



2021 » Q1 ISSUE
Molin Concrete Products

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Farm Island Township Lake Home

This design-build custom home was built on Spirit Lake in Farm Island Township which is located in Aitkin County, MN. The home was designed by the owner who also served as the general contractor. The two-story, three-bedroom, two-and-a-half-bath home features insulated architectural precast concrete walls and a prestressed concrete structural beam that supports the prestressed hollow core upper-level floor.

The interior side of the exterior walls of the home were furred to facilitate electrical wiring and to add 1-1/2" of additional rigid insulation, then covered with a combination of wood and drywall. The interior walls are a combination of precast concrete and wood framed. The main level ceiling features exposed painted hollow core precast concrete and a faux wood beam design element. Although the roof framing is a wood engineered parallel truss system with wood deck, the roof covering is a standing seam metal roof.



» CONT'D PAGE 2

ISSUE CONTENTS:

> **Project:**
Farm Island Township
Lake Home

> Molin Involved With
Ford Site Redevelopment

> **Employee News**

> **Sign up for Presentations Online**

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» CONT'D FROM COVER

The use of precast concrete products in the design and construction of this home provided many benefits to the owner. Those benefits include:

► **Fire Resistant** Precast concrete is naturally noncombustible so it will not catch fire and it will prevent the spreading of fire from room to room. The precast concrete building enclosure coupled with the steel roof will protect the home from wildfire. (More than 4,300 acres in Aitkin County, MN were burned by wildfire in 2015.)

► **Storm Resistant** Sheltering inside a reinforced concrete building is one of the safest places to be during a storm – most safe rooms and shelters are made with concrete systems. The homeowner designed the home with safety in mind as Minnesota is known to experience severe weather and high wind events.

► **Energy Efficient** Precast concrete walls act like thermal sponges, absorbing heat during the day and then slowly releasing the heat as temperatures fall at night. As the night air cools the walls, they store it and transfer it back into the building during the day. This “thermal mass” cycle repeats itself each day. The effect reduces heating and cooling loads on the building’s HVAC system, resulting in energy savings.

The energy efficient design of the home extended beyond the precast concrete wall system. The homeowner designed the house with insulation values of R-24 (walls) and R-42 (roof), both of which exceed local building code requirements. The exterior windows provide low-E high performance to complete the superior energy efficient enclosure.

The cast-in-place concrete slab on grade (main floor) and the upper level 2” topping over precast hollow core plank were both cast over rigid insulation and have in-floor radiant heating. Both concrete floors have been stained with a three-color acid staining process.

For cooling and any need for supplemental heat this home includes a mini-split HVAC system which alleviates the need to have ductwork enabling the homeowner to showcase the exposed precast ceilings as a design feature in the main level of the home.

With this combination of high insulation factor, radiant heating system, and “thermal mass”, this home will have significantly reduced heating and cooling costs.

► **Low Maintenance** Precast concrete is highly resistant to impact, corrosion, weathering, abrasion, and other ravages of time, which reduces maintenance and operating costs. Having a low maintenance home was important to the homeowners. The exterior precast walls were designed with a combination of stacked stone and a rough sawn wood pattern which was then stained onsite with a premium grade concrete stain that offered a 25-year warranty against fading, cracking, chipping, or peeling. To further insure a maintenance-free lifestyle, the homeowner chose a standing seam steel roof.

► **Pest Resistant** Vermin and insects cannot destroy concrete because it is inedible. Due to its hardness, vermin and insects will not bore through concrete. The homeowners chose a large, wooded lakefront property for their dream home. They are able to sleep peacefully because they know that precast concrete protects their home from insects, rodents, and other regional pests like woodpeckers.

► **Sound Proof** Precast concrete is very dense and sturdy, making it a fantastic material choice for buildings where sound proofing is a top priority. The homeowners love the fact that precast concrete provides them with a quiet, serene place to call home.

