

# A Journey Through MERCEDDES-BENZ STADIUM

The future home of the Atlanta Falcons and Atlanta United is scheduled to open on July 30th. With a bevy of signature elements, including its oculus and operable roof, halo board and mega column, VR-infused loge suites and fiber-to-the-edge technology architecture, will its “Fan First” philosophy and programming deliver the industry’s next iconic design?

By Jared Frank, ALSD

**W**alking the wide yet winding Mercedes-Benz Stadium corridors requires different navigation each day. Today, a wall that wasn’t there yesterday blocks our path. We must find a new way around this progress.

The concrete sweats, our safety goggles fog in the cool, damp air. Under heavy, wintry clouds, a hive of activity buzzes around our hard-hat journey. Fifteen hundred worker bees bend metal into honeycombs never seen before in the venue marketplace. Cranes, two of which are among the world’s largest crawler cranes, hoist the unique fabrications and plant them amongst a forest of fixed-roof steel overhead.

A total of six cranes lift the job site today, the least number of cranes in months. As the Georgia Dome preps to host its final Atlanta Falcons home game, 84 feet away, Mercedes-Benz Stadium enters its final stretch of construction. Some spaces are already punched, including some concession stands and suites.

“It’s exciting to see some of this stuff getting close to the finish line,” says Scott Jenkins, General Manager at Mercedes-Benz Stadium and the ALSD’s tour guide today. “Between now and roughly six months, we’ll see it come to the finish.”

Now scheduled for a July 30th opening, the nearly two-million-square-foot venue will host up to 80,000 fans for two anchor tenants – the Atlanta Falcons and MLS-expansion franchise Atlanta United – as well as a gamut of major events, including Super Bowl LIII.

But any drive to the end zone is beset with many starts and stops. Progress never moves in a straight line.

## QUICK HITS

**18,000 tons of fixed-roof steel support an eight-piece operable roof unlike any design to date in the venue marketplace.**

**Just beneath the roofline, 60,000 square feet of LED lights, dubbed the halo board, circumnavigate the stadium’s signature oculus.**

**Amid construction, 28 technology-focused loge suites with virtual reality headsets and two iPads joined the menu of premium offerings.**

