

Conducting Building Surveys



**Start
at the
top**



Roofs

- Roof structure is a term that refers to the construction at the top of a building which typically provides protection from the elements.
- It generally comprises a system of structural members designed to support the roof build-up – i.e. the materials that provide watertightness and insulation to the building below.

Roofs

- Of all the exposed elements of a building, the roof presents the greatest difficulty to the surveyor.

Roofs

- Of all the exposed elements of a building, the roof presents the greatest difficulty to the surveyor.

What makes roofs difficult to inspect?

Roofs

Accessibility

Safety Risks

Structural
Complexity

Visibility

Weather

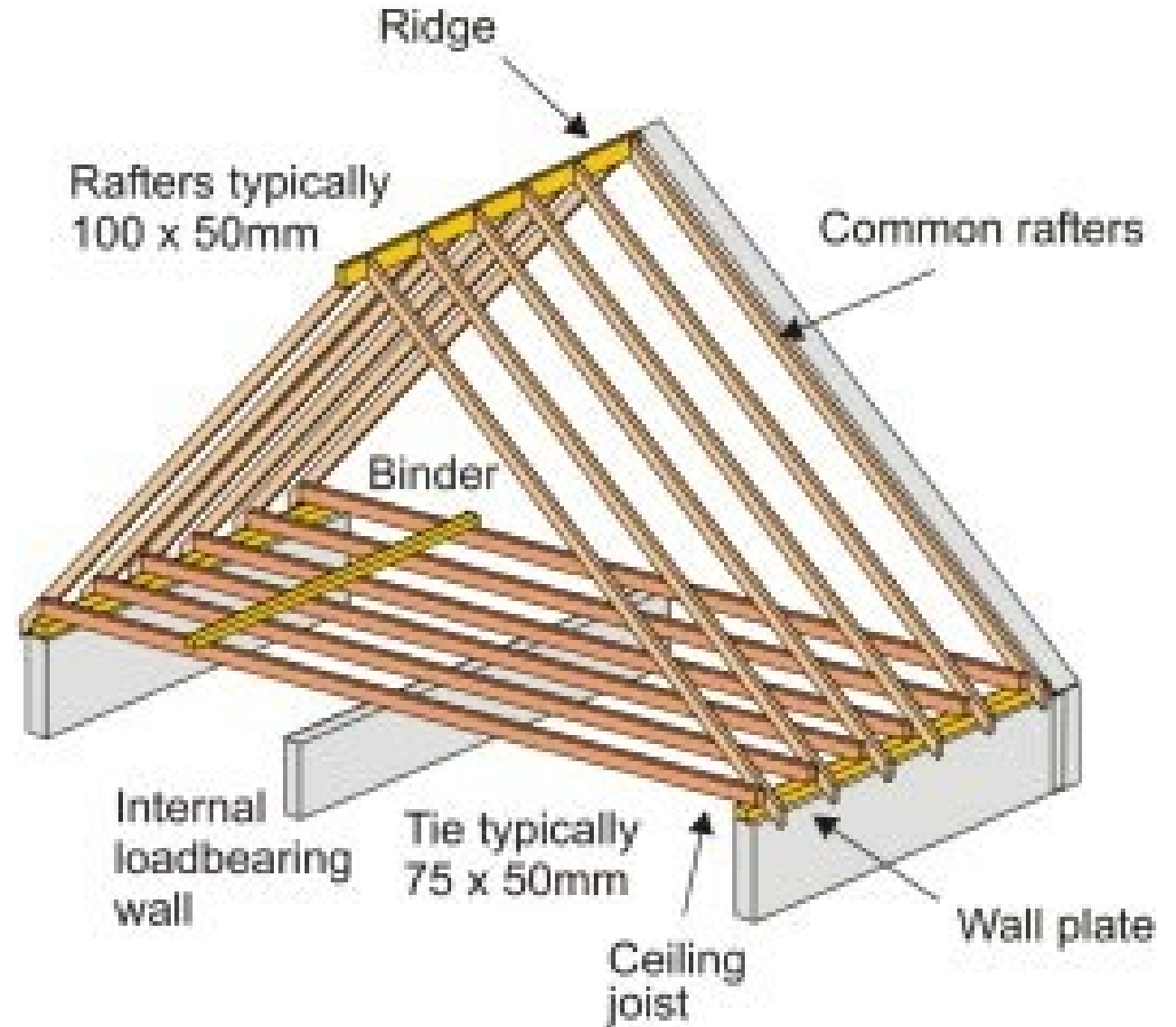
Roofs

- In a house of masonry construction, the roof structure is often a 'bolt-on' framework
- Comprising timber purlins and rafters fixed to wall plates which are in turn tied down to the masonry walls

