DAEDALUS
STRUCTURAL ENGINEERING

**Firm Profile**

Daedalus is a Bay Area structural engineering firm with over 37 years of experience designing new and renovating older building resources. We provide a full range of structural engineering services, and our staff has diverse experience in project types, complexity, and size, including seismic evaluation and retrofit design, custom residential, civic, k-12 and higher education, commercial projects, as well as building and earth retention shoring.

We see the structure as an extension of the architecture and not merely a skeleton hidden beneath the finished product. Whether completely covered by architectural finishes or an integral part of the architecture, we believe the structure provides an opportunity to expand and help shape the finished architecture and building envelope. Working closely with each client to provide the best possible service, we look for opportunities to explore integrated architectural and structural solutions that vary from the most cost effective conventional systems to the unexpected. We provide input and offer alternatives to help Owners, Architects, and Builders to develop and shape the architectural design, select materials, advance and refine detailing, speed construction, and reign in unnecessary costs. Our services do not end with the “primary structural” systems, but also extend to design of temporary systems required for construction means and methods as well as all aesthetically sensitive architectural and site features important to the architectural and programming vision.

We thrive to ensure that costs are properly distributed to provide structurally efficient systems and not out-of-balance structural building costs due to neglectful or excessively conservative engineering and detailing. We work closely with each Architect, their other Consultants, the Geotechnical Engineer, the Contractor, and the Owner to ensure that structural solutions meld seamlessly with all building systems and finishes and that important design features, finishes, and other project goals are not lost in cost engineering due to unnecessarily expensive foundation or superstructure systems that are ultimately hidden from view.

Daedalus and all staff, including work with previous employers, have never been involved in litigation and have made never made an insurance claim.

**Services**

New Building Design
Seismic Evaluation & Strengthening
Earth Retention System Shoring Design
Building Shoring Design
Construction Means and Methods Engineering
Art installation Structural Design
Building Distress Evaluation & Mitigation
Historic Preservation and Renovation Engineering
Sustainable Structural Design
Structural Peer Review
Prelease/Prepurchase Structural Evaluation
Expert Witness and Litigation Support
Non-Structural Anchorage and Bracing

**Key Personnel**

**Doug Robertson**
Firm Founder and Principal
37 years Experience
Structural Engineer, California (S 3424)
Civil Engineer, California (C O41076)
Structural Engineer, Hawaii (16007)
Civil Engineer, Colorado (PE 25543)

**Mae Kawamoto**
Associate
23 years Experience
Civil Engineer, California (C 60706)
Structural Engineer, California (S 5658)

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**Douglas Robertson, P.E., S.E.**
Project Principal

Doug has managed and directed the structural design of many diverse projects during his career spanning 37 years. Placing great attention on important project details, while executing broader project goals pertaining to construction budget, schedule, and constructability, Doug has led many technologically innovative and diverse projects including new building design, seismic evaluation and strengthening, historic renovation and preservation, sustainable design, and implementation of energy dissipation technologies. Through careful study and collaboration Doug has consistently helped owners and architects develop innovative design solutions, while helping reduce Est. Costs.

**Registrations**
Structural Engineer, California (S 3424)
Civil Engineer, California (C O41076)
Structural Engineer, Hawaii (16007)
Civil Engineer, Colorado (PE 25543)

