

Outsulation® Case Study



Ability to Satisfy Historic, Weight, and Budget Requirements Earns Dryvit's Outsulation System Starring Role In New Metal Construction of B&B Theatre



With Dryvit's Outsulation exterior insulation and finish system (EIFS), the B&B Theatre development team was able to replicate all the surfaces from the surrounding buildings including brick, limestone, and concrete while satisfying sensitive historic requirements.

But with Dryvit's Outsulation System, these concerns were addressed and the result was a unique building that is getting rave reviews by not only the theater owner, but by the local Hannibal historic committee and the community at large as well.

After Weighing All the Issues, Dryvit Outsulation Fits the Bill

According to Dennis McIntire, director of strategic planning for B&B Theatres, "This project was one of the most unique and challenging buildings we've constructed to date, but also one of the most rewarding. The location is only an eighth of a mile away from the Mississippi River so the water table is extremely high. We had to drill piers to bedrock at 65' below grade. In an historic town such as this, a new brick building would have fit right in, but that would have not only been too expensive, but was also out of the question from a structural standpoint. The masonry would have been too heavy. We also considered a product that had the metal sheathing and insulating foam combined in one product, but that was also cost prohibitive."

When the owners of the B&B Theatres decided to build a new movie theater, they thought they found the perfect site in downtown Hannibal, Missouri, the boyhood home of Mark Twain. The town needed and wanted a new theater, and there was even a vacant lot available right on the corner of Broadway and Main Streets. But how were they to build a state-of-the-art, multi-screen digital movie theater without having it stand out like a sore thumb in an historic town surrounded by buildings from the 19th century? Add to that, constraints of a levee and a high water table from the nearby Mississippi River, extreme foundation conditions, as well as budget issues, and you've got a challenging design and construction project to say the least.

Project Name:

B&B Theatre
Hannibal, MO

Owner:

B&B Theatres
Hannibal, MO

Architect:

J. Price Architect
Liberty, MO

Dryvit System & Finish:

Outsulation
Custom Brick

Dryvit Applicator:

Entrup Painting & Drywall
Quincy, IL

Dryvit Distributor:

Ceiling Supply
St. Louis, MO

Jeff Price, of J. Price Architecture, Liberty, Missouri, the architect on the job, echoed McIntire's concerns. "Our soils required a great deal of drilled piers and the river water table was a great concern. Potential building movement and the requirements for supporting masonry walls without cracking would have been a real challenge."

After weighing all of these issues, the development team ultimately made the decision to construct the building using a combination of pre-engineered metal panels and the Dryvit Outsulation System as the cladding. Jeff Price said, "Lighter weight and lower cost compared to masonry, were definitely determining factors in choosing Dryvit's Outsulation System; and the improvements in the painted brick aesthetic made it the best cladding system to address our issues." McIntire added, "With Dryvit, we were able to replicate all the surfaces from the surrounding historic buildings including brick, limestone, and concrete."

The construction of the B&B Theatre was unique from the outset including the positioning of the metal panels. "What we did was flipped the standard metal building panels so that the majority of the flat metal surface was facing out," said Price. The Dryvit Outsulation System was then secured to the panels directly as a backing in lieu of the exterior (Dens Glass Gold) sheathing.



This new building which houses eight cinemas was also not your traditional movie theater design because of its corner location in such an historic area. To make the location work, Price had a vision of, "achieving a row effect of buildings, especially on the main street fronts." The building was pushed to the street with parking in the rear. To break the building mass he staggered the building footprint and extended parapets to different heights. They then decided to clad certain portions of the façade in Dryvit's Custom Brick and some areas over carved stone bases. In the recessed areas they chose a taupe pallet to highlight the brick portions



The new B&B Theatre was not a typical movie theater design because of its corner location in historic downtown Hannibal, Missouri. The Dryvit Outsulation System, with its ability to replicate brick, limestone, concrete block and carved stone, was critical in achieving the row house-effect that the architect desired.

and help the composition look clean and uncluttered. Price added, "We even created 'fake' shuttered windows, dock doors, boarded facades, all in Dryvit Outsulation, to give the building a two-story character. We placed the entry at the corner and designed the lobby as two-story with glass windows that would allow the entrance to become a beacon at night."



The Dryvit Outsulation System used on the rear of the building shows "fake" boarded up windows, sills and docks along with a variety of surface treatments.

"Attaching Outsulation directly to metal sheathing is pretty unique," said Mike Welch, of Ceiling Supply, Inc., the company that supplied the Dryvit materials. "This project has been the talk of the town and is certain to revive activity in the downtown area."

Mike Entrup of Entrup Drywall and Painting, the applicator on the job amplified Welch's comments. "This isn't a project you see every day. As instructed, we mechanically fastened 2" foam cladding directly onto the metal sheathing with screws. The metal acts as its own water drainage system. If any incidental water was to get behind the Outsulation, it would simply drain out similar to the way it would on a metal roof."

