Inside this issue:
Our Savior Parish & USC
Caurso Catholic Center 2
Oakland Zoo Veterinary Hospital 3
Grace Bible Church Youth and Family Building 4
El Segundo Museum of Art (ESMoA) 5
UCSF Parking Garage 6
Augustus F. Hawkins High School 7
Delta Vector Control District 8
Beaumont High School Stadium
Athletic Fields + Environmental Learning Center 9
P604 Child Development Center
MCB Camp Pendleton 10
Somerset Academy
Sky Point Campus 11
CMACN Producer Members 12
Architect’s Commentary: Adjacent to the University of Southern California, the Our Savior Parish and USC Caruso Catholic Center are key components of the north side of campus. The design of each was inspired by traditional Italianate Romanesque structures and features natural travertine stone, soaring wooden ceilings, stained glass windows, a bronzed crucifix, and bell tower reminiscent of USC’s Mudd Hall.

The two-story student union building includes a large multi-use room with ancillary storage, kitchen facilities, two lounges, a fireplace and office spaces for campus ministry staff and students. Located at an important crossroads for students traveling to and from USC’s University Park Campus, the USC Caruso Catholic Center was planned around a public courtyard providing a community accessible gathering place.

Why Masonry? During the very early planning stages of the Our Savior Church, the team sought a flexible, cost-effective, durable material to serve as the primary structural element in the church. Several different options were considered during the course of the design process - wood framing, steel framing, concrete tilt-up and pre-cast concrete. Through a rigorous process of elimination, the team pared the possible structural systems down to concrete masonry and concrete tilt-up and weighed the pros and cons of each system. In the end, fully grouted concrete masonry units were chosen based on the product’s flexible nature, its ability to perform structurally with a slender profile, its competitive cost and its ability to meet the Archdiocese of Los Angeles’ 100 year building requirement for durability. In addition, the concrete masonry structure served as the perfect substrate from which to hang tens of thousands of pounds of the travertine and precast concrete panels that adorn the building.

The project is USGBC LEED® Gold certified.
The Oakland Zoo is home to more than 660 native and exotic animals. The Zoo urgently needed to replace its 1960s-era veterinary hospital with a facility that could accommodate state-of-the-art technology and increased capacity. The design of the new 17,000 square-foot Veterinary Hospital expands the Zoo’s animal care, research, and training programs. The building will be the first LEED® certified facility of its kind in the state of California. Sustainable features include solar panels, extensive daylighting, renewable and recycled content materials, water conservation, in-slab radiant heating, and an electric vehicle charging station.

Why Masonry? The building includes an animal holding wing; food preparation facilities, X-ray, surgery and medical support spaces; laboratory spaces; and veterinary staff offices. Simple natural materials – wood and masonry – echo the Zoo’s commitment to preserving and protecting the natural environment. Concrete masonry units (CMUs) also met the need for durability and ease of cleanup. CMUs provide the walls of the animal holding areas, keeping them temperate and insulated from sound and vibration, reducing stress on sick animals. Ground-face concrete masonry units were chosen for the main exterior finish with a contrasting accent band of split-face CMUs. Though the building is not open to the public, veterinary students and staff visit the facility for tours and educational programs. Materials used for “back of house” spaces are more utilitarian, while the more public areas like the lobby and entry staircase received upgraded finishes. The project included generous donor funding and a wall in the main hallway highlights major contributors.

The site is carved out of a hillside that looks out over the city and towards the San Francisco Bay. Careful attention was paid to building orientation. The architects wished to maximize daylighting and views and minimize heat gain. Concrete masonry units combined with natural wood offered a beautiful, yet functional design aesthetic.
Architect's Commentary: Conscientious architect, Brent Freeby, strives for a balance of strength, durability, usefulness, beauty, sustainability and intelligent use of resources in every project. The design for the youth and family building for Grace Bible Church in Arroyo Grande, California is a perfect example. The community of Arroyo Grande prides itself on its small-town, local feel and has a strong historical tradition and moderate aesthetic.

The new building is an addition to a 15-year old campus consisting of plastered metal buildings. Stylistically, it was important for the project to acknowledge the existing facilities while clearly stating a forward-thinking direction. The decision to use block added a 6-8% premium to the overall project cost, but ultimately was decided to be the best choice for a variety of reasons.