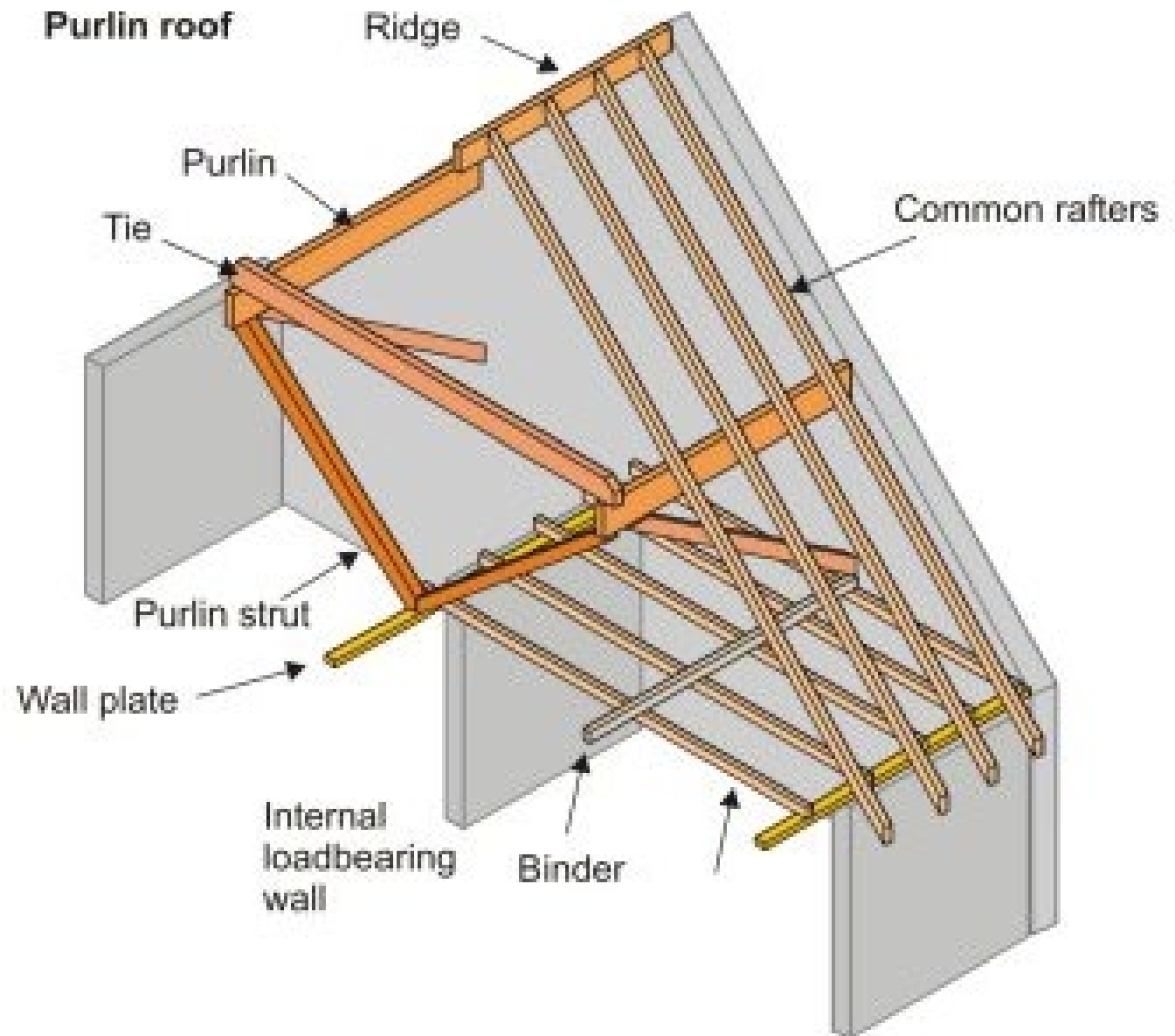


Closed Couple Roof

Closed couple roof

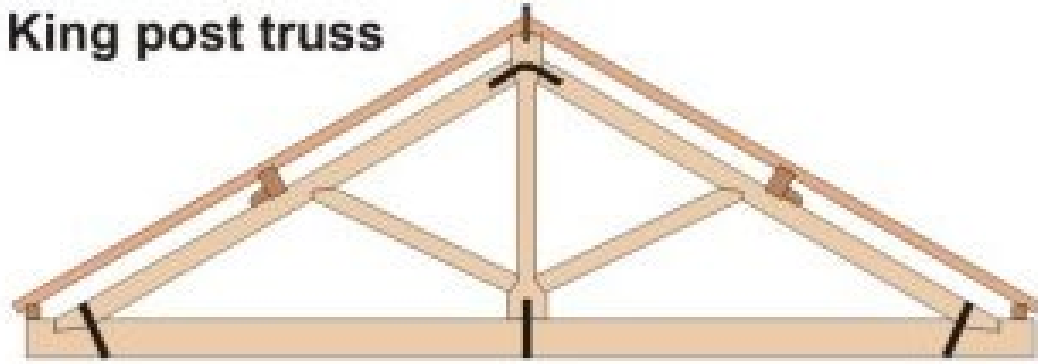


Purlin Roof

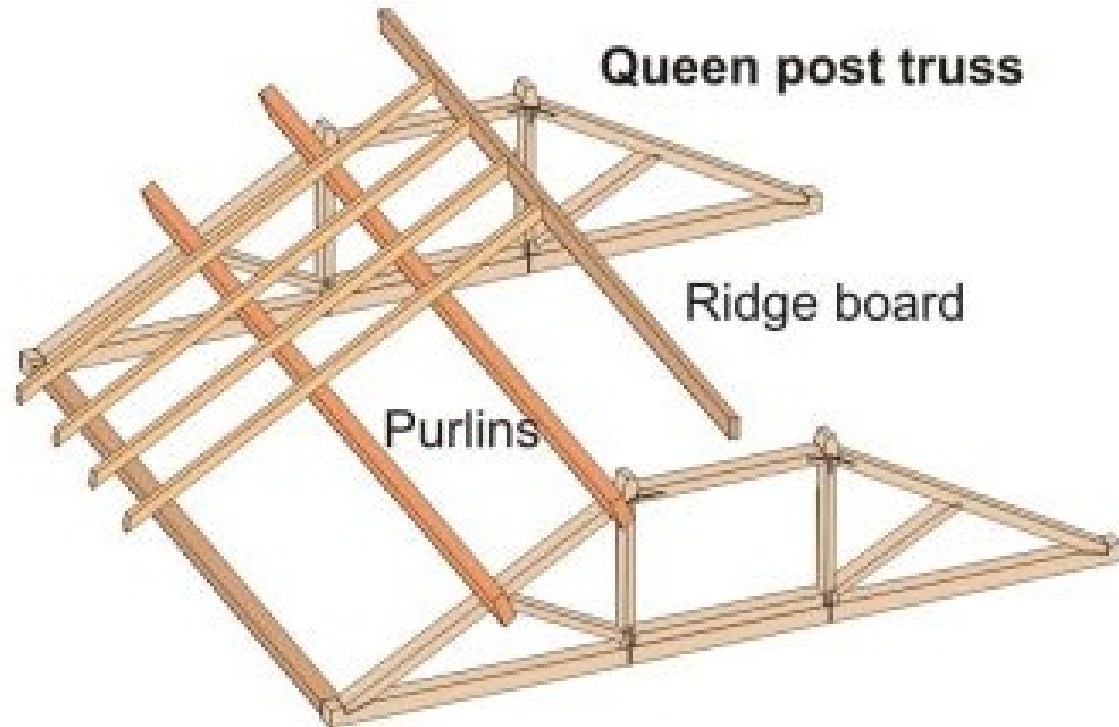


King and Queen Post Truss

King post truss

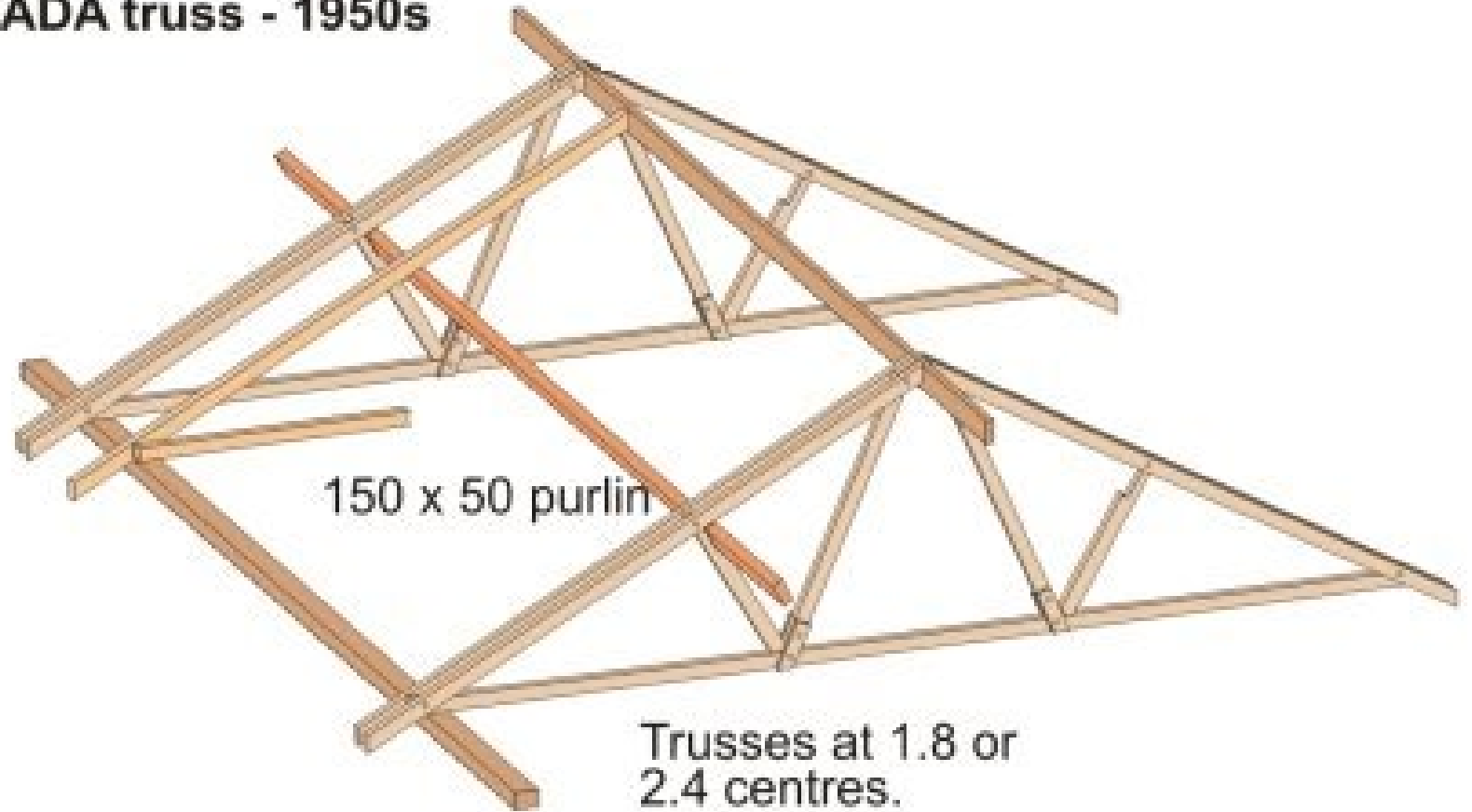


Queen post truss

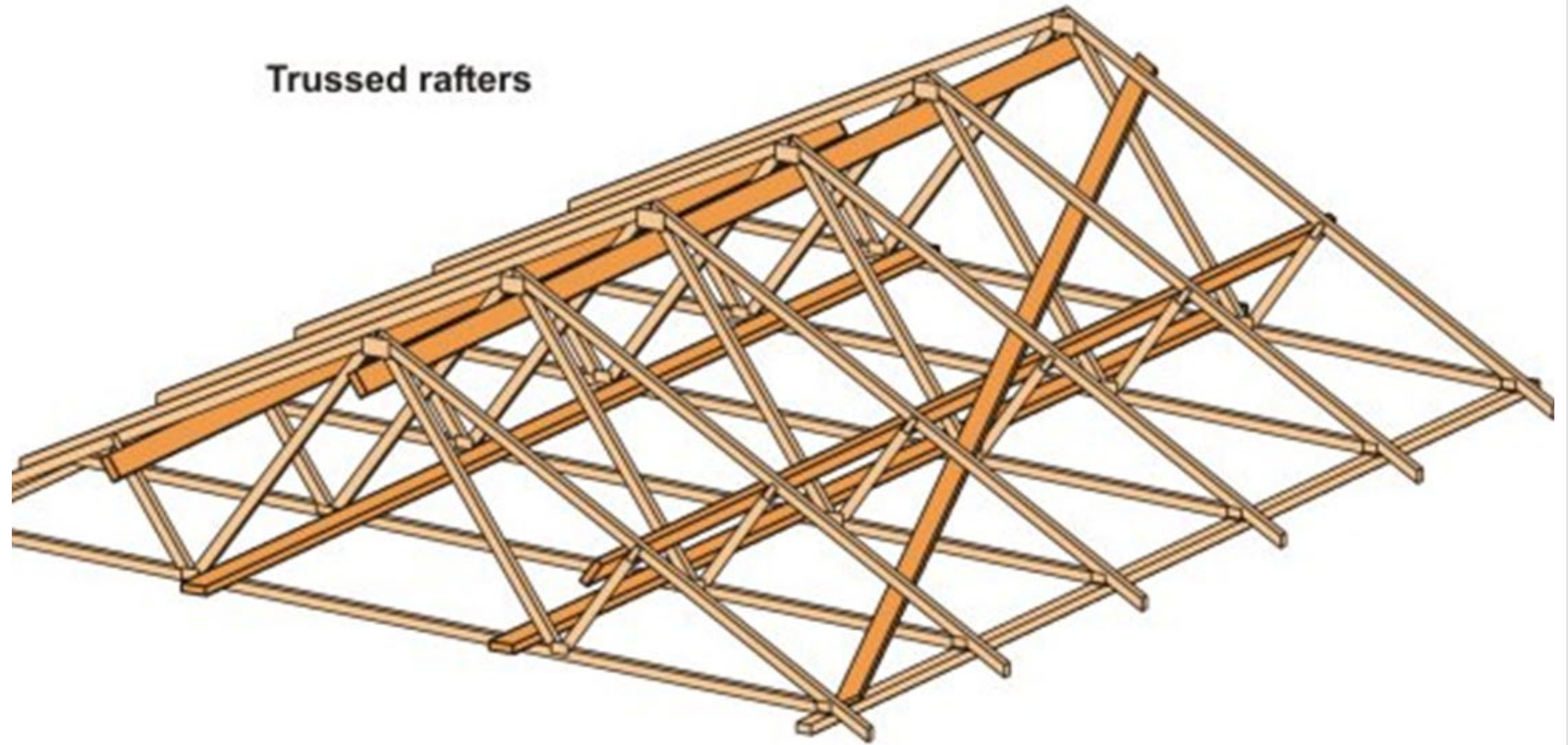


Trada Truss

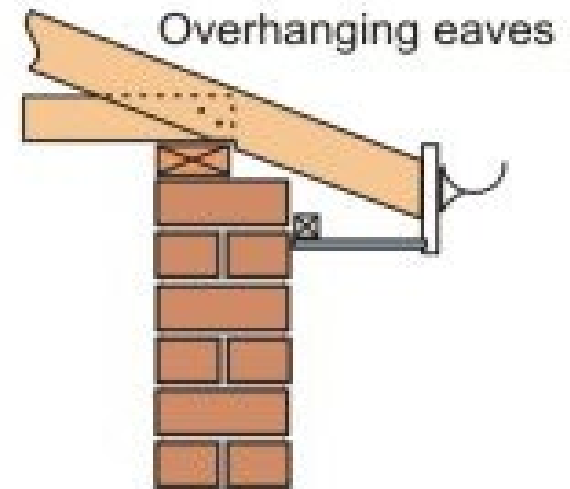
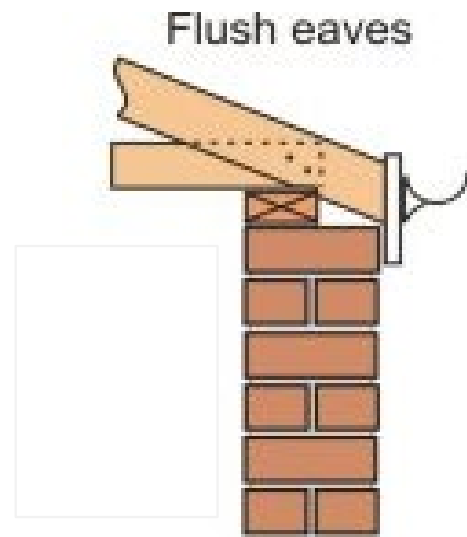
TRADA truss - 1950s



