Creating the Best Fan Experience is Top of Mind in Professional Sports Facilities

There's more planning and strategizing occurring than meets the eye when new professional sports facilities rise from the ground or existing ones undergo a renovation. From choosing the best video boards to selecting the most innovative seating solutions; from the most optimal wireless connectivity to enacting security procedures to reduce insurance premiums, facility designers strive to develop the ultimate fan experience. Top construction companies monitor the industry to take advantage of the latest trends. Then, once a new building has had a few season cycles there's more planning to keep it updated and fresh throughout its entire life span.

Check out some of the best projects recently completed or in the works in this special professional sports facility industry section.



Why Capital Improvement Planning Can Make or Break Your Stadium

The thousands of systems and components that operate behind the scenes that help pro sports teams deliver great fan experiences all have a finite lifespan. Once the shine has worn off a new building, it is imperative venue operators understand how to keep their building running for decades. Populous has built a team dedicated to understanding building lifecycles – and the delicate balance between upgrading systems, renovating spaces or completely new builds.

"At Populous, our focus isn't just on new buildings; more often than not, we're helping our clients understand how their facility works and how to keep it running smoothly for decades," said Byron Chambers, principal at Populous. "Every system, every component in our clients' buildings has a lifespan – and those lifespans seldom line up with each other. Having a long-term plan in place that systemat-



In partnership with Tampa Sports Authority, Populous has kept Raymond James Stadium in good shape since opening in 1998.

ically helps our clients stay on top of things can impact their bottom line in a big way. It's a dramatically more cost-efficient approach to managing a venue compared to waiting every 15 years, until you have a problem or until the lease runs out."

Populous has helped its partners at the Tampa Sports Authority keep Ray-



T-Mobile Park is undergoing a \$29.8 million renovation for gate and premium seating enhancements.

mond James Stadium in good shape since opening in 1998.

"Operating a building that's a public entity is a budget balancing act," said Mickey Farrell, senior vice president of stadium operations for the Tampa Sports Authority. "We've worked with Populous yearly since Raymond James Stadium opened in 1998 to

assist us in updating our yearly capital project plan."

This sort of strategic approach often takes the form of Capital Improvement Planning (CIP). When helping clients with this service, Populous starts with a detailed facility condition assessment and analyzes not just the building at hand, but compares the building with their 36 years of industry knowledge and best practices.

"Two of the most common questions we get from our clients are, 'how much money should we set aside for this?' and 'how do we choose our biggest priorities?'" said Chambers. "Depending on the venue, construction costs for these improvements can range anywhere from \$1 million to \$15 million per year. Priorities will vary based on specific circumstances, like age of the facility and how many years are left in the lease."



ADPRO SPORTS PERFORMANCE AND SCIENCE ADDITION

Description: NFL training facility

expansion

Major tenant: Buffalo Bills Architect of record: Populous Contractor: ARC Building Partners

Est. cost: \$18 million Start date: 2018 Completion date: 2020 Location: Buffalo, N.Y.

ALLEGIANT STADIUM

Description: New NFL stadium Major tenant: Las Vegas Raiders Architect of record: Manica Archi-

Contractor: Mortenson | McCarthy

Est. cost: \$1.9 billion Start date: December 2018 Completion date: August 2021 Location: Las Vegas, Nev.

BELMONT ARENA

Description: New NHL arena Major tenant: New York Islanders Architect of record: Populous Contractor: Hunt Construction/Barton

Est. cost: \$1.3 billion Start date: May 2019 Completion date: 2021

Location: Elmont, N.Y.

BRIDGESTONE ARENA

Description: NHL, NBA arena renova-

Major tenant: Nashville Predators Architect of record: Populous Location: Nashville, Tenn.

CAROLINA PANTHERS HEADQUARTERS

Description: NFL headquarters, training facility and mixed-use develop-

Major tenant: Carolina Panthers Architect of record: Populous Contractor: Mascara | Barton Malow Start date: March 2019

Completion date: July 2022 Location: Rock Hill, S.C.

DUNEDIN STADIUM

Description: MLB spring training facil-

ity renovation

Major tenant: Toronto Blue Jays Architect of record: Populous Contractor: Gilbane | Turner Con-

struction

Est. cost: \$81 million Start date: April 2019 Completion date: 2020 Location: Dunedin, Fla.