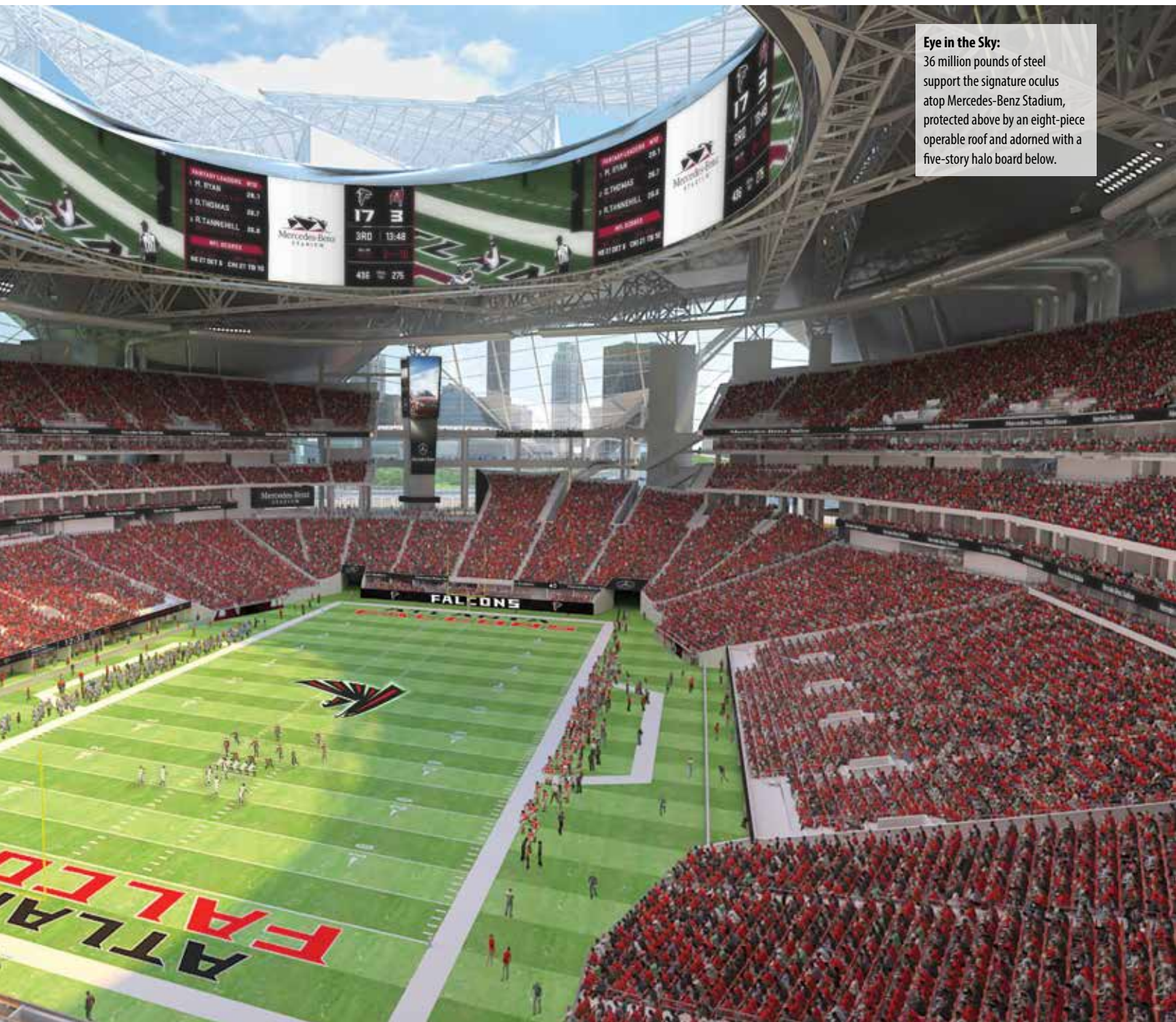
**65% more points of sale have been installed to meet expected increases in demand stemming from Fan First food and beverage pricing.**







**Concourse Destinations:**  
Technology zones, beer gardens, and the 100 Yard Club on the 300 Level (pictured here) provide premium-like experiences for all fans.



**Eye in the Sky:**  
36 million pounds of steel support the signature oculus atop Mercedes-Benz Stadium, protected above by an eight-piece operable roof and adorned with a five-story halo board below.

All images are courtesy of Mercedes-Benz Stadium.



**“[The roof] has been the biggest challenge construction-wise. Now that that’s up there, we’re feeling great about the momentum we have on the rest of the project to bring it to the finish line.”**

– Scott Jenkins, Mercedes-Benz Stadium



## **SIGNATURE ARCHITECTURAL ELEMENTS**

Now blooming out of the downtown Atlanta soil is an iconic-looking structure, progressive and forward-looking in terms of its design and technology, and one intended to serve as an international symbol for the state of Georgia and the city of Atlanta. These initial cues came straight from Arthur Blank, Owner and Chairman of AMB Sports & Entertainment – the parent company of the Falcons and Atlanta United.

Bill Johnson, SVP and Design Principal at HOK Sports + Recreation + Entertainment, remembers the seeds of his imaginative design.

“When we came in with this concept in the interview process, the Falcons were either going to love it, or they were going to hate it,” says Johnson. “It wasn’t going to be in the middle. We swung for the fences so to speak. And it fulfilled a lot of [Arthur Blank’s] preconceptions about what he wanted the project to be.”

Out of the initial ideation came a thesis that the energy of football and soccer is focused in the center, resulting in the iconic oculus roof, reminiscent of the Roman Pantheon. Also inspired by the Falcons logo and team colors, Johnson created the mesmerizing exterior geometry of the building.

“There was something about the falcon’s wings in flight that I really loved,” says Johnson. “And so we thought about overlapping shapes and forms that would look like a falcon’s wing.”

