



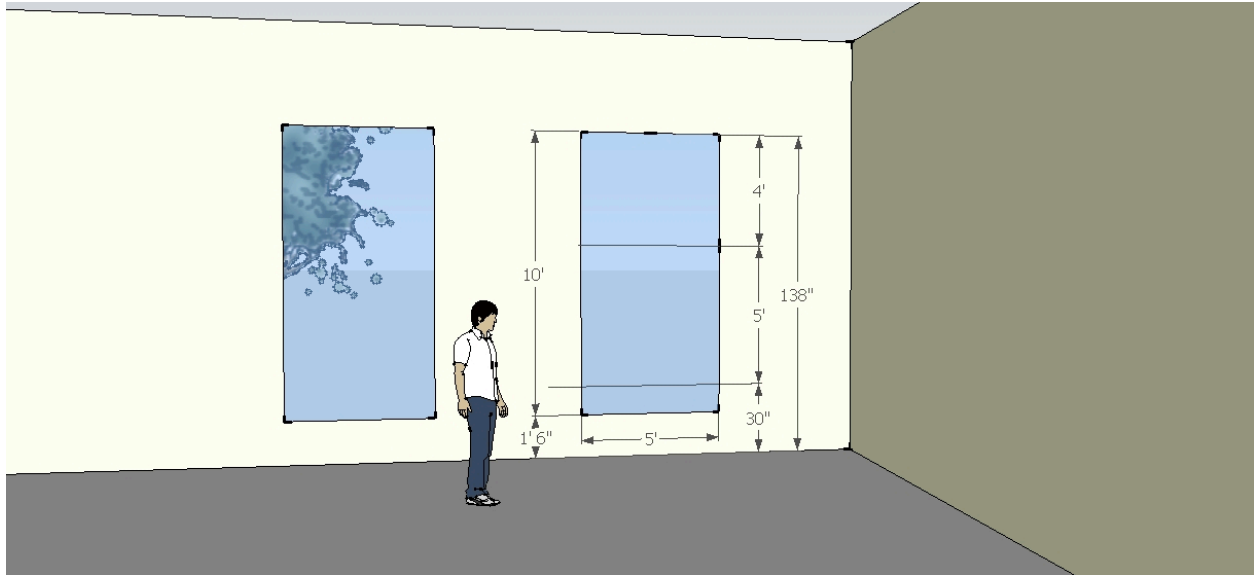
This sample project will attempt to achieve the daylight credit by using a combination of sidelight and toplight glazing. The project is an open floor plate for an office space that will be all regularly occupied space. The total SF of the space is 3,500 SF. The glazing has a visual transmittance of 0.89. There is a drop ceiling that obscures part of the windows.

## SIDE LIGHTING

### Step 1:

Determine the window surface area SF that can count towards this calculation.

- Any area below 30" can not count towards the credit as it does not contribute to daylighting.
- (5'-0" wide) x (9'-0" tall) = **45 SF per window**

