



Denver Art Museum

Denver, Colorado

Project Spotlight: November 2006



ARCHITECT:
Daniel Libeskind and
Davis Partnership,
Denver, CO

**GENERAL
CONTRACTOR:**
M.A. Mortenson Company
Denver, CO

**STONE SUPPLIER AND
INSTALLER:**
Ryan and Company, Inc.
Parker, CO

**STONE INSTALLATION
SYSTEM:**
LATICRETE International, Inc.
Bethany, CT

LATICRETE DISTRIBUTOR:
Rio Grande Company,
Denver, CO

One mile high and climbing; LATICRETE helps elevate the Denver Art Museum

By Eric Carson

Located at the base of the majestic Rocky Mountains, Denver, Colorado is blessed with three hundred days of sunshine a year, rugged terrain, lakes and rivers; few if any metropolitan areas have a stronger connection to nature than the Mile High City. Denver is also a thriving regional hub of music, art, and culture. This high cultural awareness and passion for the arts led to a need to expand the 113-year old Denver Art Museum, originally designed by Italian architect Gio Ponti in 1893.

To realize the delicate expansion of this urban museum which sits in the center of the Denver skyline, Daniel Libeskind, one of the most accomplished architects of our time, was chosen by a 12-member selection committee to work in collaboration with the Denver-based architectural firm Davis Partnership.

Libeskind, best-known as the architect chosen to resurrect Ground Zero, site of the devastating attacks on the World Trade Center in the heart of New York City, designed the new Frederic C. Hamilton Building of the Denver Art Museum. Inspired by the geology of the Rockies, Libeskind's vision was not to create a stand alone building, but rather, one that would take its place as part of a composition of public spaces, monuments and gateways that already existed in the downtown area. To capture the vibrancy of Denver with all of its unique elements: topography, atmosphere, sunlight and Rocky Mountain views, Libeskind chose a palette of materials closely related to the existing landscape, as well as innovative new materials like titanium that will connect Denver to the new millennium.

Construction of this new wing, widely recognized as the most unusual and unique building project to take place in the United States in the last four decades, took over three years to complete, with over two-hundred people a day working on different parts of the building. The process required more than 2,750 tons of steel, including nine thousand panels of titanium cladding and over fifty-thousand bolts. The unconventional and modern interior design resulted in sloped walls with no right angles to carry the weight of the building, meaning no plumb staircases or floor lines either, which greatly challenged every trade involved in the process. Measurements and calculations had to be extremely precise, and even what would normally be considered routine processes, such as building scaffoldings to access the walls and frames of the four-story wing, became troublesome and time consuming with the angles that were presented in the design.

The stone selected for the floor of this new-age museum was meant to be subtle, as to not distract from the contemporary and modern art that it showcases. For this reason, a smooth Black Pearl granite was chosen. In order to install the staircases and floors of one of the most innovative museum ever built, only the most durable and well proven stone installation materials would do. With 50 years of industry leading innovative expertise, LATICRETE was selected for this most unique and inspiring project.

The professional chosen to install the Black Pearl granite with LATICRETE installation materials was Pat Ryan of Ryan and Company, Inc., one of the most experienced and skilled stone installer in the Rocky Mountain region. Ryan and Company, originally hired as a consultant for the project in the design phase, ultimately won the bid due to the experience their company has with high-profile commercial stone installations in the area. These projects include the Colorado Convention Center expansion, the Wellington E. Webb Municipal Building and the Hyatt Regency Denver (at Colorado Convention Center) Hotel. Ryan and Company depends on and has been using LATICRETE for over 25 years. For the past six years, Ryan and Company have been committed members of LATICRETE's Most Valued Partner Program and purchase their LATICRETE products from Tim Whitver at the Rio Grande Company in Denver.

"LATICRETE's reputation with commercial contractors is second to none," Whitver said. "Pat Ryan has a great reputation in this business and is our most loyal customer. He specifies LATICRETE on every project where he has a choice. You would have to see the job he did at the Denver Art Museum to believe it. There isn't a right angle in the building, and every stone slab had to be angle cut into the wall. It was the ultimate challenge."

"Due to the complexities of the building and all of the calculations that had to be done," said Ryan, "it was hard to get a handle on this project. We had 1,600 feet of linear treads and risers on the stairs that go up four stories. We had to float all the steel and make sure that the risers were clean, so from that standpoint it was very challenging. With all the complexities involved, every trade was behind and the building ended up being finished 10 months behind schedule. That added even more pressure, since there were a lot of investors involved and condos that were part of the on-site package of the courtyard waiting to be opened."



Ryan, who traveled to China himself to purchase the Black Pearl granite, installed the 40,000 square feet of recessed slabs with LATICRETE's products in a non-bonded, wire-reinforced mortar bed using the Tile Council of North America's method F111 for stone over concrete.

