

Ambassador Barbara McConnell Barrett

Growing up in an era when society afforded women few career options, Barbara McConnell Barrett defied societal expectations to become a trailblazer in international business, public service, aviation, and higher education.

A true Horatio Alger story, Barrett is all the more remarkable for beginning on a subsistence level. Encouraged by her father to do what she chose to do, Barrett cultivated a hunger for education, an ethic, a hunger for education, and an adventure from a young age.

By the time she was thirty, Barrett was executive at Fortune 200 companies on more than one hundred corporate boards. Somehow, she found time to instrumented pilot and serve. Recognizing her abilities, two U.S. Presidents, Ronald Reagan and George W. Bush, have named her to serve in their administrations.

Through it all, Barrett maintained a commitment to higher education and women around the world.

Justice Sandra Day O'Connor

When Sandra Day O'Connor graduated at the top of her class from Stanford Law School, she was the only woman in the class. She was offered a position as a law clerk by the Supreme Court, but she refused to take "her job" as a woman.

O'Connor went on to become a judge in the Arizona state court system. She was the first woman to be elected to the Arizona state court system. She was the first woman to be elected to the Arizona state court system.

O'Connor drove her relentless and determined spirit into the world of government. She was the first woman to be elected to the Arizona state court system. She was the first woman to be elected to the Arizona state court system.

After six years on the court, O'Connor has taken a place in history as an icon of the judicial system. Always valuing her independence, O'Connor shaped the most important issues of our time.

Ambassador Barbara Barrett & Justice Sandra Day O'Connor Washington Center at

ASU Arizona State
University



CNC machinery helps create unique stone design for Arizona State University facility

LAS VEGAS ROCK, A RARE METAQUARTZITE KNOWN FOR ITS CANYON-LIKE COLOR, WAS USED TO CONSTRUCT THREE-DIMENSIONAL FEATURE WALLS IN THE NEW LOBBY OF ARIZONA STATE UNIVERSITY'S BARRETT & O'CONNOR WASHINGTON CENTER IN WASHINGTON, DC

BY HEATHER FIORE

Photo courtesy of Alan Karchmer





The focal points of Arizona State University's (ASU) new headquarters in Washington, DC, the Barrett & O'Connor Washington Center, are two intricately crafted, three-dimensional metaquartzite walls in the lobby. Photo courtesy of Alan Karchmer

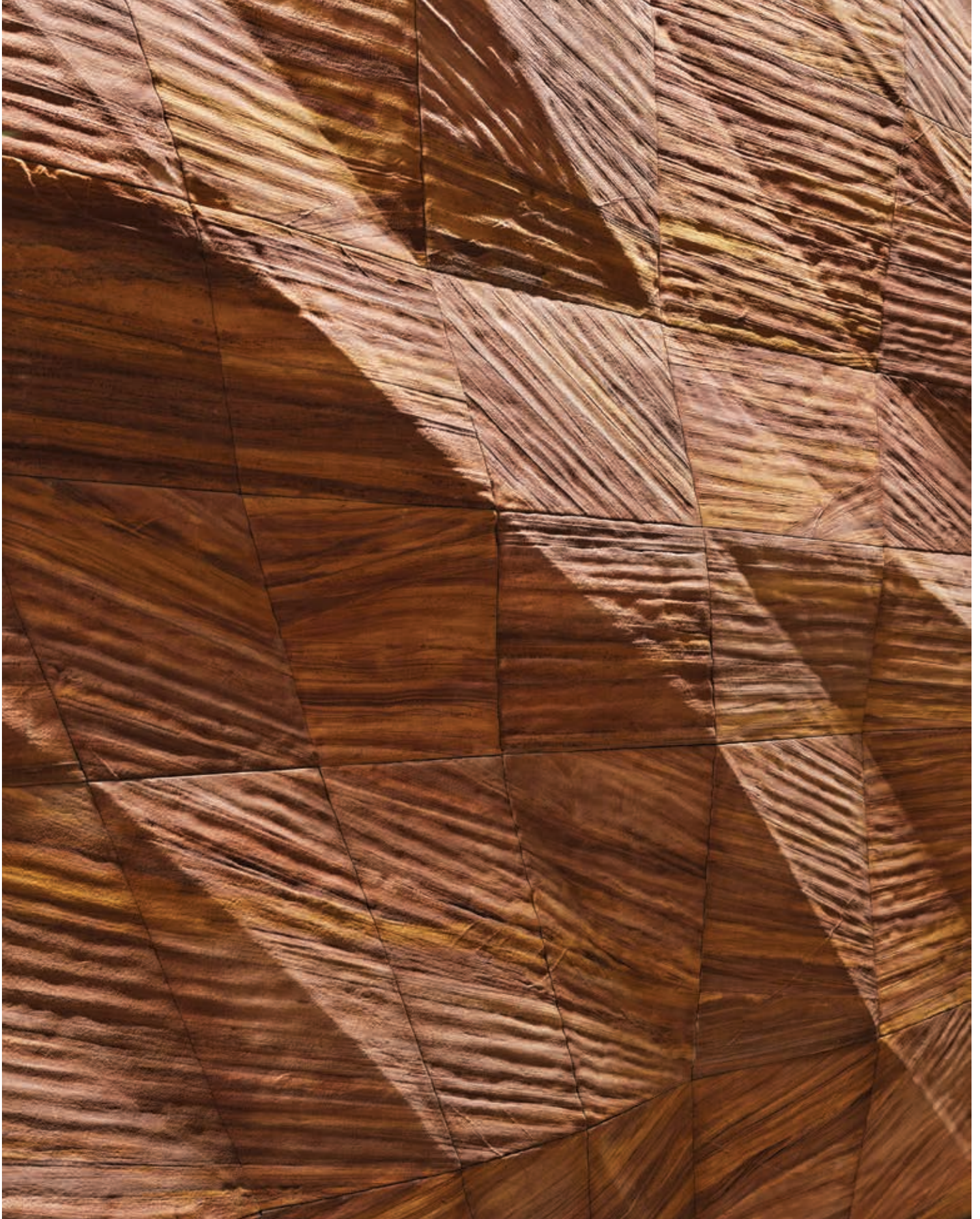
Our capital is known for many things — from the iconic museums to historic landmarks that have withstood the test of time. However, if one thing is apparent as soon as you arrive, it's that Washington, DC is defined by its neoclassical monuments and buildings.