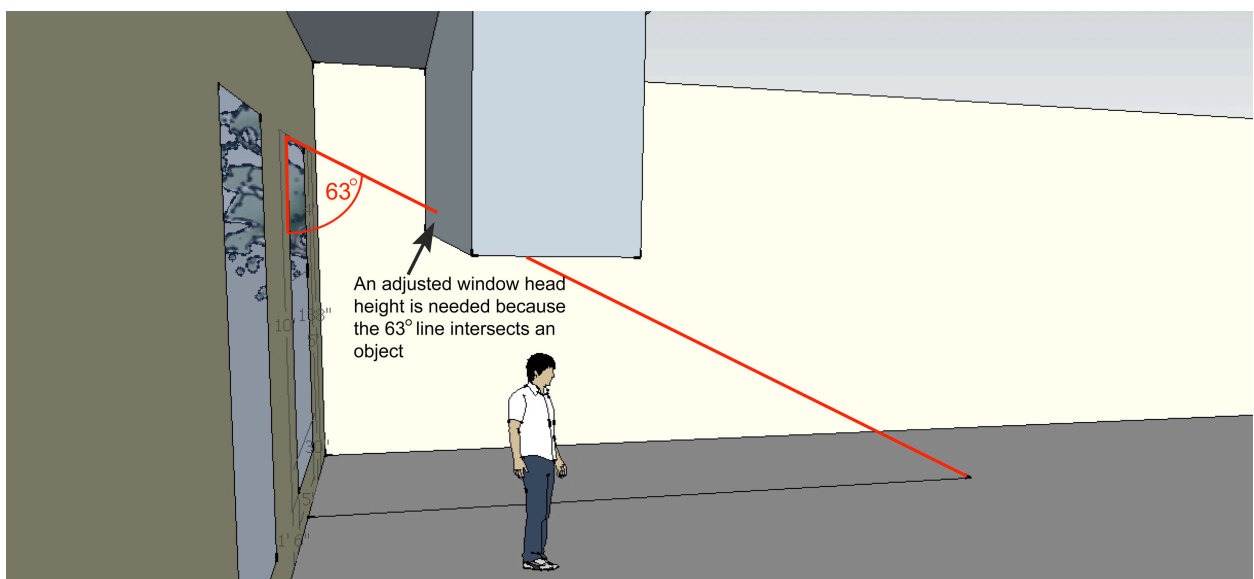


### Step 2:

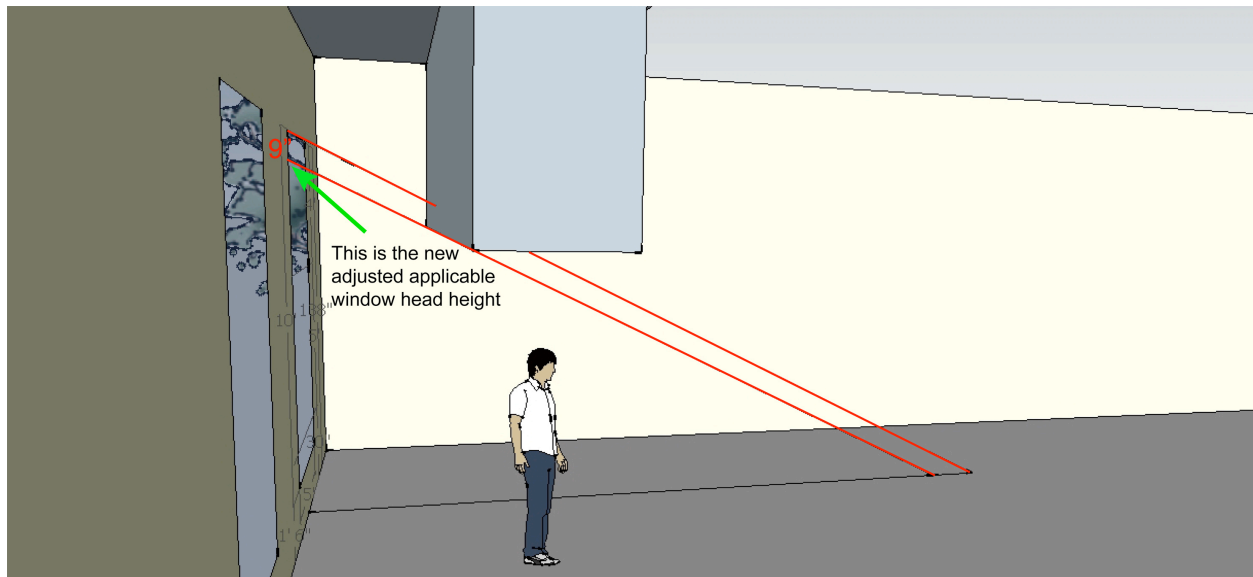
Determine if you need to adjust the applicable window SF.

You will need to adjust the applicable head height of the window if a drop ceiling etc is blocking part of the window. To determine if you need to adjust the head height, perform the following:

- Draw a line from the actual window head height to the floor at a 63 degree angle. If the line intersects a solid object, an adjusted window height must be used.



