ZAHNER®



THE INTERSECTION OF ART AND ARCHITECTURE.

PETERSEN AUTOMOTIVE MUSEUM DESIGNED BY KOHN PEDERSEN FOX ZAHNER PROVIDED THE NEW FACADE USING ZEPPS® TECHNOLOGY FOR CURVING FORMS

"Zahner employees are visionary perfectionists. Their work raises the level of an architect's abilities."

- Daniel Libeskind

"Zahner provides exemplary craftsmanship in everything they undertake, and are seriously and extremely committed to architecture, with a capital A."

- Frank Gehry

"We always look forward to opportunities to work with A. Zahner. It was a privilege to have their hand in one of our projects."

Stacey Jones

"Our changing times require enlightened and artistically oriented talent in a way that is exemplified in the figure of Bill Zahner."

-Steven Holl

"Zahner has moved into the global community, working with designers on a world-class level. The result is that many of the most notable examples of architecture of the past twenty years have been influenced by a company out of the mid-section of the US."

- Antoine Predock

"When everyone else said that the operable double skin for the Cooper Union's New Academic Building couldn't be done, Zahner worked closely with us to make it happen."

- Thom Mayne \longrightarrow





OUR MISSION

Zahner's Mission is to surpass the expectations of our clients by expanding the boundaries of high-quality metal and glass used in art and architecture. Zahner pushes the levels of technology while providing a worthwhile, challenging and safe environment for our present and future employees and associates.

Zahner employees practice this mantra at every phase of the design and construction process. When clients first visit the Zahner campus in Kansas City, they experience new processes, surfaces, and possibilities. As a project moves forward, Zahner engineers develop details to elegantly match the architect's designed aesthetic. The resulting technologies expand a project's potential.

We work to understand your vision and help you achieve it.

A single facade can require upwards of hundreds and even thousands of panels. During production, components are organized by digital signatures and delivered on a schedule to the site. This systematized process provides for an intelligently organized installation process on highly bespoke designs. Zahner field engineers work tirelessly to ensure accurate installation with highest possible craft.





The concept of Design Assist first appeared during the design

phase of the EMP Museum (left) in 1999. Zahner engineers met with Frank Gehry's design team to develop the complex façade. Design Assist describes the collaborative process we use to build complex architecture. It is a dedication to meeting the client's expectations with a quality product.

Design Assist gives the client power to directly control quality, cost, and schedule. If you've worked with Zahner, you understand that Design Assist is also an effective method for reducing the cost, time, and the number of issues that arise in the production of unparalleled architecture. Zahner engineers and fabricators understand the limitations of what is possible, empowering the team to design for the lowest possible budget at the highest possible quality.



Let us take your risk. Design Assist helps owners control the budget and achieve their project's goals:

Increase Quality — Zahner has the expertise to know what can be reduced without sacrificing the desired aesthetic.

Streamline Schedule — Instead of building in the field, we prefabricate components for rapid installation, typically saving two to four months of installation time.

Save Money — Design Assist saves money for owners. This is achieved by expertise, automation strategies, and analytical processes which occur at the beginning of each project.



Zahner Headquarters, Kansas City Missouri

Zahner is internationally renowned and recognized for

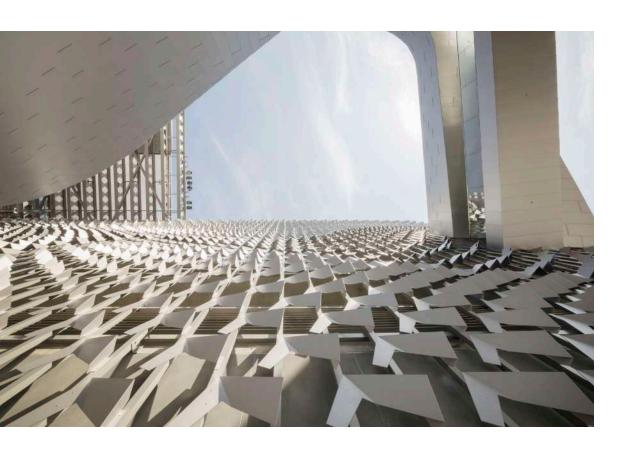
innovations in the field of metal and digital fabrication. Zahner leads by developing new and sustainable metal applications, patinas, and their respective technologies, recruiting only the most dedicated and intelligent engineers and fabricators. Zahner employs over 250 people with facilities in Dallas, Texas and Kansas City, Missouri.

L. William Zahner, CEO/President, is a recognized expert in the field of architectural metals. He has authored two books detailing the use of metal in architecture which are used by students around the world as textbooks for the application of architectural metal. In 2007 the American Institute of Architects awarded Mr. Zahner with an honorary membership for his dedication to the architectural profession, his devotion to spreading his knowledge of metal, and his innovations and contributions to architectural metal.











Emerson Los Angeles was designed by Morphosis and is the

fourth project completed under a Design Assist contract with Zahner design and fabrication.

Zahner's design team replaced the structural steel and provided automated fabrication technologies to reduce costs and increase efficiency. ZEPPS® panels were pre-fabricated in the Zahner shop, so the construction schedule was reduced by three months when compared with traditional installation. By using ZEPPS® in lieu of traditional stud framing, the team was able to reduce the cost of labor in the field. As a result, Zahner saved the client over \$400K.





Creating a mockup in Kansas City allowed the design team to test and tweak detail-changes before going into production.



Zahner installers nearing completion on the Emerson College campus in Los Angeles, California



Zahner created three facades for the Miami City View Parking Structure in the Miami Design District. Three design teams worked with the architect of record to bring the facades to fruition: IwamotoScott (right), John Baldessari (below), and Leong Leong (next page). The engineering team at Zahner worked with the firms to design, manufacture, and install each of the unique facade systems.















