







VanMechelen Architects







VanMechelen Architects is an architectural design firm with a practice in Berkeley, California. Our projects include a variety of alternative building materials and healthy practice designs, including solar oriented houses, schools and a Nature Center for the City of Berkeley.

Our work involves the integration of building systems and materials with the need to provide healthy and safe environments while respecting natural systems. This includes passive and active solar energy design, renewable and resource efficient building materials, and interior spaces that promote human health through daylighting, natural ventilation, and good indoor air quality. We have done work for several clients with chemical injury, and are especially sensitive to the need to reduce the toxic chemicals found in many building materials. Our projects also utilize alternative building materials, such as strawbale and earthen construction, as well as salvaged and sustainably harvested wood, and spray cellulose insulation, made from recycled newspaper.

Our work includes residential, commercial, and institutional projects.















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Architect

FIRM PROFILE

VanMechelen Architects is an architectural design firm with a practice in Berkeley, California. Our projects include a variety of alternative building materials and healthy practice designs, including solar oriented and strawbale houses, schools and a Nature Center for the City of Berkeley. We also

specialize in work for clients with chemical sensitivities, and are currently working on a 320 acre development for people with extreme environmental illness. We were also co-designer for a traveling display trailer of environmentally preferable building materials.

Our work involves the integration of building systems and materials with the need to provide healthy and safe environments while respecting natural systems. This includes creating buildings utilizing passive and active solar energy, renewable and resource efficient building materials, and interior spaces that promote human health through daylighting, natural ventilation, and good indoor air quality. We have done work for several clients with chemical injury, and are especially sensitive to the need to reduce the toxic chemicals found in many building materials. Our projects also utilize alternative building materials, such as strawbale and earthen construction, as well as salvaged and sustainably harvested wood, and spray cellulose insulation, made from recycled newspaper. Our work includes residential, commercial, and institutional projects.

We are the co-author of the Revised Master Specifications for Lawrence Berkeley National Laboratory, which incorporates a variety of resource-efficient and waste minimizing materials and techniques. Greg VanMechelen was also the Resource Efficient Building Consultant to the City of San Francisco, advising their Public Works Departments, including Architecture and Construction Management, on Green Building Practices.

Mr. VanMechelen serves on the National Board of Architects/ Designers/ Planners for Social Responsibility (ADPSR), and is Chair of their Northern California Chapter. He is a founding member of the California Straw Building Association (CASBA), on the Board of Berkeley EcoHouse, and also on the Advisory Board to the Sustainable Business Alliance: Berkeley (SBA:B), and Project Green Team. He is co-founder of the Berkeley Green Resource Center, a joint project of ADPSR and SBA:B.

He is also co-author of Building Less Waste, a manual for environmental building practices, and the ADPSR West Coast Architectural Resource Guide. He has written several articles, and presented Green Building Techniques to the General Services Administration and other Federal Agencies, and at numerous universities and conferences.

The design approach is another unique aspect of our work. To create a design that truly meets the needs, it is critical that the client actually be involved in the design process. This works best with a multiple step process of site analysis and synthesis, in which the client is an active participant in the work. The first step involves analysis to develop a more complete understanding of the physical, social, and spiritual characteristics of place. The design is then created through an interactive working process, with paper cut outs and clay, to develop the planning and the forms for the design. The client is active member in the design, and the Architect's role is somewhat akin to facilitator. In a group process, it is beneficial to all parties that the entire Community participates in this process, as it is in the collective atmosphere that all voices can be heard, and that the true qualities of the situation can be learned. Many do not understand the value of their own contribution, and important insights often come from the least outspoken among us.



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Greg VanMechelen

Architect

Greg VanMechelen is a licensed architect with more than 18 years of professional experience. He is also concerned with the environmental effects of architecture on both global and human health. He can provide design, construction and material choices that promote good use of limited natural resources, while creating non-toxic environments that increase user productivity and enjoyment. He is on the local and national boards of Architects/ Designers/ Planners for Social Responsibility, and is a co-author of their Architectural Resource Guide.

