoid construction delays. The folks from Burns & McDonnell in the field are very professional and well-versed in their customer service skills.”
Drew McMullin, the Burns & McDonnell community relations manager on the MPRP, has been the point person for CMP in working with the third-party ombudsman appointed by the Maine Public Utilities Commission to resolve the concerns of property owners.

"Less than 5 percent of the more than 3,000 abutting property owners have reached the ombudsman’s consideration," McMullin says. "By presenting CMP’s voice in these negotiations and maintaining a dialog with these abutters, we’ve cut the utility’s risk of schedule delays and cost increases significantly."

After the negotiations, McMullin and the rest of the Burns & McDonnell team follow through on all agreements.

"Through this front-line role, we’re developing a system of protocols and effective techniques that will apply to community relations initiatives in other regions and other industries," McMullin says.

**Experience with Empowerment**

When the U.S. power grid was built and improved to its current state, landholders overwhelmingly accepted the status quo. Easements were, for the most part, accepted without issue. Today’s stakeholders are empowered to speak out and assert their will on public projects in ways that range from damaging company reputations to, ultimately, shutting down projects.

The good news: Implementing the right tools and processes can defuse conflict early and move projects forward with community support and understanding. That can mean a better customer relationship after the project.

“Getting involved during the project’s planning phase is critical,” says Patricia Bandzes, Burns & McDonnell’s community relations manager on the New England East-West Solution (NEEWS) project for Northeast Utilities. “By building stakeholder contacts early, before the siting process begins, utilities have the ability to reach key opinion leaders who can affect the decisions. You also begin establishing those relationships and contacts with local officials and residents who will be involved down the road.”

**The Complete Package**

Integrating community relations with a comprehensive program management approach puts the project team on the ground from the very beginning through closeout. Previous Burns & McDonnell experience on large, successfully managed projects — like Northeast Utilities’ Middletown-Norwalk Project, completed in 2009 — honed the company’s approach to community relations. Bandzes was involved in building that project’s community relations efforts from the earliest stages of construction.

Experience has enabled the teams working on current projects to take a proactive approach to communications, instead of being reactive.

“Through a methodical analysis of the areas touched by a project, we can identify areas that are likely to spur challenges, based on the number of residents, necessary tree clearing, proximity to schools, day care centers or other high-visibility public areas,” Bandzes says. "We can focus our resources on the highest needs and potentially avoid pitfalls."

The early involvement also puts more information in the hands of officials.

**Project Snapshots**

**Greater Springfield Reliability Project**

**Northeast Utilities**

- One of four New England East-West Solution (NEEWS) projects
- 39 miles of new and reconstructed overhead transmission lines in Connecticut and Massachusetts, touching eight cities and 4,000 abutting properties
- Three major substation upgrades; additional work on five others
- Two new switching stations; additional work on two others

- **Timeline:**
  - October 2008: Filings with state siting agencies
  - March 2010: Connecticut siting approval
  - September 2010: Massachusetts siting approval
  - Dec. 7, 2010: Substation construction began in Massachusetts
  - February 2011: Transmission construction began in Massachusetts
  - August 2011: Substation construction began in Connecticut
  - October 2011: Transmission construction began in Connecticut
  - Late 2013: Estimated in-service date

**Maine Power Reliability Project**

**Central Maine Power**

- 440 miles of new or rebuilt transmission line in Maine, touching 75 communities in 13 counties and 3,000 abutting properties
- Six new substations and major upgrades to six more, plus smaller upgrades to approximately 35 others
- The largest construction project in the state’s history

- **Timeline:**
  - Mid-2008: Filing with state and federal agencies
  - May 2010: Public Utilities Commission approval
  - August 2010: Construction began
  - Late 2014: Anticipated project completion
"By keeping legislators, government agency staff and municipal leaders informed from the start, they are able to respond knowledgeably to callers at every stage. They can demonstrate awareness and refer residents to the project team for resolution," Bandzes says.

