



Energy Center
Pittsburgh

Energy News

for the **Northside**

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Hats Off to Hands-On Carnegie Science Museum

Courtesy Carnegie Museums of Pittsburgh.



The Northside's Carnegie Science Center is one of the four Carnegie Museums of Pittsburgh, which also include Carnegie Museum of Natural History, Carnegie Art Museum and The Andy Warhol Museum.

When Carnegie Science Center opened in 1991 on Pittsburgh's Northside, then-Mayor Richard Caliguiri said, "I want visitors to the city to come through the tunnel and see on the North Shore ... Carnegie Science Center as the icon of Pittsburgh's science and technology achievement."

Over the past 20 years, the mayor's vision has been realized, as the revered, award-winning museum has enlightened, educated and entertained people from around the world with interactive experiences in science and technology. From the start, NRG Energy Center Pittsburgh has provided the Carnegie Science Center with hot water for space heating and chilled water for air conditioning

from an onsite plant that NRG Pittsburgh renovated in 2007.

The museum has deep roots on the Northside. It evolved out of the Buhl Planetarium and Institute of Popular Science, founded in 1939. The Buhl outgrew its original location in the 1980s and merged with the Carnegie Institute in 1987. The new Carnegie Science Center opened its doors four years later in the current location.

The museum features hundred of hands-on exhibits geared for all ages, bearing out the Chinese proverb, "Tell me and I'll forget. Show me and I may remember. Involve me and I'll understand." In the Science Center's

four-story, 167,500-square-foot main building, visitors can explore, for example, the world's largest permanent robotics exhibition; Body Tech, featuring interactive exhibits about recent medical technologies; or Exploration Station, where children can learn about science concepts and processes.

Carnegie Science Center is also home to the fully digital Buhl Digital Planetarium and the Rangos Omnimax Theater, which boasts the region's only domed movie screen. Located in its own adjacent 20,000-square-foot building is the Highmark SportsWorks® exhibition, dedicated to the science of sports. Another popular Science Center attraction is the *U.S.S. Requin*, a battle-ready, World War II-era submarine docked just outside on the Ohio River.

Not surprisingly, given the museum's track record for innovation, it's also forward-thinking when it comes to facility efficiency and sustainability. Carnegie Science Center has a sustainability plan that aims to reduce energy consumption and cut down on waste.

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In 2007, the museum significantly improved its energy efficiency by installing direct digital controls to better manage its HVAC system. That's critical, as Tom Flaherty, Facilities Planning and Operations at Carnegie Museums of Pittsburgh, explains: "Besides keeping our visitors and staff comfortable, our HVAC system helps us maintain proper temperature and humidity levels in the Omnimax theater and projection booth. If those levels are too high or low, some of our movie viewers could get

Carnegie Science Center continues...

Carnegie Science Center continues...

'motion sickness' during flyover scenes, for example, and film could get damaged or destroyed."

In addition to upgrading its HVAC system, the museum has begun installing occupancy sensors to control lighting, and is switching to energy-saving light bulbs. Recycling programs have long been in place, and composting efforts are expanding. The museum has put green building standards into practice with the recent \$5 million renovation of the SportsWorks building, which is seeking LEED® (Leadership in Energy and Environmental Design) certification.

Reaching 700,000 people each year through its exhibits and outreach programs, Carnegie Science Center has surely fulfilled Mayor Caliguri's vision as a city icon. NRG Energy Center Pittsburgh tips its hat to the museum for its accomplishments. As another science- and technology-based local organization, we're proud to count you among our customers!



Courtesy, Carnegie Museums of Pittsburgh.

The museum's nationally renowned Miniature Railroad and Village® exhibit displays scenes of early 20th-century western Pennsylvania.

Additions to NRG Thermal Team

Last summer, NRG Thermal LLC, which owns NRG Energy Center Pittsburgh, announced new additions: NRG Energy Center Princeton LLC and NRG Energy Center Phoenix LLC. Princeton HealthCare System selected NRG Thermal to provide the continuous energy supply it needs to ensure uninterrupted high-quality medical care at its new 630,000-square-foot University Medical Center of Princeton at Plainsboro,

New Jersey. NRG Energy Center Princeton LLC will design, build, own, operate and maintain a combined heat and power plant—CHP+NRG®—to supply electricity, steam and chilled water to the new medical center scheduled to open in early 2012. NRG Thermal has significant hospital and CHP experience in Pittsburgh, Minneapolis and Harrisburg, which has provided insight on the Princeton project.

In addition, NRG Thermal acquired three significant district energy operations in Arizona from APS Energy Services Company Inc., a subsidiary of Pinnacle West Capital Corp. Now known as NRG Energy Center Phoenix, the former Northwind Phoenix properties include the Phoenix district cooling business unit, the Tucson district energy business unit, and the operations and maintenance of a combined heat and power (CHP) plant at Arizona State University. The Phoenix system provides chilled water to nearly 30 buildings downtown Phoenix, including Chase Field, home of the Arizona Diamondbacks. NRG Thermal also owns and operates district energy systems in San Diego and San Francisco.

In 2001, Chase Field was the first customer of what was then Northwind Phoenix. Today's NRG Energy Center Phoenix cools the ballpark and nearby downtown buildings using chillers at the stadium plus an adjacent ice-storage plant, shown here. (NRG Energy Center Pittsburgh provides heating and cooling service to PNC Field.) Another cooling plant—located at the Phoenix Convention Center—also helps serve downtown customers.



Bright Idea: NRG plant converts to LED lighting

When Thomas Edison patented his incandescent light bulb 130 years ago, he could never have imagined his invention's evolution—or that today's increasingly popular light-emitting diode (LED) would have more in common with a laptop computer than his original bulb.

