



EXCELLENCE SINCE 1920

Mechanical and Fire Protection Contractors and Engineers

Winter/Spring 2001

The President's Corner

by Paul Grunau

With this issue of the Grunau Gram we feature two very exciting projects recently completed in Milwaukee, along with a summary of some significant projects we were fortunate to be a part of in Pittsburgh, PA.

As I travel and spend time with our employees and customers, I am continually reminded of the significant changes that have occurred in our business over the past few years.

Our customers continue to demand construction of the highest quality, and they absolutely deserve it! Beyond the construction, however, is a heightened emphasis on competence in other areas; system design, creativity, innovation, team building, listening, and relationship management. As we all read in business publications, customers demand a larger array of services from their vendors and suppliers. In fact, these relationships are now less supplier/customer, as they are partnerships.

I believe that in today's marketplace, that to effectively compete, and offer the wide range of technical and installation services that are required, that we must look at our business with a new paradigm.

We must consider our business as a group of relationships, rather than a series of projects. The relationships are the foundation, from which the projects flow, and we absolutely must focus our thinking and efforts on making the relationships with our customers the priority of our business. In doing this we begin to think hand in hand with our customers, to understand their business philosophy, and in turn to make decisions that are in their long-term best interest.

I believe that the most fulfilling aspect of business is the process of building and maintaining long-term relationships. These relationships are built on trust, and are highly productive.

They are now, and will remain, at the heart of our business philosophy.

Pittsburgh Fire Protection

Grunau Company's Pittsburgh office is a leader in Fire Protection Contract Services, Special Hazards, Design/Build, Inspection & Testing, and Service & Maintenance in the greater Pittsburgh area. Their continued growth and success is based on the creation of partnerships and strategic alliances with their customers.

The Pittsburgh office is proud to have been involved in several projects within Southpointe, a highly successful commercial and residential development located 12 miles southwest of Pittsburgh. Grunau teamed with Scalo Case Development Co., Inc., developer, and Mosites Construction Company, construction manager, to fabricate and install the complete sprinkler systems in the award winning projects below, all of which are representative of Grunau Pittsburgh's commitment to excellence.



Project: Stealth Technology Center

Square Footage: 116,000

Type of System: Wet, 6 Zones, 3 Standpipes

Number of Heads: 1200

NAIOP Project of the Year and Development of the Year Awards in 1998



Project: Solutions Consulting, Inc.

Square Footage: 63,000

Type of System: Wet, 4 Systems, 1 Preaction, 2 Standpipes, Alarm & Detection Equipment

Number of Heads: 900

2000 Master Builders Association Building Excellence Award for Craftsmanship



Project: Stealth II Technology Center

Square Footage: 100,000

Type of System: Wet, 6 Systems, 3 Standpipes

Number of Heads: 1100

Fast-track project built in 8 months thru winter. Home to Voest Alpine / VA Tech America U.S. Headquarters.

TEAM MEMBERS:

Mosites Construction Company, Construction Manager

Dean Mosites, President

Joe Wattick, Project Manager

Scalo Case Development Co., Inc., Developer

Jim Scale, Principal

Charlie Case, Principal

Lorenzi Dodds & Gunill, Architect

Bill Durkee, Architect, Principal

Grunau Company

Charlie Johns, Vice President/Project Mgr.

Cheryl Clarke, Designer

Vinnie Viglione, Designer

Norm Hall, Construction Manager

Bob Fuchs, Superintendent

Ed Barnes, Foreman

Bob Schad, Foreman



Potawatomi Bingo & Casino Entrance



Air Distribution for Atrium

The new 275,000 sq.ft., \$120 million Potawatomi Bingo & Casino is located in Milwaukee's Menomonee Valley. The choice for this location was made on the basis of tradition. Now designated as reservation land, the site of the casino and the surrounding valley were once home to many Native American cultures, including the Potawatomi.