**Education**
B.S. Civil Engineering, University of Colorado, Boulder

**Project Experience**

100+ custom single family residential projects (New and renovations)
$50+ million Mercer Island, WA estate (40.000 sf)
$20+ million Woodside, CA estate (14.000 sf)
$20+ million Portola Valley, CA estate (14.000 sf)
Plantation House, North Kona,Hawaii
Portola Preserve, Portola Valley, CA
Quintessa Winery Tasting Pavilions, St. Helena, CA
Admin, Gym and Theater, Gideon Hausner Jewish Day School, Palo Alto, CA
Boeddeker Park and Clubhouse, San Francisco, CA
Hayes Valley Playground and Clubhouse, San Francisco, CA
Voyageur du Temps, Los Altos, CA
Jennifer Russel Community Center, Lafayette, CA
Apple San Francisco, Flag Ship Retail Store, San Francisco, CA
Orange Park Community Center, South San Francisco, CA
Morgan Hill Aquatics Center, Morgan Hill, CA
Fremont Civic Center, Fremont, CA
Fox Theater renovation, San Jose, CA
UCSB Student Rec and Aquatics Center, UC Santa Barbara, CA
Gymnasium and Aquatic Center, Woodside High School, Woodside, CA
Performing Arts Center, Woodside High School, Woodside, CA
Hercules Public Library, Hercules, CA
Mills College, Olin Library, Oakland, CA
Health Sciences Library, UC San Francisco
Mountain View Civic Center, Mountain View, CA

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**Mae R. Kawamoto, P.E., S.E.**
Associate

Mae has designed various structures over the past 24 years including custom residences, public and private school buildings, community centers, public art and commercial buildings. Her experience ranges from new, ground-up construction to remodels and seismic upgrades and evaluations of existing structures. She has a special interest in sustainable design and construction and follows LEED certification updates and sustainable practices. Mae has a good rapport with design teams and contractors to ensure that solutions are efficient and sensible.

**Registrations**
Registered Civil Engineer, California (C 60706)
Registered Structural Engineer, California (S 5658)

**Education**
B.S. Architectural Engineering, California Polytechnic State University, San Luis Obispo
B.Arch Architecture, California Polytechnic State University, San Luis Obispo

**Project Experience**
Portola Preserve. Portola, CA
Mulberry Residence, Atherton, CA
Stern Guest House, Atherton, CA
Willow Glen Residence Remodel, basement addition, San Jose, CA
Creekside Plaza Mixed Use, Berkeley, CA
Cull Canyon ICF Residence, Hayward, CA
Hyde Street Mixed Use, San Francisco, CA
Gardner Community Center, San Jose, CA
Mountain View Teen Center Remodel, Mountain View, CA
Theater and Gymnasium, Ann Sobrato High School, Morgan Hill, CA
Theater Renovation and Amphitheater, Live Oak High School, Morgan Hill, CA
Camden Community Center, LEED certified MPR and Gym, San Jose, CA
Mountain View Daycare Center, Mountain View, CA
Athletic Field Improvements, Foothill College, Los Altos, CA
Humanities Building, Bellarmine College Preparatory, San Jose, CA
Concessions and Restroom Building, Mather Sports Center, Cordova, CA
SJSU Cesar Chavez Arch, Public Art Design, San Jose, CA
City of San Jose Parking Garage Retrofit, San Jose, CA

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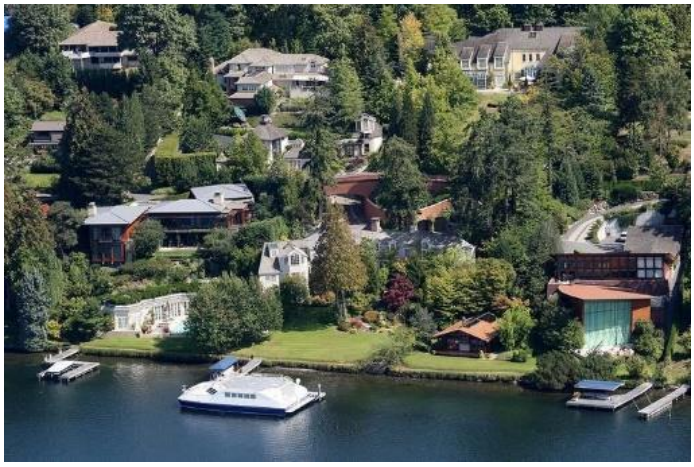
## Residential Projects (Completed)



**Island Estate,** Mercer Island, WA
This six-acre estate and business center includes an eight structure complex including indoor NBA basketball training center/swimming pool connected through an office wing to the indoor tennis pavilion, second residence/library, guest house, 13 car garage, underground movie theater, a ground level fine arts gallery, pool house, main residence expansion and second guest house. All buildings are either below grade or benched into the hillside to day light at the lake side. Type of building construction varies from built-up angle steel roof trusses with Alaskan yellow cedar double timber purlins and exposed wood roof decking in the basketball court/pool and tennis pavilion, cast-in-place concrete for the movie theater/gallery and the parking garage and pool house, and timber construction for the private residence, second residences/library, and guest house.