FUSION ARENA

Description: New esports venue Major tenant: Philadelphia Fusion Architect of record: Populous

Est. cost: \$50 million

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K&K Insurance Brings Experience and Expertise to Sports Facilities

Specializing in the sports, recreation and entertainment industry, K&K Insurance covers everything from small amateur sports to professional teams and large venues, as well as recreational organizations like health clubs and campgrounds. In business for more than 65 years, the company offers 70 insurance programs.

K&K's clients often seek safety and security advice on ways to reduce the risk of claims to reduce their insurance premiums. "Based on the needs of the individual client, we can offer recommendations on such things as evacuation plans, installing barriers and using metal detectors," said Lita Mello, senior vice president of K&K's recreation division.

Recently, the industry has been having many conversations about security. "We're getting a lot of questions about shooter coverage, bomb sniffing dogs and matters related to the security of the venue itself," said





Security cameras and security personnel help facilities reduce their insurance premiums

Travis Walker, a senior underwriter at K&K who specializes in large sports and entertainment venues.

"The general public has seen the events that have occurred over the past few years and it's at the top of everyone's mind right now," said Lorena Hatfield, K&K's marketing manager. "But this is not a new topic for K&K or our underwriters because we've always looked at large gatherings of people from a risk standpoint. This is not new and frightening to our underwriters. They know how to evaluate the risk and provide appropriate coverage for the specific venue."

Most of the larger facilities and many of the newer ones have stateof-the-art video cameras throughout the venue. They also have security rooms with multitudes of screens to monitor both inside and outside the building. Additionally, a lot of facilities now have their own bomb-sniffing

In a recent trend, facilities are contracting their security to third-party companies, "With this move, the facilities are shifting the liability of security operations to the third-party security vendors," said Mello. "This lowers the cost of their insurance. They'll carry their own facility insurance and also be named as an additional insured on the security company's policy, so they'll be more protected."

The experts at K&K Insurance understand the unique risks of sporting events and sports facilities. "There are very few organizations that can bring to the table the level of experience and expertise we have," said Mello



K&K Insurance—the choice for sports, leisure, and



entertainment coverage.

Fun is a risky business-and it demands the experience and longevity that K&K Insurance provides. Sports teams and sports facilities across the U.S. like yours choose K&K for our deep understanding of the coverage needs that your organization requires. And when claims occur, our colleagues are here to resolve your claims efficiently and effectively.

- Amateur and Professional Sports Teams, Leagues and Events
- Multi-purpose Facilities
- · Arenas & Facilities
- Auditoriums Coliseums
- Stadiums
- Sports Complexes

· Intercollegiate Athletics Motorsports Race Teams,

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Daktronics Revolutionizes Centerhung Video Display at TD Garden

As new facilities are being constructed and older facilities are being renovated, there has been an increasing emphasis on elevating the fan experience. A common avenue to create a high-level fan experience is by installing state-of-the-art, high-resolution video displays. The trend has not only been to improve the resolution, but also to increase the display's size.

When the executives at TD Garden, home of the Boston Bruins and Boston Celtics, decided to upgrade their video board as part of a renovation to the building, they turned to Daktronics. The world leader in large-screen video displays, Daktronics has been reinventing the way fans view displays at sports facilities since 1968.

TD Garden had four 13'x23', 10 millimeter centerhung video displays. This year, in phase one of TD Garden's video upgrade, Daktronics installed new 2.5-millimeter displays. Boasting more than 4.5 million pixels each, the new displays give the Garden more than four times the high definition resolution than the old displays, which topped out at less than one million pixels each.

Next year for phase two, Daktronics will install four 18'x33', 4K centerhung video displays that are HDR ready.



Daktronics' 2.5-millimeter centerhung video display provides TD Garden with more than four times the high definition resolution than their old display.

"Having 4K within a centerhung display that has a predefined footprint, while utilizing a 2.5-millimeter LED product is amazing," said Jay Parker, vice president of Daktronics. "It will be the highest resolution LED centerhung video display in the country. This is an extremely high-resolution product that's meant for very close-up viewing and, at TD Garden, we're providing fans with high resolution and high quality video images."

