The lighting in this space is truly unique for a retail showroom application. The space utilizes predominately fluorescent and metal halide lighting. These light sources significantly reduce the watts per square foot energy usage for lighting. In addition, the lighting is on an astronomical timer that significantly drops lighting levels after hours. A PV cell monitors the amount of daylight coming in the windows and adjusts electrical lighting accordingly. Occupancy sensors for lighting are located in all spaces that are not regularly occupied. There are a variety of lighting levels in the office space, including natural daylight, ceiling fluorescents, and desk task lighting, to allow designers previewing projects for clients to simulate a number of real-life lighting scenarios.

The lighting system design resulted in a 41% improvement over the applicable energy standards (ASHRAE Standard 90.1-1999). This translates to a 1.15 W/ft^2 actual lighting power density versus a 1.9 W/ft^2 allowance.

Additional Features

Interface provided carbon dioxide monitoring for the entire first floor of the existing base building. The entire west-facing curtain wall, shaded with exterior canopies, gives access to pedestrian-level daylight and views. In addition, the office area contains a low wall, a movable partition system that does not obscure views.

The following how-to tips were implemented in this project: QA1, QA3, QA6, QA8A, QA10, QA12, QA16, EN26, DL1, DL2, DL6, DL7, DL9, EL1, EL2, EL3, EL5, EL9, EL10, EL13, EL14, EL18, EL19, EL21, EL23, EL25, HV7, HV22, WH1, WH2, WH3, WH5, and WH6.

INTERFACE SHOWROOM	
Processes for Achieving Energy Savings	**Description of Project Elements**
Lighting	
Window Design for Daylight	Exterior canopies.
Daylighting	A photocell located along the exterior window wall reads available daylight and, in conjunction with the daylight interface module, adjusts the interior lighting when adequate daylight is available. This helps balance the lighting as well as provide energy savings through daylight harvesting.
Electric Lighting Design	Most lighting fixtures are fluorescent or metal halide to maximize efficiency. Fluorescent lamping is a combination of T-5HO (high output), T-8, and compact fluorescent. The compact fluorescent lamps were used for downlights, as well as for decorative wall sconces and table lamps. Linear fluorescent (T-5HO and T-8) were used for architectural cove lighting, illumination of "super-graphics," and special large-scale architectural "lamp shade" features. With the exception of office work areas and storage rooms, the fluorescent fixtures are all dimmable. Low-wattage CMH lamping was used for accent and display lighting. The lighting design and controls incorporate multiple control zones and various color temperature lamps to simulate conditions of residential (3000 K), commercial/office (3500 K), and natural lighted environments (4100 K).
HVAC	
Controls	CO_2 sensors for ventilation control.
Service Water Heating	
Tenant improvement of new space	15 gal, 2.5 kW electric storage water heater, ENERGY STAR® rated.

CLIMATE ZONE 3—PETCO ENERGY SHOWCASE STORE

LAKE ELSINORE, CALIFORNIA

The PETCO Energy Showcase Store is located in Lake Elsinore, California, in climate zone 3. It consists of a 17,500 ft^2 retail pet supply store located in a strip mall. The building was designed to showcase an extensively daylit big-box retail building.

Energy-saving features include retail floor lighting designed to 1.2 W/ft^2, tubular daylighting devices that provide daylighting in the retail sales area as well as for the

Photograph courtesy Neall Digert

Figure 4-5. Exterior view of PETCO Energy Showcase Store.

Photographs courtesy Neall Digert

(a) **(b)**

Figure 4-6. PETCO Energy Showcase Store (a) sales floor and (b) grooming room, both showing daylighting.