

Skylights

People are drawn to areas with natural light. What's more, there is something special about natural light from above, bringing the sky indoors. Skylights can make a dark room bright, provide ventilation and add architectural appeal.



As Lighting

A skylight can be a problem solver, bringing natural light where it would be difficult or impossible to add a window. Here are some examples -

- Inside wall area of a duplex (semi-detached) or a home on a zero lot line.
- Natural illumination of a stairway.
- Natural lighting where privacy is required such as a bathroom.
- Small lots where windows would be looking directly onto a neighbors home.
- Where an attic has been renovated into a living area. Some skylights are manufactured to satisfy attic egress requirements of building codes as well.

As Ventilation

Skylights can be of fixed design or openable. The openable type can provide natural ventilation. There are also fixed skylights that have a venting option. In these, there is a vent flap that can be opened. Openable skylights are either manual or automatic.

Light Shaft

Skylights on cathedral ceilings bring light directly through the roof plane into the living area. Skylights on homes with an attic are a little more complicated. You have to punch a hole through a large attic area. The hole through the attic area is called the light shaft.

The simplest light shaft is a channel that extends straight down from the skylight above. This is the easiest to frame and interferes the least with existing framing. It's also the least interesting architecturally and brings in the least amount of light. A more interesting design is to flare the light shaft out to bring in more light. The flare can be a simple one sided flare or a more complicated two sided or even four sided flare. The more sides you flare, the more complicated and disruptive the framing.

Heat

One of the most important things to consider for warm climates is that skylights will add considerably to the heat gain and thus the air conditioning load. In hot climates, care should be given to the orientation of the skylight. For example, south or west facing skylights have a much greater heat

gain than north or east facing skylights. In addition to orientation, choosing the correct skylight for your climate helps. A skylight that is ideal in one climate may be completely wrong in another. There are many options available such as low-e glass and tinted or reflective glass. Your installer should be familiar with the different options and the ratings on the skylight. There are several different parameters that are rated on skylights. For warm climates the SHGC or Solar Heat Gain Coefficient is one of the most important. SHGC represents how much heat from the sun penetrates the skylight. A low tech solution to heat gain is a shade for the skylight.

Different orientations have different light characteristics as well. North facing skylights have steady light levels throughout the day and the light is very soft. East and west facing skylights have varying light levels throughout the day. South facing skylights gives the most light but the light is also very hot and harsh.

Installation

When a roof leaks, it leaks at a roof penetration. It does not leak in the middle of a field of shingles or tiles. A skylight is a big roof penetration. As such, a skylight has the potential to leak. The difference between a skylight that leaks and one that does not is a good installer. A good installer knows how to pick a good skylight and knows how to flash the skylight properly so it sheds water.

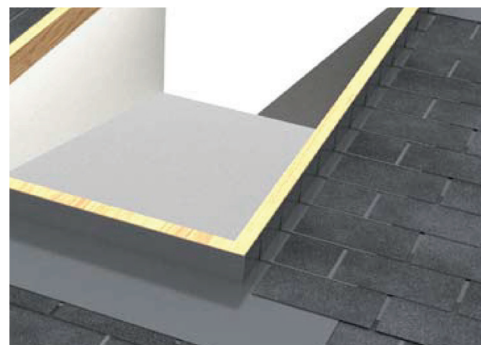
There two types of skylights commonly used for residential homes. Skylights that have to be mounted on a curb and a skylight that comes with its own curb (integrated curb). The best is the type that mounts on a curb. A curb mount skylight sits up above the roof plane on a wood frame. A curb mount skylight gets flashed just like a chimney. It gets step flashing, head and base flashing. The illustration below shows a curb mount and flashing for a skylight. All that is required is to set the skylight on the curb.

Peel and stick ice and water shield have made skylight installations much more reliable. Most installers use ice and water shield to complement the skylight flashing for a good watertight installation in any weather conditions.

Signs of Trouble

Once a skylight is installed, it may be difficult to recognize if the installation was done properly. Here are a few signs that there could be trouble -

- Mastic or sealant (roofing tar) has been used to seal the skylight. Good skylight flashing should shed water and does not require mastic. Mastic on the flashing is a sign of trouble.
- If a skylight is installed too close to a plumbing stack or some other roof penetration or intersection (less than 18 inches) it is very difficult to flash properly. Room is needed around the skylight for the flashing components.
- Moisture or stains on the inside could be evidence of a leak or could be condensation. Sometimes it's hard to determine what you are looking at.



This illustration shows a curb mount for a skylight, shown without the skylight for clarity. You can see the step flashing and the apron flashing.