



Innovative Tile and Stone
Installation Systems

Paragon Prairie Tower

Project Spotlight: May 2008



LOCATION:

Urbandale, IA

OWNER:

Dan Rupprecht, R&R Realty, West Des Moines, IA

ARTIST DESIGNER:

David B. Dahlquist, RDG Dahlquist Art Studio, Des Moines, IA

TILE CONTRACTOR:

Mario DeMarco, Mark Halsey, and Steve Hauser,
Des Moines Marble & Mantel Co., Des Moines, IA

TILE SUPPLIER:

Sunderland Brothers, Urbandale, IA

TILE INSTALLATION SYSTEM:

LATICRETE International, Inc., Bethany, CT

LATICRETE DISTRIBUTOR:

Sunderland Brothers, Urbandale, IA

Paragon Prairie Tower America's Largest Exterior Mosaic Glass Mural Installed with LATICRETE

By Eric Carson



The state of Iowa, wedged between the Missouri River to the west and the mighty Mississippi to the east, has an agricultural history as rich as the soil of its native tall grass prairies that once stretched 250 million acres across Middle America.

A prairie, French for “meadow,” is an ecosystem native to North America, defined by big bluestem grass averaging five to six feet in height, wildflowers, and a rather ominous lack of tree cover. The tall grass prairie ecosystem depends largely on fire for survival and renewal, serving to remove dead biomass and increase the availability of light energy. Prairie fires were either set by lightning or the Native Americans that once roamed the vast expanse and relied on fire to drive buffalo, improve hunting, travel and visibility.

Today, the native prairie is the most endangered ecosystem in the United States, with less than one percent left in its natural habitat. Beginning in the mid to late 1800s, the native prairie gave way to the steel plow, commerce, and the need to feed a growing country.

Even though only a small portion of the Iowa tall grass prairie remains, the people and the history of our 29th state still celebrate its once awesome presence. Many organizations have sprung up with the mission of protecting and preserving what prairie still remains, but one local developer hooked up with a special artist to take it one step further.

David Dahlquist from RDG Dahlquist Art Studio, in collaboration with the project owner, Dan Rupprecht at R&R Realty, designed a 118-foot tall mosaic glass mural in Urbandale, Iowa, a suburb of Des Moines, paying homage to the history of the native Iowa prairie.

Designed to create a major destination icon and a new cultural landmark for the state of Iowa, the Paragon Prairie Tower represents the largest exterior mosaic glass mural in the United States. Serving as the “Gateway” to the new Paragon Office Park, this dynamic symbol of Iowa heritage is surrounded by a public plaza, a lake, and soon several more businesses and residences are expected to arrive.

The double repeating pattern that serves as the image for the Paragon Prairie Tower consists of sprays of bluestem grass and wildflowers in a stylized deco landscape of field and sky. The original image by Dahlquist was interpreted by a computer program into

1.8 million pieces of mosaic glass tiles. But that was the easy part, the hard part was installing the resulting 5,400 sheets of SICIS mosaic glass tiles.

For this most challenging installation, Mario DeMarco, president of Des Moines Marble & Mantel Company, and his team of installers, Mark Halsey and Steve Hauser, would battle wind, rain, sun, a tight schedule and perhaps even acrophobia, executing a truly masterful job in the face of all.

Of course, before Des Moines Marble & Mantel could consider installing the glass mosaics as the exterior façade of the Paragon Prairie Tower, there were several installation issues that needed to be ironed out with the help of Pete Bird from the Sunderland Brothers Company and Mark Brooks, David Meyers and Walt Stivers from LATICRETE

The first major issue, installing mosaic glass tiles, or any tile for that matter, in a freeze/thaw environment as an exterior cladding, was the inherent threat of movement and the possible delamination of the finished tile work. Iowa is known for hot, humid summers and cold, snowy winters, which along with the height of this thin structure, magnified the threat of movement. LATICRETE, a global leader in the manufacturing of innovative systems for the installation of natural stone, ceramic and glass tile, specified a palette of GREENGUARD certified setting materials, contributing to LEED points.

Working closely with Pete Bird at Sunderland Brothers, the structural engineer Charles Saul, Des Moines Marble & Mantel, and LATICRETE technical services, a complicated plan was engineered to protect against expansion and contraction between the pre-cast concrete substrate and the mosaic glass tile façade.

“From conception to completion, Sunderland Brothers worked closely with the architects, structural engineers, the general contractor, suppliers and installers,” said Bird, Vice President of Sunderland Brothers. “With the help of LATICRETE, a complete system was specified and it was our role to assist the architect with the materials selection and review procedures with Des Moines Marble & Mantel for the install. The biggest concern with a vertical exterior install in a freeze/thaw environment was the threat of movement, but also to complete it successfully without compromising the visual aesthetic.”