Completed in 2015, Zahner's involvement with the

Miami City View project began with a Design Assist contract and the creation of a mockup at the Zahner campus (top). The design team further developed the concept, manufactured and installed in Miami, Florida. The Leong Leong facade was manufactured with a gold-colored titanium-coated stainless steel surface, whose selective perforation and folded edges create a picotage-like surface in glowing metal (opposite).

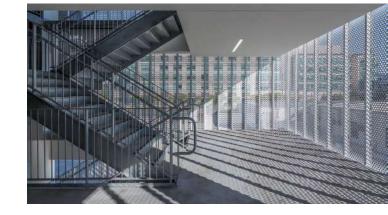
The center of the structure's facade, by artist John Baldessari, uses Zahner's ZIRA® ImageWall® technology to create a vivid rendering on stainless steel using circular perforations removed from its surface. The blue facade, by IwamotoScott architects, is a custompainted aluminum system, with repeating and non-repeating forms which vary in depth, shape, size, and color. The structure opened March, 2015.

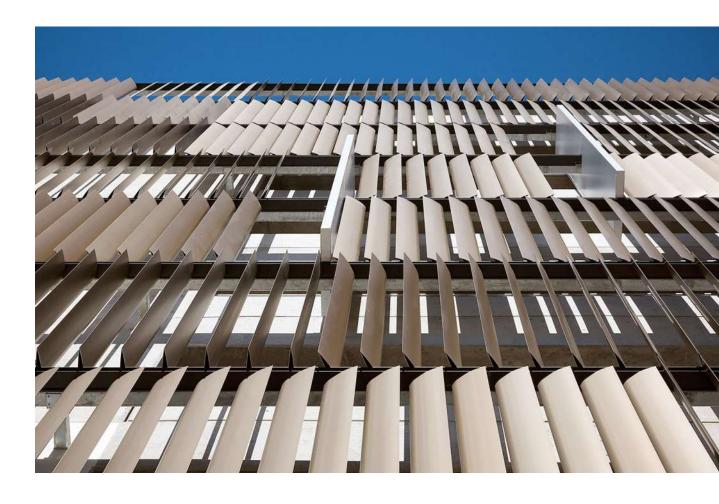




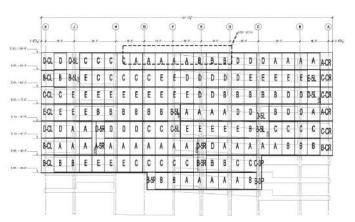
For the ten-story UCSF parking facility in San Francisco,

Zahner worked closely under a Design Assist contract to develop a smart facade with a compelling visual aesthetic. The project's restrictive budget required an intelligent process to efficiently fabricate, ship, and install. Zahner met this challenge without compromising the design by using Design Assist to develop the client's design into a simple yet elegant system. The project was achieved using only five panel types, each made up a single extrusion type, anodized with a bronze finish.









Zahner's solution for creating a panelized layout for each of the pre-assembled fin sections.





Zahner worked with the architects at Foster + Partners to

develop a canopy system which would allow beneficial light through the courtyard while preventing harsh rays of the sun. The highly technical engineered design of this canopy was developed by Zahner, who worked with directly with the architects to realize their desired form.

The aluminum canopy features aircraft-grade connections and is engineered and fabricated with the highest design standards. The photographs above show the artful design layout of the fins integrating into the canopy framework.





The massive canopy of the Winspear Opera House provides natural shade and cooling for theatre-goers in the hot Texas weather.



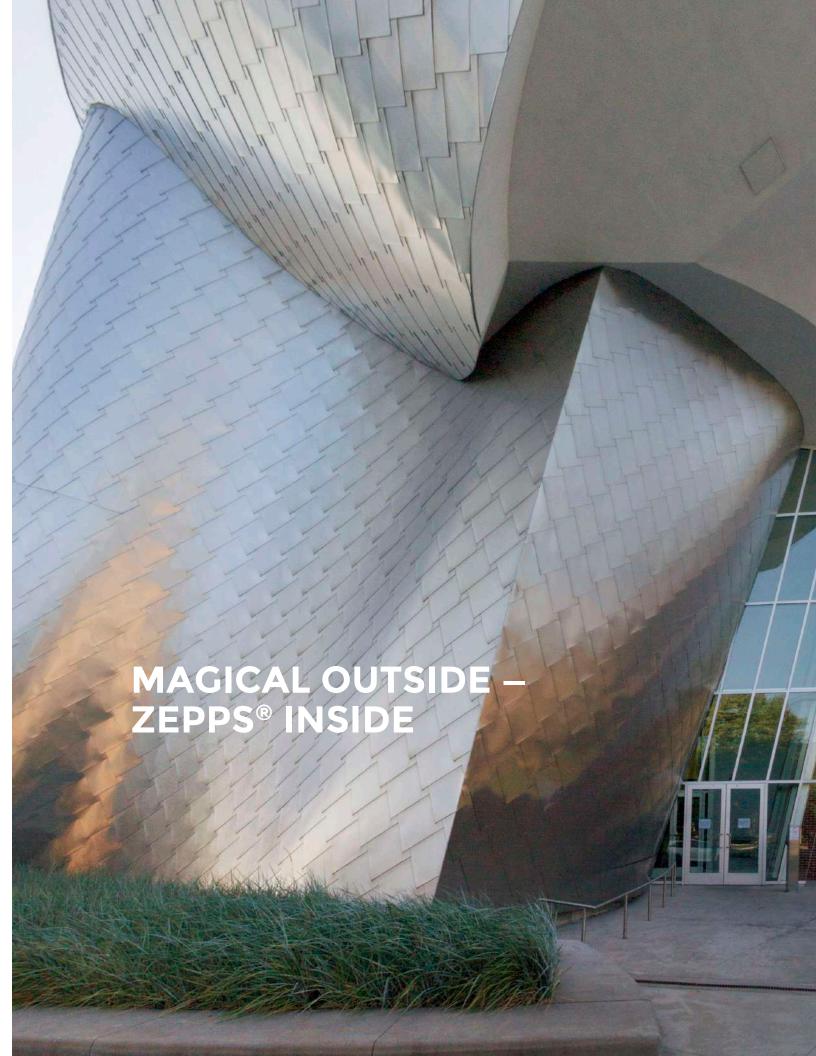
"It works a little bit like a model-airplane kit — Zahner's computer system automatically organizes all the parts to create a shape. The cutting patterns get sent over to a computer system that cuts the shapes. All the shapes come in a box numbered, and as long as they fit the numbered parts in the right places there's very little measuring. You get a unique prefabricated shape that comes in a box."

