Complex Projects Drive SOM's Success

— Craig A. Shutt

Architectural precast concrete's plasticity and quality help meet San Francisco office's needs for unique façade treatments on mixed-use and other multifunction buildings

Creating high-profile projects with a mix of functions presents a complex array of challenges. But when additional requirements for high-seismic zones and sustainable products are added to the mix, as they are for many of the projects undertaken by the San Francisco office of Skidmore, Owings & Merrill LLP, creating exciting projects requires a strong mix of expertise and support from the entire team — including the precaster.

The office, celebrating its 60th anniversary this year as the international company celebrates its 70th anniversary overall, is known for the large-scale, complex projects it undertakes. Its commissions have included the Bank of America World Headquarters, the Federal Reserve Bank of San Francisco, the Oakland Coliseum, Davies Symphony Hall, U.S. Court of Appeals and the International Terminal at San Francisco International Airport. As that range indicates, it is complexity, more than building type, that drives this West Coast team.

"I wouldn't classify us as specialists per se in a certain type of building," says Keith Boswell, technical partner in the San Francisco office. "We've become very familiar with projects of all scales that involve complex criteria and multiple functions. A number of us have been able to work together and handle some large-scale projects early in our careers, so we gained experience that we've been able to develop." The design work is overseen by Craig Hartman and Brian Lee, the partners in charge of design for the San Francisco office.

Mixed-Use Designs Thrive

One of the strongest markets currently for SOM SF is mixed-use commercial projects. These usually include office and some form of retail or a combination of hotels or multi-unit condominium spaces with retail. "There are rarely typical or traditional components to these

Two levels of sandblasting add visual interest through texture and color for the precast concrete spandrels and column covers on the Electronic Arts corporate headquarters in Redwood City, Calif. Photo: ©Abby Sadin

PROJECT SPOTLIGHT

Electronic Arts Corporate Headquarters

Location: *Redwood City, Calif.*

Project Type: *Headquarters office building*

Area: *400,000 square feet*

Designer: *Skidmore, Owings & Merrill LLP*

Owner: *Electronic Arts*

Contractor: *Webcor Builders, San Mateo, Calif.*

PCI-Certified Precaster: *Clark Pacific, West Sacramento, Calif.*

Description: *This headquarters project was designed to express a balance between the corporate culture of a major Silicon Valley company and the flexibility to accommodate the rapid change of the high tech industry. The project is part of the company's one-million-square-foot master plan for an office park and features two separate buildings. Architectural precast concrete spandrels and column covers were used in conjunction with tinted glass to create a contemporary but solid appearance on both structures.*

Each project relates to the centrally located great lawn in a different way, due to the nature of the space and its structures. They each feature an entrance on one side and a façade that faces the semipublic great lawn. Different faces are shown as a result of this interaction.

The precast concrete panels feature two levels of sandblasting to create texture and contrast. Precast was chosen to provide a consistent level of finish and surface flatness while providing accent relief with the sandblasted finishes. Spandrels added to the design emphasize the horizontally grained exterior design intent.

About 95,000 square feet of precast were used, in which 1,000 pieces were installed, with most of the panels featuring dual finishes and dual colors.

'One of the key challenges comes in giving the project a specific unifying identity while also providing each element with its own character.'

projects, even when they combine similar function," says Boswell. "Each project is case-specific based on the owner's plan, the site logistics and other factors that influence the design process. There's a problem-solving process that each project goes through, but the design is driven by the parameters that are set for the building, and the result is always different."

Designing for complex projects, especially mixed-use buildings, presents another level of challenges, he notes. "Mixed-use projects have many similar needs and functions as single-use structures. But one of the key challenges comes in giving the project a specific unifying identity while also providing each element with its own character. The components must be identifiable while fitting into the design language of the entire complex. Achieving this consistency speaks to good design, which ultimately must be realized in quality detailing and construction."

Projects Show Precast Diversity

Several projects completed within the last few years of the airport project show the range of ways the company uses precast concrete. At the Electronic Arts Corporate Headquarters in Redwood City, Calif., precast spandrels complement bands of tinted windows and help form a dramatic entry with tall columns. "For this project, we needed an economical material that could provide visual interest with subtle relief and texture," he explains. "We could

Keith Boswell, technical partner, SOM San Francisco

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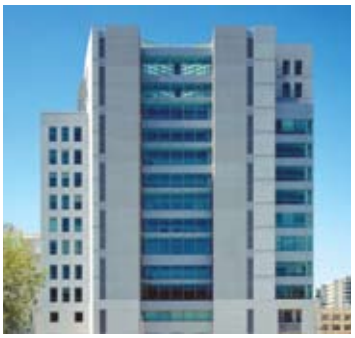
change finishes to achieve a level of detail on both the spandrels and column covers that is inherent in architectural precast concrete."

