

**FleeceBACK® RL™**  
RapidLock Membrane

CASE STUDY

**Preserving Senior Comfort: Revitalizing Grace Manor's Roof with Innovative Solutions**



**RapidLock**  
TECHNOLOGY

**JOB PROFILE**

**PROJECT LOCATION:**  
Indiana, PA

**CARLISLE APPLICATOR:**  
TRS Roofing, Inc.

**BUILDING OWNER:**  
Presbyterian Senior Living

**ROOFING SYSTEM:**  
Carlisle RapidLock System,  
with a 135-mil slate gray  
FleeceBACK PVC membrane  
and Contour Rib™ Profiles

Located in picturesque Indiana, Penn., Grace Manor at St. Andrews Village is a senior living community and part of the Presbyterian Senior Living (PSL) family of communities, where they are dedicated and committed to providing older adults with quality service and a meaningful experience. For over 96 years, PSL has been providing residential and care services to seniors in 27 locations across Pennsylvania, Maryland, Ohio, and Delaware.

“The roof on Grace Manor was failing and in dire need of replacement,” said Troy Spigelmyer, one of the owners of TRS Roofing, Inc. TRS is a 29-year-old commercial Authorized Applicator that serves Williamsburg, Penn., and the surrounding area.

The 55-and-older community, which includes 17 one-and two-bedroom apartments, has a complicated hip roof design with several gabled dormers and valleys, as well as four cupolas around the structure, which surrounds a courtyard area below. In total, the roof was over 29,000 square feet and was covered in both asphalt shingles and metal shingles.

“The roof has many valleys that transition into other valleys,” said Spigelmyer, “and the previous roof had leak and ice dam issues in these areas, essentially beginning the day it was first installed. Our job was to find a workable solution that would preserve the residential appearance of the building, while providing effective protection against water and the elements.”



The original specification, developed by Michael Lichy of Lichy & Associates of Cranberry Township, Penn., called for a standing seam metal roof lifted an inch over the existing roof for air circulation, which was one of the critical issues with the previous roofing systems.

“Not only did we originally specify that the roof needed to be raised an inch or so, but also we were going to add soffit and gable vents to really help with air movement under the roof,” said Lichy. “However, the price for the standing seam metal roof and new assembly was substantially over the budget, so we had to find a workable alternative that also met the budget parameters.”

“The roof of Grace Manor is visible from the ground and not only had to perform well but also it had to be visually appealing,” said Lichy. “The Carlisle system with Contour Ribbs, was the perfect solution and a great economical alternative for the project.”

At the time, the commercial roofing industry, like many other industries, was experiencing significant supply chain and material shortage issues. Membrane and adhesive prices were soaring, so finding an economical solution and securing the necessary materials was a critical first step.

“Since adhesive prices were rapidly increasing, we recommended the Carlisle RapidLock System with a 135-mil slate gray FleeceBACK PVC membrane and Contour Rib Profile to provide the look of a standing seam metal roof with the integrity and performance advantages of a welded thermoplastic membrane,” said Spigelmyer. “It was a great solution for this challenging project, and really worked out well.”

The first step of the project was to strip the old shingles off the roof down to the plywood deck. Once that was done, the eight-man crew mechanically attached a ½-inch recovery board over the entire roof to provide a clean new surface for the new roofing assembly.

“The work was somewhat slow going and dangerous,” said Spigelmyer, “due to the design and various slopes on the roof, which ranged from 5:12 to 12:12. As a result, we had to install extensive scaffolding and roof jacks, and our crew had to be tied off everywhere on the roof.”

Once the recovery board was installed, the next step was to install Carlisle’s InsulBase® RL polyiso. RapidLock (RL) is a hook-and-loop attachment system powered by VELCRO® Brand Securables Solutions. This revolutionary membrane attachment method essentially provides

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a fully adhered system without the use of adhesives. Carlisle's insulation boards act as the hook while the FleeceBACK membranes act as the loop, creating the industry's first adhesive-free, fully adhered attachment system.

“Given the roof design and slopes, we had to mechanically fasten the 2-inch-thick InsulBase RL polyiso using Carlisle fasteners and plates,” said Spigelmyer. “And as with the recovery board, the work was slow going.”

After the InsulBase RL was installed, the really hard work began for the TRS team.

“Once you put the FleeceBACK down on the RapidLock insulation, it is not coming off,” said Spigelmyer, “so you have to be very particular and precise when installing the membrane.”

Due to the roof's design with gables and dormers, it was critical that each piece of membrane be installed so that the seams were perfectly aligned for the Contour Ribs that would be installed later. On the sides of the dormers, that meant the seams had to be perpendicular to the eave, and on the sections that sloped from the ridge to eave, they had to be installed perfectly straight down the slope.

“No doubt, installing the membrane on the sloped surfaces was the most challenging aspect of the project,” said Spigelmyer. “To make sure we got it right, we had eight installers handling each sheet to keep it taut and stretched, and we used release paper to make sure that it did not connect with the InsulBase RL until it was in perfect position.”

One the membrane was perfectly positioned and the release paper removed, the TRS team rolled in each sheet with a heavy steel roller.

“The next step was using the roller on the sloped roof,” said Spigelmyer, “The crew had to roll it down each slope and then pull that heavy roller back up with a rope and get it ready for the next run.”

“This was our first project using the RapidLock system,” said Spigelmyer, “and everyone was really thrilled with the product. We didn't have to deal with any adhesives, which would have been difficult anyway given the roof design and slope, and even the guys who thought that the Velcro would ‘never work’ were really pleased with the product in the end.”

In addition to allowing the membrane to be installed safely on a steep slope, the RapidLock system was also beneficial as much of the installation occurred in the cold winter months.

“The RapidLock system was a critical component of the project, and really makes the roof a much better system,” said Lichy.

Once the membrane was installed, including separate PVC flashing in the valleys, at the peak, and in transition areas, it was time to install the Contour Ribs. First the team measured for the desired 20-inch rib spacing and snapped lines parallel with the laps to indicate where each rib would be installed. The spacing enabled TRS to install ribs at each seam, effectively hiding them from visibility.

“We welded the Contour Ribs to the roof using a VARIMAT Welder that had a special adaptor,” said Spigelmyer, that would



# CASE STUDY



accommodate each of the 10-foot-long, 1 ¼-inch-tall by 2 ⅝-inch-wide Contour Ribs.

The finishing touches for the roof included removing the old skylights on the cupolas, building new low-slope pyramid-style roofs on each, and covering them with gray membrane and gray siding to blend in with the roof. In addition, the TRS team terminated the roofing system on the gable ends with Carlisle Fascia, and at the eaves with termination bar and continuous shop-bent gutters. The individual vent stacks were flashed with custom-fabricated boots made for the individual slopes, and Alpine Snow Guards were installed around the perimeter for the residents' safety.

"This project happened at a very difficult time in the industry," said Spigelmyer. "We were all dealing with COVID and significant supply issues. Carlisle worked very hard to get the materials to us for this project and to help make it happen, and we are very grateful for their support."

"Working with TRS was really great," said Lichy. "They were very meticulous in their approach and conscientious of their work and attention to detail. They were the best contractor to have on the project."

"The project was truly collaborative between the architect, roofing consultant and the contractor. The team took a building with failing system and researched, recommended and installed a protective roofing system that we will benefit from for years to come with a cost, function and serviceability approach," said Casey Jones, Corporate Director of Environmental Services, PSL.

In the end, TRS addressed a very complex project during a very difficult time with new roofing products and technology from Carlisle SynTec Systems that is bound to provide the residents and staff of Grace Manor with many years of maintenance-free protection from the elements.