Based on computer chip technology, LEDs are about 10 times more efficient than incandescent bulbs and twice as efficient as compact fluorescents. Recognizing this efficiency, NRG Energy Center Pittsburgh is converting from fluorescent to LED lighting in its plant to help reduce energy and maintenance costs.

The way LEDs convert electric current to light results in very efficient light output and low heat rejection. In addition, LED lights:

- need no fixture change, since the ballast from the existing fluorescent is just disconnected and fixtures reused;

- mean less energy is required for air conditioning, since they produce minimal heat;
- can last five to 10 years, reducing maintenance;
- contain no mercury so are 100% recyclable and green;
- start instantly and don't flicker;
- do not produce ultraviolet light, which can cause products to fade; and
- can offer a return on investment from six months to four years for businesses that take advantage of Pennsylvania Act 129 (aka Duquesne Light Act) funding.

NRG Pittsburgh is using this funding for its lighting upgrade and expects to see a 2.5-year payback. Although LED projects are typically subsidized today, look for them to become more affordable over the next five to 10 years as LED technology matures. The subsidies are helping drive up the demand for LED lighting, and manufacturing costs are expected to drop significantly. At the same time, ongoing research and development may increase the light output per diode more than tenfold in the next decade.

It's clear our conversion to LED lighting offers many immediate advantages. We think Mr. Edison would agree!

Nothing But Blue Skies in Federal Street Underpass

A slice of blue sky on a sunny day is brightening the way for people traveling between downtown and the Northside along Federal Street. A large-scale photograph titled *Blue Skies*, by Pittsburgh-based artist Kim Beck, now adorns the walls of the underpass on Federal below the Norfolk & Southern Railroad bridge. The underpass has been cleaned, painted and will serve as a rotating gallery of artwork.

This effort to beautify the concrete structure is spearheaded by the Children's Museum of Pittsburgh as part of the Charm Bracelet Project—a collaboration of community organizations committed to fostering a vibrant, attractive and accessible Northside. The Federal Street underpass project is funded by a grant from The Heinz Endowments with support from The Grable Foundation, Norfolk Southern Foundation and the National Endowment for the Arts, plus NRG Energy Inc. and NRG Energy Center Pittsburgh. To help keep *Blue Skies* shining, NRG Pittsburgh regularly sends a crew of employees to the underpass to keep it clean.

Begun in 2006, the Charm Bracelet Project has brought together two dozen cultural, educational and recreational organizations, including the Children's Museum, which continue to explore ways to collectively enhance and strengthen the Northside district. Among the Charm Bracelet's many other initiatives are free kayaking lessons on Lake Elizabeth; art installations in the Perry Hilltop neighborhood; and an after-school writing club for third- through fifth-graders at Allegheny Traditional Academy.



NRG Pittsburgh employees help keep the Federal Street underpass clean and inviting for travelers and visitors who are headed to the area's cultural venues.

FROM THE GM

A look back at progress



As you read this message, I will have recently retired after eight years as General Manager of NRG Energy Center Pittsburgh. I have taken this step with considerable reluctance, as I enjoy the people—employees, customers and vendors—I've worked with over the years. Every morning I've gone in to work looking forward to interacting with a great group of individuals. Not everyone can say that. I'm grateful.

I feel good about my tenure here. We worked steadily to improve reliability along with lowering costs and focusing on our customers and neighbors. We adopted a customer-centric focus and intend to keep it that way, knowing that, as Peter Drucker says, "Culture eats strategy for breakfast."


Company values and culture are all-important. I am proudest of the changes we made in our safety culture during my tenure. We made great strides to become a safer work place. It is easy to talk-the-talk with regard to safety, but walking-the-walk to build a safety culture is a never-ending, all-consuming activity. I am so pleased with our journey.

I am confident that my successor, Del Dausman, will continue the many journeys we have started over the years. Indeed, Del has said he will help me ease the transition and "ramp down" by letting me assist him on certain projects over the balance of the calendar year. So don't be surprised to see me continuing to prowling the streets of the Northside. Thank you for being a part of my final gig.

Tim Merrill, General Manager



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Meet Del Dausman, Our New General Manager



When Tim Merrill recently stepped down from his position as General Manager of NRG Energy Center Pittsburgh, Del Dausman stepped in as his successor. Del has been with the company and served as customer service engineer since 2009. He was hired with this latest assignment in mind.

In addition to focusing on customer initiatives, Del has worked closely with Tim on most

aspects of the business, including plant and building engineering, energy procurement, financial modeling, energy conservation, project development and safety. "Energy has been my passion professionally for decades, and I can't imagine being a part of a better team than NRG," says Del.

Prior to joining NRG Pittsburgh, Del had 25 years of experience as a building systems engineering consultant. Most recently, he was a partner at C&S Engineers in Syracuse, N.Y., before moving to Pittsburgh to be closer to family. Del is a licensed professional engineer, a Certified Energy Manager and a LEED® (Leadership in Energy and Environmental Design) Accredited Professional. He and his wife, Chrisanda, reside in Sewickley and have three grown sons, who are currently serving in the military after graduating from the U.S. Naval Academy. Del may be reached at 412.231.0409, del.dausman@nrgenergy.com. Congratulations, Del!



It's Hot! Is your cooling system ready for summer?

Summer weather is here and with it a greater need for air conditioning. That's why it's time to make sure your system is operating as efficiently as possible. A list of recommended work to be performed on your cooling system is available for download at <http://tinyurl.com/coolingchecklist>.

Please contact your HVAC professional or Del Dausman if you have questions about the transition to the cooling season.