

D_Further applications

The information below provides an example of Stora Enso's construction proposals

A Shell construction

- Plinth/Wall anchorage
- Wall joint
- Lintel
- Ceiling
- "Ground floor wall – ceiling – top floor wall" connecting nodes
- Roof
- Cantilever/coat

B Layer structure

- External walls
- Internal walls
- Floor structure
- Slab (underside)
- Roof
- Party wall
- Building partition wall

C Details

- Plinth/Wall anchorage
- Window connection
- Door joint
- Cantilever
- Pitched roof
- Flat roof
- Electric installation
- Sanitary installation
- Fireplace
- Stairs

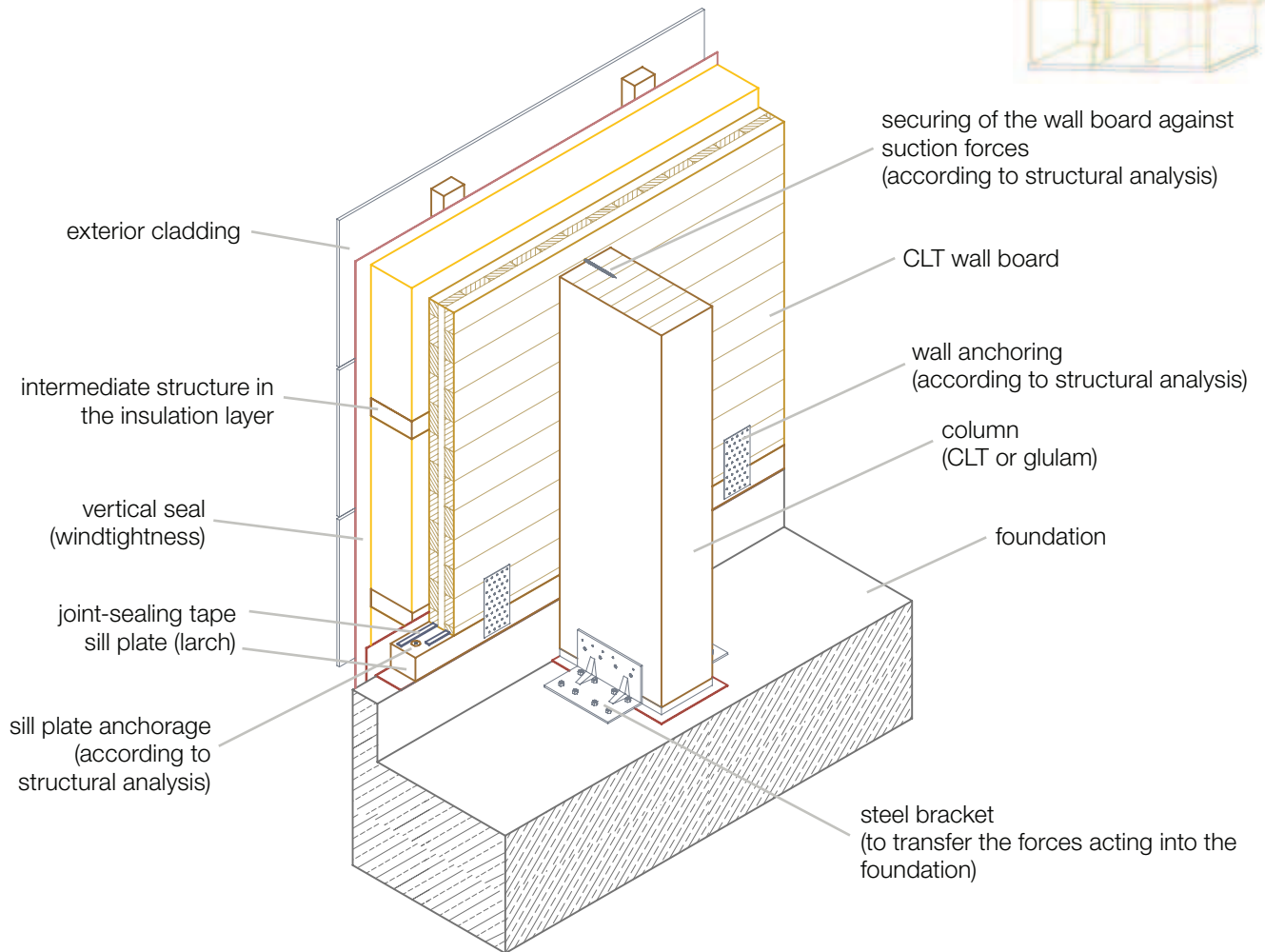
D Other applications

- Industrial and commercial buildings
- Multi-storey residential buildings
- Building extensions
- Structural engineering

Constructions or structures must be tested separately and calculated on a case by case basis with regard to the structural analysis, building physics and feasibility. The actual professional implementation is the responsibility of the crews authorised to perform the work.

