

Virtual is the new normal

COMMUNICATION METHODS ARE CHANGING. But that hasn't stopped this "hometown" Iowa-based team from effectively communicating and collaborating on the Iowa City High School Additions and Renovations project located in Iowa City, IA.



IOWA CITY HIGH SCHOOL ADDITIONS AND RENOVATIONS PROJECT TEAM

Jennifer Hoffman NCARB, Licensed Architect, BLDD Architects; *Role on Project Team: Project Architect*

Frank Hayes, Project Manager, Miron Construction Co, Inc; *Role on Project Team: General Contractor*

Todd Cyrulik AIA, Principal, BLDD Architects; *Role on Project Team: Designer*

Kristi Ortega, Project Manager, MPC Enterprises Inc.; *Role on Project Team: Precaster*

Jean Underwood AIA, NCARB, LEED AP O + M - Sr. Associate, BLDD Architects; *Role on Project Team: Project Manager*

Ron Volberding PE, SE, Structural Engineer, e.Construct; *Role on Project Team: Precast Specialty Engineer*

Andy Sederquist PE, Structural Engineer, Select Structural Engineering; *Role on Project Team: Structural Engineer*

Tyler Theisen, Project Manager, Cedar Valley Steel; *Role on Project Team: Precast Erector*

Arden Hills Readiness Center



The 149,735 square foot National Guard Readiness Center Complex serves as the new home for the 34th Infantry Division, known as the Red Bulls. In the last decade, this unit has grown significantly in personnel, equipment and technology, and the new facility provides necessary administrative, training, secure work and storage areas.

Construction of the \$37,872,000 Division Headquarters Building, as a part of the greater Arden Hills Army Training Site (AHATS), commenced earthwork and utilities in the fall of 2019 and was completed in August 2020.

During typical weekday use, the occupancy is low and limited to primarily office use. During weekend drill activities, the occupancy increases tenfold and the use expands to include training exercises, equipment distribution, large scale food service and more, so the building was designed with flexibility in mind.

The design divides the building into three masses to efficiently support these uses: Unit Support, (dedicated to the storage of supplies and weapons and includes unit storage spaces, vaults, and locker rooms); Administration, (accommodates highly critical operations and communications, while requiring the flexibility to operate

functionally with anywhere from 50 occupants to 600 occupants mitigating the impacts of M-day use on everyday function); and the Common Use, (central zone which includes the building entry and serves as a hub by which all spaces extend from).

This project comes with a few requirements not normally seen in government building contracts, said Bill Scherling, Stahl's director of project management. Resistance to explosions is one of them. "There were some exterior blast-resistant specifications that needed to be met in the materials selected, so in this case much of the building is precast concrete in the building envelope," Scherling said.

To maximize sustainability, the design includes geothermal systems, photovoltaic arrays and EnergyStar equipment. The facility is designed to achieve LEED Silver Certification.

Wells Concrete produced more than 135,000 square feet of precast concrete for this project, with a total of 204 precast concrete members. The new building has both external façades and interior structural support with double tees and structural wall panels. The exterior insulated architectural panels showcase a unique mix of acid etch and formliners enhancing the building's appearance.

Key Project Attributes

- Blast resistant wall panels
- Flexible design accommodates variety of occupancy needs
- Sustainable features include geothermal systems, photovoltaic arrays and EnergyStar equipment

Project and Precast Scope

Product	Square Feet	# of Pieces
Architectural Insulated Walls	45,566	231
Architectural Solid Walls	1,961	20
Double Tees	56,348	83
Other	615	78
Structural Insulated Walls	1,714	8
Structural Solid Walls	28,072	87
Totals	134,277	507

Architect and Engineer: **Leo A. Daly Architecture**
Contractor: **Stahl Construction**
Owner: **MN Army National Guard**
Precaster and PCI Certified Erector: **Wells Concrete**
Precast Specialty Engineer and Drafter: **Sandman Structural Engineering**
Location: **Arden Hills, MN**
Date of Completion: **2020**



www.wellsconcrete.com

The Depot on Main



Named for the Great Northern Railway train depot which once stood on the site, The Depot on Main has three-stories of apartments over a precast concrete underground parking structure. The project features include a community room with outdoor deck, fitness room, playground, outdoor grills, and a 26,035 square foot climate-controlled, underground parking garage.

