

Precast Concrete HEADOFTHECLASS



COST: A+ Precast concrete provides fast construction, eliminates trades and lowers lifetime maintenance.

TIME: A+

Precast components meet tight deadlines - fast design, fabrication and erection speed.

QUALITY: A+

PCI members produce certified, high-quality componenets to meet your design requirements.

McCook Community College Events Center

The McCook College Community (MCC) Events Center is a new stateof-the-art NCAA regulation sporting and event center that has been long overdue for the McCook community. The two-story, 54,000 square foot events center has a seating capacity for sporting events of 1,500, and 2,500 for non-sporting events. The MCC Events Center is also used for hosting public service activities such as business and industry conferences as well as concerts and cultural symposiums. This new event center was the answer the college needed to guickly build a replacement facility for the aging True Hall as it had fallen into disrepair after admirably serving as home to the college's athletic program for more than 70 years.

The architects chose precast concrete for the shell of the building as it was the only material that could accommodate the aggressive schedule



Owner: Mid Plains Community College • Architect: BVH Architects - Lincoln • Engineer: Lange Structural Group • Construction Manager: Straub Construction • Location: McCook, NE

and still conform to the budget. They also valued the inherit qualities that insulated load-bearing prestressed concrete wall panels bring to the table. Some of these include: high R-Values, less structure/more useable space and a varied pallet of finishes for both the exterior and interior of the building. These finishes were comprised of integral cast-in thin-brick and buff color along with revels and two depths of sandblasting.

They used precast concrete extensively in other areas such as

stadia rises, benches and hollowcore floors. The hollowcore floors allowed the designers to attain the long, uninterrupted spans they were looking for as well as helping to control sound and vibration transmission from floor to floor.

The community is very proud of what the new MCC Events Center represents for them now and into the future for many generations to come.



www.concreteindustries.com

Norris Intermediate School

This intermediate elementary school features precast concrete insulated sandwich wall panels to help meet its program requirements. The dominant portion of the façade is thin clay brick embedded into the precast concrete, allowing for the character and beauty of masonry integral with the added benefits of precast concrete. The design also incorporates scarlet red colored glazed brick to accentuate various areas of the façade. The buff colored concrete has a light sandblast finish as well as a deep sandblast to give the building a varied look. This



Architect: **DLR Group, Omaha, NE** • Structural Engineer: **DLR Group, Omaha, NE** • Contractor: **Hausmann Construction, Lincoln, NE** • Owner: **Norris Public Schools, Firth, NE** • Location: **Firth, NE**

finish strategy allowed the designers to use a single precast panel to mimic the look of several interfacing materials all while reducing the amount of trades, materials, and detailing necessary.



www.coreslab.com

Todd County Elementary School

Located in Mission, South Dakota, Todd County School District needed to replace existing buildings with updated facilities. The new elementary school was designed with precast as the preferred building material from the start but the architect and the owner wanted to avoid a mass production panel look and were concerned that budget restrictions would only allow for uniform generic panels. The precaster was able to provide an economical solution that incorporated the desired graphics, and utilized multiple finishes and colors based on the architect's design. Despite the desired graphics and colors, the project maintained its budget pricing.

The 74,000 square foot elementary school has three classroom wings, as well as a center commons area. Consisting of 34 panels, the gym box is encompassed by 12,300 square feet of 12 inch insulated wall panels. The rest of the building includes 156 panels and 22,100 square feet of 12 inch insulated



Owner: Todd County School District • Architect: LSE/Great Horse • Structural Engineer: Albertson Engineering • Contractor: Dean Kurtz Construction • Location: Mission, SD

wall panels, as well as 76 panels of 4 inch solid panels for an additional 1,460 square feet of precast.

To help control cost, the precaster offered a single element solution for the walls. Insulated wall panels were used in the classroom areas to serve as a water barrier, while also providing the necessary durable interior and exterior aesthetic. The electrician provided electrical outlets to be cast into these walls, that also included a Grade A finish on the interior that was painted on-site, creating a finished wall.

The school's mascot is a falcon,

which the owner wanted somehow incorporated into the exterior panels. The precaster embedded the outline of a falcon's head into the gymnasium's red exterior wall with a buff color that incorporated both acid etched and sand blasted finishes. Due to its prominent size, the falcon is a key feature of the school's entrance.

Todd County elementary will welcome its first students in the fall of 2014.



www.gagebrothers.com

Minneapolis Public Schools Hazardous Materials Buildings at North Star

Crest Precast supplied the Minneapolis School District with two 12' wide by 20' long & 8' clear ceiling height hazardous material storage buildings. The buildings were prefabricated complete with floor, walls and roof. They were assembled in La Crescent, MN with each building weighing in at 64,000 pounds.

Each building was designed to store forty-five 55 gallon drums of cleaning and paint solvents. The unique floors were designed to have containment features in case of accidental spill from the solvents.



Architect: ATS&R Architect /Engineers, Inc. (Dan Moll) · Engineer: ATS&R Architect / Engineers, Inc. (Gary Munkelt) · Location: Minneapolis, MN

One of the building floors had four containment cells to isolate chemicals from each other. Heavy duty fiberglass gratings were also supplied and installed by Crest Precast as flooring over the containment cells.

The buildings were pre-wired with explosion proof lighting, vandal proof

vents and security doors. And epoxy paint was used to coat the interior surfaces of both buildings and the exterior surfaces were an exposed aggregate finish with integral color.