Est. Cost: Not available under NDA

Area: 40,000 sf

Architect: William Turnbull and Charles Moore

**Portola Valley Cascade**
This unique multi-level residence is constructed entirely of cast-in-place concrete to achieve the Indian motif of four slender columns topped with a single column cap, which was used throughout the structure. Concrete framing was cast using custom shaped and joint-filled MDF forms followed with surfacing by sand blasting and/or bush hammer to produce finished concrete with a seamless and monolithic appearance. The house includes multiple green sod roofs with raised rooftop planters that follow the natural grade of the surrounding hillside.

Est. Cost: Not available under NDA

Area: 14,000 sf

Architect: Arthur Erickson

**Atherton Refined**
This carefully crafted home was completed with a particularly careful eye for detail in both design and construction. Coordination of all structural framing, MEP systems, and architectural finishes was meticulously carried out, resulting in a very refined and beautiful finished appearance.

Est. Cost: $8+ million

Area: 11,000 sf

Architect: Walker Warner Architects

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**Atherton Classical**
This unusually tall, single-story neoclassical style residence was originally built in the mid-1980s but was an odd collection of tall dark rooms with dark narrow hallways. This extensive remodel and seismic retrofit project added multiple skylights, glazed French style doors in the kitchen and casual dining AREAs, as well as new front and rear glazed entryways to bring in natural light transforming the high ceiling spaces into elegant and inviting rooms.

Est. Cost: $16 million

Area: 10,500 sf

Architect: Butler Armsden Architects

**Atherton Classic Renovation**, CA
Completing this required extensive addition and remodel completely rearranging interior spaces and support structure to allow the final room layout to flow seamlessly from the existing AREAs to the added wings.
During construction it was found that the existing foundations were compromised and needed to be replaced. To accomplish this, the entire residence was lifted from the existing foundation so new foundation elements could be constructed. The owners decided to take advantage of the shored structure to increase the size of the existing basement.

Est. Cost: Est. $8 million

Area: 7,000 sf

Architect: David Buergler Architect

Photo not available under NDA

**Woodside Estate**, CA
On a verdant 41.7-acre lot in Woodside, this stunning traditional English style estate presents superb privacy, timeless luxury, and incredible space for entertaining on a grand scale, all next to its own private lake. Lofty ceilings craft an airy atmosphere throughout the home, and tall, wide windows allow an abundance of natural light. Expansive formal rooms enjoy elegant appointments, and the lower level includes a theater. Other structures near the main residence include a guesthouse, care-takers house, pool house, cabana, gym, auxiliary garage, and horse arena.

Est. Cost: $50+ million

Area: 28,000 sf (Main Residence)

Architect: Bohlin Cywinski Jackson

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**Creekside.** Woodside, CA
This unique single-story residence over a partial basement is sited on eight acres between two tributary dry creek beds that converge upon and border the site. The bedroom and guest wing, which traverses one of the redwood and oak lined creeks, is juxtaposed to the kitchen and service wing. These two wings feed into and tuck under the floating roof of the large volume glass enclosed pavilion from opposite sides and all converge on the even taller library as the focal point of the entire site.
Other structures near the main residence include a guesthouse, which is connected by an exposed and flashed glue-lam beam covered walkway to the bedroom wing, and an exposed timber framed car port.

Est. Cost: $20+ million

Area: 14,000 sf

Architect: Bohlin Cywinski Jackson

**Plantation House**, Hawaii
This beach side residence, located in North Kona on the island of Hawaii, is comprised of four separate living units. The buildings follow a traditional Hawaiian plantation style with a touch of modern refinement in the clarity of the structural wood members and the clean, fastener-free appearance of the connections.

