

Concrete Masonry Association of California and Nevada

CMU

January 2021

# Profiles in Architecture

*Why Masonry?*

[www.whymasonry.org](http://www.whymasonry.org)

Chollas Water Operations Facility  
Steinberg Hart San Diego  
Photography by Pam Martin, RCP Block and Brick, Inc.

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**GENERAL CONTRACTOR:**  
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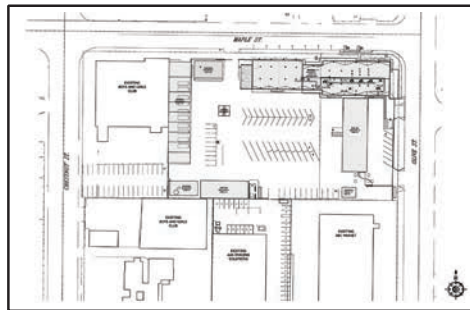
**BLOCK PRODUCER:**  
Angelus Block Company, Inc.

**OWNER:**  
City of Westminster

**©PHOTOGRAPHY:**  
Jerry Laursen Photography

# Westminster Corporate Yard Campus

Westminster, California



**ARCHITECT'S COMMENTARY:** Being over-crowded, inefficient, and insufficient to implement the city's needs as a maintenance facility, Westminster Maintenance yard facility was updated and expanded. The corporate yard renovation includes a new administration building, canopies, fuel station, and warehouse facilities.

Enhanced architectural features along the facility wall include new fenestration and shading devices to provide controlled natural daylight into the building with a visual connection into the facility as well. A storefront canopy that provides a formal visual entrance marker that welcomes visitors from the street was added to establish an acquaintance between the facility and the neighborhood.

## WHY MASONRY?

A major challenge faced on this project was the requirement of keeping the facility operational during the course of renovation, all while keeping portions of the existing facility remaining and intact for updating. Since portions of the existing original facility were to remain, the strategy was to provide an architectural relationship between the old and new. Originally built in the early 1960s, the facility was composed of uninterrupted walls of soldier stack pattern block. It was abstract, utilitarian, and functional without any notable formal connection or entrance to the street or neighborhood.

Enhancing the facility's connection to the street, which was primarily surrounded by single family homes, was highly desired. This was accomplished with the use of a similar soldier stack pattern concrete masonry unit (CMU). A warmer tone of CMU interspersed with subtle ribbons of differing CMU color and texture was used to further enhance visual interest to the new façades. To blend in within its residential context, portions of the CMU façade wall steps down to meet the street in the form of a landscaped planter, providing a more human scale and connection to the sidewalk and the homes across the street.





# Williams Elementary School Multi-Purpose Building

Williams, California



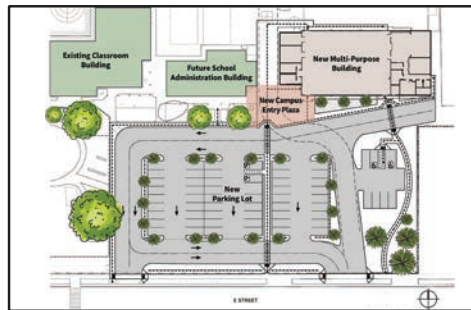
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**MASONRY CONTRACTOR:**  
American Masonry Specialists  
**BLOCK PRODUCER:**  
Basalite Concrete Products, LLC  
**OWNER:**  
Williams Unified School District  
**©PHOTOGRAPHY:**  
Travis M. Tuner Photography



**ARCHITECT'S COMMENTARY:** The new multi-purpose building will house full school assemblies of 850 students and be the central stage for large group activities. A modern kitchen serves the needs of the combined school campuses, up to 1,400 meals daily and at least three serving periods. Site upgrades include the campus frontage and entry, pedestrian circulation, landscaping, lighting, parking, and student drop off area. Both future and current site amenities result in significant improvements to the school's safety and security, including separation of pedestrians and vehicles, clear identification of school administration, single point of school entry, safe student drop off and pick up aisle, re-alignment of campus entry with existing intersection, new bus zone for safe student drop off and pick up, and new multi-purpose building with internal restrooms and dining.



**WHY MASONRY?** The very nature of a multipurpose building is one that must sustain a high level of wear and tear. The facility hosts daily meal service, gymnasium activities, public events, and a commercial kitchen. Therefore, selecting a primary building system whose main properties are durability is a paramount consideration, and concrete masonry units (CMUs) were an obvious choice.