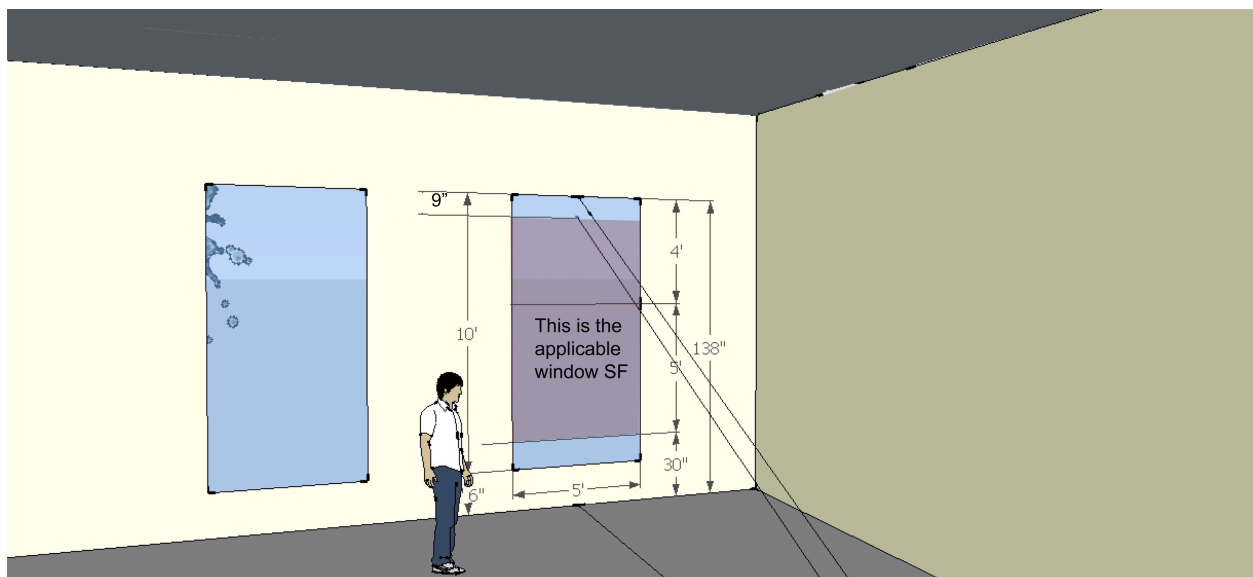
- b) Move the 63 degree top line down until it no longer intersects the solid object. The point at which this adjusted line touches the window top will be the adjusted applicable window head height.



- c) With the new adjusted applicable window head height, determine the window surface area SF that can count towards this calculation.

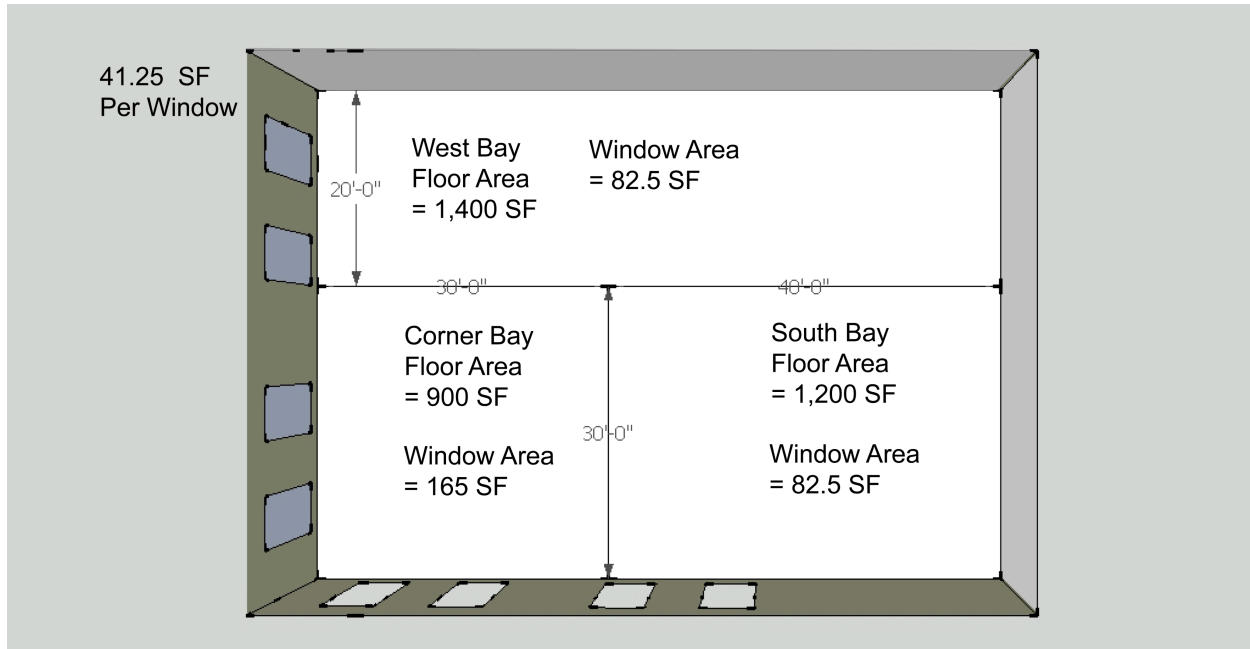
The top 9" cannot count towards the window surface area  
 $(9" = 0.75 \text{ feet tall}) \times (5'-0" \text{ wide}) = 3.75 \text{ SF}$  of this window that cannot count towards the calculation.

