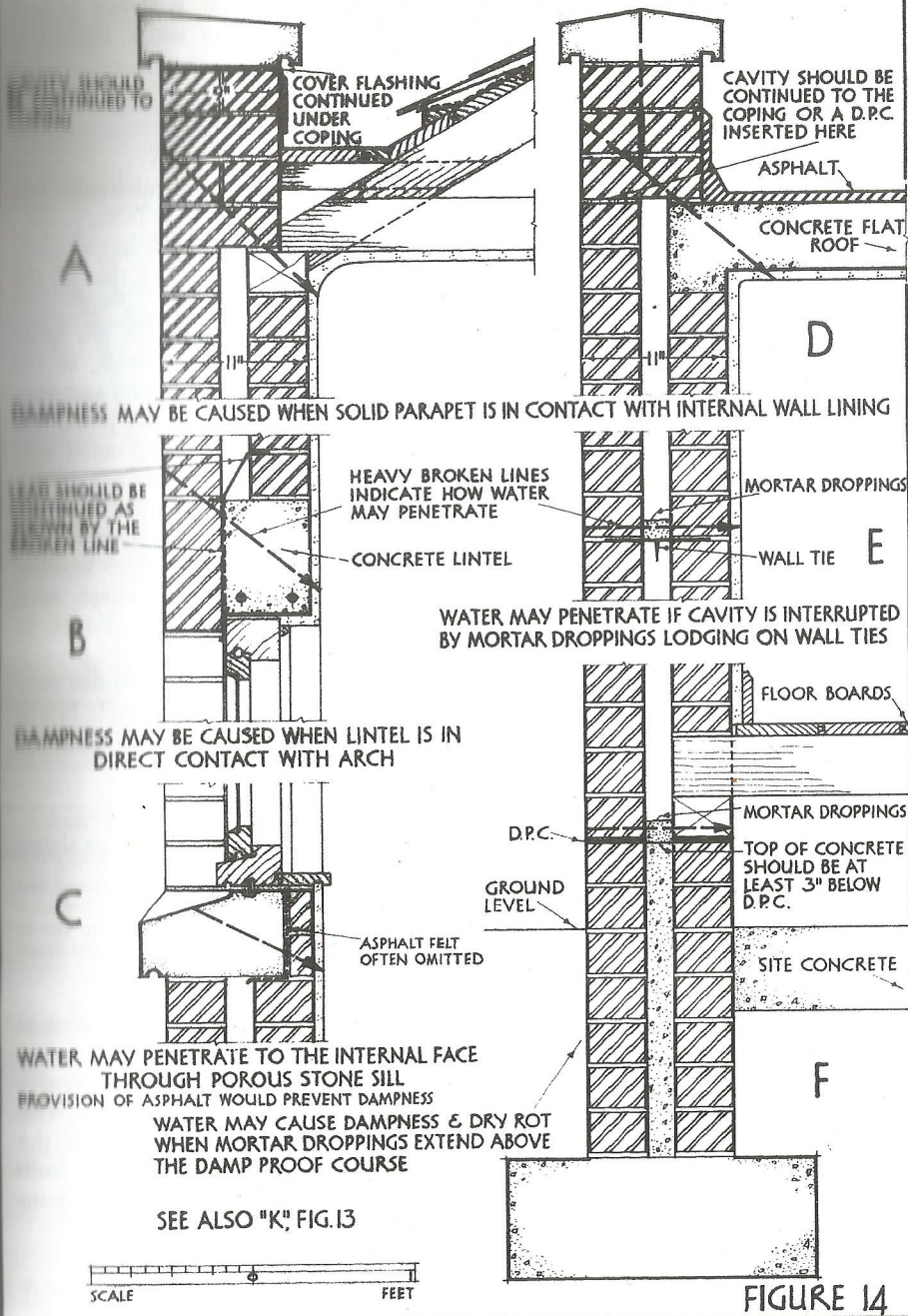


CAVITY WALLS DETAILS SHOWING DEFECTIVE CONSTRUCTION



CAVITY WALLS

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otherwise rain may penetrate through mortar droppings which may lodge on the projecting ends.

If a lean-to or flat roof of a lower building adjoins a cavity wall the usual lead cover flashing should be continued for the full thickness of the outer leaf and be stepped up to the inner leaf. A few weep-holes should also be left in the course of the outer leaf above the flashing. Similarly, when a pitched roof abuts against a higher cavity wall, the stepped cover flashings at the intersection should be continued with upturned edge to 1-in. beyond the inner face of the outer leaf. Such provision is necessary to intercept rain-water streaming down the inner face of the outer leaf and causing dampness to the party wall below.

An additional cavity wall detail showing plans of successive courses at an obtuse squint quoin is given at E, Fig. 11. The external corner brick may be a purpose-made dogleg as shown, or the special squint c, Fig. 5. Alternate plans of an 11-in. circular wall are shown at D, Fig. 15 (see also p. 44). In both details wall ties are shown at the angles in each course to increase stability.

FLOOR TIMBERS.—Only sound, well-seasoned timber should be used for floor joists, wall plates, etc., otherwise dampness from the cavity may cause dry rot. It is also a wise precaution to have the wall plates and ends of built-in joists thoroughly creosoted or treated with other preservatives (see pp. 12-14, Vol. III). The risk of dry rot to ground floor (or basement) timbers is considerably reduced if the joists are supported on wall plates bedded on sleeper walls, as shown at E, Fig. 10, Vol. I.

ADVANTAGES OF CAVITY WALL CONSTRUCTION.—The chief merits of cavity walls are: (1) They prevent rain from penetrating to the internal face, (2) they have a high insulating value, and (3) they are economical.

1. *Prevention of Dampness.*—A cavity wall is more reliable than a solid wall of corresponding brick-thickness in excluding rain. Thus, an 11-in. cavity wall in an exposed position will prevent water from penetrating to the inner leaf, provided adequate precautions are taken in its construction and sound materials and workmanship are employed. But an external 9-in. solid wall (which is equivalent in thickness of brickwork to an 11-in. cavity wall) in an exposed position will *not* prevent rain from penetrating to the internal face unless the wall is rough-casted or similarly protected. As has been pointed out on p. 14, a solid wall is vulnerable to dampness by the penetration of rain through cracks in the mortar joints and to other causes, and it is recognized that external solid walls of buildings to be used for human habitation should be at least 13½-in. thick, unless they are rough-casted.

2. *Insulation.*—As air is a good non-conductor of heat, it follows that the air in the cavity is effective in reducing the transmission of heat through the wall. Therefore the "heat losses" through an 11-in. cavity wall are less than through a 9-in. solid wall, and a building of hollow wall construction is warmer in winter and cooler in summer (as the inward flow of the heated external air is impeded) than one built of solid outer walls. This affects fuel consumption, for less fuel is required to heat a building with cavity walls than that of solid wall construction.