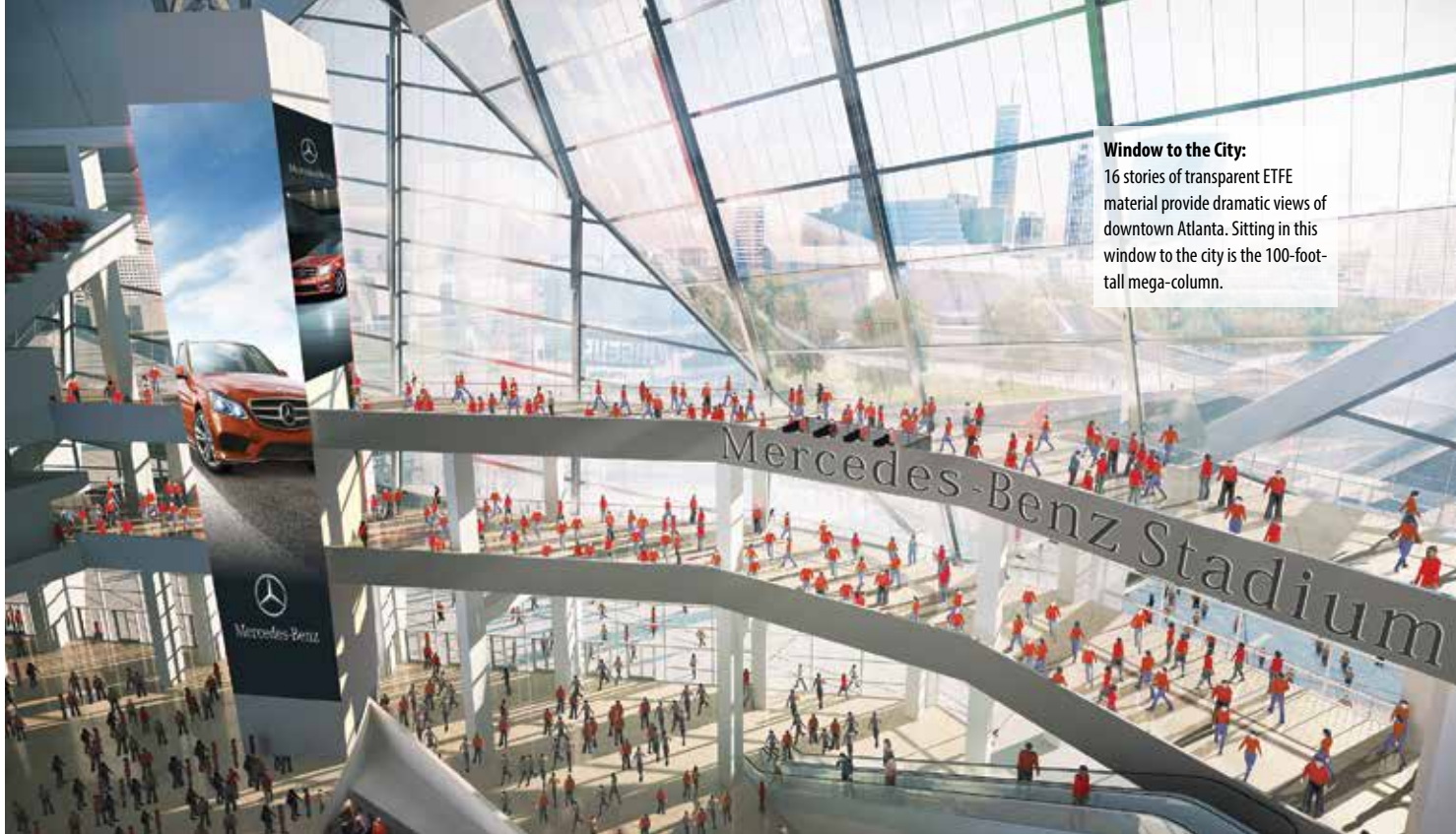
Combining the oculus with the falcon’s wing inspirations, Johnson next created a first-of-its-kind retractable roof design – a grand departure from the simple single-panel or bi-parting-panel designs typically enclosing sports and entertainment venues.

“We thought about what would actually focus energy in the middle, look like motion, look like a falcon wing in flight, and we came up with the idea that the roof could actually move in a radial way, away from the center,” Johnson says. “That became the inspiration for the skin and for the materials, for the seating bowl, and everything really followed that idea.”

