PROJECT PROFILE:

BB&T Ballpark
Charlotte, North Carolina

Challenge

In its inaugural season in 2014, BB&T Ballpark in Charlotte, North Carolina set new records. It was the most visited Minor League Baseball venue of the season. Including the Triple-A National Championship Game, the Charlotte Knights welcomed 696,601 fans during their inaugural season in Uptown Charlotte with 31 sell-out crowds and leading all of Minor League Baseball in attendance.

The 10,000-seat home of the Charlotte Knights is strategically oriented so that the field showcases views of the city skyline from home plate. Fans enjoy a variety of viewing options, including 22 fully furnished luxury suites, tiered dining terraces comprised of a Stadium Club on the Club Level and a Homeplate Club on the Concourse Level as well as two "dugout suites" at the field level, a "Home Run Porch" in right field, a picnic terrace in left field, and outfield bench and fixed seating.

The construction and operation of a sports facility must complement and work in harmony with its surroundings while accommodating the demanding requirements of the sports venues, many of which also host concerts, festivals, corporate and community events. In the case of the BB&T Ballpark where LEED

Location	Charlotte, North Carolina
Operator	Knights Baseball, LLC The Charlote Knights are a Triple-A baseball team affiliated with the Chicago White Sox.
Architects	Odell Associates (lead) Ball Park Design Associates
Construction Managers	Barton Malow Company R.J. Leeper Construction Rodgers Builders
Waterproofing, Air Barrier & Traffic Coating Contractor:	Strickland Waterproofing, Co.
Glazier	Charlotte Glass
Tremco Solutions	TREMproof® 6100 Hot Rubberized Asphalt, ExoAir® 120 Fluid-Applied Air & Vapor Barrier Membrane, ExoAir 110 Self-Adhered Air & Vapor Membrane, Spectrem® 1 Silicon Sealant, Vulkem® 350NF Low-Odor, Low-VOC Polyurethane Basecoat, Dymeric® 240FC Polyurethane Sealant

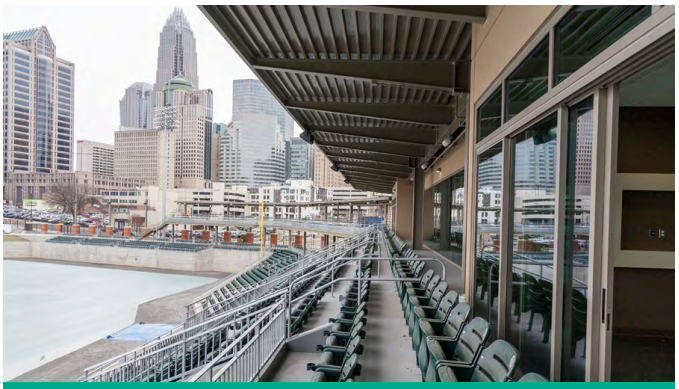
TREMCO

Challenge *(cont.)*

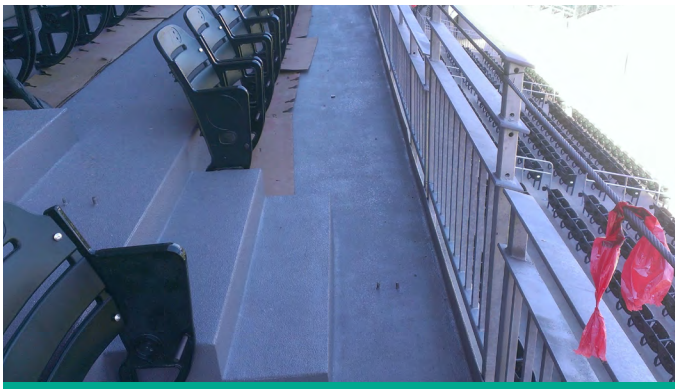
certification was an objective, the LEED certification principles and life cycle analysis tools are some of the best references for monitoring the entire life of a facility.

