October 2009



U Profiles in Architecture

Safe & Sound

.

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"Keep my community safe and sound. Build our facility with concrete masonry."



14355 W. ARMINTA STREET



VALADEZ MIDDLE SCHOOL

PLACENTIA, CALIFORNIA

ARCHITECT:

WLC Architects, Inc. 8163 Rochester Avenue, Suite 100 Rancho Cucamonga, CA 91730-3754

Jim DiCamillo, AIA, LEED AP *President and Principal*

Elena Purice, AIA, LEED AP Senior Project Architect

STRUCTURAL ENGINEER:

K. B. Leung Structural Engineers, Inc. GENERAL CONTRACTOR: California Construction Management MASONRY CONTRACTOR: Bledsoe Masonry BLOCK PRODUCER: Angelus Block Company, Inc. OWNER: Placentia Yorba Linda Unified School District

Architect's Commentary: Valadez Middle School is the first new middle school in the Placentia Yorba Linda Unified School District in the last 25 years. The school sits adjacent to an award winning Elementary School on a site that was reclaimed from an old warehouse use, and as such brings a holistic K-8 educational village environment to this lower socio-economic neighborhood. The design has a strong urban street presence since most students walk to the campus, and the interior courtyard opens up to reveal open circulation and playful balconies that let them know that learning and exploration, mixed with a little fun, will be experienced there. The two-story Library space opens up to connect the two campuses and playfields are shared for recess and after school programs. The City of Placentia takes over the site after hours through a shared-use agreement that converts the site into a sports park on the weekends. The use of concrete masonry was a direct response to the existence of a pressurized gas line just to the north side of the site. The California Department of Education mandated through the EIR process that the buildings structural frame and skin be durable and blast resistant. Concrete masonry was the logical, economic and durable choice.

Sustainable Site Design features include:

- The site was reclaimed from an abandoned warehouse use
- The site provides a public bus stop and bicycle parking
- The site is near many community services such as shopping and recreational uses
- The potential for future recycled water use
- Drought tolerant planting selections
- Multi-story design limits site coverage

Sustainable Building Design features include:

- Natural day lighting to each interior space
- · Solar shades on all south facing facades
- · Energy Management system for all HVAC systems
- Use of locally available materials (CMU and Steel structural system)
- Low flow restroom fixtures
- High efficiency HVAC units
- Lighting controls tied to day lighting controls with
- occupancy sensors
- · Cool roof membrane to reduce heat island impacts
- · Use of low VOC's materials throughout the interiors

Sustainable Construction features included:

• Collection of recyclable materials and construction waste









Photography: Genevieve Wolff, WLC Architects, Inc.

FIRE STATION 81 RECRUIT TRAINING CENTER 14355 W. ARMINTA STREET

VALLEY RECRUIT TRAINING CENTER AND FIRE STATION NO. 81 Van Nuys, California

ARCHITECT: WLC Architects, Inc. 8163 Rochester Avenue Rancho Cucamonga, CA 91730

Kelley Needham, AIA Principal

Rowel Zafra Simon Chang Project Managers

STRUCTURAL ENGINEER: BFL Owen & Associates GENERAL CONTRACTOR: Sinanian Development Incorporated MASONRY CONTRACTOR: ARC-Accucon Construction BLOCK PRODUCER: ORCO Block Company, Inc. OWNER: City of Los Angeles

Architect's Commentary: The new \$15 million dollar Valley Recruit Training Facility in Van Nuys, California, was built by the City of Los Angeles to provide training for Los Angeles Fire Department recruits. This site is a donated lot where a General Motors Plant previously stood. The entire facility uses structural concrete masonry units (CMU) on all four buildings: Fire Station No. 81, an administration building, an apparatus storage building, and a seven-story training tower.

The two-story fire station anchors the southwest corner of the site nearest the entrance into the facility. The

Administration building includes administrative offices, two classrooms, weight room, showers, restroom and library. The apparatus storage building includes a maintenance pit for minor vehicle repairs. The tower includes two major stairwells, a lofty mezzanine lobby, a multi-level elevator shaft, and a variety of training rooms.