Boat Works Commons

The Boat Works Commons is a new apartment community currently under construction in White Bear Lake, MN. The project overlooks the lake, and is located on the former site of Johnson Boat Works, a boat manufacturing company that revolutionized the sport of sailing. Its four story, 85 unit, upscale apartment building will be accompanied by a two story community building and museum, along with additional retail and public facilities.

The site will be managed jointly by public and private interests. While the residential and commercial units are privately owned, the City of White Bear Lake will maintain a public plaza on the site, as well as retain ownership of one level of the apartment building's 3-level parking ramp. The parking ramp is located underneath the framebuilt apartment building. The privately owned 41,500 ft² lower level and 34,000 ft² upper level will provide parking for apartment residents. The city-owned portion, which includes a 34,000 ft² interior section as well as a 7,000 ft² exterior lot, occupies the middle level.

This shared ownership resulted in an interesting engineering challenge.



General Contractor: **Moeding Partners** • Architect/Engineer: **Mattson MacDonald Young** • Location: **White Bear Lake, MN**

The City of White Bear Lake required post-tensioned slab construction for their portion of the parking ramp. The developers preferred the convenience of precast concrete. The architect, Steve Burch of Collage Architects of Minneapolis, worked closely with Stephanie Young of the Minneapolis engineering firm Mattson MacDonald Young to design a structure that incorporates both. The design allows for the different rates of expansion between a precast column and plank upper level and lower levels built of poured concrete post-tension slabs. The precaster was chosen to supply 29,868 ft² of 8" and 12" hollowcore, 696 ft² of solid precast slabs, and 344 12"x12" and 16"x16" precast columns for the precast portion of the project.

A standard expansion anchor connection was not able to be utilized

when a portion of the post tension slab ended up too close to where two of the precast column anchor bolts needed to be fastened to the castin-place pier. The precaster worked directly with precast engineering company, Reigstad & Associates, to develop a revised detail that allows the anchor bolts to be installed using a drill and epoxy method versus the standard expansion anchor connection.

This approach successfully achieved the required connection without disrupting the as-built condition, and kept the project moving forward as scheduled. The Boat Works Commons apartments are expected to open in late 2014.



www.countymaterials.com

Five15 On the Park

Molin Concrete Products is currently installing product on the Five15 Project in Minneapolis with Frana Companies. Located in urban Minneapolis, this project is an example of many of the high density developments along the Green Line light rail system in Minneapolis. Previously a vacant lot, the project will offer many units of affordable housing to the area.

Once completed, the Five15 project will boast upward of 260 units of rental



General Contractor: Frana Companies Inc • Architect & Engineer: BKV Group • Photo Credit: Erik Molin, Molin Concrete Products Co.; BKV Group • Location: Minneapolis, MN

space and will round out at six stories tall, the main level of which will feature retail and office space. By utilizing precast components in this type of mixed-use development, the designer is able to offer both below-grade parking for residents, retail at the main level and fire-rated separation for the residents above.

Products:

- Hollow Core Plank: 53,000 SF
- Solid Slabs: 3400 SF
- Columns: 2750 LF
- Beams: 6200 LF



Learn & Earn Half Day Seminars

Learn precast and earn continuing education credits!









NEW! Lateral Loads and Precast Concrete Design - Part II.

This half-day seminar is dedicated to the design of precast and prestressed concrete buildings for lateral loads generated by wind and earthquake ground motion provisions. The seminar provides an overview of lateral force resisting systems for precast and prestressed concrete structures. The seminar includes the calculation of member forces for a typical five-story office building located in the Midwest. Design procedures and calculations for typical members in the building are presented.

Lateral Loads and Precast Concrete Design – Part I. This half-day seminar is dedicated to the design of precast and prestressed concrete buildings for lateral loads generated by wind and earthquake ground motions. The seminar provides an overview of lateral load determination for precast concrete buildings, including both architectural and structural precast concrete. The seminar includes a brief history of wind and seismic lateral loads in building codes in the United States in conformance with IBC 2009, ASCE 7-05, and ACI 318-08. Numerical examples are presented for a typical five-story office building located in the Midwest.

Total Precast Concrete Design. Learn the advantages of a total precast building system during this half-day seminar. Strategies such as increased efficiency and shorter construction schedules of "dual use" structural and exterior cladding systems will be presented, as well as guidelines for the design and detailing of architecturally finished exterior walls, concrete tees, hollowcore plank, and precast concrete stairs. Integration of HVAC systems, building code requirements, and total precast's potential contribution toward LEED certification will also be discussed.

Designing Precast Concrete Parking Structures.

Learn how to design and detail precast concrete parking structures during this half-day seminar. Advantages such as decreased construction time, efficiencies of combining a variety of exterior finishes with exposed structural members, and precast concrete's potential contribution toward LEED certification will be discussed. Integration of HVAC systems, building code requirements, long-term durability, ramp and vehicle circulation types, safety, and maintenance issues will also be presented.

Continuing education credits are available for these presentations. All Half Day Seminars are 3.5 hours long and are approved for AIA HSW 3.5 LU. A certificate for 3.5 PDH is also available. Contact PCI Midwest at 952-806-9997 or e-mail mike@pcimidwest.org for more information on how you can participate.

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