

www.PCIMidwest.org

spring 19

How Precast Builds - Versatility



The most versatile of building systems is precast concrete construction. Its ability to adapt to many different functions makes it a favorite of architects, engineers, and contractors alike. What can you build with precast concrete? Ask anyone in the design community and you will receive a varied mix of their favorite applications of precast concrete. From athletic stadiums, office buildings, schools, data centers, and student housing, to retail, prisons, courthouses, parking structures, and much more, precast concrete reinvents itself every time it is specified.

Pinnacle National Development Center





Mixed-Use Building Award Winner

Pinnacle National Development Center represents a groundbreaking collaboration between a professional sports team, a national sports federation, and a firstclass sports medicine provider. The new, 81,000 square foot training center for the professional soccer club Sporting Kansas City also provides a permanent facility for training U.S. Soccer coaches and referees and is home to the Children's Mercy Sports Medicine Center, which provides a full range of sports medicine services, resources, and programming for student-athletes in all sports.

The project was intended to provide training for athletes from across the United States while conveying a distinctive sense of place that would invite each visitor to feel like a part of the local environment, says Dirk McClure, director of business development for Enterprise Precast Concrete. The sandcolored precast concrete facade with threedimensional patterning helped to make that happen. "Through the use of modular, repetitive form liners, the custom design pattern makes a statement, and this oneof-a-kind design solely belongs to the new home of this team," McClure says.

Precast concrete was not the initial choice for this project, McClure notes. When they

designed the building, the architects wanted use depth, color, and textural variation to express "the movement of the body and the ball," he says. The design team explored multiple exterior-cladding options, such as fiber-reinforced concrete or fiber-cement panels. But after multiple design iterations and cost estimates for these options, team members determined that they needed another option to stay within budget. "Solid architectural precast concrete panels were the next logical step," says McClure.

The primary design element is the pronounced diamond pattern cast into the precast concrete wall panels. The look was chosen after an extensive mock-up process, in which the precast concrete team filmed a panel for a full day to learn how sun and shadows affected the protrusions in the precast concrete panel design. "Everyone loved it," McClure says.

An acid-etched finish was also used in the entryway of the building for a modern design sensibility, and a sandblasted finish at the field level integrates the design with the landscape. A rain-screen system featuring a wood veneer was added as further complement to the precast concrete panels.

Along with delivering the desired visual effect, the use of precast concrete helped the project stay on schedule and budget. As winter approached, "precast concrete contributed to a fast-track delivery method with quick erection times," McClure explains. Also, precast concrete "offered a cost-effective exterior design solution," he says.

The versatility of precast concrete helped to meet the client's ultimate goal of creating a unique building whose design feels local to the area but can also stand out on the national stage. "With a client as passionate and involved as the design team was, this facility successfully came to life as a worldclass training facility and exceeded all expectations," McClure says.

Owner: Sporting Club, Kansas City, KS Tenants: Sporting Kansas City, U.S. Soccer, Children's Mercy Sports Medicine Center Precast Specialty Engineer: Enterprise Precast Concrete, Omaha, NE Architect: Populous, Kansas City, MO Engineer of Record: Walter P Moore, Kansas City, MO General Contractor: Turner Construction, Kansas City, MO Photo Credit: Enterprise Precast Concrete and Jacia Phillips Photography Location: Kansas City, KS



www.enterpriseprecast.com



St. John's Chapel and Mausoleum



Religious Structure Award Winner

St. John's Chapel in Columbia, SD, is a one-story, 2200 square foot structure that features a clean, white "clapboard" facade with stained glass windows and a steeple topped by a simple, lighted white cross. Visually, it resembles other community churches that have historically anchored small towns across the Midwest. However, unlike the stick-frame structures favored in the past, this chapel has a precast concrete facade that combines a classic look and feel with modern durability.

The client, whose father had once been mayor of the town, wanted a sustainable design that would resemble a traditional 19th-century prairie church, but the chapel also had to be built to withstand South Dakota's hot summers and snowy winters. The "need for durability and sustainability was the biggest challenges for the project," says Eric Kurtz of Gage Brothers, the precaster for the project.

