

July 2018 Edition

Concrete Masonry Association of California and Nevada

CMU Profiles in Architecture

Why Masonry? www.whymasonry.org

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ARCHITECT: Pults & Associates, LLP 3592 Sacramento Drive, Suite 140 San Luis Obispo, CA 93401

Tim Woodle, AIA Principal-in-Charge

STRUCTURAL ENGINEER: Smith Structural Group, LLP GENERAL CONTRACTOR: Auburn Constructors, Inc. MASONRY CONTRACTOR: Santa Maria Masonry, Inc. BLOCK PRODUCER: Air Vol Block, Inc. OWNER: County of San Luis Obispo ©PHOTOGRAPHY: Erik Geil, Air Vol Block, Inc.

Los Osos Water Recycling Facility

Los Osos, California











ARCHITECT'S COMMENTARY: In 2016, the small community of Los Osos's wastewater treatment and water recycling plant went online and eliminated the use of individual septic systems for its 14,276 residents. A new water recycling facility was needed to mitigate multiple issues of groundwater contamination and a level III water resource shortage. The project team of this new facility was also tasked with adressing community concerns regarding the location of the facility and constructing the project in an environmentally sustainable and cost-effective manner, all while promoting participatory government and affordability to the individual property owners.

WHY MASONRY? To support the operations of treating and recycling the water, the facility needed maintenance, electrical and dewatering buildings. For these three buildings, concrete masonry was selected for its durability and low maintenance costs, as well as its design versatility. All three of the buildings have a 4-foot masonry wainscot, which utilizes ground-face concrete masonry units (CMUs) on the exterior. Ground-face CMU was selected because its exposed aggregate surface provides a greater depth of color that effectively accents the other design elements of the buildings.

The Electrical and Dewatering Buildings are full concrete masonry unit structures in which the wall above the wainscot is covered with metal siding on the exterior, and exposed CMU is on the interior. The exposed masonry on the interior walls is the ideal surface to withstand the daily use of a wastewater facility, with the additional benefit of containing and suppressing the sounds of the generators and other machinery that are operating 24 hours a day, 7 days a week.

Masonry was indeed the ideal choice for each of these buildings supporting the Water Recycling operations for the Community of Los Osos.

Solano Automotive Technology Facility Vallejo, CA



ARCHITECT: JK Architecture Engineering 11661 Blocker Drive, Suite 220 Auburn, CA 95603

Chris Vicencio, Partner/Owner AIA, NCARB, LEED[®] AP, DBIA *Principal-in-Charge*

STRUCTURAL ENGINEER: Buehler & Buehler Structural Engineers, Inc. GENERAL CONTRACTOR: Clark/Sullivan Construction MASONRY CONTRACTOR: John D. Wait Masonry BLOCK PRODUCER: Basalite Concrete Products, LLC OWNER: Solano Community College District ©PHOTOGRAPHY: Travis M. Turner Photography



ARCHITECT'S COMMENTARY: Solano Community College's Automotive Technology Facility is a cutting-edge, career-technical, education center leveraging design, technology and industry partnerships to bring advanced industry-focused opportunities to the students. The goal of the facility was to design an automotive center for educational purposes that is far more than a dark garage. The result of the highly-collaborative design process is a facility that is light, open, flexible, durable and connected. The facility seamlessly incorporates contemporary educational planning paradigms such as program transparency, collaborative adjacency, and adaptability and flexibility. Outdoor learning areas allow students to learn in a small college campus setting that feels like an advanced research and development facility instead of a simple, enclosed garage.

The Solano Automotive Technology Facility has been awarded LEED[®] Gold certification due to its rooftop solar panels, rainwater collection cistern, electric vehicle charging stations, and high-performance mechanical and lighting systems. The design proves to be sustainable in a variety of ways, including ample daylighting throughout the facility and drought tolerant landscaping and irrigation systems.

WHY MASONRY? The design team made the prudent choice to select concrete masonry units (CMUs) as the primary structural and wall system due to the durability required in this type of training facility that involves automobiles and other heavy equipment. The design team also selected CMU as it performs extremely well in helping to limit sound migration from the noisier automotive instructional bay area to the quieter staff offices and classroom instructional spaces. The clean lines of the concrete masonry units helped the design team create a durable, adaptable and contemporary-feeling instructional environment.