— George Metzger, Gehry Partner

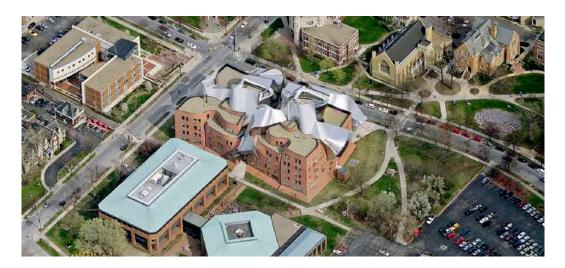
Ouoted in Sheet Metal Magicians. Peter Hall, Metropolis

Patent No(s). 7,434,366 B2; 7784243 B2; 20070283663 A1









Weatherhead School of Managment's Peter B. Lewis

Building was completed using the ZEPPS® process. The metal surface was mechanically finished to provide a stainless steel surface, undulating like ribbons of cloth amongst its brick forms. Zahner engineers produced the forms using ZEPPS® process, and clad the building in a custom flat seam to provide a highly planar edge.

ZEPPS® forms can be clad in a wide range of materials. For Weatherhead, the designers selected stainless steel. The 22ga material is surfaced with a #4 Satin mechanical finish. This is more reflective than the Angel Hair® stainless steel, but diffuses more light than a mirror-finish.









350,000 square feet of stainless steel skins clad the

sweeping curves of BOK Center in Tulsa, Oklahoma. The structural assemblies as well as the stainless steel skins were all made possible by using ZEPPS® technology developed by Zahner. In opting to use this technology, the client saved money, eliminating much of the structural steel and reducing the amount of subcontractors involved in the construction process. Designed by Pelli Clarke Pelli, the project was managed by Flintco & Manhattan Construction, who called BOK Center one of the finest architectural designs in their 100-year history of architectural work.



BOK CENTER A SMART INVESTMENT "The iconic 19,199 seat downtown arena has spent nearly five years shattering expectations, selling out shows, attracting major artists and landing in national publications' rankings of the nation's top-performing venues. Since its first show on Sept. 6, 2008 - a sold-out concert by the Eagles - the BOK Center has sold 3.3 million tickets, collected \$104.4 million in ticket revenue and generated more than \$11.1 million in sales tax." – Zack Stoycoff, Tulsa World 2013 BOK Arena, Tulsa, Oklahoma





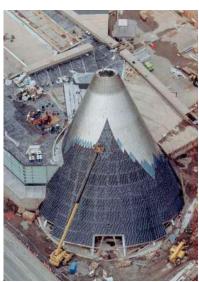
A twisting stainless steel ribbon races around the

perimeter of the NASCAR Hall of Fame in Charlotte, North Carolina. Engineers at Zahner used ZEPPS® technology to enable simple construction of an otherwise complex shape. The ribbon is clad in Angel Hair® stainless steel, a product developed by Zahner to reduce the glare and bright spots while providing a uniform satin finish. Even in bright sunlight, the surface has significantly less glare than standard finishes on stainless steel.













Tacoma Museum of Glass, Tacoma, Washington

2,800 unique diamond-shaped stainless steel panels skin

the surface of the Tacoma Museum of Glass. Designed by Arthur Erickson, the project was a major Design Assist effort. The architects consulted with Zahner to lay the groundwork for producing the complex geometries efficiently, and then executed the design with Zahner fabrication technologies.

The shape of the cone is made possible by the ZEPPS® process, a system designed to make complex structures manageable. Each row of diamond panels has a different height and width, decreasing in size as it goes up. The photo above was taken in 2012, ten years after its completion.



