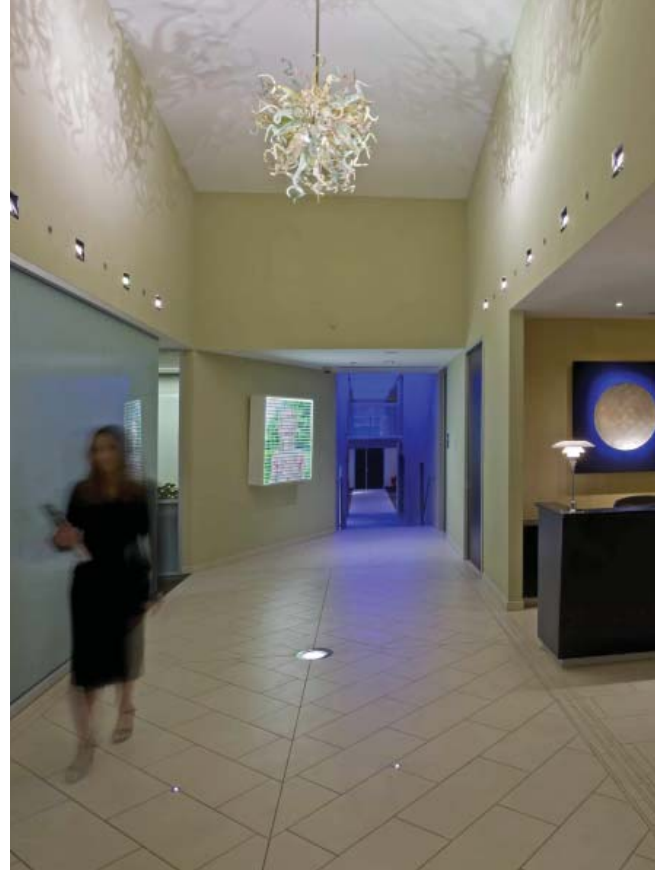


LIGHTING DESIGN ALLIANCE MOVES INTO SUSTAINABLE OFFICE

LIGHTING DESIGN ALLIANCE moved into their new design studio in Los Angeles. As a lighting design firm actively involved with environmental conscious design and sustainability we had to construct an office that shows we practice what we preach. To achieve an innovative design the studio had to not only house employees, but it had to educate and display lighting design to clients, architects and students alike. Each aspect of the studio is a showcase for new lighting technologies and techniques. Nearly every type of lighting technology available on the market today is demonstrated in the new building: from the color changing LED skylight to the solar fed fiber optic accent lights, it's clear that light is the most important element in the design of the building.

The entire renovation for this design studio started with a dark, windowless warehouse that manufactured automobile wheel rims, and transformed it into an educational center that demonstrates the newest lighting technologies with full integration of passive and active daylighting. Every lighting teaching tool and technique was integrated into the project as permanent art installation. Custom patented Hybrid electrical/daylight systems introduce sunlight into the interior of all spaces during daylight hours while the integrated electric lights slowly energize as light is needed in the evenings. By combining daylighting and electric lighting into one unit visual clutter within the ceiling was eliminated. Designed to meet LEED Platinum standards, fully connected lighting loads are 0.8 watts/sq ft, but with daylight harvesting and dynamic dimming, the actual documented lighting load is 0.07 watts/sq ft. To further reduce the amount of energy consumed, 10kW of photovoltaic panels are mounted to the west façade and the roof. To demonstrate our endeavor for energy efficiency, a laptop in the reception runs a program that allows clients and users to see real-time energy usage for the entire building. The panels can easily offset the remaining lighting demands.



TOP: in-grade LED marker lights continue from the exterior and end at an in-grade metal halide uplight that highlights the glass sculpture. solar tracking, fiber-optic spotlights mix with small ceramic metal halided accents to illuminate sculpture from all sides. bright art display at the reception desk and internally illuminated artwork create visual terminous' while Linear RGB LED spline leads guests further into the studio.

BOTTOM: embedded white LEDs and large suspended glass sculpture lead guests toward the front door while metal halide downlights and indirect glass bollards illuminate the entrance. linear LED light bars graze down the textured stone wall and indirect task lights within the offices create secondary focal planes.



An inviting entry with soaring ceilings was added to the front of the building to increase the scale and make it a more inviting space. Translucent glass at the reception area reduces glare and heat gain at the reception area, while transom windows and light shelves bounce light deep into the interior. Custom luminous louvers block the Western sun on the front façade where the front offices are located. The chandelier in the lobby is illuminated by a fiber optic daylight system with 72 sun tracking mirrors.

