Figure 11.7
The worship space showing the influence of the 'vessel' idea coming right through into the choice of materials and junction details

Sources of primary generators

In the examples considered so far those constraints have been mainly radical in function, that is to say, they are considerations of the primary purpose of the object being designed. The architectural student groups designing a county administrative building focused their attention on providing satisfactory working conditions and internal communications. In general there seem to be three main sources for primary generators or central design ideas. First, and most obviously as we have seen, the programme itself in terms of the radical constraints involved. Second, we might reasonably expect any particularly important external constraints to impact significantly on the designer's thoughts. The design of the Severins Bridge across the

Rhine in Cologne, which was illustrated in Chapter 6, is a very good example of a central design idea emerging from external constraints. Third, we may expect designers to bring their own continuing programme or 'guiding principles' (see Chapter 10) to bear on the specific project. This deserves further illustration here.

As we saw in the last chapter many architects have some guiding principles based around practical constraints. One area particularly popular during the modern movement was that of structure, with the notion of 'structural honesty' forming an important part of many architects' guiding principles. Bill Howell (1970) described how his practice of Howell, Killick, Partridge and Amis developed a philosophy of building they called 'vertebrate architecture' in which 'the interior volume is defined and articulated by actual, visible structure'. Howell showed how this led to a design process in which architect and engineer worked in close dialogue to develop the anatomy of each building. At first glance this approach seems rather wilful and, indeed, Howell (1970) admits that 'we do it, because we like it'. This suggests a design process which is guided by a general set of principles about the role of structure, and in which the primary generator is likely to be the structural form of the building. The sequence of drawings shown here, drawn during the design process for Howell's University Centre building in Cambridge, rather tend to confirm this (Fig. 11.8). Of course, such a design process cannot exclude all other considerations, it is just that they are organised around the primary generative ideas. Howell describes exactly such a process in his own words:

> While thinking about structural economy, the relationship of internal partitioning to downstanding beams, the relationship of cladding to the structure, and so on, you are taking decisions which affect the relationship of the anatomy of the building to its site and to its neighbours.
>
> (Howell 1970)

Of course this strategy is not in some way 'right' or 'wrong'. It simply worked for this particular designer and created an architecture of a certain kind which has been much admired (Fig. 11.9). By way of illustrating this we might consider how Arthur Erikson, who has a very different set of guiding principles about structure, describes his design process for his Museum of Anthropology in Vancouver:

> As with all my buildings, the structure was not even considered until the main premises of the design, the shape of the spaces and the form of the building, had been determined . . . It is only when the idea is fully rounded and fleshed out, that structure should come into play and bring its discipline to give shape and substance to the amorphic form. In that sense it is afterthink.
>
> (Suckle 1980)