The project team considered several design options and ultimately chose to use precast



concrete to meet the aesthetic, durability, and low-maintenance requirements. "The architect recognized the inert properties that precast concrete was going to provide," Kurtz says. "The formability allowed for the architectural exterior finish; form liners achieved the shape and texture for the 'clapboard' siding; and concrete ingredients provided the integral color that would achieve a no-maintenance exterior."

The exterior walls were made with precast concrete panels simulating wood clapboard lap siding, with metal stud framing on the interior. The precaster used a form to create highly defined, white "clapboard" siding. "The choice of white concrete makes maintenance of the exterior a nonissue," Kurtz says.

The production crew used the thickest plastic available within the form to replicate the clapboard look and ensure that the shape was maintained throughout production. The precaster also designed panels to work with the natural size of the liner to eliminate the need for splicing liners. "These were important aspects of the project as the precast concrete was used for both the structure and architectural exterior finish of the chapel," explains Kurtz.

The off-site production and speed of erection also contributed to the success of this project, Kurtz says. "The contractor took advantage of getting the structure up and enclosed quickly to allow completion of the interior work in an enclosed and tempered condition." The result is a beautiful, modernday chapel that is "built for eternity."

Owner: Private client

Precast Specialty Engineer: Gage Brothers, Sioux Falls, SD Architect: Mekus Tanager, Greenville, SC Engineer of Record: Albertson Engineering, Rapid City, SD General Contractor: KyBurz Carlson Construction, Aberdeen, SD Photo Credit: Gage Brothers Location: Columbia, SD



FLOOD



Harry H. Edwards Honorable Mention Award Winner

The FLOOD project in Omaha, NE, is a novel example of how precast concrete can be used to transform a community space. The developers took an empty, early-20thcentury building and transformed it with an architectural and art installation using precast concrete to educate the community about design, art, architecture, and manufacturing.

Unlike permanent museum buildings, which can require massive budgets to build and maintain, this project used the existing urban infrastructure to create a temporary exhibition space. Then, the designers brought in innovative ultra-thin precast concrete panels to serves as the canvas for urban industrial art. Six ultra-thin, 12-ft-wide precast concrete panels were custom designed to meet the needs of this project. Each panel is just 1½ inch thick and weighs approximately 2,000 pounds—which is roughly one-third lighter than traditional architectural precast concrete panels. However, the precaster was able to deliver comparable levels of strength, durability, and crack resistance through the use of a 5000-psi concrete mix and prestressed, corrosion-resistant stainless steel wire cables spaced 4 inches apart throughout the panel interiors.

A steel erector on a boom was used to load the main-level panels through a storefront window and into the upper level via a fire escape exit door. Once the panels were in the building, the design team established a ½-inch-thick steel plate frame around the border of each panel and applied black waterproofing by hand as the art to the canvas. After applying the waterproofing, the team dragged a 10-foot-wide steel plate along the top of the frame on each panel in one move, creating a unique finished texture for each panel.

When the waterproofing had cured, the erection team used simple rigging equipment to hoist the panels into position and supported them from 3/8-in.-diameter cable loops attached to steel beams between the existing cast-in-place concrete columns. The result is a remarkable and sublime installation that appears to float in air within the original, raw cast-in place concrete structure of this historic building.

Owner: Standard Development, Omaha, NE Engineer of Record: Enterprise Precast Concrete, Omaha, NE Architect and General Contractor: Mike Nesbit Studio, Los Angeles, CA PCI-Certified Erector: Patriot Steel Erection, Omaha, NE Photo Credits: Mike Nesbit Studio Location: Omaha, NE



www.enterpriseprecast.com



TCO Performance Center Campus

Molin Concrete Products was contracted to design, produce and install the architectural precast wall panels for multiple buildings at the new campus for the Minnesota Vikings Headquarters and Training Facility in Eagan, MN. The Vikings campus, on about 35 acres just south of Interstate 494 and east of Dodd Road, has four outdoor practice fields (two are heated, one is synthetic), a 6,500seat outdoor practice stadium (expandable to 10,000) and a fieldhouse with a 98-foot roof for punting. The Vikings' brand-new headquarters (the Twin Cities Orthopedics Performance Center) is more than double the square footage of their old headquarters, Winter Park, in Eden Prairie.

