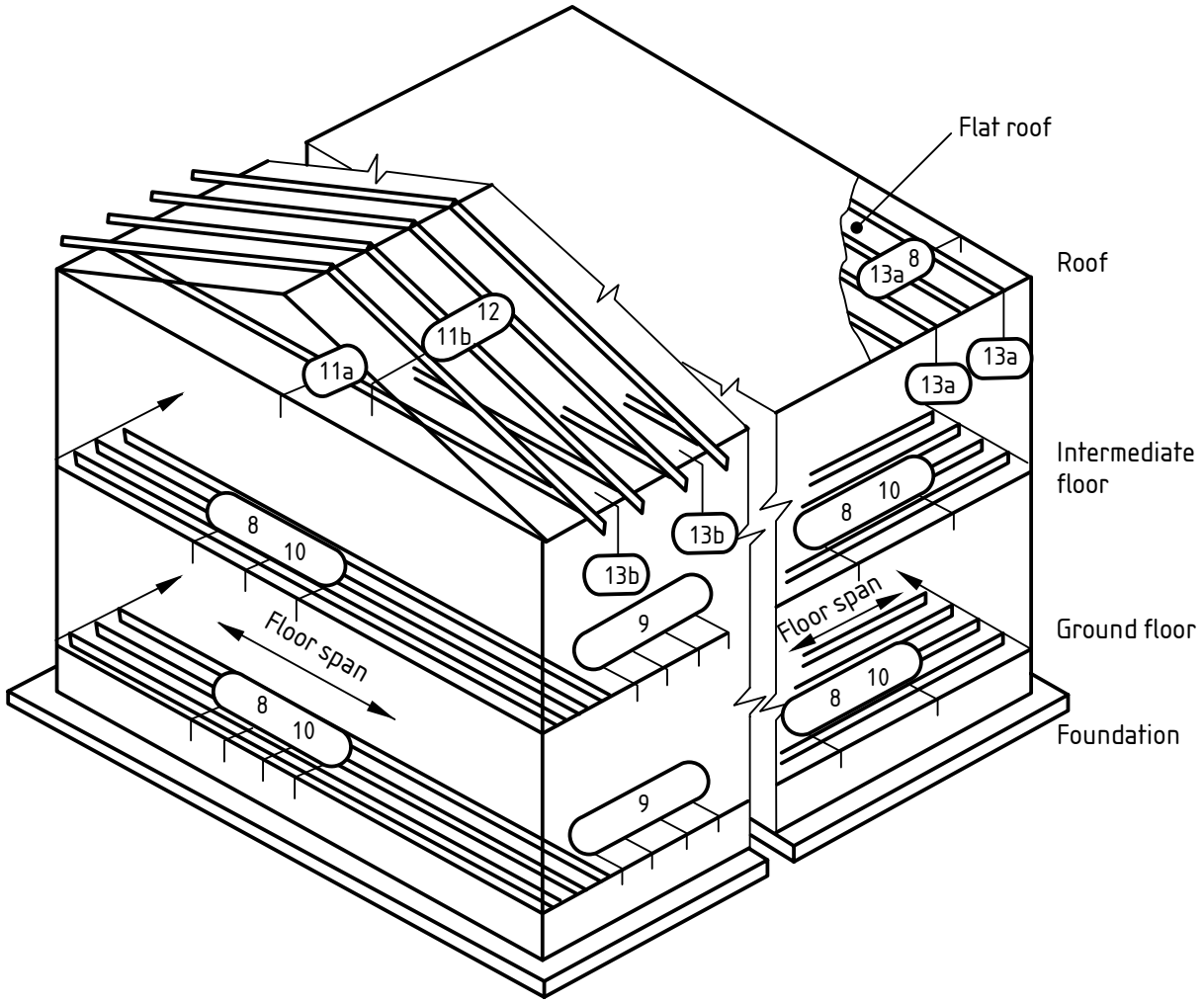


Figure 7 — Location and types of connection necessary between elements of a typical building