A concrete masonry perimeter wall protects the facility and links the buildings. The longest length of perimeter wall is over 500 feet and varies in height from 20 feet to 8 feet. This wall is also a training tool. It varies in layout along the property line to mimic the outline of buildings. Niches located at different levels within the wall simulate doorways and windows. The inherent properties of CMU meet the requirement of these walls to be durable enough to resist years of abuse from ladders and fire hoses.

Recruits perform fire training on the seven-story tower (six stories with a roof deck on top), which simulates different fire-related scenarios by using class A and gas fired props. Below the tower is a cistern, which is basically a large pool of water used to feed the fire hydrants. There are drains around the drill tower that recycle the water; once it hits the ground, it goes through a filtration system and is recycled back into the cistern.

The structural exterior/interior walls of the tower (as well as most of the structural walls of all the buildings in this project) were built with alternating bands of medium weight precision concrete masonry with single verticle score. The CMU was produced in green and dark grey tones (integrally-colored in custom hues) that were used to break up the monolithic form of the buildings. On the tower this banding allows the recruits to easily identify the different floor levels from a ground-level vantage point. A matching custom colored mortar was also used.



Photography: Fred Daly, Daly Architectural Photography



ARCHITECT: STUDIOS Architecture 99 Green Street San Francisco, CA 94111

David Sabalvaro, AIA, LEED AP Principal

STRUCTURAL ENGINEER:

SOHA Engineers GENERAL CONTRACTOR: S. C. Anderson MASONRY CONTRACTOR: Frazier Masonry Corporation BLOCK PRODUCER: Trenwyth Industries, Inc. (A subsidiary of Oldcastle, APG West) OWNER: California State University, Bakersfield

Architect's Commentary: This new 53,000 square-foot, three-story, brick and concrete masonry math and science building sets a new aesthetic and design standard for the CSU Bakersfield campus, which is primarily populated by cement plaster buildings.

The use of Prairiestone, which is available in a large variety of shapes and sizes, allowed for a high degree of design flexibility. The team was able to form masonry bands of alternating heights, adding architectural interest to the large facade of the building and creating a custom appearance at an affordable price. Prairiestone provides the durability of concrete masonry units, while offering the classic look of natural stone by incorporating all natural limestone aggregates. The resultant design establishes the building's unique identity on the campus, while complementing the surrounding hot and arid environment.

The building orientation maximizes the favorable north and south exposures for the building and minimizes the harsh western and eastern exposures. Two major building blocks occur to the north and south of the building spine, housing classrooms, labs and faculty offices. The southern exposure utilizes deep overhangs or sunshades to mitigate solar heat gain into the building. The northern exposure maximizes windows for natural light into faculty offices. The western exposure is controlled and contains only circulation space and the first floor café. The large lecture classrooms are located off the main circulation spine and allows for tiered seating with full ADA accessibility. The majority of the instructional labs and smaller classrooms are located on the interior of the building allowing most faculty offices access to exterior windows and natural light.

The building creates a new facility that contributes classroom, laboratory and office spaces for the anticipated growth of Computer Science and Mathematics Department. This project also initiates a new academic quadrant where future science, math and engineering facilities are planned.









Photography: Michael O'Callahan, Michael O'Callahan Photography



ARROYO GRANDE HIGH SCHOOL MODERNIZATION AND NEW CONSTRUCTION Arroyo Grande, California

ARCHITECT: PMSM Architects 1004 E. Main Street Santa Maria, CA 93454

Anthony Palazzo, AIA Principal

Jared M. Hurley Design Architect

STRUCTURAL ENGINEER: Ehlen Spiess & Haight, Inc. GENERAL CONTRACTOR: Diani Building Corporation MASONRY CONTRACTOR: Gerry Smith Masonry, Inc. BLOCK PRODUCER: Air Vol Block, Inc. Owner: Lucia Mar Unified School District

Architect's Commentary: As the first high school campus in Arroyo Grande, California, Arroyo Grande High School has served the Community for over 70 years. The District and the Community wisely understood the value of preserving this legacy for future generations to enjoy. In March 2004, the Community voted to approve a \$21.3 million bond measure to fund renovation and new construction projects as well as utility, infrastructure, and technology upgrades at Arroyo Grande High School.