The centerhung display will also have high-resolution 3.9-millimeter rings on the top and bottom, along with underbelly displays. As the center-

hung displays have gotten bigger, it's become difficult for fans in the courtside seats to see the action on the board. The underbelly displays allow them to see the video that's on main display.

"We want to give fans an experience they can't get at home so they'll keep coming back to the arena," said Parker.

This is the same technology Daktronics has installed in TD Garden's vomitory displays, the sponsor and advertiser boards in the building's corners. When the camera pans that area of the building, fans will see a

high resolution, clear image for the advertisements of the teams' sponsors.

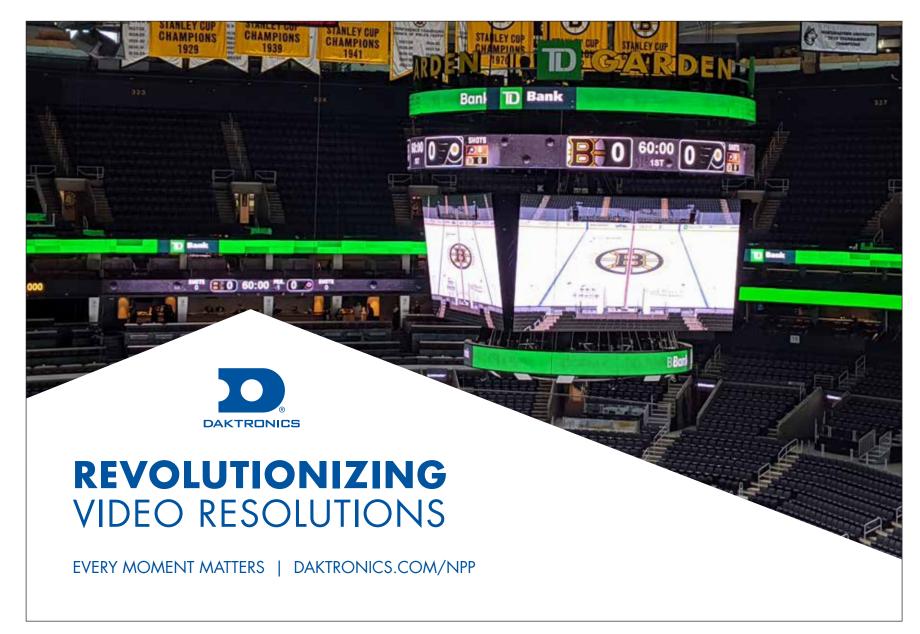
Additionally, the same 2.5-millimeter product used in the centerhung display is being installed in the concourses – the bars and other high gathering places, along with the club areas

"They're creating an interesting, high-resolution facility at TD Garden," said Parker. "They're not only trying to blow out the experience in the bowl, but also within the concourses."

Daktronics also has 1.9, 1.5 and 1.2-millimeter LED products that will be replacing the LCD products traditionally seen in facilities. "LED products have a lot of advantages, including long life, up to 10 years," said Parker, "and they're very power conscious. With LED, it doesn't take much power to run a large video image display."

"It's an exciting time because the technology has caught up and the pricing is comparable," said Parker. "We're giving facilities the technology to be able to help entertain fans more often and in more places with vibrant high resolution displays."

"Our goal is to try and enhance and compliment the game-day experience in the bowl and keep people wanting to go to the events," said Parker.



Welcome to Vegas – Sports and Entertainment Capital of the World

Las Vegas has experienced an influx in sports teams, events and facilities over the last few years. This, combined with its rich history of hosting professional golf, rodeo, racing, boxing and more, has led to the city being named the Sports and Entertainment Capital of the World.

"We have a long sports history in Las Vegas," said Steve Hill, CEO of the Las Veaas Convention and Visitors Authority (LVCVA). "We've been the boxing capital of the world. UFC was founded here. We have professional golf and tennis, the rodeo and two NASCAR weekends a year. What we didn't have until the Golden Knights, was a professional sports franchise. The Knights broke that barrier and the Raiders followed. The WNBA is here now and it's only a matter of time before other major league sports are in Las Vegas. But, without the venues to host these teams, none of this would be possible."

