The components on the roof (1)

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Not everyone knows the components on the top of roof of single houses and townhouses. We will simply introduce the types and functions of them in this section for readers to know their properties well. Originally roofs are the basic protection for property of weather and life safety; in addition, it is the attractive part of the building and enhancing appealing. The common roofs we normally see are gable and hip, which are easy to tell the difference. The side view of the gable roof is triangle. The ridge is at the highest point of this triangle and horizontal which is mostly paralleled to the building. The hip has 4 facets at least and multiple ridges intersected in one point. Hip is the popular current construction style, which can be designed much fancier.

One of the most important components is the roof vent. It usually installed gable vents on the top of both parallel sidewalls, which provide the convection to the roof attic ex. figure 1; the hip roof doesn't have this advantage. It has to adopt regular roof vents, which ventilated through the perforated soffit cover and roof vent openings ex. figure 2, 3; also there are special vented ridge caps that can offer the attic ventilation. We have a good example to address why the attic needs to be vented. I believe most of us have the experiences that get into the car parked in the hot summer and cold winter. The real temperature is even higher than the ambient. But once we have a sun roof left open, it will be much better in the hot day. The same scenario the attic would get extreme hot in the sunny summer if not vented. Even though there is insulation on the top of ceiling, the comfort of the living space underneath is still affected. Plus the overheated attic may have the negative impact on some building materials. We understand how vent is important in summer. However, people may challenge the vented roof in winter. In terms that air is the good isolated media, is it a benefit to keep the building warm if the attic has been sealed? Yes, the stationed air is a good insulation but the attic is large enough to have the air

figure 1

figure 2

figure 3

convection that caused the heat conducted and lose even without vents installed; most important although there is a vapour barrier under the attic insulation, the air can always find its way to get into attic. It would condensate if not vented for the lower temperature in the attic. This would cause the mould and mildew, even rot structure. In the long time, it would not only be a comfort issue but a safety hazard.

It is simple to keep attic vented, but still has the basic technical requirements, which either not enough to fail to the above defects, or excessively vented to generate negative air pressure, which is easier to be accessed by the interior moisture and exterior leaking.

figure 4

figure 5

We still have the chance to find the bath, kitchen and dryer vents on the roof. Ex. figure 4 looks ugly but effective to get rid of the interior moisture, which adjusted the relative humidity for living space and reduced the growing of mould and mildew. There are some constructions which vented from soffit or exterior wall. They have the same function as the roof vent. Moreover, ex. figure 5 the pluming stack vent is balancing the drainage pressure to keep draining smooth, also help to get rid of the odour. Simply speaking, it is the extension of the black ABS drain pipe we can see inside the building but covered the portion with lead or other metal parts on the roof due to the UV protection to ABS, which built the roof penetration flashing at the same time.

We will introduce chimney, skylights and their defects next time.