Molin's scope of work on the new facility included insulated and uninsulated architectural precast panels and precast stairs for the Players Training Facility, the Headquarters Building, the Twin Cities Orthopedics Medical Office Building, The Vikings Practice Stadium and the Twin Cities



Orthopedics Sports Medicine Building.

Along with an expedited construction schedule, this project required installation of the precast wall panels to be completed after several areas of projecting structural steel have been installed. Molin worked with the project team to resolve what some companies may consider an unreasonable construction sequence to successfully complete the installation of the "tucked under" precast panels. After the architectural precast wall panels were installed, Molin's field team completed the joint sealant and final field washing processes for completion of another successful wall panel project.

Architect: Crawford Associates, Kansas City, MO General Contractor: Kraus Anderson Construction Location: Eagan, MN



www.molin.com

Creighton University Ruth Scott Training Center

The \$5 million Ruth Scott Training Center is the latest addition to Creighton University's east campus athletic corridor. The 16,000 square foot building will serve as the new training home for Creighton University's volleyball and women's basketball teams. The facility provides space for two fullsized basketball and volleyball courts, six basketball hoops, two automated volleyball nets that lower from the ceiling, state-ofthe-art audio and visual equipment to film and review practices, a hydration station and additional storage space. The new training center will help remedy logistical troubles scheduling games and practices between the volleyball and basketball teams.

The exterior façade of the building features architectural precast concrete insulated wall panels. The precast exterior was

chosen based on cost savings and accelerated schedule capabilities that would allow fast track construction. The exterior of the building consists of thin brick and decorative acid etch buff accents. There are a number of distinct brick coursing patterns, projections, and radiused panels incorporated into the exterior while the interior was power troweled to be site painted.

Construction on the training center was completed in January 2019, with the facility dedicated on February 4, 2019. Because of precast concrete, Creighton University Athletics will have a beautiful yet functional facility which will make a major statement for years to come.

Architect and Structural Engineer: Leo A Daly, Omaha, NE Contractor: MCL Construction, Omaha, NE Owner: Creighton University Location: Omaha, NE



www.coreslab.com



Health Partners Bloomington Parking Structure



All Precast Parking Structure Honorable Mention Award Winner

When Health Partners healthcare facility signed a new lease for its corporate headquarters in Bloomington, MN, the extension allowed for significant upgrades, including a new, eight-level, all-precastconcrete parking structure. The new ramp includes 1,666 parking stalls to serve more than 2,500 healthcare employees who work on the campus, giving them an easier, safer, and more accessible parking solution. The new structure dramatically expands future growth opportunities for the mixeduse development, while shortening the distance employees have to walk from their cars. It also allows site owners to develop acres of impervious surface parking in the future. Precast concrete guickly emerged as the material of choice to meet the cost, schedule, durability, and expandability goals for the ramp.

From the early stages of design, the precast concrete fabricator, contractor, architect, structural engineer, and parking planners





worked together to fashion a design that efficiently met the performance and design goals for the project. The efficiency of a simple box was embraced in conceptual design, and the team found an opportunity for variation and relief in the detailing of the panels. Sandblasted, acid-etched, and honed corbel finishes provide color and texture, while simple, framed relief in the casting beds adds reveals that cause light and shadow to shift throughout the day.

The arrangement of panels with different finishes within the facades lends a purposefulness to the design, helping the structure to mesh with the overall campus development and meld into the background despite its size. To inject further design appeal into the project without overshadowing neighboring structures, the design team added a "light wall" component to the exterior that provides a vertical expression of interlocking white corbels and contrasts with the shades of grey in the horizontal panels. These vertical elements also cover the sloping ramp floors, giving the exterior appearance a simple interplay of vertical and horizontal lines. The resulting design delivers a flexible, low-maintenance solution that can be expanded to accommodate future growth, while blending easily with the existing infrastructure.

Owner: McGough Development, St. Paul, MN Architect: BWBR Architects, St. Paul, MN Engineer of Record and Precast Concrete Specialty Engineer: Ericksen Roed & Associates, St. Paul, MN General Contractor: McGough Construction, St. Paul, MN Photo Credit: McGough Construction Co., Inc., Wells Concrete



www.wellsconcrete.com

Learn & Earn Box Lunches

PCI Midwest provides continuing education programs on a variety of topics. These programs are easily tailored to conference room or classroom lunch programs. Architects and engineers can learn about precast concrete hollow-core floors and walls, architectural precast concrete, precast parking structures, glass fiber reinforced concrete, high performance precast concrete and much, much more. Contact mike@ pcimidwest.org to request a program for you or your company.