The interior design reflects the Potawatomi culture as it is based on the Circle of Life – the Spring Casino in the East, the Summer Casino in the South, the Fall Casino in the West, and the Winter Casino in the North. At the casino's main entrance is a 100 foot glass tower. On top of the tower is a simulated flame, which symbolizes the Potawatomi culture. The Forest County Potawatomi Community, part of the ancient "Three Fires" alliance is known as the Keeper of the Flame. The Chippewa, known as Keeper of the Faith, and the Ottawa, known as Keeper of the Trade, are the other members of the alliance.

The new casino offers a variety of entertainment and dining, including blackjack tables, specialty bingo suites, and slot machines; a four-star restaurant, buffet dining, and a sports grill; 750 seat entertainment theatre; gift shop; heritage center; and a four-story parking structure with a skywalk to the casino.

Grunau Company began the interview process in January 1999, with the owner and construction manager. It was evident, at that time that all contractors selected must share in the excitement on this project. All team members were given the opportunity to make decisions in the owner's interest for the project so the design would be maintained within budget and on schedule for opening of the facility in the fall of 2000.

The project started immediately in February 1999, with team meetings consisting of all designers and construction trades whether associated with site development, parking structure, building core and shell, or detailed interior finishes and decorating. This approach allowed everyone to visualize and design immediately to the final building finishes and voice their needs during design.

After preliminary internal design and construction meetings within our company, Grunau decided the best way to provide an HVAC system engineered on a timely basis and meeting the latest design criteria for a multi-function casino facility would be to partner with a casino design engineer. The firm selected was AE Associates of Las Vegas, Nevada. Teaming with the consultant we were able to access their knowledge in smoke control, air distribution, load requirements, and many design related items they have experienced with their design and commissioning of several Las Vegas casinos.

The areas that required the most design and installation attention were the multiple kitchen/restaurant areas, bingo hall, casino, theatre, atriums, money count, and security areas. All of these areas had their own special requirements, but most important was the need to run 24 hours a day, provide cooling redundancy for all security and communication areas, and control smoke movement within the building and odors from the plant adjacent to the casino.

The mechanical systems consist of a central boiler and chiller plant providing 2100 tons of cooling and 25,000,000 BTUH of heating. These services were circulated to air handling, terminal heating, and cooling units by 23 pumps located in the mechanical room.

Thirteen custom roof mounted air handling units providing 500,000 cfm distribute air throughout the building. Multiple units were provided for the casino and bingo halls to provide redundancy. These units provide high percentages of outside air to ventilate these areas and flush smoke with frequent changes of air within the space.



Air Distribution for Northern Lights Theatre



Reclaim Coil for Snow Melt System

All units came with carbon filters that remove odors from smoke within the building and sources outside the building. The six air handling units for the casino and bingo halls have heat recovery wheels to capture available energy from within the building to reduce heating and cooling costs.

Redundant stand-alone Liebert systems provide cooling and humidity control for security, surveillance, and MIS wiring centers for the building. These areas monitor all activities within the building and cannot afford any shutdowns or failures. Many other electrical, dimmer, server, and UPS rooms throughout the building also require stand-alone systems.

The bingo hall is divided into three areas, and each one has its own special design requirements. Private bingo areas require separate control zones when used outside normal hall hours. The main bingo area, which allows smoking, can also be used for concerts requiring special air distribution and sound attenuation at the portable stage area. The final area, the non-smoking bingo hall, requires a design to maintain a smoke free environment by maintaining a positive pressure compared to the adjacent smoking bingo area.

The Northern Lights Theatre design was complex due to the exposed structure and seating arrangement for the theatre area. The stage area needs separate zoning due to the high cooling load from stage lighting while also needing attenuation of all sound due to air distribution and equipment noise.

The restaurants and kitchen areas throughout the building have high amounts of exhaust from kitchen hoods and dishwashers. This is provided by air supplied to the dining and prefunction areas and transferred into the kitchen food preparation areas from the main air handling units.