Trussed Rafters

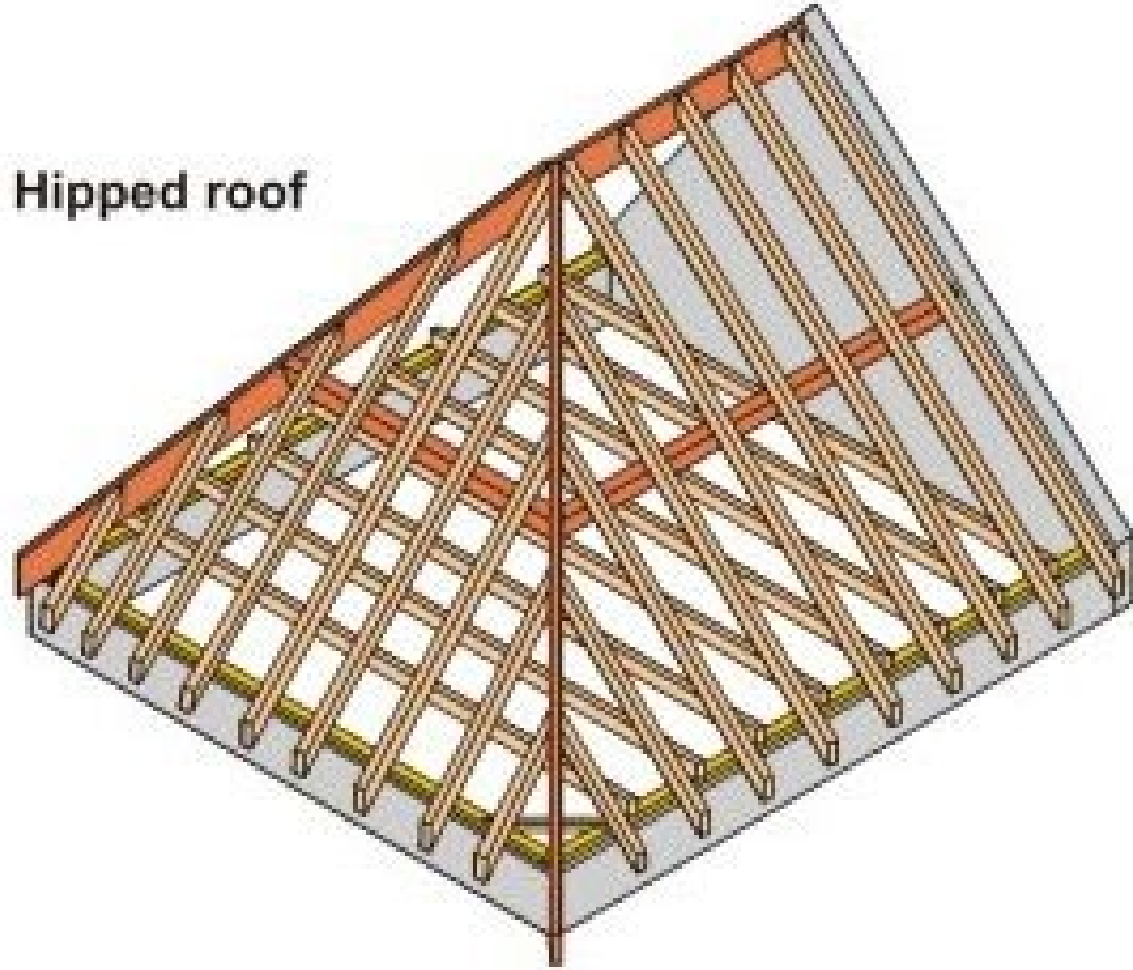


Eaves

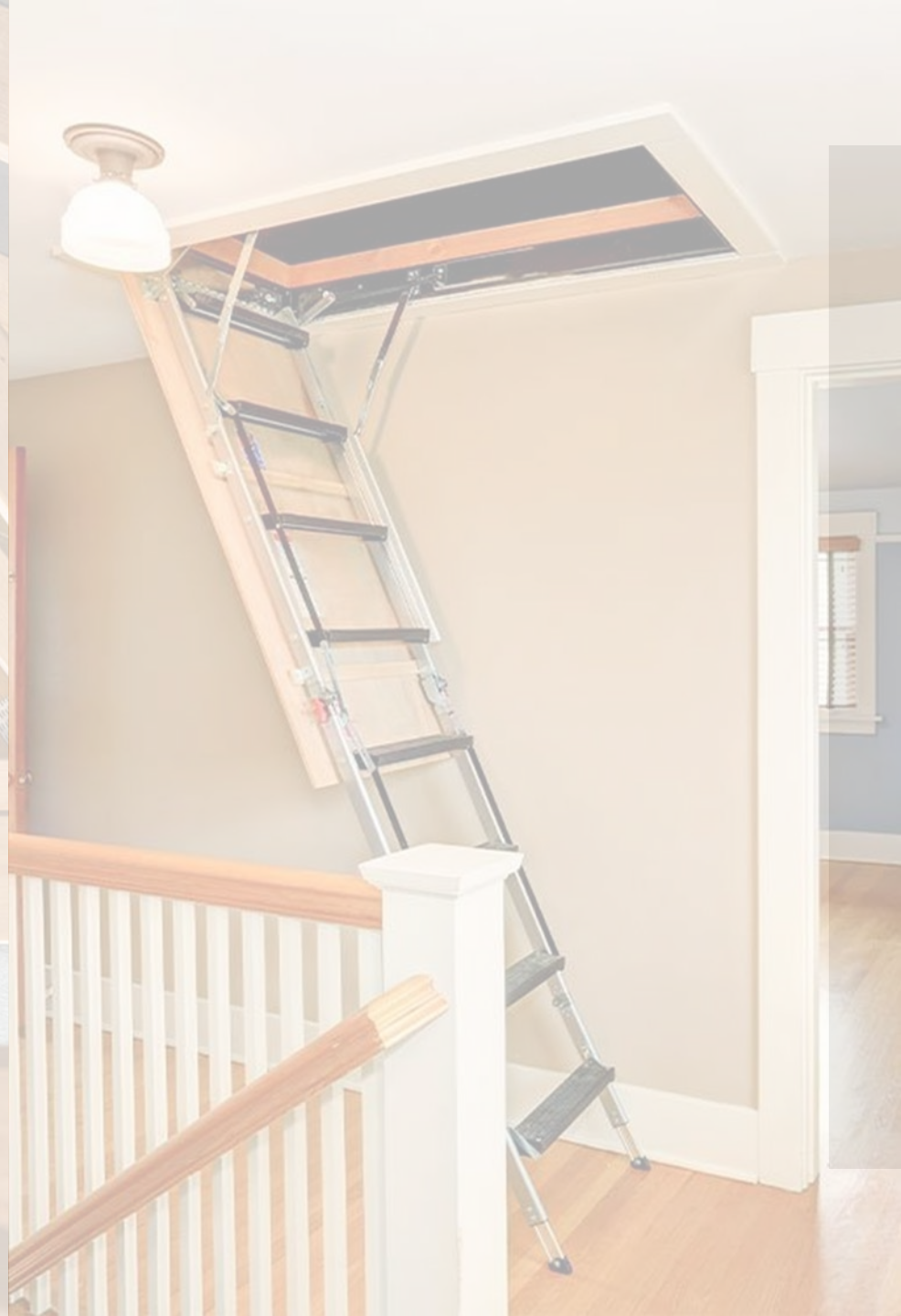


Hipped Roof

Hipped roof



Internal Roof Inspection



Roof Defects

- The first indication of a roofing defect is usually a damp patch on the ceiling or at the internal angle of wall and ceiling.



Roof Defects

The first indication of a roofing defect is usually a damp patch on the ceiling or at the internal angle of wall and ceiling.

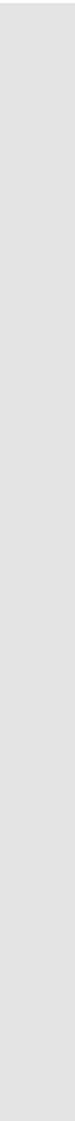
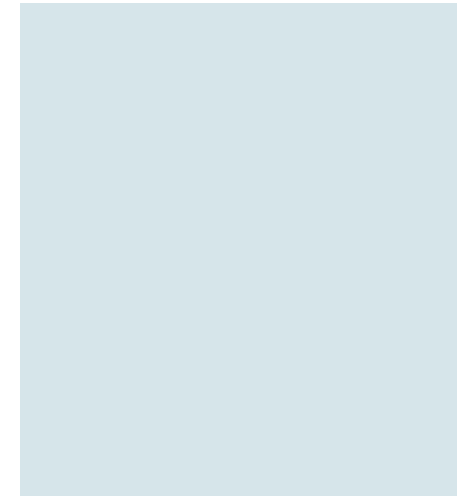
These problems often occur due to:



Roof Defects

The first indication of a roofing defect is usually a damp patch on the ceiling or at the internal angle of wall and ceiling.

These problems often occur due to:



Roof Defects

The first indication of a roofing defect is usually a damp patch on the ceiling or at the internal angle of wall and ceiling.

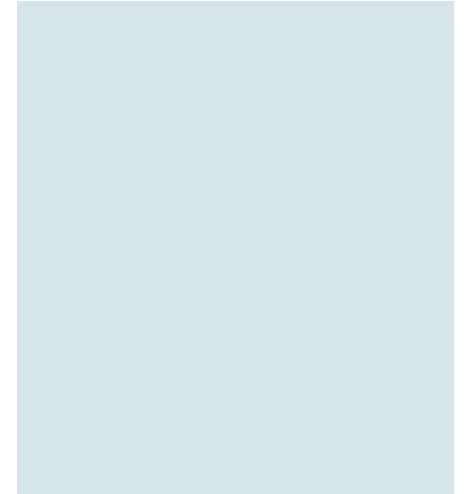
These problems often occur due to:



Roof Defects

The first indication of a roofing defect is usually a damp patch on the ceiling or at the internal angle of wall and ceiling.

These problems often occur due to:





Pitched Roof Coverings

A close-up photograph of a thatched roof, showing the dense, layered structure of dried straw or reeds. The roof is pitched, and the background is slightly blurred, showing green foliage.

Thatch

A photograph of a slate roof, showing the flat, rectangular tiles laid in a regular pattern. A white chimney is visible in the background against a blue sky with light clouds.