Most commercial construction projects wind up being rather boxy in nature. A ballpark, however, is comprised of a number of little buildings that wrap around a playing field, are independent of each other and that move separately. It has outdoor spaces and more elegant, high detail areas with a multitude of corners, ins and outs and transitions. When the cheering begins and the crowd starts jumping up and stomping, the impact does more than root the team on. It actually makes the buildings move.

The biggest challenge with a sports facility of this type is the seating components over occupied space which are concrete. As concrete moves, it cracks. It is in the areas that are not visible where problems may come later, possibly many years later. Key to a successful outcome is ensuring that the fans taking advantage of the spaces beneath are protected.



Tremco's compatibility of silicone-based glazing and urethane deck coatings at the window-to-wall transition was critical for long-term adhesion.



Vulkem® low-VOC, low-odor polyurethane basecoat was used to dress up the ballpark and to ensure fans in lower levels stay protected.

Solution

Successful outcomes are dependent upon a commitment to an integrated design process that carries through to comprehensive details at areas where materials abut, adjoin or overlap to ensure a complete building envelope assembly. In addition, compatibility of those connections or transitions is critical.

Strickland Waterproofing Co., Inc., based in Charlotte, has built a reputation over the last 100 years for providing waterproofing protection, specialized repairs and restoration as well as epoxy and urethane coatings. To ensure the high performance building design was carried through to the materials and processes utilized during construction, subcontractor Strickland was responsible for the waterproofing, air barrier, traffic coating and much of the sealant installation on the BB&T Ballpark.

The products used for these applications were all from Tremco Commercial Sealants & Waterproofing. Tremco's vast offering of products and systems including air barrier systems, glazing systems and transition assemblies, traffic coatings, waterproofing and sealants are formulated and tested to ensure superior performance and compatibility. Understanding that the quality of the entire building envelope will determine how well a building functions as well as its lifespan, Tremco has committed significant resources to developing superior technology and integrated systems that provide true solutions to the most troublesome gaps in building protection.

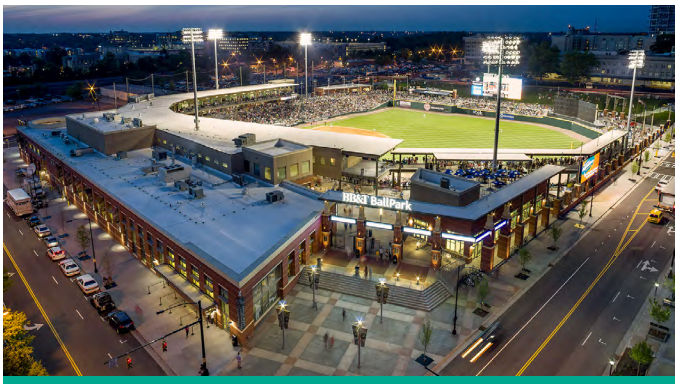
Tremco is the only company able to provide a comprehensive air barrier system, including fluid- and sheet-applied membranes, thruwall flashing, primers, termination mastics, high performance silicone and urethane sealants and transition assemblies.

Solution *(cont.)*

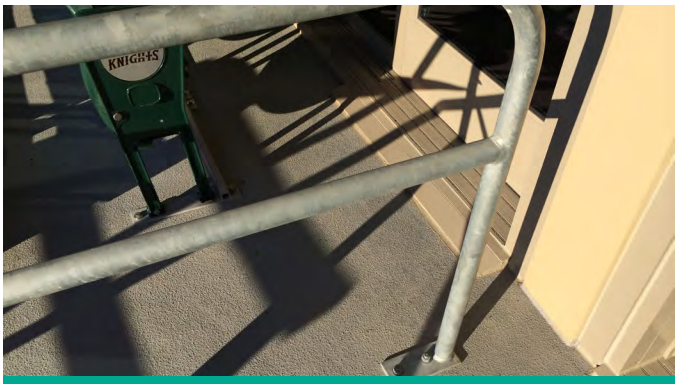
Knowing that Tremco had validated compatibility between different systems and the expertise to work through the jobsite conditions endemic to the sports facility environment was a big part of their selection as a partner on this project. "The BB&T stadium project is a great example of several Division 7 materials and assemblies combining (and in some cases connecting) to provide a complete building envelope assembly," remarked Eddie Black, project manager for Strickland. "We knew the Tremco pedestrian coating system as a good one and also knew that there may be some areas where the glazing contractor would be installing Tremco's Spectrem® 1 Silicone Sealant over the coating."