Located in the heart of the district at 1800 Eye Street, adjacent to the World Bank and only two blocks from the White House, stands one of these historic structures, which was recently renovated and expanded to serve as the new DC headquarters of Arizona State University (ASU).

Known as the Barrett & O'Connor Washington Center, it was named in honor of two significant women of history, Ambassador Barbara McConnell Barrett and Justice Sandra Day O'Connor. The eight-story, 32,000-square-foot building was purportedly the first concrete and masonry residential building in DC. Originally constructed as apartments around 1910, the building was converted into offices sometime during the 1960s. The new structure, which was modernized a little more than five years ago, is now home to various ASU programs and research facilities. It enabled ASU to consolidate

its DC office, teaching and event spaces.

"ASU has long hosted students, faculty and staff in Washington, DC," said Christopher Peli, project designer at CORE architecture + design in Washington, DC. "With the new building, the university has space to expand the offerings of the initiatives based there." This includes the McCain Institute for International Leadership, the Walter Cronkite School of Journalism and Mass Communication, Cronkite News/Arizona PBS Washington Bureau, the Academy for Innovative Higher Education Leadership, the Center on the Future of War, and the Global Security Initiative."



The main feature wall, which spans over 32 feet long and 11 feet high, was constructed of Las Vegas Rock, a rare metaquartzite that is quarried 15 miles from the Strip in Las Vegas, NV. A windswept finish, which produces the raked appearance and three-dimensional texture, was created to emulate an extracted slice of a slot canyon. Photo courtesy of Alan Karchmer



The adjacent wall, designed with a carved "ASU" logo, also incorporates the windswept finish, as well as a contrasting honed finish. Photo courtesy of Alan Karchmer

"With its prime downtown corner location, 1800 Eye Street was a perfect place to consolidate Arizona State University's DC presence," added CORE principal, David Cheney, who worked alongside Peli on the project. "This century-old gem of a historic building is too small for modern-day Class A office space, but ASU has truly maximized the site's value and utility for the next century."

To pay homage to its American desert southwest home, ASU wanted to use sandstone commonly seen throughout Arizona to create a feature wall in the lobby that simulated if a slice of a slot canyon was extracted and displaced. "We translated that into a concept of a

windswept sandstone canyon, cut out of the American Southwest and inserted into downtown DC," Peli said. "Through studies of the natural windswept forms, a digitally modeled surface was generated mimicking the canyon-like features. Rather than achieving a perfectly smooth striation pattern over the wall — an impossibility due to the wall being constructed of blocks cut from 6-inch-thick slabs — blocks were personally selected for uniformity and figuring to mirror the tectonic intersections in grain found in nature."

"The sculptural windswept finish on the feature wall was as much a process as an idea," Peli went on to say. "It all revolved around knowing that a specific expression was desired."

AN INTRICATE FABRICATION PROCESS

The 32 1/2- x 12-foot wall, which greets visitors at the entry, is constructed of a glass-grade metaquartzite that is quarried 15 miles south of Las Vegas, NV, known as "Las Vegas Rock." The rare stone was supplied by Stone Source in New York, NY.

"The computationally generated surface of the wall topography is not 'hidden,' but rather celebrated in a triangulated pattern, allowing it to read through in the final product," Peli said of the three-dimensional wall design. "The triangulation edges are a result of the stone tooling, a diamond-bit rope on two CNC pulleys that are able to carve

a ruled surface through the stone slabs. The crisp edges of the CNC fabrication were 'swept' by laying up the entire wall and hand-sandblast sculpting the surface to bring out the striation and create uniformity to the final form."