Why Masonry? Precision concrete masonry block was an early choice due to its thermal mass properties, clean aesthetic, local sourcing, acoustics, longevity, and low maintenance. The local climate is very temperate and the thermal pendulum created through the block mass has virtually negated the need for heat or cooling through the building’s first year of use. The production plant for the block is only 13 miles away, minimizing transportation impacts and costs. Research indicated that the exposed block absorbed 6 times the noise as a traditional drywall assembly, a good choice as the young groups that populate the building generate a great deal of noise with music and other activities. The combined attributes of the product seemed much more appropriate for the wear and tear groups of young people can have on a facility.

With all factors considered, the concrete masonry block units were the only logical choice for the project.
Architect's Commentary: With a site measuring only 25 feet wide by 140 feet long and with neighboring structures built up to the property line, the primary goal for the El Segundo Museum of Art was simply to "make it fit." After realizing that "fit" was achievable, the owners challenged the goals further by requiring a tall main gallery space in the middle of the building.

Why Masonry? In order to maximize the buildable area and pre-finish the inaccessible exterior walls of the building, white burnished concrete masonry units (CMUs) with matching mortar were selected as the materials of choice. CMUs were perfect for constructing on such a cramped construction site.

To maximize the clients' budget while making use of the costly process of burnishing, a computer model of ESMoA was built, block by block, to determine the number of blocks needed and which faces of each would be visible. Of the 12,766 concrete masonry units, the need was established for 24 different combinations of mold forms and block burnishing.

Keeping nearly 13,000 concrete masonry units of 24 varieties organized amongst contractors and a cramped construction site required the development of a letter coding system. Each block type produced was kept organized on palettes labeled with their corresponding letter. The palettes were transported from the local block facility to an intermediary site, where they were housed, still organized by letter, until it was time to incorporate each specific block type into construction. Once on site, contractors used coded drawings to ensure that each block type was placed in precisely the right location.
UCSF PARKING GARAGE
SAN FRANCISCO, CALIFORNIA

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PROJECT LEAD (DESIGN BUILD):
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MASONRY CONTRACTOR:
Creative Masonry

BLOCK PRODUCER:
Calstone Company, Inc.

OWNER:
University of California, San Francisco

DEVELOPER:
Urban Pacific Properties Inc.,
dba Pacific Union Development Co.

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David Wakely, David Wakely Photography

Architect’s Commentary: UCSF occupies a unique position in San Francisco, with several campuses integrated within the City’s network of streets and public spaces. Gould Evans was asked to design a structure that touches upon the legacy of the Mount Zion campus, and also “fits” comfortably within the greater Mount Zion area, nestled among a mix of large and small structures, featuring institutional, commercial, and residential uses.

Framed by two very dissimilar buildings - the richly detailed heavy masonry Russian Center to the west, and a circa 1985 cement plaster-faced medical office building to the east - Gould Evans chose to balance the overall street front composition by creating a counterpoint with a quiet, yet dignified presence. The juxtaposition of horizontal and vertical elements subtly alludes to the surrounding mix of scales, and artfully mixes opaque and transparent surfaces to shield the view of vehicles within. At street level, care is taken to provide interest and openness, utilizing richly colored tile work and planting to enhance the pedestrian experience.

This facility provides much-needed staff and outpatient parking. Carefully configured on a tight site, it offers 230 independently accessible spaces on 7 levels, and features an underground connection to the garage located beneath the adjacent medical office building.

Why Masonry? Major materials used for the construction of the garage include concrete, concrete masonry units (CMUs), angled, corrugated and perforated metal panels, stucco, storefront curtain walls and ceramic tiles. Concrete is typical for parking structures and Build Group, Inc. brought in-house capability specializing in the material. Being a fluid material, the use of concrete enabled the design to address slope changes, etc. Concrete masonry was decorative and used on the exposed wall to the medical office building to the east. The use of CMUs allowed designers to control color and patterning with splitface and smooth face units.

The UCSF Project is the recipient of the 2013 Gold Nugget - Best Special Use Project, Award of Merit.
Architect’s Commentary: The new Augustus F. Hawkins High School is located on 15.37 acres in highly urbanized South Los Angeles and consists of three Small Learning Communities (SLC’s) each including classrooms, science labs and administrative offices. The 4-story, 2,025-student neighborhood high school is a state-of-the-art educational facility that was designed to relieve overcrowding of nearby schools and eliminate student busing. The school responds to the District’s goal to facilitate better education through the design, construction and maintenance of healthy, safe and modern facilities that promote schools as centers of community.

