have a profound effect upon the building's appearance. Moreover, the particular materials employed in the latter case will determine the limit of inclination or pitch for the roof plane; the larger the tile or slate, the lower the pitch which may be effected. Clearly such constraints also contribute to the visual outcome of any roof (**Figures 4.39, 4.40**).

Another strategic element of roof design is how rainwater is to be collected. It is important to realise how such an apparently mundane and banal proposition as rainwater collection can have a profound effect upon how a building looks. Many architects have seized upon expressive devices at the roof's edge to collect water from the roof membrane and then discharge it (**Figures 4.41, 4.42**); exaggerated

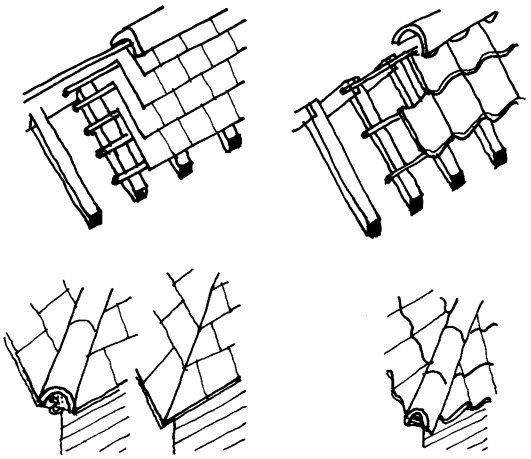

Figure 4.40 *Traditional heavy slate and pantile roofs.*

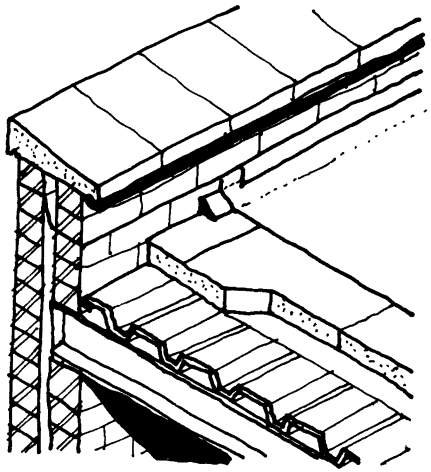

Figure 4.39 *Lightweight roof 'deck'.*

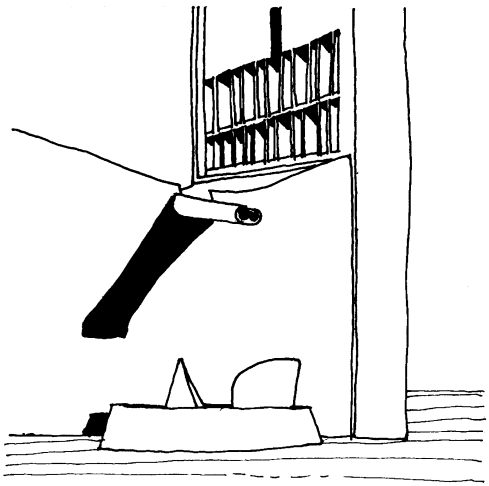

Figure 4.41 *Le Corbusier, Chapel, Ronchamp, France, 1955.*

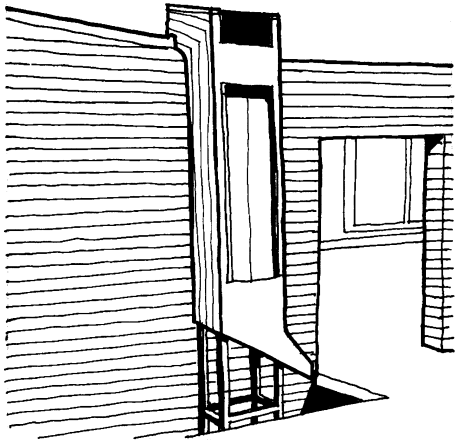

Figure 4.42 *Ralph Erskine, Clare Hall, Cambridge, 1968. Rainwater chute.*

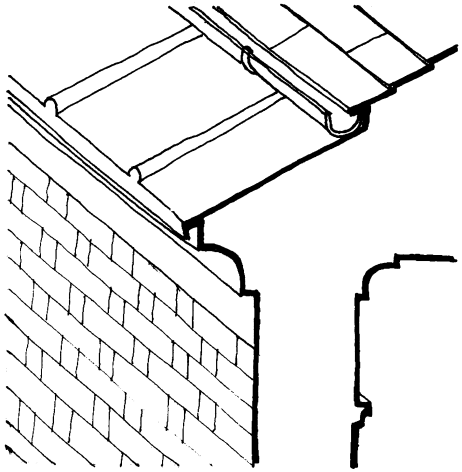

Figure 4.43 *Donald MacMorran, Social Science Building, Nottingham University, 1957. Eaves detail.*

projecting eaves have rendered such expression even more explicit (**Figure 4.42**). In contradistinction to this approach, some architects have chosen to conceal gutters and downpipes (with obvious consequences for future maintenance) within the building fabric. Where a pitched roof is employed, this may result in a minimal roof surface of projecting eaves beyond the building's edge shedding water to the ground without recourse to any system of collection (**Figure 4.43**). In any event it is important to understand the visual consequences of such decision-making.

The façade

Like the roof, the wall membrane is an 'environmental filter' which contributes to the building's performance and decisions regarding lightweight versus heavyweight, or permeable versus impermeable which applied to the roof likewise need to be considered. But in the case of walls these decisions assume a greater degree of complexity for, much more than roofs, walls tend to be punctuated by openings to provide access, daylighting, views out, or ventilation, all of which have to be accommodated within the strategy for construction.

Should traditional loadbearing structure be employed, then the wall membrane will be 'heavy' and most likely permeable. Moreover, openings are likely to be formed within this heavy membrane by simple lintels which suggests a directly expressive 'hole-in-the-wall' architecture (**Figure 4.44**). By con-