From 2016-20, four new sports facilities will have opened, giving Las Vegas an even dozen professional-caliber facilities. T-Mobile Arena was the first to open in 2016 and now hosts the NHL's Sports Business Awardwinning Vegas Golden Knights. City National Arena, the Knights' training facility, opened in 2017. This year, the



A crowd of more than 83,000 were on hand in March 2019 for the Pennzoil 400 at the Las Vegas Motor Speedway.

award-winning Las Vegas Ballpark opened as home to MiLB's Las Vegas Aviators. And next July, Allegiant Stadium will open with the NFL's Raiders taking the field.

There are six venues that can seat 140,000 fans within one mile of the intersection of Tropicana and Las Vegas Boulevards and there will be times when four or more of the venues have major sporting events going on at the same time. All of these facilities are within walking distance of 125,000 hotel rooms.

This led the LVCVA to spearhead the creation of the Ultimate Vegas

Sports Weekend, where typically five major events take place on the same weekend. These can include boxing, UFC, a NASCAR race, rodeo or bull riding, hockey and soon, football.

"The environment in Las Vegas creates an excitement you can't replicate anywhere else," said Hill.

The \$2 billion Allegiant Field, slated to open ahead of the 2020 football season, is not only the future home of the Raiders, it will also host the Las Vegas Bowl, Pac-12 football championship, UNLV's football team and a variety of other events. A future Super Bowl may also be on the horizon.

"The Super Bowl is scheduled through 2024, so we've applied to host the game in 2025," said Hill. "Whether it's 2025 or 2026, we plan on hosting a Super Bowl."

Following the arrival of the Knights, Raiders and the WNBA's Aces, Las Vegas is looking at attracting teams from the other professional leagues.

"We have two proposals for an MLS team," said Hill. "There's one more expansion team to be awarded now and one or two down the road. MLS in Las Vegas makes a lot of sense."

"Fans from visiting teams will want to come to Las Vegas because the experience we offer is completely different," concluded Hill.

Vegas Offers a Multitude of Sports Facilities

- Allegiant Stadium Raiders (NFL)
- **T-Mobile Arena** Vegas Golden Knights (NHL), UFC
- Las Vegas Ballpark Las Vegas Aviators (AAA)
- Mandalay Bay Events Center - Aces (WNBA)
- City National Arena Vegas Golden Knights practice facility, UNLV hockey
- Las Vegas Motor Speedway
 NASCAR
- Thomas & Mack Center –
 UNLV basketball
- Cashman Field Las Vegas Lights FC (USL)
- MGM Grand Garden Arena - college basketball, boxing
- South Point Equestrian
 Center equestrian, PBR
- South Point Bowling Center - PBA, USBC
- Orleans Arena Vegas Rollers (WTT)



Mortenson at Forefront of Sports Industry's Facility Trends

Mortenson has been leading many of the trends happening in the sports facility industry and these trends are all presenting themselves in the company's most recent project, the Golden State Warriors' Chase Center.

One of the most important trends is the rise of sports-anchored adjacent development. Recent examples of Mortenson projects include the development integrated into Chase Center; the 77 acres of development at The Battery adjacent to the Atlanta Braves' Sun Trust Park; and the 25 acres of development adjacent to Minnesota United's Allianz Field where Mortenson is the master developer.

This adjacent development is being done purposefully and intentionally and helps drive an improved fan experience and increased return on investment for ownership.

"Adjacent development has become an extension of the stadium, the game-day experience and the team's brand," said Logan Gerken, vice president and general manager at Mortenson. "It has opened up a lot of avenues and opportunity to take what's inside the stadium and bring it outside the venue. Nearly all of the projects we have under construction or in the pipeline include some sort of adjacent development components."

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Allianz Field in St. Paul, Minn., home to MLS' Minnesota United FC, was one of Mortenson's projects in 2019.

The inclusion of adjacent developments affects a facility's site selection. "We're looking for walkable urban sites with a daytime population that makes the location a 24/7, 365-day-a-year experience," said Gerken. "Some sports are more conducive to that, such as baseball with a 162-game season and basketball and hockey arenas, where there's 200 to 250 events a year."