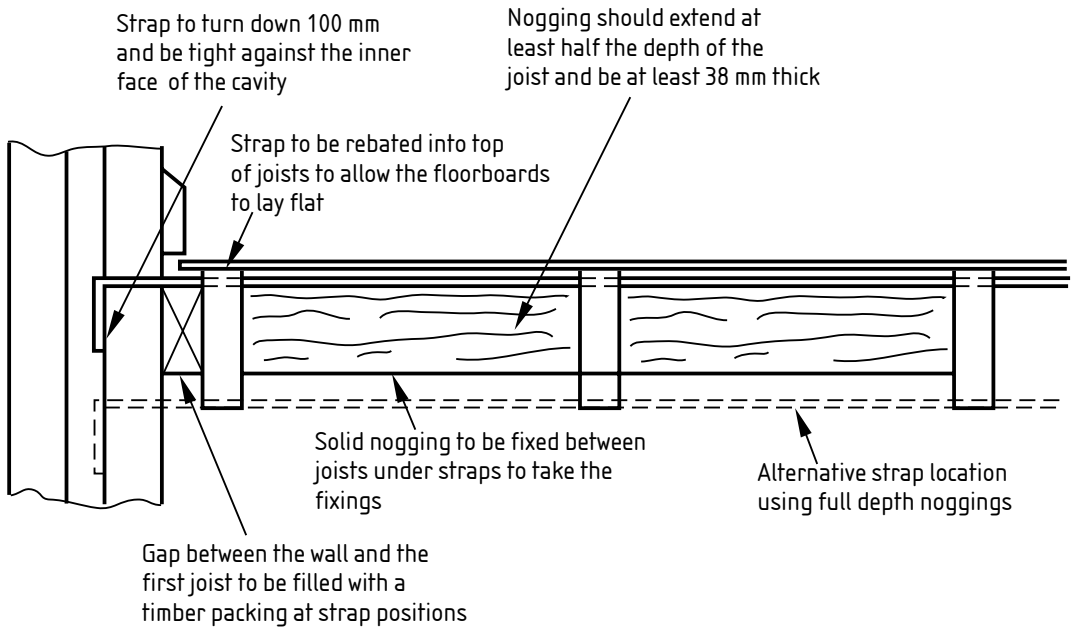
5.3.2 ***Floors***

Typical ways of connecting floors with walls are shown in Figure 8, Figure 9 and Figure 10. Where floors are required to provide lateral restraint, the recommendations of BS 5628-1:1992, Annex C, or BS 8103 should be followed.

Where practicable, suspended timber floors near to the ground should be supported independently of the main structure by sleeper walls. Where this is not practicable, offsets or corbels from external walls may be used. Suspended timber floors at other levels should be built into the walls or supported by offsets, corbels or joist hangers. Timber wall plates should not be built into any wall.

