

Concrete Masonry Association of California and Nevada



Profiles in Architecture

April 2020

Why Masonry?

www.whymasonry.org

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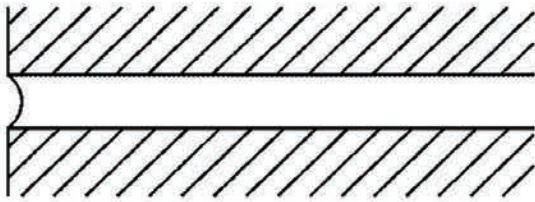
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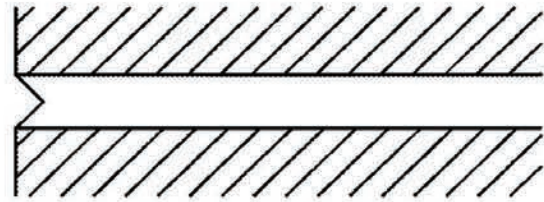
RECOMMENDED MORTAR JOINTS

Best Weather Protection



Concave Joint

Most common joint used. Tooling works the mortar tight into the joint to produce a good weather joint. Pattern is emphasized and small irregularities in laying are concealed.

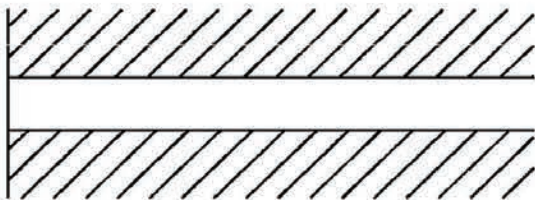


V Joint

Tooling works the mortar tight and provides a good weather joint. Used to emphasize joints and conceal small irregularities in laying.

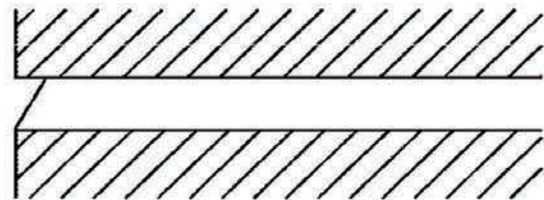
ACCEPTABLE MORTAR JOINTS

Weather Joint Possible with Proper Tooling



Flush Joint

Use where wall is to be plastered or where it is desired to hide joints under paint. Special care is required to make joint weatherproof. Mortar joints must be compressed to assure intimate contact with the block.

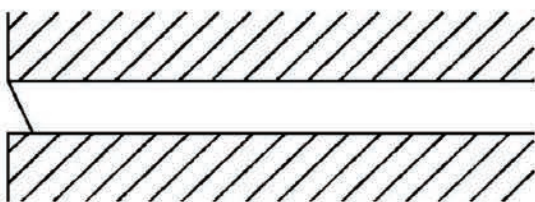


Weathered Joint

Use to emphasize horizontal joints. Acceptable weather joint with proper tooling. Care must be taken to properly paint the overhang ledge of the unit at each mortar joint.

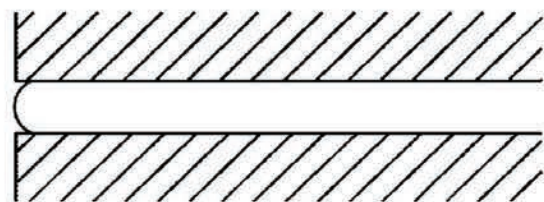
NON-WEATHER MORTAR JOINTS

For Special Effects Only



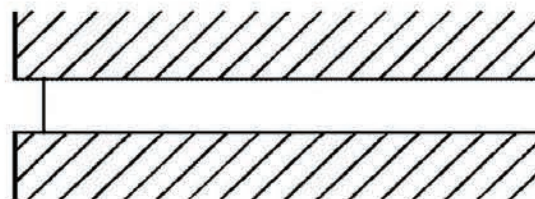
Struck Joint

Use to emphasize horizontal joints, poor weather joint - not recommended.



Beaded Joint

Special effect, poor exterior weather joint because of exposed ledge - not recommended.



Raked Joint

Strongly emphasized joints. Poor weather joint - not recommended.