Another trend is the continued growth in sponsorship and media rights and how they're being leveraged to improve the fan experience. The diverse clubs and entertainment options being built into venues are increasing the opportunity for sponsorship. Today's entertainment options

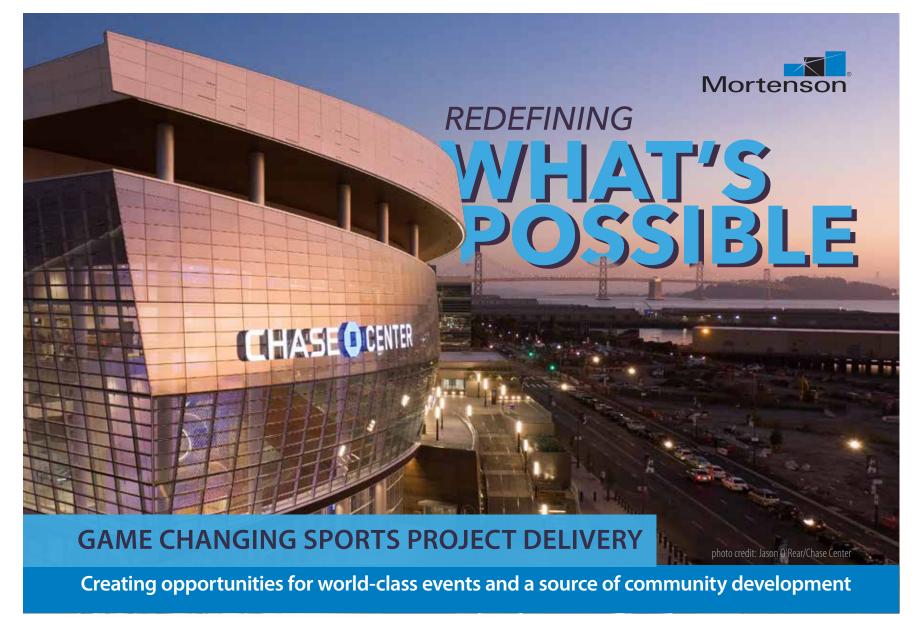
each have its own character, which gives fans opportunity to customize and tailor their game-day experience. This further enhances the fan experience resulting in higher game attendances, which in turn creates more brand loyalty for the teams and better brand associations for the sponsors. This virtuous cycle eventually results in higher team and league revenues, leading to the overall growth of the industry.

Chase Center is a great example of adjacent development and the enhancement of the fan experience. It's thoughtful in its flexibility and capability to move from 18,000-seat events, vast NBA games and concerts, with automated functionality to reduce the

size to half-house shows. It's integrated within San Francisco's Mission Bay neighborhood and contains Uber's headquarters and more than 100,000 square feet of retail space. "At Chase Center, we see the adjacent development and the flexible use of space as true destination entertainment," said Gerken, "It was built to entertain and be more flexible than any other arena and the quality of the premium spaces and fan experience inside is second to none. Every fan can receive a first-class experience, whether they're in the last row or the front row.

To track growth and development in the industry, Mortenson has launched an analytics group that tracks data across all markets and customers to identify trends, benchmarks and help customers understand where they stand relative to the leading edge and how they're positioning themselves relative to the marketplace.

"The return on investment is so important in making decisions that we're not just chasing first costs, we're chasing long-term value," said Gerken. "We're being cognizant of that as we help our customers make smart decisions as they embark on renovations and new facility construction projects."



Start date: March 2019 Completion date: 2021 Location: Philadelphia, Penn.

HEINZ FIELD STEELERS PRO SHOP

Description: Merchandise store and ticket office addition
Major tenant: Pittsburgh Steelers
Architect of record: Populous
Contractor: Mascaro Construction
Start date: January 2020
Completion date: July 2020
Location: Pittsburgh, Penn.

KANNAPOLIS SPORTS AND ENTERTAINMENT VENUE

Description: New A ballpark Major tenant: Kannapolis Cannon Architect of record: Populous Contractor: Barton Malow Est. cost: \$52 million Start date: October 2018 Completion date: April 2020 Location: Kannapolis, N.C.