The main shaft of the 118-foot tower is comprised

of five stacked sections of precast concrete, each segmented into four quadrants of 20-feet high by 12-foot curved panels, assembled on-site. The tower was first patched where needed, then covered with a skim coat of thin-set to ensure a smooth surface and accurate plumb lines. At this point, Des Moines Marble & Mantel had to re-cut the vertical joints with a skill saw to remove the thin-set from the joints, in preparation for the painstaking chore of installing a liquid applied waterproofing membrane in the wind and at great heights.

The specification called for LATICRETE® 9235 Waterproofing Membrane, long the industry standard, to protect the exterior installation from moisture penetration that could further affect this complicated install. LATICRETE 9235 Waterproofing Membrane is service rated ASTM C627 "Extra Heavy," doubles as an anti-fracture membrane capable of bridging cracks up to the industry standard of 1/8" (3 mm), and inhibits the growth of damaging mold and mildew with antimicrobial protection from Microban®.

The issue for Des Moines Marble & Mantel lead installers, Hauser and Halsey, was ensuring that LATICRETE 9235 Waterproofing Membrane was installed wrinkle-free in the high winds that increased as they worked their way to the top. In order to maintain a wrinkle-free surface, LATICRETE 9235 Waterproofing Membrane was tucked neatly behind the backer rod in the vertical joints. After successfully installing the waterproofing membrane, the entire surface required a thin-set skim coat of LATICRETE 254 Platinum, since the waterproofing membrane could only be exposed to the elements for 30 days and the tiling work would take much longer.

Using a motorized scaffolding with special bumpers to protect the finished tile work when going up and down the tower, Des Moines Marble & Mantel began setting the tile horizontally with a three-man crew from the bottom of the terra cotta base to the top of the Paragon Prairie Tower.

The specifications called for LATICRETE 254 Platinum, a premium thin-set ideal for exterior or interior applications, providing unsurpassed bond strength that far exceeds all ANSI requirements. GREENGUARD certified and a component of the LATICRETE 25 Year System Warranty[†], LATICRETE 254 Platinum provides a tenacious bond and excellent workability with a long open time. Slowly but surely, with one person spreading the thin-set and one person handing over sheet after sheet of mosaic glass tiles, Des Moines Marble & Mantel set over 5,050 square feet of tile as

the weather moved from spring to summer.

"We started at the end of April and the wind was the worst," said DeMarco, President of Des Moines Marble & Mantel. "We were out in the middle of nowhere, there was only a little wind down below but when we got about halfway up it was gusting pretty bad. The wind picked Steve (Hauser) up a foot in the air off his feet once."

For the next and final step of grouting the mosaic glass tiles as the façade of the Paragon Prairie Tower, LATICRETE SpectraLOCK®* PRO Grout was specified. LATICRETE SpectraLOCK PRO Grout offers unmatched performance in terms of stain resistance, color consistency with exceptional ease of use. LATICRETE SpectraLOCK PRO Grout is GREENGUARD certified, meets ANSI A118.3, while inhibiting the growth of stain-causing mold and mildew with antimicrobial protection from Microban.

But still, Des Moines Marble & Mantel was not quite finished. To protect the installation from movement, a second backer rod was installed in all vertical joints and horizontal surface joints were cut in every 10 feet. The horizontal surface joints and the vertical expansion joints were then caulked with LATICRETE Latasil™, a 100 percent silicone sealant, in Sterling Silver to match the grout.

"LATICRETE SpectraLOCK PRO Grout got rave reviews," said DeMarco. "The guys loved the grout. They also thought the adhesive was tremendous. They enjoyed working with all the products. Actually, there were four outriggers down below that contained the lighting. At times the wind would blow the LATICRETE 254 Platinum off the trowel and it would land on the outriggers. We had a heck of a time getting that off. That is good stuff."

In the end, the Paragon Prairie Tower isn't just an incredibly gorgeous landmark and reminder of the awe-inspiring native prairie for the people of Iowa; it's a testament to the communication and teamwork of all parties involved in realizing this remarkable mosaic glass tower under trying conditions.

Dedicated to the people of Iowa in September of 2007, the Paragon Prairie Tower is quickly becoming one of the signature installations in the American tile industry. Standing tall and proud, much like the silos that harvest and preserve the abundant natural resources of the Midwest, the Paragon Prairie Tower is simply put - a masterpiece.

*United States Patent No.:6881768 (and other Patents).

† See Data Sheet 025.0 for complete warranty information.