This project's foundation and underground parking garage were designed using precast concrete columns, prestressed beams, hollow core floor plank and architectural precast concrete formliner wall panels. The ashlar stone formliner pattern used on the 68 wall panels for this project has become a staple in the designs used by this project team for many other multi-family housing projects.

Scheduled for construction during a harsh Minnesota winter, the use of precast concrete on this project enabled construction to continually progress in spite of the cold.

Key Project Attributes

- Precast concrete provided a low maintenance option
- Precast concrete's speed of construction during winter weather was a huge benefit
- Precast concrete allows for low sound transmission between below grade parking and housing
- Precast concrete establishes fire separation between below grade parking and housing

Project and Precast Scope

- Precast Columns - 33 pcs (342 LF)
- Prestressed Beams – 31 pcs (759 LF)
- Hollow Core Plank (8" and 12" thick) – 24,135 SF
- Solid Slabs – 690 SF
- Architectural Wall Panels – 14,225 SF (68 pcs)

Architect: **Cole Group Architects**
Engineer: **Herzog Engineering, LLC**
Contractor: **Miller Architects & Builders**
Precaster, Precast Specialty Engineer, and PCI Certified
Erector: **Molin Concrete Products Company**
Location: **Zimmerman, MN**
Date of Completion: **2019**



www.molin.com

Delaware County Sheriff's Office



The Delaware County's new Sheriff's Office and Correctional Facility is located in Manchester, Iowa. The new building consists of 27,315 square feet of sheriff offices, jail cells, and additional recreational space for Delaware County's police department.

Precast concrete panels were chosen for this project to provide the skeletal framework of the building. The exterior panels were produced with a black mix design and finished with a mixture of sandblasting and acid washing techniques to create a contrast in both texture and color. The black mix design was used for the building's exterior panels to provide a

modern industrial look. Sandblasting and acid washing allowed for an even rock exposure across the totality of the building. The front office panels were designed with the lower fourth of the panel each having four rows of horizontal reveals. Each reveal was heavily sandblasted to create a lighter color and heavy contrast compared to the black design of the panel. The overall effect is an eye-pleasing architectural design.

213 insulated precast concrete wall panels were produced for the project. Panels ranged in size - reaching anywhere from 13 to 26 feet in height. The precast concrete exterior shell of the building was erected in

only eight days.

Precast concrete was chosen for this project due to its many benefits of strength, durability, high thermal ratings, and product longevity.

Key Project Attributes

- A black mix design was used for the building's exterior panels
- Sandblasting and acid washing allowed for an even rock exposure across the totality of the building.

Project and Precast Scope

- 27,315 square foot, two-story building
- 213 precast concrete panels
- The precast concrete exterior shell was erected in eight days

Architect: **Weidner Architecture LLC**
Engineer: **Apex Structural LLC**
Contractor: **Woodruff Construction**
Owner: **Delaware County**
Precaster: **Advanced Precast Company**
Precast Specialty Engineer: **Beton-Stahl, Inc**
PCI Certified Erector: **Cedar Valley Steel**
Location: **Manchester, IA**
Completion Date: **2020**



www.advancedprecastcompany.com



Gabbert's-HOM Furniture



HOM Furniture built a flagship megastore in Bloomington, MN to house all three of its brands — HOM Furniture, Gabberts and Dock 86 under one roof. Construction began on June 1, 2019 with store opening in May 2020. The site more than doubled the size of the old location – from 100,000 to more than 212,000 square feet, making it the company's largest store.

The development marks the greatest improvement for Gabberts as it moves from the Galleria, a high-end mall in Edina, MN, where the furniture store has been for 60 years. The former HOM store now at the Bloomington site was razed to make way for the new 212,000-square-foot structure. The new complex resembles one that the company has operated for several years in Little Canada, MN, just outside Minneapolis and St. Paul.