Professional Experience

1992-Present Greg VanMechelen, Architect, Berkeley, CA Stone Marraccini Patterson Architects (now the Smith Group), San Francisco, CA 1986-1992 Hoffman O'Brien Levatich & Taube, Ithaca, NY 1984-1986 **Partial Project Experience** Waldorf School of Mendocino County: Master Plan for 4 acre campus and design for new 2005 Eurythmy/ Music Hall, Classrooms, Early Childhood Education, and Administration. The Prospects at Pacifica: Master Plan and design for 34 new environmental residences on an 2005 11 acre site. Project features passive solar design, water reclaimation, extensive landscaping, ecological building materials, and site strategies to minimize the impact of the automobile. Meadowbrook Waldorf School, East Kingston, RI: Master Plan for 28 acre campus and design 2004 for new Grade School and Early Childhood Education Center. California Conservation Center, Berkeley, CA: Addition and remodel for Recycling Center 2003 Offices featuring a variety of salvaged, recycled, and renewable materials. Abrams Residence, Cloverdale, CA: New strawbale residence with passive and active solar 2002 design, radiant heating, natural and salvaged materials.

- California Vipassana Center, North Fork, CA: Meditation Pagoda and residential units using 2002 passive solar design, strawbale construction, and numerous natural materials.
- Shorebird Environmental Learning Center, Berkeley, CA: Education Center with strawbale 1999 construction, solar design, and alternative and recycled content materials.
- East Bay Waldorf School, El Sobrante, CA: Master Plan for Upper School, Gardening/ Craft 1997-1999 Structure with strawbale construction, earthen floors, and salvaged lumber.
- 1999-2000 Urban Ore EcoPark, Berkeley, CA: Industrial Retrofit and Remodel incorporating salvaged elements and environmentally-preferable materials.
- Knapp/Levin Residence, Redwood Valley, CA: Energy independent single family residence 1997-1999 incorporating strawbale construction and permaculture landscaping.
- Lawrence Berkeley National Laboratories, Berkeley, CA: Revised architectural specifications 1997-1998 to incorporate less polluting, resource and energy-efficient products.
- 1992-present ADPSR Architectural Resource Guide: Co-author of sourcebook for environmentally considered materials and techniques.
- 1993-present The Building Ecology Forum: co-organizer and speaker at monthly lecture series.

Related Public Speaking (partial listing)

KQED Forum, KPFA, KNBR, KFOG, KSAN radio; Bioneers, Sacramento Municipal Utility District, General Services Administration (Chicago and Washington DC), Sandia National Laboratory, Princeton Plasma Physics Laboratory, Argonne National Laboratory, Lawrence Berkeley National Laboratory, Fiber Futures Conference, San Francisco Institute of Architecture, Sierra Club, Natural Building Network, Solar Energy Exposition and Rally

Professional Organizations

ADPSR, NorCal and National Board, Co-chair, Education and Resources Committees; Berkeley EcoHouse, Co-chair; Berkeley Green Resource Center, Co-founder and Advisory Board Member

Professional Registration

Licensed to practice Architecture in California and New York.

Education

1984 Cornell University, Bachelor of Architecture

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View from southwest

Abrams Residence Cloverdale, CA

An Entry Trellis provides cover and separates the private space from the parking



This 2600 square foot house is located on a remote site above the Russian River. The house design is a transformation of traditional Mediterranean design and the regional barn vocabulary found in many nearby winery structures. With temperatures ranging from below freezing in winter to well over 100 in the summer, passive solar design was of primary importance.

The house features strawbale walls, high flyash concrete, hot water solar panels and building integrated photovoltaic panels.



Ceiling above kitchen



View towards stair from kitchen



South-facing clerestory windows ensure solar energy is absorbed by plaster walls



Bedroom with window seat

The major rooms are located to the south, while service elements - bathrooms, laundry - are on the north.

While the rooms are open, lofts over the living room and kitchen define the spaces and provide greater intimacy. The ceiling structure creates a secondary geometry that unites the spaces.

Upper floor

Ground floor

View towards kitchen



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View towards stair and entry



View from the North Side Approach



Strawbale Window Detail



View from the west



Southwest view

This 2800 square foot residence designed to be completely independent off the energy grid. The house also features Photovoltaic panels mounted on solar trackers, and composting toilets.

Strawbale walls and passive heating and cooling techniques eliminate the need for air conditioning in a climate where summer temperatures exceed 1000 F. Overhangs were carefully designed to maximize passive solar gain in the winter while blocking out the hot summer sun.