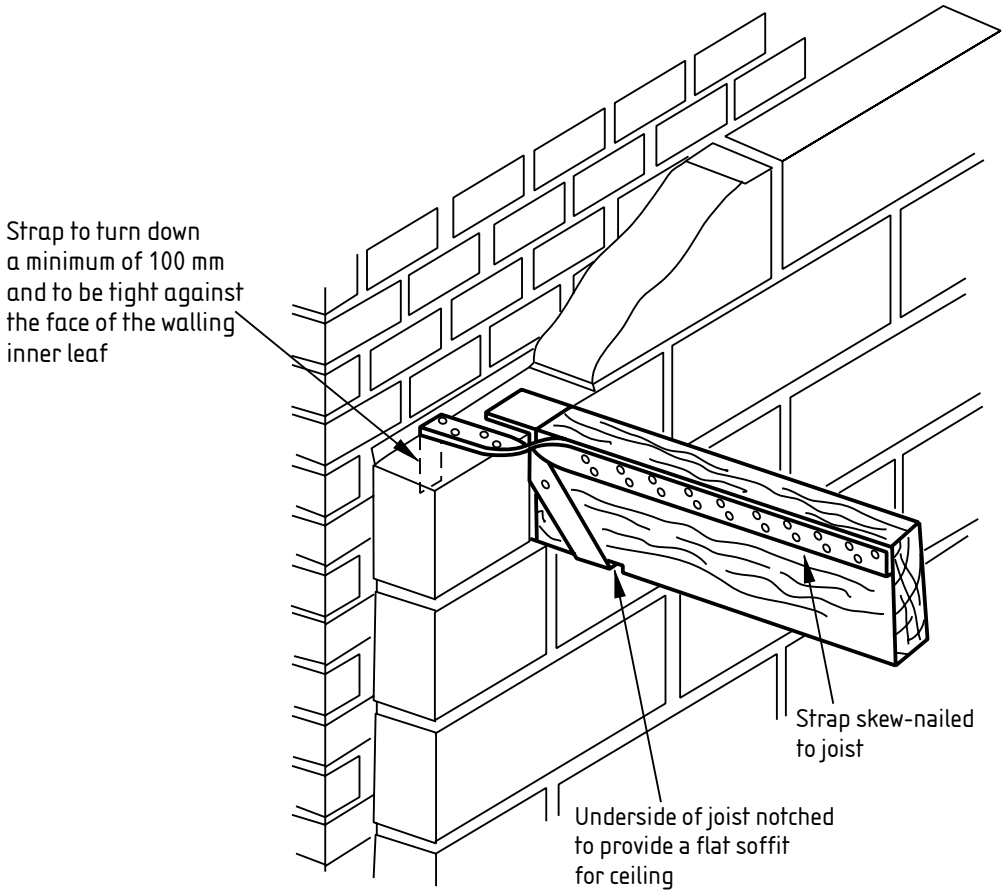
Unreinforced concrete floors laid on the ground, or on fill, should not also bear on walls as this can give rise to cracking as a result of differential movement.

The bearing of all types of floor and support fittings should be not less than 75 mm. Concrete floors should have a bearing of not less than 90 mm, however, this bearing may be reduced at the discretion of the designer provided relevant factors such as loading, span, tolerances, height of support and the provision of continuity reinforcement should be taken into account.



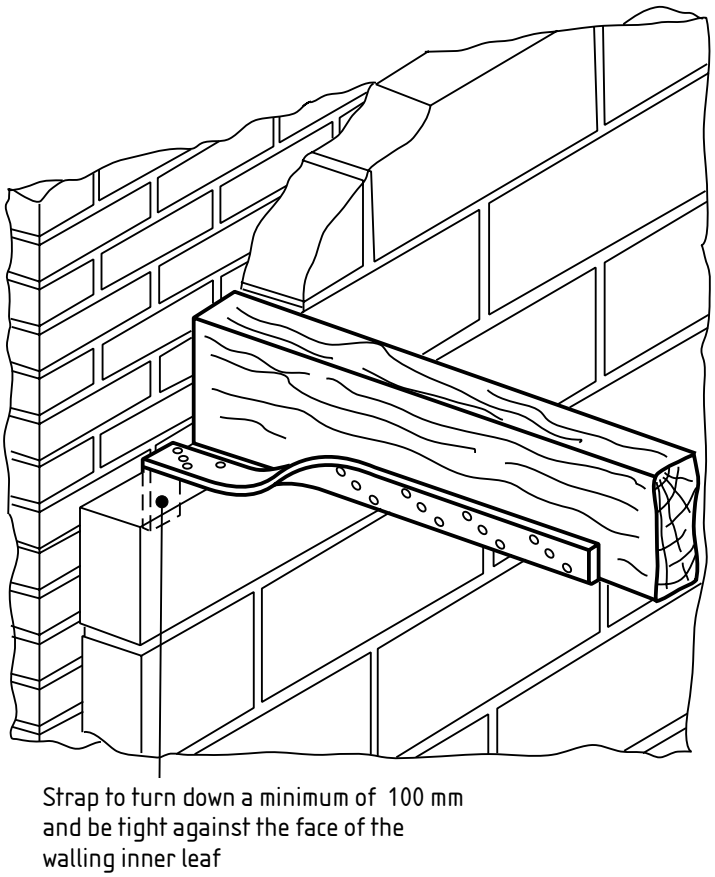
The strap should be carried over at least three joists and be secured with four fixings of which at least one should be in the third joist, or in the nogging beyond the third joint.