The new Gabberts showroom is two stories and larger than the existing store in Edina. A two-story HOM store and single-level Dock 86 share an entrance but are in separate stores. The Bloomington flagship is about 40,000 square feet larger than the Little Canada location. The new flagship is the largest furniture store built in the U.S. in the past five years, when Nebraska Furniture

Mart opened a Texas-sized 560,000 square foot store in Dallas, TX.

The owner's goal in building a new flagship furniture store along the busy Bloomington, MN 494 interstate was for passers-by to take notice of a unique and beautiful building. The owner was familiar with all the benefits of precast concrete insulated wall panels since he had built his Coon Rapids, MN furniture store in the 1990's with precast concrete. The challenge for the new flagship store was to fashion an exterior façade that would look like no other building in town. In the end, a precast concrete insulated wall panel with a custom form-liner finish provided the unique façade he was after to make an architectural statement of exceptional quality. The precast concrete insulated wall panels maintained the project's tight budget and aggressive construction schedule.

Wells Concrete produced and erected nearly 60,000 square feet of precast concrete for this new megastore. The exterior façade includes architectural insulated wall panels that boast beautiful white panels with a unique abstract formliner pattern. The lower portion of the panel is a black mix in a stone look formliner pattern.

Key Project Attributes

- The Gabberts entrance features an awning for protection from the elements, and once inside, six rain chandeliers flank twin curved staircases rising to the second floor.
- To the right, custom forged iron gates rescued decades ago from the Foshay Tower in downtown Minneapolis greet shoppers.

Project and Precast Scope

Product	Square Feet	# of Pieces
Architectural Insulated Walls	40,770	88
Architectural Solid Walls	79	2
Columns	159	5
Structural Solid Walls	17,289	97
Totals	58,298	192

Architect: **Arch Net**

Engineer: **RISE Structural Associates**

Contractor: **Benson-Orth General Contractors**

Owner: **HOM Furniture**

Precaster and PCI Certified Erector: **Wells Concrete**

Location: **Bloomington, MN**

Completion Date: **2020**



www.wellsconcrete.com

U.S. 10 Bridge Reconstruction Over Plum Creek



Corporation in Roberts, WI were installed from the temporary bridge. During the manufacturing process, rebar loops were embedded into the girders to ease on site installation challenges. With incredible coordination and planning efforts, all five girders were delivered in one day and set the bridge to reopen within the month.

Key Project Attributes

- Precise prestress girder delivery coordination minimized traffic flow disruptions.
- Delivery of five 136-foot girders required help from Ellsworth, WI law enforcement and County Materials Corporations' dispatch team.
- A temporary bridge allowed job site access in the challenging landscape.
- The new bridge opened for traffic within a month.

Project and Precast Scope

- Five I-beam bridge girders were delivered.
- Each girder weighed 140,000 pounds.
- The girders measured 136 feet-long.

Contractor and PCI Certified Erector:

Kraemer North America

Owner: **WisDOT**

Precaster: **County Materials Corporation**

Image Credits: **County Materials Corporation**

Location: **Plum City, WI**

Date Completed: **2019**



www.countymaterials.com

With the help of Ellsworth, WI law enforcement and the company's dispatch team, County Materials' heavy-haul drivers transported five prestress concrete I-beam bridge girders from Roberts, WI, 50 miles south to Plum City, WI. Due to the size of the girders and the area's hilly geography, delivery and site preparation precautions needed to be taken to ensure a successful delivery and installation. Each girder measured 136 feet long and weighed 140,000 pounds, making the transportation of the beams challenging. The extreme length of the girders required the drivers

to carefully navigate through a traffic light island, going in the wrong direction. The coordinated efforts made the delivery of all five girders in a single day successful.

On site, the problem solving continued. The area's hilly geography prohibited job site access for the oversized construction equipment. A temporary bridge installed over Plum Creek, alongside the U.S. 10 bridge, served as a work platform and maintained traffic flow during reconstruction. The five prestressed concrete bridge girders manufactured by County Materials

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

Abrasives Inc.