An extended service porch on the lower floor of the west facade prevents afternoon overheating; in contrast the three high windows in the stairway create a heated space that passively creates air currents to draw in cooling air in the evening.

High clerestory windows on the lower floor bring daylight farther into the spaces and allow the low-angle Winter sun to reach the thermal mass on the walls and concrete stairs.

Composting toilets reduce site water usage and provide valuable nutrients for land damaged by historic cattle grazing.



Knapp-Levin Residence, Redwood Valley, CA

Composting toilet collection chamber in utility space



View from kitchen towards living room









The 1600 square foot strawbale residence has multiple levels that step neatly onto its sloping site and separate program functions. Although compact, the house feels larger with a dynamic arrangement of rooms. Expansive views are captured through large south facing windows which also bring in solar warming.

On the ground floor the living room, dining room and kitchen center on an open buffet adjoining the fireplace and refrigerator enclosure, which also provide thermal mass for passive heating and cooling. An exposed round pole provides a vertical design element at the edge of this centerpiece.

The interiors are open and brightly lit, with softer strawbale walls contrasting with sharp, linear design elements.

Mines Residence, Wilseyville, CA













This goals for this addition and major remodel to a 90 year old house were to improve the energy performance and bring natural daylight into a dark interior with a large house to the immediate south. Clerestory windows and dramatic forms bring natural light into the interior spaces from a variety of directions and angles.

The addition is easily distinguished with strong rectilinear forms and bands of light.

In addition to the passive solar heating, environmental features include a 4 KW photovoltaic system, salvaged wood flooring, and FSC-certified wood.





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Robertson-Moe Residence, Berkeley CA



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Entry/ Northeast View



West view. The addition is to the left



The addition builds on the dynamic forms of the existing house

The Clients wanted to add a second story Office/ Studio and Deck Space, while preserving the design character of a house built in the 1920's and added onto in the 1970's.

A dynamic approach to massing enhanced the stepping design of the house, screening views from neighboring houses, and working within zoning setbacks. Windows and skylights maximize natural light in a dense woods, while the deck projects and becomes part of the tree canopy.

The site is surrounded by dense redwood trees, and maximizing natural light was critical. Each room has windows facing in at least two directions. The Studio has windows on all four walls, as well as skylights.

The house had previously been heavily with copper napthanate in the crawl space, which was contaminating the air in the interior. The main floor was rebuilt to seal the toxic chemicals from the living spaces.

Natural materials are used throughout, including bamboo floors and non-toxic paints.



Studio deck built into the Redwoods



View from southeast

Greenleaf Residence, Larkspur, CA



Northwest View www.vanmechelenarchitects.com



Studio interior has extensive natural light from a variety of sources.



Dining Room opens to Kitchen and Living Room



Skylights and high windows in tub bring light while preserving privacy



Detail showing encasement of toxic crawl space



Connecting interior rooms expands the space and increases natural light.



A large kitchen island creates a new social center. www.vanmechelenarchitects.com





West Elevation



View from Southwest



View from Entry Approach

Sandford-Marshall Residence El Sobrante, CA

1750 square foot strawbale residence on rural site.

With the very steep hill slope, the private spaces are placed on the lower level, allowing larger volumes and better passive heating for the Living, Dining, and Kitchen.

The roof forms dominate from above, and slope to match the hill. The roof provides space for solar hot water and photovoltaic panels while maximizing water harvesting. From below the house takes a more organic form, with dynamic relations between projecting bays and clerestory windows.

The interior features earth plasters, and salvaged cabinetry and doors.



Lower Floor Plan

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Wolf Residence Castro Valley, CA

Remodel and second story addition to 1950's house.

The original house was dark and had limited opportunities for passive solar heating. Clerestory windows provide solar gain to all interior spaces; their dynamic shapes form enclosures for rooftop decks. The forms create a continuity between interior and exterior spaces, and there is a sense of mystery in the continuous lines.

The roof also provides space for a large photovoltaic array. The goal is to make a zero energy house.







View from street



View from back yard



The Clients were looking for Anthroposophic Design for their new residence on a very hot, dry, flat, and barren site approximately 50 miles west of Phoenix.