Balboa Center at Marina Park

Newport Beach, California



ARCHITECT: Bundy-Finkel Architects 1120 Bristol St., Suite 120 Costa Mesa, CA 92626

Timothy Bundy, AIA, Partner Richard Finkel, AIA, Partner *Principals-in-Charge*

PROJECT LEAD/LANDSCAPE Architect:

Rabben/Herman design office STRUCTURAL ENGINEER: STB Structural Engineers, Inc. **GENERAL CONTRACTOR:** KPRS Construction Services, Inc. **MASONRY CONTRACTOR:** Majestic Masonry, Inc. **BLOCK PRODUCER: ORCO Block & Hardscape OWNER:** City of Newport Beach ©PHOTOGRAPHY: Dan Herman, Rabben/ Herman design office -Exterior Photos Paul Kiler, Kiler Photography -Interior Photos







Architect's Commentary: The City of Newport Beach transformed a beach front 10.5-acre mobile home park into the multi-functional Marina Park along the Balboa Peninsula separating Newport Harbor from the Pacific Ocean.

Adjacent to a new visiting vessel marina, the Community/Sailing center anchors one end of the new park designed to be "the Window to the Bay". The "Balboa Center" consists of two distinct buildings separated by a 20-foot breezeway, each with spectacular views of the bay. The 11,000 square-foot Community Center features two levels of fan shaped multi-purpose rooms, lounges, a catering kitchen and administrative offices. The 13,000 squarefoot Sailing Center consists of classrooms providing educational programs for kids and adults, administrative offices for the park and various sailing programs, a boat maintenance/storage area as well as marina services for visiting boaters that includes showers and a laundry. It also features a specialty café at the base of a 72-foot tall glass tower.

The multi-purpose rooms open onto a large deck that spans across a breezeway and terminates at deck and ground level outdoor seating surrounding the "Lighthouse Café" tower. This iconic translucent glass tower is a modern take on the traditional lighthouse, functioning as a way-finding beacon for new and experienced sailors in the bay and has become a landmark for residents and visitors on the peninsula.

WHY MASONRY? The choice of materials for this project provides contrast for the interplay of translucence and solidity. Inspired by the nautical theme, lightweight aluminum roofs were shaped over each building evoking a curving spinnaker over the Sailing Center and the broad sweep of a sail over the Community Center. Chosen for their innate beauty and durability, concrete masonry units (CMUs) were a natural choice to complement the aluminum, steel, glass and stone veneer in the marine environment. The Sailing Center features a structural shell constructed primarily of concrete masonry units wrapping a steel frame. The CMU provides a singular structural material with an appealing, virtually maintenance-free finish. An economic, subtle visual texture on all these walls was achieved with a medium shotblast finish applied to a varied pattern using two colors of precision block providing an industrial, yet refined look to this popular facility.







Architect's Commentary: Cabrillo Gateway is a LEED[®] Platinum, 81-unit affordable housing, apartment building in Long Beach, California located within the Century Villages at Cabrillo (CVC) campus; a 27-acre residential community designed to break the cycle of homelessness. CVC is situated on a former military housing site that served the Long Beach shipyards and was conveyed to Century Housing in 1997 for the benefit of the homeless.

WHY MASONRY? Cabrillo Gateway is the architectural expression of CVC's mission to provide permanent supportive housing for formerly homeless veterans and families. The project includes a semi-circular entry gate formed by a 3-foot concrete masonry unit (CMU) wall with 12-foot tall CMU pilasters. From the approach to the village to the courtyards of Cabrillo Gateway, the architectural language provides the residents with a sense of stability.

The design concept was to create a building that interlocks with the landscape, reminiscent of a ship coming in to dock. Concrete masonry units were selected for their visual weight to anchor the building in its place. The charcoal-colored, standard 8x8x16-inch CMUs are laid in a running bond to signify stability and contribute to sustainability goals as a regionally manufactured material with thermal mass qualities.

Concrete masonry units were also selected for their durability and integrity serving as both structure and finish. Concealed in some areas by stucco or siding, the burnished CMU is revealed to highlight community spaces. The material moves from exterior to interior for visual continuity and connection to the landscape. Its texture and scale adds visual interest. The CMU becomes the memorable element in the composition of finishes and was used as a design tool to establish order. Lengths of walls and openings are based on block module creating a rhythm of windows to wall. Burnished black CMU was used for the lintels and window sills for added detail.



ARCHITECT: The Architects Collective 209 S. Market Street Inglewood, CA 90301

Richard Prantis, AIA, LEED[®] AP *Principal*

STRUCTURAL ENGINEER:

Castillo Engineering, Inc. GENERAL CONTRACTOR: Walton Construction Services MASONRY CONTRACTOR: Lonestar Construction BLOCK PRODUCER: Angelus Block Company, Inc. Owner: Century Villages at Cabrillo ©PHOTOGRAPHY: Guangchen Studio





ARCHITECT: USDA Forest Service Region 4 Facilities Team 324 25th Street Ogden, UT 84401

Shelley Hill-Worthen, LEED[®] AP Green Globes Professional Architect *Principal-in-Charge*

