

HOME RUN



Glass Plays a Key Role in New Baseball Stadiums

by Brigid O'Leary

The vendors at many stadiums across the country are getting ready to roll out the peanuts and Cracker Jack, along with the hotdogs and the beer. Yes folks, baseball season will be starting in a few weeks, with the Phillies looking to retain the World Series title they won in 2008. In New York, players from both teams closed out the last season with respectable records.

The disappointment was especially hard last year, with both teams facing a big change in the off-season; each team has a new stadium and while many of the players laid claim to pieces of the old stadiums and, in a sense, a part of history, many fans—especially those in the building and construction industries—are looking forward to seeing the new digs at work. And there will be plenty to look forward to, especially for those with an eye for glass.

The New Shea'd of Green: Citi Field

In 2004, Atlanta Braves third baseman Chipper Jones named his newborn son Shea. It has been reported that Jones chose to name his son Shea because he believes he always hit well at Shea Stadium, home of the New York Mets. Whether or not the story is true, by the time Shea Jones starts school in the fall of 2009, the stadium bearing the same name will have been replaced by a newer model which at press time was expected to be named Citi Field.

Though sports arenas have a very prescribed purpose, there are a number of ways to work glass into the design. Baseball stadiums, in particular, require glass to do very specific and specialized things—things that may not be required of glass in other sporting venues.

“Baseball impact resistance is the first [thing] that comes to mind,” explains Bruce Marshall, principal with HOK Sports, the design firm behind Citi Field. “We have a lot of glazing that faces the field and we have to make sure it doesn't break upon baseball impact.”

And that, he explains, applies to any and all glass that faces the field, whether it's in restaurants, press boxes or the private suite boxes, even if the chance of a player hitting it seems impossible.

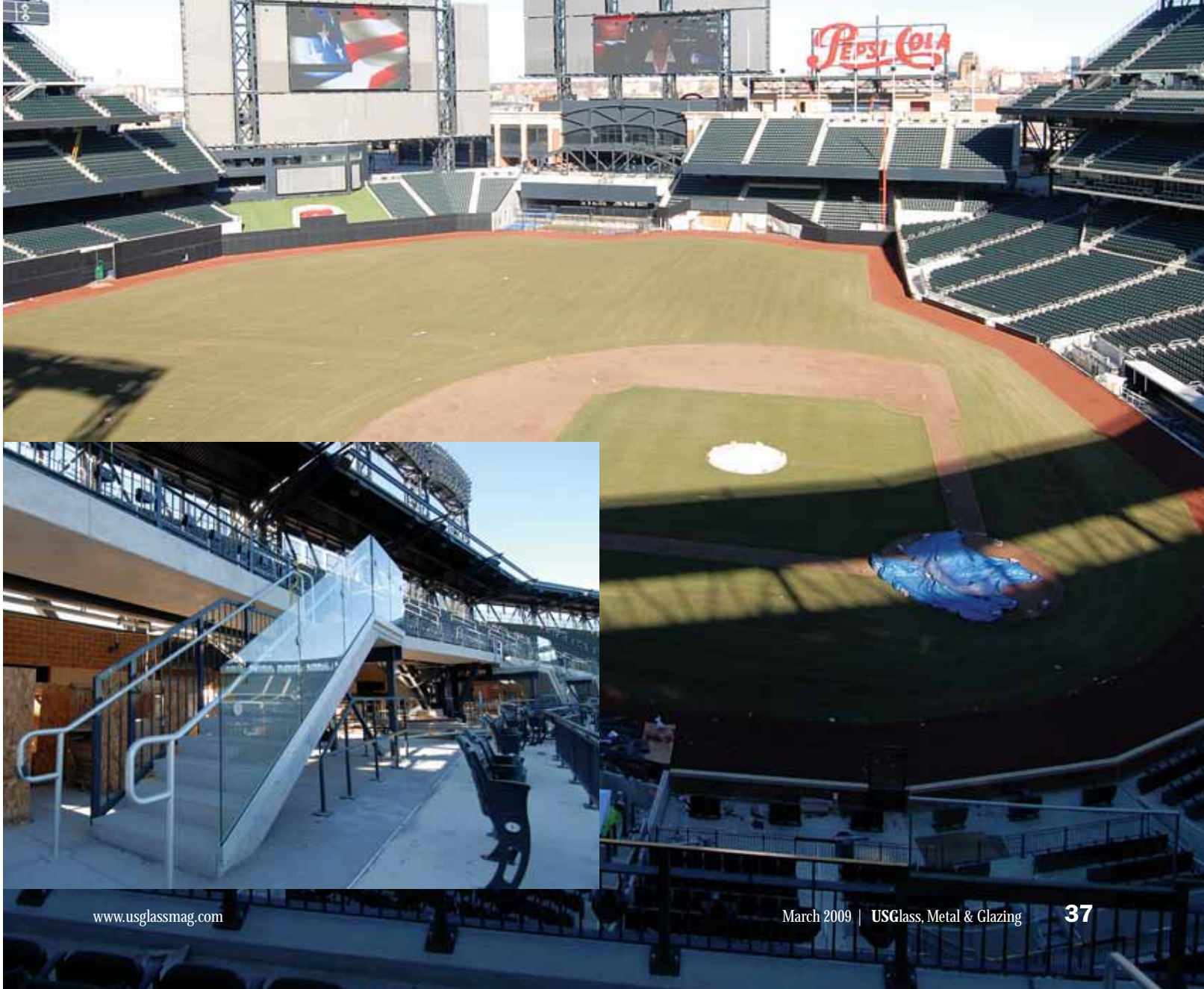
But what may surprise some is that there is impact-resistant glass on the stadium's exterior as well.