The design, by PMSM Architects, echoes and enhances the relationship between Arroyo Grande High School and the surrounding community. The primary design goal was to create a cohesive campus with a defined sense of place. The placement of the three major new buildings – Student Support Center, Multi Purpose Building, and Food Service Facility – at the front of the campus signifies the front door, and the new entrance and covered walkways serve as visual cues. Concrete masonry units (CMU) were chosen for the new Multi Purpose Building, the largest of the three major buildings, for its durability, ease and efficiency of installation, thermal protection, and integral beauty.

Framed by the new Multi Purpose Building, the space separating the entrance and administrative functions from the classrooms was converted into an outdoor quad area with new landscaping, benches and covered eating areas for social gathering, thus adding to the sense of campus community. The architectural style and palette of colors and materials, including the CMU, was taken from the surrounding buildings to provide continuity throughout the campus. Concrete masonry has become the material of choice on this campus and will be used on the new Career Technology Complex at the south end of Arroyo Grande High School.

To meet the District's desired schedule, the projects were sequenced with the first phase of construction commencing less than a year after the passage of the bond. The following five phases were completed in less than four years from the passage of the bond, without displacing students from classrooms. The speed that concrete masonry units can be installed helped meet that schedule.





Photography: PMSM Architects (1), Air Vol Block, Inc. (4) Lawrence Anderson Photography (2, 3, and 5) CMACN 2009 October Issue of "CMU Profiles in Architecture"



MONTCLAIR POLICE FACILITY

MONTCLAIR, CALIFORNIA

ARCHITECT: WLC Architects, Inc. 8163 Rochester Avenue Rancho Cucamonga, CA 91730-3754

Larry Wolff, AIA, LEED AP Principal

STRUCTURAL ENGINEER:

K. B. Leung Structural Engineers, Inc. GENERAL CONTRACTOR: C. W. Driver MASONRY CONTRACTOR: Frazier Masonry Corporation BLOCK PRODUCER: ORCO Block Company, Inc. OWNER: City of Montclair

Architect's Commentary: This new 45,000 square foot police facility models sustainable design. The project replaces blighted property and strengthens neighboring development. Oriented for predominate southern exposures, the building features a reduced footprint achieved by a stacked, compact plan, which further minimizes earthwork, improves water quality management, and preserves open space.

While the project is designed to connect to local public transportation, employees are encouraged to car-pool and ride bicycles to minimize parking. Pedestrian access and outdoor gathering areas are supported by a series of connected plazas designed to optimize native landscaping, which features grey-water irrigation

technology. Most heat island effects within the campus are eliminated by the building and landscape design.

Predominant masonry wall construction best met essential services seismic-safety requirements, and reduced the need for redundant wall finishes. Thickened walls and high-thermal building mass are created by use of locally-produced concrete masonry units, which support a central atrium designed to optimize natural day-lighting.

Natural lighting is facilitated by large window walls, clerestories, and skylights, and is used to reduce electrical loads, while greatly reducing air-conditioning loads. A variable air volume HVAC system provides selective heating and cooling to building occupants, and personalized zoning, lighting controls, energy-star roofing, and energy management systems further increase estimated energy efficiency savings to exceed Title 24 requirements by 22%.

Superior indoor air quality is achieved by the elimination of atmospheric pollutants in building materials. An indoor humidification system further supports personal comfort, and work areas are designed with task-lighting to meet high-performance workplace criteria.

Materials and products made from renewable and recycled resources further increase environmental stewardship, and encourage use of green building methods by the community. With permanence and endurance in mind, this new police facility is built for sustainability.







Photography: Genevieve Wolff, WLC Architects, Inc.