The design utilizes an open courtyard to unite the spaces and protect against the harsh elements. The feeling of oasis is further enhanced by a small pool, which also provides evaporative cooling for the house. Large overhangs provide shelter and a design theme connecting the house to the land.

Interior spaces have dynamic, nonrectillinear shapes, with the Kitchen at the heart.

Deresh Residence, Arlington, AZ

joint project with Christopher Day, architect



View of the Model www.vanmechelenarchitects.com

The climate extremes were the basis for this 2800 sf Residence in the Gila River Valley, west of Phoenix Arizona. Both Ancient and Modern strategies were incorporated into a design based on Anthropsophic principles

Other climate systems include cooling towers, natural ventilation, stratification, ground-tied geothermal exchange, and swamp coolers.

Natural materials, including strawbale, cob, adobe, and earth mounding temper the extreme hot and cold, while overhangs and trellises protect the interior from the harsh summer sun, while clerestory windows allow the warming winter sun.



Entry Sketch



Northeast Elevation



Southwest Elevation



South Elevation



Cross Section at Pool



Cross Section showing cooling systems











The original house, built in the 1920's, is surprisingly modern and strikingly similar to a house designed by the German philosopher Ludwig Wittegenstein for his sister.

With this inspiration, the 3 story addition draws its influence from the mid-life paintings of Hans Hoffman, with dynamic planar volumes that create overlapping spaces and forms.

Richardson-Lee Residence, Berkeley, CA



New Residence, Berkeley, CA

Rear Yard Residence on dense urban lot. Careful planning permits 5 bedrooms, 4 baths, and roof deck while permitting passive solar gain through almost all rooms. Roof is shaped for Photovoltaic panels.











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Segelcke Residence, Half Moon Bay, CA



Deck View

1300 square foot complete remodel of derelict residence on ocean front lot.

The design has both a "nautical" feel desired by the Client and the County, while incorporating a variety of salvaged and environmental materials.

Stepping forms and a sleek profile evoke images of sailing ships. Phase II work will provide a sail-shaped windscreen. The south side is almost entirely glass, to take advantage of the view and solar heating.

The interior features salvaged maple flooring and salvaged kitchen cabinets and bathing fixtures. Fiberglass windows were selected for their durability with the harsh salt air.



View from Southwest





The Prospects, Pacifica, CA

New ecological village on 11 acres of former quarry site near the Pacific Coast.

The project features 34 new cottages, each 1200-1500 square feet, that are models of environmentally responsible development. Each residence will be a "zero energy home", where all energy needs are met by renewable sources, including photovoltaic panels, passive solar design, and hot water solar heating.

The site will be developed to minimize disruption; the structures will cover 2 acres, and the remaining land will be restored with native vegetation and have trails, community gardens, and other recreational spaces. The site is also planned to minimize automobile traffic; a short driveway leads to a buried parking garage, hidden below dwellings. Residents can carry heavy loads in either electric or manual carts.

The project will also capture and utilize all on-site rainwater. A series of ponds and cisterns will store the winter rainwater for use in the landscape. PV powered pumps will recirculate the water to the highest pond, where it will cascade down a series of streams and waterfalls to an amphitheater along the main pedestrian promenade.

The roof of the parking garage will be developed as a series of small courtyards and plazas to promote interaction among the residents. The main plaza is centrally located and has a commanding view of the Pacific Ocean. A recirculating water course, fed by captured rainwater, courses from a pond adjoining a picnic area on the hill above, past gardens and play fields, through garage roof courts and plazas, before cascading down a waterfall to the lower level.





Below the main plaza is a walkable promenade, with small alcoves and decks for sitting and relaxing, and an amphitheater for seasonal cultural events.

Although the project is densely populated, the perimeter is surrounded by low cottages which give a small scale appearance to the development.





Escalante Master Plan, Escalante, UT

A new development for individuals with severe environmental illness and multiple chemical sensitivity (EI/MCS). The design is based on providing a variety of connected communities with areas separate by the degree and type of illness or sensitivity. These communities stretch east-west, separated by deep creek washes, and are also oriented to minimize cross-pollution by the prevailing winds.