**Avoiding Trouble**

The economic impact of transmission projects goes beyond construction jobs and electrical system reliability. These projects affect the daily life of the region, and they can wield an economic impact beyond construction jobs.

The Big E is an annual 17-day fair celebrating the agriculture, food and entertainment offerings of New England states. Attracting more than 1.2 million visitors to the grounds in West Springfield, Mass., each September, the fair organizers had a vested interest in the challenges presented by construction vehicles and potential road closures or restrictions in the area.

"Because we learned early on how important this is, Northeast Utilities and our project team were able to adjust the construction schedule and keep crews working in other areas during fair time," says Patty Maturo, Burns & McDonnell community relations specialist on the Greater Springfield Reliability Project.

Similarly, CMP knew many of the transmission rights-of-way (ROWs) on the MPRP route are critical to winter snowmobiling traffic in the state. This popular winter activity in the heavily forested state brings an estimated $261 million to the state each year, according to the Maine Snowmobile Association. The cleared ROWs essentially become highways for snowmobiling and other outdoor enthusiasts.

"Closing rights-of-way was a major issue. By working with local clubs and the department of conservation, we helped develop alternate routes that would get people through to their weekend destinations," says Chris Marshall, Burns & McDonnell community relations specialist. "CMP is able to get its work done without damaging its reputation in the communities it serves."

**Adaptable Model**

Communities impacted by transmission construction vary from region to region. For the Greater Springfield Reliability Project, the work is in primarily urban areas. Regulatory bodies are at the state level, with informational involvement in affected towns. The project teams work with residents and businesses of all types along the route, often accommodating heavy traffic demands.

In Maine, the territory is more rural. One affected property was a teaching organic farm. The farm's plantings are planned years in advance, so the owners needed to know where construction will be taking place over the full project period.

"Maine also has a local permitting process," Marshall says. "We've received local permits from about 75 towns and held multiple meetings per town, in addition to five large, statewide meetings at the very beginning. We've put a community relations person in contact with every neighbor who has brought concerns to these meetings."

**Follow-Through**

Throughout the life of a billion-dollar transmission program, a community relations
“Implementing the right tools and processes can defuse conflict early and move projects forward with community support and understanding. That can mean a better customer relationship after the project is done.”

By tracking such granular details as how to most effectively reach an abutting landowner to avoiding blockage of a Dunkin' Donuts drive-through entrance before 10 a.m. to protecting a resident’s cherry tree, Burns & McDonnell helps maintain the utility company’s credibility.

“Large transmission projects can be highly impactful to residents. Often, they feel unheard,” says John Troiano, Burns & McDonnell community relations specialist. “The public needs to feel they have a liaison on the project. Our teams are out there every day, meeting with people, knocking on doors, addressing concerns. We learn about the wedding reception at their house that’s coming up or their dog who gets nervous from seeing strangers. We can work with contractors to protect our client’s reputation with its customers.”

Burns & McDonnell tracks the detail of regulatory and non-regulatory contacts through its OneTouchPM® system, which integrates seamlessly with the Primavera Contract Manager package. Real-time database access for construction and community relations crews means everyone is on the same page when work moves into a neighborhood.

Building Support
Before the Project Takes Shape

Even the best ideas can languish without public support and funding. Moving from early planning into design and construction requires a foundation in positive stakeholder engagement.

Building that foundation can take many forms — and in today’s economic climate — a serious examination of the economic benefits of a proposed initiative can be used as a focal point upon which to build support.

“Economic analysis can be a powerful tool in demonstrating a project’s potential for creating positive change in a community,” says Julie Lorenz, senior strategic consultant for Burns & McDonnell. “Whether the project’s effects will be job creation or retention, improving the tax base or increasing economic competitiveness, a three-pronged approach will be most effective in gathering the desired support.”