1 Industrial and commercial construction

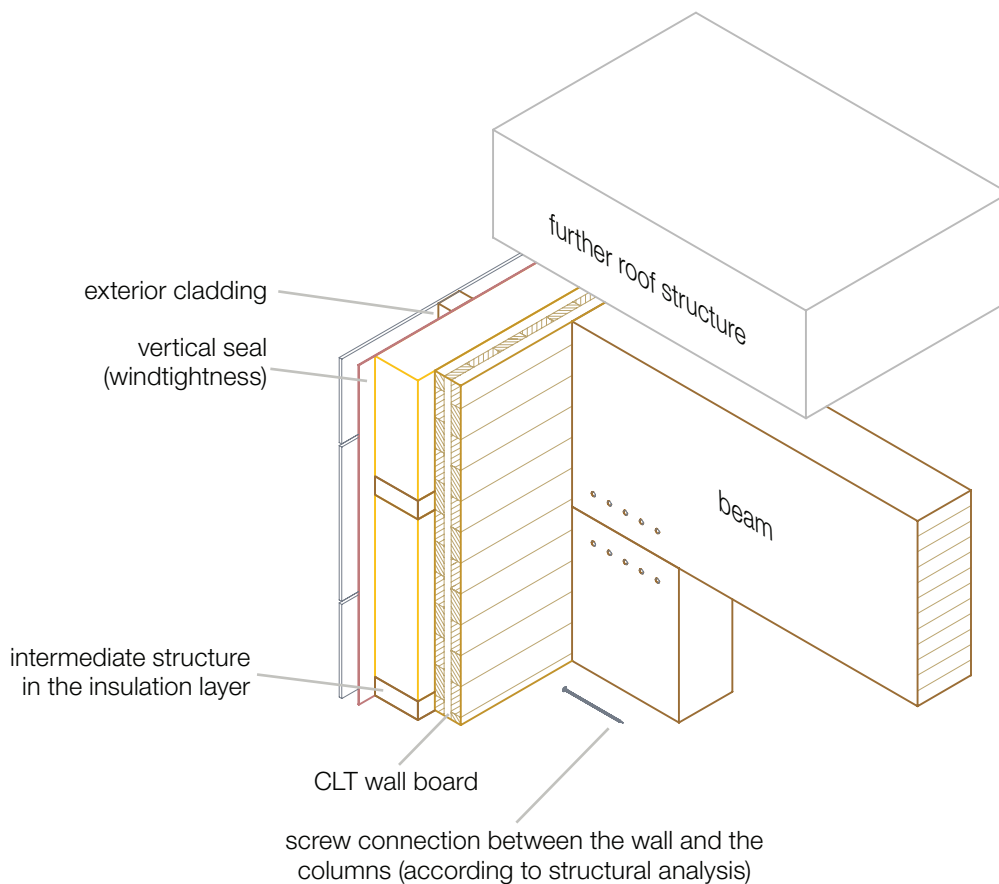
1.1 Wall anchoring



Execution

- The CLT wall board and the column structure must be protected against rising damp by means of suitable seals.
- Height adjustment (wood, metal or mortar) must be provided between the columns and foundation.
- The choice and rating of the connectors and all structural components depend on the structural requirements.
- Depending on the requirements, the forces acting upon the CLT wall board must be transferred to the columns and from there to the solid structure (foundation) by means of fully threaded screws.

1.2 “Wall-to-roof” connection node



Execution

- When necessary, joint-sealing tape must be used between the CLT wall and roof boards to make the structure airtight.
- The choice and rating of the connectors and all structural components depend on the structural requirements.
- The correct transfer of forces from the roof board to the wall board must be possible.