STRUCTURAL ENGINEER: ARW Engineers GENERAL CONTRACTOR: Blanchard Hoffman Construction MASONRY CONTRACTOR: A-1 Masonry and Sandblasting BLOCK PRODUCER: Superlite (an Oldcastle Company) Owner: Spring Mountain National Recreation Area, Humboldt-Toiyabe NF USDA Forest Service ©PHOTOGRAPHY: Sierra Brewer USDA Forest Service, H-T NF





ARCHITECT'S COMMENTARY: The Forest Service constructed the Kyle Canyon Fire Station building in 2014-2015. The building is a 4,600 square-foot, singlestory structure with two fire engine bays, offices, a ready room, rest-rooms, workout areas, showers and storage spaces to serve the needs of the Spring Mountains National Recreation Area Fire Staff. The facility is constructed from reinforced concrete masonry units (CMUs), steel joists, steel decking, standing seam roofing, concrete footings and slabs, cold formed steel framing, steel panels, hollow metal doors and aluminum framed windows.



WHY MASONRY? CMU was selected because it is a durable wall material that will stand up to heavy use of fire crews and forest personnel. The facility has already endured much usage and is still in excellent condition. For the Kyle Canyon Fire Station, durability has been maximized and maintenance has been minimized.

The building was designed to meet the requirements of the "Federal Leadership in High Performance and Sustainable Buildings: A Memorandum of Understanding". Concrete masonry units and steel contributed to goals for using recycled content and reducing volatile organic chemicals. The lightweight CMU was specified with both honed and split face finishes and was selected to provide a durable, sustainable wall and finish system in an extremely challenging vegas, Nevada. The honed CMU wall system was utilized because it did not require additional finishing on the interior or most of the exterior of the facility. Concrete masonry units eliminated the need for drywall, painting or additional siding in work areas, and no additional coating or protections will be needed for the exteriors over the long term.

San Diego Fire-Rescue Station No. 17 San Diego, California



ARCHITECT'S COMMENTARY: This \$10 million facility is equipped with a Photo Voltaic system, can house 10 firefighters and contains a total of 10,750 square-feet within three stories. The ground floor level includes two drive-through bays for engine/pumper apparatuses and a half bay back up for smaller vehicles. Ground floor related uses also include storage rooms, a locker room, workshop, decontamination room, office and a public lobby. The second level contains the kitchen, physical fitness, day room and a lavatory/shower with two individual sleeping dorms. The third level captures all sleeping dorms for the entirety of the firefighter staff and includes additional lavatories/showers.

17 THE HUB

Fire Station 17 replaced a single story station that served its community for over 50 years. While the building may be new, the station is still known to surrounding fire fighters as "The Hub" because many of the personnel came through this station to serve the neighborhood of City Heights during their career. Fire Station 17 is also still one of the busiest stations responding to calls in the City of San Diego. This project's site was only .287 acres, which is extremely small by fire station standards. Despite the small lot, it can still accommodate nine employee vehicles and an on-site diesel fuel tank. The owner, with the help of the design and construction team, achieved a LEED® Silver rating from the USGBC, completing the project in the first quarter of 2018.

WHY MASONRY? Fire Station 17's stair towers were built with exterior burnished finish, colored aggregate concrete masonry units (CMUs), while brick veneer was used for the exterior finish of the outside garage massing. In addition to the sliding fire poles for quick response, fire fighters often utilize the stairs for vertical circulation. CMU was a practical choice as an interior surface for its durability during these uses. The fire fighters also required a secured, rear, exterior yard. A split face concrete masonry wall offered a logical solution to mask unwanted views of the vehicles while relating to the building in color scheme and material.

ARCHITECT: CCBG Architects, Inc. 3677 Voltaire Street San Diego, CA 92106

Brian Cassidy, AIA, NCARB *Principal-in-Charge*

Darrold Davis, AIA Associate Architect

STRUCTURAL ENGINEER: Structural Engineering Solutions GENERAL CONTRACTOR: EC Constructors, Inc. MASONRY CONTRACTOR: Williams and Sons Masonry, Inc. BLOCK PRODUCER: RCP Block and Brick, Inc. Owner: City of San Diego ©PHOTOGRAPHY: John Ulrich, Ulrich Photography









Concrete Masonry Association of California and Nevada

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6060 Sunrise Vista Drive Suite 1990 Citrus Heights, CA 95610 www.cmacn.org

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Call for Entries available January 2019.



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- 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.

For further informtion contact us at: Concrete Masonry Association of California and Nevada 6060 Sunrise Vista Drive, Suite 1990 Citrus Heights, CA 95610-7004

Tel: (916) 722-1700 Fax: (916) 722-1819 Email: info@cmacn.org Web Site: www.cmacn.org