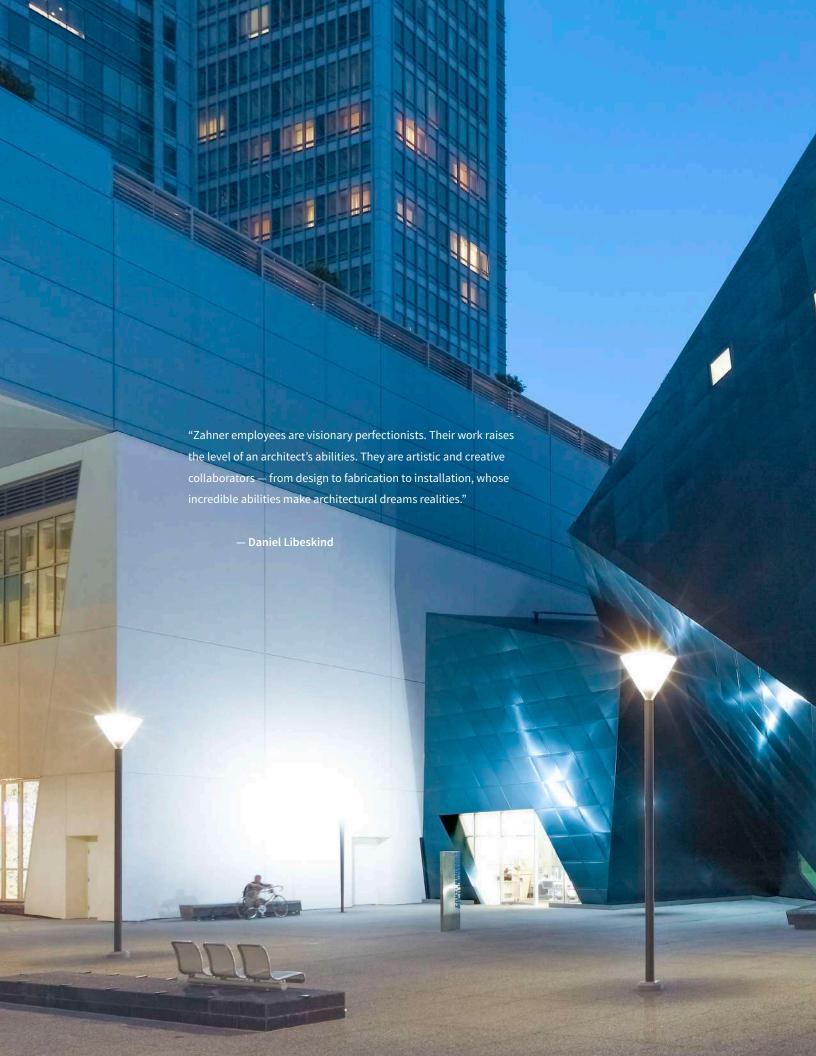






The Pritzker Pavilion at Millennium Park in

Chicago, Illinois is a feat of engineering and construction. Zahner fabricated 697 ZEPPS® panels, ranging from 6 to 300 square feet, and 1,600 to 20,000 pounds, with a thickness of about 14 inches. Each panel is uniquely numbered and ready to install, enabling rapid construction schedules with small teams of installers. These assemblies are then clad in Angel Hair® stainless steel. Designed by Gehry Partners, the project was completed in 2004.











Due to its color interference coating, the material becomes iridescent in certain lighting conditions and viewing angles (above).

3,028 sheets of blue iridescent cross-fire interference

stainless steel clad the surface of the Contemporary Jewish Museum in San Francisco. Designed by Studio Daniel Libeskind, the engineers and fabricators at Zahner were responsible for the total building envelope, including the metal, glass, and substrate. The project uses an Inverted Seam® roof and facade system, the most powerful building envelope system for water control, planar uniformity and long-term performance.

Zahner engineered the skylight windows to integrate into the building skin, inset with four-sided structural silicone glazing. The 36 custom skylights sit flush with the surface of the metal, giving the roof and siding a smooth, uniform facing.



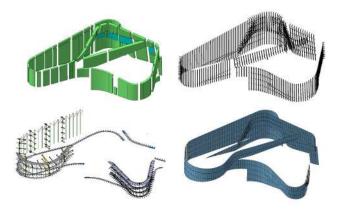




McCoy Federal Building, Jackson, Mississippi

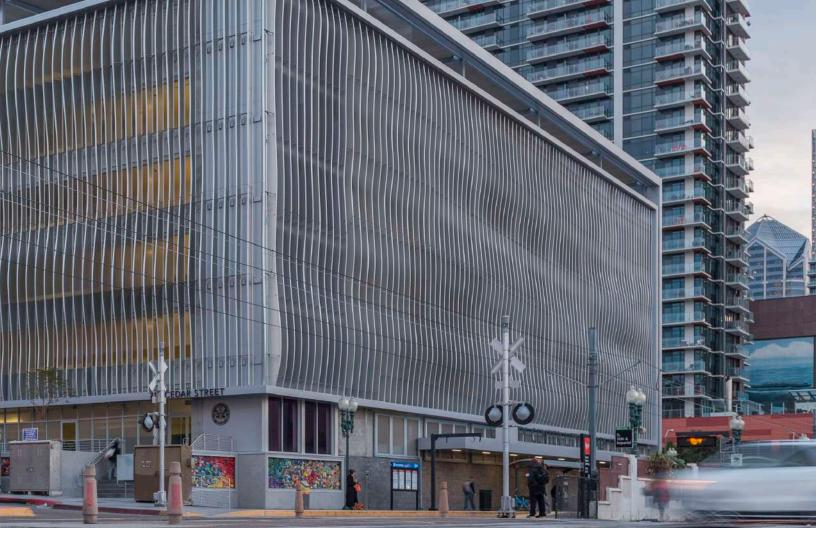






Glass and steel, 260 extrusions, each 10 to 25 feet long,

thread into ZEPPS" sections to hold 1,078 lites of glass for the design by Schwartz + Silver for the Jackson, Mississippi Federal Courthouse and GSA Building. Locked into place by over 2,000 quills of varying heights, almost every single lite of glass is unique, offering differing widths and heights as specified by Zahner engineering and programming specialists.



Cedar Kettner Parking Garage, San Diego, California

A striking new parking garage graces the corner

of Cedar Street and Kettner Boulevard in Little Italy, San Diego. The design team was led by architects International Parking Design (IPD), working with construction manager McCarthy Builders in San Diego. The design team visited Zahner's Headquarters prior to working on the job, and experienced the CloudWall™ system installed on the building's facade.