First, stakeholders need to know your initiative solves an important problem and improves their lives. Second, they need to have the opportunity to shape the solutions, to the extent possible. And in terms of economic analysis, the data must be meaningful to your stakeholders and the results must be framed in terms that resonate.

This focus is nothing new to Lorenz, who joined Burns & McDonnell in early 2011 with the goal of helping clients develop strategies that will move their ideas forward. Her experience includes a primary role in securing an $8.2 billion, 10-year funding program for the Kansas Department of Transportation, resulting largely from stakeholder collaboration and a focus on economic impact analysis.

“The key is developing and using a collaborative process,” Lorenz says. “Your stakeholders need to see how the process involves them in shaping the decision. That’s the key to building support.”

For more information, contact Chuck Bell, 816-349-6615.
Meet in the Middle East

Designed to the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) Gold standards, the Qatar National Convention Centre Extension in Doha, Qatar — member of the Qatar Foundation — features sustainable technologies and modern, historically significant design. For the convention center extension, Burns & McDonnell provided architecture; civil, mechanical and electrical engineering; security and communication system design; landscaping; and construction administration. As architect of record, Burns & McDonnell worked in collaboration with Populous. For landscape design, Burns & McDonnell worked in collaboration with Patti Banks.

The Qatar National Convention Centre Extension features an architecturally stunning bridge that links guests to the Qatar Science and Technology Park. The bridge’s leaf-shaped canopy is reminiscent of the convention center’s Sidra tree motif and its destination’s iconic veil. A skylight shaded by a pergola — with Sidra leaves suspended above a reflection pool where visitors can interact with ripples of water and streams of light — also illustrates the Sidra tree motif.

Sustainable features of the extension include solar panels that power 12.5 percent of the convention center’s electricity, while a gray water system recycles and conserves water. The convention center will be the first to incorporate energy-efficient, high-bay LED lighting, which greatly reduces maintenance.

The Qatar National Convention Centre features more than 400,000 square feet of exhibition space plus room for outdoor exhibitions to accommodate more than 30,000 guests, a 2,300-seat lyric-style theater, three auditoriums with stadium seating, a 4,000-person conference hall, 57 meeting rooms, catering facilities, the latest wireless presentation technology and covered parking for 3,200 connected with an air-conditioned people-mover. The extension included an expansion of exhibition space, meeting rooms and catering facilities, and the addition of hospitality suites.

To make hanging banners at the convention center easier, Burns & McDonnell incorporated an advanced mobile rigging grid that allows lowering and raising banners electronically. A command center for integrated presentation displays maximizes the capabilities of this world-class facility.

The convention center will be completed in fall 2011 and will host its first major event, the 20th World Petroleum Congress and Exhibition, on Dec. 4-8, 2011.

For more information, contact Karen Stelling, 816-822-3342.

Learn more online at www.qatarconvention.com.
Easing the Growing Pains of Traffic Expansion

While population growth and the ability to thrive are admirable qualities for virtually any city, they come with some challenges as city, county and state governments strive to keep up with that growth. The city of Columbia, Mo., was no different when it called on Burns & McDonnell to help redesign Scott Boulevard, or Missouri Route TT, a suburban arterial running north-south along the city’s west side, to handle increased traffic due to population growth and city expansion.

A two-lane, rural route with rolling hills and light traffic, Scott Boulevard has spent much of its existence as a county road. But when the city of Columbia began to stretch its limits beginning in the 1970s, the population increase and expanded development to the west caused traffic demand that outpaced the capacity of the roadway.

Aside from the challenge of handling increased traffic, the design of the roadway came with its own set of challenges. The decades-old county route had a number of safety issues, including small to non-existent shoulders, deep ditches on each side and short sight distance due to rolling hills. In addition, numerous residential properties had direct access to the roadway, making merges into the traffic flow dangerous.