Associate Members

ALP Supply

www.alpsupply.com Jim Valent, Regional Sales Manager jvalent@alpsupply.com

Architectural Polymers, Inc.,

1220 Little Gap Road Palmerton, PA 18071 610-824-3322 www.apformliner.com Marshall Walters marshall@apformliner.com

Ash Grove Cement

1101 Cody Street Overland Park, KS 66210 Dave Suchorski 913-205-8146 dave.suchorski@ashgrove.com Mark Kreiser 913-451-8900 mark.kreiser@ashgrove.com

BASF

2955 Eagandale Blvd Eagan, MN 55121 www.basf.com Contact: Denise Guzzetta 605-310-5223 Denise.guzzetta@basf.com

Beton-Stahl, Inc.

2003 O'Neil Rd Hudson, WI 54016 715-808-0213 www.beton-stahl.com Corey Leith info@beton-stahl.com

Carl Harris Co, Inc

1245 S Santa Fe Wichita, KS 67211 Phone: 316-267-8700 Contact: Carl Harris

Cheesebrough Brokerage Inc.

448 Lilac Street Lino Lakes, MN 55014 Rep: Patrick Cheesebrough 651-717-6060

Commercial Metals Company

1 Steel Mill Drive Seguin, TX 78155 www.cmc.com 830-372-8284 Jon Kinnischtke - 719-240-0514

Continental Cement

www.continentalcement.com Contact: Brett Heinlein: 563-344-4488 Contact: Dave Meyer: 612-889-5236

Dayton Superior

1125 Byers Road Miamisburg, OH 45342 937-866-0711 www.daytonsuperior.com Bob Roeller bob.roeller@daytonsuperior.com

DRL Drafting and Design

770 Technology Way, Suite 1C Chippewa Falls, WI 54728 715-726-9656 www.DRLDD.com Contact: Don Loew 715-726-9656 ext 101 don@drldd.com

Dynamic Color Solutions

2024 S. Lenox Street Milwaukee, WI 53207 www.dynamiccolorsolutions.com 414-769-2585

e.Construct.USA, LLC

11823 Arbor Street, Suite 200 Omaha, NE 68144 www.econstruct.us 402-884-9998

Elematic

19745 Sommer Drive Brookfield, WI 53045 www.elematic.com 262-798-9777

Endicott Thin Brick & Tile LLC

PO Box 645 Fairbury, NE 68352 www.endicott.com Rep: Dean Schmidt 402-729-3315 Rep: Jim Riccio 402-587-1764

Fister Quarries Group

1150 Lyon Road Batavia, IL 60510 www.fisterquarries.com 800-542-7393

Fitzgerald Formliners

1500 E Chestnut Ave Santa Ana, CA 92701 www.formliners.com Edward Fitzgerald 714-547-6710

GCC of America

600 S Cherry St. #1000 Glendale, CO 80246 www.gccusa.com April Stier - astier@gcc.com Chuck Cox - ccox@gcc.com

GCP Applied Technologies

Chuck Stauber 612-246-7175 charles.l.stauber@gcpat.com www.gcpat.com

GRT Admixtures

2978 Center Court, Eagan, MN 55121 www.grtinc.com 651-454-4151

Hamilton Form Company

7009 Midway Fort Worth, TX 76118 www.hamiltonform.com 817-590-2111 sales@hamiltonform.com

Hayden-Murphy Equipment Co, Inc.

9301 E Bloomington Fwy Minneapolis, MN 55420 www.hayden-murphy.com Len Kirk 952-884-2301

Heyer Engineering, Inc.

1020 36th Street South, Suite A Fargo, ND 58103 701-280-0949 www.heyerengineering.com Contact: Eric Greff, PE

ICONX LLC

5525 Kaw Dr Kansas City, KS 66102 www.iconxusa.com Phone: 913-208-4274 Contact: Joel Foderberg

Insteel Wire Products

1373 Boggs Dr Mt. Airy, NC 27030 www.insteel.com 800-334-9504 Rep: Randy Plitt rplitt@insteel.com

Iowa Steel & Wire Company

1500 W Van Buren, PO Box 156, Centerville, IA 52544 www.okbrandwire.com 800-325-5118

JVI Inc.