## **OCULUS AND OPERABLE ROOF**

First conceived as a circular opening, the roof geometry was simple. Eight congruent segments with congruent movement would easily come together to close the roof. But after stadium designs were refined, the circle stretched to an oval, introducing complicating variables. Now the pieces vary in shape and size, and move slightly faster or slower over distances slightly longer or shorter than one





**Window to the City:**  
16 stories of transparent ETFE material provide dramatic views of downtown Atlanta. Sitting in this window to the city is the 100-foot-tall mega-column.

another.

Tried-and-true technology guides the wheels and tracks, but the development of the roof mechanization, designed by Minneapolis-based Uni-Systems, is something the industry has never seen before. Each cantilevered puzzle piece has six drive bogies that each have two 7.5-horsepower motors for a total of 96 motors.

Some in the press have expressed concerns about whether the mechanical system will successfully bring the eight roof components together to deliver a waterproof building as planned. HOK doesn't share those concerns.

"We're not concerned in any way at all about the mechanization. That's tried and proved," says Mac McCoy, SVP and Director of Project Management at HOK Sports + Recreation + Entertainment.

A significant milestone was achieved in December when Mercedes-Benz Stadium's signature element was decentered. Shoring towers were jacked down, and 36 million pounds of fixed-roof steel dropped 22 inches as planned, settled, and supported itself.

"That's a celebration for everybody because that means things can start getting demobilized and moved out of the bowl, opening up real estate so they can finish the lower level bowl," says McCoy.

"[The roof] was spaghetti. Between the amount of cranes, the amount of steel, and the shoring towers, it looked rather chaotic," adds Jenkins. "To clear that up and see the view, it's really quite dramatic."

With the workspace now clear of the shoring towers, the components of the operable roof portion, known as "petals" (like the petals of a flower), are now being assembled on the floor. Once installed, the eight triangular-

*[continued on page 84]*

## MERCEDES-BENZ STADIUM BY THE NUMBERS

**Construction Cost:** \$1.5 Billion

**Architect:** HOK

**General Contractor:**

Joint Venture of Holder Construction Co., Hunt Construction Group, H.J. Russell & Co., and C.D. Moody Construction Co.

60,000-Square-Foot, 600-Ton Halo Board

100-Foot-Tall 3D Mega-Column

3,200 Lineal Feet of Ribbon Board

52 Million Individual LED Lights

4,000 Miles of Fiber Cable

1,800 Wireless Access Points

18,000 Tons of Fixed-Roof Steel

10-Million-Pound, 8-Piece Operable Roof

96 7.5-Horsepower Motors to Operate the Roof

4,000 Solar Panels

1.1-Million-Gallon Storm Vault

680,000-Gallon Cistern

20 Elevators

25 Escalators

193 Suites

16 Field-Level Suites

7,500 Club Seats

28 Loge Suites

2 Metropolitan Atlanta Rapid Transit Authority (MARTA) Stops

## THE TOP 5 PREMIUM DESTINATIONS IN MERCEDES-BENZ STADIUM



Owner's Suite

The premium seating industry doesn't witness any dramatic shift in products offered at Mercedes-Benz Stadium, but successful industry products from the past five years see significant incremental improvement across all levels.

"These buildings can produce tremendous premium experiences today," says Rich McKay, President of AMB Sports & Entertainment. "[We're] taking other people's ideas, and making them a little better."

The premium menu at Mercedes-Benz Stadium reflects AMB Sports & Entertainment Owner and Chairman Arthur Blank's bullishness on the Atlanta economy. Upscale experiences abound with 4K televisions on the walls and china on the tables in 193 suites, 16 field-level suites, 7,500 club seats, and 28 loge suites.

"We have a lot of product," says McKay. "Atlanta can support it. We have a very deep corporate community."

Here are the top-five premium destinations in Mercedes-Benz Stadium.

### 1. Mercedes-Benz Club/AMG Lounge

This club-within-a-club environment underneath the 100 Level seating is reserved for club seat holders in the first 35 rows of the lower bowl along the south sideline. The 30,000-square-foot Mercedes-Benz Club provides patrons with access to an on-field patio and toes-on-the-turf experience between the 20 yard lines.