MADISON ALABAMA BALLPARK

Description: New AA ballpark Major tenant: Rocket City Trash Pandas

Architect of record: Populous Contractor: Hoar Construction Est. cost: \$48 million

Start date: 2018 Completion date: 2020 Location: Madison, Ala.

NASHVILLE SOCCER STADIUM

Description: New MLS stadium Major tenant: Nashville SC Architect of record: Populous Contractor: Mortenson | Messer Est. cost: \$275 million Start date: March 2020 Completion date: January 2022 Location: Nashville, Tenn.

PALM SPRINGS ARENA

Description: New AHL arena Major tenant: Seattle's NHL expansion team's AHL affiliate Architect of record: Populous Contractor: McCarthy Building Cos. Start date: January 2020 Completion date: August 2021 Location: Palm Springs, Calif.

PROTECTIVE STADIUM

Description: NBA G-League arena renovation Architect of record: Populous Est. cost: \$125 million

Start date: 2019
Completion date: 2022
Location: Birmingham, Ala.

SEATTLE CENTER ARENA

Description: WNBA, NHL arena renovation with redesigned interior with new clubs and social spaces
Major tenants: Seattle Storm, NHL expansion team

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4Topps Innovative Seats Seen as Stadium Asset

4Topps Premium Seating got its strong reputation in the industry with its patented four-seat, half-circle table unit. That product continues to be a tremendous seller for the company, aided by its ability to drive revenue for teams. But in recent years, 4Topps has seen interest in its tip-up row seats accelerate rapidly. With that in mind, the company saw the need for a change.

"We recognized that our company name may be interfering with people's understanding that we're also a row seating company," said Deron Nardo, president of 4Topps, "so we decided to rebrand our row seating line"

4Topps' signature row seating product is its new Cool Comfort + line of breathable, AirFlow, mesh stadium seats. Its simple, sleek design features interchangeable arms and an interchangeable mesh seat pan and



Fans at Las Vegas Ballpark enjoy games in 4Topps Cool Comfort + row seats.

back, which are up to 50 degrees cooler than padded vinyl.

"We've had mesh seats in the marketplace for seven years, but we're just now starting to emphasize the row seat," said Nardo. "The fact that our seats are so much cooler than a padded vinyl seat, and therefore more comfortable, makes them a tremendous asset."

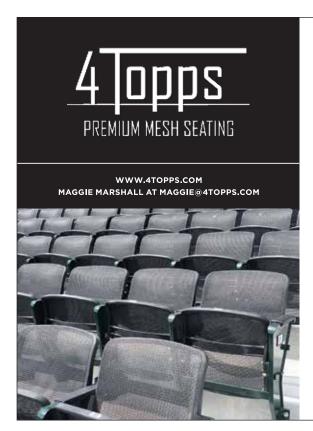
4Topps' row seats product was initially launched in 2016 with the installation of 3,000 seats at Atlanta Braves' Sun Trust Park. This year, the company made history with the opening of Las Vegas Ballpark, home to the AAA Las Vegas Aviators, when its Cool Comfort + seats were chosen to outfit the

entire 8,500-seat ballpark.

"The bull's-eye for us is outdoor clubs and suites, along with all of the premium spots in the lower bowl," said Nardo. "It's a significantly cooler and more comfortable experience sitting in a breathable mesh seat than a padded vinyl seat, and our seats are more durable than vinyl."

Nardo believes seating needs to be looked at differently than in years past. "Seating is a long-term asset that teams can use to attract fans," he said. "Teams need to rethink their seating products because attendance is spiraling. They need to give fans a reason to come back, and giving them a cool, comfortable experience while sitting for three or four hours at an event will go a long way."

Looking ahead, Cool Comfort + row seating will be featured in the new Wichita Ballpark and in TCU's Amon G. Carter Stadium.