"In addition to the safety issues, the city’s primary water transmission main also runs parallel to the roadway," says John Frerking, Burns & McDonnell’s client manager for the city of Columbia. "We had to be precise with the design for the new roadway to avoid the main. This included potholing along the pipeline alignment so we could mark the line’s exact horizontal location and depth."

Ultimately, Burns & McDonnell proposed an offset of the roadway’s existing centerline alignment for a significant portion of the project to avoid the transmission main and remove most of the residential access.

In the spirit of mutual cooperation, the Missouri Department of Transportation (MoDOT), which previously was responsible for maintenance of Scott Boulevard, entered a relinquishment agreement with the city. MoDOT provided significant funding toward the redesign and construction, but once complete, Scott Boulevard maintenance becomes the responsibility of the city. That means the design had to meet both city and state criteria before it could be approved.

Now Scott Boulevard, a four-lane arterial with turning lanes, a bike lane and a median, is a safer, more pleasant route for Columbia motorists. Sight distance has been improved by leveling the terrain and moving access to residential properties off the main thoroughfare. The medians on the northern half of the roadway were designed to allow for future lane expansion if traffic demand continues to grow. Burns & McDonnell is completing design work for Phase II, a southern extension of the Scott Boulevard improvements, with construction set to begin in 2013. Phase III will be designed by city engineering staff, with Burns & McDonnell assisting on a bridge design.

For more information, contact John Frerking, 816-822-3347.
Background
The U.S. Air Force Academy near Colorado Springs has set its sights on becoming a net zero and carbon neutral operation. Its long-term goal is to produce as much energy — preferably from renewable resources — as it consumes on its 18,000-acre campus. In support of this goal, the academy received $18.3 million through the American Recovery & Reinvestment Act in 2009 to fund construction of a new on-site photovoltaic solar facility, its first venture into solar power.

Challenge
In the beginning, planners thought the utility would contract with an outside firm to design and build the solar power plant. The keys would then be turned over to the utility, which would own and operate the facility.

There was a problem with this approach: A municipal entity, Colorado Springs Utilities doesn’t pay federal taxes. It would not be able to take advantage of the federal tax credits, treasury grants, accelerated depreciation or other incentives available to private developers of renewable energy projects. The result? The project would cost more compared to projects developed by companies with an appetite for tax credits.

Solution
Burns & McDonnell’s Denver-based project team collaborated with solar power and financial experts from the firm’s Phoenix and Kansas City offices to investigate available incentives and alternate contracting strategies for the project.

“Because of the solar project’s high national visibility, it was important for the academy to maximize the amount of solar energy it produced,” explains Bill Nixon, project manager for Colorado Springs Utilities. “We looked to Burns & McDonnell to find an effective way to leverage federal incentives to increase the amount of capital available for the project.”

Another challenge: To structure the project in a way that ensured the academy received all of the benefits of the renewable power generated — and that the utility’s other ratepayers bore none of the expense.

LET THE SUN SHINE IN

A high-efficiency, single-axis solar tracking system follows the arc of the sun during the peak daytime hours, increasing sunlight captured by the Air Force Academy’s system by an estimated 25 percent over conventional solar panels.
third party that could take advantage of the available federal tax incentives,” explains Matt Brinkman, solar business unit manager for Burns & McDonnell’s Energy Group. “The chosen vendor would construct, own and operate the solar power plant on the Air Force Academy’s property and then deliver the power to the utility under a power purchase agreement.”

In the request for proposals developed by Burns & McDonnell, respondents were asked to outline not only their design and construction plans but also their approach to using federal incentives to benefit the project.

Interest from the solar industry was understandably high. The project team narrowed the 22 original respondents to a list of six finalists. The proposal evaluation process included two major components, says Jeff DeWitt, Burns & McDonnell’s Denver-based project manager. “We conducted not only a technical evaluation of the designs but also an in-depth financial analysis of energy costs over the life of the project.”