Vehicle access is limited to areas where residents can tolerate both the noise and pollution. More severely afflicted residents are located further from the entry and common areas. Private parcels are provided as well as camping for those who cannot tolerate interior environments.





Plan and cross section



View from the east. The storage room is to the right.

Material durability and low maintenance were critical factor for this 400 square foot toilet and storage structure in a public park. At the same time, the clients wanted to make showcase of recycled and environmentally considered materials, and to use a design and materials that could be erected by the local community.

The form provides natural light to all the interior spaces. A central bearing wall separates the toilets from the storage room, and simplifies building the structure. The walls are rammed earth, and the roof is standing seam metal with integrated photovoltaic panels to power the lights.

Glass windows were avoided due to security concerns. Openings to the toilet areas are high to ensure privacy, while large openings in the sink area will have security bars fabricated by a local artist from scrap metal. In addition to low-flow toilets, there will be a waterless urinal which saves water and has less maintenance..



Bella Vista Park Rest Rooms, Oakland, CA

View from southeast. The black strips in the roof are building-integrated photovoltaic panels.







Shorebird Park Nature Center, Berkeley, CA

The first municipally-owned strawbale structure in California, Shorebird Park Nature Center provides education about the San Francisco Bay environment. The City wanted the building to be a showcase of environmental design and technologies.

In addition to the super-insulating strawbale walls, the building features passive solar design, a building-integrated grid-tied photovoltaic system and solar hot water heating. All wood for the building is from FSC-certified sustainable forests. The concrete uses 50% Flyash, a waste material from coal combustion. Interior walls are made of compressed straw, and ceiling panels are straw particleboard. All doors were salvaged and retrofitted with energy efficient glazing.



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A large covered outdoor classroom provides additional teaching space. A perimeter gravel bag wall provides durable seating for children and enclosure to the exterior space. Large double doors open the interior space to the exterior for larger events. A trellis on the south side provides shading from the sun.

The central tower is the unifying mass in the composition, and provides passive heating through a large, south-facing window, and passive cooling with high, operable windows.

Building-integrated photovoltaics were chosen for their durability and resistance to potential damage in a public park.











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The interior space is light and airy, with an exposed structure and wheat straw ceiling panels with wood battens. A fan in the tower assists with moving the warm air - evacuating in the summer or recirculating in the winter.

The utility room is available for public viewing, to show the components of the radiant floor heating, and the inverter and meter for the photovoltaic electric system.

The window sills are made from locally-sourced recycled glass mixed with a mineral-cement binder.

The floor is made of natural linoleum cut by the owner into the shape of the San Francisco Bay.









Straw bales were chosen as the most appropriate material for an environmental showcase building. A waste product from agriculture, straw is typically burned. Rice straw is very abundant in Northern California, and is particularly resistant to fire, rot, and insects. In addition, the bale wall has a very high insulating value, approximately three times the insulation required in this climate.

While load-bearing strawbale walls are used in some parts of the country, most California structures use a wood frame with strawbale infill. The strawbale walls were raised over a weekend with volunteers from the community. The bales are stacked in a running bond, trimmed with a bale saw or electric weed trimmer, and are encased in a metal mesh before plastering.

Metal diagonal straps provide resistance to forces from wind and earthquakes. More recent research has shown that the bales, with a heavy gauge mesh and plaster, provide sufficient strength and the metal bracing can often be eliminated.



Gardening/ Woodworking Classroom East Bay Waldorf School El Sobrante, CA





The first element of a long term Master Plan, the Gardening Classroom reflects Waldorf School values and their unique teaching method.

The Building is a series of gestural movements, going beyond the static nature of most structures, to better support the learning within.

Major materials include strawbale walls, wood from salvaged sources, lime plasters, and a floor made from local soil, sand, psyllium husks, and hemp fibers, sealed with natural linoleum.





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East Bay Waldorf School Remodel El Sobrante, CA

joint venture with Christopher Day, architect, and

Davidson + Seals Architects

An intensive Workshop established design patterns and ideas for remodeling an existing derelict school building, determined the site and created an early study model for a future Upper School.

For the existing building, we created new circulation patterns, and sketched methods for enhancing natural light while softening the harsh rectilinear forms of the original design.



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The Central Courtyard builds community, while an engaging sequence of steps and platforms, enhanced with a running watercourse with flow forms, connects the Upper and Lower School on a sloping site.