Construction

FURTHER APPLICATIONS

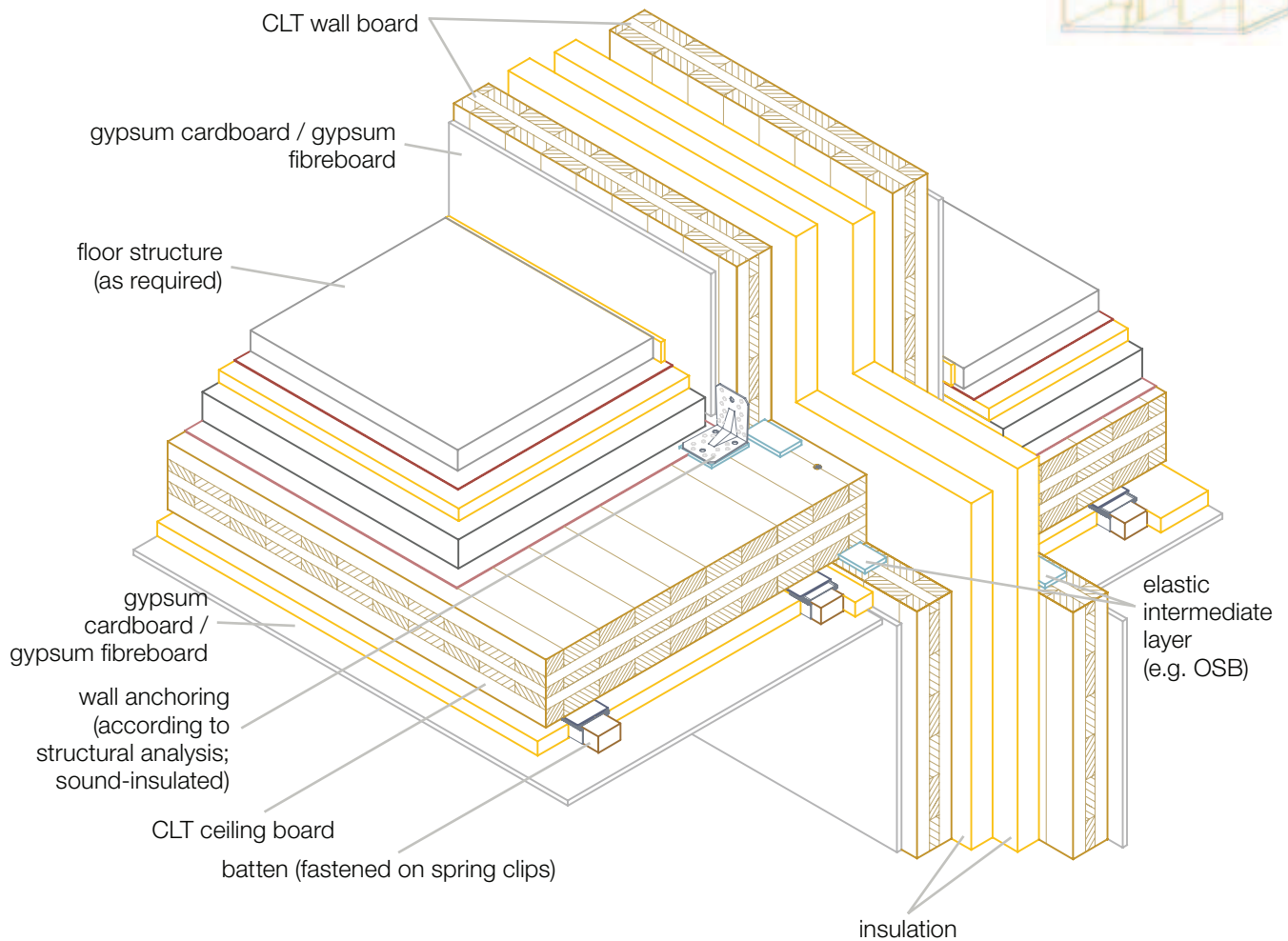
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Illustration