Establishing a waterproof tie-in between the silicone-based glazing system and the urethane deck coating at the window-wall of the luxury boxes was going to be a critical aspect of the job.

Chemistry incompatibility could cause loss of adhesion, leading to problems down the line. The polyethylene backing on sheet-applied air barrier membranes also is an adhesion challenge for most sealants. Since Tremco's products are formulated and tested to ensure compatibility and proven performance, the selection of these products eliminates risk for the contractor. Particularly on larger projects, this represents a significant benefit.



In 2015, BB&T Ballpark was ranked the number 1 Minor League baseball park in America by *Baseball America* magazine.



Compatibility of products at floor-to-wall transitions, detailing and drainage is vital to eliminate concerns about cure inhibition or adhesion.

Built-in Protection, From the Ground Up

While the majority of the project other than the field itself was built at street level, there was a significant amount of horizontal waterproofing below the seating to protect the locker room and occupied spaces below. Tremco's TREMproof® 6100 Hot Rubberized Asphalt provided the performance required within the budget parameters. Among other applications, it was used for waterproofing a double slab roof where a maintenance room was situated below.

In addition, Strickland Waterproofing had a long and successful history using Tremco's hot-applied waterproofing system. "Our installers know the system well and did a great job of making sure we passed the vector mapping leak testing on the first attempt," added Black.

To reflect the character of uptown Charlotte, the brick and storefront window exterior features found on buildings in the area are combined with the stadium's painted exposed steel structure.

Tremco's ExoAir® 120 Fluid-Applied Air & Vapor Barrier Membrane serves as the foundation for the air barrier system behind the brick, providing a monolithic, seamless membrane which ensures continuous integrity without gaps. ExoAir 110 Self-Adhered Air & Vapor Membrane is used as a transition membrane into door and window openings. Spectrem 1 Silicone Sealant was used at the connection from the air barrier to the window-wall of the luxury boxes and the punched window openings.

The Extra Step

Tremco's Vulkem® low-VOC, low-odor polyurethane basecoat with tenacious adhesion to clean and dry concrete was an addition to the project late in the game. Not a lot of stadiums can afford to put a traffic coating on the outdoor elevated seating. The square footage on the treads and risers adds up quickly, but the traffic coating dresses up the ballpark and provides waterproofing. This ensures not only a good look but efficient protection, making it very affordable.

The roller-grade version of Vulkem 350NF was used on the project, making the application up the risers much easier than with a selfleveling material and it does not require priming. Its compatibility with other Tremco products where it abuts other transitions or penetrations of the structure such as floor-to-wall transitions, detailing and drainage areas eliminates concerns about cure inhibition or adhesion issues. Dymeric® 240FC Polyurethane Sealant, specially formulated for dynamically moving building joints, was used to provide flexible, durable, weathertight seals in the concrete.

Building a Tradition for Performance

Soon after its inaugural season came to a close, BB&T Ballpark was named a Winner in the 2014 ENR Southeast Awards program in the Sports/Entertainment category. ENR Southeast's annual project excellence program and judges based their decisions on which projects represent the "best" construction and design achievements of the past year for the Southeast region.

The Charlotte Knights were also selected to host the 29th annual Triple-A Baseball All-Star Game in 2016. The game has featured 86 players who would later go on to play in Major League All-Star Games.

The cheering, exuberant crowds have only been around for a few years now, but the ballpark is ready to weather whatever mother nature or the fans bring its way.

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