“The bulk of the glass is 1 ¼-inch-thick insulating units, the outboard lite being a ⅜-inch laminated make-up. That was chosen to face the exterior for a lot for reasons, [primarily] impact re-



Citi Field is billed as having “unprecedented sightlines,” to some degree due to the use of glass. (Left) W&W Glass installed a Pilkington structural glazed system in the restaurant that overlooks the playing field. (Below) Glass makes an appearance in unexpected places, such as the stairs leading to the upper deck.

Photos by Fred Kopf.



sistance,” says Bruce Hensdorf, project manager with W&W Glass of Nanuet, N.Y., the glazing contractor hired for the exterior glazing. “Let’s say the Mets lose the World Series in the 15th inning of the seventh game and fans go nuts . . .”

Location, Location, Location

Of course, the incorporation of glass in the design of a stadium in some ways is like any other building: its location and use often determine the specific product used.

Hensdorf says that most of the glass installed at the Met’s new home is 1 ¼-inch coated, insulating laminated glass. Additionally, 1 ¼-inch

to reduce the sounds of the surrounding city from impeding the work within. He notes that the sound resistance aspect is especially important, as the stadium is in the flight path of LaGuardia Airport.

For the architects at HOK Sports, the surroundings shaped the stadium’s design.

“The architecture is designed according to the context of where it is located,” says Marshall. “With Citi Field, it’s mimicking Ebbets field. We’re trying to stick with colors versus not a lot of color or reflectivity based on the architectural façade. For most of the glazing on the inside we stick with clear glass, rather than colored. It encloses the space, but we want to maintain the very best view, whereas color or tinted glass would minimize the sightline directly to the playing field.”

And at this stadium, those sightlines are especially important. The stadium’s website bills the new facility as having “unprecedented sightlines”—the first and most frequently mentioned aspect of the new park.

“Understandably, the owner requested an unobstructed view of the field. The size of the glass—96 by 136 inches—necessitated the increase in material thickness,” Hensdorf says.

Be Specific

Though the designers at HOK Sports don’t get much say in which contract glazing company—or companies—end up doing the work on their projects, they do try to make sure to get input from the glazing industry throughout the design process.

