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summer 19

# **How Precast Concrete Builds - Efficiently**



The definition of efficient is "achieving maximum productivity with minimum wasted effort or expense." Precast concrete embodies this term throughout every stage of a building's life. From concept through completion, precast concrete checks every box. Efficient design uses thinner sections, precast concrete production uses the least amount of labor and materials, the speed of installation accelerates schedules, and the result is reduced operating costs for a precast concrete building.

# **Phillips-Medisize**



Phillips – Medisize, a Molex Company, is building a new 230,000 square foot manufacturing facility on the St. Croix Meadows site in Hudson, WI. The site sat idle for the 17 years and was previously the home to the St. Croix Meadows Greyhound Racing Park. The facility will support more than 250 employees with jobs ranging from skilled manufacturing to engineering. Construction is expected to be complete by the middle of 2020.

Molin Concrete Products worked directly with Market & Johnson, River Valley Architects, and Ericksen Roed & Associates, through the design development phase and was selected to provide the architectural precast wall panels for the new facility. Molin provided the project team with tours of completed projects and Molin's precast concrete production facilities. They also provided budgeting assistance and precast samples to assist the owner and design team in selecting the final building aesthetics. Architectural precast concrete mix colors, textures and additional features were proposed to help achieve the vision of the owner and architect.

Molin began shop drawings and engineering

services while working with the design team to finalize the construction drawings to meet the projects required construction schedule. During the pre-installation process, Molin's project manager and field superintendent coordinated site access, crane and trucking logistics, safety and installation plans with Market & Johnson's project managers and job superintendents all throughout a recordbreaking harsh winter.

Ultimately, Molin designed, produced and installed approximately 60,000 square feet of architectural insulated precast and solid precast wall panels incorporating a light color mix with an etched finish, recessed abrasive blast and form liner bands to provide the visual effects desired by the owner.

Project: **Phillips-Medisize** Precaster: **Molin Concrete Products Co.** Architect: **River Valley Architects** Engineer: **Ericksen Roed & Assoc** Contractor: **Market and Johnson Inc.** Photo Credit: **Market and Johnson** 



# **Canton Performing Arts Center**

To meet the needs of both the Canton School District and the community, Architecture Incorporated designed this 40,000 square-foot performing arts center. Though it is attached to the Canton High School via a secure entrance, it has a separate lobby and restrooms so that community groups can also use the space. Acoustical and theatre consultants collaborated with the firm to help inform the



design of space and ensure high-quality acoustical performance. The auditorium seats 1,000 and includes a balcony, side performance decks, orchestra lift, catwalks, sound booth, lighting control rooms, and a fully equipped proscenium stage with a fly gallery. Additional spaces include dressing rooms, areas to apply makeup, a scene shop, storage and a lobby with space for concessions, box office and coat check. The exterior building materials were selected to seamlessly blend with the existing school while simultaneously boasting a unique look and feel. The interior finishes are contemporary with wood accents, using Canton's school colors in a sophisticated way.

Architect: Architecture, Incorporated Contractor: Henry Carlson Construction, LLC Specialty Engineer/Drafter: PTAC Photo Credit: Gage Brothers Location: Canton, SD



# **UNL College of Business**

Robert AM Stern Architects of New York in partnership with Alley Poyner Machietto Architects of Omaha, NE collaborated on the 240,000 square foot College of Business for the University of Nebraska. The exterior is comprised of glass and precast concrete wall panels clad with natural limestone provided by US Stone Industries. The 70,000 square feet of Silverdale limestone with a honed finish created a visually appealing facade.

The 3'x5' stone pieces were attached to the precast at the precast facility with stainless



steel anchor pins and shipped to the site in large panels. This panelization of the stone in the plant minimizes the time and labor compared to installing the stone piece by piece at the jobsite. Another advantage to the stone clad panels is the reduction of loading on the steel framed structure as the

> precast concrete panels are self-supporting and simply tied back to the steel structure. This allows for unique shaped panels to be designed and fabricated without additional framing.

Architect: Robert AM Stern (in Collaboration with Alley Poyner Machietto Architecture) Engineer: TD2 Engineering Contractor: Hausmann Construction Owner: University of Nebraska -Lincoln Precast Specialty Engineer: Enterprise Precast Conrete PCI Certified Erector: Davis Erection Photo Credits: Arch Photo KC Location: Lincoln, NE



# Pittsburg, KS Middle School Gym Addition

Crossland Prefab joined with Prestressed Concrete Construction to provide the precast panels needed for the Pittsburg Middle School's Gym Addition. This project added three different elements to the Middle School; a 7,000 square foot locker room that would double as a FEMA shelter, a 7,000 square foot weight room and a 13,000 square foot competition size



gymnasium. A connection link was included to tie the new features to the existing building. Approximately 5,000 square feet of thin brick veneer was placed on the building's exterior in select areas to help highlight entry ways and create a pleasing aesthetic.