Structurally, the design team needed a cost-effective system that could support the main space's sizable open volume. After considering several different methods, CMUs were the most cost-effective solution. CMUs afforded an economical and durable interior wall system that was impact-resistant and easily maintainable. From scoreboard to basketball nets, CMUs allowed a very flexible structural backing to attach a multitude of equipment. Being a project subject to Division of the State Architect review, we had confidence that a CMU system would exceed their demanding standards while at the same time create a unique design that the client and community would love.





# California Highway Patrol Replacement Facility, Oceanside Area Office

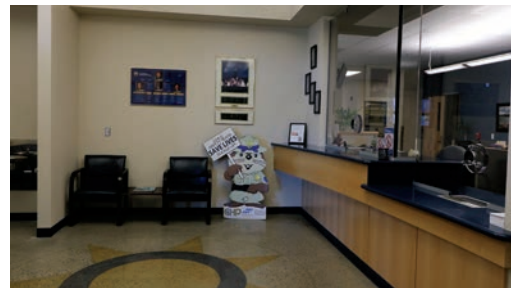
Vista, California



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**BLOCK PRODUCER:**  
ORCO Block & Hardscape  
**OWNER:**  
California Highway Patrol,  
Facilities Section  
**©PHOTOGRAPHY:**  
DGS/RES/PMDB



**ARCHITECT'S COMMENTARY:** This 25,900-square-foot 2-story building contains space for CHP law enforcement and administrative personnel, plus an auto shop for the repair of patrol vehicles. The compact site dictated that the building be multi-story to allow enough space for other facility support.

**WHY MASONRY?** The selection of split-face concrete masonry units (CMUs) was a key decision made early on in the design phase for various important reasons: security, seismic resistance, fire resistance, sustainability, energy efficiency, noise attenuation, low maintenance, durability, and esthetics. The split-face finish of the CMU walls provide a softer, yet strong, appearance appropriate for a law enforcement facility in a mixed-use neighborhood. As an "essential services" building, the building code increases the factor of safety for seismic design, so the use of CMUs for shear walls was a natural choice. Likewise, CHP requires that all new facilities be "hardened" to resist vehicular attack. The front of the building has walls and raised planters of CMUs that will effectively prevent vehicular penetration, and a CMU sound wall abates noise from daily siren tests that could disturb adjacent residences.

The building has received a LEED® Certified rating through the implementation of various energy saving and sustainable design elements, including the extensive use of CMUs. The exterior CMU wall adds significant thermal mass to reduce heat and cold transference and increases insulation value resulting in lower energy usage. Since CMUs are durable and a primary element in this building, additional sustainability was achieved through the conservation of virgin materials and by delaying the introduction of construction waste into the waste stream compared to a building of lesser construction.





# Chollas Water Operations Facility

San Diego, California



**ARCHITECT'S COMMENTARY:** The Chollas Water Operations Facility is a 10.6-acre campus that provides administrative, customer service, and maintenance support for the San Diego Water Department's ongoing operations. A two-story, 35,000-square-foot administration building houses management, engineering, and information systems of the Water Department, including a SCADA control room, Department Operations Center (DOC), the emergency water system command post, and the Security Operations Center (SOC). This secure and resilient structure is equipped with redundant power and communications systems, providing centralized security surveillance of the City's reservoirs and other critical water production and distribution facilities. A one-story 27,800-square-foot shops and maintenance building houses the Water Meter, Telemetry, Electrical, Machine, and Tool Shops, including crew muster and support facilities. Both buildings are accessible by the public for Water Department transactions. A Design-Build delivery method was used to complete this LEED® Silver project that includes a water conservation-themed public art sculpture and a covered outdoor assembly area.

**WHY MASONRY?** The important operations housed within the facility required a resilient and sustainable design solution that minimized maintenance, maximized dependability, and provided aesthetic character to enhance the workplace environment. Concrete masonry unit (CMU) shear walls were an integral part of the building's structural system. Quality integral color CMUs provided a durable solution for the building envelope and selected horizontal paving surfaces with enduring patterns of color and texture sculpted by natural light. The use of CMUs provided a human scale to the building massing with interesting textures adjacent to public circulation and served as a complementary material to the aluminum-framed windows and storefronts. The use of locally manufactured CMUs as the primary exterior building skin material and as permeable surface paving significantly contributed to the project's sustainable design. According to our client, the design aesthetic will be the basis of design for other buildings within the complex.



