

WALLS & CEILINGS

Restoring a Historic Landmark with High-Performance Materials

The Keezell Building

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Doug Kramer



The five-story brick and glass structure at 122 S. Main St. in Harrisonburg, Virginia, has more than just an address. It has a name and history steeped in tradition. Listed on the National Register of Historic Places, the Keezell Building sits in the city's downtown area, and is a proud example of classic revival-style

architecture. Just after being built, it housed the *Daily News Record* offices, printing presses, and was named after the paper inhabiting it, being touted as one of the finest and most modern newspaper buildings in Virginia.

In 1941, after a long tenure within the property, the *Daily News Record* moved out, drawing a large crowd to watch the 45,000-pound printing press be relocated. Following the newspaper's departure, the building donned a new name: The Keezell Building.

Over the years, the Keezell Building saw numerous tenants and owners come and go. In 2017, Matchbox Realty and Management Services (the current owner), initiated a more than \$2 million renovation to the property. Built in 1906, the 20,000-square-foot building comprises apartment units set atop ground-floor commercial space. The structure needed a significant upgrade to its envelope, interior spaces, and finishes. Spurred by both the need to enhance the property, as well as historic tax credits available to cover a portion of the cost, Matchbox began the rehabilitation in March 2017.

In Need of Insulation

With more than 100 years under its belt, the Keezell Building's enclosure was far from energy efficient, especially when compared to today's standards. Originally insulated with nothing, the structure proved a prime candidate for a high performing insulation system.

Matchbox brought in Elite Insulation & PolyPro, a full-service insulation company operating in the Shenandoah Valley, to consult on the best possible solutions and to complete the insulation overhaul.

"We were thrilled to be a part of the restoration of this historic fixture of downtown Harrisonburg and to help restore this beautiful building to its original glory," says Ken Wells, principal and co-owner of Elite Insulation & PolyPro.

Understanding that the ownership sought a solution that would provide both commercial and residential tenants with comfortable and quiet spaces to work and live, Elite Insulation & PolyPro selected two types of Icynene-Lapolla Spray Polyurethane Foam Insulation: Lapolla FOAM-LOK 2000-4G two-pound closed cell, and Lapolla FOAM-LOK 500 half-pound open cell, for the retrofit project.

"The ability of the spray foam insulation solutions to seal, insulate, offer sound attenuation, and even structural strength, rendered them the right materials for this noteworthy project," says Wells.

One important consideration for Elite was the tax credits leveraged by Matchbox, which mandated that the building's old hard wood flooring and all its original steps be retained and refinished. Over the years (and many tenants), the floors had become extremely squeaky, sounding off with each step, thus reducing the noise became an important part of the project as well. To resolve the issue, Wells' team applied one inch of closed cell spray foam to the underside of all flooring and steps. This not only sealed the floors, but added just enough structural integrity to silence them.

Next, 6 inches of open cell foam was applied to help with reducing sound transmission from unit to unit. Finally, a three-inch batt of mineral wool was installed. Walls shared between units received 5½ inches of open cell spray foam insulation on one side, and 5½ inches of mineral wool on the other side of the wall, for a total of 11 inches of insulation between each unit.

Restoring Crawl Spaces

The Keezell Building also includes a large crawl space. At the time of the restoration, the space needed a proper insulation application. Many of the building's mechanicals were located within the space, beneath an extremely leaky floor. Elite Insulation & PolyPro determined a closed cell conditioned crawl space was the only appropriate way to insulate the area. The team applied 2 inches of closed cell insulation to the exterior joist ends and crawl walls, overlapping a 12-mil scrim reinforced poly liner on the floor. All piers were sealed with foam and all poly seams were double taped, with bituthane in between, and vapor bond tape on top. A thermal barrier was applied to the exposed foam in the entire crawl space.

"The previously uninsulated crawl space is now properly insulated with spray foam," adds Wells. "Not only does this solution keep mold and mildew at bay but it improves indoor air quality for the first-floor commercial spaces, reduces potential stack effect, and dramatically reduces energy demands."

Matchbox Realty and Management Services, who has called on Elite Insulation & PolyPro for numerous projects, agrees that spray foam insulation was the right choice for this project.

"Spray foam not only accomplished what we needed it to, but exceeded our expectations," says Barry Kelley, president of Matchbox Realty. "Now we have a restored building built in 1906 that does not squeak, is highly energy efficient, and that maintains quiet between apartments. We have essentially kept the best of the old, while attaining the best of the new."

A Successful Renovation

In addition to the hard wood flooring and steps, Matchbox Realty preserved additional older features in the renovation, including the windows. They also added a top floor to house additional apartments.

As the renovation wrapped up in late 2017, leasing commenced for the apartment units, serving as off-campus housing for James Madison University. The re-vamped apartments, with modern sleek finishes, upscale kitchens, and new appliances were so popular with students that they all leased within five weeks. Three businesses signed on as tenants for the ground-level commercial space and by October 2017, all tenants had moved in, providing full occupancy and proving the restoration a worthwhile success.

In February, Elite Insulation & PolyPro was awarded first prize in the 2018 National Industry Excellence Awards in the Commercial Wall Foam category for the Keezell Building renovation. Hosted by the Spray Polyurethane Foam Alliance, the awards are an annual competition recognizing the year's best-in-class projects in spray polyurethane foam.

About the Author

Doug Kramer is President of Icynene-Lapolla. He can be reached at dkramer@icynene-lapolla.com.