► **Speed of Construction** Once produced, precast concrete can be scheduled and delivered to a construction site precisely when it is needed. Once delivered, precast concrete components can be installed quickly – saving time in the construction process. In this case, the installation of the precast building components was completed in less than five days. It took approximately the same amount of time to stain the exterior side of the precast wall panels.

► **Cost** When considering the initial build cost vs. long-term energy and maintenance costs, the homeowner expects a 10-year return on investment. This estimate does not take into account any savings in insurance premiums that may come as a result of the strength and durability of the home that was made possible by the use of precast concrete.

In the end, the homeowners are thrilled to be able to spend the majority of their time on the lake enjoying their wooded surroundings. They are proud to see that their vision of living in an energy-efficient, maintenance free, beautiful home has become their reality. «



Molin Involved With Ford Site Redevelopment

After being an anchor to St. Paul's Highland Park neighborhood, the Ford Motor Company plant closed the doors in 2011 leaving an important and large piece of the community vacant. Since that closing the City collaborated with area stakeholders to create an ambitious master plan for the vast site. After formally securing development rights from Ford, Ryan Companies began an 18-month community engagement journey to learn and develop the plan's core priorities. In 2019, Ryan and the City entered into a Redevelopment Agreement paving the way for Ryan's purchase of the 122-acre site. The redevelopment, now named Highland Bridge, includes roadways to the surrounding neighborhood and expands the existing Highland Park community with the new development which is planned to include housing, retail, office, and greenspace. It also will include 3,800 new multi-family residences.

Molin has been awarded the contract for precast concrete products to be used as foundations and underground parking for apartment buildings located in the Blocks 1-3 and Blocks 6 and 7 sections of this massive redevelopment. Molin Sales and Engineering staff have been involved with Ryan's design staff to assist with value engineering and budget pricing since early



Renderings courtesy of Ryan Companies US, Inc | Ryan A+E, Inc.

design development meetings began in 2019. Molin's Business Development Reps continued to collaborate from the early design stages through the aesthetic conception and selection of colors and textures including the thin brick selections for the architectural precast wall panels which will be incorporated as part of the building foundations.

Highland Bridge connects existing retail along Ford Parkway to the Mississippi River, creating a welcoming mixed-use gateway district. The master site plans will enhance the natural beauty of the site by adding 1,000 trees and native plantings as well as an iconic central water feature. «



 Photo courtesy of Drone Brothers

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Passing of Molin Employee Justin Bowen

We regret to announce the passing of Justin Bowen. Justin was hired in 2005 and most recently worked as an Assistant Field Coordinator in Molin's Field Operations department working out of the Lino Lakes offices. He leaves behind his children, Maxwell, Maggie, and Ellie who were his world. Our thoughts and prayers go out to his family.



Passing of Molin Employee Jack Sanford

With deep sorrow we mourn the passing of Jack Sanford on December 6, 2020 at the age of 37 years. Jack was a Journeyman at Molin and proudly supported Local 563. Jack leaves behind his children, Jaxon Kohl and Silver Ann. Jack enjoyed gardening, camping, fishing, four-wheeling, racing, playing pool, tubing the river, music, welding, and always had a project going. His presence on our Field crews will be missed.



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MOLIN CONCRETE PRODUCTS

415 Lilac Street
Lino Lakes, MN 55014

651.786.7722
800.336.6546

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While implementing updated safety standards and social distancing practices, Molin offers multiple virtual continuing education opportunities for architects, engineers, and contractors. At this time lunch & Learn presentations cannot be provided in client offices and Molin will not be offering onsite PCI plant tours. We can offer PCI continuing education virtual webinars that can be viewed online from your remote work location. Many presentations are registered with AIA/CES and Registered Continuing Education Program (RCEP) of the National Council of Examiners for Engineers & Surveyors (NCEES) for continuing professional education credits.

If you're looking for product information, help with registering for a virtual presentation, want to schedule a plant tour or box lunch presentation when Molin can safely present onsite, or wish to be contacted by a Molin representative, please visit our website at www.MOLIN.com and fill out and submit the **"Contact Us Form."**



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