Given the circumstances that job was too large to pour all of the concrete in one day, the threat of seismic movement in a mountainous area, and concrete's inherent nature to shrink as it cures, Ryan and Company used LATICRETE® Blue 92 Anti-Fracture Membrane on all cold and expansion joints. Too often stone installations crack due to cracking in the concrete substrate, but LATICRETE Blue 92 Anti-Fracture Membrane is TCA Extra Heavy rated per ASTM C627 allowing for successful installations in even the most heavily trafficked application areas. The LATICRETE Blue 92 Anti-Fracture membrane roller applied liquid is quick and easy to install over concrete saving time and labor.

To protect against moisture in the wet areas of the Denver Art Museum, which draws over 435,000 visitors annually, Ryan and Company used LATICRETE 9235 Waterproofing Membrane. ICC and IAPMO approved, the membrane inhibits the growth of stain causing bacteria with Microban® antimicrobial protection, while doubling as an anti-fracture membrane to reduce the risk of cracks up to 1/8". Safe and easy to install with a paint roller or brush, LATICRETE Blue 92 and LATICRETE 9235 are both Greenguard® Certified — another crucial requirement of this prestigious project.

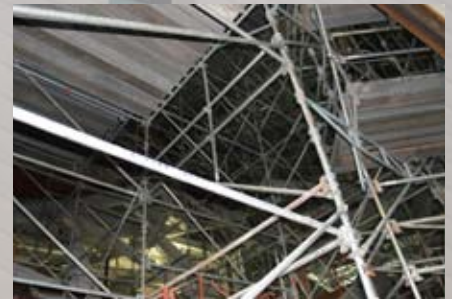
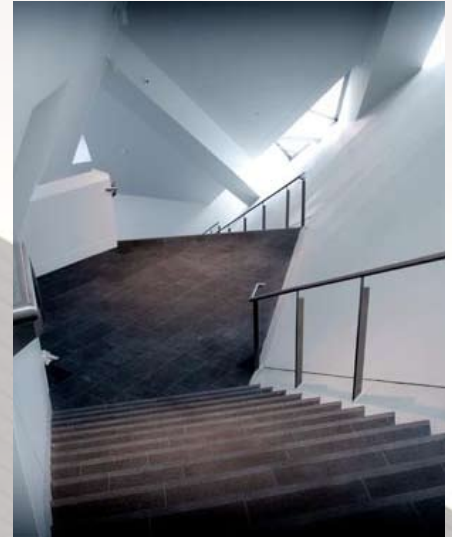
With no plumb walls inside the Frederic C. Hamilton Building, an intricate pattern of granite was to be installed. To accomplish this ambitious layout, the slabs were cut in four different sizes (6", 9", 12" and 18" with 12" as the common dimension) and placed in a random linear pattern that repeated itself every 20 feet.

To install the recessed slabs of Black Pearl granite LATICRETE 253 Gold was carefully applied to ensure maximum bond. LATICRETE 253 Gold is a superior polymer fortified thin-set adhesive mortar for installing all types of ceramic tile and stone using the thin bed method of installation. Designed for interior and exterior installations LATICRETE 253 Multipurpose exceeds the ANSI A118.4 Shear Bond Strength requirement and is Greenguard® Certified.

With the substrate prepared, and the stone securely bonded, it was time for Ryan and Company to apply the finishing touch by grouting all the floors and staircases. For this final step, Ryan and Company chose LATICRETE 1500 Sanded Grout, a premium, factory prepared Portland cement grout formulated from a blend of high strength Portland cement, graded aggregates, polymers and color-fast pigments designed to be mixed with water. The end result when the grout is cured is a joint that is hard, dense and durable. LATICRETE 1500 Sanded Grout meets ANSI A118.7 standards, is Greenguard Certified, and part of the LATICRETE system that includes materials for every aspect of a tile or stone installation to ensure quality and long lasting performance.

"This was a fantastic project," Ryan said. "Architecturally speaking it's a very unique building. The designs led to some radical stairways that were complex with regards to riser heights. With each course we had to go up and over three inches following the slope of the wall. It's hard to really explain this project to anyone who hasn't seen it. You almost have to come out and visit to be able to believe it. Just seeing this building is an emotional event in itself."

Now picture this: the sun sets softly through a purple and orange haze over the Rocky Mountains and on to the bustling epicenter of Denver, Colorado. The skyline has changed — different but better — and the Frederic C. Hamilton Building designed by Daniel Libeskind stands tall at the heart of it all. Inside, images, pictures and sculptures from a new generation of artists float off a Black Pearl backdrop. And down below, where most eyes will only casually wander, the most complex staircases and unique floors in the city are safe and secure, protected by 50 years of innovation from LATICRETE.





1956 - 2006

50 years
of innovation

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