CASE STUDY

San Antonio Spurs, Victory Capital Performance Center

Storied NBA team chooses mass timber to ‘invest in their best’

Over the years, the San Antonio Spurs have built a reputation for prioritizing the well-being of their professional basketball players, and nowhere is that commitment more obvious than in their new practice facility, the Victory Capital Performance Center. Designed to support holistic player development, this state-of-the-art building is distinguished among sports training centers by its use of mass timber, visible in nearly every part of the facility. The Spurs organization chose wood as a way to bring nature indoors where players spend most of their time, creating a people-centric, restorative, and supportive environment.

"Ours is one of the few facilities in the NBA where you'll see natural light, and we think it makes a big difference," said Phil Cullen, Senior Director of Basketball Operations and Organizational Development for Spurs Sports & Entertainment. "Often, people don't realize how much impact architecture has on their sense of well-being. Since we moved in, we've had more players stay in San Antonio in the off season because of the building, because of the beautiful space and all the amenities. I had one individual tell me they're working just as long and just as hard as they were in the old building, but they're not nearly as tired. That's what this facility is all about."

World Tour Leads Design Team to Mass Timber

In 2014, leaders within the San Antonio Spurs organization launched an exhaustive fact-finding mission, taking key staff and architects from ZGF to visit professional sports training facilities across the U.S. and Europe. Their goal was to identify building trends and learn what other sports teams were doing to help their players achieve top performance. Altogether, they toured more than 250 facilities.

Cullen not only participated in the tour but returned to serve as the team's construction project manager. He says he was fortunate that his background in civil and environmental engineering crossed paths with professional basketball, giving him valuable insight into what was both needed and structurally possible. He was familiar with mass timber—he'd taken a timber design class in college—and saw the material used in facilities throughout Europe. He knew wood met the team's human-centered design objectives and their desire to feature natural materials in the building.

"We also knew that using wood was an opportunity for us to do something unique," said Cullen. "And now, when you're in the building, it doesn't feel like anything else we saw. Wood met our sustainability goals as well, which were a mandate from the Spurs' ownership."

The building is framed with glue-laminated timber (glulam) beams and columns, and cross-laminated timber (CLT) floor and roof panels. Designers left the wood exposed as much as possible, and chose concealed connectors, both to meet fire-resistance design requirements and to leave visual focus on the wood itself. Windows were slanted to limit glare and provide shade from the hot Texas sun, and the roof supports an expansive solar array. The masonry-clad exterior gives few clues to the building's wood interior, but once inside, the warmth of the wood is unmistakable.

"The Spurs had a mentality to question everything and every decision," said Gavin Flisakowski, Project Architect at ZGF. "They have clear core values, and everything we did in terms of design needed to resonate with those. They wanted something uniquely Texan, to reflect the brand of the team. They also wanted to be innovative, to create a warm, inviting, healthy environment. Mass timber was the perfect solution."

PROJECT DETAILS

San Antonio Spurs, Victory Capital Performance Center

LOCATION:	San Antonio, Texas
STORIES:	Three
SIZE:	138,900 square feet
CONSTRUCTION TYPE:	III-A
COMPLETED:	2023

PROJECT TEAM

OWNER/DEVELOPER:	Spurs Sports & Entertainment, Lincoln Property Company
ARCHITECT:	ZGF Architects
STRUCTURAL ENGINEER:	Arup
CONSTRUCTION MANAGER:	Joeris General Contractors, LLC
CLT PANELS:	SmartLam North America
GLULAM MANUFACTURING:	American Laminators (now Timberlab)
GLULAM FABRICATION:	Timberlyne
MASS TIMBER INSTALLER:	Timberlyne
INSTALLATION TOOLS:	Rotho Blaas USA INC.
MASS TIMBER FINISHES:	Sansin

Connect with the Victory Capital Performance Center project team at *www.woodworksinnovationnetwork.org/projects/victory-capital-performance-center*

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Purposeful, Human-Centric Design

Tucked into the limestone hills of the Texas Hill Country, Victory Capital Performance Center is the featured facility of The Rock at La Cantera, a mixed-use development focused on connecting community and improving human performance. Once all phases of construction are complete, the 45-acre campus will serve as a research hub for the San Antonio community, providing a home for organizations dedicated to sports and other human performance research.

The Spurs organization recognized the link between player performance and environment and wanted the Victory Capital Performance Center to help give their team a competitive edge. Two unique design criteria emerged.

