

Lesson 2: Daylit Zones

Primary Daylit Zone: The area in which daylight can demonstrably substitute all electric lighting.

Secondary Daylit Zone: The area in which daylight may substitute some or none of the electric lighting.

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Energy codes indicate that the aperture of the skylight plus an incident angle ranging from 35° - 45° (depending on the state) on all four sides of the skylight provide the formula to calculate the primary daylit zone.

Example:

A 4 x 8 skylight mounted 20 ft. above floor with a 35° incident angle (70% of the floor to ceiling height) creates a primary daylit zone of 1,152 ft², calculated thus:

Skylight Width: 8 ft.

$$(8 \text{ ft.} + (20 \text{ ft. height} \times 70\% \times 2)) = 36 \text{ ft. daylit area width}$$

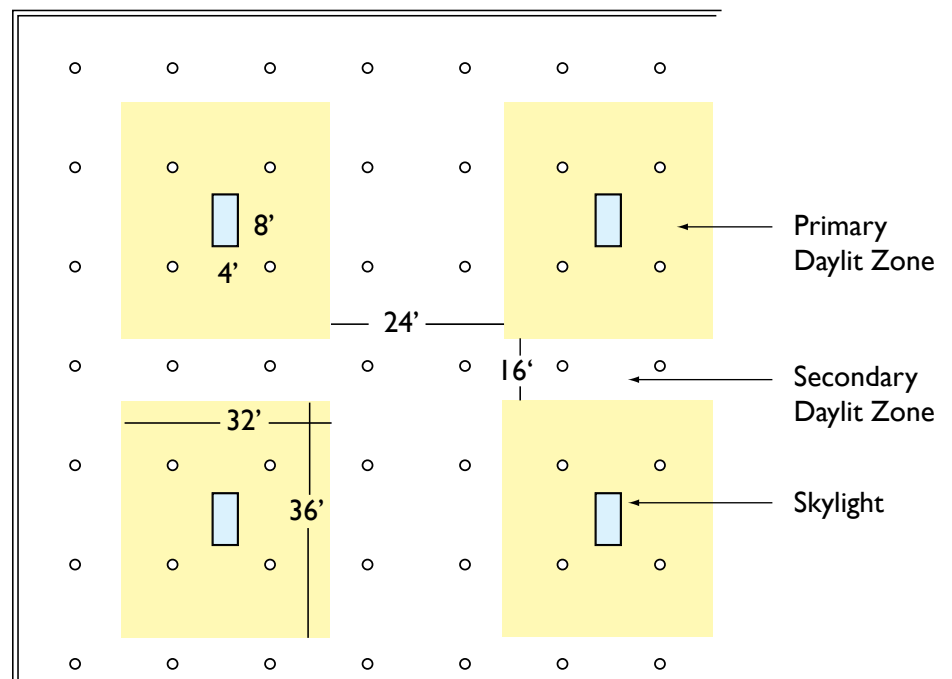
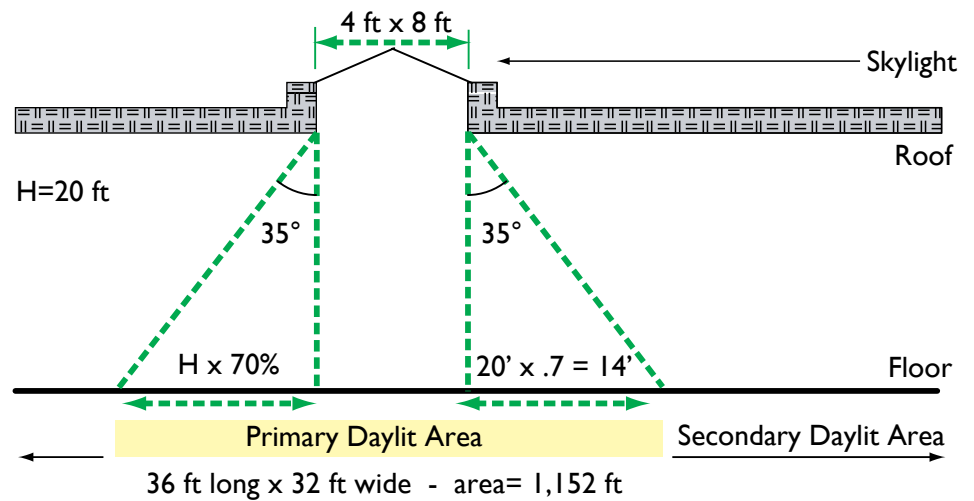
Skylight Depth : 4 ft.

$$(4 \text{ ft.} + (20 \text{ ft height} \times 70\% \times 2)) = 32 \text{ ft. daylit area length}$$

Primary Daylit Zone

$$36 \text{ ft.} \times 32 \text{ ft.} = 1,152 \text{ ft}^2$$

Calculating Top-Lit Zones

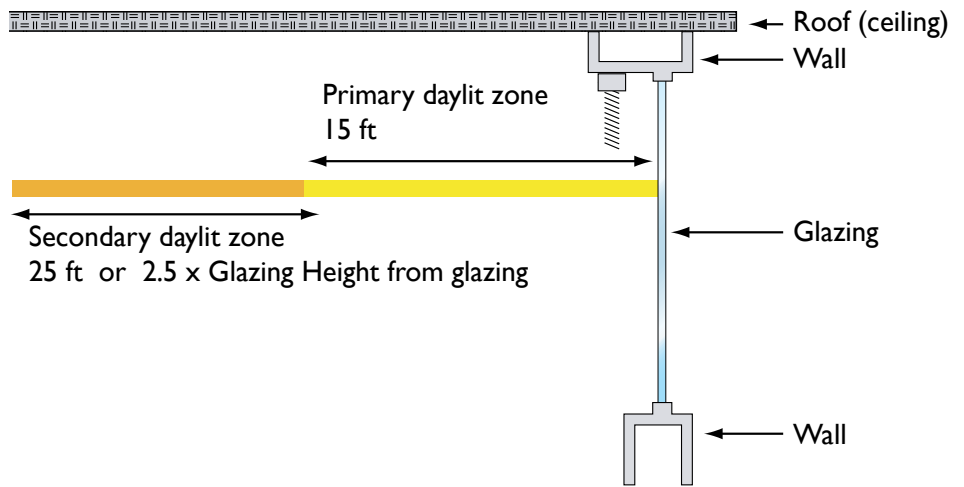


Energy code guidelines such as California's Title 24 indicate that the daylit zone for a side-lit space:

"...extends back a distance of 15 ft.. perpendicular to the glazing... The width of the daylit area is the width of the window plus either 2 feet on each side..."

This 15 ft. depth is an arbitrary starting point and the actual distance can be greatly affected by vertical height of glazing. A safe rule of thumb is to create a Primary Daylit Zone depth of 15 ft. and a Secondary Daylit Zone depth of either 25 feet or 2.5 x the height of the glazing from the floor.

Calculating Side-Lit Zones



Example