From Step 1:  $5' \times 9' = 45 \text{ SF}$  per window –  $3.75 \text{ SF} = 41.25 \text{ SF}$  of surface area per window that can be counted



**Step 3 :**

- Divide the Floor Area (FA) into areas that will apply to each window bay and determine the floor areas. It is up to you how to divide up the floor area and wall area to determine each bay. Generally you will want to couple floor areas with adjacent window areas.
- Determine the Window Area (WA) that will pertain to each divided floor area.

**Step 4 :**

- Determine the Window to Floor Area (WFR) ratio for each plan area and multiply it by the visual transmittance (VLT) or (Tvis) of the glazing. This project has a visual light transmittance of 0.89.
  - Window Area (WA) / Floor Area (FA) = Window to Floor Area ratio (WFR)
  - (WFR) \* (VLT) = should be between 0.15 and 0.18

|   | Corner | South | West  |
|---|--------|-------|-------|
| Window Area (WA)                          | 165    | 82.5  | 82.5  |
| Floor Area (FA)                           | 900    | 1200  | 1400  |
| WA / FA= (WFR)                            | 0.183  | 0.069 | 0.059 |
| Visual Transmittance (VLT)                | 0.89   | 0.89  | 0.89  |
| WFR x VLT =                               | 0.163  | 0.061 | 0.052 |
| Compliant area between 0.15 and 0.18? Y/N | Yes    | No    | No    |

**Step 5:**

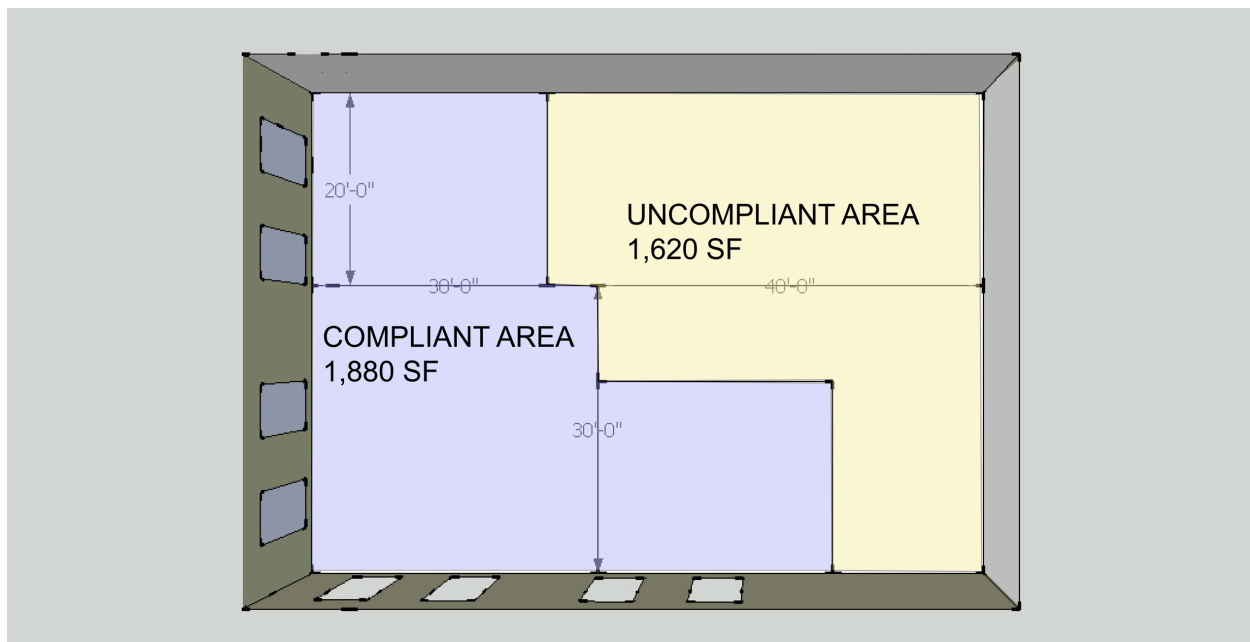
- If an area was not compliant, reduce the SF of the Floor Area in the equation until the area is compliant. This will tell you how much floor area can count towards the credit