Est. Cost: $14+ million

Area: 7,500 sf

Architect: Walker Warner Architects

**Coastal Retreat,** CA
This two-story private residence and guest house, located on a coastal bluff overlooking a flat grassland and the Pacific Ocean, embraces contemporary cape cod styling. The home includes complex steel and timber framing that is not discernable with the clean appearance that makes the structure appear simple and seamless.

Est. Cost: $17 Million

Area: 10,500 sf

Architect: Walker Warner Architects

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**Winged Retreat,** Santa Lucia, CA
Set on a steeply sloping site in the hills of beautiful Carmel Valley, this private residence offers sweeping views of the surrounding verdant hillsides, which are framed by the twin cantilever roofs over the two living wings.

Est. Cost: $3.5 million

Area: 3,500 sf

Architect: : Aidlin Darling

## Residential Projects (In Progress)

**Atherton Traditional**
Tucked in the tree-lined neighborhood of Atherton, this classical style residence complex includes a detached 3-car garage and pool house. The main residence sits over a full basement which includes a guest suite, game room, wine cellar and a gym, which opens up to a large lightwell. The grand entry is flanked by open dining and living rooms and lead to the family room, the commercial sized kitchen and octagonal, skylight lit, breakfast nook. The family room also opens up to the covered piazza through a 25 ft. sliding pocket glazing system and overlooks the yard, pool and pool house. The arbor-covered path leads to the garage and pool house in the same classical style.

Est. Cost: $12 million

Area: 10,915 sf + 1,595 sf covered outdoor space

Architect: David Buergler Architects

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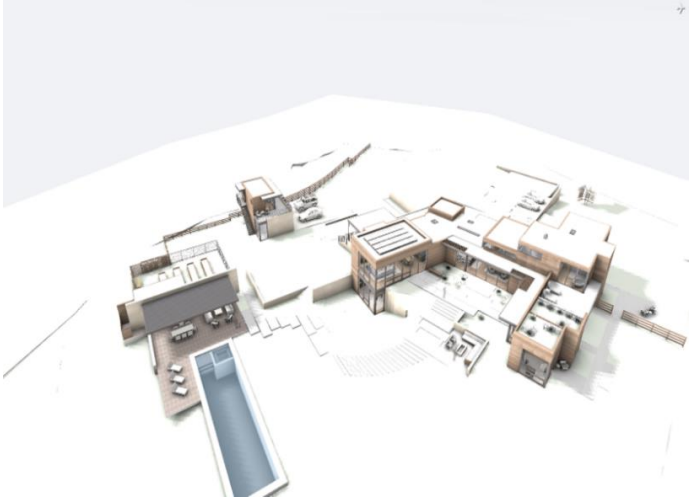

**Portola Valley Preserve**
Perched atop a knoll on the Preserve, this new residence melds into its environment with stepping roofs and earth-hugging lateral lines in the cedar finishes and board-formed concrete walls. The main residence includes a double-height library space and living space with views and access to the rear courtyard, beyond which the view of the bay extends beyond peripheral limits. The custom landscape features spill down to the pool and cabana structure featuring a 20 ft cantilevered roof. The dining terrace, flanking the main house overlooks the shop and guest house. The structure features multiple cantilevered members including a second floor space supported by a hanging column and a unique cantilever thin profile roof at the cabana roof.

Est. Cost: $19 million

Area: 12,450 sf

Architect: Walker Warner Architects

**Atherton Contemporary**
Tucked away on a serene street in Atherton, this new residential compound includes detached guest house and garage/workshop. The home's three wings are interconnected by walkway "bridges". All three structures are partially covered by an extensive trellis system, which provides continuity between structures. Other prominent project features include one and two-story artistic finished concrete walls, two feature steel fin shrouds surrounding the full-height glazing at the front and rear of the residence, a three-story glazing wall at the central wing of the main residence continuous from the basement to the roof and including an operable aluminum and wood privacy screen wall, and a sunken terrace with cascading water feature.

