Jennifer Rennick, Architectural Design and Energy Consulting

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Professional registration

California Licensed Architect, C26577

Certified Energy Analyst, CEA, R05-06-705 and NR05-06-763

Professional architectural practice

Energy Consultant . Consultant to architectural design firms, owners and builders. Architectural practice specializing in passive solar design, whole building energy use, and sustainability master planning. Energy use optimization for over 40 residential and commercial projects.

Juvenile Hall Replacement Project, San Francisco Juvenile Probation Department, San Francisco, CA. Architects: The Design Partnership and Del Campo Maru, San Francisco, CA. Project Description: Energy use study for a 1500+ sq. ft. two-level lobby space as part of the building alteration project. The unique aspect of this project was the limited availability of air-conditioning. This study analyzed:

Multiple glass/window options, each with different thermal comfort and cost implications.

Interior temperatures and thermal comfort.

Night ventilation cooling.

Insulation and thermal mass levels.

Window shading options and electric lighting controls.

Grossmont Hospital Addition, San Diego, CA. Architects: The Design Partnership, San Francisco, CA. Project Description: Energy use study for the five story addition of patient recovery rooms. This study analyzed:

Multiple glass/window options, each with different energy use and cost implications.

Interior temperatures and thermal comfort.

Effectiveness of exterior sun shading devices, potential to reduce the cooling loads by 50- 30% depending on the type of glass used in the windows.

San Luis Obispo Botanical Garden, San Luis Obispo, CA. Architect: Habitat Studio and San Luis Obispo Sustainability Group. San Luis Obispo, CA. Project Description: New office and educational facilities showcase the gardens, ecological literacy, education and stewardship of the natural and built environment. Under Construction. Under Construction. Buildings feature:

Passive solar heating.

Night ventilation cooling.

Strawbale construction.

Natural daylighting.

Domaine Alfred Winery, Pults and Assoc. Architects, San Luis Obispo, CA. Building type: office, wine tasting and retail. Construction to begin 2002.

73% reduction in heating loads.

Utilizes natural and mechanical ventilation.

65% reduction in air-conditioning loads.

Optimized natural daylighting.

Camp Ocean Pines Arts Camp, Cambria, CA. Architect: San Luis Obispo Sustainability Group, Santa Margarita, CA. Camp Ocean Pines is a resident camp and outdoor

education center dedicated to the fine and performing arts. Project description: feasibility study, master planning and architectural design for cabins, class rooms, bath houses, walking trails. Under construction.

Passive solar heated, straw bale cabins (Three cabins completed 2000.)

On site timber use and forest management plan.

Grey water system.

Composting toilets.

Passive solar heated straw bale caretaker's residence.

Trust for Hidden Villa, Education Center, Los Altos, CA. Architect: San Luis Obispo Sustainability Group, Santa Margarita, CA. Hidden Villa is the site of a working organic demonstration farm; community supported agriculture program, environmental and outdoor education center, youth hostel and hiking trails. Project description: 3300 sq. ft. building for naturalist and administrators. Building type: office and educational. Completed 2000.

Passive solar heated and night-vent cooled.

85% reduction in heating loads.

100% reduction in air-conditioning loads.

Optimized natural daylighting. 70% reduction of electrical light energy use.

Green materials specifications.

Straw bale construction

Rain water roof catchment system.

Solar electric, photovoltaic grid inter-tie.

Mary Graham Children's Shelter, San Joaquin County, French Camp, CA. Architect: The Design Partnership, San Francisco. Building types: office, educational and temporary residential. French Camp, outside of Modesto, has very warm summers, often in the 100's deg. F range and cool winters. Construction completed 2003.

Utilizes natural and mechanical night ventilation cooling.

30-40% reduction in air-conditioning loads.

50% reduction in heating loads.

BPM Radiant Floor Heating Tenant-Improvement Project, San Francisco, CA. Building type: office. Architect: Douglas Burnham / Architecture, Berkeley. Completed. 2002.

Utilizes natural and mechanical ventilation cooling.

Natural daylighting through out space.

100% reduction in air-conditioning loads.

50% reduction in heating loads.

RRM Tenant Improvement Project, RRM Architecture and Planning, San Luis Obispo, CA. Architect: RRM Architecture and Planning. Building: 30,000 sq. ft. office. Completed 2001.

Utilizes natural and mechanical ventilation.

40% reduction in air-conditioning loads.

Optimized natural daylighting.

50% reduction in electrical light energy use. Occupancy and photo sensing controls used.

Annual energy cost savings predicted to be $ 6,500/yr.

John Deer Dealership, Wilson's Heavy Equipment, Plattsburg, NY. Tenant Improvement / Owner Builder. Building type: retail and workshop / industrial.

Optimized electrical lighting.

40% reduction of electrical light energy use with improved retail sales and worker area lighting.

Increased visual acuity and elimination of video terminal glare.

Client reported reduced employee eyestrain and increased comfort.

Kardel Law Tenant Improvement, San Luis Obispo, CA. Remodel for Peter M. Kardel Councilor at Law. Tenant Improvement / Owner Builder. Building type: office.

Increased natural daylight.

Optimized window glazing type.

30% reduction of electrical light energy use.

25% reduction in air-conditioning loads

Client reported the elimination of video terminal glare screens and increased employee productivity.

