



## Michaels Engineering LEED® Brief

### DAYLIGHTING

#### SUGGESTIONS...

Do you have certain LEED® topics you'd like to know more about? Send an email with your suggestion to the author listed below and your topic might become a future LEED® Brief!

#### DID YOU KNOW...

...lower light levels (foot candles) seem as accommodating as 20-30% greater foot candles coming from ubiquitous ceiling-mounted fluorescent fixtures.

...Daylighting is not direct sunlight. It is diffuse and indirect.

#### MEET THE AUTHOR



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#### → DAYLIGHTING: BE SMART NOT CHEAP

Install plenty of windows and occupants will benefit from daylight, right...mmmmaybe. Build a big curtain wall on the south side of the building and we'll get all the daylight we can ask for, right...yes, but...

Daylighting is effective harvesting of natural daylight. Effective daylight harvesting does not include direct sunlight blazing into the workspace where the glare is so intense the occupant has to rearrange the furniture to see things comfortably. Effective daylighting is diffuse, and indirect. Effective daylighting lights up the ceiling with reflected light from outdoors.

Features such as clerestory glass located 6 to 7 feet above the floor with an interior or exterior light shelf work very effectively to bounce sunlight into the ceiling sending diffuse natural light down towards the workspace, walls or occupants. The diffuse light comes from all directions making lower light levels (foot candles) seem as accommodating as 20-30% greater foot candles coming from ubiquitous ceiling-mounted fluorescent fixtures.

Windows at normal outdoor-viewing level can be treated with tinting to limit transmitted direct light, reducing glare. Also, perforated blinds can be used to block 90%-plus of transmitted light when sunshine is really pounding spaces with east or west facing facades. This will still allow plenty of daylight in for the space.

Another effective daylight harvesting feature is a light well. Direct sunlight entering the light well is bounced around to create diffuse light for the space below. Also, light wells can effectively harvest east and west direct sunlight without excessive glare problems. Light wells also add architectural interest to a facility.

Clerestory glass and light wells should really be considered for new construction only, when the incremental costs are not excessive. Keep in mind when drawing up your daylighting plans for your next building that diffuse light is what you want for a smart daylighting design. Don't cut corners with conventional windows and window placement. You will be disappointed if you do.

We will discuss integration of artificial lighting with daylit spaces, controls, and energy implications in a future brief.

