

Architectural Resources

A Pacific Energy Center Factsheet



Introduction

The Pacific Energy Center assists designers in maximizing energy efficiency and occupant comfort for buildings in PG&E's service territory. The Center houses a wide array of design tools, resource information, technology exhibits, and technical expertise to help building designers and owners make smart energy choices. View the Pacific Energy Center as an addition to your collection of technical resources.

The facilities and educational programs are available to building and design professionals. Most resources are available, without an appointment, anytime during the Center's business hours. Some facilities and the technical consultants are available by appointment.

The Center welcomes individual or group visits and is happy to consider hosting an architectural group for a specialized event. For further information or to arrange an appointment, please call (415) 972-1841.

Energy Resource Center

This reference library (no materials checkout) contains a superior collection of printed and video information. The Resource Center serves as a central gathering place for both common and hard-to-find literature on building energy and related topics. CD-ROM databases are available for literature searching. Marlene Vogelsang, the Energy Center's research specialist, is available to assist with searches. Her direct phone number is (415) 973-7206. The Resource Center is open Monday - Friday, 9 a.m. - 5 p.m., or by appointment.

The collection includes:

- Books and general references
- Building and fire codes
- Conference proceedings and research papers
- EPRI and CEC documents
- Manufacturers' catalogs
- Pacific Energy Center Fact Sheets
- PG&E rebate brochures and other literature
- Product & topical videotapes
- Professional & trade journals
- Specialized publications pertaining to energy efficiency
- Sweet's Catalog
- Thomas Register
- Clean Air Transportation

Exhibits

Permanent and rotating exhibits showcase leading technologies and design strategies for energy efficiency. Some of these are in full-scale demonstration format, including many design elements of the building itself. The ground floor **"Challenge 2000" House** displays practical solutions to residential energy efficiency addressing windows, lighting, insulation and appliances. The **Lighting Classroom** (available by appointment only) exhibits a wide range of lighting strategies and technologies. Several glazing, window, and shading displays on the top floor address technical advancements in these areas of architectural design. Product samples, technical demonstrations, and case study exhibits illustrate the options for energy efficiency in the building envelope. The **HVAC Classroom** demonstrates various mechanical system elements, and is available as a mock-up space. Exhibits throughout the Center change periodically.

Heliodon and Model Shop

This tool enables quick and easy study of sun and shadow effects. An adjustable table and a "sun" lamp allow designers to simulate sun and shadow patterns with a scale model. This powerful tool is useful for designing shading devices and predicting sun patterns in courtyards. The Center also provides video and still photography assistance, as well as digital image capture. A particularly effective method to document a heliodon session is through time lapse video, where the sun and shadow patterns on the building over an entire year are captured in just a few minutes on tape. Heliodon and daylight model clients have access to the fully equipped model shop. Center staff can assist with building the models. Clients must supply their own major materials. For a heliodon appointment or to use the model shop, please contact Ryan Stroupe by phone at (415) 973-7257 or by email at R2S2.pge.com.

Daylight Models

A unique wall mounting system for scale models permits assessment of the qualitative aspects of an indoor environment as affected by choices in glazing, facade elements, and interior finishes. Models designed for the framing system are mounted against a clear window and are viewed from the inside. The Center can assist with photography and a time lapse video of a study session. Contact Ryan Stroupe by phone at (415) 973-7257 or by email at R2S2.pge.com to arrange a session in the Daylight Lab.

Daylight Photometry

When accurate quantitative assessment of daylight contribution to a space is required, the staff can assist in the measurement of interior light levels in a scale model or a full scale space. In scale model studies, a carefully built model is instrumented with light sensors and measured outdoors, either on the roof of the Center or at the project site. Call the Daylighting Lab at (415) 973-7257 for more information.

Software Tools

A Simulation Workstation including the following software tools is being redesigned and will be available by the end of the year 2000.

- AAMASKY, a spreadsheet-format package for skylight design with daylighting analysis
- Daylighting analysis
- Electric lighting analysis
- Life Cycle Cost analysis
- ResFen, a residential window cost effectiveness calculating tool
- Title 24 compliance programs
- Whole building energy simulation, including HVAC loads & system calculations
- Window 4.0, the industry standard for calculating total window energy properties

Contact Marlene Vogelsang at (415) 973-7206 or mxv6@pge.com for more information.

Cost Effectiveness Analysis

The smartest design choices for energy efficiency occasionally have higher first costs but generally much lower life cycle costs than most conventional choices. The Center assists in analyzing your design options in order to make the most cost effective decisions.

Consulting

Technical consultants are available on a limited basis to work directly with your design team to help identify energy efficiency opportunities. To arrange an appointment, please contact Bill Burke by phone at (415) 973-9951 or by email at WXB0@pge.com.

Tool Lending Library

The Energy Center's Tool Lending Library can provide you with building measurement tools for monitoring the energy-saving potential of your facility or home. For tool requests, please contact Christine Condon by phone at (415) 973-9945 or by email at clc7@pge.com.

Continuing Education

The Energy Center offers seminars, workshops, and lectures covering a wide-range of energy technologies and design strategies. Educational events range from back-to-the-basics refresher courses to technical presentations of emerging technologies and design strategies. Guided tours of the exhibits are given weekly. The Center can also arrange for a customized educational event.

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