A total of 52 skylights are incorporated into the buildings lighting design, using triple layer heat stopping acrylic, or double pane low-e glass to maximize the amount of daylight used while minimizing the amount of heat gain. 8'x8' clerestory monitors wrapped with special UV/heat rejection film refract low angle daylight while rejecting heat. North facing, clear windows electrically open for ventilation and allow occupants direct view of sky. High daylight levels coincide with circadian rhythm requirements making the open offices places where people want to work.

A frosted acrylic ceiling system illuminated by a clear continuous skylight above spans the entire length of the building from the lobby to the rear exit forming a bright central corridor. The lounge at end of the corridor has 4'x4' clear skylights that house sun-tracking mirrors, which focus high light levels down to social area below. During the evening remote controlled ceramic metal halide downlights illuminate the same areas.

All lamps sources throughout the building were selected for long lamp life and high efficiency for reduced maintenance and wattage. Photocells, occupancy sensors, an astronomical timeclock and local controls at each work station provide full building control to suit the needs of each employee. Every light source applicable was dimmed to allow for minimal energy use while still achieving each visual task necessary.



TOP: general illumination, task and accent lighting within the reception area is all provided by 20-watt ceramic metal halide trimless pinhole downlights. additional artwork internally illuminated by dynamic LEDs and cantilevered leather bench floats between supporting end tables that wrap around floor mounted lamps.

BOTTOM: daylight and fluorescent hybrid 2X2 troffers dynamically dim with the presence of daylight. Daylight is guided down from the roof to the translucent side panels and linear fluorescent lamps behind louvers energize when needed. workstations utilize integrated occupancy sensors and manual dimmer overrides allowing employees to control the workspace as needed. an educational neon sculpture interactively displays 12 colors of white, in 12 different languages, showing that white is not just one color.



LEFT: color changing LED cove lights, direct/indirect fluorescent pendants, MR-16 downlights and compact fluorescent wall washers all dim separately providing the conference room with multi-scene presets. Interactive touch screen operates A/V equipment and drapes providing users with one-touch scenes for any occasion.

RIGHT: full height, fully retractable window wall illuminates space during the day with the electric lights supporting space when more light is needed.



Lighting Design Alliance moved to a custom designed low carbon footprint office. With 100% daylight in working areas, photovoltaic panels and solar hot water panels, active sun tracking skylights and active daylight monitoring systems, daylight fiber-optic systems, electric lighting with full dimming and daylight harvesting capabilities and exterior solar shutters, the building is a testing laboratory to evaluate all of the latest lighting technology in a real world condition creating one of the most efficient buildings in California.

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LEFT: two story solar tubes introduce natural light into lower level restrooms. Warm-tone fluorescent sconces illuminate individual stalls and provide flattering facial illumination. Concealed halogen downlights within solar tubes provide sparkle at the lavatories.

BELOW: Iumaside ceiling spline illuminated by continuous skylight (daytime) and RGB LEDs programmed for multiple light shows travels the entire length of the central corridor. Metal halide monopoints within skylights to the side provide task lighting below at seating groups and gaming areas. a colorful and shadowed art sculpture provides visible focus from front door.



RIGHT: a new and inviting entry with soaring ceilings was added to draw daylight into the lobby. translucent glass at the reception area reduces glare and heat gain, while transom windows and light shelves bounce light deep into the interior. custom Luminous louvers block the bright western sun while still providing ample daylight into the front offices.



ABOVE: the lumasite ceiling spline is illuminated by a continuous skylight by day and fully programmable RGB LEDs by night. large 4'x4' clear skylights house suntracking mirrors that focusing high light levels down to the social areas below. metal halide monopoints within skylights provide task lighting; currently off. indirect LED cove lights under bridge structure add another layer of light within the space.



ABOVE: decorative chandelier provides scale, while recessed linear fluorescents and adjustable downlights provide teleconference fill light. textured brick wall can be illuminated with three different sources for teaching purposes and also provides backlight necessary for teleconferencing. artwork is internally illuminated and sculpture is highlighted from above. controls within the conference room provide 8 preset scenes, plus a full black-out preset.



LEFT: concealed linear TSHO fixtures within clerestories provide general lighting. one lamp aims up to make clerestory glow and 3 lamps aim down for general light. all fixtures dim and are tied to photo cells, occupancy sensors and time clock. all skylights are triple glazed for thermal heat gain and clear North facing window allow for full view of sky.