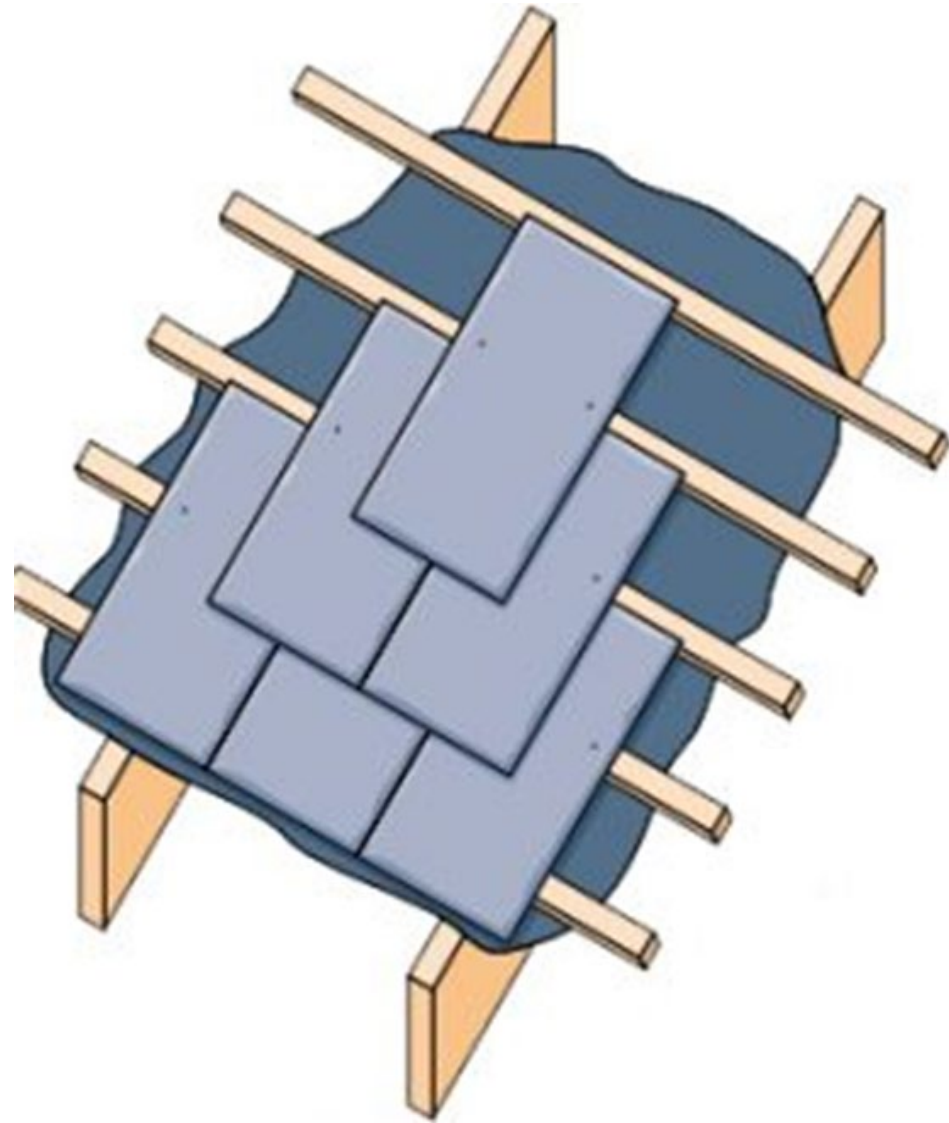
Slate

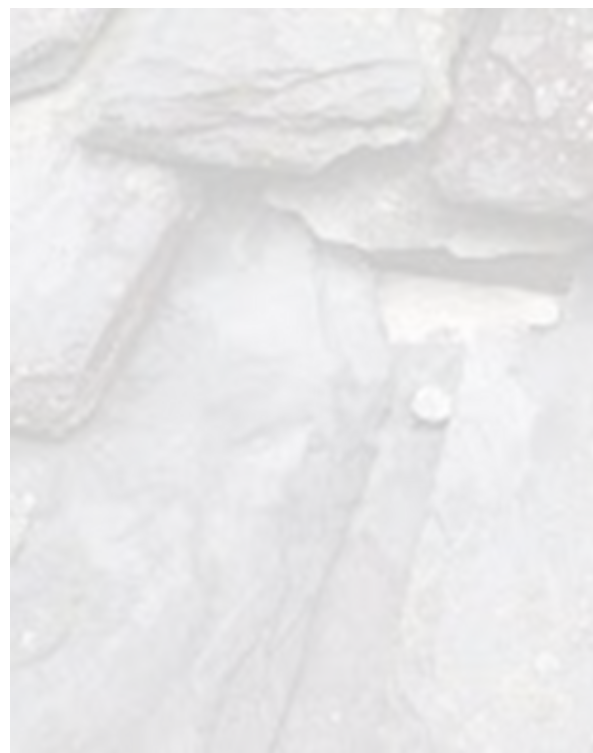
A photograph of a tiled roof, showing the interlocking pattern of reddish-brown tiles. The roof is pitched, and the background shows a clear blue sky.

Tile

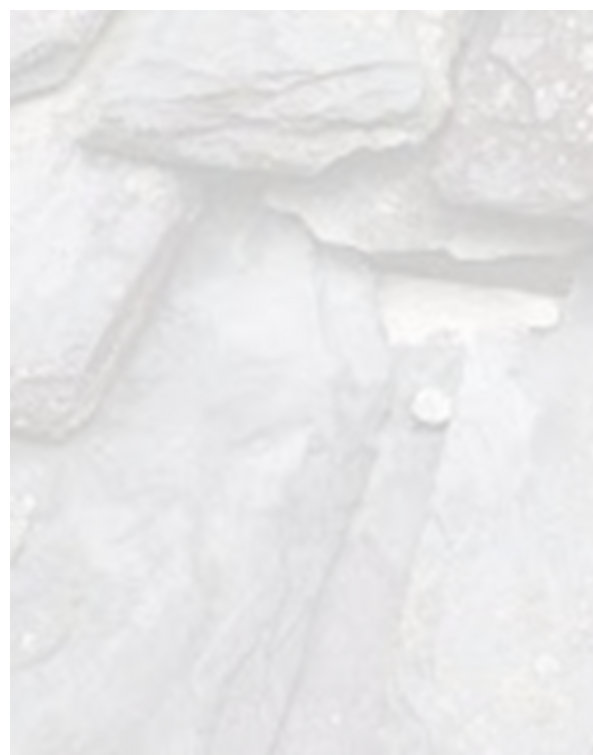
Pitched Roof Coverings

Slate





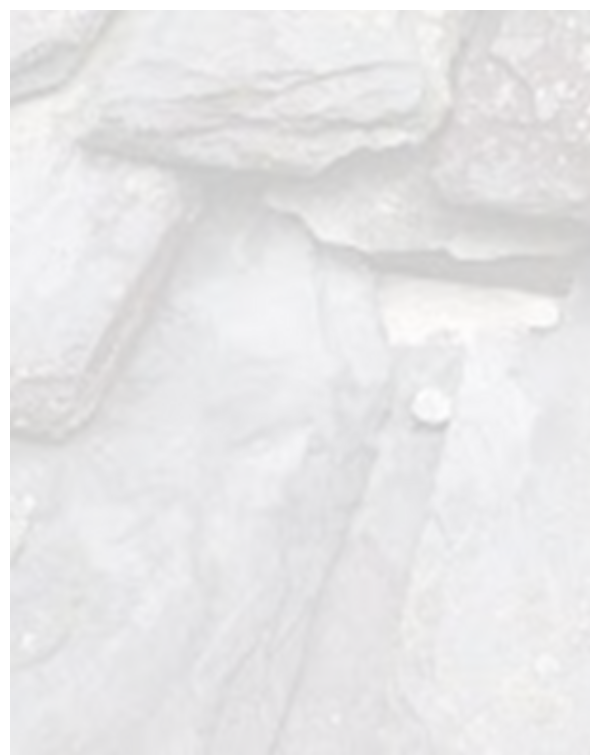
Slate



Slate



Slate



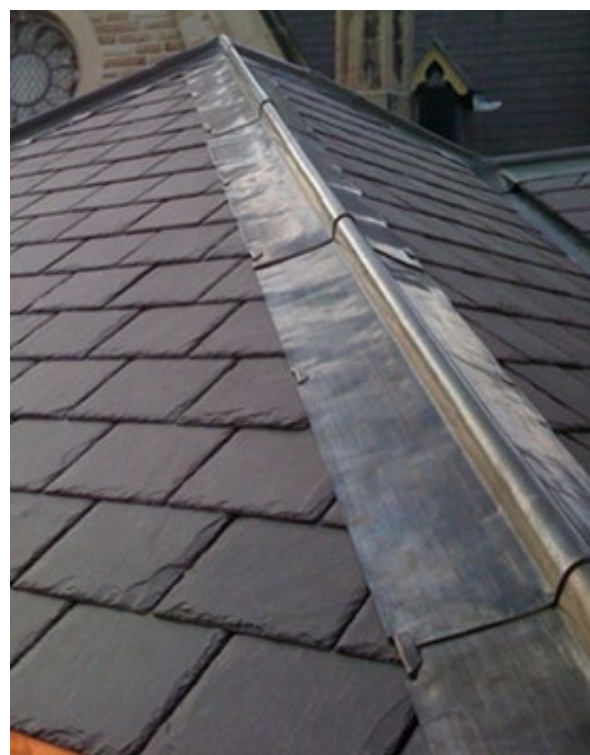
Slate



Slate



Slate

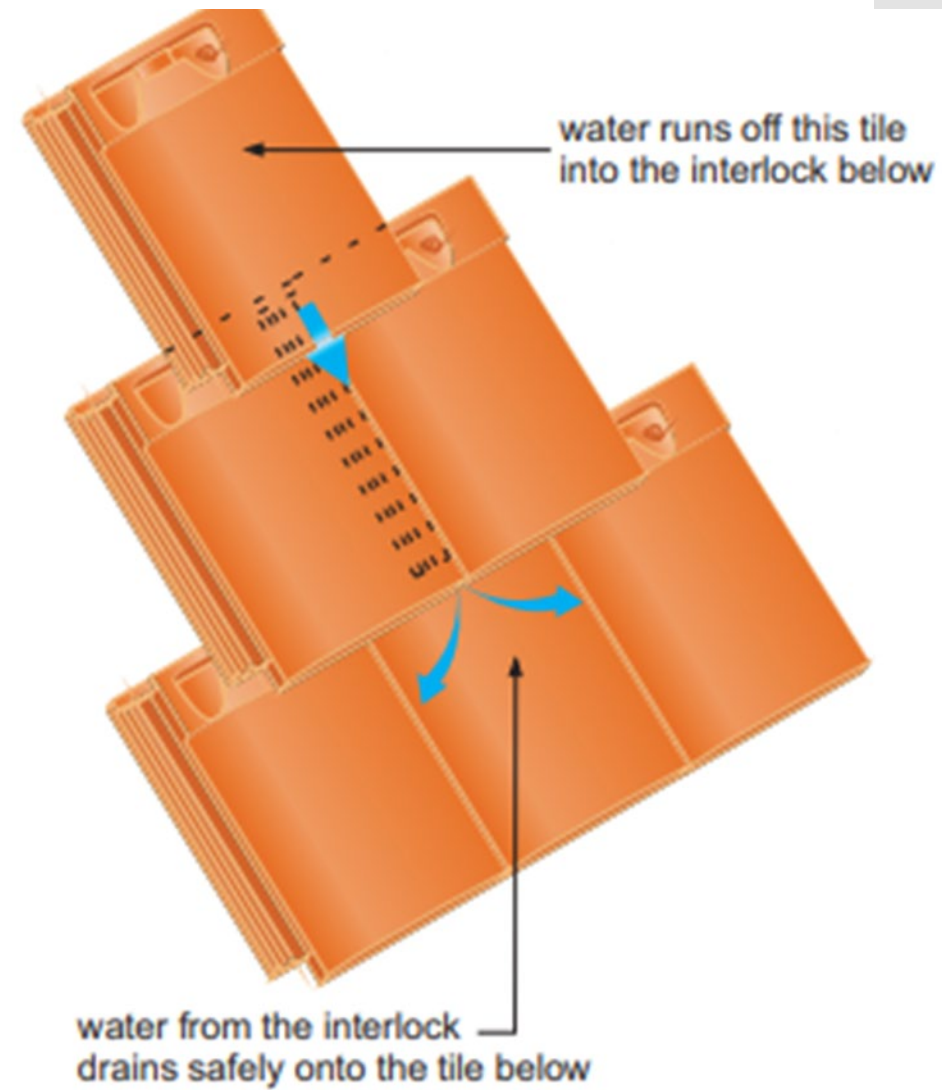
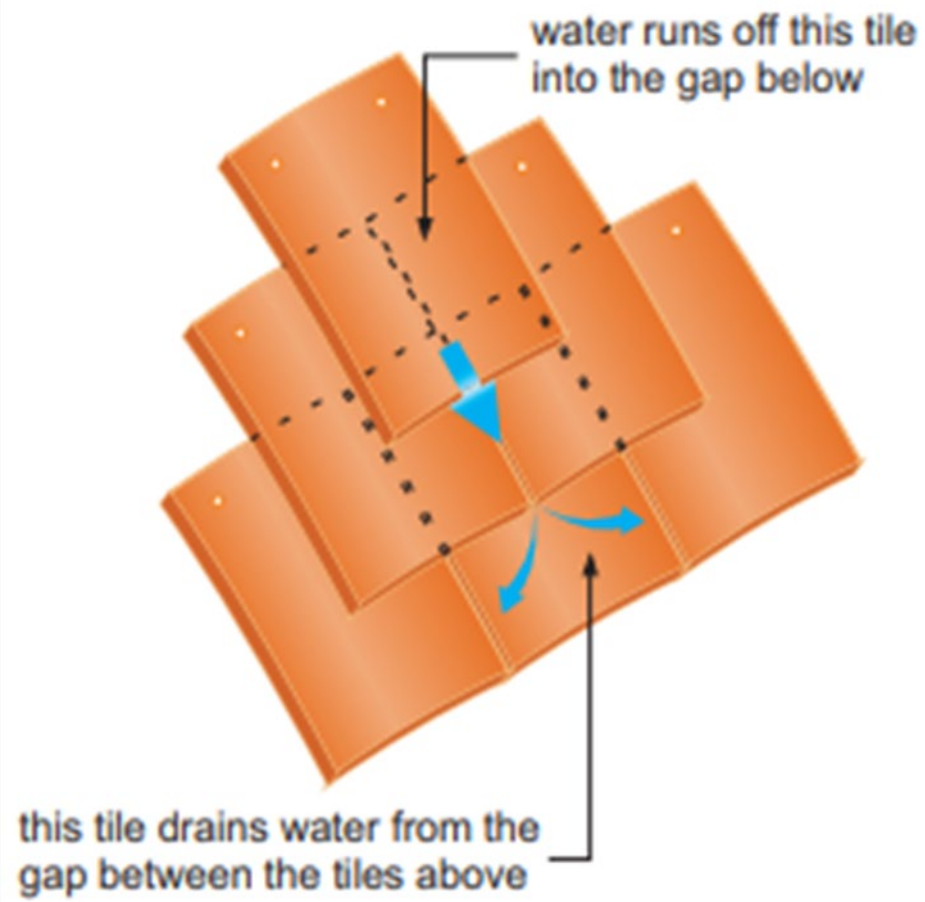


