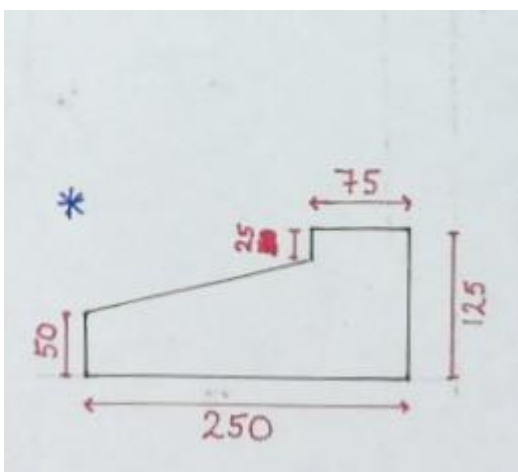
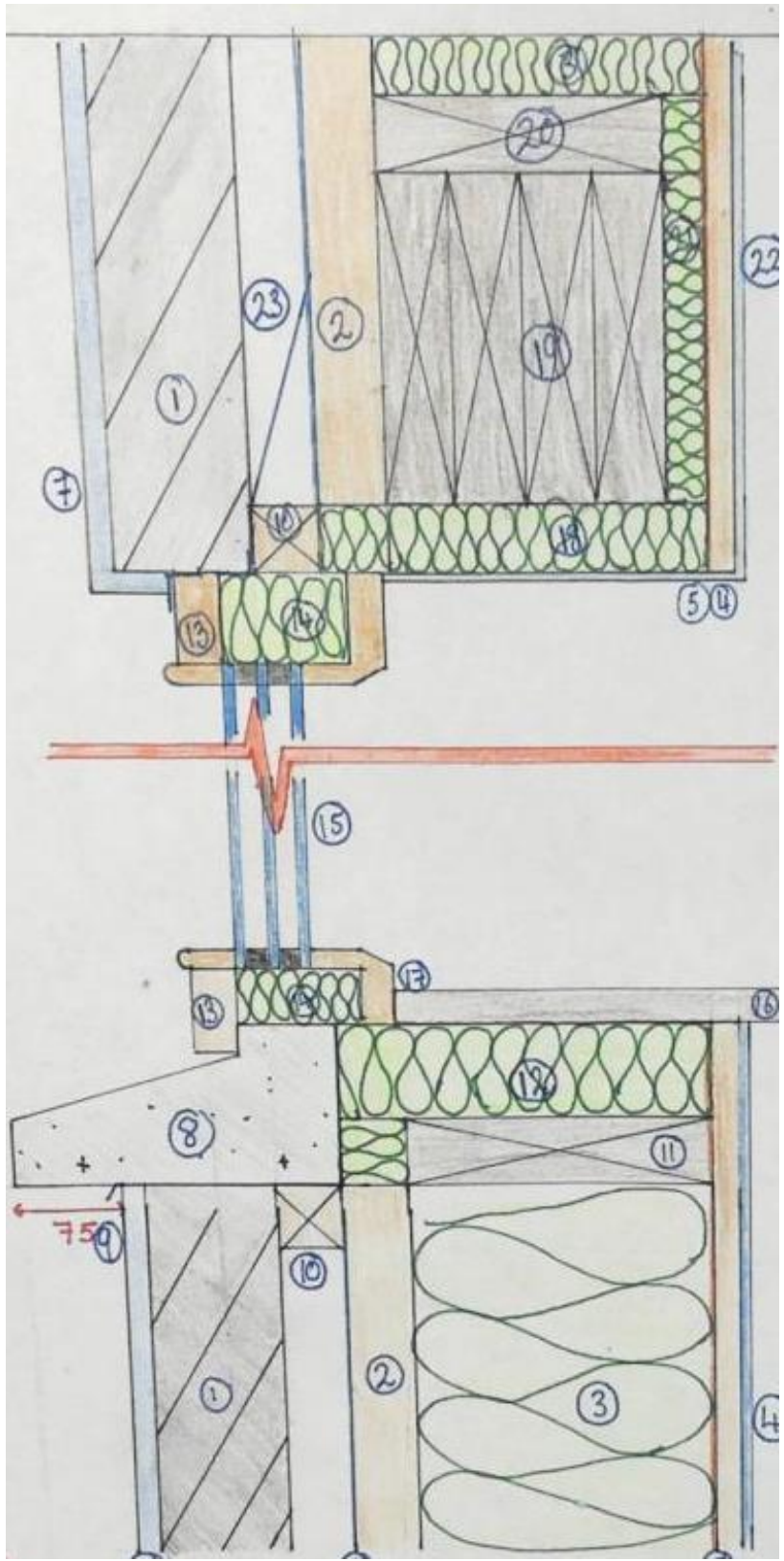
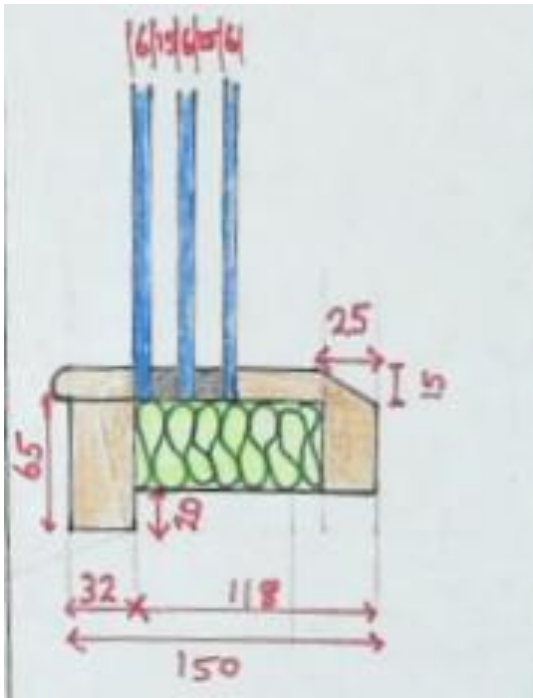