The remaining external concrete was sandblasted, along with the exposed concrete in the gymnasium and interior corridors. All of the exterior walls for this project were precast panels, as well as some of the interior walls. This project boasted 124 precast concrete panels, of which 101 were insulated. Precast was chosen on this project because of the FEMA shelter, but also because of its resiliency and the minimal maintenance that is required.

Architect: DLR partnered with Corner, Greer and Associates Engineer: DLR Contractor: Crossland Construction Owner: Pittsburg Middle School Precast Specialty Engineer: Needham Engineering PCI Certified Erector: Crossland Construction Location: Pittsburg, KS



# White House Custom Colour

Eagan-based photo lab White House Custom Colour has taken a big step toward an expansion of its corporate campus by purchasing almost 11 acres as the site of two new buildings.

White House, which moved to the Waters Business Center in Eagan from South St. Paul in 2007, built this 85,200-squarefoot warehouse and production space in November, 2017. The overall campus sprawls across 17.85 acres and has grown to about 235,000 square feet of office, warehouse and production space with the addition. In addition, White House has added about 200 employees to its local workforce through the expansion, relocation and consolidation of operations from other facilities. White House got its start in 1978 as a photo finisher that catered primarily to Twin Cites wedding photographers. It has since expanded into printing photo



books and greeting cards, and sells related products including backgrounds for photo shoots and framed prints.

Wells Concrete partnered on this total precast project to include nearly 70,000 square feet of precast concrete members including hollowcore and architectural wall panels. The wall panels demonstrated a unique acid etch and sandblast finish, with thin brick accents. An interesting aspect about this project is the 13" thick vertical panels Wells Concrete created, combined with 12" thick spandrels to give the elevation different depths for a truly remarkable finished look.

Contractor: Zeman Construction Architect: Sperides Reiners Architects, Inc. Engineer: Ericksen Roed & Associates Owner: White House Custom Colour Location: Eagan, MN



www.wellsconcrete.com

# Peru State College Performing Arts Center

The original Peru State College campus performing arts center was built in 1921 and the theatre retains the sweeping curves of the time period. After many generous donations from alumni and area residents, along with funding from the Nebraska State Legislature, a new addition was recently constructed which includes a new main and second floor lobby, costume and prop workshops, dressing rooms, a green room, new bathrooms, and an extended stage.

This historic campus building remodel features precast concrete insulated wall panels. The precast exterior was chosen based on the material's ability to mimic the existing architecture, cost savings, energy efficiency, and accelerated schedule



capabilities.

The exterior of the building consists of thin brick with a pattern to match the existing building. The brick that was used on the project was sourced from Endicott who was able to provide a very good match for the almost 100-year-old brick on the original building. There is also ornamental buff acid etched banding that adorns various areas of the façade as well as around the window sills and surrounds.

Architect: Architectural Design Associates, Lincoln, NE Structural Engineer: Structural Design Group, Lincoln, NE Contractor: Rogge General Contractors, Lincoln, NE Owner: Peru State College Location: Peru, NE



# **Rochester Ramp**

The ramp design features urban design standards that conform to Destination Medical Center guidelines and includes a pedestrian promenade, as well as one underground level. The year-long construction is expected to conclude in May 2019. The design conformed closely to the vision laid out in the DMC Design Guidelines, and while the design process started before the design guidelines were published, the final product matched the DMC vision. Overall, the ramp will have space for 640 cars. Ninety of those stalls are dedicated to the other building on the block, the underconstruction Hilton Hotel building. The parking ramp and the Hilton will connect in several places, including at the skyway level.

Wells Concrete produced and erected more than 20,000 sq. ft. of precast for the project, including some unique arch pieces. The top arch sits on a bottom arch on each side. There are two complete arches, going over a railroad track that goes under the ramp. The top arch is 45'-9.5" out to out with a rise of 9'-6" to the top. The section is 34' deep, 16' wide and a taper to 23" wide on the top side in erected position, with a sandblast finish. In addition to the arched pieces, Wells also provided architectural wall panels with beautiful cornices and terracotta accents.

Contractor: Kraus-Anderson Construction Co. Architect: Collaborative Design Group Engineer: Collaborative Design Group Owner: City of Rochester, MN Location: Rochester, MN



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# 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.



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