Value: Est. $13 million

Area: 6,466 sf

Architect: Aidlin Darling Design

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**Palo Alto Traditional**
This French Modern style residence has all the appearances of traditional French vernacular with very refined detailing from the exterior, but inside the home the space opens up to reflect the owner's more contemporary life style with a large great room/kitchen space and larger living room space. The great room space also opens to the backyard with two sliding panel doors that together extend the full length of the rear facing elevation.

Est. Cost: $18 million

Area: 9,000 sf

Architect: David Buergler Architects

**Portola Valley Modern**
This 10-acre estate blends into its hillside environment and forms
a "U" shape wrapping around a single dominant oak tree. The complex curved roof form covers both interior and interstitial exterior spaces with large openings over outdoor spaces to allow daylight for trees and other planting. The upper roof profile sweeps upward at apposing ends to bring more light into the spaces below through the full perimeter clerestories. The thin roof profile also has particularly long spans and large roof expanses that cantilever over structural concrete and rammed earth walls.

Est. Cost: TBD

Area: 12,500 sf

Architect: Aidlin Darling Design

**Martis Twist**, Truckee, CA
This new residence is set into the sloping mountain side in Martis Camp, Lake Tahoe. The project features a sculptural bedroom wing that twists over the main residence which is integrated into the site. The majority of the residence is benched into the hillside while the sculptural bedroom wing flows along the hillside, forming a protected courtyard with views toward the valley below. The project includes a mostly subterranean garage that daylights at the north façade, an at-grade indoor/outdoor living space, and a cantilevered bedroom wing—all oriented downslope to capture the magnificent valley views. The transition from the first to second floor forms an elegant twisted feature that defines the building's exterior appearance.

Area: 7,000 sf

Architect: Verner Architects

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## Commercial Projects (completed)

UCSB Physical Sciences, Santa Barbara

**UCSB Physical Sciences**, Santa Barbara, CA
This project added two new Physical Science buildings to the UCSB science quad. The north building is a four story, reinforced concrete, laboratory building. Floors and roof are 10 inch thick concrete flat slab construction with short 22 foot bay spacing to meet the strict vibration criteria established for laboratories. At the roof level four mechanical steel framed penthouses house the laboratory's 16,000 lb air handling units. The south building is a 2 story reinforced concrete building and houses two stories of offices at the south end and a high ceiling mechanical shop space at the north end for the Physical Sciences Department. The building includes a steel framed mezzanine floor and roof construction. An adjacent open air, 2000 sf, below grade cast-in-place central plan was also constructed to serve both this building and the north physical science building.

Architect:

**Boeddeker,** San Francisco, CA
The redevelopment of this one-acre park and clubhouse building in the heart of San Francisco's Tenderloin district is part of a local program for improvements to several parks in some of the more vital but lower income neighborhoods of San Francisco. The seemingly unobscured building transparency belies an unconventional lateral force resisting system. Only two concrete-encased steel columns provide both gravity and lateral support at the recreation wing allowing full height glazing along the entire length of three recreation wing exterior elevations. To frame the distinctively shaped recreation room roof and ceiling, the steel hip beam is splayed near the peak as it transitions into two smaller steel beams to frame around the rooftop skylight.

Architect: WRNS Studio

**Presidio,** San Francisco, CA
The New William Penn Mott, Jr. Presidio Visitor Center invites park visitors to this former military post turned 1,500 acre national park. The adaptive reuse of the original jail house, built in 1900, now includes 7,500 square feet of exhibits space that chronicles the parks history with the building located with prominent views of the Golden Gate. The building's character and interiors have been restored by removing decades of alterations, reconstructing missing architectural features, and returning the exterior to its original fenestration.

Architect: Bohlin Czwinski Jackson

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**Quintessa Winery,** St. Helena, CA
The three private 250 square foot tasting pavilions are nestled amongst ancient oak trees atop a ridge located on the Quintessa Winery estate. Each secluded pavilion overlooks the rolling hills and an estate lake and can be entirely open-air in mild weather or fully glass enclosed in inclement weather or in the heat of late summer. The thin roof with concealed gutters and an 11' 6" overall cantilever provides an exceptionally clean appearance.