Timber Frame Cavity Walls Openings (Triple Glazed Windows)

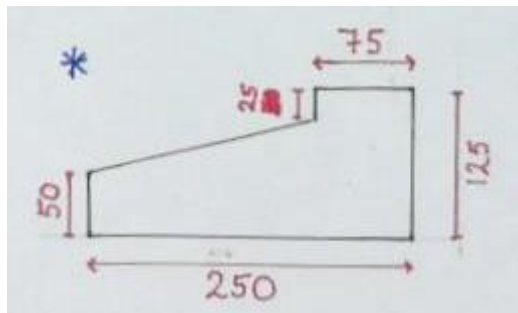
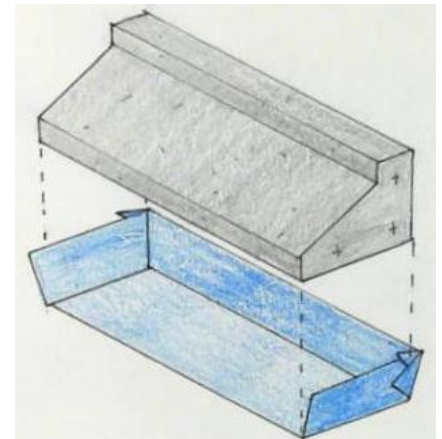


Openings in timber-frame cavity walls

- Timber lintels are used to span openings in the inner leaf. To support this, extra studs are used called *cripple studs* to carry the additional loads.
- A pressure-treated timber batten called a cavity barrier is fixed to the outer surface of the timber panel to seal the cavity around the opening and provide fixing for door and window frames.
- Window cills are slightly smaller than in concrete cavity construction
- Supported by cavity barrier and two courses of DPC are used to prevent the penetration of moisture from either cill or outer leaf

Window Cill

- The base of the window is called the window cill
- The window cill is typically made from prefabricated concrete which is pre stressed with steel reinforcement
- The entire cill is wrapped in a damp proof plastic sheet to ensure moisture resistance
- Insulation is packed behind the cill to prevent thermal bridging
- As mentioned above the Window Cill is slightly smaller in Timber Frame Cavity Walls

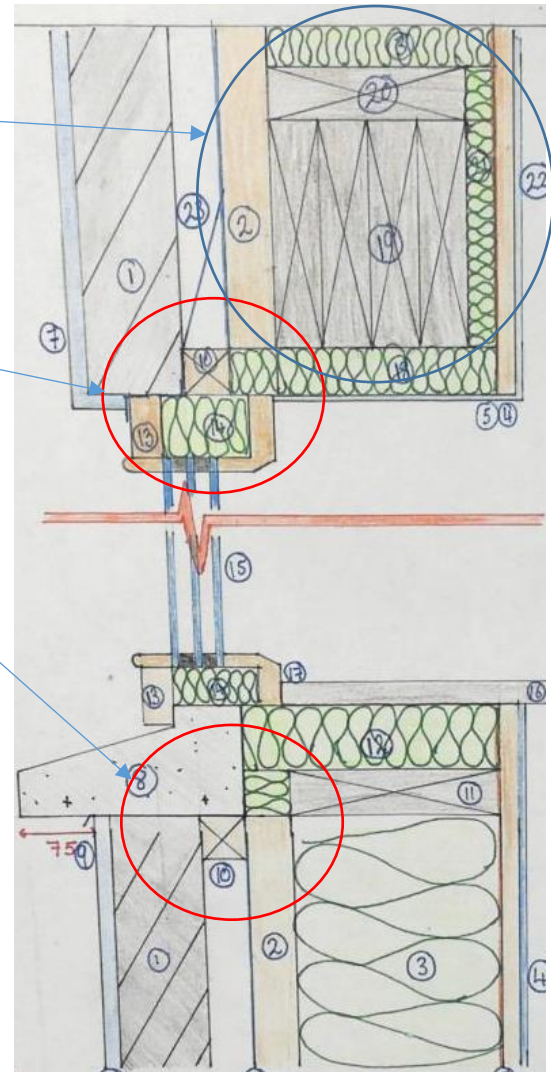


DPC at the cill



Closing the cavity around the opes

- Where Timber Frame is used, **pre-stressed Timber lintels** are installed
- **Prefabricated cavity barriers** are used to close the cavity and **damp proof course (DPC)** is placed over to prevent **moisture bridging**
- It is important to properly seal/close the cavity space around the ope.
- If this is not done correctly, heat can easily travel out of the building.
- Heat can also escape across the solid components by **thermal bridging**



Thermal Bridging

- A thermal bridge occurs where a portion of a structure has a high conductivity, resulting in pathways through which significant heat is lost
- It is uncontrolled and undesirable heat loss across building materials
- A thermal bridge will occur at openings in external walls or where cavities are bridge with materials of poor insulating value.
- Thermal bridges lead to increased energy costs as thermal bridges lower the overall thermal insulation properties of the structure
- Thermal bridging may also lead to condensation forming on the internal surface of the external walls

Advantages of eliminating thermal bridging

- Eliminating thermal bridges improves the thermal comfort and performance of the house
- This saves money as less heat is required and reduces the carbon footprint of the building
- This also reduces the likelihood of dampness and mould occurring, and thus results in a healthier building environment