The team is on the road about 60 days a year, so they wanted a facility that would allow them to balance their role as a public entertainment and community asset with players' need for private space. They wanted a place where players could relax, recover from stressful away games and focus on training. Players don't get a lot of opportunities to go outside, so another key goal was to provide exposure to natural light and materials. Victory Capital Performance Center emphasizes access to outdoor areas, giving players and staff the ability to easily see outside and know what time of day it is, regardless of their travel and practice schedule.

The building is divided into different zones, grouping areas for athletic training as well as recovery, social, and office space. The training zone includes practice courts along with strength and conditioning spaces. The dining area, which features floor-to-ceiling windows, flows to an outdoor courtyard, giving players and staff room for socializing, al fresco dining, and informal staff meetings. The recovery area includes hydrotherapy pools, a sauna, cold and warm plunge pools, and an underwater treadmill, as well as outdoor terraces and patios, protected from public view to give players restful privacy. All zones of the building had the same structural design, leaving wood exposed wherever possible.

Areas like the aquatic center did require special treatment of the mass timber elements, said Michael Ratliff, Executive Director of Commercial operations for Timberlyne. “To protect the wood from moisture, we had the glulam beams pressure treated with preservative, allowing us to leave the wood exposed. We also treated the CLT panels for that area; they were cut to five-foot widths to fit the treatment facility. None of the connectors were left exposed, to prevent corrosion.”

Huge Beams Soar Over the Practice Facility

The beauty of mass timber is on full display in the training area, where players spend so much of their time.

Light streams in from north-facing clerestory windows (which allow daylight but reduce glare) while huge beams span the open space—which includes two practice courts plus one half-court space for a shooting lab. The beams, 6-1/2 feet deep, rest on mass timber columns. At 130 feet long, they were the longest clear-span elements that could be shipped to the site. In total, 20 of these beams, each weighing more than 13 tons, plus four slightly smaller beams, were transported via a specialized heavy-haul vehicle with a driver in the main truck cab and another in the back steering the back axle. Pilot cars shepherded the rig on multiple trips from the manufacturer in Oregon to Texas. The long-span beams went directly to the jobsite, where they were lifted into place with a 500-ton crane.

Timberlyne handled logistics and designed a robust rigging and installation plan for their team on site. “We designed the long-span beam connections to be as simple as possible, just wood-to-wood bearing, but we still had some pretty tight tolerances across that 130-foot span,” said Ratliff. “When we were setting the first beam, every person, from every trade on site, set down their tools to watch. The jobsite got very quiet; all you could hear was the hum of the crane. That first beam was in place within 10 minutes, as tight and as perfect as it could be. The next 19 went in just as smoothly. It took a lot of planning, but it was worth it.”

Early in design, the team considered splicing together shorter beams instead of using the huge single beams. “We worked with Arup, but determined that we’d have needed thicker beams, almost twice as wide, for the spliced connections to work,” Ratliff added. “We were able to save money both in time and fiber by choosing a single continuous beam across that 130-foot span.”

Custom Panels

The 3-ply CLT panels were produced in SmartLam’s Montana facility using a unique species combination of Sitka spruce and Douglas fir.

“This project got caught up in the lumber price escalation that occurred during the pandemic,” said Cory Scrivner, National Sales Manager for SmartLam. “We were able to buy the spruce from one of our partner mills to bring down the cost. We used the spruce in the nonvisual layers of the panel, and the Douglas fir for the bottom layer, so the exposed part of the panels would match the Douglas fir glulam beams and columns.”

SmartLam applied low-VOC coatings from Sansin to all six sides of the CLT panels in their facility to protect against moisture absorption, UV degradation, and staining. Each panel was individually wrapped, and each truckload was tarped before being shipped to San Antonio.

Texas Connections

With a commercial facility located just 20 miles from the jobsite, Timberlyne played a key role in engineering, fabrication, and erection of the mass timber structure. Altogether, Victory Capital Performance Center has 404 beams, 340 CLT panels, 150 columns plus the huge beams used over the practice courts. Except for the long-span beams, all glulam was delivered to Timberlyne’s facility for fabrication and pre-installation of connections.

Timberlyne also played an important role on site. The structure was designed with a hybrid lateral system that included concrete masonry block shear walls and elevator cores and some steel. Steel and masonry have different allowable tolerances than mass timber, so Timberlyne scanned the steel and masonry parts of the structure once in place, then imported the 3D scans into their Revit models, allowing them to adjust their beam and column fabrication for a precise fit.

