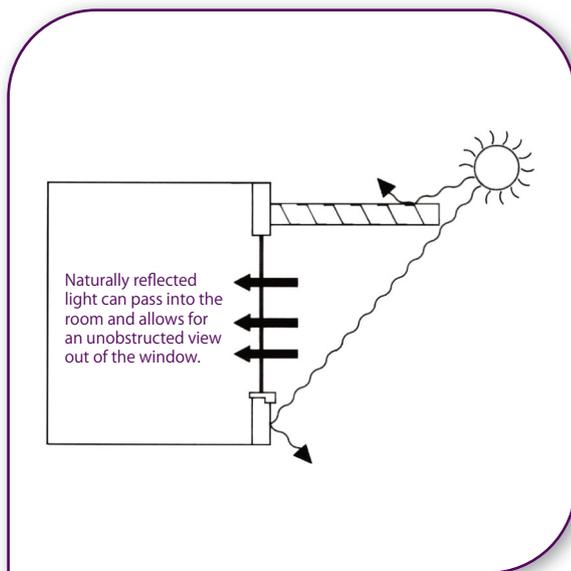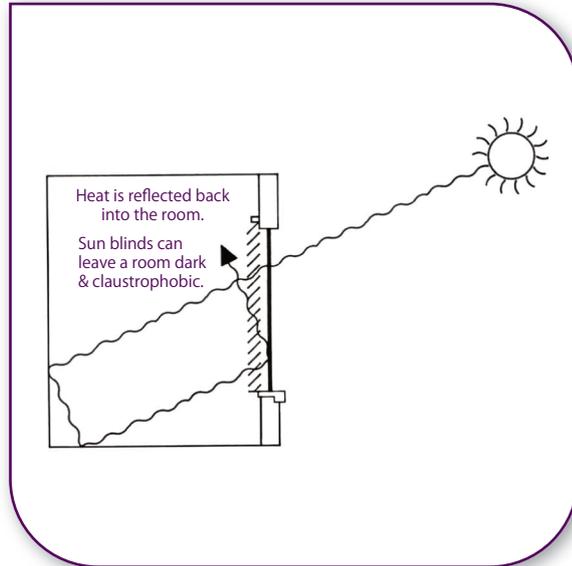# tek limited

Why Use Solar Shading?
Heat gain through an unshaded window can be as much as 700 watts/m. As the temperature rises, so do the costs of air conditioning and cooling systems.

By using Tek solar shading, heat gain can be reduced to as little as 119 watts/m.

Tek solar shading works by cutting out harmful direct sunlight but allows naturally reflected and diffused light in, thus preventing rooms from becoming dark.

Tek shading systems also allow for a completely unobstructed view out of the windows on a horizontal view plane, as the shading systems are calculated not to fall below the average person's eye level.

Heat is reflected back into the room.

Sun blinds can leave a room dark & claustrophobic.

Naturally reflected light can pass into the room and allows for an unobstructed view out of the window.

Even with the sun blinds on the inside of the window, the sun's longwave radiation penetrates the window and is turned to short wave radiation which cannot escape.

The heats is reflected back into the room and as a result the room temperature rises causing unpleasant working conditions for occupants and cooling costs to rise steeply.

By using Tek solar shading systems, the sun's harmful rays are reflected away from the window, but naturally reflected light is allowed to pass through, illuminating even the furthest recesses in the room, unlike sun blinds.

Solar Azimuth

$$\frac{\cos 0 = \sin 61° \times \sin 50° - \sin 23.5°}{\cos 61° \times \cos 50°} \quad = \quad \frac{0.8746197 \times 0.7660444 - 0.398749}{0.4848096 \times 0.6427876}$$

$$= 29°29'35''$$
for am $= 180° - 29°29'35'' = 150°30'$

Wall Solar Azimuth
North = 0° South East Elevation = 135° Azimuth = 150°
T am 135° - 150° = -15 or 15°

Vertical Shadow Angle (VSA)

$$\tan v = \tan a \times \sec T \qquad or \qquad \tan a = \frac{\tan 61°}{\cos T} = \frac{61.834°}{\cos 15°}$$

Shadow Protusion

$$Protusion = \frac{window\ height}{\tan VSA} = \frac{1.2m}{\tan 61.834°} = 0.6425m\ or\ 0.64m$$

Louvres & Solar Shading

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Solar Shading Typical Installation