Bauhaus Block

Templeton, California



ARCHITECT:

Jade Architecture

5120 Sycamore Road
Atascadero, CA 93422

Alison Edwards, NCARB
Principal-in-Charge

STRUCTURAL ENGINEER:

WC Engineering

GENERAL CONTRACTOR:

Semmes & Co. Builders, Inc.

MASONRY CONTRACTOR:

Cereghino Masonry Inc.

BLOCK PRODUCER:

Air Vol Block, Inc.

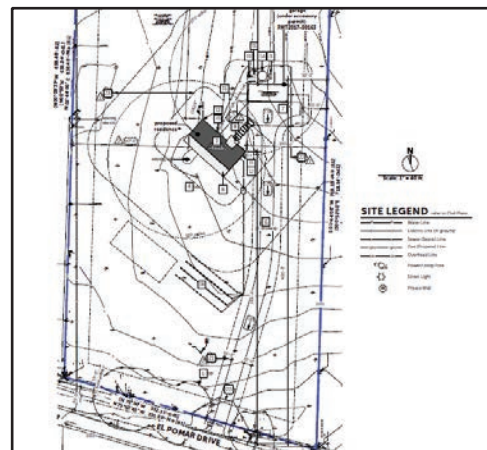
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Elliot Johnson Photography

ARCHITECT'S COMMENTARY: The home's simple, boxy construction reflects the modernist ideas of minimalism and functionality, creating a habitat that is connected to the rhythms of nature.

Expansive, panoramic windows frame the remote countryside, capturing views of California's golden hills and vineyards. Keeping sustainability in mind, the exterior concrete masonry unit (CMU) walls reduce energy use by maximizing the thermal mass potential. To harvest southern light, the home's orientation, cross breeze windows, and overhangs were strategically placed. The result is a home whose natural cooling capacity reduces the need for mechanical equipment. Large windows with high performance glass minimize heat transfer while connecting the home's interiors with its surroundings. High Fly Ash concrete floors with solar in-floor heating, sleek ceiling fans, and LED recessed lighting throughout are examples of the sustainable home building focus. European design philosophies showcase crisp lines and a simple color palette. Family heirlooms and custom design furnishings make the home feel eminently "human" and livable, without an abundance of manufactured finishes.

WHY MASONRY? Applying passive solar strategies to reduce energy use by maximizing the thermal mass potential of the CMUs works exceptionally well for the extreme temperature shifts of the central coast location. On hot summer days external heat transfer is delayed, and in the cold winter months heat loss is shifted from the middle of the night to the middle of the day, when the sun makes up the difference. Truth to materials is a major tenet of modern architecture. CMU is one place we see this axiom in action and achieve an architecture focused on the timeless aesthetics of the "Bauhaus" design philosophy. In addition to their aesthetics, concrete masonry units also meet the requirements for a durable, long lasting building material with a high-quality final finish that requires no maintenance or upkeep.



San Gabriel Municipal Yard Facility

San Gabriel, California



ARCHITECT:

**Gillis + Panichapan
Architects, Inc.**

2900 Bristol Street, Suite G-205
Costa Mesa, CA 92626

Jack Panichapan, AIA, LEED® AP
Principal-in-Charge

STRUCTURAL ENGINEER:

Dale Christian Structural Engineer, Inc.

GENERAL CONTRACTOR:

Parkwest Construction Company

MASONRY CONTRACTOR:

NuWay Inc.

BLOCK PRODUCER:

ORCO Block & Hardscape

OWNER:

City of San Gabriel

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Jerry Laursen Photography

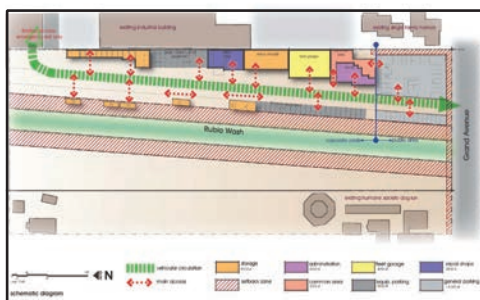


ARCHITECT'S COMMENTARY: The City of San Gabriel had acquired a challenging narrow 3.5-acre site bifurcated by a flood control channel for their new maintenance facility. The building would encompass the Maintenance Division and Engineering and Administration staff, while a portion would remain to serve as an essential maintenance facility. The project objective was to provide an environmentally and energy efficient building to the city that not only blended in, but also enhanced the surrounding community.