“We often seek things specifically,” Marshall explains, describing a project in Houston that included an operable glass roof that proved challenging. “We used a non-reflective coating on surface four, on the inside surface—it’s opposite of what people usually do because we were worried about the reflectivity especially from the playing field, such as in a first-to-third play.”

The concern was mitigating any un-

wanted reflection that could cause interference if a player has to look upward to catch the ball.

“In that case, in something we haven’t done before, we go to the glazing industry to ask questions about what was possible, how big [it’s available], where we can get it. We often talk to glaziers about the strength of glass, the proportions,” Marshall continues. “We look to glaziers to help us with weights. Press boxes are modified, custom, single-hung window and we’re concerned about it working with manufacturer pre-designed window systems. We also ask a lot about color, tint, low-E coatings and those things so we can understand the mechanical issues of glass that is exposed to the sun. Hopefully, we’re asking questions upfront, before we give specifications, so we can really specify exactly what we’re looking for.”

How Many Does it Take ...

Asking the questions upfront and getting the right materials specified is particularly important because once the design stage is complete and building begins, much goes out of the hands of HOK Sports. The buildings are public works, and the construction managers usually choose the contract glaziers, often going with the lowest bidders, Marshall says.

Though the stadium design was complete before the contracting bids were issued, W&W Glass got involved very early—as early as 2006 on the administrative end of things. In fact, W&W Glass was already working on proposals for the job when Hensdorf started with the company in early 2007 and, by that summer, the company had employees on the site of the new stadium. The long working relationship allowed W&W Glass to work with the other contractors to ensure that their needs had been met. It’s the kind of teamwork that begets pennant wins and the payoff here was that the stadium construction wound up ahead of schedule.

“There’s immense coordination that goes on with regard with what

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**—Bruce Marshall,
principal, HOK Sport**

thick composite spandrel panels consisting of ¼-inch heat strengthened clear glass with custom color ceramic frit on the number 2 surface, ¾-inch foam core and ¼-inch hardboard faced on the number 4 surface with aluminum skin painted in high performance Kynar® to match the custom color framing systems was provided by Mapes Industries. That was used primarily at external stadium elevations at upper levels in traditional spandrel applications, Hensdorf says.

Hensdorf adds that the many administrative offices located on the Citi Field campus are glazed with 1 ¼-inch coated, insulating laminated glass as well. Impact wasn’t the big concern there—the thick glass helps

Last Train to Ruthville:

The New Yankee Stadium



Photo courtesy of Champion Metal & Glass.

Though the exterior of the stadium was designed to resemble the original Yankee Stadium, the Yankee's new home will have a "modern" look and feel.

we're doing, especially with structural steel that will support us. In fact, we're usually involved with design and making sure it's what we need," Hernsdorf explains.

Because HOK Sports doesn't always get much say about which contract glazing companies are hired to work on their stadiums, they also don't have much control over how many glazing companies are hired—a number that can vary depending on the size of the project. "Complicated" was the word Marshall used to describe the contract glazing work on venues the size of sports stadiums. There is so much work to be done that up to four companies can be hired to work on one structure, especially if a project has been put on a fast-track schedule. One company may install the glass on the luxury suites, while another will handle the glazing needs of the press boxes, Marshall explains.

"Sometimes it's a bonding, issue, too, just because the issue is so huge—some contractors just can't get bonded for the whole project. To keep it fair, the [general contractors] will break it out into multiple scope packages. It's a big project and there's so much different stuff going into it. Every type of framing you can think of; there's a structural glazed system in the restaurant that overlooks the playing field. It ranges from very straightforward to very custom pieces," he says. Custom pieces such as the proprietary Pilkington structural glazed system in the stadium restaurant, installed by W&W Glass.

"It's exciting. It's a landmark building. It's a beautiful building—a massive project," Hernsdorf says, describing what it's like to be part of the project to replace Shea Stadium. "There's no doubt it's exciting to be part of the creation of a landmark."