TRIBAL COMMUNITY CENTER

LEMOORE, CALIFORNIA

ARCHITECT: Marvin Armstrong 1640 West Shaw Avenue, Suite 102 Fresno, CA 93711

Marvin Armstrong, Architect Principal

STRUCTURAL ENGINEER:

Dutcher & Associates GENERAL CONTRACTOR: Oral E. Micham, Inc. MASONRY CONTRACTOR: Advanced Masonry, Inc. BLOCK PRODUCER: Blocklite (a subsidiary of Basalite Concrete Products, Inc.) OWNER: Santa Rosa Rancheria Tachi-Yokut Tribe

Architect's Commentary: The Tribal Community Center is the first phase of the master plan for a 48acre recreational area within the Santa Rosa Rancheria near Lemoore, California. Typical of the central San Joaquin Valley, the site is an agricultural field bounded by country roads and agricultural land stretching for miles in all directions. This site is the original land of the Tachi-Yokut Tribe and care was taken in the earthwork to discover and protect any buried artifacts.

The goal of this project was to provide a cultural and community center for the Tachi-Yokut Indian Tribe and a new home for the growing recreation and education department needs. Recreation facilities for children, teens and adults included a new gymnasium, swimming pool and children's play structures. Education facilities were constructed for after school programs, alternative education and adult education. The full size gymnasium includes a stage and high school level courts for basketball, volley ball and badminton, weight training area, aerobics area, men and women showers, lockers, restrooms and kitchen to serve 500 people.

The design concept was to incorporate traditional tribal art and design into the physical structures. To accomplish this, circular elements and cardinal directions in the site plan and floor plan design were used. The buildings are oriented around a circular walkway with each building on the north-south or the east-west axis, which are important cultural considerations for site design and in providing orientation to the earth and the sun.

The most distinctive design feature is the basket patterns adorning the earth-tone, split face concrete masonry walls throughout the exteriors. The patterns, which come from the baskets made by the Tribe's ancestors, are created with contrasting structural blocks to allow the pattern to show on the inside as well. Concrete masonry patterns become glass block patterns for diffused day lighting in the Gymnasium.

Each building has a different pattern selected as a metaphor for its function. The ensemble of buildings resembles a display of Indian baskets, and thus providing reminders of historic Indian art and culture. The referenced metaphors are: Gymnasium/Multi-Purpose Building – eagle, flock of birds, quail tufts, ants, arrow points and snake; Recreation Office – wild Geese; Education Office – clasped hands; Pool House – waves; Classroom Building – human form.











Photography: Tom Skelton



CARDIFF TOWN CENTER

CARDIFF-BY-THE-SEA, CALIFORNIA

ARCHITECT: McCabe Architecture 2051 San Elijo Avenue Cardiff-by-the-Sea, CA 92007

Tom McCabe, AIA Principal

STRUCTURAL ENGINEER: Hope Engineering GENERAL CONTRACTOR: Bycor Construction, Inc. MASONRY CONTRACTOR: Ben Moran Masonry BLOCK PRODUCER: RCP Block & Brick, Inc. OWNER: Cardiff Town Center, LLC

Architect's Commentary: Cardiff Town Center is in the heart of a quirky beach community. Since 2001, renovations created a distinctive image from the original Von's and ValueFair circa 1964 and 1984 Cape Code remodel. The third phase of reconstruction removes a single story restaurant and adds a two-story mixed use addition.

The design concept uses simple materials and structural elements as integral components of the image, using classic forms and proportions; allowing a new building to fit cohesively without overpowering the existing "less sophisticated" buildings.

• The main volume uses exposed steel columns and beams in a similar fashion of the existing wood frame structures.

- On the north side of the building, the concrete masonry (CMU) is both a structural and finish material
- In the structural use, the modules are a typical 16" x 8" x 8", stacked running bond using mixed pattern of browns and grays. However, the accent strips are standard gray.
- In the architectural use, the multi-colored CMU creates an eye-catching form with both texture and color.
- The concrete masonry, mixed with the stair's sculptural concrete forms, add whimsy to the north façade.
- The CMU is placed in "random order" using 8"x 12", 8" x 16", and 4" x 16"; the smaller "ordered" pattern creates a larger "random" pattern, accented by horizontals.
- Astute observers notice along the corners that it is actually a 4" veneer.
- The 4" x 16" horizontal modules mimic a stone module used as accent elements on west side.
- The concrete masnry creates an image that is unique, high-caliber and aesthetically equal as natural sandstone or limestone.

Using an eclectic and cost-effective mix of materials, the project integrates with the neighborhood's distinctive beach image and creates a modern business aesthetic reflective of its unique context.