169 N Hampshire Elmhurst, IL 60126 www.jvi-inc.com

LafargeHolcim

2815 Dodd Road Suite 102 Eagan, MN 55121 800-562-3989

Lehigh Cement

12300 Dupont Avenue South Burnsville, MN 55337 www.lehighcement.com Rep: Dave Grausam

Masonry & Precast Specialty Services

726 N Frontier Rd Papillion, NE 68046 www.masonryprecast.com 402-306-6004 Craig Christensen

Meadow Burke

6467 S Falkenburg Rd Riverview, FL 33578 www.meadowburke.com Nick Fain 513-507-7223

METROBRICK

1201 Millerton Street SE Canton, OH 44707 www.metrothinbrick.com Rep: Dianne Young 888-325-3945

Midwest Precast Services

4675 40th Avenue South, #140 Fargo, ND 58104 www.mwprecastservices.com 701-893-0188 Paul Nelson Paul.nelson@mwprecastservices.com

Nawkaw Mid-America

12901 St. Charles Rock Road Bridgeton, MO 63044 www.nawkaw.com Andrew Ness: 636-373-2843 aness@midwestblock.com

Nox-Crete Products Group

1444 S 20th St, Omaha, NE 68108 www.nox-crete.com Jeff Bishop 402-401-0506 jbishop@nox-crete.com

Pathfinder Systems

695 Ottawa Beach Road Holland, MI 49424 616-395-8447 www.pathfindersystem.com Dana Hook: 779-771-3586 Dana@PathfinderSystem.com

Polylok, Inc.

3 Fairfield Boulevard Wallingford, CT 06492 www.polylok.com 877-765-9565 Jim Redding jim@polylok.com

Sandman Structural Engineers

1587 30th Avenue South Moorhead, MN 56560 218-227-0022 www.sandmanse.com Contact: Kurt Sandman, PE

Shuttlelift

49 E Yew Street Sturgeon Bay, WI 54235 www.shuttlelift.com 920-743-8650

Sika Corporation

1515 Titanium Drive Ottawa, IL 61350 www.usa.sika.com Andy Pearson 920-655-7600 pearson.andy@us.sika.com

Simem America Inc.

12100 Crown Point, Suite 100 San Antonio, TX 78233 www.simemamerica.com Jay Newton 210-568-9987

SKAKO Concrete, Inc.

7985 Dunbrook Rd, Suite F San Diego, CA 92126 www.skako.com John Leszczynski 852-271-7341

Spillman Company

www.spillmanform.com Ted Coons tcoons@spillmanform.com

Splice Sleeve North America, Inc.

38777 W Six Mile Rd #205 Livonia, MI 48152 www.splicesleeve.com 877-880-3230 Rep: Toshi Yamanishi

Standley Batch Systems, Inc.

PO Box 800, Cape Giradeau, MO 653702-0800 www.standleybatch.com Ralph Kiel - ralphk@standleybatch.com

Stehler Structural Engineering

6 Scotch Pine Road St. Paul, MN 55127 www.stehler.net 651-278-1571 Don Stehler don@stehler.net

Sumiden Wire Products Corp.

710 Marshall Stuart Drive, Dickson, TN 37055 www.sumidenwire.com Matt Speedy 614-537-5988

Sylvan Products, LLC

7400 SW Cherry Drive Portland, OR 97223 503-639-9000 www.sylvan-products.com Contact: Bryan White 503-608-3930 bwhite@sylvan-products.com

Thermomass

1000 Technology Drive, Boone, IA 50036 www.thermomass.com 800-232-1748 Rep: Brad Nesset

THiN-Wall

210 N. 13th Street Seward, NE 68434 www.thin-wall.com 800-869-0359

UltraSpan Technologies

165 Fennell Street Winnipeg, MB R3T OM6 204-992-3200 www.ultraspan.ca Adam Formuziewich: 204-292-3666 adamf@ultraspan.ca

US Formliner

370 Commerce Blvd, Athens, GA 30606 www.usformliner.com Ray Clark 706-549-6787

Voeller Solutions

369 W Western Ave PO Box 325 Port Washington, WI 53074 www.voellersolutions.com Joe Fisher 262-284-3114 joe.fisher@voellermixers.com

West Central Steel, Inc.