PSL prices for the Mercedes-Benz Club range from \$15,000 to \$20,000. Michael Drake, SVP and Chief Revenue Officer at AMB Sports & Entertainment, expects to sell out of this inventory two or three months before the building opens.

The 12,000-square-foot AMG Lounge is an all-inclusive private club located inside the Mercedes-Benz Club, serving the sections between the 45 yard lines. This ultra-exclusive space has floor-to-ceiling windows to provide patrons with viewing access to the Falcons players and coaches as they enter and exit the home team locker room. Access to these amenities costs \$45,000 for a PSL and \$385 per ticket. AMG Lounge club seats sold out in nine months.

A mirror club-within-a-club experience, the North Champions Club/SunTrust Club, exists on the north sideline. SunTrust Club patrons have viewing access to the visiting team's tunnel.

### 2. Owner's Suites

Adjacent to Arthur Blank's suite are 20 of the highest-end luxury units in Atlanta. These all-inclusive, high-end settings do not just come with food and beverage baked into the purchase price, but also include tickets to all future events.

The sold-out Owner's Suites run \$400,000 per year, and most were sold on 20-year lease terms with the option to pay upfront or in annual installments.

"[The owner's suite concept] has worked its way around the league, and we'll continue to see it," Drake says. "It's a good product. Anything that you can do to attach a fan or a corporation to the team in a unique way is a win."

Mercedes-Benz Stadium offers another level of suites, the NCR Suite Level, on which 81 of 85 units have been sold. These products range from 16 to 22 seats with pricing ranging from \$100,000 to \$350,000 with the same lease terms as the Owner's Suites.

### 3. Loge Suites

Six months ago, amid construction, design changes introduced a loge box concept. These 28 all-inclusive loge suites are technology-focused products. Virtual reality headsets and two iPads control the experience.

"We sold out of that product within four months of offering it," says Drake. "First time I've been involved with a product being created and sold-out that quick. The fan base had been telling us, 'hey I don't need 20 seats.' So we heard it, and much like our core values, we listened and responded to that fan base."

### 4. Touchdown Suites

Eight Touchdown Suites line the back of each end zone. One significant difference between the Touchdown Suites at Mercedes-Benz Stadium and similar inventory across the NFL is that in Atlanta, they are built four feet off the field to provide better sightlines – a common complaint of fans in other markets.

"It's the first time it's been done," Drake says.

### 5. Piedmont Club

Located on the 200 Level on both sidelines are the sold-out North and South Piedmont Clubs. Both clubs measure 6,000 square feet, and are programmed with intimate dining areas exclusively servicing approximately 400 seats in the three midfield sections on the north and south sides.

Retractable glass doors fold up, exposing the Piedmont Club to the seating bowl and offering patrons unmatched views to the playing field below and halo board overhead.

*To learn more about the premium seating at Mercedes-Benz Stadium, as well as the Mercedes-Benz Stadium Preview Center, watch our two exclusive interviews with Michael Drake on ALSD.com.*





**The Best or Nothing:** Like the marketing slogan of its namesake brand, the Mercedes-Benz Club and AMG Lounge is the best premium destination in the new building, with its 30,000 square feet of interior space and 60-yard on-field patio.



**Owner's Suite Level:** Adjacent to Arthur Blank's suite are 20 luxury units and a high-end club space. Michael Drake, CRO of AMB Sports & Entertainment, says "It's a good product. Anything that you can do to attach a fan or a corporation to the team in a unique way is a win."



**Platinum-Certified:**

With 4,000 solar panels and a rainwater capture system that includes a 1.1-million-gallon storm vault, Mercedes-Benz Stadium is tracking to become the first professional stadium to be certified LEED Platinum.

*[continued from page 81]*

shaped pieces will open and close in approximately ten seconds. Video renderings display the roof blooming in a circular motion, but this appearance is an optical illusion. The triangles, in fact, move on a straight line.

“[The roof] has been the biggest challenge construction-wise,” Jenkins says. “Now that that’s up there, we’re feeling great about the momentum we have on the rest of the project to bring it to the finish line.”