WHY MASONRY?

The Municipal Yard Facility artfully blends in the contextual juxtaposition of the single-family residential homes versus the industrial facilities, using concrete masonry units (CMUs) as the primary façade material to transition between the two zones. The new buildings provide a gradual contextual transition of the larger concrete warehouses to the residential scale. The facility uses a series of subtle patterned CMU walls throughout the main façades. The colored patterned CMUs provide a warmth and scale within its residential context while fitting in with the larger tilt-up industrial buildings on the other side. Another goal with the use of concrete masonry units was to provide visual and acoustic mitigation between the industrial uses and residential zones. With the narrow site, the durability of the walls offers good response to high volume activities and traffic within the very narrow site.

Besides the use of CMUs, the facility also implemented other sustainable design features such as native plantings and recycled finish materials, along with north-south fenestration orientation and shading strategies for energy efficiency.



County of San Diego Fire Station 44

Pine Valley, California



ARCHITECT'S COMMENTARY: The Pine Valley Fire Station is a 13,000 square foot, newly constructed facility that replaced an existing 6,900 square foot building. The two-story Fire Station includes three deep bays for parking fire apparatus and a half bay for an ambulance or battalion chief vehicle, associated support spaces, an administrative/training area, and living accommodations for up to fifteen personnel. The living spaces include a fitness room, kitchen, dining, day room, individual bunk rooms and restroom facilities, and administrative office space. This LEED® Silver project was completed utilizing a Design-Build delivery method, enabling the project to be designed and constructed in just 18 months from the time of being awarded the contract to the time of the grand opening.

WHY MASONRY? The true measure of design excellence for Public Safety Projects is the building's ability to hold up over time to the heavy use these types of facilities encounter. With this in mind, the walls in the apparatus bay and support spaces were constructed with concrete masonry units (CMUs) and integral colored board formed cast-in-place concrete. The combination of concrete and CMUs provides the durability, sustainability, and cleanability a fire station requires. Additionally, the rich textures and colors of the CMUs complement the aesthetics and architectural character of this rural neighborhood.

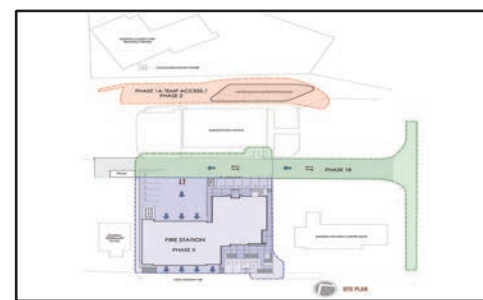
The project implements low impact development standards and uses sustainable design principles, practices, and performance. The architecture, engineering, landscaping, and building systems are designed for efficiency and ease of maintenance. The design-build team worked closely with a variety of stakeholders to ensure all programming and project goals were attained and a quality of craftsmanship and durability lasting 50-plus years was realized. Through careful planning and attention to detail and the use of concrete masonry units, the Pine Valley Fire Station supports CAL FIRE's mission, fits well within its context, and has been enthusiastically received by both Fire personnel and the community.

ARCHITECT:
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Jeff Katz, AIA
Principal-in-Charge

Christie Hanson
Project Architect

STRUCTURAL ENGINEER:
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GENERAL CONTRACTOR:
EC Constructors, Inc.
MASONRY CONTRACTOR:
Schwartz Masonry
BLOCK PRODUCER:
RCP Block & Brick, Inc.
OWNER:
County of San Diego
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Pablo Mason Photography



Donner Trail Elementary School

Truckee, California



ARCHITECT:

JK Architecture Engineering

11661 Blocker Drive, Suite 220
Auburn, CA 95603

Chris Vicencio, AIA, NCARB,
LEED® AP, DBIA
Principal-in-Charge

STRUCTURAL ENGINEER:

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GENERAL CONTRACTOR:

Reyman Brothers Construction

MASONRY CONTRACTOR:

John D. Waite Masonry

BLOCK PRODUCER:

Basalite Concrete Products, LLC

OWNER:

Tahoe Truckee Unified School District

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Travis M. Turner Photography



ARCHITECT'S COMMENTARY: Tahoe Truckee Unified School District engaged this award-winning transformation of their 1940's historical Donner Summit schoolhouse. The educational specifications for the school were created with extensive school-site committee and community feedback. Situated near Donner Summit in Kingvale, CA and overlooking the Yuba River, the school has majestic views of Castle Peaks and takes clues from the local flora and geography with its color and design scheme. The building orientation takes advantage of natural daylighting and maximizes opportunities for student and staff exposure to sunlight during the winter. The indoor reading nook allows pull-out space for students to enjoy the warm sunlight in a group setting even during the coldest days of winter.