The winning proposal came from SunPower Corp. of San Jose, Calif., which planned to take advantage of a 30 percent treasury grant and five-year accelerated depreciation. “Those incentives alone added about 40 percent to the value of the academy’s direct project funding,” says DeWitt. “That meant our vendor could build a much larger facility at no additional cost to the academy or the utility’s other customers.”

“The winning design, which includes nearly 19,000 solar panels, features a high-efficiency, single-axis solar tracking system that follows the arc of the sun during the day, when power use peaks,” says Anika Hammond, Burns & McDonnell’s field representative during construction. The tracking system increases the sunlight captured by an estimated 25 percent, compared to conventional solar panels.

The 6.0 megawatt solar power plant came online in July 2011 after an eight-month construction and startup effort.

**Results**

The new solar facility supplies approximately 11 percent of the academy’s power — with no additional out-of-pocket energy payments required by either the academy or Colorado Springs Utilities.

“Burns & McDonnell helped us negotiate a power purchase agreement that calls for the academy to receive the power generated at the solar power plant for the next 25 years,” Nixon says. “The cost of the power was prepaid using the bulk of the Air Force Academy’s original $18.3 million grant.

The use of federal incentives “made a huge difference,” Nixon says. “We were essentially able to double the amount of power generated at the site.”

The project also significantly increases the academy’s use of renewable energy, allowing it to take a leap forward in its vision of becoming a net zero installation, Nixon adds. Perhaps just as importantly, it demonstrated the value of a creative contracting strategy. “Though more complex than most project contracts, this solution allowed Colorado Springs Utilities to demonstrate that it’s possible to successfully marry private enterprise with municipal and federal government,” Brinkman says. “This is a case where every party wins.”

*For more information, contact Matt Brinkman, 480-337-6507, or Jeff DeWitt, 303-474-2256.*

“We looked to Burns & McDonnell to find an effective way to leverage federal incentives to increase the amount of capital available for the project.”
Today’s nuclear power plants can produce huge amounts of clean energy from small amounts of fuel. What they can’t do, however, is be 100 percent certain there isn’t a hacker somewhere in the world eager to tamper with and use their controls for more nefarious purposes.

That’s why the U.S. Nuclear Regulatory Commission (NRC) added Rule 10CFR73.54 to the Code of Federal Regulations in 2009. Designed to protect against digital sabotage, the new rule requires the nation’s 94 nuclear power plants to provide “high assurance” that their computer and communication systems and networks are adequately protected from cyber attack.

“What the rule didn’t explain was exactly how they were supposed to accomplish that,” explains Steve Carr, a Burns & McDonnell cyber security consultant.

That’s where the Nuclear Energy Institute, an industry trade group, stepped in. Working with more than 20 cyber security experts from the nuclear industry — including Carr — the institute developed guidelines that prescribe how the nation’s nuclear plants should comply with the rule.

The result: NEI 0809, which lists approximately 130 controls that must be in place on each of the hundreds of critical digital assets in every nuclear power plant. Plants have until Dec. 31, 2012, to implement the guidelines and achieve compliance with the NRC’s rule.

A Tool for Tracking Cyber Assets
With little more than a year to go before the deadline, compliance efforts are a work in progress,” says Carr, who co-authored the guidelines and is part of a Burns & McDonnell Cyber Security Group that works with plants to implement them. “The key is making sure a plant’s leadership understands the controls needed to protect their assets and how to implement them without interfering with day-to-day operations.”

To bring order to the process, Burns & McDonnell developed an electronic asset tracking tool that identifies cyber gaps in a plant’s critical digital assets.

Users enter an inventory of these assets, along with the controls that have been applied to them, into a database. The auditing tool then looks for gaps in the controls that may put the assets at risk of attack.

The controls themselves cover everything from physical security — can the asset be locked? — to access questions — is each user’s access locked down to the lowest level required for the job?

“To achieve compliance with the NRC rule, every single one of a plant’s digital assets must have all 130 controls applied to it,” says Carr. Burns & McDonnell is implementing its auditing tool in seven nuclear power plants.