**HALO BOARD**

The 18,000 tons of 70-foot-tall fixed-roof steel trusses supporting the operable roof and overall structural loads also abut what will be the world’s largest scoreboard and create its unique shape. Mercedes-Benz Stadium partnered with Daktronics to create 60,000 square feet (58 feet high by 1,100 lineal feet) of LED board, dubbed the halo board, that lines the circumference of the building’s signature oculus just beneath the roofline.

“When we went to all this trouble to create an opening in the center and energy in the center and a roof moving away from the center, the last thing we wanted to do was plug it up with a traditional board,” says Johnson.

The idea quickly diverted from putting a board in the center beneath the oculus to surrounding that opening with a 360-degree experience. In a word, the halo board is enormous – as tall as a five-story building and approximately 600 tons. Going from rendering to reality is a jaw-dropping visual.

**WINDOW TO THE CITY**

The skin of the building is made up of multiple systems of metal panel, glazing, and the world’s largest installation of

single-membrane ethylene tetrafluoroethylene (ETFE).

ETFE is a sturdy, lightweight plastic that sheds dirt and provides transparency in lieu of glass. Designers can insert a frit (a series of dots) on the material to protect patrons from the sun. At Mercedes-Benz Stadium, the ETFE on the south and west sides of the building has a 70% to 80% opacity.

As fans move about the building, the frit dissolves. On the north and east sides, the ETFE is clear and 16-stories tall, providing fans with exceptional views of the Atlanta skyline from downtown to midtown all the way to Buckhead through what is being referred to as “the window to the city”.

**ENERGY EFFICIENCY**

Mercedes-Benz Stadium is tracking to become the first professional stadium to be certified LEED Platinum. Efficiency characteristics include a substantial investment in solar power. In total, 4,000 solar panels will be deployed, producing 1.6 megawatts of renewable energy. About 30% less energy will be needed from the grid to power the stadium.

From a water standpoint, Mercedes-Benz Stadium will use about half as much H<sub>2</sub>O as the typical building. On site, a rainwater capture system that includes a 1.1-million-gallon storm vault feeds a 680,000-gallon cistern to be used for the cooling tower and to irrigate the site landscaping.

**MULTI-PURPOSE FACILITY**

Alongside its two anchor tenants, Mercedes-Benz Stadium will be home to a full calendar of events. To sup-

*[continued on page 87]*





## WILL MERCEDES-BENZ STADIUM DISRUPT THE F&B INDUSTRY WITH ITS FAN FIRST PRICING MODEL?

In Mercedes-Benz Stadium, a family of four will be well fed for less than \$30. To address one of the lowest performing assets of most stadium experiences, the venue has announced its one-of-a-kind Fan First food and beverage menu and pricing model, as part of the organization's larger initiative to reimagine the holistic fan experience in sports and entertainment.

Throughout all stadium levels, including club levels, popular concessions items will be sold at "street prices." Hot dogs are two bucks, pizza three bucks, a 12-ounce beer five bucks.

"There's no reason to have to pay \$5 for a bottle of water. We all know it," says Mike Gomes, SVP of Fan Experience at AMB Sports & Entertainment. "But if you're thirsty, it's your only option on gameday. When we announced our Fan First pricing, really a first-of-its-kind in the industry, we wanted to be fair. We wanted to charge you what you think you'd pay if you're out on the street at a street vendor or going to a convenience store."

"It doesn't mean that we won't have premium offerings," adds Rich McKay, President of AMB Sports & Entertainment. "We will have as good of premium offerings that you can have in our clubs."

Fan First pricing doesn't stop with the concessions staples. There will also be no stadium markup across the offerings from local restaurant partners in the building. If a pulled pork sandwich from Atlanta favorite Fox Brothers is \$7 in the restaurant, it'll be \$7 in the stadium.

Critics of the model question whether it will spread to other venues in the industry. Many stadiums and arenas will be watching Atlanta closely to see if volumes increase due to the lower prices, without lengthening wait time. To date, no other teams have adopted the model.

"We didn't do it for [other teams]. We didn't focus on game-changing this whole thing," McKay says. "We did it because when you talk to the fan and you look at their biggest angst, it was food and beverage."