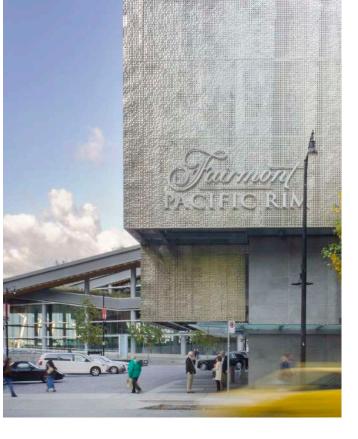
Completed in 2015, this new building provides much needed parking for visitors in a bustling area of tourism. 645 new parking spaces give the county the ability to accommodate greater amounts of tourism, bolster the local economy, and look great while doing so. The Cedar Kettner project uses the CloudWall fin-based facade system. The technology was first developed to use on the Zahner Headquarters in Kansas City.



Reminiscent of ripples in the San Diego Bay, the CloudWall™ surface follows the recently completed waterfront park. The facade encompasses the building's seven aboveground levels. Three additional levels exist underground. The panels were installed using custom extruded channel embeds which were set in concrete. Zahner worked with McCarthy to coordinate the location for each embed.



Unique CloudWall™ fins create an undulating aesthetic for the facade of the Cedar Kettner Parking Garage.





The Fairmont Pacific Rim in Vancouver features a

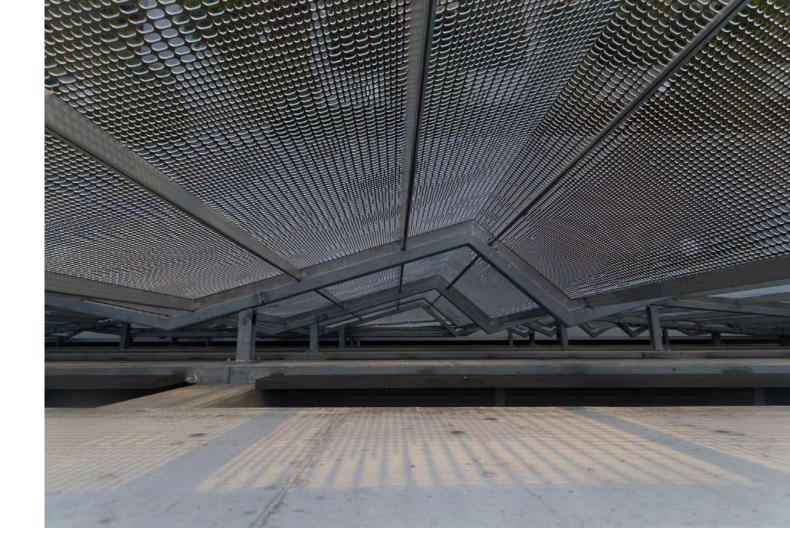
perforated and bumped metal screen wall. Designed by James K.M. Cheng Architects, Zahner developed a perforated facade to disguise the first few floors of office, while allowing light and air to enter through the thousands of perforations.

What sets this perforated screen apart from standard fare is its unique surface design, a perforated and bumped texture subtly glistening across the surface. The bright annealed stainless steel material is features Angel Hair® surfacing developed by Zahner.











The Mission Bay Block 27 Parking Structure

of San Francisco houses 1,420 parking spaces on seven elevated levels. The structure features a metal screen with perforated imagery of California's redwood forests. Designed by WRNS Studio, this facade was design-engineered by the and produced by Zahner.

Four distinct oval cut-outs make up the building's abstract pattern. The designer provided tree imagery and Zahner engineers processed the imagery into circular shapes to abstract the form. For the surface, the firm decided on a perforated aluminum cladding which covers the entirety of the metal scope for the garage.



The most rapidly produced work of this scale

completed with Zahner to date, the Liverpool Flagship Department Store is an example of what can be built using Zahner engineered products and automation systems. Rojkind Arquitectos conceived and completed the project within a single year. As a testament to the simplicity of installing ZEPPS® assemblies, Zahner shipped the units to Mexico City, where a third-party field team installed the panels without prior experience with the ZEPPS® technology. The system was installed ahead of schedule on a tight deadline.







Liverpool Flagship Department Store, Mexico City, Mexico





The facade encases a rooftop garden, three floors of shopping, and a three-story parking garage for shoppers at the Interlomas subdevelopment in Mexico City. This project is a design-build project whose exterior system was defined by the Zahner Design Assist team. Zahner owned the anchor design and worked with the structural engineer to integrate the building's form seamlessly. Zahner provided Design Assist, engineering, fabrication and shipment. The project's prefabricated unitized panels were shipped to Mexico City, where local crews installed the facade system without issue.



THE NEXT STAGE OF MANUFACTURING

As the foremost manufacturer of complex architecture,





The Petersen Automotive Museum is a renovation of an

existing building. The designer's concept was envisioned as a curvilinear facade which floats around its perimeter and rooftop event space. The ZEPPS® process was used to manufacture this complex facade.

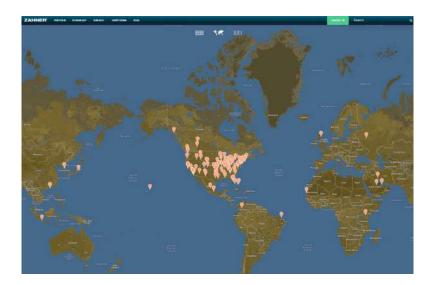
The mockup (pictured opposite) was shown to the owners, designers, and construction team in August, 2013. The project began installation in April, 2015 and was completed in December, 2015.