At the San Francisco Civic Center Complex, a $256-million, 1.05-million-square-foot addition expanded the existing California State Supreme Court building, a historic structure. "The existing building had considerable relief in its elevation, without a really flat plane," he explains. "We wanted the new addition to respect the historic structure in massing articulation and the rhythm in the exterior façade. We selected architectural precast concrete panels because they provide a fairly 'plastic' material that could achieve relief within the exterior elevation, thanks to the way they could be cast with varying thicknesses and returns and with changes in the mix and panel finishes."

'Architectural precast concrete panels provide a fairly "plastic" material.'

The Civic Center project offered different challenges due to its design-build format. "We were able to obtain early input from the precaster during the design detailing stage," he says. "We've worked with the precasters in our area well enough to know the types of connection details and what returns we could create in the finished panels. The precasters of northern California were very helpful in working with us to achieve our design intent."

Lessons learned about finishes and textures from those and other precast concrete projects paid off in the St. Regis Museum Tower in San Francisco, which was completed in



PROJECT SPOTLIGHT

San Francisco Civic Center Complex

Location: *San Francisco*

Project Type: *Addition to historic state building*

Area: *1.05 million square feet*

Designer: *Skidmore, Owings & Merrill LLP*

Owner: *State of California*

Contractor: *Clark Construction, Oakland, Calif.*

PCI-Certified Precaster: *Clark Pacific, West Sacramento, Calif.*

Description: *Located directly north of City Hall within the city's historic Civic Center, this new complex contains the renovated 200,000-square-foot California State Supreme Court building together with a 17-story, 800,000-square-foot addition that features architectural precast concrete panels with various reveals and relief added to them.*

The project is one of the largest to be undertaken by the state in its current design-build program. The goal with the façade was to respect the surrounding buildings and their history while providing the structure with its own civic presence. The size of the building meant it would be a key fixture on the cityscape, requiring the precast panels to provide design detail that would reflect the styling of the nearby seven-story, granite-clad Supreme Court building.

The precast concrete mix reflected the colors and texture of the sierra-white granite on the historic neighbor. The panels also allowed for the visual depth and recesses in the façade at window openings, which provided a modern interpretation of the masonry stone openings in the historic structure. A second mix of darker concrete was integrally cast into the same panels to accent floor elevations and the building's massing.

Approximately 105,000 square feet of precast, in 1,615 pieces, were required for the project, many with unusual shapes and deep returns. A key challenge came in providing the strict engineering specifications required for public buildings in Seismic Zone 4.

2005. "With the St. Regis, we were able to add relief to the elevation with the use of architectural precast concrete. Additionally, we designed the panels with multiple colors within a precast panel and with different surface textures. This combination allowed us to create a weave of color and texture over the building elevation."

Close Cooperation Pays Off

Achieving that diversity is a result of close cooperation with local precasters, who offer a strong expertise for these complex and diverse projects, he notes. "When selecting materials and systems, you want to be confident in the way they're fabricated, shipped and installed," he says. "We have some

Several colors of architectural precast concrete panels combine with a series of reveals and insets to provide the San Francisco Civic Center addition with a contemporary interpretation of its granite-clad historic neighbor. Photos: ©Abby Sadin

'You can draw or detail all day long, but you need to have someone you know has the knowledge to execute a finished product we can all be proud of.'

The façade of the St. Regis Museum Tower in San Francisco features architectural precast concrete panels cast with two colors in each panel, with two levels of sandblasting used on each color in different areas, to create four distinct finishes.

PROJECT SPOTLIGHT

St. Regis Museum Tower

Location: *San Francisco*

Project Type: *Commercial/Mixed Use*

Area: *677,658 square feet on 42 stories, with four levels of underground parking*

Designer: *Skidmore, Owings & Merrill LLP*

Co-owners: *Carpenter & Co. Inc. and Starwood Hotels & Resorts*

Contractor: *Webcor Builders Inc.*

PCI-Certified Precaster: *Clark Pacific, West Sacramento, Calif.*

Description: *The project features three key functions: a cultural museum, hotel and condominiums. The designers' goal was to give the building a range of colors and textures that could not be achieved with other materials by creating a tapestry or cloak that wraps the building with architectural precast concrete panels.*

On two corners, the cloak emphasizes a tall vertical glass shaft that runs to the building's base, forms an inner layer and gives the building the appearance of being taller and thinner. By using two different colors of precast concrete and sandblasting them two different ways, a panel with four tones was created. A light sandblast on white concrete created a lighter color, and the heavier sandblasting on white concrete darkened the surface. The same was true of the limestone-colored precast panels.