Last Train to Ruthville: The New Yankee Stadium

On September 21, 2008, the Yankees played their last regular season home game, defeating the Baltimore Orioles 7-3. Having missed making the playoffs, the game served as the end of an era and left fans and players alike paying their last respects to Yankee Stadium, a structure referred to by sportscasters—or at least by SportsCenter anchor Stuart Scott—as "the grand cathedral of baseball stadiums."

The Cleveland Indians will be the first visiting team to test out the new Yankee Stadium, which will open on April 16, 2009, and likely draw the same number of loyal Yankee fans to root for their favorite team. What many of those same fans might not notice is the interior glazing of the stadium. Much of the interior glazing—except that on the bullpens—is the work of Champion Metal and Glass

Inc., headquartered in Deer Park, N.Y.

The company is a heavy-hitter when it comes to high-profile projects such as this one. What company owner and president Ali Ghahremani describes as “a very small start-up company” when it opened in December of 1993, quickly grew in size—and in the scope of the projects with which it got involved. Fifteen years on, the company’s work on the New York Times building and the new Jet Blue Terminal at John F. Kennedy International Airport are some of the most well-recognized projects of which it has been part.

And yet, even with such high-profile jobs under its belts, getting the contract to work on Yankee Stadium has been the company’s own little home run.

“This project is unique. Not too many buildings have the history and image that Yankee Stadium has,” says Ghahremani. “That by itself is a great honor to be part of.”

Triple Play

However, in other ways, the job isn’t greatly different than other projects.

“It’s more than typical in material that we use on almost every project,” Ghahremani says, but he quickly adds, “there’s no difference in working with other trades on this as other jobs, just coordination and scheduling.”

Working with field-facing glass, the company faced the same safety concerns that Marshall faced when designing the stadium for the other New York team. To keep visitors as safe as possible, most of the glass Champion Metal and Glass installed is tempered/laminated glass— $\frac{9}{16}$ -inch—but that’s hardly the last of it.

“We have a custom fabricated insulating unit, 1 $\frac{5}{8}$ -inch overall thickness, at the 100-level Legends Lounge, behind home plate, butt-jointed without any vertical mullion to give you a clear view looking to the field,” says chief op-

erating officer Linda Oristano. “At the various levels at 125, 150, 200 and 300 we have the lounges and restaurant storefront framing and glass. One of the main specialty items are the ticket windows, which are 1 $\frac{1}{2}$ -inch laminated bullet-resistant glass with standard framing furnished by C.R. Laurence. We have all of the entrances to the 200 level suites, party suites and miscellaneous doorways.”

Kawneer supplied Champion with the 2-inch thick, heavy wall construction medium- and wide-stile doors and frames, fabricated with required hardware.

“Trifab® VG 451T front set and center set systems were used throughout all concourse levels of the stadium, which include restaurants, retail and offices,” explains Joclyn Fagan, public relations representative for Kawneer. “350 Heavy Wall™ with 3 $\frac{1}{2}$ -inch wide vertical stiles were selected for the stadium’s luxury suites and are single-swing doors into the units. 500 Heavy Wall™ with 5-inch wide vertical stiles are featured on all concourse levels, main entrances and gate entryways throughout the facility. Engineered to withstand heavy traffic, Heavy Wall™ entrances provide quality and durability that lasts. In addition, the 500 Heavy Wall entrances have 10 $\frac{1}{4}$ -inch bottom rails for additional strength and were prepared to be outfitted with custom hardware for the project.”

Fagan adds, “Though the exterior of the stadium is designed to resemble the pre-renovation exterior of the original Yankee Stadium, the interior will have a modern look and feel.”

Champion fabricated the sidelite frames and storefront frames as required in the various levels while Oldcastle was “fabricating the glass ... for the various glass types at the exterior side of the stadium and interior side facing the field,” Oristano says.

For its part, Oldcastle provided interior glazing for the stadium, and originally quoted 13 different types of glass, according to Steve Acker, sales manager for Oldcastle in New York.



Photo courtesy of Champion Metal & Glass.

Oldcastle originally quoted 13 different types of glass for the interior of this multi-faceted project.

