

It is with great excitement that I am writing my first President's Corner as the new president of the Grunau Company. During my 19 year career with Grunau, I have met and worked with many of you. If our paths haven't yet crossed, I look forward to meeting you in the near future.

As Grunau begins this new chapter, I'm confident in our ability to continue to provide quality solutions for our clients. It's hard to argue that 2009 will present anything but a challenging business environment and the potential for tremendous change. Yet, although these changes can seem overwhelming, I also see them as an opportunity to do new and exciting things.

We have a strong team of experienced professionals who understand that our philosophy of long-term customer relationships has propelled us to our current success and will allow us to succeed in the future. While I may be new to the post of president, I have experienced our growth and continued success as one of the professionals for 19 years. I have no doubts about our strategy.

I was struck by the ingenuity and expertise of our Grunau teams as they took on the complex projects you'll read about in this issue. Leading edge projects that implemented environmentally-sound energy management techniques and helped NASA improve safety for its astronauts. Our commitment to excellence helped us deliver on multiple projects in Florida, an area where others are severely affected by the economic downturn. We also initiated our first international project with work on the Catoca Diamond Mine in Africa.

As 2009 continues, I encourage us to embrace the changes it brings head on. Even amidst the uncertainty of the current economy, new doors will be opening and Grunau is well poised to walk through them when they do.

Lawrence E. Loomis
President, Grunau Company



MECHANICAL

KEEPING MILWAUKEE GROUNDED IN GREEN BUILDING

When the City of Milwaukee wanted to set an example of green building and energy efficiency for local businesses, it turned to Grunau. Keep Greater Milwaukee Beautiful, a non-profit group focused on environmental beautification and conservation, teamed with Grunau to use an innovative energy management technique, known as a geothermal system, in its environmental education building.

Geothermal technology relies on ground temperature as a heating and cooling source, resulting in significant energy savings since ground temperature is more consistent than air temperature. It remains between 55 and 60 degrees Fahrenheit throughout the summer and winter.

The challenge in implementing a geothermal system is that it requires drilling several deep wells to reach the level needed to provide proper heat transfer in the summer and winter. A closed pipe loop system is installed in each well and covered with thermal grout for efficient heat transfer. Each well provides approximately one-and-a-half tons of energy. The number of wells needed is based on the desired heating and cooling capacity for the building. In this case, Keep Greater Milwaukee Beautiful required 10 wells drilled to a depth of 300 feet.



Initially, representatives at the City of Milwaukee planned to sink coils in the Milwaukee River bed near its building. Instead, Grunau advised them to drill the wells under an existing parking lot on the building's site to avoid potential problems with boat interference.

Grunau also offered real-time problem solving when drillers encountered a layer of hard rock that prevented the wells from reaching the optimal 300-foot depth. To correct the issue, Grunau recommended adding two additional wells. These 12 wells, dug at a depth of 270 feet, maintained an energy transfer equivalent to the original plan for 10, slightly deeper wells.

After the wells were completed, Grunau dug trenches to bury the pipes that ran to the building, where they connected with heat pumps. The entire heating and cooling system is electronically linked to City Hall through the Johnson Controls Metasys system. This allows city officials and Keep Greater Milwaukee Beautiful to monitor energy savings.

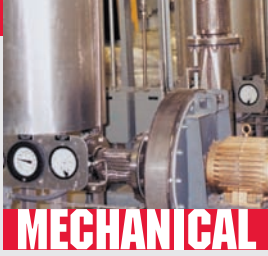
"We wanted to show people that a building can be retrofitted to utilize a new form of renewable energy," said Joe Wilson, executive director of Keep Greater Milwaukee Beautiful. "The system has been working marvelously. We've noticed quite a change in temperature as well as air quality. We were thrilled with Ken Bhatia and the team at Grunau for being patient and professional. They made it happen."

Grunau completed a similar project for Johnson Controls. The company wanted to achieve a LEED Platinum certification on additions to its world headquarters in Milwaukee and asked Grunau to regulate its heating and cooling with 272 ground wells.

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◀ *Grunau's technicians lay pipes in a trench as part of the geothermal system installed at Keep Greater Milwaukee Beautiful's headquarters.*





MECHANICAL

GRUNAU GIVES CHILDREN'S HOSPITAL FARTHER REACH

For the past year and a half, Grunau has been instrumental in constructing the new 12-story, 425,000 square-foot West Bed Tower at Children's Hospital of Wisconsin. The hospital expanded its facilities to meet rapid patient growth. Boldt Construction, the project's construction manager, asked Grunau to manage plumbing installations for the expansion.

The new bed tower houses 96 patient rooms, 72 intensive care rooms and two floors of additional shell space for future expansions. Because Children's is a level one trauma center, Grunau's work included installation of the medical gas and oxygen lines, as well as water lines. The Grunau team completed more than 2,400 medical gas connections for the bed tower's patient rooms, as well as intensive care rooms.