4090 Hwy 49
Glen Ullin, ND 58631
Russell Raad - 701-348-3610

Advanced Concrete Technologies

300 Portsmouth Avenue
Greenland, NH 03840
603-431-5661
www.concretebiz.com
Edwan Batista - 603-380-5015
ebatista@concretebiz.com

Afinitas – Spillman Company

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

ALP Supply

www.alpsupply.com
Jim Valent
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

Beton-Stahl, Inc.

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

Bob's Sparkle Wash

1135 114th Lane NW
Coon Rapids, MN 55448
763-225-6500
www.sparklewash.com/centralmn/
Scott Walters – 763-225-6211

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Wichita, KS 67211
Carl Harris - 316-267-8700

Cheesebrough Brokerage Inc.

448 Lilac Street
Lino Lakes, MN 55014
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: Dave Meyer: 612-889-5236

Cresset Chemical Company

13255 Main Street, Box 367
Weston, OH 43569
800-367-2020
www.cresset.com
Jim Renda - 419-669-2041
jim@cresset.com

Dayton Superior

1125 Byers Road
Miamisburg, OH 45342
www.daytonsuperior.com
Adam Stenberg – 612-201-7516
adamstenberg@daytonsuperior.com

DRL Drafting and Design

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

e.Construct.USA, LLC

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

Egan Company

11611 Business Park Blvd N
Champlin, MN 55316
763-595-4300
https://Intellibatch.eganco.com
Wayne Bauernschmitt - ww@eganco.com

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

Fister Quarries Group

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

Fitzgerald Formliners

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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
Chuck Cox - ccox@gcc.com
Scott Ruby - sruby@gcc.com

GCP Applied Technologies

Aaron Kjolhede 515-306-1793
aaron.kjolhede@gcpat.com
Tyler DuBord 651-247-8927
tyler.dubord@gcpat.com
www.gcpat.com

General Shale Brick Inc.

1845 West Dartmouth Ave.
Denver, CO 80110
www.generalshale.com
Jeff Franich

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.

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Fargo, ND 58103
701-280-0949
www.heyengineering.com
Eric Greff, PE

ICONX LLC

5525 Kaw Dr
Kansas City, KS 66102
www.iconxusa.com
913-208-4274 - 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
Troy Selvy

JVI Inc.

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

Lehigh Cement

12300 Dupont Avenue South
Burnsville, MN 55337
www.lehighcement.com
Chad Hanson

MAPEI Corporation

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

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

Metro Brick Inc.

3314 Winpark Drive
Crystal MN 55427
Office (952) 417-0200
Fax (952) 417-0204
www.metrobrickinc.com

METROBRICK

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

Midwest Industrial Supply, Inc.

1101 3rd Street SE
Canton, OH 44707
330-456-3121
www.midwestind.com
Joe Ricca - joe.ricca@midwestind.com

Nawkaw Mid-America

12901 St. Charles Rock Road
Bridgeton, MO 63044
www.nawkaw.com
Darus Brondel
Dbrondel@nawkawmidamerica.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

Sandman Structural Engineers

1587 30th Avenue South
Moorhead, MN 56560
218-227-0022
www.sandmanse.com
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.and@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

Splice Sleeve North America, Inc.

38777 W Six Mile Rd #205
Livonia, MI 48152
www.splicesleeve.com
877-880-3230
AJ Ishikawa aishikawa@splicesleeve.com

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
Bryan White - 503-608-3930
bwhite@sylvan-products.com

Thermomass

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

THiN-Wall

2310 South 105th Ave
Omaha, NE 68124
www.thin-wall.com
800-869-0359

UltraSpan Technologies

165 Fennell Street
Winnipeg, MB R3T 0M6
204-992-3200
www.ultraspan.ca
Adam Formuziewicz - 204-292-3666
adamf@ultraspan.ca

US Formliner

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

West Central Steel, Inc.

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

Wysan Precast Services LLC

6189 170th Street North
Hawley, MN 56549
218-486-5100
www.wysanprecastservices.com
Paul Nelson - 507-380-9423

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