“Contractors came to Oldcastle because of our size, reputation and ability to deliver on the project. We had meetings with the general contractors for Yankee Stadium; they came out to our facility early on ... They wanted confidence in that we could produce on time with their tight schedule,” Acker says.

And produce they did, providing clear insulating units with PPG Solarban 60 low-E glass, Solarban 60 on bronze substrate, laminated glass with Arctic Snow interlayers from Solutia and 1/8-clear tempered laminated glass for the stadium.

As it turns out, suppliers aren't immune from the Mets-Yankee rivalry, especially those with a local office—and more so if they're supplying product for both, as Oldcastle did.

“Being in the New York market, employees of the company were torn between Yankees and Mets as to which project went through first,” says Acker.

The Full Cycle

Overall, Champion's work on the stadium will have lasted nearly a full year.

“We have been on the project as early as February of 2008 installing mock-ups for the 200 level door entrances ... and [continued] through January of 2009,” Oristano says.

And, much like the contract glaziers working on the HOK Sport designs, Champion Metal and Glazing didn't get much say in what they were asked to do or with what materials they were to do it.

“All materials were in the specification manuals,” Oristano says. While the specs are already written by the time they get to the contract glaziers, there was plenty of responsibility for the glaziers to shoulder.

“We had to coordinate the correct function of the specified hardware on the doorways due to the complexity and number of security entrances and requirements of the stadium. Some of the storefront openings needed to be engineered due to the exposure of the exterior elements and anchoring to the adjacent materials,” Oristano explains.

And while there are always challenges on a job the size of Yankee Stadium, the same business practices that have made Champion Metal and Glass successful helped the crew field whatever came their way as easily as Yankee fans hope Bobby Abreu can.

“I value my employees, I value my vendors and I value my customers. I make sure all three get the same respect I would want to get as any of those entities,” says Ghahremani. “Champion is a very fast growing company and we pride ourselves with the quality of our work and the service we provide to our end users. We're looking forward to continuing to rebuild the city of New York for many years to come.”

Grand Slam

While most architects look at designing buildings to match the surrounding structures, Oristano and her coworkers at Champion Metal and Glazing view the new Yankee Stadium as a reflection of the city's personality—much like glass itself.

“The personality of the city and team can be described in the same class as tempered and laminated glass. They are both resilient, hard to crack; they are tough and strong,” she says. “Laminated glass and the way it is made represent a combination of diverse particles. Our city has a vast amount of diversity (similar to the combination of particles) and again is strong in that it absorbs the energy of the impact, resisting penetration. We can handle a lot. Although the glass may break, the glass fragments remain firmly bonded to the interlayer, minimizing the risk of injuries.”

History in the Making

Yankee Stadium opened in 1923 and underwent renovations, including a complete overhaul on the same site in the 1970s. And though it may not carry an iconic name such as Wrigley Field or Camden Yards, there is a certain amount of his-

tory and consistency keeping the same name. There's a certain amount of pressure that goes into such an iconic job, too; the pressure to get it right and make sure the new facility lives up to the reputation of its predecessor.

“This project is a unique project in many different ways. One is [that we're] pretty much replacing the stadium that's been there for more than a century. I'm anxious to be part of a building that's going to last another century or more,” says Ghahremani.

No matter what the stadium is called, Champion Metal and Glazing knows it is part of the team that is making history.

When queried about what it's like essentially rebuilding “the House that Ruth built,” Oristano replied, “Change is growth. If you do not rebuild, then you cannot grow. Champion is proud to be part of the rebuilding of the stadium. Who knows, it could become the “House that A-Rod built.”

With opening day at hand, everyone at Champion Metal and Glazing, at least, is excited to see just what A-Rod and his teammates can do.

“The majority of our employees are Yankee Fans and are looking forward to enjoying them win at the new stadium. Even the token Met fans are excited and anxious to see the stadium complete,” Oristano says. ■

Next Month: The Exterior

Hungry for more details, sports fans? Then look for the April USGlass, which will bring you more details about the exterior of the new Yankees stadium.

the author



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