Slate



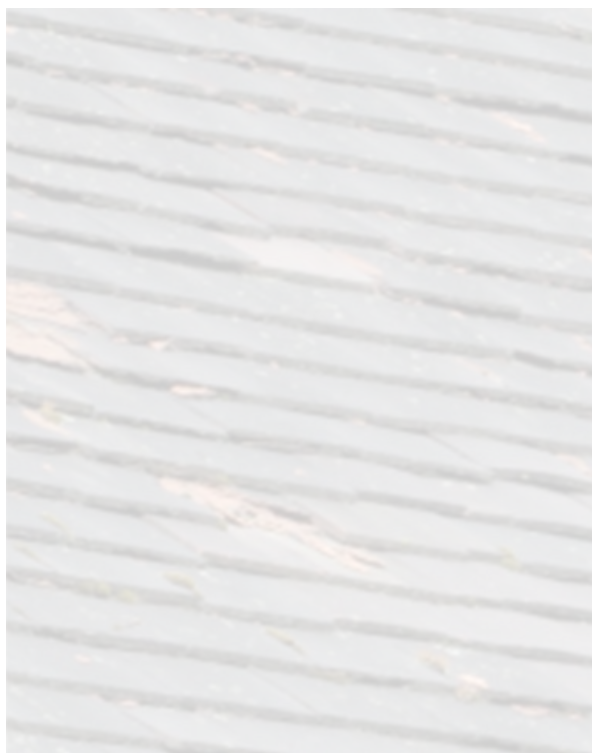
Slate

Tiles



Tiles

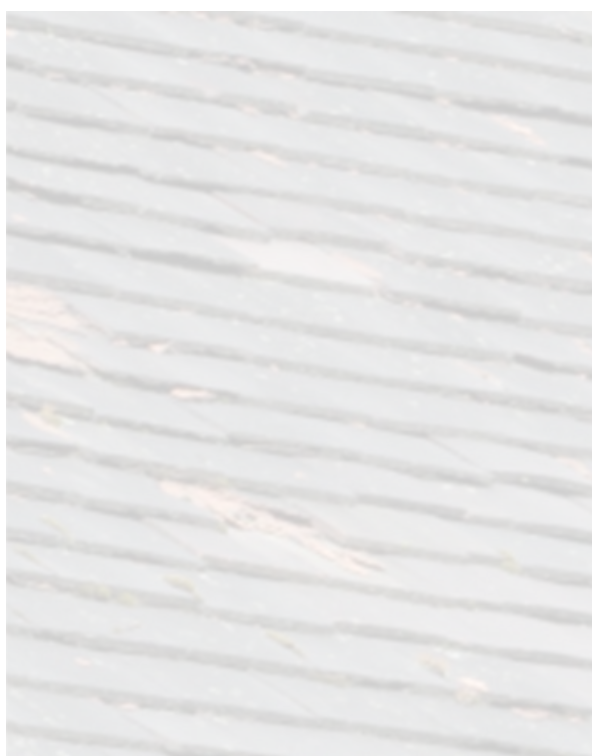




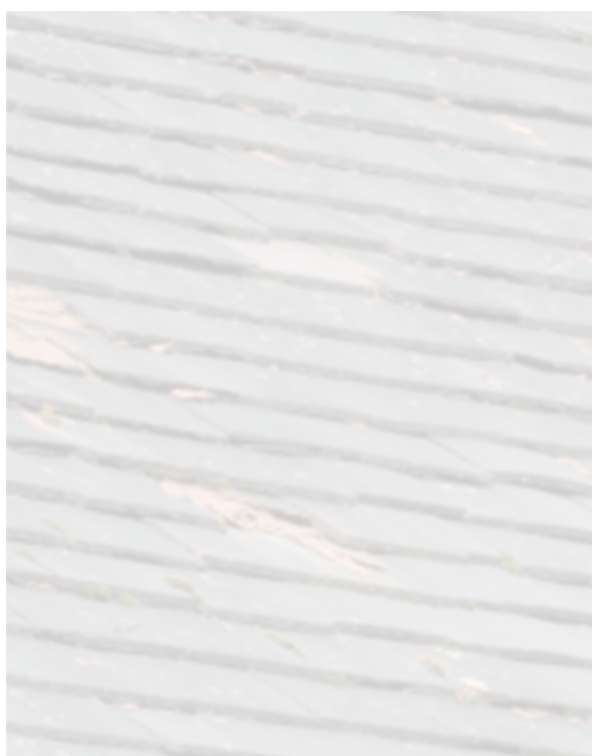
Tiles



Tiles

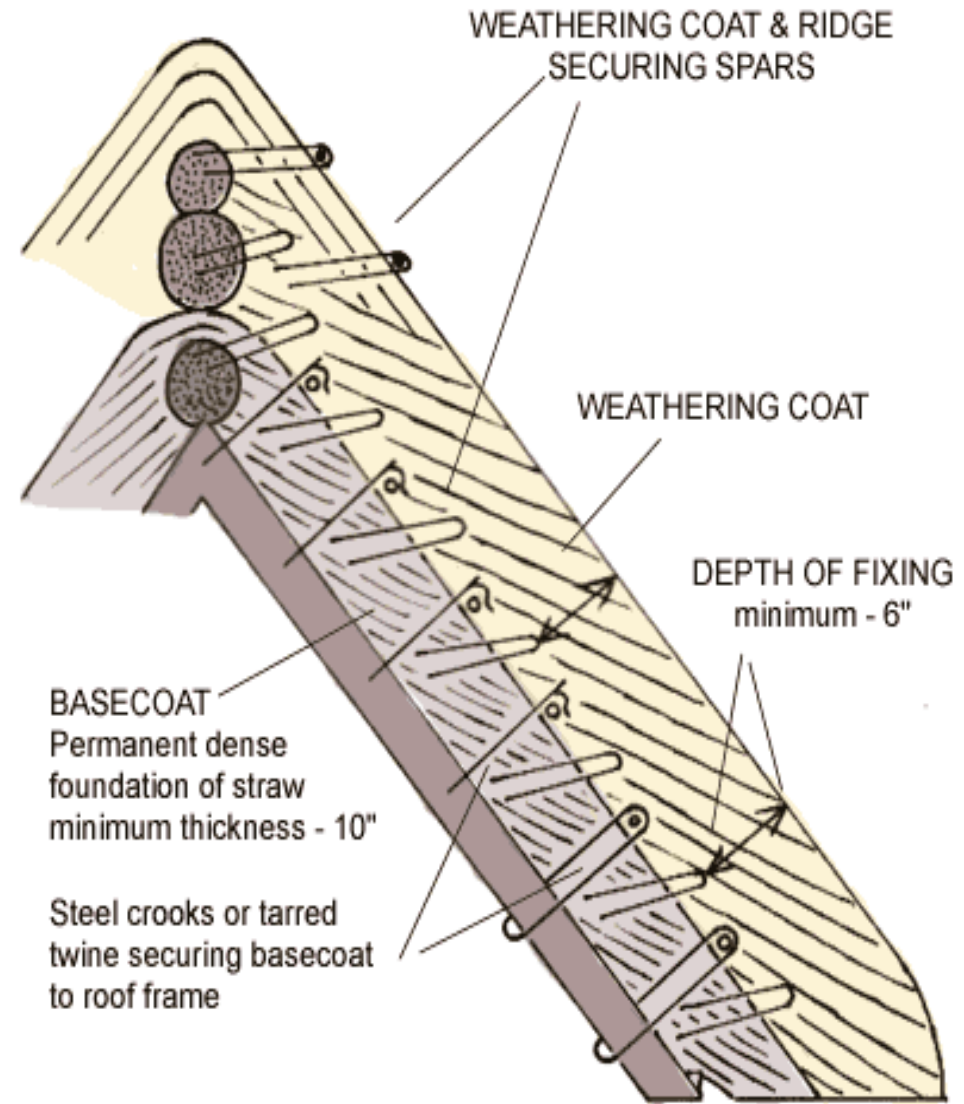


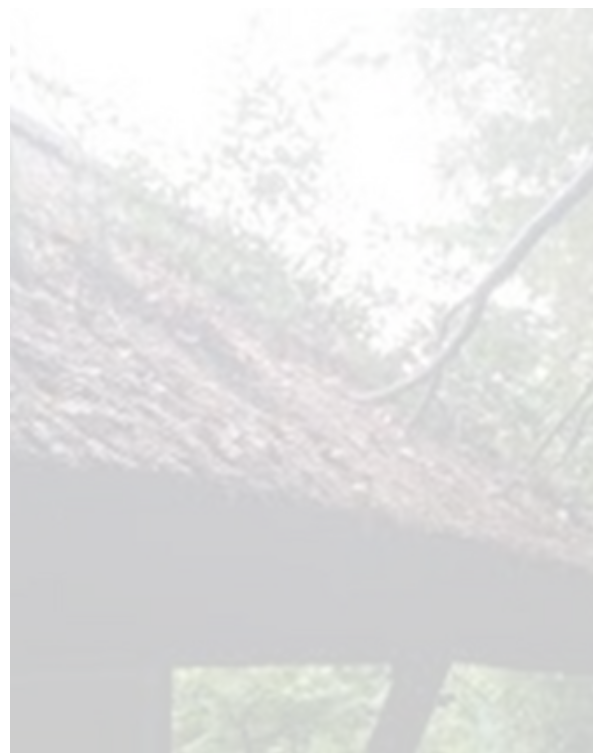
Tiles



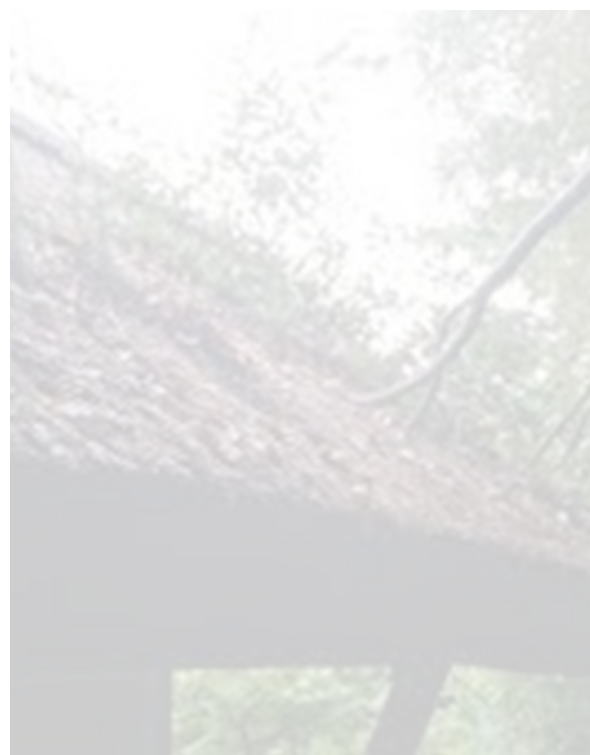
Tiles

Thatch





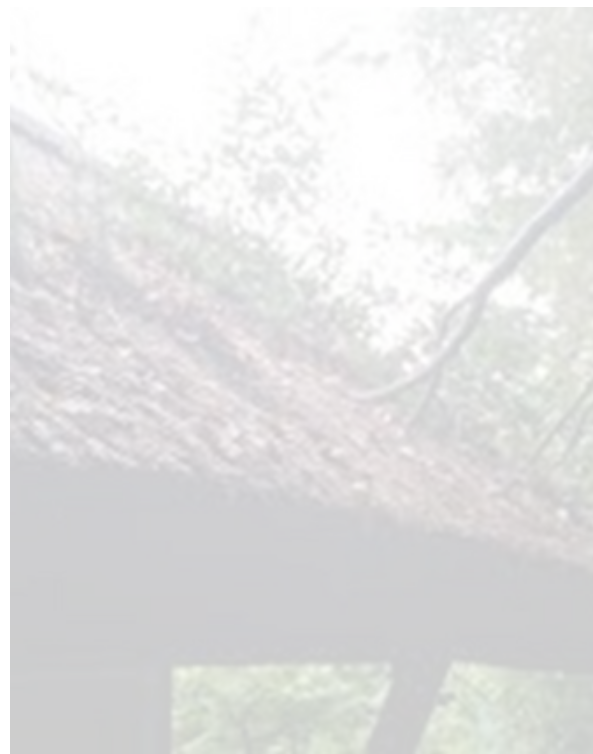
Thatch



Thatch



Thatch



Thatch

Flat Roofs





Bituminous Felt



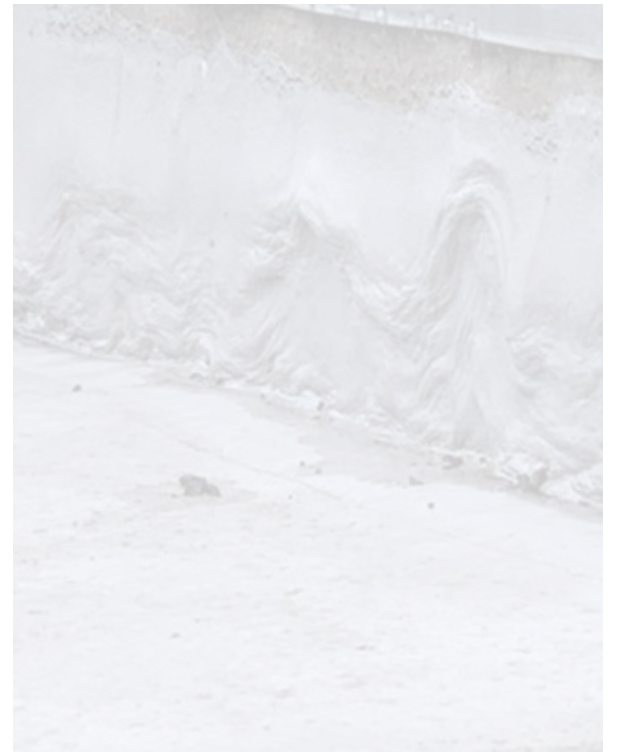