Sandblasters undertook the carving of the stone the same way a sculptor would, carefully raking each panel in an undulating motion to create a wave effect very similar to what Mother Nature does to the Earth over centuries. "The windswept finish is a sandblasted technique where media is shot and removes material," said Jeremy Adams, vice president of operations at Las Vegas Rock Inc. in Jean, NV, which completed the stone fabrication. "We use different grits, as some cut more aggressively and others are for finer or finishing detail."

Adams explained how two different mock-ups were created for the feature wall to ensure color consistency. "The windswept finish can be a real artistic finish," he explained. "It can either be heavily raked, undulated or just kissed to provide a texture. The mock-ups confirmed the finish desired, which was an undulated raked finish that followed the striation of each individual panel."

Adams and his team utilized a range of machinery to create the 6-inch-thick wall pieces from solid blocks of the Las Vegas Rock before the finish was applied. "We first cut the blocks with a Breton Paragon multi-wire saw," Adams said. "We cut 15cm slab inventory from the customer-selected blocks that fit their desired design intent. There are panels that have intersecting striation, which is what ASU wanted. The slabs were then cut into the individual panels on a bridge saw. After, they were transferred to a 7-axis Pellegrini RobotWire EVO saw, which cut out the unique face profile of



"The logo was designed to be disguised within the panels, only revealing itself when caught by the meticulous eye of visitors," said Christopher Peli, project designer at CORE architecture + design in Washington, DC. "As a result, the vibrant stone was crafted into one of the center's most integral design features." Photo courtesy of Alan Karchmer



Hand-selected panels were laid out to ensure color consistency. Photo courtesy of CORE

each panel. Finally, the panels were laid out and windswept together.”

Fabrication of the 700 square feet of stone supplied for the project took between four and six weeks. “We spent a lot of time on the front end with design and panel sizing working with the architect and installer,” Adams said.

“The most challenging aspect of the project was getting the tight tolerances between the feature wall panels. With the panels not having anything in the joints, every step of the process had to be very precise. The side cuts had to be exact, because if they weren’t, it could create unwanted gaps at the face.

“The feature wall has 91 panels and no two panels are the same, so each was a unique puzzle piece that fit exact in its location and had to match its adjoining panels as closely as possible,” he further explained. “I think the effort paid off in the end though, as the finished installation is spectacular.”

CONNECTING ALL OF THE DOTS

The design was modified with the addition of a logo wall, which features both honed and windswept finishes. “The logo was designed to be disguised within the panels, only revealing itself when caught by the meticulous eye of visitors,” Peli said. “As a result, the vibrant stone was crafted into one of the center’s most integral design features.”

Time was taken transitioning from each panel on both walls to create a continuous flow, especially during the installation, which was completed by a team of four men from Boatman & Magnani, Inc. in Capital Heights, MD. “It is not too often that stone walls are created in a three-dimensional format, so the challenge was to coordinate with the fabricator through the shop drawing process,” said senior executive, Don Wrieden. “All pieces were labeled and numbered so we knew which piece went where.”

The main objective during the installation was to ensure all of the edges lined up accordingly, with no joint lines. “We did some tweaking in the field,” Wrieden explained. “The hardest part was making the pieces fit perfectly. Some of the pieces were adjusted onsite to make sure that there were no joints.”

To support the load of the wall and ensure no joint lines, a gravity wall was created, which is a retaining wall that



Two mock-ups of the feature wall were also created to ensure color consistency and that the undulated flow was continuous throughout the entire design. Photo courtesy of CORE

relies solely on its own weight to stand up. Gravity walls are built with massive blocks — in this case, the carved panels of Las Vegas Rock — using a tongue-and-groove system to lock the pieces together. While the stone pieces are massive, they require no mortar or pins and minimal labor with quick installation.

“The color varies through the whole thing and that is what makes it look interesting,” Wrieden said. “It ended up portraying exactly what ASU wanted it to. What you see in Arizona — the windswept hills and mountains that are tangled by wind and blowing sand.”

Between the feature wall and logo wall, the installation took around one month to complete. “Dramatic, grazed-lighting highlights the CNC-sculpted stone, capturing the relief and detail of the surface,” Peli said. “The result is a hybrid of digitally developed modeling and hand-finished circumstance that bridges the line between natural and computer-generated form.”

Since its completion, the project has since received local and national praise, as well as various accolades, including a 2019 Pinnacle Award of Excellence from the Natural Stone Institute in

the “architectural carving/lettering/sculpture” category. ■

Arizona State University Barrett & O'Connor Washington Center lobby Washington, DC

Architect: CORE architecture + design,
Washington, DC

Stone Supplier: Stone Source, New York, NY
(Las Vegas Rock)

Stone Fabricator: Las Vegas Rock Inc., Jean, NV

Stone Installer: Boatman & Magnani, Inc.,
Capital Heights, MD