MADE WITH ZAHNER

Explore Zahner projects, around the world.

In 2015, Zahner released a map showcasing a selection of the works that Zahner has created around the world. Dive through the map and discover projects in your own city, or take a look at the many works Zahner has done in countries outside of North America. Zahner has produced thousands of projects on five continents, and is doing more work overseas as it expands into new markets, and exports the technologies that were once only possible within the United States.

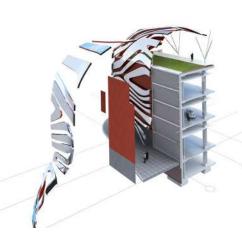
Discover more: azahner.com/earth



Build modular forms with ZEPPS.

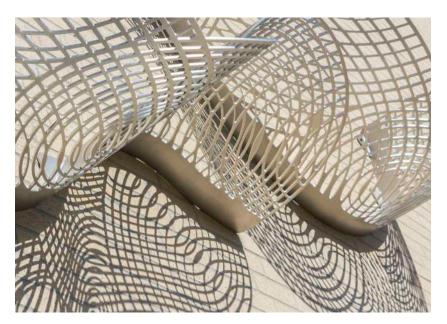
Design curves, and know that they can be built, with Zahner. Pictured from below to right: renderings, mockup, and completed work for the Petersen Automotive Museum in Los Angeles, designed by KPF.

See curved forms: azahner.com/zepps











Develop stunning light & shadows.

Artist Jesse Small designed a wall-mounted sculpture for the Jewish Community Center in Overland Park, Kansas. The laser-cut stainless steel forms are mounted to a brick facade, casting unique shadows across its wall.

Read more: azahner.com/sculpture

Make art without fear.

Commissioned as a permanent installation, the latest Jan Hendrix work of art (pictured right), was produced and delivered by Zahner to a private collection in Mexico City. Jan Hendrix has developed a studio practice that makes use of Zahner's fabrication capabilities, which means more time spent in his studio and an increased capacity for production of his work. Because of Zahner's continued innovation, each sculpture taps a new process developed by Zahner R&D. The artwork pictured right features a mirrorpolish aluminum cut with beveled edge made by Zahner's CNC milling equipment.



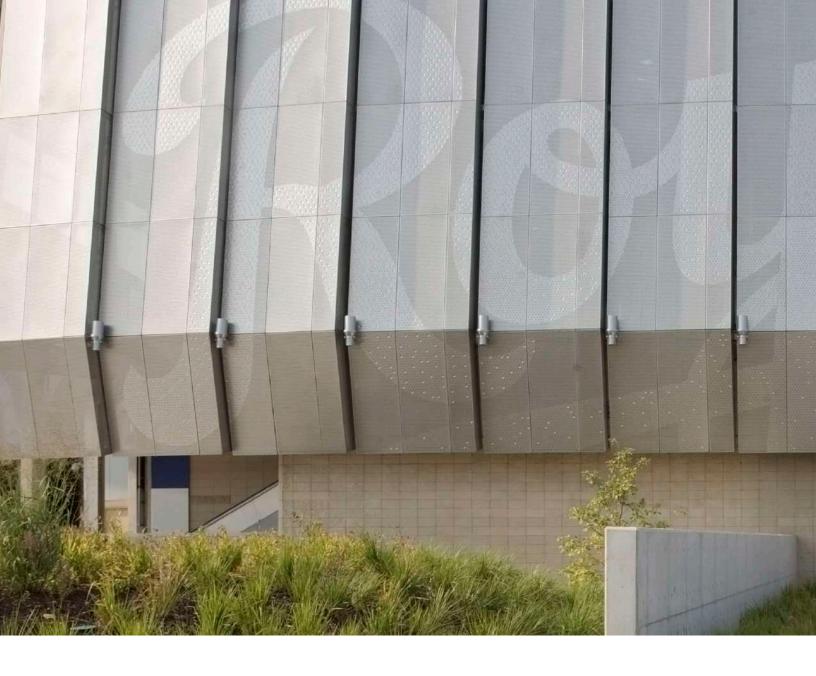


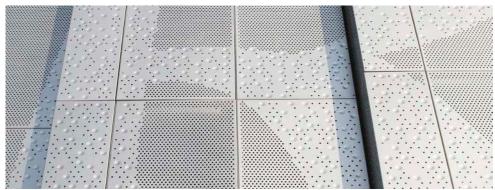


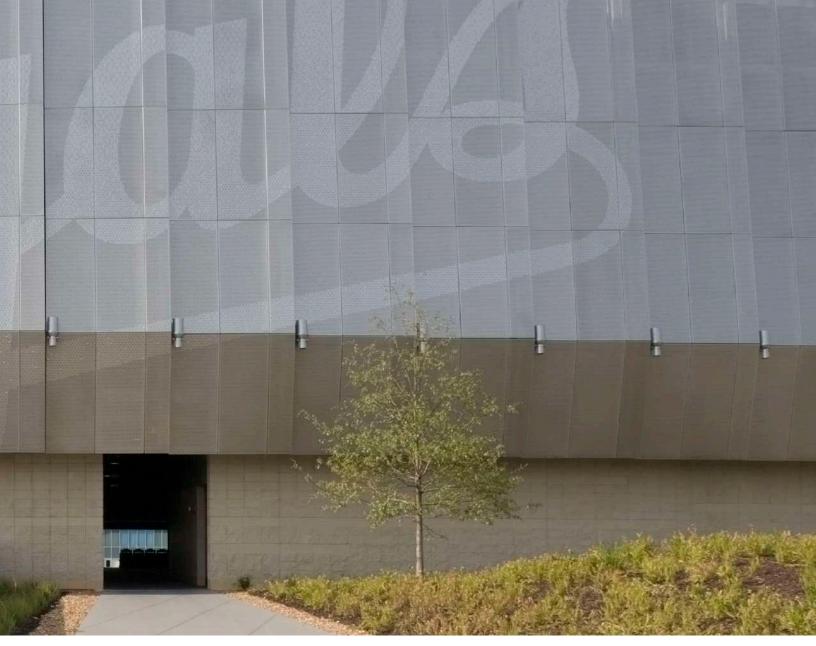
Build iconic flagship facades.