Architect: Walker Warner Architects

**Flowers Winery,** Healdsburg, CA
The House of Flowers is a complete renovation and partial expansion of an existing winery. The project included lifting half of the building roof by 4 feet, replacing two exterior walls below the raised portion with full-height glazing, addition of a kitchen within the footprint of the existing adjacent building, and the addition of an open accessory structure housing the outdoor kitchen.

Architect: Walker Warner Architects

**Mountain View Civic Center**, California
This major civic center complex includes a City Hall, community theater, and plaza courtyard all supported above a single level below grade parking structure. The City Hall is a three story steel framed structure, which includes a 324-seat proscenium theater/city council chamber. The steel framed community theater building features a two-level 625-seat main performing arts theater, a 200 seat black box theater, an outdoor stage, and significant back-of-stage and rehearsal facilities.

Architect: William Turnbull Associates

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## Commercial Projects (in progress)


Gene Friend Recreation Center, San Francisco

**Gene Friend Recreation Center**, San Francisco, CA
This new community center will include gymnasiums, multi-purpose rooms, exercise space, a roof top terrace, and outdoor space. The structure will include an enhanced seismic performance system to serve as an Emergency Staging Site. Located on a site with high liquefaction and shaking potential, the foundation will be a mat slab over very deep auger-cast piers, and the superstructure will include buckling-restrained braced frames. Daedalus developed a proprietary wood waffle roof framing system for the large gymnasium space to create a free-form system with a unique ceiling profile. (In Concept Design)

Architect:


Los Altos Community Center, Los Altos

**Los Altos Community Center,** CA
This new community building features high ceiling multipurpose rooms, meetings rooms, catering kitchen, and dedicated spaces for seniors, teens and childcare. The timber framing aesthetic creates inviting gathering spaces with glulam rafters and trusses and cedar trellises exposed throughout the project. Cantilevered steel columns are designed to bridge the many stepped roofs and to meet the more stringent seismic demands. The project is designed to a LEED Gold standard and will serve as an emergency shelter (in construction).

Architect:

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## Mass Timber Projects (in progress)

K-12 Public School Classrooms

**K-12 Public School Classrooms**, CA
This design-build repeatable K-12 public school classroom project takes advantage of the prefabrication of Cross Laminated Timber panels combined with shop installed utilities, insulation, and architectural finishes to create a preassembled "kit-of-parts" that will be delivered to site and very rapidly erected during the short summer months between academic years. The project will be reviewed as a "pre-check approval" by the Division of State Architect (DSA) allowing the project to be deployed in multiple jurisdictions across California with simple over the counter permit review. The design also allows between 2 and 8 classrooms. These permanent buildings will include exposed timber panels on the interior and are expected to be cost competitive with temporary portable classrooms but will deliver a real and permanent classroom alternative. (In for Permitting)

Twin Towers, California

**Twin 12 Story Mass Timber Towers,** California
This California project, currently in design, includes two 12-story Cross Laminated Timber towers over a single level concrete podium plaza and garage level. As a timber building with a height that exceeds current code, the project has been accepted by the building official with early adoption of the 2021 International Building Code provisions for taller mass timber building construction. When completed this project is projected to be the tallest timber building in the United States. (In Design)

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Ohana Montage Health Facility, Monterey

**Ohana Montage Health Facility**, Monterey, CA
This three-story mass timber and steel hybrid health facility comes with residential care Areas, offices, and therapy support spaces. Mass timber is used for the primary framing, establishing a balance between structural function and beauty. Exposed interior timber finishing emulates the oak trees surrounding the facility on this 10-acre site while simultaneously, expansive glazing extends people's connections with the outdoors. Additionally, the optimization of multi-sensory integration and treatment of weather and seasonal changes helps with minimizing the building's carbon footprint. This project is a teaming effort together with the respected structural engineering firm Fast + Epp based out of Vancouver BC. (In Design)