Grunau also upgraded the existing bulk oxygen system, which meant the entire Children's Hospital facility had to be equipped with a temporary oxygen system for 24 hours. Grunau brought in bottles of oxygen and connected them at appropriate places within the hospital to ensure that the facility could function without interruption during the upgrade.

The new bed tower's unique design, a triangular shape with a radius on one side, created a challenging work environment. Since the building was 12 stories high, the Grunau team needed to work in several places at once to complete the project. Grunau streamlined the installation process using 3D modeling. This capability created an electronic materials list for vendors, which allowed Grunau to receive one materials delivery for each floor rather than several different shipments.



▲ Grunau managed plumbing installations for the new 168-room bed tower at Children's Hospital of Wisconsin.



FIRE PROTECTION

TAKING FIRE PROTECTION TO NEW HEIGHTS

In the 1970s, Walt Disney World opened a new vacation community at Lake Buena Vista Resort near Sarasota Springs, Fla. The resort included 60 unique treehouse villas where visitors could stay amidst the beauty of protected wetlands. Flash forward about 35 years and those same treehouses were badly in need of repair and updating. Disney asked the Grunau Company to manage fire protection installation during the upgrades.

Grunau developed a fire protection budget to update the Disney treehouses. Based on Grunau's insights, Disney personnel decided to demolish the existing treehouse villas and reinforce the eight-foot high pedestals that supported each villa. Disney also ordered new treehouse units, which had to be bolted together and bolted to the supporting pedestals.

Once the villa units were in place, the Grunau team installed NFPA 13D fire protection systems in each treehouse. This type of sprinkler and fire protection system is typical for resorts or residential homes. The installations ensured that Disney's new treehouse villas remained up-to-code.



Although the system installation may have been standard, the work environment for Grunau was anything but typical. Since the treehouse villas are located in a protected wetlands area, Grunau took extra care not to disturb the environment beyond the existing footprint of the villas. With only one road in and out of the job site, detailed planning became essential. Grunau met with other trades on the job to coordinate schedules and materials drop-offs, which often occurred before or after work hours.

"This is the type of complex project where Grunau excels," said Ken Cross, Grunau's project manager. "It required a lot of coordination. Mark Johnson, our job superintendent, and Josh Truebe, our construction superintendent, both did great work on this project."

Grunau's coordination skills and ability to manage the challenging work environment impressed Disney so much that Grunau was the only trade contractor retained for the entire length of the project.

◀ Grunau's Orlando fire protection team helped Disney update its resort at Lake Buena Vista by installing a sprinkler system in the resort's new treehouse villas.

Continued from page 1

To meet the project's tight schedule, Grunau prepared computer assisted drawings for the location of all the wells and downloaded the information on a TOPCON system. The team relied on a TOPCON GPS locator, an in-the-field laser locator, to identify and flag each well's position prior to drilling. Using the TOPCON technology, Grunau mapped all 272 wells in just two days. The Grunau team also helped Johnson Controls save time by pre-engineering and prefabricating the pipes that would connect the building to the wells. In addition, Grunau was able to start digging pipe trenches after only a few wells were completed. Normally, this type of work cannot be done in conjunction with the well drilling; however, thanks to the map laid out with the TOPCON technology, Grunau and the well diggers were able to work in parallel.

"These were exciting projects for us," said Bhatia, Grunau's project manager for both jobs. "It was Grunau's first opportunity to apply geothermal technology in the Milwaukee area. We're using the latest technology to improve building efficiency."

Grunau's geothermal work has drawn the attention of the U.S. Air Force and other customers interested in using similar technology.



▲ The Grunau team needed to dig trenches for piping that connected to geothermal wells at Johnson Controls.



FIRE PROTECTION

GRUNAU FIRE PROTECTION IS 'DIAMOND' FOR CATOCA MINE

In 2008, the Grunau Company initiated its first overseas project — for the Catoca diamond mine in Angola, Africa. Through networking with Robin Hand at Paskor Holdings, a previous client in Orlando, Grunau's fire protection office seized the opportunity to design and fabricate an aqueous film-forming foam (AFFF) system to protect the mine's diesel storage areas.

The Catoca mine is the fourth largest diamond mine in the world. In 2001, it produced 2.6 million carats of diamonds, 65 percent of which were industrial quality and 35 percent, gem quality. Although the mine is 15 years old, it previously did not have any type of fire protection system. The mine's owners, including investors from the Angolan government, Russia and Brazil, wanted to employ U.S. technology to design new protection systems. This was especially important in the mine's diesel storage areas, which contain 300,000 gallons of potentially flammable equipment fuel, as well as in the mine's refueling station, fuel depot and fuel tank farm.