Bituminous Felt



Bituminous Felt



Mastic Asphalt



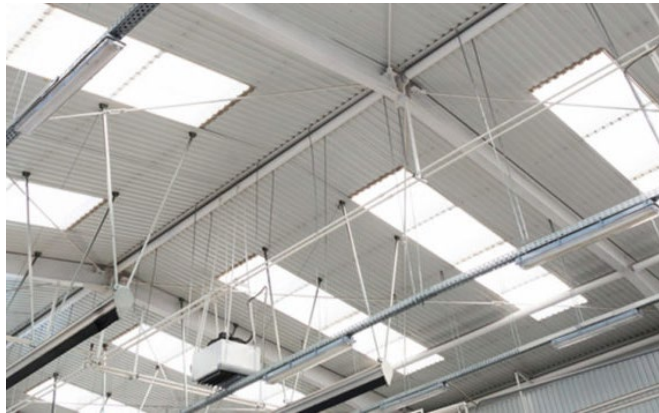
Mastic Asphalt



Mastic Asphalt



Mastic Asphalt





Roof Lights

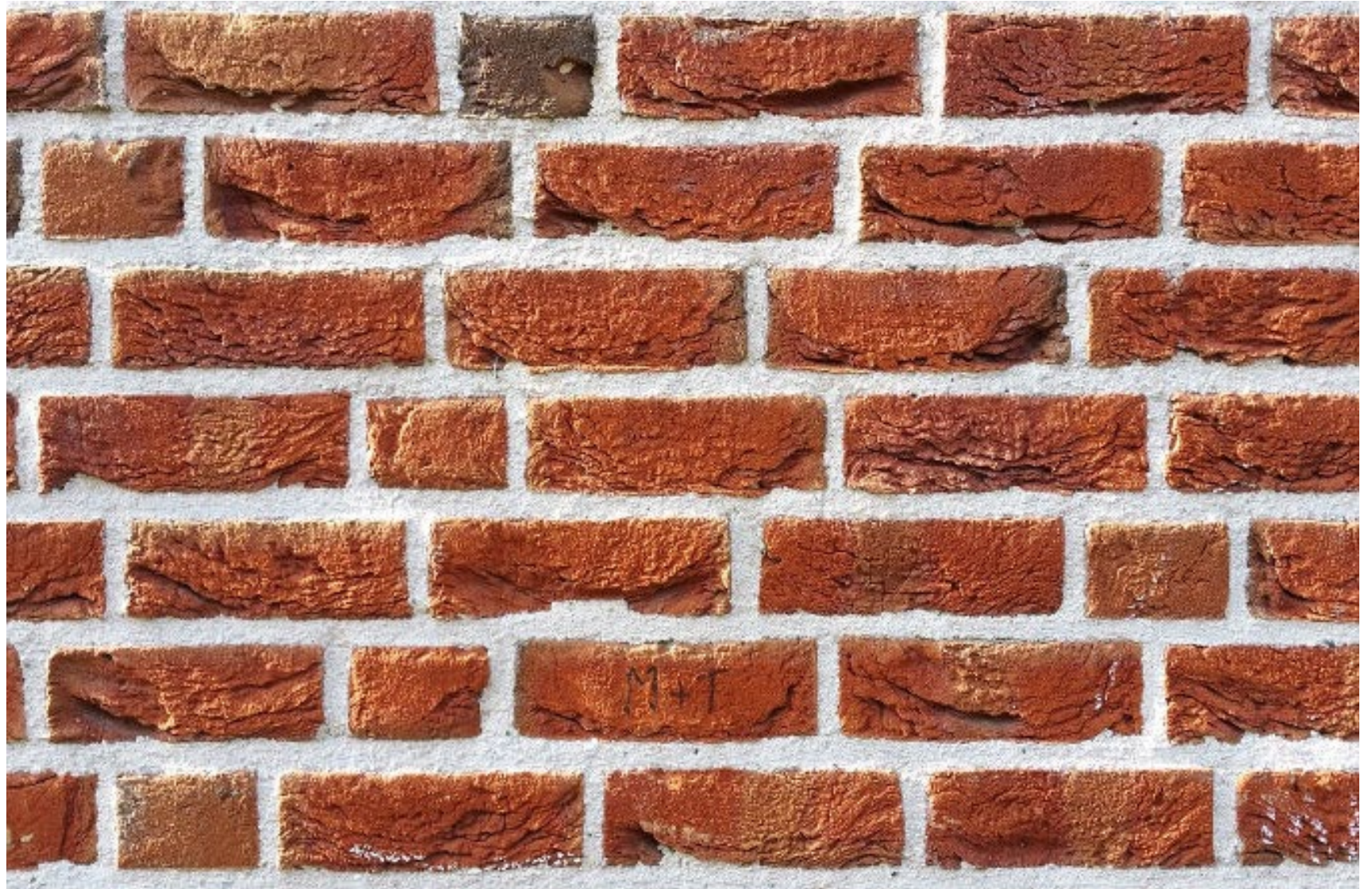


Roof Lights



Roof Lights

Walls



Walls

- The main purpose of walls in building construction is not only to protect buildings from damage but also to divide them for different rooms or spaces.

What are the functional requirements of walls?