Why Masonry? Augustus F. Hawkins High School was designed to meet the Collaborative for High Performance Schools (CHPS) program. The program sets forth criteria for the design of environmentally responsible and high performance learning spaces. In addition to the CHPS program elements, the design of the Augustus F. Hawkins High School also includes:

- Implementation of a central plant to house all of the HVAC equipment needed to generate the heating and cooling requirements for campus buildings.
- Central courtyard that unifies the campus SLC’s as well as its extracurricular activities.
- Exterior main stairways to allow open interaction among the school and students while being shaded by stainless steel mesh screens.
- Outdoor classroom spaces, such as the amphitheater, to allow for further interaction with the campus and community.
- Staff, student, and guest on-grade parking garage with basketball courts located on the roof to allow for maximum program and security on the tight urban site.
- Use of durable interior and exterior materials, such as concrete masonry units, stainless steel, concrete, and epoxy paint to allow for an extended campus life and low maintenance and operations costs.
- Use of multi-color/multi-surface concrete masonry units, metal paneling, concrete pavers, hardscape, and paint create a campus design that unifies and inspires its staff and students.
The Delta Vector Control District is responsible for the study, control, and prevention of vector-borne diseases in Tulare County, California. To expand its services to the community, the District received public funding to construct a laboratory building at their existing site, which already has an administration building, vehicle storage and repair, mosquito fish tank, and chemical storage facilities. The new building is sustainable and rated for CDC Bio-safety Level 3, which allows the District to extract and study potentially deadly viruses, such as West Nile.

The 4,264 square-foot laboratory building contains two vital functions. The foremost function is the new lab suite, which contains a main open lab, with separate and secure BSL-3 lab spaces, and office spaces for the lab personnel. The second function is a conference suite, which is crucial for training personnel from the Delta VCD, and other surrounding districts.

Why Masonry? Glazed concrete masonry was chosen as a primary material for the new facility based on its sustainable quality and attractiveness. It has significant pre-consumer recycle content, durable factory finish that never requires repainting, and performs as thermal mass for tempering the extreme temperatures of summer and winter.

The building energy performance and life-cycle cost analysis were tested prior to construction using Building Information Modeling (BIM) software. A 3D model was constructed in Revit and uploaded to an online Green Building Studio. Based on climate data, building orientation, shape and materials, HVAC system, glazing and shading, day lighting and occupancy type, BIM software afforded the architect the opportunity to tweak the design for optimum result, such as integrating photovoltaic panels with the curved metal roof to supply 30% of the electrical load.

The rich color palette of the glazed concrete masonry units in combination with wood paneling and open ceiling with wood trusses creates a workplace that the users rave about. The lab manager loved that she never turned on the lights during working hours.
Architect's Commentary: Adjacent to Beaumont High School and situated upon 39 acres, Beaumont Unified School District unveiled their new state-of-the-art sports stadium, among the finest in the region. With a 4,500-seat capacity, full press box, and eight-lane synthetic track, the complex is on a par with many college football/soccer stadiums. Student circulation connects from the fields to the campus through an environmental learning center and future renewable energy wind farm. All facilities are constructed from local materials and sited for passive solar benefits.

Collaborative for High Performance Schools (CHPS) criteria was considered in every aspect of the design. Ample daylight and views are provided throughout the design and natural ventilation is provided where appropriate. Low emitting materials and high efficiency lighting and appliances are used throughout the project. Low flow water fixtures are used and reclaimed water is used to irrigate climate appropriate landscaping. High performance mechanical systems are also employed to reduce energy demand and the wind farm will produce 24,000 kWh. Solar shading devices are employed throughout the project. These sustainable practices are focused on improving student learning outcomes and culminate with the Environmental Learning Center. The solution presented here solves the challenges with the best practices kept clearly in focus on providing improved student learning outcomes.

Why Masonry? Concrete masonry is affordable, durable and safe. Safety is a significant issue when designing schools for youths. Concrete masonry buildings are structurally sound, weather, earthquake, flood and fire resistant, also resisting mold, insects and other pests that plague buildings; the District was able to reduce their insurance rates.

Additional concrete products are utilized throughout the entirety of the project including beautiful walking paths that are key to the landscaping plan. The positive impact on both the environment and fiscal aspects of choosing concrete products for this renovation project has proven successful. The use of concrete paving and pervious concrete constitutes more than 60% of the 39 acre site, inherently lowering the life-cycle cost of the project, due to high durability and low maintenance, among other factors. Additionally, the design team achieved more than 2 million dollars in savings for the District through the use of pervious concrete (105,525 square feet) in lieu of a previously planned subterranean water retention system.