Figure 8 — Timber floor spanning parallel with a wall



a) Timber floor supported on standard joist hanger

Figure 9 — Alternative methods of supporting floor joists and providing restraint

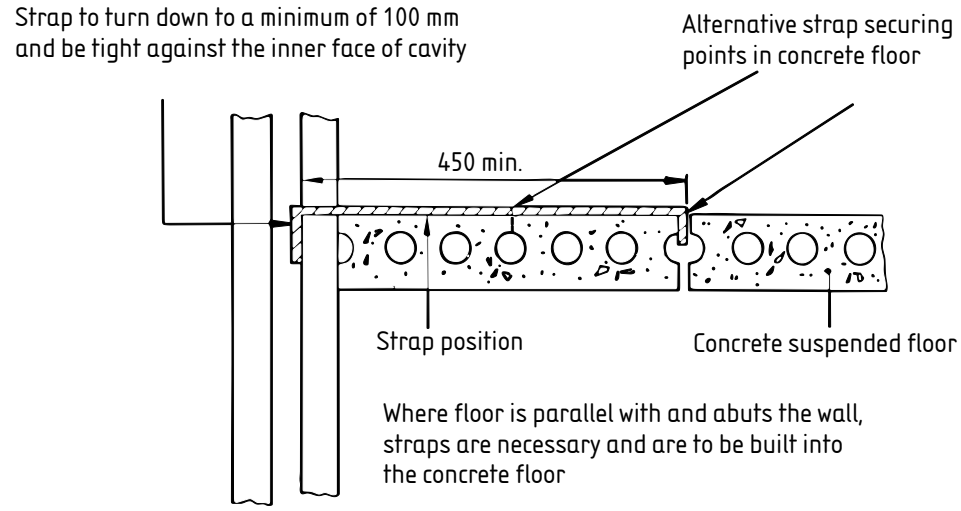


No strap is necessary provided joists are at 1.2 m spacing or closer and bear at least 90 mm into the wall. Otherwise, strap as shown; on top of the joist with the strap turned up or on one side of joist with strap turned sideways (alternative positions are shown in BS 5628-1:1992, Figure 11).