COOL COMFORT +

THE MOST INNOVATIVE TIP-UP ROW SEAT IN THE WORLD



Cool Comfort + Mesh Available Across Full Seating Line

Perfect for Suites, Clubs and Lower Bowl More Durable than Padded Vinyl

Mesh Surface Up to 50 Degrees Cooler than Vinyl and Plastic

FEATURES

- Breathable AirFlow Mesh™
- Zero Pressure Point Cushioning™
- InstaDry™ Quick Drying Feature
- Ergonomically-Designed
- Lumbar Support

OPTIONS

- Standard Back or High Back
- Custom Arm and Mesh Colors







ZERO PRESSURE POINT CUSHIONING

Architect of record: Populous Contractor: Mortenson Est. cost: \$930 million Start date: December 2018 Completion date: August 2021 Location: Seattle, Wash.

T-MOBILE PARK

Description: MLB ballpark club and gate renovation Major tenant: Seattle Mariners Architect of record: Populous

Contractor: Skansa Est. cost: \$29.8 million Start date: November 2019 Completion date: March 2020 Location: Seattle, Wash.

UNITED VILLAGE MIXED-USE DEVELOPMENT

Description: Mixed-use development surrounding Allianz Field Major tenant: N/A Architect of record: Populous

Contractor: Mortenson Start date: 2020 Location: St. Paul, Minn.

WEST END STADIUM

Description: New MLS stadium Major tenant: FC Cincinnati Architect of record: Populous Contractor: Turner Construction Est. cost: \$250 million Start date: December 2018 Completion date: March 2021

Location: Cincinnati, Ohio

WRIGLEY FIELD

Description: MLB ballpark renovation Major tenant: Chicago Cubs Architect of record: Populous Contractor: Pepper Start date: October 2018 (Phase 5) Completion date: April 2020 Location: Chicago, III.

Corning ONE Keeps Fans Connected Through Its Fiber-Fed Solutions

When executives at Chase Center set out to deliver the ultimate fan-connected experience, they brought in Verizon Wireless to own and operate the distributed antenna system (DAS). The DAS provides enhanced cellular coverage and bandwidth for fans that don't join the WiFi network. Fans and guests depend on reliable connectivity without restriction - all the time, at full speed, on any device, from any-

To implement this, Verizon chose Corning ONE™ combining their low and mid-powered solutions. One of the system's key features is its use of fiber to the edge or all the way out to the antenna. With this technology, Corning ONE™ provides a future flexible solution for the building to be able to handle new technologies. It's a high-density system that gets the signal as close to the user's handsets as possible providing high speeds and low latency.

Corning ONE™ covers the high and mid-bands with an under-the-seat solution, in which the antennas are under the seats and fed by Corning's Remote Access Unit (RAU) product. The low bands use an overhead solu-



Corning's RAUs attach below the seats.

tion. By choosing Corning, the venue has the flexibility to be ready for the 3.5 and 5 GHz frequencies. Corning also used a Digital Electricity Solution that delivers bulk power more efficiently to the arena's technology.

Since Chase Center's opening, the system has performed exceptionally well. "Users are experiencing high download and upload speeds on their devices," said Jessica Koch, director of ONE™ Business Development for Corning

While Chase Center is Cornina



Fans receive better connectivity with Corning's under-the-seat solution.

ONE's most recent arena installation, that solution has also been deployed at the Tampa Bay Lightning's Amalie Arena, Detroit Red Wings' Little Caesars Arena, Texas A&M's Kyle Field, Tennessee's Nevland Stadium, Fort Worth's Dickies Arena and as part of the Indiana Pacers' renovation to Bankers Life Fieldhouse.

Additionally, Corning's fiber is powering the passive optical LAN network at Los Angeles FC's new Banc of California Stadium, enabling all of the stadium's technologies, including its

point-of-sale systems and security cameras, basically everything that's

"At all of these locations, because Corning delivers fiber and power to the edge, new technologies and frequencies can be added with ease without the need to run costly new infrastructure," Koch said. "Our goal is to have every guest connected at enhanced speeds enabling them to stream video, send and receive pictures or videos or use their social media."



Future-Ready Network For The Way We Play

Can your venue keep up with the connectivity demands of tens of thousands of devices all at once? Whether you are planning a new venue or renovating your existing one, Corning fiber and cellular solutions can help you deliver a connected experience your fans will appreciate. Lay the fiber foundation so your venue can deliver the best today and be ready for years to come.

For a winning connectivity solution, visit us at corning.com/gameday

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