The organic forms of the buildings were designed to blend into the surrounding landscape while maximizing natural light, and providing passive heating, cooling and ventilation.



The East Bay Waldorf School sits on an 11 acre hillside site, with an existing 1950's era public school, adjoining a regional park. We conducted several intensive Workshops with the School Community to design the Upper School, shared Library, Public Auditorium, Music Hall and Eurythmy Room, as well as administrative functions.



consensus design workshop

view approaching Upper School

Upper School, East Bay Waldorf School, El Sobrante, CA

joint venture with Christopher Day, architect, and Davidson + Seals Architects



clay massing model from 2 day workshop



California Conservation Center, Berkeley, CA



The project is a 1200 square foot addition and 600 square foot remodel for the offices of the Berkeley Recycling Facility. The design includes a showcase for a variety of recycled and environmentally considered materials, while dynamic forms maximize interior daylighting. Products include salvaged wood, flyash concrete, recycled metal shingles, insulation from recycled newspaper, plastic lumber, and insulating blocks made from recycled polystyrene.

The Building forms reflect the dynamism of the recycling process. The Project will also give something back to the Community with exterior shelves for Public Art feature to display locally made artwork from recycled materials on the busy, industrial Gilman Street.

The Canopy at the Buy-Back Window is made from salvaged automobile hoods.





Counter -





Meadowbrook Waldorf School East Kingston, Rhode Island

joint venture with Christopher Day, architect





The MeadowbrookWaldorf School sits on a 28 acre wooded site. We conducted several intensive Workshops with the School Community to create a Master Plan, design the Grade School, Upper School, Early Childhood Education, Public Auditorium, and Eurythmy Room, as well as administrative functions.

We began our 2 week process by meeting with 25 members of the School Community to learn the nature of the site and establish guiding principles to develop the site. We took a silent walk of the property, followed by explorations into the site features, history and biography, gestures and moods, and finally statement of the "genius loci", or inherent nature of the site.

The design exploration was followed by intensive design workshops to establish the characteristics of development, including flow patterns, spatial relationships, and specific siting.

This was followed by specific designs for the entire site, and schematic plans, sections, and elevations for the Early Childhood Education and the Grade School.







Cesar E. Chavez Education Center Oakland, California

VBN Architects, Prime Architects VanMechelen Architects, Environmental consultant

The vision for the new Fruitvale/San Antonio Elementary School is a state-of-the-art, sustainable, student centered school with programs, facilities, turf fields, hard court, and play apparatus areas available to the community after school hours. The program is expected to include 29 classrooms, a library media center with computer lab available for community use/ education, administrative areas, a large multipurpose room with adjacent music room and community, as well as school kitchen and an outdoor amphitheater. 45-60 parking spaces, and an ample safe drop-off zone will be accommodated. This new school includes a separate early childhood education (ECE) facility for 68 children accessed off 29th Avenue. The intention is to maximize community use and create an enriching cultural environment for the "whole child," emphasizing early childhood education, day care and extended care aspects, as well as adult education, culminating in a new symbolic "heart" for the neighborhood.



California Vipassana Center NorthFork, California

(Joint Venture with Siegel & Strain Architects)



Facilities for this remote Meditation Center include a circular Pagoda, separate Men's and Women's Housing, a small Interview Room/ Dhamma Hall, and Bath Block.

The Architectural Program included using as many natural materials as possible, and incorporation of passive heating and cooling systems. The Pagoda uses strawbale construction, while the housing minimizes wood use through optimum framing techniques.







Design of a 7.200 square foot micro-brewery and restaurant in Senta Rosa, California.







June 21, 3pm

Abrams Residence Cloverdale CA

Technical Tools

Solar studies at the Pacific Energy Center's Heliodon can help determine window placement, overhangs, and thermal mass locations to maximize passive solar heating and cooling.

The interior space is completely protected from direct sun during the hot summer afternoons (above and left), while there is maximum penetration of sunlight throughout the winter, especially in the cold mornings (below and right).

In addition to confirming the effectiveness of the design, the Heliodon verified that one living room wall would receive minimal direct light and be a safe place for placing a large painting.



site photo December 21, 9am



December 21, 9am



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