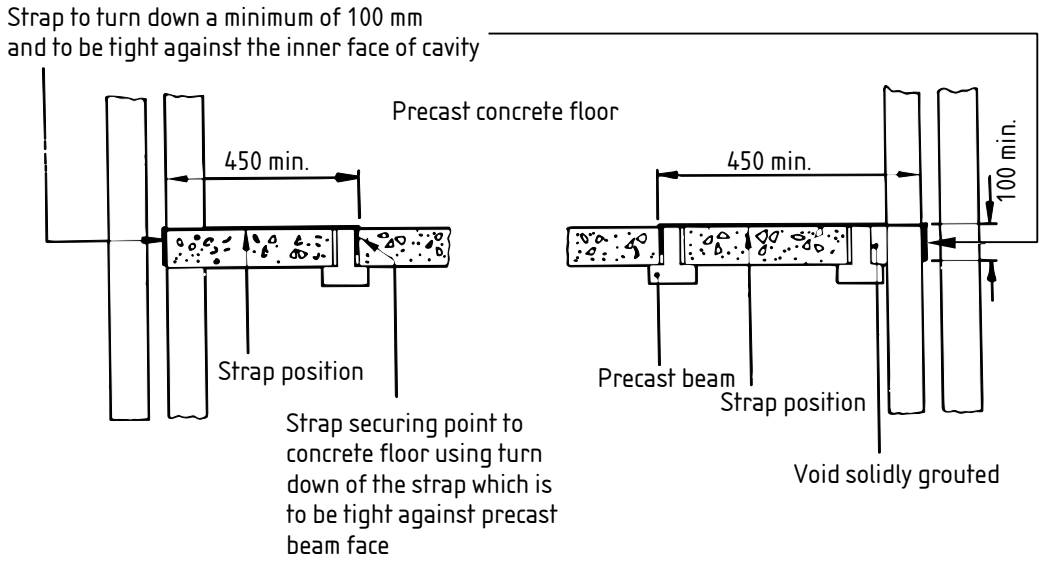
b) Timber floor bearing on to wall

Figure 9 — Alternative methods of supporting floor joists and providing restraint *(concluded)*

Dimensions in millimetres



a) Concrete suspended floor abutting wall



Typical edge detail Alternative edge detail

b) Precast concrete beam and block type floor abutting or spanning on to wall

Figure 10 — Alternative methods of connecting concrete slab floors

5.3.3 *Roofs*

Where roofs are needed to provide lateral restraint for the wall, reference should be made to BS 5628-1:1992, Annex C and BS 8103.

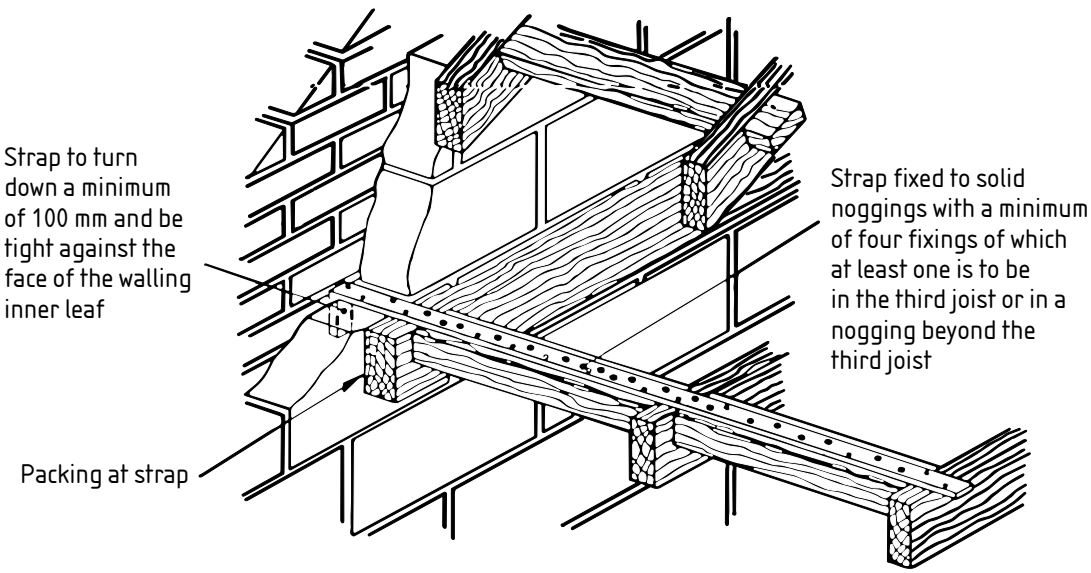
Typical ways of connecting roofs with walls are shown in Figure 11, Figure 12 and Figure 13. The design should follow the recommendations given in BS 5628-1:1992, Annex C, and BS 8103.

The bearing on walls of timber joists and joist hangers should be not less than 75 mm. The frogs of bricks should be filled to provide an even bearing. It may be desirable to provide a wall plate in certain cases.