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"It's standard practice for us to do that because it saves time and money," said Ratliff. "In some cases, we were hanging beams between two CMU walls, and even little wall variances can grow by the time you get 18 feet high. Our fabrication plant is just down the road from the jobsite, so it was easy to make these modifications. We also do extensive BIM modeling, which allowed us to do everything from sequencing material delivery to coordinating installation with Joeris, the general contractor."

Timberlyne used their own fleet to deliver all 31 truckloads of glulam from their facility to the jobsite. They had a team of 24 people working on fabrication, and during the 12 weeks it took to install the mass timber structure, another eight worked on site. "It was an incredible experience for us to get to work locally with the San Antonio Spurs, such an admired organization in our community," Ratliff said. "It was also rewarding to be part of creating this world class facility, a great place not only for the athletes but also for fans like us."

Fans are such an important part of the San Antonio Spurs' culture that the organization dedicated a portion of their new facility to what's called the Spurs Club. Located on level three next to the practice courts, this members-only lounge, the first of its kind in the NBA, gives fans an inside look at the team's operations. Club members and their guests are even given exclusive views from the Club down onto the practice courts. As in the rest of the facility, wood is prominently featured throughout the 9,800-square-foot space, which houses multiple bars, a fine dining restaurant, personal work areas and space for private events. The timber is accented with local limestone, oak, and leather, to emphasize the Spurs brand and their Texas connections.

Mass Timber Checked All the Boxes

As a firm, ZGF has designed numerous notable sports, training, and human performance facilities across the country, but Flisakowski says the Victory Capital Performance Center stands out.

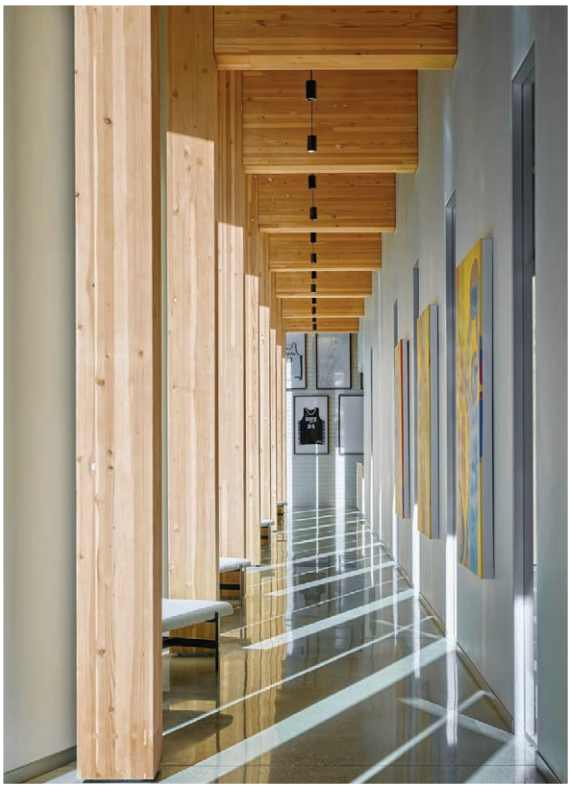
"I hope it changes the industry," he said. "Mass timber is interesting because it tells so many stories and has so many benefits. It's sustainable, it supports wellness, it looks great, and it's bespoke—the benefits are additive. I think that's what drew everyone to wood for this project; it just kept checking off the boxes."

Cullen agreed, adding, "It's our office, it's the home for our basketball operations, and it fits well into the community. Feedback from our players has been extremely encouraging, shown by the fact that they're spending more time here. However, we didn't build it just for the players. We built it for the staff and the community as well; considering the well-being of everyone associated with the Spurs organization was an important objective. Plus, we wanted to tell a unique story. We are happy to utilize our platform to share a message that we can build sustainable buildings with sustainable materials."

Supporting Sustainable Forests

San Antonio Spurs, Victory Capital Performance Center includes 33,019 cubic feet of wood products. It takes North American forests 3 minutes to grow this volume of wood.

Estimated by the Wood Carbon Calculator for Buildings, based on research by Sarthre, R. and J. O'Connor, 2010, A Synthesis of Research on Wood Products and Greenhouse Gas Impacts, FPInnovations.



Funding provided in part by the Softwood Lumber Board
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Images: Timberlyne/San Antonio Spurs (cover); Dror Baldinger; Timberlyne (p.5 bottom, p.6)