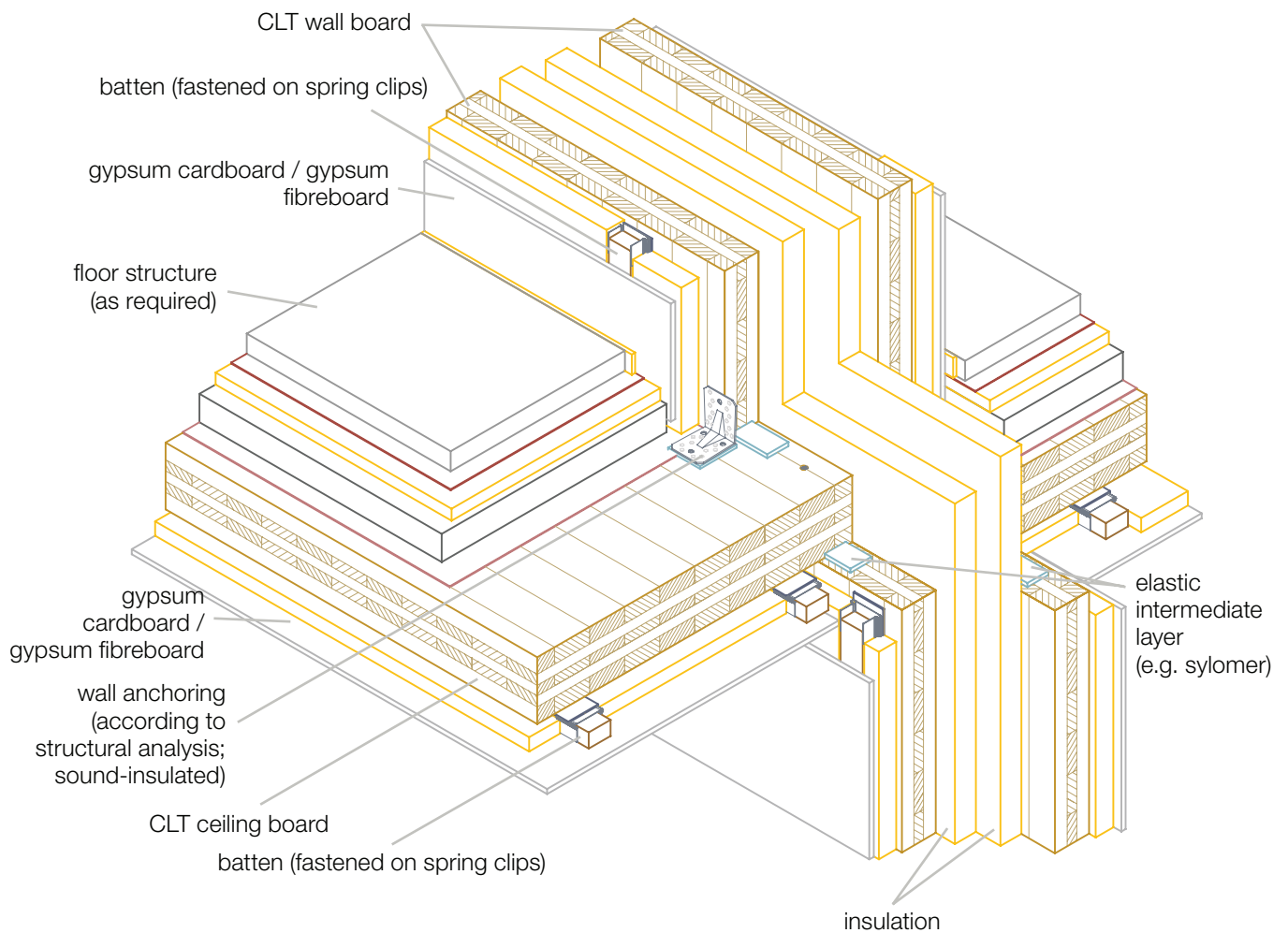
2 Multi-storey residential buildings

2.1 “Lower floor wall – ceiling – upper floor wall” connection node



Execution

- Sound insulation appropriate to the soundproofing requirements must be provided for the various components.
- The fasteners must be sound-insulated from the framework with suitable elastic intermediate layers.
- The ceiling must be designed according to the mass-spring-mass principle.
- The choice and rating of the connectors and all structural components depend on the structural requirements.
- When calculating dimensions, the required structural-physical properties of such connection nodes must always be taken into account (e.g. thermal, sound and fire insulation).