Concrete roofs should have a bearing of not less than 90 mm; however, this bearing may be reduced at the discretion of the designer provided relevant factors such as loading, span, tolerances, height of support and the provision of continuity reinforcement should be taken into account.

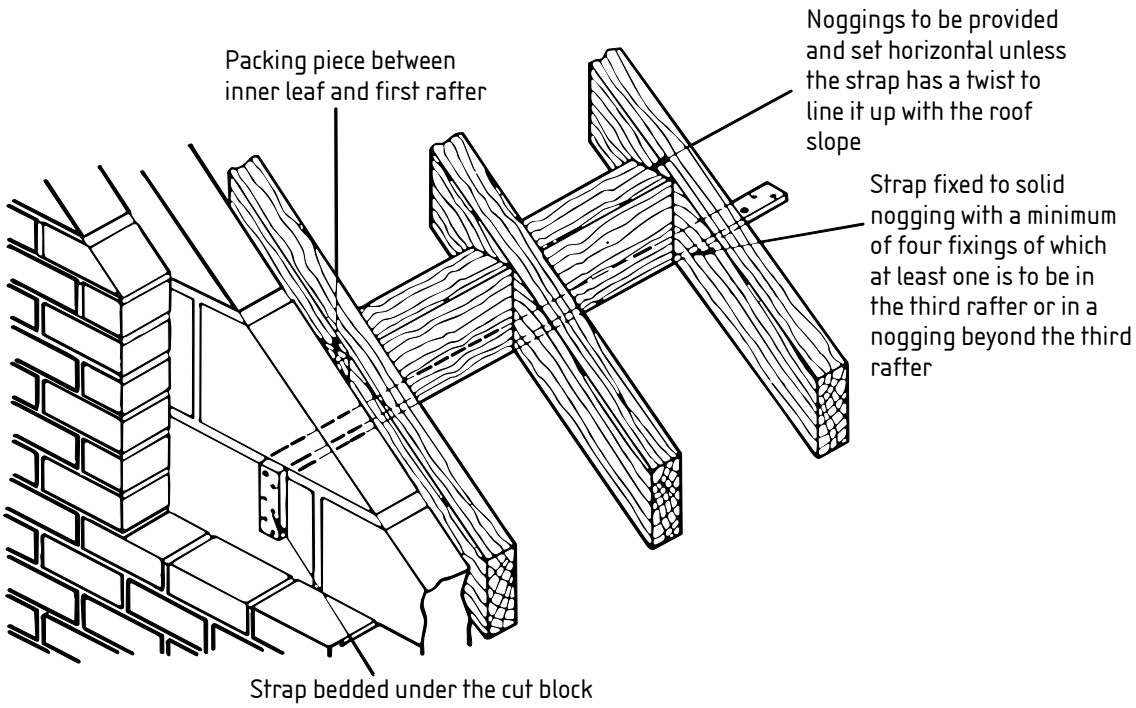
NOTE 1 Binders or other beams giving rise to concentrated loads on the wall may need to be provided with a padstone or spreader beam (see **5.2.2**).

NOTE 2 Where detailing the bearings of flat roofs upon walls, the danger of displacement of the top courses of masonry as a result of thermal movements in the roof and deflection of the structure should be taken into account. Temperature variations can be reduced by providing external insulation or reflective coatings to the roof.



a) Strapping at ceiling where roof spans parallel with a wall (similar detail for flat roof spanning parallel with wall)

