

Day Lighting

Supplement or reduce artificial lighting use with day light.

Here are some considerations to make best use of day lighting in an existing facility:

- Factor the orientation of the building/site. Urban/rural; high-rise/low-rise will impact the amount of day light available. In general the quality of northern light is consistently cool, and clear; eastern light is warm, bright and clear; southern light is mostly available year-round; and western light can be strong and hazy.
- Different kinds of spaces require different light levels. IESNA recommends 50 foot-candles at the desktop level for regular office work in North America.
- Locate activities according to light and comfort requirements.
- Allow individual control of window treatment.
- Access control by minimizing window obstruction such as furniture.
- Use light emitting, translucent furnishing materials near windows.
- Avoid west facing zones which are least desirable for comfort and cooling.
- Light interior finish colors are desirable. Avoid dark colors and high glare surfaces.
- Keep reflected view of bright windows off of computer screens.
- Filter light with blinds and open weave shades which are the best materials to control the amount of daylight.
- Integrate task lighting to reduce overhead ambient light needs
- Integrate direct/indirect lighting fixtures and reflective ceiling for even spatial distribution and avoid glare.
- Digital photos sensors, switching, and dimming controls balance light level requirements.
- Occupancy control sensors respond to movement or object surface temperature.
- Timers are a cost effective device for peak-period use.
- Consider using an energy consultant to provide a cost/benefit model to select best methods and means.
- Educate users on how to use the system. Manual harvesting is more difficult to achieve in a mid-size to large company. It can be difficult to get end-users to remember to turn off the lights.

Successful day lighting is a science and an art. It is the balance of light/contrast; shade/glare; heat gain/loss; synchronized with the position of the sun as it changes day-to-day. Natural day light can be visually stimulating. It is pleasant to occupants and increases productivity, performance, and minimizes absenteeism. Used effectively it reduces energy/operating costs and eases burden of HVAC cooling by reducing load with fewer fixtures on demand.