Burberry Flagship Store in Chicago (pictured left) is the second in a series of flagship stores to use black interference stainless steel. Zahner's design and engineering team approached the details from a unique perspective, employing heavy gauge stainless steel, v-notched corners, and an interlocking system for efficient installation of the metal panel design. The system is also deeply set, providing a strong sculptural feel to the building's architectural accents.

Learn more: azahner.com/flagships







Kauffman Stadium, Kansas City, Missouri

Patented $\mathsf{ZIRA}^{\mathsf{TM}}$ technology enables artists and architects

to automatically translate unique imagery onto metal using any combination of selective embossing, cutting, or perforation of the surfaces. Any image, photograph, drawing, or pattern can be translated to the metal surface using with our ZIRA™ technology.

Kauffman Stadium, designed by Populous, uses a combination of dimpled, bumped, and perforated metal surfacing to create a subtle reveal of the baseball team's logo on its surface.

Patent No. 7,212,688 B2

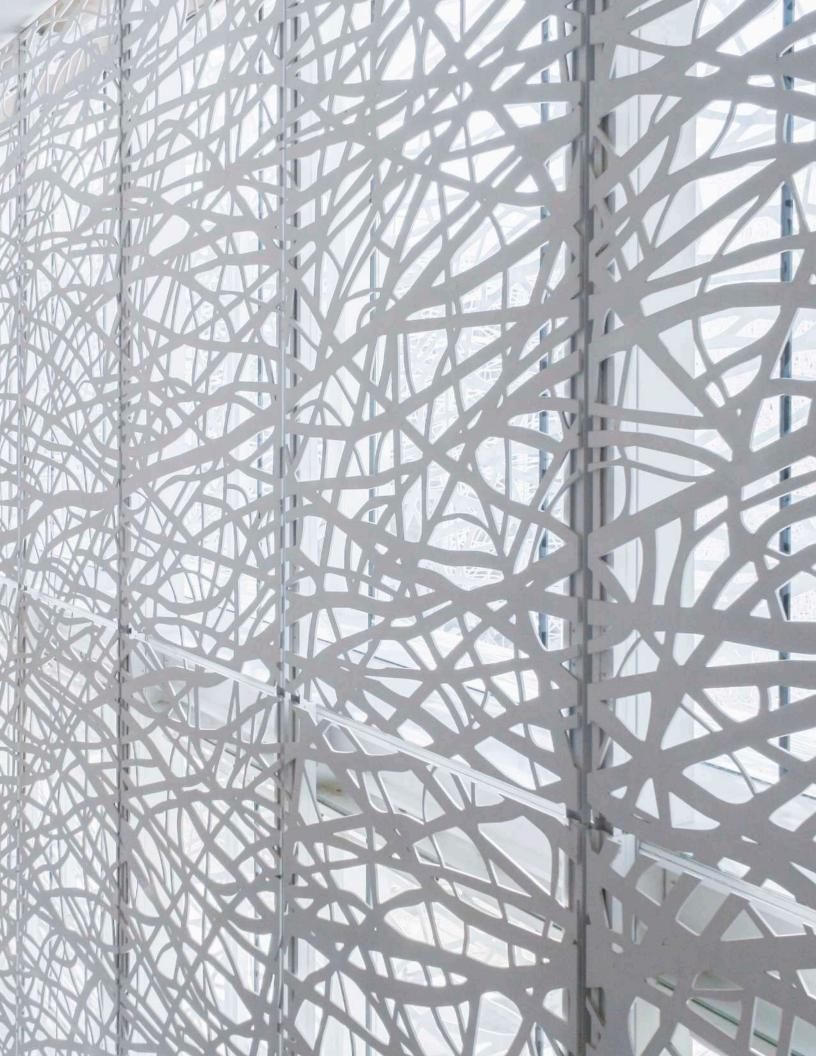


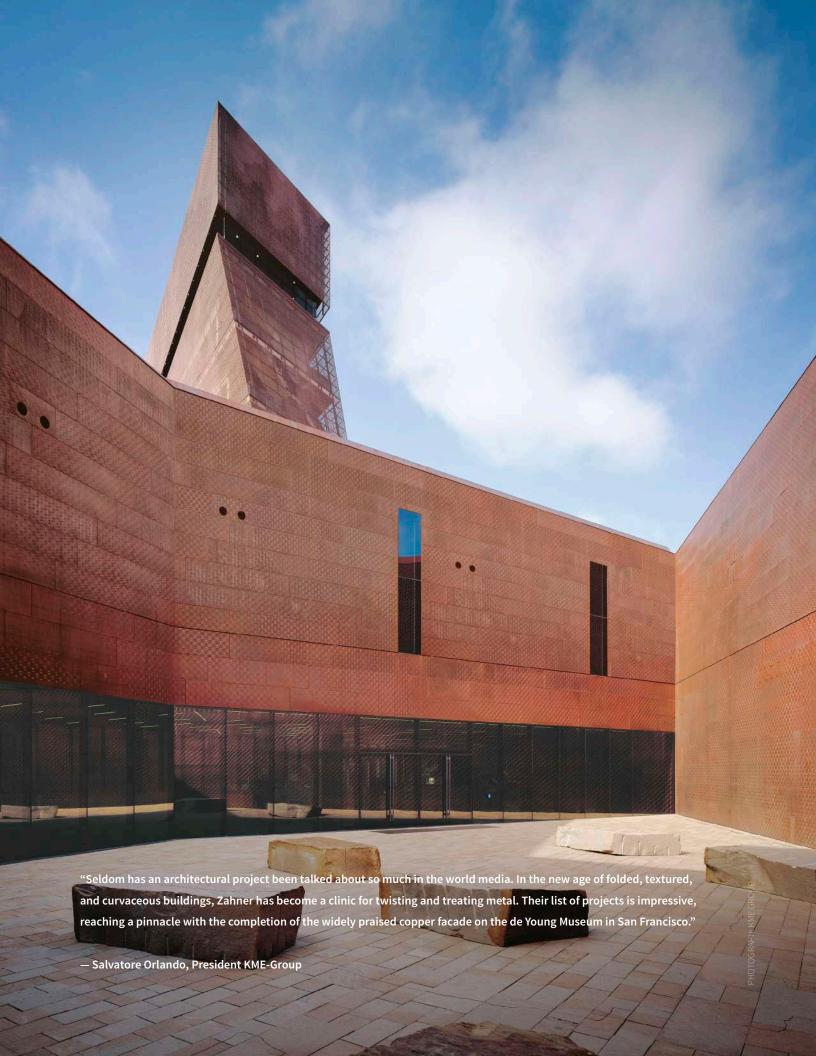


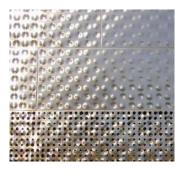
Massive aluminum plates measuring eight by

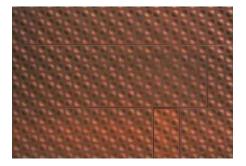
twenty feet frame the Student Center Courtyard at Doha University, Qatar. The half-inch plates were fabricated by Zahner in Kansas City to match a pattern drawn by artist Jan Hendrix. Completed in the summer of 2010, the art installation was a part of the overall building design by architects Legoretta & Legoretta. Painted aluminum panels and substructure were shipped as units to Doha where local installers placed the large metal plates on both the interior and exterior frameworks.