The areas calling for the most flexibility in design were the air distribution devices and location in the main casino and atrium. The main supply air ductwork was installed with 20 foot high manlifts off an unfinished gravel floor before the "theming contractor" for these areas finished final architectural design. After receiving the final theming, or as we may call it "interior decorating" plans, our foremen at the jobsite prepared 1/2 inch scale coordination plans to locate diffusers and their elevations to avoid the decorative wood structure, fabrics, and seasonal features provided within the casino.

Outside of the building the owner requested sidewalk areas to be provided with a snow melt system at the entrance and bus drop off areas. In order to provide this system and meet state requirements, a means of reclaiming waste heat needed to be determined. The main constant source of reclaim energy available is from the heat

of the boiler exhaust gases. A reclaim coil was installed on each stack and the glycol solution is circulated through seven panels in the sidewalk to melt the snow.

Grunau Metals was contracted for the design and fabrication of the metal pan stairs and railings for the access stairs in the main casino building, the stairs and railings in stair towers in the parking structure, and the hand railings for the theatre were custom fabricated on-site and installed. All HVAC units sit on support steel fabricated and installed by Grunau Metals.

There are certain projects that, when they become publicized, we at the Grunau Company look at as an opportunity to develop a relationship with an owner, and as a challenge to our design/build capabilities; the Potawatomi Bingo & Casino expansion was definitely one of these projects. We extend our thanks to the Potawatomi Community and all their members for giving this Team their trust and allowing us to work on this project with them as HVAC Design/Build contractor.

PROJECT TEAM

Forest County Executive Council
Forest County Gaming Commission
Potawatomi Bingo & Casino Management

Grunau Project Development, Construction Manager
 Bob Fenlon, Project Manager
 Larry Gilroy, Project Manager

AE Associates, Inc., Consultant
 Rob Finnegan, PE, Principal
 Vic Sibilla, Project Engineer

Zimmerman Design Group, Architectural Design
 Sandy Wiegand, Project Architect
 John Stolze, Designer

Thalden Boyd Architects, Interior Design
 Richard Hamstead, Project Architect

Grunau Company, Inc.
 Ron Kwiatkowski, Vice President/Project Manager
 Jeff Kuhnke, Senior HVAC Engineer
 Ken Dottai, Air/Water Balancer Engineer
 Tom Owen, Temperature Controls Project Manager
 Mark Gall, Grunau Metals Division Manager
 Rod Patzner, MEP Coordination
 Mike Reynders, Piping Superintendent
 Randy Duemke, Piping General Foreman
 Don Sindric, Piping Foreman
 Tom Greiner, Sheet Metal Superintendent
 Tom Stoiber, Sheet Metal Foreman
 Doug Legler, Sheet Metal Foreman
 Brad Shepherd, Temperature Controls Foreman
 Dale Poweleit, Temperature Controls Foreman
 Bob Niedzwiecki, Air/Water Balancer Foreman
 Bill Arends, Air/Water Balancer
 Mike Alexander, Ironworker Foreman
 Bob Antczak, Ironworker Foreman



AHU Service Platforms



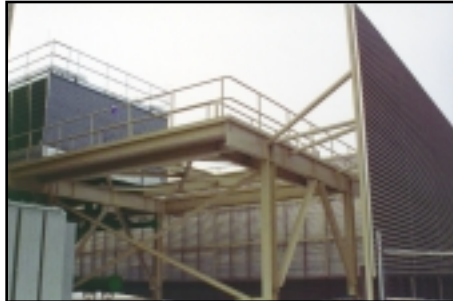
Snow Melt System

GENERAL MITCHELL INTERNATIONAL AIRPORT



Box Conduit & Pipe Setting

Cooling Tower & Access Platform



Boilers

Chillers



Condenser Pump Package

General Mitchell International Airport (GMIA) is a medium-hub airport owned by Milwaukee County and operated by the Department of Public Works, Airport Division, under the direction of the Milwaukee County Executive and the County Board of Supervisors. The first airport terminal opened on this site in July of 1927. With numerous additions and renovations throughout the years, the airport now has 42 gates, serves approximately 16 airlines that offer around 220 arrivals and departures daily, and provides air travel to roughly 90 cities direct or nonstop.

