



CALIFORNIA CONSTRUCTOR

Technology Keeping Contractors Competitive, Safe and Cost-Effective

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- Prefabrication Key on Massive Mission Rock Project
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*Architectural precast
panels for the Mission
Rock Building G Project*



A bay view rendering of Mission Rock Building A. Image © Pixelflakes, courtesy of architect MVRDV.

By Carol Eaton

A massive mixed-use development now taking shape near San Francisco's Oracle Park is transforming 28 acres of asphalt and a former parking lot into a vibrant new neighborhood in the city by the bay.

Mission Rock combines largescale residential and commercial spaces as well as restaurant and retail amenities with an abundance of public parks and open spaces. Culminating more than a decade of planning and community input, this marquee project is a public-private development of the San Francisco Giants, Tishman Speyer, and the Port of San Francisco. Their goal: to create a highly sustainable and dynamic new neighborhood that is transformative, inspiring and welcoming.

Mission Rock's four-building Phase 1 broke ground in early 2020 and is expected to complete around 2023, according to the project website missionrock.com.

The entire project is planned to be built out in multiple phases over five to 10 years. Key components include:

- Approximately 1,200 residential units, including 40 percent that are affordable to low- and moderate-income households.
- Between 1- to 1.4-million square feet of commercial space.
- 250,000 sq. ft. of restaurant and retail space.
- 8 acres of parks and open space including a signature waterfront park.
- The rehabilitation of historic Pier 48.
- Over \$40 million in neighborhood-supporting transit infrastructure.
- A parking structure to support the ballpark and neighborhood needs.

For the design and engineering teams, the general contractors,

Massive Mission Rock Project Taking Shape in San Francisco

Prefabrication Plays Leading Role in Iconic Development

Mission Rock G Architectural Precast panels in storage at Clark Pacific's manufacturing yard, awaiting window installation.

subcontractors and suppliers and the multitude of skilled workers that will ultimately have a hand in the project, Mission Rock represents a model of collaboration and innovation. The public-private owner/developer assembled a team of world-renowned architects to collaboratively design the four buildings in Phase 1. Each will have its own look and feel but is designed to complement the others as well as the surrounding environment.

Highly Collaborative Teams

As outlined on the project website, the architectural teams forming the design cohort “came together in true studio fashion to discover, share, collaborate, evaluate and to ensure that the first phase authentically reflects the community’s vision.”

Mission Rock Building G broke ground in 2020 and is well underway. It is a 13-story, approximately 300,000-sq.-ft. commercial office building with retail and restaurants on the ground floor. Hathaway Dinwiddie/Nibbi Brothers joint venture is general contractor and Henning Larsen is lead architect, working in association with Adamson Associates and Y.A. Studio on the design of the building that is targeting LEED Gold certification.

Also underway is Building A, a 23-story approximately 380,000-sq.-ft. mixed use building with an estimated 285 residential units and 50,000-sq.-ft. in office space. AGC member firm Swinerton is serving as general contractor, while MVRDV is lead architect working with Perry Architects as associate architect.

Building B, an 8-story office building designed by lead architect WORKac with associate architects Adamson Associate and Y.A. Studio, and Building F, a 23-story residential high-rise designed by Studio Gang with associate architect Quezada Architecture, round out the vertical structures in Phase 1.

The Prefabrication Solution

One of the most technically complex components of any high-performing structure is its façade – and the signature exterior facades of Mission Rock’s vertical structures clearly distinguish the entire development. They draw inspiration from California’s natural topography and San Francisco’s own urban landscape. Building G is inspired by the geologic rock formations of California’s Devil’s Postpile National Monument near Yosemite, while Building A reflects California’s many rock formations; its design evokes a narrow valley between rocky walls extending up the western façade.

Delivering these complex, high-performance facades within strict budget and schedule constraints while maintaining the highest level of quality, safety and productivity required a prefabricated solution.

AGC member Clark Pacific, a leading provider of prefabricated building systems in the construction

“Everybody knew the north star, they knew the goal – which was get the most out of the façade design for long-term performance, and to get it within budget. Everybody was working in the same direction and 100 percent bought in, and that made it go smoothly.” – Jim Lewis, Clark Pacific



industry, was brought on board in a design-assist capacity to help develop prefabricated solutions for Buildings G and A. The company’s focus is to provide a single source of responsibility through collaborative design, advanced manufacturing and efficient delivery of high quality and cost-effective prefabricated building systems.

Role as Integrator

“Our role is to be an integrator,” commented Jim Lewis, Director of Preconstruction, Facades for Clark Pacific. “The envelope or façade on a building is the most complicated part of the building. We’re integrating a lot of different systems like weather barriers, glazing and insulation, but by starting this process at the conceptual design phase we were able to make the façade constructible and within the budget. Our collaborative delivery model is the only way to deliver facades on iconic buildings.”

The team’s highly collaborative approach has driven the projects’

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Mission Rock A, GFRC mock-up ensures color and quality before Clark Pacific begins mass production.

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success to date, according to Lewis. “Everybody knew the north star,

they knew the goal – which was get the most out of the façade design for long-term performance, and to get it within budget. Everybody was working in the same direction and 100 percent bought in, and that made it go smoothly.”

The use of prefabricated solutions for Mission Rock’s Buildings G and A offered significant advantages in quality, safety, and installation

schedule. It also vastly reduced the number of workers required on the dense urban San Francisco jobsite, where labor is at a premium. The global pandemic only heightened the onsite workforce challenge over the past year.

“We’re really controlling the (job site) chaos,” Lewis noted. “We’re able to assemble all these pieces in a controlled environment and then bring it out to the job site to assemble as one panel with pre-installed glazing systems that is caulked and ready to go on the building. There is a savings in labor, it is much more efficient and it’s also safer working in a controlled environment.”

Defining the ‘Must Haves’

The complex and collaborative process of designing the prefabricated facades required multiple design charrettes and extensive use of mockups to ensure they were meeting the design intent while staying within the strict budget requirements.

During the charrettes, “the architects would come in along with the owner, the envelope consultant (Heintges), the engineer and us, and we would outline everything that was important for the owner, architects, engineers, consultants, and ultimately the community,” Lewis said. “We would work together to achieve all of



Mission Rock G rebar cages at Clark Pacific’s yard, ready for production.

An aerial rendering of Mission Rock (Aerial image © Binyan Studios, image courtesy MVRDV)

these while keeping the project in budget. I don't want it to seem easy, but it's a transparent process of collaboration."

One "must have" presented a major challenge that the team embraced: how to create an in-slab duct that would allow fresh air into Building A while not being visible from the exterior of the highly articulated facades. Clark Pacific collaborated closely with its European based window supply partner, Schuco, to design a track that fit into the head of the window. "We had to design a lot of different things to make it work, but it ended up being a great solution," Lewis noted.

The project team developed a highly detailed BIM model, a prerequisite for prefabricated systems in order to avoid clashes during construction. It helps ensure that what is being manufactured at the company's offsite facility in Woodland, CA fits together seamlessly during onsite installation.

Clark Pacific is manufacturing 665 architectural precast concrete panels covering 160,000 square feet on Building G, and an estimated 1081 glass fiber reinforced concrete (GFRC) panels covering 163,000 square feet. on Building A.

The company is scheduled to begin just-in-time delivery and erection of the Building G panels this September, with façade work slated to be completed by late 2021. Installation of the precast cladding on Building A is scheduled to begin in early 2022 and will take approximately six months to complete. ■

