



National Sustainable Buildings Workshop, Ann Arbor, October 8-9 1999

Case studies and presenters

Case Study 2: **Environmental Technology Center (ETC)**, Sonoma State University, Sonoma, CA
Presenter: **George Beeler**

Location: 1801 E. Cotati Avenue (707) 664-2306 (p)
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Summary of Project (from <http://www.sonoma.edu/ensp/etc/>)

What is it?

- A model of sustainable building techniques and technologies focusing on fundamental human needs of energy and food production. The NSF grant-winning ETC will include energy and water-efficient landscaping, "smart building" control technologies, environmentally-sensitive building materials, passive solar heating and cooling, advanced window systems and daylighting, solar electric technology, and digital communication systems.
- A source of unbiased technical information and a place for a unique applied educational experience.
- A model to the entire CSU system, providing in-house consultative services and a model of public sector environmental responsibility for California's state universities and colleges.

Design Criteria

- Energy use reduction goal of 80% below the levels allowed by CA Title 24
- Passive solar heating and passive cooling as the primary space conditioning systems (back-up with radiant active solar)
- CO2 sensors for ventilation control
- 4" concrete slab on insulated floor panels, 8" concrete masonry partition, 2 ½" concrete masonry unit veneer, rammed earth interior partitions
- Solar hot water for domestic water, and as pre-heat for radiant heating
- Occupancy sensors and dimming for lighting
- South windows, clerestory windows and skylights (sunlight reflected and diffused by light shelves, fabric banners, light tubes, fresnel lens, prismatic glazing)
- Exterior operable venetian blinds
- High performance windows with heat mirror technology
- 4 kW photovoltaic system planned
- Material choices based on comprehensive list of environmental and social criteria
- Rainwater harvest
- Waterless urinals

Structure and utilities planned to be flexible & easily modified in the future; this also helps the building have a longer useful life. Additional Sustainability issues are that the structure shall be designed to exceed code minimums for seismic & wind loads and fire & vermin resistance. Post and beam construction will allow exterior walls to be changed in the future. Display area will have ceiling grid to accommodate moveable partitions for display flexibility. Glass ports will show construction details.



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Bio

George A. Beeler, Architect with AIM Associates: Architecture and Interactive Management

- Since 1972 designer and architect in New York and California

Georges experiences range from technically demanding pharmaceutical laboratories, NSF Environmental Technology Center, addition to an historic one-room school, aesthetically demanding grand homes, socially responsible affordable homes to offices where productivity is enhanced through healthy indoor environments. His goal for every project is to create a responsive and enjoyable man-made environment that reflects what is unique about the client, the users of the building and the site in a manner that is healthy for the occupants and ecologically sustainable.