The existing heating/cooling plant had to be relocated to make way for an addition to the parking structure to accommodate the airports growing needs. In February 2000, Grunau Company was awarded contracts #10 and #11 to provide the complete mechanical work for a new heating/cooling plant to support the entire General Mitchell International Airport (GMIA) in Milwaukee, Wisconsin.

Other contracts were awarded to construct the building itself. Contract #10 consisted of the mechanical work inside the new plant. Contract #11 consisted of a new 1200 foot long underground box conduit to distribute the heating and cooling water to the airport.

Contract #10 was awarded to Grunau to install the County purchased chillers, cooling towers, boilers, and pump packages inside the new 25,000 sq.ft. plant along with the necessary piping, fire protection, and plumbing.

Grunau installed four 500 ton chillers, three 15,000 MBH boilers, three skid mounted pumping packages, and four cooling towers. The interconnecting piping for this equipment consisted of black steel pipe in all sizes up through 24 inches. A majority of this piping was prefabricated at our weld shop facilities in Oak Creek, then shipped to the jobsite and hoisted into place. The cooling towers sit 15 feet above grade on a support steel structure fabricated and installed by Grunau Metals. The tower area is then screened from view by a 22 foot high louver wall, the structure for which Grunau Metals also fabricated and installed.

The fire protection system consists of a standard wet system throughout the majority of the plant with a pre-action system in the garage area. The plumbing system consists of a men's and women's locker room, a kitchenette area, roof conductor system, and an underfloor drainage system for the main equipment room.

Contract #11 was awarded to Grunau as the general contractor to install an underground concrete box conduit 1200 feet long in which new 16 inch chilled water supply and return piping and 12 inch hot water supply and return piping was installed to distribute the water to the airport from the new plant. Due to the length and routing of the box conduit, it had to be completed in phases in order to minimize disruption to existing airport facilities. The piping that was installed was pur-

chased in preinsulated 40 foot lengths. When a phase of the box conduit concrete floor and walls was complete, Grunau would lower the four sections of piping into the box conduit via multiple cranes. The longest phase was over 300 feet long. Grunau assembled the appropriate lengths of piping next to the box conduit trench then hoisted them in with cranes. Each phase was then connected utilizing a window weld. Where each phase connected the piping could not be reached along the bottom of the box conduit to be welded. Therefore, a square opening of steel was cut out of the top of the piping to allow the welder to weld the pipe from the inside. Once the welder was at a point where the weld could be finished from the outside, the square opening or window was welded back in and the welding completed. This procedure of joining the phases helped to reduce the lag time between phases and helped expedite the project completion.

The original project was started in February 2000, and was to be completed in 180 days. Due to coordination issues and weather delays the project end date was extended and completed in September 2000. Thanks to the cooperation for all those involved.

PROJECT TEAM

General Mitchell International Airport

Barry Bateman, Airport Director
Mark Winkelman, Airport Maintenance Manager

Milwaukee County, Owner

Ken Loeffel, Project Administrator
Mark Hipp, Resident Construction Manager

Sverdrup Facilities, Inc./C.G. Schmidt, Inc., Jt. Venture, Construction Manager

Tom Baade, Construction Manager
Dave Grauvogl, Project Manager

Insulation Industries

Roger Peot, President

Johnson Controls

Tom Praeger, Project Manager
Chuck Berber, Project Engineer

Platt Construction

Mike Gastrow, Project Manager

Grunau Company, General Contractor

Larry Loomis, Project Manager
Paul Schmidt, Vice President Construction
Tom Owen, Electrical Controls Project Manager
Mark Gall, Grunau Metals Division Manager/
Project Manager
Eric Radke, Fire Protection Project Manager
David Bartoshevich, Project Engineer
George Bachman, Plumbing Superintendent
Mike Reynders, Steamfitter Superintendent
Tom Greiner, Sheet Metal Superintendent
Gerry Gelhaar, Steamfitter Foreman

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Grunau Company, Inc.
P.O. Box 479
Milwaukee, WI 53201

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