

Roof (a)

A roof covers the top of a building, to keep weather, particularly rain, out but they also help to keep heat in. Heat rises, so all the heat in a house will rise up to the roof area. Insulating the roof traps the heat, so the house stays warmer in winter.

There are many different shapes of roof, such as sloped, pitched (angled) and flat.

There are also many different types of material used, depending on the type and shape of roof you want and how strong the support beams are. The stronger the support beams, the stronger the roof will be. This means heavier materials, such as tiles, can be used.

Types of roof material

Thatch: Dry vegetation such as straw, water reed or heather. It is probably the oldest roofing material known to man and has to be fitted by a specialist roofer. Thatched roofs were used by the poor in the early 11th and 12th centuries as thatch was a cheap material. Today, thatch roofs are much more expensive, but many people choose thatch so that their cottages look traditional.

Tile: A hard material made of stone, metal or glass, which is baked and cut into tile shapes.

Wood: Wood cut into tiles shapes can also be used on a roof. It is very popular in the United States of America.

Metal: Iron, aluminium, steel and copper can all be used in flat or corrugated sheets as a roofing material. This type of roof is often found on buildings like warehouses but in some countries it is also used on homes. In Thailand, for example, metal roofs are popular amongst the poorer members of society, because they are cheap and because there is lots of rainfall in the monsoon months. Metal roofs are a good way of keeping the rain out.

What might you find on a roof?

- Rain gutter
- T.V. aerial
- Satellite dish
- Solar panels
- Chimney
- Small wind turbines
- Garden/swimming pool/helicopter landing pad – on some buildings with flat roofs
- Windows – buildings with rooms in the loft space will have windows

Roof (b)

Rain gutter

A rain gutter collects rainwater, which flows down from the roof. The gutter runs along the roof edge and down the side of the building through down pipes into the drain. Rain gutters stop water collecting on the roof or splashing straight onto the ground, where it can cause damage to the building. The gutter and pipes can be used to collect the rain water, stored in a water butt so that it can be reused for watering the garden or washing the car, instead of the water going down the drain and being wasted.

Rain gutters can be made from lots of different materials, including steel, copper, aluminium, plastic and even wood.

Ways to make your roof energy efficient

Insulation: Insulation material (fibreglass/polystyrene) fitted in the loft can save heat (energy) being lost through the roof.

Hint: If you see snow melting from your roof whilst neighbours still have snow - you might need insulation!

Solar panels: These panels can be placed on the roof and used to heat the household water. Solar panels are usually placed on top of the roof materials. If the panels are the right size and work properly they can provide around 40-60% of a home's hot water needs.

Photovoltaic panels: These panels generate electricity from the Sun and can be built into the roof as panels in the roof tiles. A photovoltaic panel is another method of using solar energy.

Green living roof: This is a roof covered in vegetation, such as grass and plants. The roof is built from beams, as an ordinary roof would be, but it has a waterproof lining. Then a filter sheet and moisture blanket are put over the roof and a rock, soil and sand mixture is placed on top so that the plants can grow. The best shape for a living roof is flat so that the plants stay well rooted.

