Whilst this revolution was facilitated by an early nineteenth-century technology, later inventions like the elevator, the electric motor and the discharge tube were to have profound effects upon a whole range of building types and therefore upon their formal outcome. For example, the elevator allowed the practical realisation of high-rise building whose potential had previously been thwarted by the limitations of the staircase (**Figure 2.13**). But the invention of the electric motor in the late nineteenth century not only facilitated the development of a cheap and practical elevator but also fundamentally changed the multi-level nineteenth-century factory type which had been so configured because of the need to harness a single source of water or steam power. The inherent flexibility of locating electric motors anywhere within the industrial process allowed the development of the single-storey deep-plan factory. Moreover, the deep-plan model applied to any building type was facilitated not only by the development of mechanical ventilation (another spin-off from the electric motor), but also by the development of the discharge tube and its application as the fluorescent tube to artificial lighting. Freed from the constraints of natural ventilation and natural lighting, architects were free to explore the formal potential of deep-plan types.

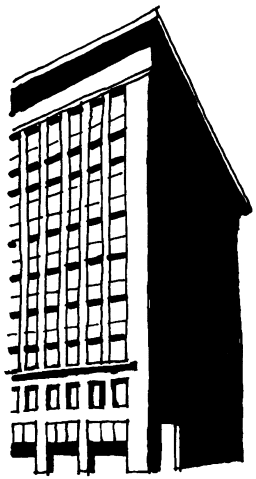

Figure 2.13 *Adler and Sullivan, Wainwright Building, Chicago, 1891. From* Architecture Nineteenth and Twentieth Centuries, *Hitchcock, H. R., Penguin, p. 343.*

This is but a crude representation of the general milieu in which any designer operates, a context which became progressively enriched as the twentieth century unfolded. But what of the specific programme for building design which presents itself to the architect? And how do architects reconcile the generality of contextual pressures with the specific nature of, say, a client's needs, and how, in turn, are such specific requirements given formal expression?

When James Stirling designed the History Faculty Library at the University of Cambridge (completed 1968), the plan form responded directly to the client's need to prevent a spate of book theft by undergraduates. Therefore an elevated control overlooks the demi-semi-circular reading room but also the radial bookstacks, offering not only potential sec-

urity for books but also a dramatic formal outcome (**Figures 2.14, 2.15**).

In 1971 Norman Foster designed an office building for a computer manufacturer in Hemel Hempstead whose principal requirement was for a temporary structure. Foster used a membrane held up by air pressure, a technique not normally applied to architecture, but which offered the potential for speedy dismantling and re-erection on another site. The translucent tent provided diffused daylighting and lamp standards were designed to give support in the event of collapse (**Figure 2.16**). Whilst this contextual 'snapshot' firmly articulates an orthodox modernist position, the so-called post-modern world has

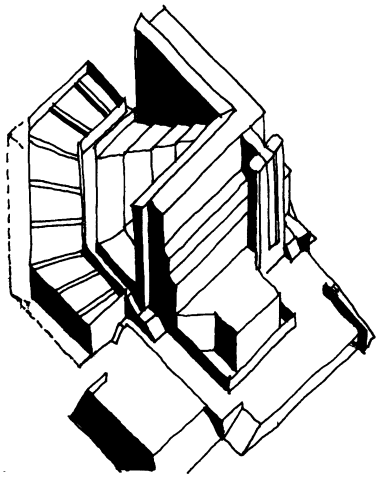

Figure 2.15 *James Stirling, History Faculty Library Cambridge, 1968, Axonometric.*

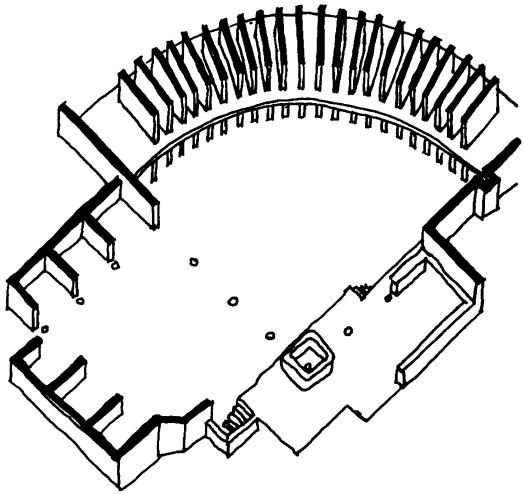

Figure 2.14 *James Stirling, History Faculty Library Cambridge, 1968, Ground floor plan.*

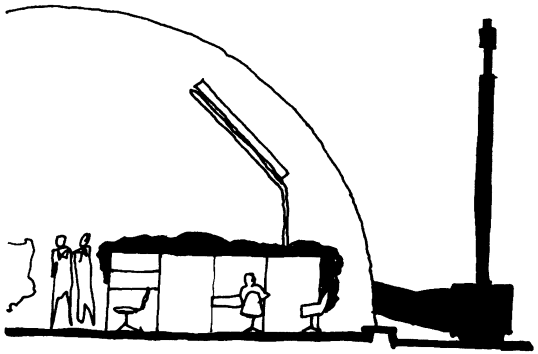

Figure 2.16 *Norman Foster, Computer Technology Ltd, Office, London, 1970, Section.*