“In the case of nuclear power plants, hackers aren’t interested in stealing data but in manipulating specific processes in a way that causes a radiation release or a shutdown of a nuclear reactor,” Carr explains. That includes everything from interrupting the power supply to a plant to shutting down the water pumps used to cool a reactor.

“Our goal is to protect the public by preventing any nuclear reaction or shutdown that is not planned,” says Carr. “That means plugging every possible cyber security gap.”

For more information, contact Steve Carr, 319-213-7414.
As green permeates our language as more than a hue blending yellow and blue, the marketplace demands transparency in sustainable corporate operations. Companies are responding to interested stakeholders by publishing corporate sustainability reports (CSRs), which disclose economic, environmental and social aspects of business.

The number of CSRs published has increased steadily over the past decade, with a 22 percent growth to more than 1,700 companies worldwide using the Global Reporting Initiative (GRI) framework in the latest reporting period. The number escalates when factoring in other reporting frameworks from AccountAbility and the International Organization of Standardization.

While CSRs fit well with public companies, nonprofits, municipalities and various other organizations are also publishing CSRs to realize benefits such as:

- Improving their image by promoting sustainable operations and social responsibility
- Increasing credibility with stakeholders through transparency
- Engaging stakeholders by responding to each group's interests
- Initiating a feedback loop with stakeholders
- Allowing a direct response to the marketplace
- Increasing employee morale and participation in sustainable and socially responsible programs

In addition to strengthened relationships with stakeholders, CSRs often lead companies to enhance their codes of conduct, policies, practices and management systems surrounding sustainability and social responsibility.

"A good CSR should be based on strategies that add value to that particular company," says Candice Derks-Wood, a LEED AP, GRI certified, corporate sustainability specialist at Burns & McDonnell. "Reporting organizations need to develop strategies that they have influence over, resonate with stakeholders and, ultimately, help pay for themselves."

When it comes to implementation, Burns & McDonnell not only helps clients successfully plan and communicate through CSRs but also execute sustainability strategies that pay for themselves. Greenhouse gas inventories and energy audits often reveal such opportunities.

**Case Study: Southwest Airlines One Report™**

Like many other public companies, Southwest Airlines published its first CSR, its 2007 Environmental Stewardship Report, in response to shareholders who wanted to know more. Southwest Airlines has published an annual CSR since and continues to improve its reporting process and scope each year. The airline has taken CSRs a step further with integrated reporting, starting with its 2009 Southwest Airlines One Report™, which covers financial, social and environmental performance.

"I see our award-winning One Report as a competitive advantage," says Marilee McInnis, senior manager of community at Southwest Airlines. "As a transparent representation of our triple bottom line, our One Report integrates what our stakeholders want to know about our performance, our people and our planet."

For Southwest Airlines' 2009 and 2010 One Reports, Burns & McDonnell assisted in developing report content, conducting a greenhouse gas inventory, complying with GRI guidelines and assuring the report. After publishing the 2010 One Report in May 2011, Southwest Airlines engaged Burns & McDonnell to assist in developing key performance indicators to better evaluate performance and gauge progress as well as continue assistance with its 2011 One Report.


Southwest Airlines has received positive feedback on its One Report from various stakeholder groups, and additional investors have become Southwest Airlines shareholders because of the One Report.

For more information, contact Candice Derks-Wood, 816-822-3946.

To learn more about corporate sustainability reporting in the airline industry and five steps to creating a successful sustainability report, visit www.burnsmcd.com/csr.
Plugged in to the Public

You work hard to build a relationship with the stakeholders in your community. When you launch a major construction initiative, that's all on the line.

From public hearings to open houses, from answering emails to knocking on doors, Burns & McDonnell community relations specialists are on your team. We help everyone understand your project and how it will affect them.

That's important to us, because we aren’t successful until you are.

www.burnsmcd.com