Walls

Strength

Stability

Weather &
Moisture
Resistance

Durability

Fire Safety

Heat Resistance

Sound
Resistance

Bulging and Leaning



Bulging and Leaning



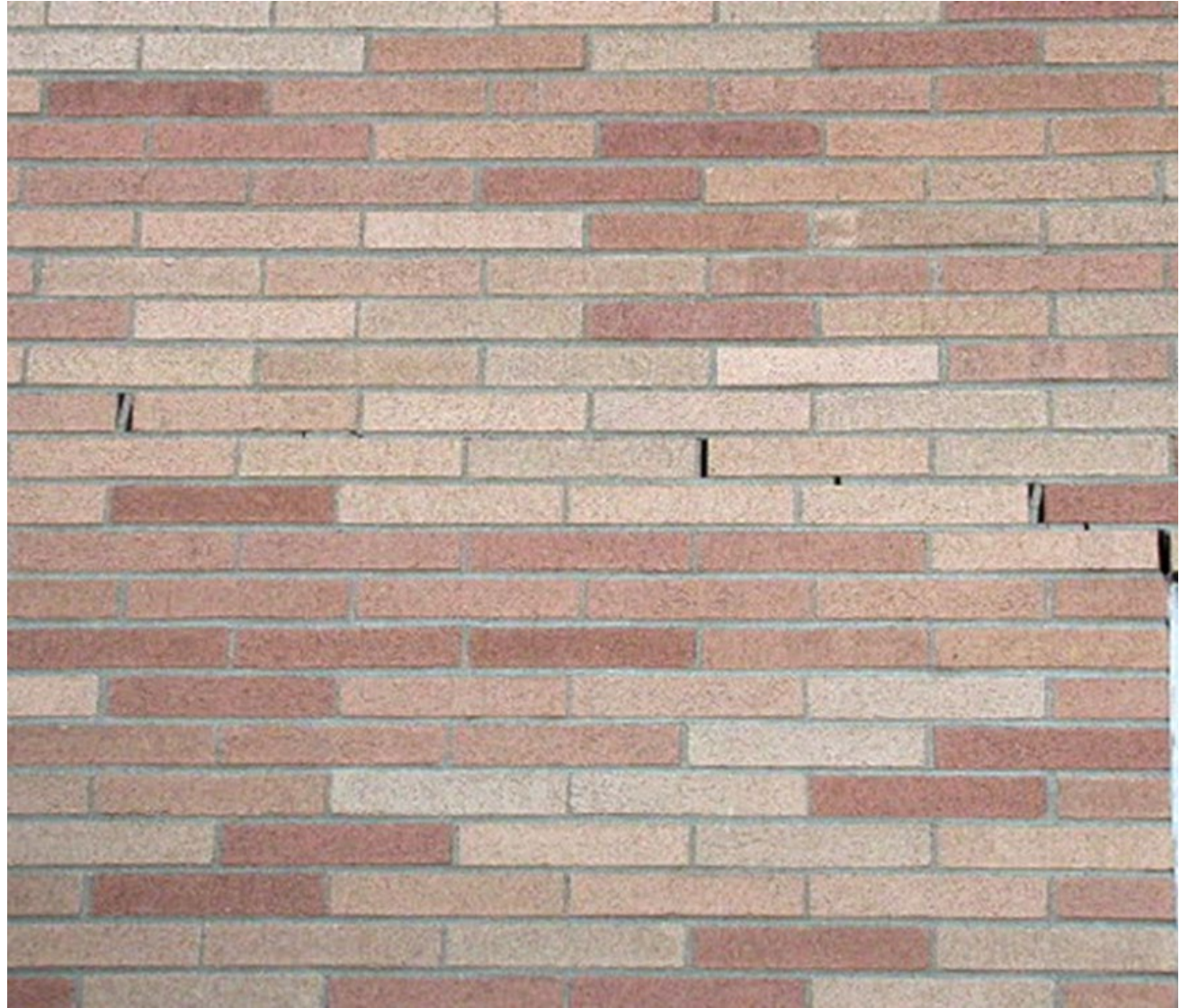
Overloading



Overloading



Thermal and Moisture Movement



Arch & Lintel Failures



Defective Materials & Chemical Action



Bonding and Junction Defects



Frost Failure



Foundations

















Symptoms



Symptoms



Symptoms

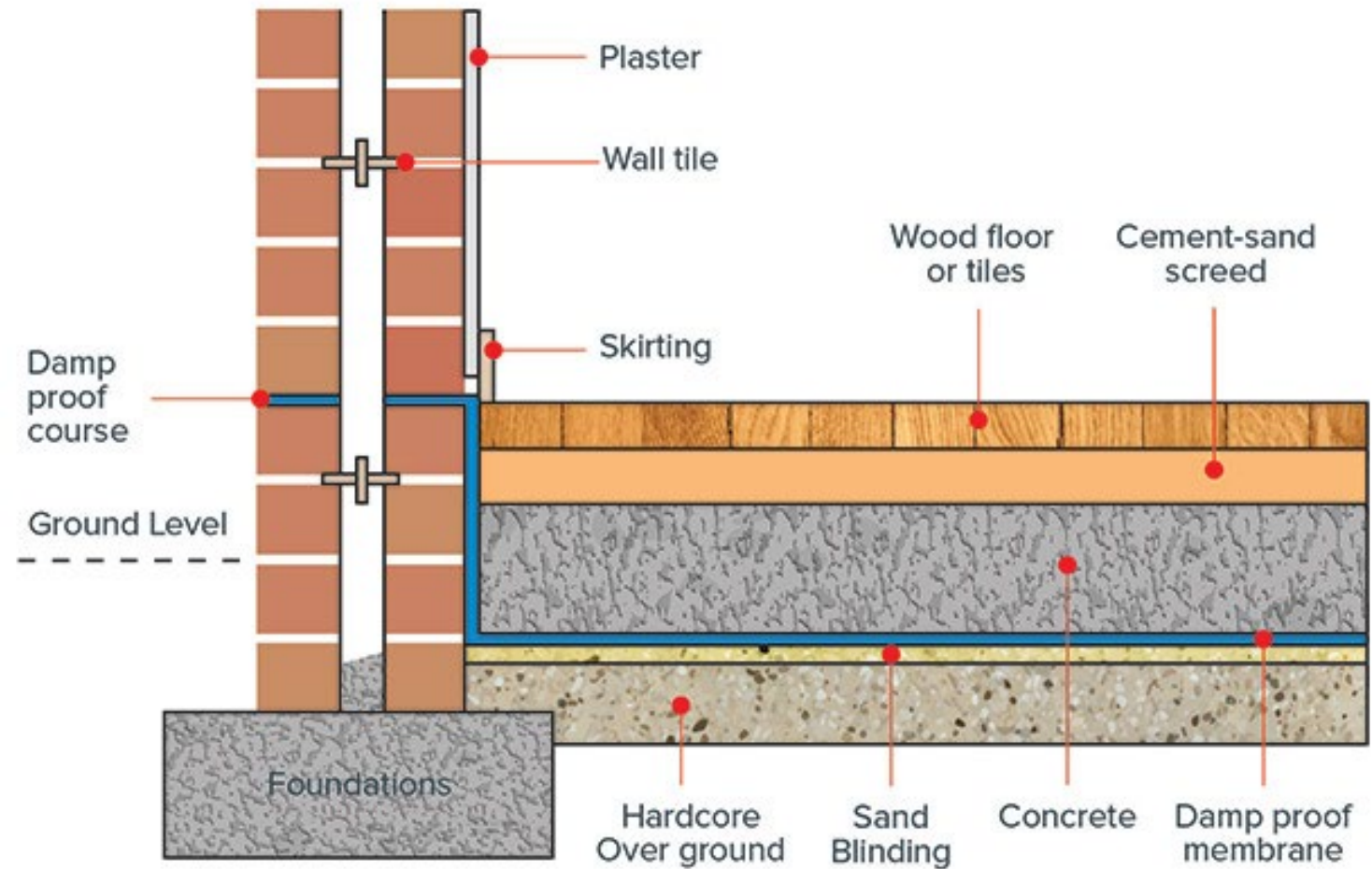


Symptoms

Damp



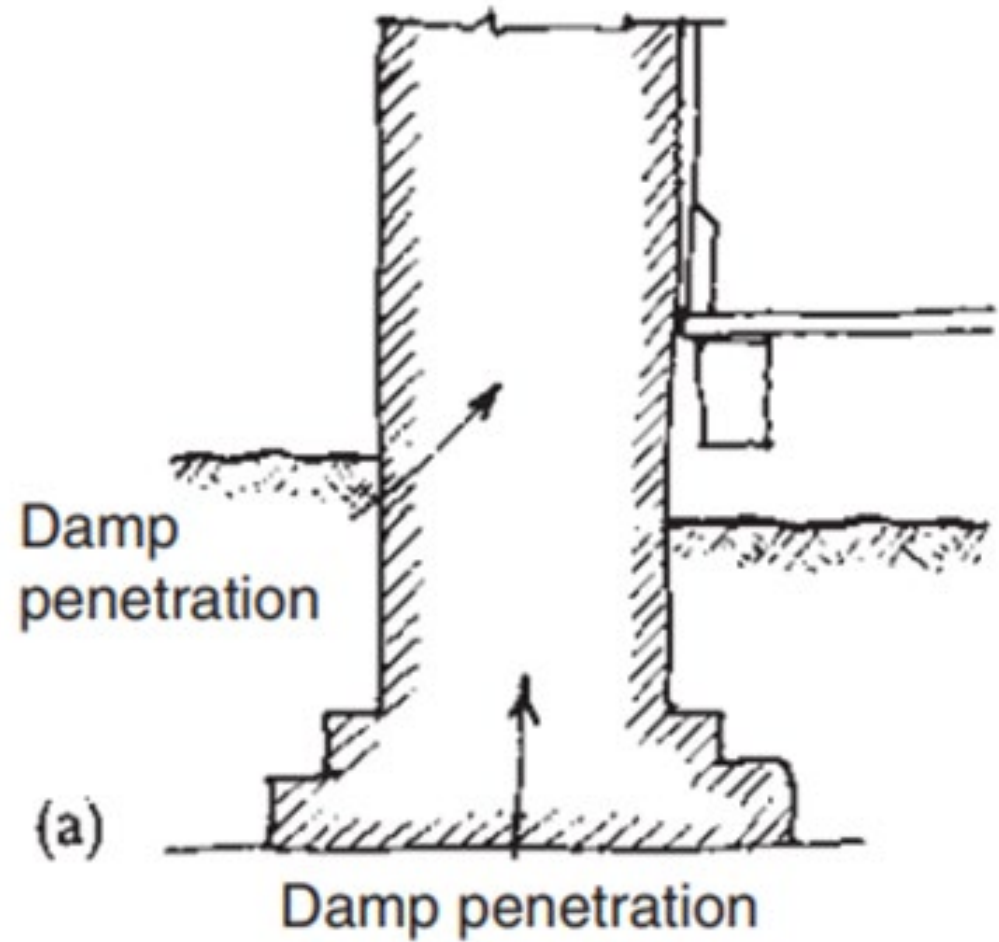
Damp Proof Course



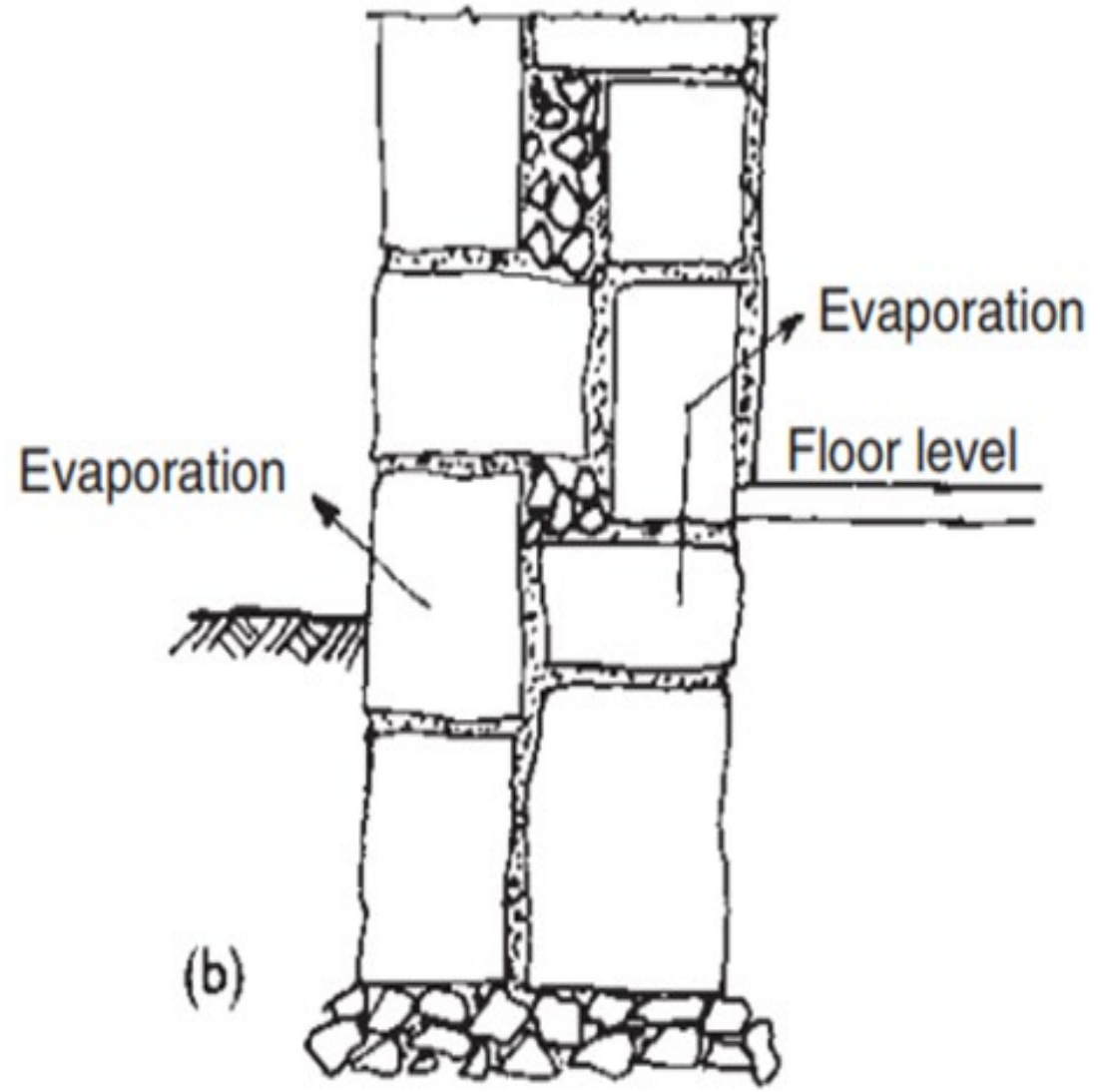
Damp Proof Course



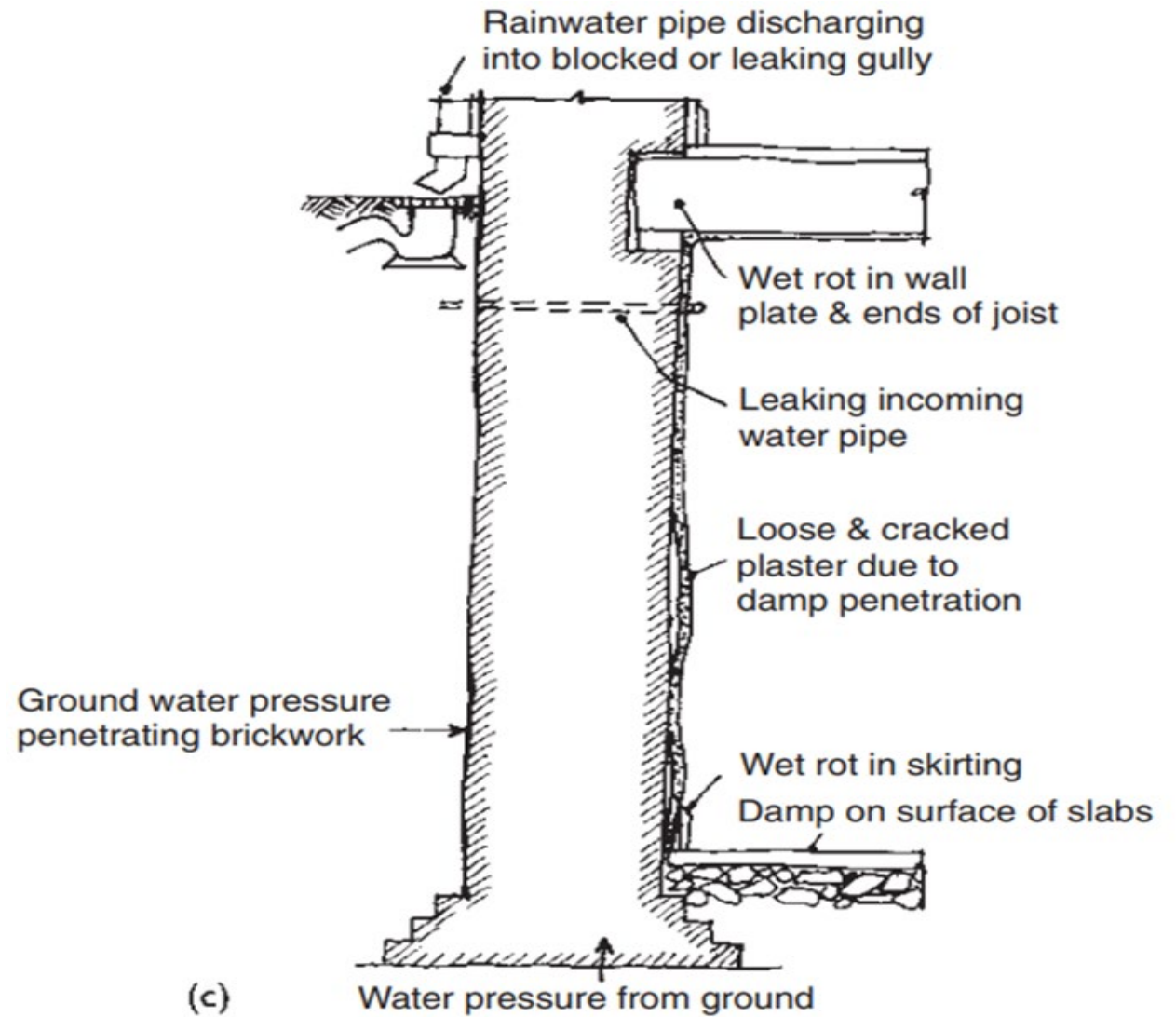
Rising Damp



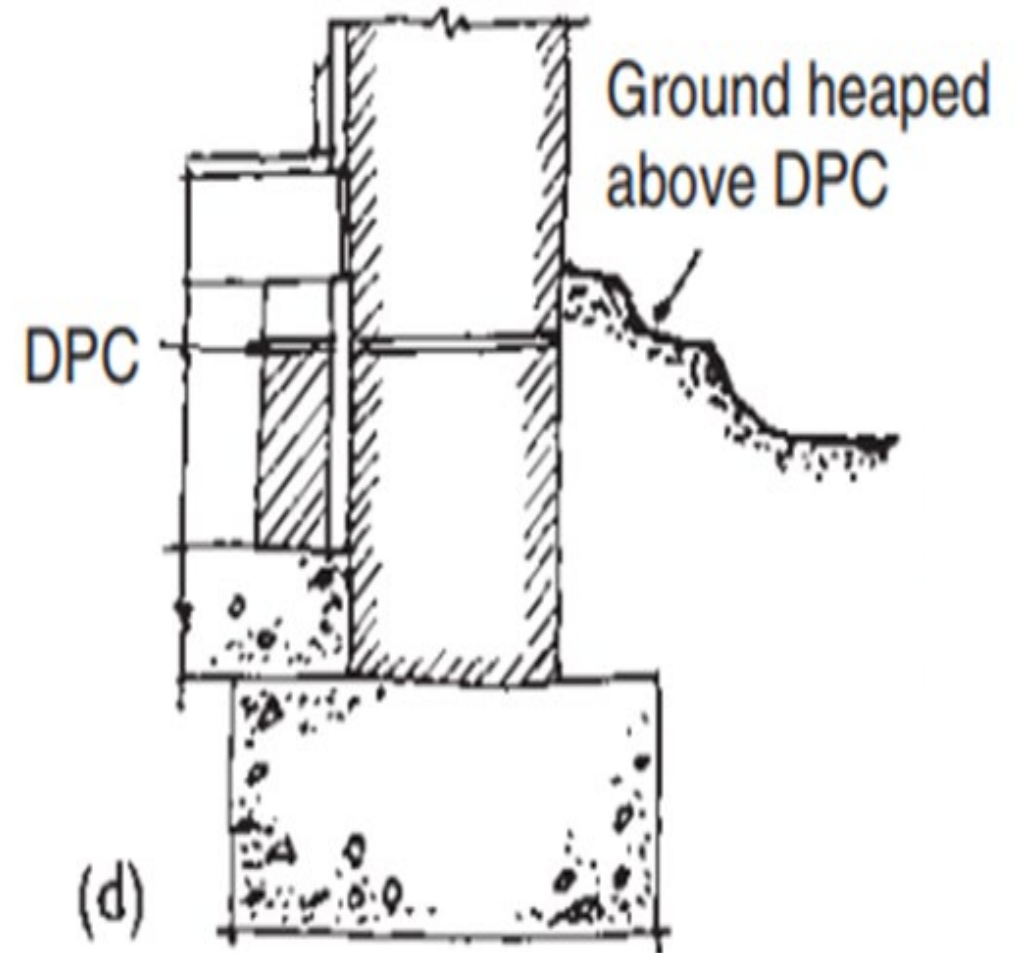