105 19th Street NW Willmar, MN 56279 www.wcsteel.com 320-235-4070 Contact: Jeff Allinder 320-214-5228 jallinder@wcsteel.com

Producer Members

Кеу:	Precast	Trim	sui			labs			ŝ				/Slabs	SIS
Architectural Structural Bridge – Transportation	Architectural	Architectural	Beams/Colum	Wall Panels	Poles	Hollow-core S	Single Tees	Double Tees	Stadium Seat	Modular Cells	Soundwalls	Piles	Boxed Beams	I Beams/Girde
Advanced Precast Co. (Mike Decker) Farley, IA, 563-744-3909 • www.advancedprecastcompany.com	•			•										
Concrete Industries, Inc. (Randy Schultz) Lincoln, NE, 402-434-1800 • www.concreteindustries.com			•	•		•		•	•			•		•
Coreslab Structures (Kansas) Inc. (Mark Simpson) Kansas City, KS, 913-287-5725 • www.coreslab.com											•	•	•	•
Coreslab Structures (Missouri) Inc. (Michael Saint) Marshall, MO, 660-886-3306 • www.coreslab.com	•		•	•			•	•	•				•	•
Coreslab Structures (Omaha) Inc. (Todd Culp) Bellevue, NE, 402-291-0733 • www.coreslab.com	•	•	•	•				•	•	•	•	•	•	•
County Materials Corp. Roberts, WI (Steve Hoesing, 800-289-2569) • Bonne Terre, MO (Scott Boma, 573-358-2773) • www.countymaterials.com	•	•	•	•		•			•	•	•	•	•	•
Crest Precast Concrete, Inc. (Gary Mader) La Crescent, MN, 507-895-2342 • www.crestprecastconcrete.com	•	•		•							•		•	
Crossland Prefab (Rob Newsom) Columbus, KS, 620-429-1414 • www.crossland.com	•		•	•										
Enterprise Precast Concrete, Inc. Omaha, NE (Shawn Wentworth) 402.895.3848 • Overland Park, KS (Dirk McClure) 913-312-5616 • www.enterpriseprecast.com	•	•		•										
Fabcon Savage, MN (Jim Houtman) 952-890-4444 Columbus, OH, Mahoney City, PA and Pleasanton, KS - www.fabcon-usa.com				•							•	•		
Forterra Building Products (Joel Mich)Maple Grove, MN, 763-545-7473 • www.forterrabp.com					•						•	•	•	•
Gage Brothers Concrete Products, Inc. (Tom Kelley) Sioux Falls, SD, 605-336-1180 • www.gagebrothers.com	•	•	•	•		•		•	•		•			•
Mid America Precast, Inc.(Rod Tanner)Fulton, MO, 573-642-6400• www.midamericaprecast.com	•	•	•	•	•					•	•			
Molin Concrete Products Co. (John Saccoman) Lino Lakes, MN, 651-786-7722 • www.molin.com	•		•	•		•			•					
MPC Enterprises, Inc. (Jeff Moehle) Mt. Pleasant, IA, 319-986-2226 • www.mpcent.com	•	•	•	•	•		•	•	•	•	•			
PDM Precast, Inc. (Adam Petersen) Des Moines, IA, 515-243-5118 • www.pdmprecast.com	•		•	•		•	•	•	•					
Prestressed Casting Co. (David Robertson) Springfield, MO, 417-869-7350 • www.prestressedcasting.com	•		•	•			•	•	•		•			
Prestressed Concrete (Chris Goevert) Newton, KS, 316-283-2277 • www.prestressedconcreteinc.com	•		•	•			•	•	•		•	•	•	•
Stress-Cast Inc (Jim Markle) Assaria, KS, 785-667-3905				•		•								
Taracon Precast (Paul Nelson) Hawley, MN, 507-380-9423 • www.taraconprecast.com	•		•	•		•	•	•	•		•			
Wells Concrete Wells, MN, Albany, MN and Maple Grove, MN (Spencer Kubat, 800-658-7049) • Grand Forks, ND (Mike Mortenson, 800-732-4261) • www.wellsconcrete.com	•	•	•	•		•		•	•		•		•	