

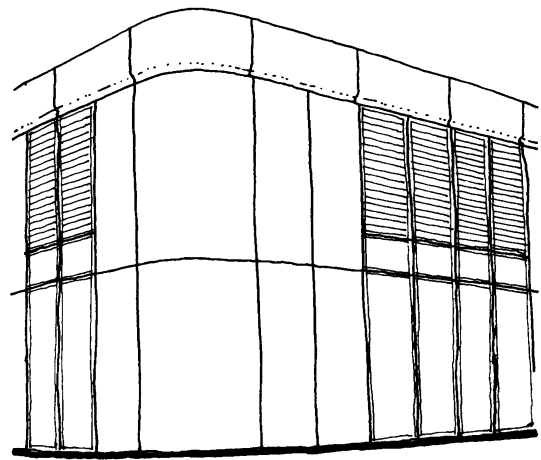
**Figure 4.44** Donald MacMorran, *Social Science Building, Nottingham University, 1957. Window detail.*

trast, a structural frame opens up a whole range of alternatives for considering the nature of the external wall. At one level, a non-structural traditional heavy envelope may conceal structural columns, beams and floor slabs and may employ a traditional 'hole-in-the-wall' expression thereby flouting the modernist orthodoxy for structural 'honesty' (this has become much less of a 'sacred cow' since the emergence of a post-modern pluralism).

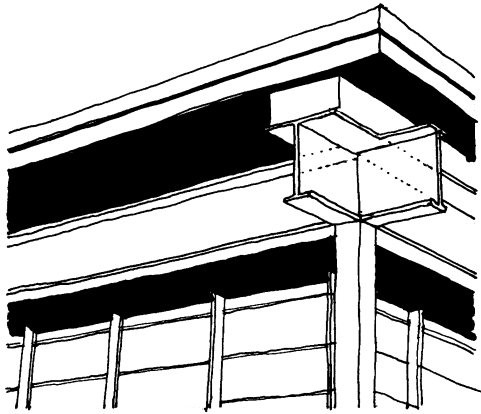
But just as a repetitive framed structure has liberated the plan so has it liberated the façade. Architects are now faced with a range of devices to express 'wall' which may or may not express the primary structure. At one level a lightweight impervious 'rainscreen' may oversail the frame

and in the process provide the principal generator of architectural expression, openings appearing in the monolithic screen as and when required. Alternatively, the screen may be considered as repetitive panels which may oversail the structure but junctions between panels will conform to the structural grid; in such a situation the design of panels to allow for a range of openings determines the architectural expression (**Figure 4.45**). Moreover, it is possible to express the structural frame within both light and heavy envelopes; at its most basic, the frame remains proud of the cladding (**Figure 4.46**) or is simply infilled (**Figure 4.47**).

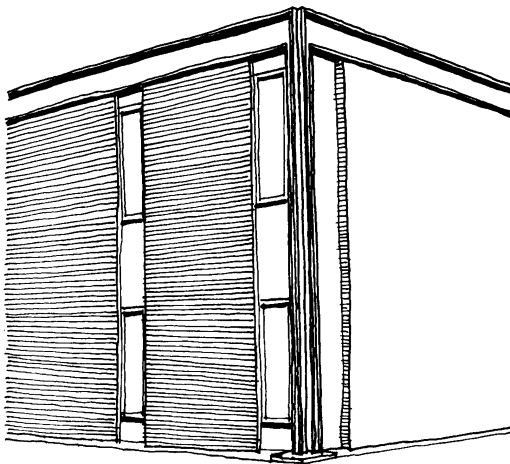
It is not our purpose here to provide a manual of building construction techniques but rather



**Figure 4.45** Nicholas Grimshaw and Partners, *Factory, Bath, England, 1976.*



**Figure 4.46** Roche, Dinkeloo, *Factory, Darlington, 1964.*



**Figure 4.47** James Cubitt and Partners with Eero Saarinen, *Factory, Darlington, 1964.*

to articulate a range of attitudes and options open to the designer. Clearly the nature of the membrane is determined by the nature of the materials which it comprises, whether heavy or light, permeable or impermeable, monolithic or comprising a variety of distinct components. However, most of our constructional concerns not unnaturally surround the whole question of joining one element to another. At a fundamental level, how is the wall connected to the roof and how does the wall meet the floor? And how does a cladding membrane join the structure? How do we achieve a satisfactory junction between solid and void, opaque and transparent elements within the building's 'skin'?

The outcome of all of these questions will have a powerful effect upon the building's appearance and therefore upon how we 'read' the building. We have already discussed how a clear 'diagram' involving the functional plan and structural expression allows us to 'read' and assimilate a building's organisation. This notion may be further extended to construction so that the building is also 'read' at a detailed level where secondary and tertiary elements which make up the building add to an understanding of and are consistent with the primary design decisions surrounding the diagram or *parti*.

Consequently, design seen in this context is a reiterative process where themes are introduced and repeated throughout the building,