Each precast panel features four punched windows, with all four colors repeated around each window. The building's skin was considered to be four distinct woven elements: projected horizontal sills; flat horizontal spandrel panels; narrow, sloping vertical mullions or threads; and flat vertical pilasters. The vertical "threads" are cast with the lightest colored concrete and are lightly sandblasted.

really good precasters in our area who bring a high level of expertise honed over many projects. This gives us a high confidence level when specifying architectural precast concrete."

The precasters provide options on panel configurations, casting procedures, hanging techniques and methods for attachment, as well as input on interfaces with other materials. "I wouldn't be as confident designing the projects in precast concrete for use in areas such as, say, China, because we don't have the advantage of that savvy builder expertise to support the design. The precasters help us to push the envelope. They know what works, what the limits are and how to collaborate on new ideas."

SOM often brings in the precaster early in the process to consult on ideas, he notes. "Their expertise and problem-solving attitude help define a method of detailing that meshes with the design intent," he explains. "You can draw or detail all day long, but you need to have someone you know has the knowledge to execute a finished product we can all be proud of."

Precast Aids Seismic Designs

Working out connection systems is of particular concern in the high seismic zones of the West Coast. "Precast concrete is an appropriate material for use in the seismic designs required in California." The key is working out the joinery in the design and design-development phases and creating the method by which the panels are attached. The precast has to be treated as a "skin system," he explains, which must respond to the frame or 'skeleton' underneath to accommodate movement in a seismic event. "You have to understand the material to configure the connections and panel arrangements, so the panels can accept seismic movement without any disruptions."

Sustainable concepts also are influencing SOM's specifications in some areas, and precast concrete helps to meet some of those goals.

'Projects usually look good when they are first constructed, but the true test is how they hold up over time.'

"Clients across the board absolutely are looking at creative and practical strategies for achieving sustainable design, and not just from the marketing aspects," he says. "They are very knowledgeable and realize the benefits of using quality products that also are sustainable. That creates a win-win situation."

Precast's use of local ingredients and the progress made in replacing cement with fly ash and other admixtures make it a strong choice for the right projects, he says. Even more than the material's contributions to energy savings and other sustainable concepts is its durability and low maintenance costs over time.

"The material holds up well, and the ability to cast large panels creates fewer joints, which makes it easy to maintain," he says. "Projects usually look good when they are first constructed, but the true test is how they hold up over time. Does the material weather well, or even look as if it's weathered? With precast concrete, the primary maintenance required is to the sealant at joints that occur panel-to-panel or with adjacent materials. When it's designed correctly and installed properly, the panels perform well for a long period of time."

The long-term lifecycle and maintenance costs for projects are top of mind for many of SOM's clients, he notes, because so many are multi-use, complex projects. "These projects are high profile, and they're going to be here a long time," he points out. "When the clients are looking at the big picture and thinking in terms of 50-plus years of maintenance, architectural precast concrete panels can be a good solution."

That specification will continue into the future, he notes. The office currently has two projects in the early schematic-design phase, a 25-story office building and a high-rise residential property, which are expected to include architectural precast concrete panels. "I enjoy working with precast concrete because there are so many design options to offer the client. I like to use it because of the clean look I can get, particularly for turning corners and, thanks to the large panel we can create, minimizing joints."

The partnerships that can be created with the local precasters and their design knowledge also aid the material's use, he notes. "I really can't say enough about the people in the precast industry on the West Coast," he says. "They are very, very knowledgeable. They understand how far you can push the material, and they believe in delivering a quality product. When you work with fabricators and installers who know their craft, it's a great benefit to the design process and the finished product." ■

For more information on this or other projects visit *www.pci.org/ascent.*

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Seventy and Counting

Founded in 1936, Skidmore, Owings & Merrill LLP has become one of the world's most renowned architectural, engineering and interior design firms. In 1961, it received the first Firm Award from the American Institute of Architects (AIA), the association's highest honor for design excellence. It remains the only firm to be honored twice, winning again in 1996. In all, it has received more than 800 design awards.

SOM's high-profile projects include America's tallest building, the 109-story Sears Tower in Chicago, as well as its cross-town neighbor, the 100-story John Hancock Tower. It also designed Lever House, an office building in New York that established a new vocabulary and set standards for office design around the world, and the U.S. Air Force Academy in Colorado Springs, Colo.

It currently operates eight offices, in Chicago, Washington, D.C., Los Angeles, London, Hong Kong and Shanghai, in addition to its New York and San Francisco offices. The San Francisco office was opened by partner Nat Owings in 1946, originally to complete a series of projects for the military in the Pacific Rim. Its 1955 Crown Zellerbach headquarters was the first International Style building in San Francisco.

One of the original members of the U.S. Green Building Council, SOM supports the ongoing research in sustainable-building technology and design. A number of its architects and engineers are LEED-certified professionals who are well versed in LEED 2.0.