Grunau's first challenge involved designing the fire protection system without seeing the physical site and without direct communication with the owners. After reaching approval on the final system design, Grunau fabricated the system's individual components and arranged for shipment via container to Africa. Since it was Grunau's first experience with an export project, the team carefully managed the exportation process to ensure that the proper documents, tariffs and language translations were in order.

Grunau constructed this fire pump in its Orlando fire protection branch facilities so that the team could take detailed photos of what the pump should like in its final state. These photos will be sent to help the on-site installation team at the Catoca Diamond Mine in Africa.

After the project was underway, mine representatives asked for additional fire protection in the generator area. They also requested a second fire pump, so Grunau coordinated shipping for both a 2,500 gallon per minute and a 1,500 gallon per minute fire pump. Both pumps are diesel powered because electricity is not a reliable source of energy in Africa.

Grunau's initial client contact, Paskor Holdings, assumed responsibility for actually constructing the fire protection system once the materials arrived at the mine. To ensure accurate installation from overseas, Grunau took several photos of each system component and provided Paskor Holdings with detailed instructions on how to install it.

"Our work on the mine required a lot of coordination," said Mark Peters, Grunau's branch manager for the Orlando fire protection branch. "Everything went as well, if not better, than expected. We met every date set by the client. It's a credit to our team that the project has advanced seamlessly."



These existing refilling stations at the Catoca Diamond Mine will be rebuilt and protected with Grunau's overhead water-foam system.



FIRE PROTECTION

GRUNAU FIRE PROTECTION HELPS FLORIDA GOLF COAST UNIVERSITY EXPAND

When Florida Golf Coast University (FGCU) opened its doors in 1997, it was already planning for rapid growth. The University hoped to attract 30,000 students by the year 2020. In 2008, it surpassed the 10,000 student mark. To make sure its campus facilities kept pace with its student growth rate, FGCU outlined a building plan that called for more than 20 major projects over the next 10 years — most of them in student housing.

Through its general contractor, Kraft Construction, FGCU engaged Grunau to install fire protection systems in two of its new dormitories and the University's central energy plant. Grunau installed approximately 1,500 sprinkler heads to protect the 600-750 student beds housed in the dorms. The fire protection system installed by Grunau's team also included a 2,000 gpm diesel fire pump, which was housed in the central energy plant and supplies water for sprinklers in 20 campus buildings.

Although Grunau's work area was unoccupied because the dorms were new construction, the team did need to build a bridge to move supplies across a swampy area of FGCU's campus.

The FGCU project is a testament to the value of Grunau's long-term relationships with customers. Grunau originally worked with Kraft Construction on middle school fire protection jobs.

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METALS

GRUNAU METALS SUPPORTS LAUNCH SAFETY FOR NASA

As part of the NASA program to develop a new space exploration system to replace the aging space shuttle, NASA is preparing to test the Launch Abort System (LAS) for the new Crew Exploration Vehicle (CEV). The LAS includes a rocket sub-system that sits on top of the CEV. In the event of a malfunction, the abort system rockets fire and the CEV is separated from the main rocket assembly. Grunau Metals, along with Jacobs Technology, has been fortunate to be involved with NASA in this exciting project.

To perform this set of tests, a new gantry is required to allow access to the launch and crew vehicles during vehicle assembly and prior to launch. The gantry structure was designed by Jacobs Technology and detailed, fabricated and erected by Grunau Metals. The gantry structure is somewhat unique as it is built on four roller assemblies, each sitting on a rail. The gantry can then be rolled approximately 170 ft. into and out of the launch position for access and rocket shading. In addition to the mechanics of the roller assemblies, the gantry structure has moveable flip-up platforms, removable platform inserts and fixed platforms.

The Grunau Metals team worked with APi sister company LeJeune Steel, which fabricated the 48x40-foot steel structure that created the skeleton and main structural support for the gantry. Grunau also fabricated ancillary materials like catwalks, handrails and movable platforms. These features allow NASA engineers to walk on the gantry and easily access different levels of the rocket assembly.

The gantry is being erected at the White Sands Missile Range in New Mexico. Grunau Metals worked with trucking companies to ship materials from Milwaukee and Minneapolis to the job site. Also, due to tight security on location, each Grunau team member must undergo background checks prior to beginning work. Throughout the project, Grunau occasionally needs to stop work and exit the site to allow for a variety of governmental tests. The team used careful planning and coordination to manage work around these interruptions.

Not only is it challenging to work around the missile tests, Grunau Metals also faces adverse working conditions at the missile range. Winds on the gantry worksite can be in excess of 40 mph and frequently make it unsafe to perform welding or grinding. The Grunau team also remains on constant alert for desert wildlife such as snakes and spiders that can harm workers.

"This project involved a lot of heavy structure and engineering expertise," said Brad Landry, Grunau Metals' project manager. "We've faced some challenging situations, and our team has overcome them to remain on track for our expected completion date in early June."



Customer focused. Built on values.

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