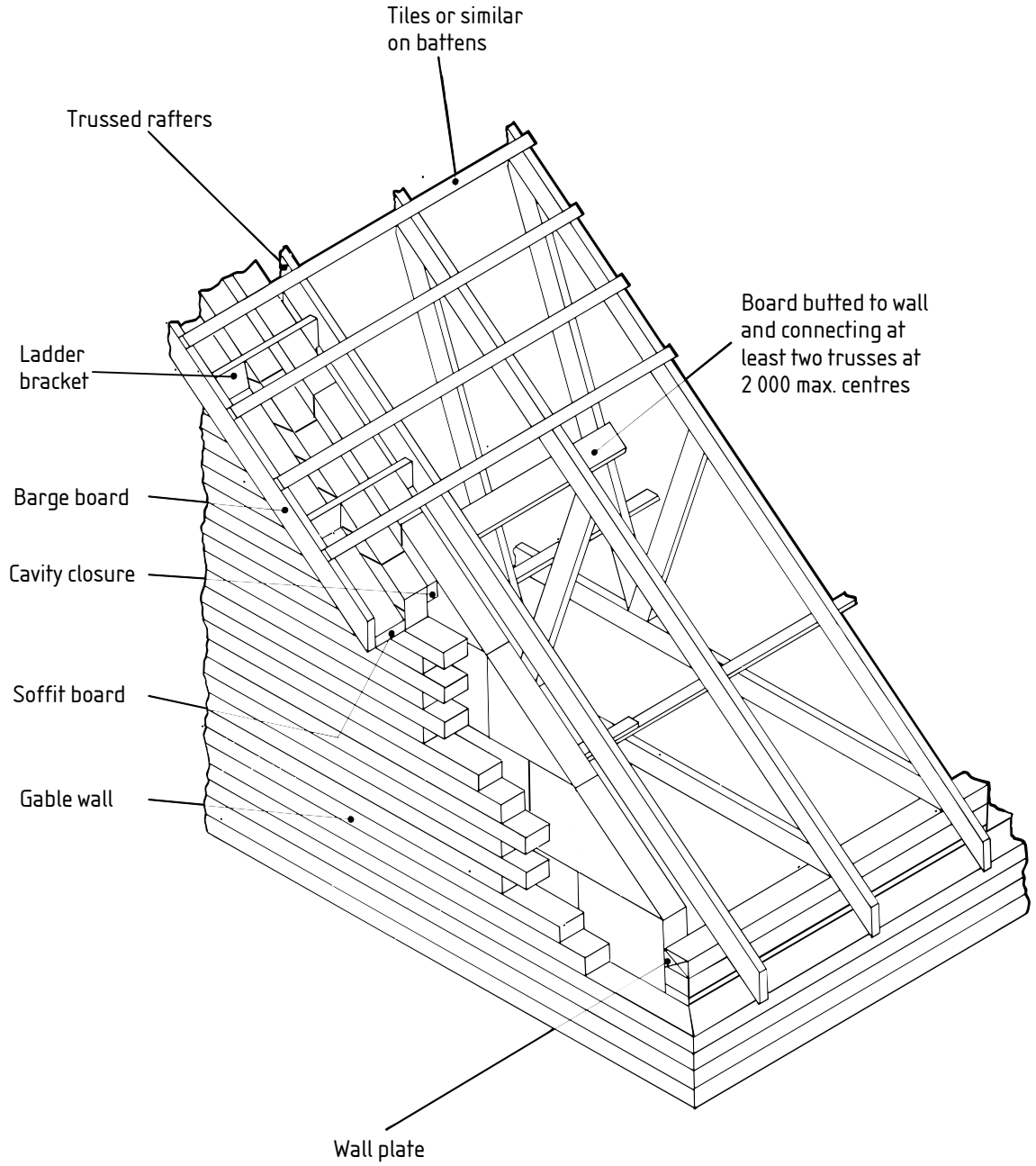
Figure 11 — Tying of pitched roofs to gable walls



b) Connections at gable verge line

Figure 11 — Tying of pitched roofs to gable walls *(concluded)*

Dimensions in millimetres



NOTE 1 Boards should span at least two rafters and be butted up to the wall.

NOTE 2 The soffit board should be securely fixed to the ladder bracket and should also be a close fit to the wall.

Figure 12 — Truss roof without straps