Photography: KevinSchultz, Shue Photography - mainphoto & 1^{si} inset Rhiannon Hosea, McCabe Architecture - insets 2-4 *CMACN 2009 October Issue of "CMU Profiles in Architecture"*



OPERATIONS AND MAINTENANCE BUILDING ELLIS CREEK WATER RECYCLING FACILITY Petaluma, California

ARCHITECT: Burks Toma Architects 814 Camelia Street Berkeley, CA 94710

Karen Burks, LEED AP *Principal*

Andy Drake, LEED AP Lisa Trujillo, LEED AP *Project Architects*

Design Engineer:

Carollo Engineers 2700 Ygnacio Valley Road, Suite 300 Walnut Creek, CA 94598

STRUCTURAL ENGINEER: Ingram DeJesse Associates, Inc. GENERAL CONTRACTOR: Kiewit Pacific Co. MASONRY CONTRACTOR: Gene Amato Masonry BLOCK PRODUCER: Calstone Company, Inc. OWNER: City of Petaluma

Architect's Commentary: The City of Petaluma's Ellis Creek Water Recycling Facility was designed to achieve a high degree of sustainability and integration of site, function and materiality. The facility is composed of water treatment process areas, a constructed wetlands, and an Operations and Maintenance building that also serves as the public entry and education center. The 13,000 square-foot Operations and Maintenance Building incorporates the Plant Administration and Control Functions, Laboratory, Maintenance, and Staff Areas. The various functional areas are enclosed within split-face concrete masonry exterior walls, transitioning to honed units at the interior entryways. Concrete masonry was selected for its aesthetic qualities, structural capacity, regional availability, and low maintenance characteristics. The exterior concrete masonry is complimented by a low slope vegetated roof, high fly ash concrete, Energy Star metal roofing and weathering copper siding and flashing materials. This rich exterior material palette requires no painting or staining and provides subtle color and textural contrasts against the surrounding hills.

The Operations area is oriented to the south, facing the wetlands and the Petaluma River. Light shelves, exterior shading, interior glazing, and a clerestory above the main circulation hall are integrated to maximize daylighting and minimize glare and unwanted heat gain. Energy savings are further enhanced by high efficiency gas boilers and an evaporative cooling system in the office and lab. The Maintenance area is daylit by a ridge skylight and heated with a radiant floor system to provide an optimal work environment.

The building is designed to accommodate educational tours by utilizing reception areas and expanded areas within the hall to gather groups of students without disrupting operations. The building's integration of sustainable materials, daylighting systems, and connection with the site create a productive work environment and demonstrates the City's commitment to the environment and the community.





Photography: Muffy Kibbey, Muffy Kibbey Photography



JOHN WAIT OFFICE BUILDING

LODI, CALIFORNIA

ARCHITECTS: John D. Wait Masonry, Inc. 310 N. Cluff Avenue Lodi, CA 95240

John D. Wait Architect of Record

STRUCTURAL ENGINEER:

Alexander A. Tounian **GENERAL CONTRACTOR:** John D. Wait Masonry, Inc. **MASONRY CONTRACTOR:** John D. Wait Masonry, Inc. **BLOCK PRODUCER:** Basalite Concrete Products, LLC **OWNER:** AJW Properties, LLC

Architect's Commentary: The John Wait Office Building is located near the wine country of Lodi, California. The project consists of a two-story office building of approximately 9,500 square feet, and three ancillary buildings, covering a total of 19,000 square feet. The office building is comprised of 10 separate office/suites, housing 25 tenants, and a conference room/tech center. The tenants also share a completely furnished kitchen and eating area, which adjoins a fully furnished sleeping room for use by an out of town guest. The ancillary buildings house a masonry "Stone Design" center, along with an office, machine shop, and dry-good storage.

The project's intent was to incorporate eco-friendly products and an innovative design, while offering the tenants a feeling of livability to their environment. Incorporating these ideas with Southern Italian flair was the approach the owner wanted. Exterior colors were chosen to blend in with the fertile wine-producing soils of the Lodi valley. The textures of the concrete masonry were complemented with the soft lines and curves of the precast elements used abundantly throughout the project. Throughout the exterior are subtle reminders of the wine country, set in the precast medallions. The interior continues with the masonry theme, as floors and walls are generously blanketed with natural stone. The stone adds to the stately "Tuscan" feel you get upon seeing the building's exterior for the first time.