The high school campus sits atop a hill above the stadium, which informed the design need for creating a visible aesthetic connection between the campus elements. The District requested materials that were attractive and flexible, economical and vandal resistant. The obvious design choice was concrete products as a viable and attractive solution as it provides an excellent surface on which to bond stucco or other finish textiles, it is also effortlessly incorporated into the design of buildings while utilizing the same design vocabulary as the main campus.
Architect’s Commentary: The design goals were to break down the 25,000 square-foot CDC building into smaller residential scale masses and forms that create spaces in scale and emotionally safe to the children, while providing rich and varied experiences and a contextual relationship with the surrounding residential neighborhood. The design also meets the Camp Pendleton Base Exterior Appearance Plan with concrete masonry unit (CMU) colors and red metal 4:12 pitched roof. The facility was to be designed with the ‘Reggio Emilia’ approach to child care, which focuses on the child’s connection with the environment and community. The goal was also to create a safe and secure facility where the children’s experience is an extension of their home environment. The connection to the environment begins with proper siting of the building with sensitivity to site constraints and opportunities. The building configuration and massing allow for cool prevailing summer breezes from the southwest and southeast while blocking the prevailing winter wind from the northwest.

Why Masonry? To reduce the scale, the concept uses varied concrete masonry colors and patterns with residential scale gable and hip roofs. The interior and exterior spaces provide for learning through critical sensory experiences of touching, moving, smelling, seeing and hearing. Different textures, visual elements, and flow patterns stimulate the children’s senses. Carefully selected plants moving to the coastal breeze provide sound and motion stimulation and interest while others provide a natural aroma.

A random pattern of three colors of shot-blast concrete masonry units (CMUs) creates visual interest and a almost childlike texture. The darker color precision CMU wainscot provides a smooth safe surface at the child’s level. Steel trellises provide a visual interest to the building while creating shadows on the ground where the children can experience the pattern. Masonry ‘chimneys’ and covered walkways with masonry columns provide visual layering to break down the building massing.

Sustainable design features were selected and used to reinforce the design goals allowing this project to achieve LEED® Gold Certification.

Floor to ceiling windows bring in an abundance of natural day-lighting creating a better learning environment while providing in indoor/outdoor feel and views/connection allow for varying angles of light to infiltrate the space. Operable windows provide natural ventilation and contribute to the thermal comfort for users and allows them to control their environment.

The site design maximizes open space and protects natural habitat. Drought tolerant plants and highly efficient plumbing fixtures were selected to minimize water usage. The soil of the site has minimal percolation and stormwater is retained on site before being filtered and released slowly.

The design choices were determined by Whole Building Performance Energy Modeling throughout the design to achieve a 39% energy use reduction below California Title 24 standards.

The masonry wall construction contributed to LEED® points for recycled content and regional materials. The CMU walls with rigid insulation, ‘cool roofing’ with R-48 insulation, insulated low-SHGC glazing with shading help to create a highly efficient building envelope. Exterior and interior masonry walls add to the thermal mass of the building, which minimizes temperatures swings.
Architect's Commentary: The Somerset Academy Charter School is a Pre-Kindergarten through 12th grade public charter school with campuses throughout the Las Vegas Valley. The Sky Pointe Campus was opened for occupancy in August of 2013 to accommodate an enrollment of approximately 1,000 students in the first of up to 5 phases. The Campus is designed to ultimately accommodate 2,000 students at full build-out and will include an Elementary School, Middle School, High School, and Gymnasium.

The two-story campus is designed as a complex of buildings connected by walks, playgrounds, and canopies surrounded by parking and vehicular circulation drives. The canopies surrounding the building reduce the perceived scale of the large two-story masses. The architectural design conveys a playful, yet civic image, which is augmented by accent materials that are colorful, durable, and that texturally contrast with the sand plaster finish.

Why Masonry? The accent materials utilized include metal panel, cement fiberboard siding, painted steel canopies, and concrete masonry units (CMUs). The architect took advantage of the variety of textures and colors of CMUs available from the local producer. Black split face concrete masonry units were selected at the school’s main entry canted piers to evoke a feeling of stability and permanency. Black split face CMUs were also used in the columns supporting the canopies. All columns on the project are capped with white split face concrete masonry units. Buff-colored smooth face CMU veneer was used as a durable wainscot at the base of the buildings. The smooth buff-colored wainscot was accented with black split face and white split face concrete masonry units in a random pattern.
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Funding for the production and publication of the CMU Profiles in Architecture is provided by:

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Please contact the CMACN Office at (916) 722-1700 or info@cmacn.org with any questions.

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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.

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CMACN 2013 October Issue of “CMU Profiles in Architecture”