Teaching experience

University Lecturer. *California Polytechnic State University*, San Luis Obispo, Architecture Department, Environmental Controls Systems, ECS. Teach building energy use, mechanical and electrical systems and daylighting strategies. 1996-2002.

Guest Lecturer. *Cal Poly Extended Education Permaculture Course*, San Luis Obispo, 2001. Instructor: Larry Santoyo. Discussed sustainable architecture: energy, water and material use.

Guest Lecturer and Workshop Leader. *Permaculture Institute*, Woodside, CA, 1999. Slide show highlighting straw bale construction and passive solar architecture. Lead students through a one-day workshop on the basics of solar geometry and site selection.

Professional presentations and publications

Co-author. Chapter: *Natural Conditioning of Buildings*. Authors: K. Haggard, P. Cooper and J. Rennick. Book Title: Alternative Construction, Contemporary Natural Buildings Methods, editors Lynn Elizabeth and Cassandra Adams, Wiley, 2000.

Speaker. *American Solar Energy Society*, 24th and 25th National Passive Solar Conferences, Forums: Defining Sustainability, 1999 and 2000.

Speaker and author. *American Solar Energy Society*, 23rd National Passive Solar Conference, Building Components Division 1998. Title: Comparative Study of Passive Solar Building Performance and Building Materials for Six Climate Zones. Author: J. Rennick. Paper published in Conference Proceedings.

Speaker. *American Solar Energy Society*, National Passive Solar Conference, 1989**.** Forum topic: Sustainability Performance Standards.

Speaker and author: *American Solar Energy Society*, National Passive Solar Conferences. Building Components Division, 1996 and 1997. Topics: Strawbale Construction and Passive Solar. Papers published in Conference Proceedings.

Continuing education

Sustainable Building Industry Council and Collaborative for High Performance Schools. Participant of workshop for architects, engineers and school facilities managers, Long Beach, CA, 2000. Seminar topics included daylighting and fenestration, electrical lighting and controls, indoor air quality, material selection and surfaces, HVAC systems and natural ventilation, and performance ratings. Sponsored by Southern California Edison, the California Energy Commission, PG&E, U.S. DOE, and U.S. EPA.

Society of Building Science Educators, SBSE. Taos, NM, 1998. Three day training Session. Seminar topics included passive solar architecture, and building thermal performance.

Permaculture Institute. Participant of week long lecture series and hands-on design workshop, Halfmoon Bay, CA, 1997. Emphasis of design incorporates the natural environment, agriculture, gardens, local watersheds, waste and water treatment, and energy production.

SBSE. Santa Barbara, CA, 1997. Three day training Session. Seminar topics included building thermal performance, electric lighting and fixture design, and solar sun geometry and shading.

SBSE. University of California Berkeley, 1995. Selected participant of summer Training Session, Vital Signs Curriculum Materials Project. Sponsored by The Energy Foundation, PG&E, and the US Department of Energy. Emphasis on field measurement protocols, energy use and computer thermal performance, HVAC systems, interior illuminance and daylighting.

Professional membership

American Solar Energy Society, ASES. Technical Review Committee for Conference Proceedings, 1998 and 2000. Chair of Sustainability Division, 1999 and 2001. Member since 1989.

Society of Building Science Educators. Member since 1995.

California Association of Energy Consultants, CABEC. Member since 2006.

Professional activities

Board of Director. *Deep Ecology Center,* Terra Foundation. Non-profit organization dedicated to community education about ecology, bio-dynamic gardening, life skills, and our spiritual connection to them. 2001-2002

Member Ethics and Membership Concerns Committee. *American Solar Energy Society*, ASES 2001-2003

Symposium Organizer. Sponsored by *Sustainability Building Council* and *Communities United for Sustainable Progress*, for Earth Day 2000, San Luis Obispo, CA. Thesis: Green Builders Program for SLO County. Keynote speaker Doug Seiter of Austin Green Builders Program and Colorado State Green Builders Program.

Chair of Sustainability Division. *American Solar Energy Society*, ASES 1999-2002.

Vice-Chair of Sustainability Division. *ASES* 1998-99.

Member Technical Review Committee. *ASES*, 25th National Passive Solar Conference 2000 and *ASES*, 23rd National Passive Solar Conference 1998. Abstract review, paper selection, and conference session organization.

Forum Organizer. *ASES*, 25th National Passive Solar Conference, Forum: Defining Sustainability, 2000. Thesis: Sustainability Defined through Example. Five speakers,

each present a subtopic of sustainability.

Board of Director. *Communities United for Sustainable Progress*, CUSP. Non-profit organization dedicated to community education about sustainability and the natural, political, economic, and social environment. 1999.

Forum Organizer. *American Solar Energy Society*, 24th National Passive Solar Conference, Forum: Defining Sustainability, 1999. Thesis: Sustainability Defined through Example. Five speakers, each present a subtopic of sustainability at differing scales while tying their topic back to the larger whole.

Awards

Charles A. Mainini Memorial Award. Obispo Beautiful Association. 2001. Kardel Residence, single family remodel and addition, San Luis Obispo, CA.

Best Paper. American Solar Energy Society. Member of five-person award winning team. Award given for presentations at the 1989 ASES Conference. Topic: Sustainability Through Theory, Education, Architectural Practice, Politics and Policy, and Guidelines.

Winning Entry. International Sustainable Communities Competition, American Institute of Architects. Member of award winning team, 1994. Title: Los Osos, a Sustainable Community within a Sustainable Watershed. Published in the magazine *Places*.