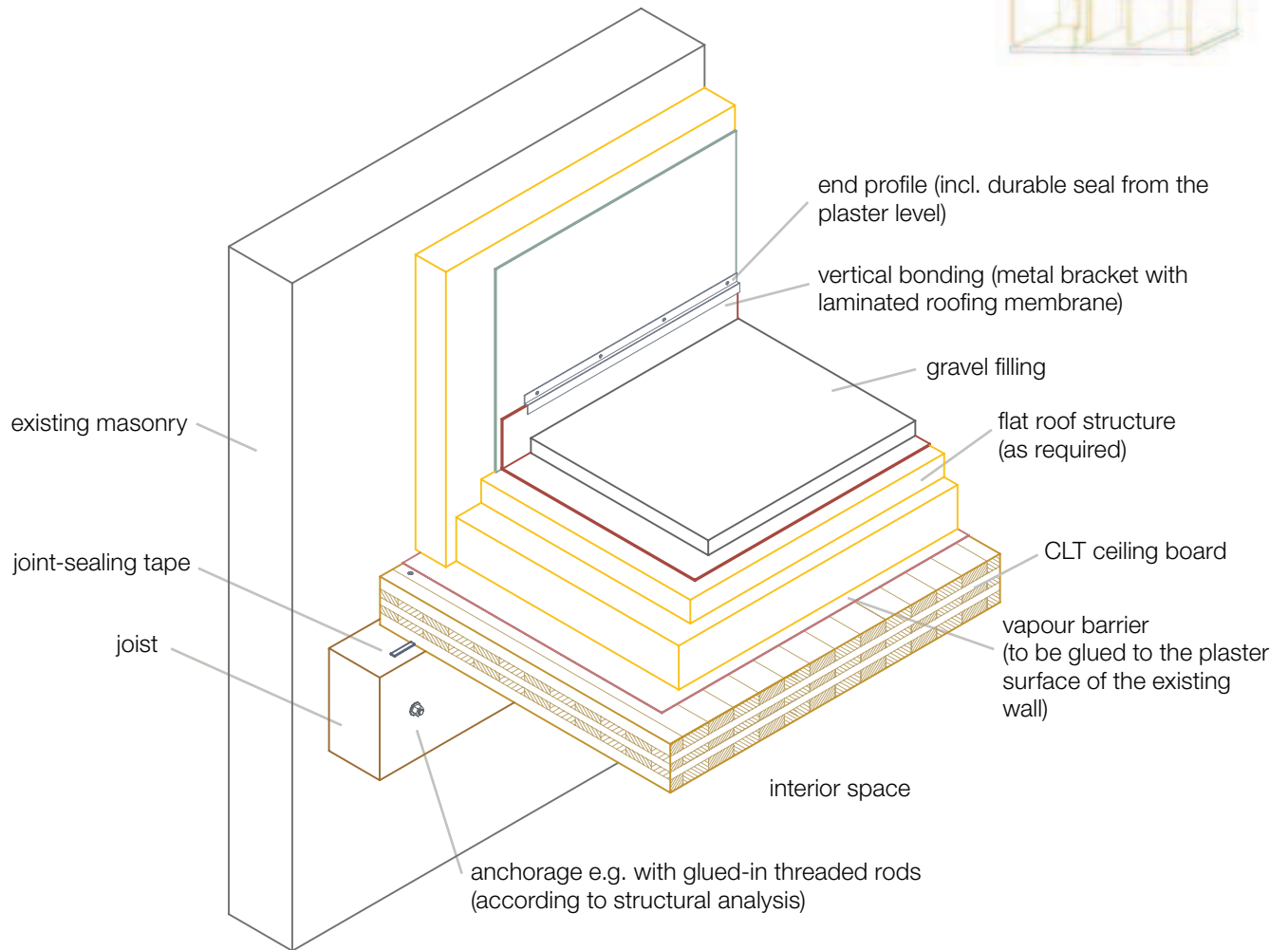


Execution

- Sound insulation appropriate to the soundproofing requirements must be provided for the various components.
- The fasteners must be sound-insulated from the framework with suitable elastic intermediate layers.
- The ceiling must be designed according to the mass-spring-mass principle.
- The choice and rating of the connectors and all structural components depend on the structural requirements.
- When calculating dimensions, the required structural-physical properties of such connection nodes must always be taken into account (e.g. thermal, sound and fire insulation).

3 Extensions

3.1 Attachment of a flat roof to an existing wall



Execution

- Joint-sealing tape must be used if necessary to make the structure airtight.
- The CLT boards must be protected against moisture from the existing structural components.
- The choice and rating of the connectors and all structural components depend on the structural requirements.

4 Civil engineering

4.1 CLT in combination with other materials



Illustration



Execution

- Particularly in large buildings, a combination of CLT with other derived timber materials, steel and concrete is essential to bridge the required large spans and to transfer the generally high loads into the ground.
- Layer structures must be adapted to the structural-physical requirements resulting from the different intended uses of the building.
- The proper dimensioning of the connectors is very important as connectors play an essential role in civil engineering structural analysis.