Rising Damp



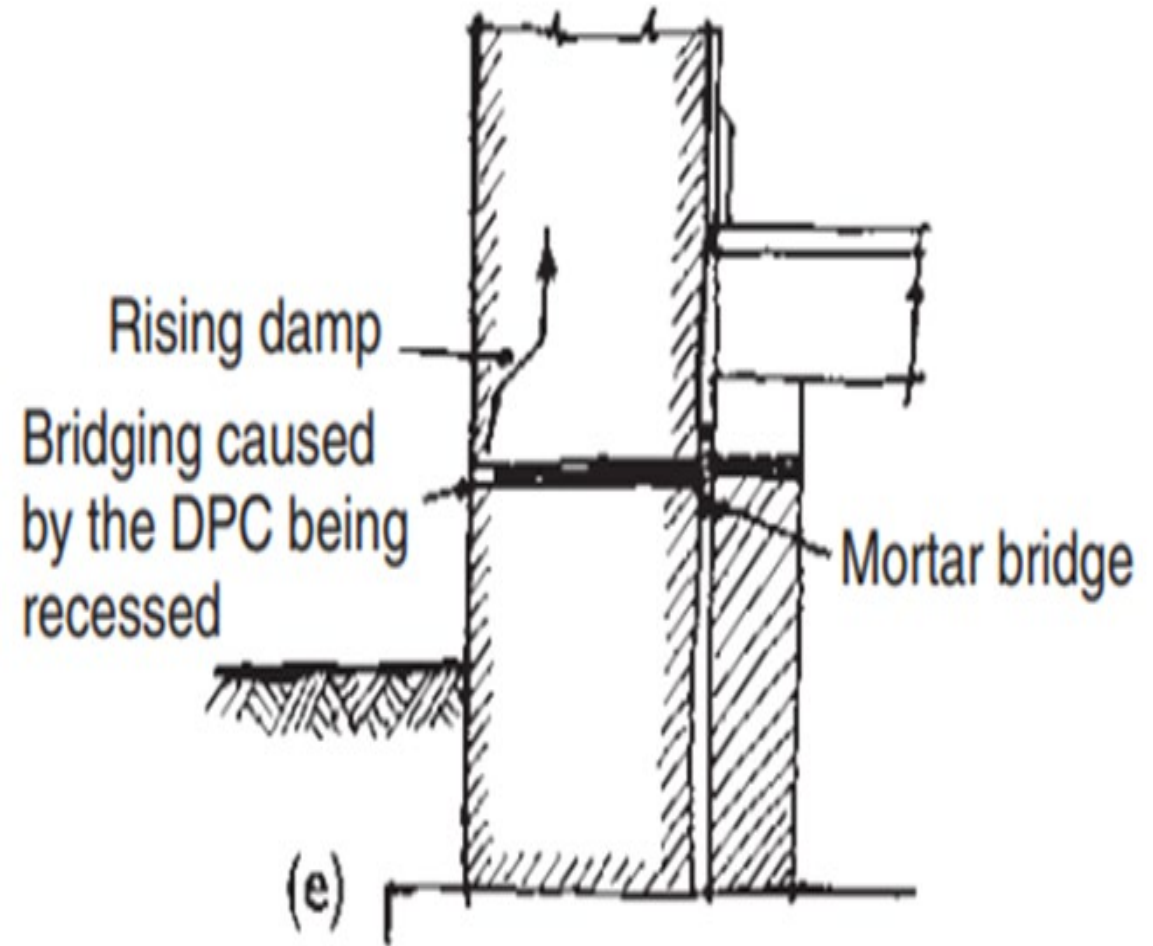
Rising Damp



Rising Damp



Rising Damp



Condensation



Dry Rot



Dry Rot



Wet Rot



Wet Rot



Pests



Pests

1. Breeding

The female woodworm beetle starts the process by laying her eggs directly into the timber through cracks, crevices and existing holes.

2. Hatching

After a few weeks the eggs hatch downwards into the timber and produce larvae.

The larvae form a pupal chamber and evolves into an adult woodworm beetle. They eat their way through the wood and produce the round holes you can see.

4. Transforming

3. Feeding

The woodworm eats for up to 5 years. It eats its way up and down the timber causing structural damage. Dust can often be seen at this point.