Single score split face concrete masonry units (CMU) for straight walls to blend in with 1/2 block CMU at radius walls along with ground face CMU, natural stone and architectural precast gave the flexibility of design and beauty to accomplish the owner's vision.









Photography: Dick Hanson



STATE OF CALIFORNIA CORRECTIONS BUILDING

LANCASTER, CALIFORNIA

ARCHITECT: Browne Architects, Inc. P.O. Box 3051 Lancaster, CA 93534

Charles L. Browne *Principal*

STRUCTURAL ENGINEER: Tetra Tech, Inc. GENERAL CONTRACTOR: Ashford Construction Company, Inc. MASONRY CONTRACTOR: Nibbelink Masonry BLOCK PRODUCER: Desert Block Company, Inc. OWNER: Cambridge Lane, LLC.

Architect's Commentary: This 21,842 square-foot building is the second building, in a series of buildings, within this industrial park. The owner liked the original building so much that, we used the rich design as inspiration for the second building. This building was streamlined by deleting the recessed entries from the original design and adding this area to the leaseable area. This tenant had a requirement for numerous smaller offices around the front perimeter and interior of the building. There was also a need for much larger training rooms and classrooms along the rear of the building. The training room was fitted with a Won-door, which allows the training room to be split into two smaller rooms as needed. There are three other features which differ from the original building. First, the owner wanted to add small metal canopies, over the front main entries and glazed areas. This provides limited shade and protection from the elements. The canopies provide, a little more "three-dimension" to the front of the building. Perforated metal panels were used, as covering for the canopies. This allowed filtered sunlight to cast shadows, in the morning, on the building. Second, a

larger 440 square-foot metal canopy was placed on the north side of the building to serve as an outdoor covered break area for the classrooms. Cool water misters were provided under the canopy to provide addition comfort in the desert heat. Lastly, the owner had a great idea that helped finish off the top of the building. We used a design from the southwest in the sienna brown color concrete masonry (CMU), which steps down around the corners of the building.

The most distinctive feature on this building is the cantilevered corner windows. Cantilevering 5'4'' at the front and 4'-0'' at the side, it completely opens up the corners. From inside or outside, the windows seem to "break the box" and add natural light to the design. It feels like the concrete masonry is floating above the windows. The remainder of the building has very large storefront windows, which further adds to the "light and airy" feel of the building. All the glass in the building is tinted, low "e" squared glass to filter the harsh rays of the low angle sun.

The design of the building starts out with using an 8''x8''x16'', sienna brown color, four-score concrete masonry units (CMU) at the base. On top of that CMU, we used 8''x8''x16'', half-score, spice color, smooth-face CMU. This gives the illusion of an 8''x8''x8'' CMU. Then, an accent band was added using an 8''x8''x8'' CMU. Then, an accent band was added using an 8''x8''x8''x16'', half-score, spice color, smooth-face CMU between the warm gray band. Finally, at the top of the building is the "icing on the cake". The 8''x8''x16'', sienna brown color, four-score concrete masonry was a great finishing touch. In fact, once laid, the owner liked it better than the sister building.

A structural panelized wood roof system was used to provide the required structural ties to the concrete masonry and to minimize cost. The structural engineer also used an innovative drag design using a 1"diameter and 1-3/8" threadbars by DYWIDAG-Systems International (DSI) to connect the rebar embeded deep into the concrete masonry shear walls.

Overall, with all the extras the build was constructed for \$1.36 per square-foot, and has proven to be a perfect combination of style, leaseability, and durability.









Photography: Mitch Rubin, Desert Block Company, Inc

Concrete Masonry Association of California and Nevada



Profiles in Architecture

Concrete Masonry Association of California and Nevada 6060 Sunrise Vista Drive, Suite 1990 Citrus Heights, CA 95610-7004

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- Develop new and existing markets for concrete masonry products.
- Coordinate members' efforts in solving common challenges within the masonry industry.

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

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