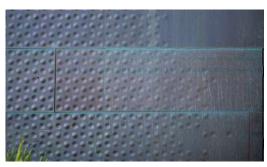










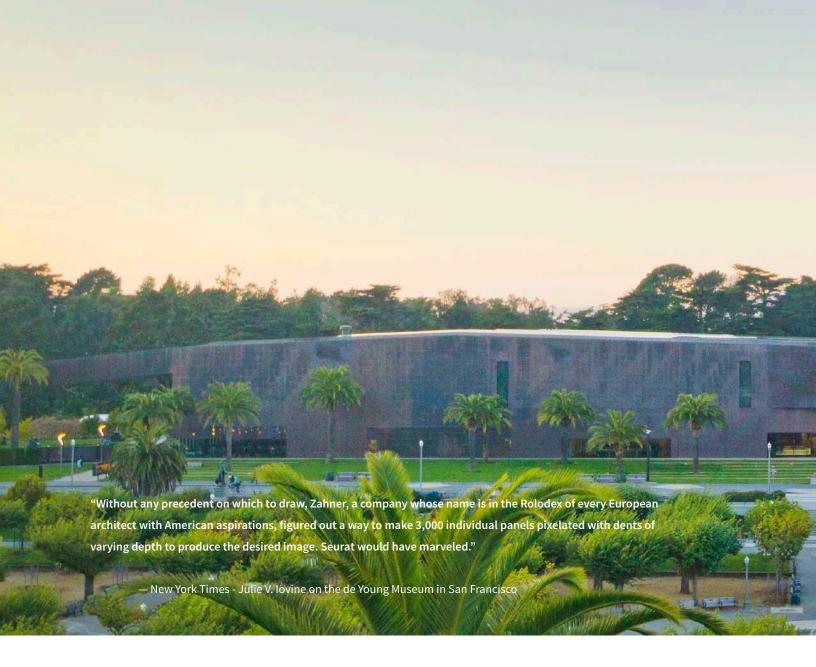


The copper material ages over time.

7,600 individual and uniquely dimpled perforated

panels adorn the surface of the de Young Museum in San Francisco, California. The innovative Museum was designed by Herzog & de Meuron, and is the first building to include perforated metal imagery defined by algorithms. Digital images were converted into machine language and used as the basis for the entire facade. Zahner provided Design Assist, value engineering, scheduling, fabrication, and erection of the interior facade and building envelope.

As designed by the architect, the copper has slowly patinated, forming on the copper surface naturally from a bright reflective red to a historic verdigris tone, pictured above and on the following page. The desired outcome is for the Museum to naturally disappear over time, becoming part of the surrounding forest at Golden Gate Park.



"Craftsmanship in large buildings is supposed to be dead, killed by Modernist ideology and cost considerations. What this building says is that maybe craftsmanship has a high-tech future after all."

— Time Magazine - Richard Lacayo on the de Young



de Young Museum, San Francisco, CA





Natural light streams through the ceiling of the

Children's Entry at the de Young Museum in San Francisco. Perforated sheets of copper create a poetic shading enclosure. The enclosure was generated using an image provided by the design team, and Zahner's patented technology was then used to create the architect's desired vision, a copper canopy whose shadows appear as though cast by overhead trees.