Maintaining Historic Character - What's New is Old Again

"Ensuring that the building would fit into this historic town was of paramount importance to B&B Theatres, the community, and particularly the Hannibal historic committee," Price said. "The community was extremely concerned that the building fit in with the historic character of the downtown. The blocks to the north and west were comprised of a series of 19th century brick, two and three story storefronts. The Mark Twain Hotel with its landmark roof sign was to the south and the levee and the Mississippi River was to the east. The footprint of our building alone would cover a great deal of the city block site and the remainder of the site was required for parking. It was a real challenge to make a single story, multi-screen theater into the image of a block of connected buildings in this historically-sensitive area."

McIntire added, "We had to satisfy the Hannibal Community Betterment Association, the historical committee responsible for approving the building's design and cladding, including the color pallet. Jeff initially created a 3D rendering of his design for the building. It had a saw tooth design to it so that three parts seemed to pop out. The historic committee commented that it not only met their requirements but exceeded their expectations. From that point on, they were really wrapped around the project. Jeff really did a great job in matching the gray block from a nearby bank and the red brick and gray block of the Mark Twain Museum. Needless to say, the association approved the plans overwhelmingly."



Two layers of Dryvit's intermediate mesh were used on the lower part of the building for added impact resistance in high traffic areas.

The ability to carve out shapes from the expanded polystyrene (EPS) used in the Outsulation System was another added benefit to using Dryvit and helped give the building dimension, while complimenting the surrounding buildings. "We made grooves and aesthetic joints by cutting directly into the 1 ½" EPS," said Jeremy Deeter, Foreman for Entrup Drywall and Painting. "Windows were extruded out and the cuts and shapes were made to simulate window sills, shutters, and window boxes. Two layers of Dryvit's intermediate mesh were used on the lower part of the building for added impact resistance in high traffic areas."

"Dryvit's variety of both standard and custom colors and the flexibility of the product were also key factors in achieving all the surface finishes required in such an historic town," Deeter continued. "We used Dryvit's Custom Brick™ to simulate brick with a 'NY Brick' stencil. The color was a custom mix that Dryvit matched specifically for the B&B. 'Coconut Shell' was used for the lower part of the walls and windows and doors. We also used 'Suede' for the joint color, 'Sand Dollar', and 'Dover Sky' to achieve the look of sandblasted stone, concrete block and cut stone. 'Monastery Brown' was used to achieve the dark brown for the simulated window boxes. We even used 'Green' as an accent to match the green fabric window awnings."



Using Dryvit Outsulation, windows were extruded out and the cuts and shapes were made to simulate window sills, shutters, and window boxes.

This building project was not without its challenges, however. Entrup said, "This job required a lot of detail work, particularly with the windows and shutters. It took a lot of time to cut out the EPS as we wanted them to look as realistic as possible. But because we have used Dryvit's Outsulation System in the past on various fire and police department buildings, our guys have the experience necessary. In addition, because we're right along the river, we get a lot of severe, cold, windy weather including winds of up to 60 miles per hour. It was a challenge to keep the stencils on the wall but using spray adhesives and keeping the edges wet helped. We also experienced some delays and had to tent and heat 75% of this job. "

Extreme Savings Over Masonry

In terms of cost, Price said, "The challenge here was to create a shell that respected its neighbors but allowed for the budget constraints of the project. Due to the foundation conditions, the savings realized by using Dryvit over masonry were extreme. I've used Dryvit products on almost every project in the past. It has always given us the ability to create many

forms and details in a façade with multitudes of color and relief by carving or layering, and has always been a budget-sensitive design tool for us.”

“Despite being a very expensive building project overall, some savings were achieved in that the installation of the typical exterior sheathing (Dens Glass Gold) was eliminated, and we didn’t have to hire various trades including bricklayers, carpenters, concrete/stone masons and painters. If we went that route, I’m sure building material and labor costs would have increased tremendously,” said Price.

A Building Even Mark Twain Would Be Proud Of

The grand opening of the Hannibal B&B Theatre took place this past March and Dryvit’s Outsulation was literally in the spotlight. McIntire commented, “The product really does look incredible. The neighbor across the street that sold us the window awnings used on the theater commented that Dryvit’s Custom Brick with its uniform color looked better than his original brick! It’s hard to please everybody, but this project seemed to do it,” said McIntire.

Mike Welch added, “If Mark Twain were alive today he might be surprised by how much his boyhood home of Hannibal has changed, but also by how much it seems to have remained the same — thanks to Dryvit and everyone involved with this project.”



For more information about Outsulation, or any of the systems and products sold by Dryvit Systems, Inc., call Dryvit Technical Services at 1-800-556-7752 or visit us on the web at www.dryvit.com