To provide great food as quickly as possible, Mercedes-Benz Stadium is incorporating technology elements, such as mobile payment options and 65% more points of sale across all three levels. Simple edits have also been engineered, such as removing all soda towers from concessions counters and relocating them into the concourse corridors.

"We've done predictive modeling that says where we think the demand will show up," Gomes says. "All of these elements, both at the design level and now at the operational execution level, will be driven to ensure high quality, plenty of variety,

easy accessibility for fans, and a flexible model that will continue to change and evolve as cases evolve, and keep those lines short and moving fast."

The deal struck with foodservice partner Levy Restaurants is much different from the traditional F&B rights deal. Levy will be paid an undisclosed management fee to collaborate on menu concepts and optimize foodservice operations. But Mercedes-Benz Stadium made the capital investment for all equipment and buildout of kitchen/pantry space.

**"There's no reason to have to pay \$5 for a bottle of water. We all know it."**

– Mike Gomes, AMB Sports & Entertainment

"At the end of the day, [the deal] wasn't as financially driven as you would think," says Brian Lapinskas, Director of Operations for Levy Restaurants at Mercedes-Benz Stadium. "It was all about what can we bring to the fan. For the ownership group here and our executive committee, it really resonated with them to say 'hey, maybe the model might be broken a little bit in sports and entertainment', especially from a pricing perspective."

The pricing piece has ignited a lot of questions from Lapinskas' peers in the industry. Is he selling a smaller hot dog or a small soda?

"That was the first thing [people asked] – what's the trick," says Lapinskas. "And there was no trick."

"This hasn't been about oh, this is a loss leader," Gomes adds. "It also hasn't been about oh, we'll make up for this all in demand. It has solely been about how do we create a great fan experience and don't lose money on food and beverage."

"[Fans] have a lot of things that they use to measure their fan experience," concludes McKay. "But do you know what sits at the top every time? It's food and beverage. And the biggest complaint? Food and beverage. We wanted to change it, so we did."

*To learn more about the Fan First philosophy at Mercedes-Benz Stadium, watch our exclusive interviews with Rich McKay, Mike Gomes, and Brian Lapinskas on ALSD.com.*



## PASSIVE OPTICAL NETWORK PROVIDES FLEXIBLE FUTURE FOR MERCEDES-BENZ STADIUM

Mercedes-Benz Stadium is a digital wonderland. There is only one set of fixed signage in the entire building (for naming rights partner Mercedes-Benz). Beyond that, everything is digital – the 600,000-square-foot halo board, the 100-foot-tall mega column, the 3,200 lineal feet of ribbon board, the 52 million individual LEDs, the 500-plus closed-circuit cameras, the 1,800 wireless access points.

“Those digital elements are everywhere,” says Jared Miller, Chief Technology Officer at AMB Sports & Entertainment.

To help optimize its technology architecture, Mercedes-Benz Stadium partnered with IBM, the official systems integrator for the stadium, to deploy a Passive Optical Network (PON), which is fiber-based to the edge. The point-to-multipoint fiber infrastructure provides all connectivity for all technology systems in the building. Every single endpoint in the building – from all the individual security cameras to every single television – has its own unique fiber running straight to that device with connections to convert to copper.

Traditionally, stadiums and arenas deploy a mix of copper and fiber cabling. For the first time in a NFL stadium, Mercedes-Benz Stadium reverses the model with 4,000 miles of fiber, but only a couple hundred miles of copper.

“In a typical copper-based system, the cabling needs to be changed out every seven to ten years,” says Jim Rushton, Sports and Entertainment Practice Leader at IBM. “With the fiber-based system, it has an extremely long shelf life and nearly unlimited bandwidth. About the only things that will need changed are the electronics at the end of the cable.”

“We believe that’s going to serve us for decades to come,” Miller adds. “What I won’t say is future-proof. We cannot future-proof anything. I have to be very clear with that. We are future-flexible. I have no idea what’s going to come out of these different technology shops in five years’ time. But we have to build the foundation to support it, regardless of what that may be.”

If one thinks of technology design as a pyramid, most venues design and build from the bottom up, starting with the infrastructure at the base, data management in the middle,

and fan experience at the top of the pyramid. But through this methodology, fan experience is inevitably limited by and shoehorned into the infrastructure deployed in the beginning of the process.