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**BLOCK PRODUCER:**  
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**OWNER:**  
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Pablo Masonry Photography -  
Center-right and center-bottom  
Pam Martin, RCP Block & Brick, Inc. -  
Top, center-left, and bottom-corner





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**BLOCK PRODUCER:**  
ORCO Block & Hardscape

**OWNER:**  
The Festival Companies  
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# Santa Fe Trail Plaza

El Monte, California



**ARCHITECT'S COMMENTARY:** The Santa Fe Trail Plaza project paid attention to sustainable design that was integrated in the architecture responding to siting, layout, material selections, solar integration, shade devices, EV charging stations and the use of recycled materials. The project integrated high levels of concrete paving systems, lighting, and pedestrian amenities that complemented the project design with the integrated landscape design. The first phase of the Santa Fe Trail Plaza has been a successful community gathering point, and the second phase of the project design is currently underway to connect the shopping center with the Metro Link station and the regional bus system that serves El Monte and the San Gabriel Valley.

## WHY MASONRY?

The Santa Fe Trail Plaza project design, although typical in layout as a shopping center with big box retail and pads, created exterior aesthetics of the project that are a complete departure from the typical design of such regional centers. The use of concrete masonry units (CMUs) allowed the freedom in the project design to integrate large spans of glazing systems that encompass most of the frontages of each building. The project design integrated large canopy and trellis areas that appear to be independent of the buildings, yet lightly connected on the roofs and CMU structure of the buildings. The integrated design of metal, wood, CMUs and glass are mostly realized on the larger buildings in the center where the CMUs were the back bone of the project support systems.



# Public Storage: Construction Circle

Irvine, California



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Shab Vakili  
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KSP Engineering

**GENERAL CONTRACTOR:**

KPRS

**MASONRY CONTRACTOR:**

AP Masonry Corporation

**BLOCK PRODUCER:**

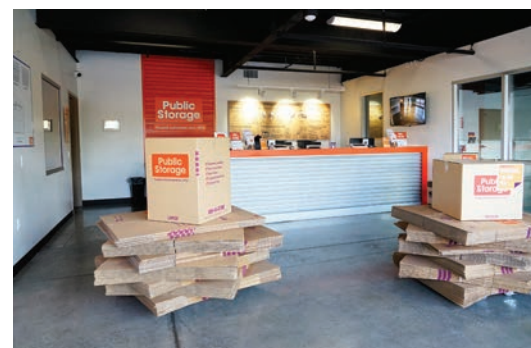
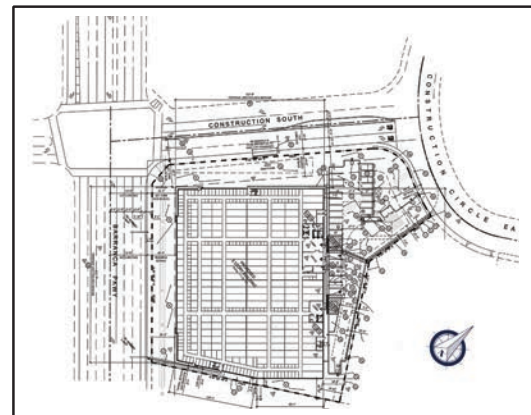
Angelus Block Company, Inc.

**OWNER:**

Public Storage

**©PHOTOGRAPHY:**

Orange County Art Center



**ARCHITECT'S COMMENTARY:** This project is 171,300 square feet with 1,362 distinct storage units, dispersed over three floors. This fully enclosed facility provides a fully climate-controlled environment, ensuring proper preservation of personal property.

**WHY MASONRY?** The totality of the building is encased in concrete masonry units (CMUs) apart from windows and doors. CMUs were considered a critical element of design in order to meet client criteria of durability and flexibility, consumer criteria of safety and cost, and environmental criteria of energy efficiency and carbon footprint. Utilizing CMUs offered maximum flexibility in weight, mixes, color and texture in order to design the storage building that met the client's needs. To the consumer, the protection of their personal property at a reasonable cost is in the forefront of their decision making. From design perspectives, CMUs provide the maximum protection against and recovery from catastrophic events unique to Southern California, i.e., fire and earthquakes. A cost analyses demonstrated substantial cost savings to design and build with CMUs, which in turn was passed down to the consumer and also drives business for the client. Acknowledging that the environment is the third pillar of all good designs, using CMUs helped achieve a greener project. Although this project was not a LEED® project, the use of CMUs as the exterior skin of building has created an energy efficient interface with the elements which we further extended with eco-friendly landscaping.



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*Concrete Masonry Association of  
California and Nevada (CMACN)  
a nonprofit professional trade  
association established in 1977,  
is committed to strengthening the  
masonry industry in California and  
Nevada by:*

- Providing technical information on concrete masonry for design professionals.
- Protecting and advancing the interests of the concrete masonry industry.
- Developing new and existing markets for concrete masonry products.
- Coordinating Members' efforts in solving common challenges within the masonry industry.

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**NOTE:** Some photos may have been altered to fit the page format.