|   | Corner     | South      | West       |
|---|------------|------------|------------|
| Window Area (WA)                          | 165        | 82.5       | 82.5       |
| Floor Area (FA)                           | 900        | <b>490</b> | <b>490</b> |
| WA / FA= (WFR)                            | 0.183      | 0.168      | 0.168      |
| Visual Transmittance (VLT)                | 0.89       | 0.89       | 0.89       |
| WFR x VLT =                               | 0.163      | 0.150      | 0.150      |
| Compliant area between 0.15 and 0.18? Y/N | <b>Yes</b> | <b>Yes</b> | <b>Yes</b> |

Compliant floor area = 900 + 490 + 490 = 1,880

The total project area is 3500

**Only 53.71 % of the floor area is daylight compliant**



**Calculate the top lighting.**

## TOPLIGHTING

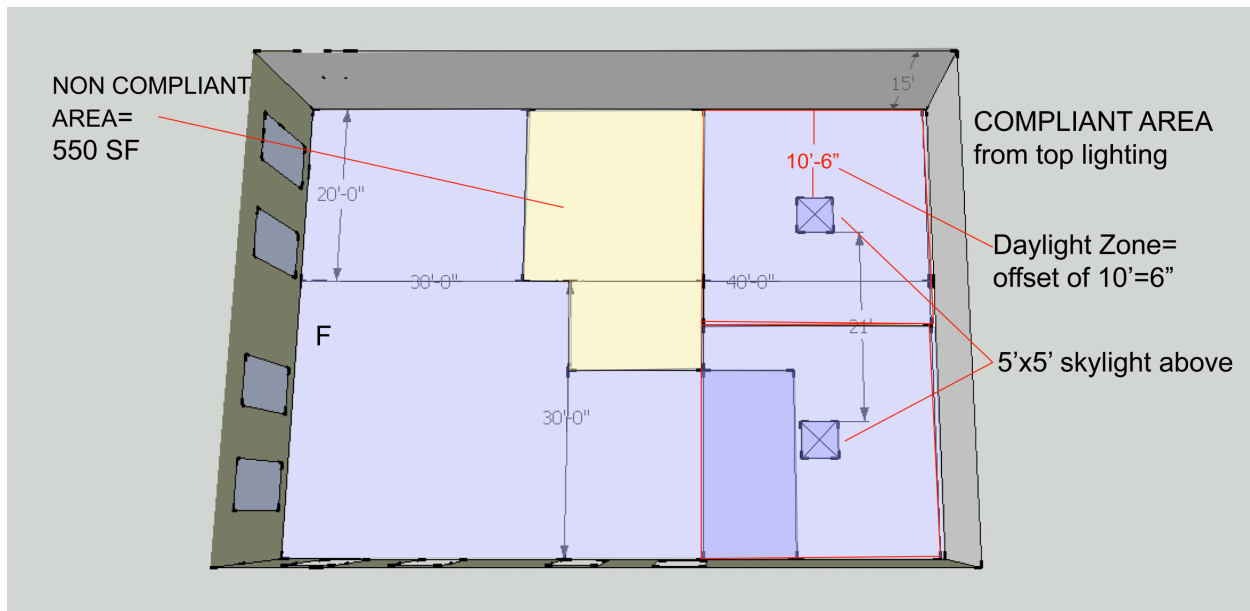
Top lighting can help supplement daylight in addition to side lighting from windows. This sample project has installed 2 5x5 skylights with a VLT of 0.7 and a diffuser with a haze value of 90%

### Step 6:

Determine how far to extend the daylight zone around the skylights. It is the lesser of the following:

1. 70% of the ceiling height  
(The ceiling height is 15'-0". 70% of that is 10'-6")
- OR
2.  $\frac{1}{2}$  the distance to the edge of the nearest skylight  
(The distance between the skylights is 21'-0". Half of this is 10'-6")

For this sample project, option 1 and 2 are the same distance, **10'-6"**



### Step 6:

Add up all daylight compliant areas and non compliant areas to figure out what percentage of the regularly occupied area is daylight compliant.

**The total regularly occupied area is 3,500 SF**

**550 SF of this is not compliant**

**84.42% of the project is daylight compliant**

**This project earns 1 LEED point**