“We turned it around and said let’s design from top to bottom, instead of bottom to top,” says Rushton. “Let’s design from the perspective of the fan experience, and allow that to inform what data is required, and allow that to inform what infrastructure is required.”

The design exercise began with AMB Sports & Entertainment and IBM identifying all the different fan personas that will attend events at Mercedes-Benz Stadium. Once those categories were identified, a fan journey map was laid out from driveway to seat, seat to driveway, indexing all touch points along the way. The workflow then became about identifying the appropriate technology capabilities (both emerging and tried-and-true) that deliver those experiences and reduce those pain points.

“In terms of impacting the fan experience, because that’s really what we want to focus on as we look at all these new technologies, what’s going to be different, what’s going to provide that surprise and delight,” Miller says. “As we look at concessions and other points of sale or points of purchase, digital wallets, mobile currencies, are all very interesting to us.”

With elements like the halo board and mega column, Mercedes-Benz Stadium features some awe-inspiring technology that fans will notice. But it’s the underlying network that they won’t see that makes the stadium future-flexible for the next generation of fans.

“They’re not going to see the guts of the building,” says Miller. “But they’re going to be able to feel the impact of that for years to come.”

*To learn more about the technology architecture at Mercedes-Benz Stadium, watch our exclusive interview with Jared Miller on [ALSD.com](http://ALSD.com).*





[continued from page 84]

port the biggest of big events, 2,700 telescopic retractable seats are located in the upper bowl. With the push of a button, capacity expands up to 80,000 for major events, such as the College Football Playoff National Championship in 2018, Super Bowl LIII in 2019, the NCAA Men's Final Four in 2020, and the SEC Championship Games through 2027.

Sitting on the Georgia World Congress campus, walking distance to downtown Atlanta and its hotels and amenities, Mercedes-Benz Stadium is expected to be a consistent host of big events throughout the building's lifetime.

Major League Soccer's Atlanta United has experienced unprecedented demand with 22,000 season tickets sold and climbing. The capacity of Mercedes-Benz Stadium will shrink to 40,000 people for MLS matches by blocking off the volume of the upper bowl with a curtain system. Meanwhile, the playing surface will expand due to additional telescopic retractable seats, allowing for a FIFA-sized soccer pitch.

### THE PATH (AND PRICE) OF PROGRESS

Originally scheduled for a March 2017 opening, construction of the \$1.5 billion Mercedes-Benz Stadium has fallen behind its original schedule, largely due to the Rubik's-cube complexity of the roof's structural design.

Because of the delay, Atlanta United will not begin play of its inaugural MLS season in Mercedes-Benz Stadium, instead sojourning in Georgia Tech's Bobby Dodd Stadium until the ribbon is cut on its permanent home. No Falcons games, preseason or regular season, will be impacted. AMB Sports & Entertainment will pay all cost overruns and rent due to Georgia Tech.

Although suboptimal, it's the price of progress in this case. After clearing our fogged safety goggles while tour-

**"When we went to all this trouble to create an opening in the center and energy in the center and a roof moving away from the center, the last thing we wanted to do was plug it up with a traditional board."**

– Bill Johnson, HOK Sports + Recreation + Entertainment

ing Mercedes-Benz Stadium earlier this winter, it seems patience for the nonlinear progress will be rewarded.

"What makes this project unique is the scope and size and breadth of the vision," says AMB Sports & Entertainment President Rich McKay. "It's going to create a completely different product than you've seen before." #

---

Which signature of Mercedes-Benz Stadium are you most intrigued by?  
Email Jared at [jared@alsd.com](mailto:jared@alsd.com).

Visit [ALSD.com](http://ALSD.com) to view our entire video series chronicling the construction of Mercedes-Benz Stadium. Enjoy ALSD-exclusive interviews with Rich McKay, Jared Miller, Michael Drake, Mike Gomes, Scott Jenkins, Brian Lapinskas, Bill Johnson, and Mac McCoy.

COMING UP NEXT:  
UBER AND AMAZON  
OUTSIDE THE  
VENUE WALLS