WHY MASONRY?

This school site can be blanketed with more than 10 feet of snow, with accumulations reaching 20 feet or more. Needless to say, durability, thermal lag, and ease of maintenance were key necessities in a setting like this, therefore making concrete masonry units (CMUs) a logical choice as the primary building material. The attractive look and structural strength were also critical factors in the architect's and structural engineer's selection of CMUs.

Orange County School of the Arts Dance, Music, & Science Center

Santa Ana, California



ARCHITECT:

John Sergio Fisher & Associates, Inc.

5567 Reseda Boulevard, Suite 209
Los Angeles, CA 91356

John Fisher, President
Principal-in-Charge

STRUCTURAL ENGINEER:

MHP Structural Engineers

GENERAL CONTRACTOR:

Howard CDM

MASONRY CONTRACTOR:

Frazier Masonry Corporation

BLOCK PRODUCER:

Angelus Block Company, Inc.

OWNER:

Orange County School of the Arts

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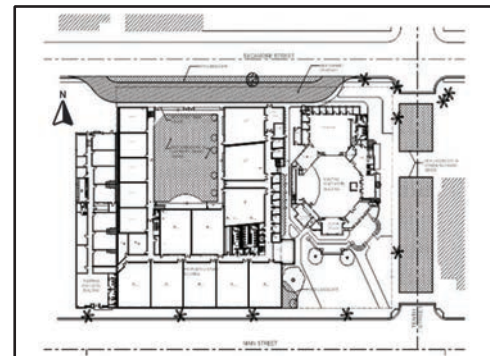
Ciro Coelho Photography

ARCHITECT'S COMMENTARY: On a tight urban site expansion of the Orange County School of the Arts campus, this project needed to create 14 large dance studios, three large music rehearsal rooms, 14 small music practice rooms, and eight science classrooms, all while leaving enough space for an outdoor amphitheater. These new spaces would be essential for the state of the art programs taught there, but would also require 62,000 square feet, which the project site could not provide. A two-story solution was required to account for the space needed versus the space available: the dance studio rooms were stacked to create a two-story center wing, the science classrooms were stacked to create a two-story wing to the south, and the rehearsal room was stacked into a two-story wing to the north. The placements of these two-story buildings would be essential to create an open courtyard that could act as the amphitheater.

WHY MASONRY?

Precision concrete masonry units (CMUs) were used to create sound resistant walls which are extremely important for containing the many sounds found within a dance and music school. Sound absorption panels were also installed to help achieve the correct reverberation times. The entire roof area of the building is covered with photovoltaic cells for net zero electricity, and the Main Street east façade has glass sun controlled devices and banners depicting the activities inside the building.

The building's CMU use was not limited to sound control; it was also utilized for its clean aesthetics, temperature control due to its thermal lag time, and for its ability to withstand prolonged use of wear and tear endured by such a school. The new site expansion has offered students and faculty alike the resources that assist in fostering profound passion and appreciation for the performing arts and sciences. The students and faculty love their new CMU building inside and out.





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CMACN/AIACA CONCRETE MASONRY DESIGN AWARDS

Please view the list of 2019 CMACN/AIACA Concrete Masonry winning projects, as well as all previous award and regular quarterly issues of "CMU Profiles in Architecture" on our website at: www.cmacn.org.

ARCHITECTURAL CONCRETE MASONRY

Concrete Masonry Units (CMUs) are dimensionally and aesthetically pleasing for ANY of your existing or future designs. CMUs can be integrally pigmented and textured to meet a wide range of client and project demands. CMUs are design flexible, versatile, noncombustible, durable, economical, and locally produced.

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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.

