this principle became forcefully apparent. An example is the residential expansion for St Andrews University (UK), completed in 1968, where the scheme is one of long "fingers" of corridors that give access to students' rooms in a herringbone pattern.

In the process of preliminary design, developing forms was a clear top priority with Stirling. Form was never arbitrary; rather, it was developed piecemeal "in response to the site and to major factors such as entry and procession through the building." Decisions about structure, materials, colours and more were made "when the process is well under way" and "the entire concept is worked out" (Stirling 1992, p. 24). Despite the primacy of three-dimensional form, the design search was conducted in two-dimensional media only – namely, drawings and not models (which were added when "the design is over," for presentation to journalists, planning authorities or clients). Drawings, however, were always made in abundance.

In the first phase of design Stirling used to make a large number of very small sketches: "the drawings which accompany this sort of thinking are doodles, tiny sketches about one centimeter in size" (ibid., p. 24). Stirling made them on every available piece of paper; some were quite literally "back of envelope" and "cocktail napkin" sketches made in transit; other sketches filled many a sheet of paper and were executed in the office. Co-workers remember Stirling as "always doodling, doodling" (Girouard 1998, p. 188); he "constantly searched for ideas in diagrammatic sketches" (Livesey 1992). The small "diagrammatic sketches" could consequently "be developed in small axonometric drawings showing the relationships between volumes and heights" (Stirling 1992, p. 24). At that point Stirling was ready to involve his assistants in the process: "my doodles give the lead, then a sort of tennis match begins with my colleagues" (ibid., p. 24). This "tennis match" was described by one of those colleagues as follows: "The office was a searching factory for an investigative architecture. It was not a pick and choose operation, but a constant elaboration of an agreed on set of ideas, a sequence of sketches rather than 25 alternatives. . . . The process remained absolutely consistent from beginning to end: collaged incidents on a set of overlaid formal arrangements" (Livesey 1992, p. 70). Many of these drawings were axonometric views: "The axonometric was promoted by Jim as part of his design process and, as has been pointed out by others, the design of a building like Leicester would be unimaginable without it. . . . These were all of the "Modernist" down-view variety. It was not until Leon Krier joined the office later in 1968 that the edited Choisy up-view joined the repertoire" (Jones 1992, p. 70).

Jones' remark concerning axonometric down-views and up-views requires explication. Axonometric views, for which the technique had been known since the Renaissance, penetrated architectural representational conventions in the 1920s as partial fulfilment of Modernism's need for new tools to express new ideas and concepts (Bois 1981). Commonly, modern architects drew down-views or "bird's-eye" views – representations that look down at the depicted object. As noted above, Stirling made very frequent use of such axonometric views, both in his sketches and in the hard-line drawings the office produced (see, for example, Figures 2.4 and 2.5). Krier was hired to make drawings for Stirling's book (1975); he redrew many of the older projects in order to create a clear and unique image of Stirling's work. While at it, he also initiated the second brand of axonometric views, up-views or

"worm's-eye" views, unconventional representations that look up at the depicted object (Girouard 1998). As Jones (1992) pointed out, the up-views were revivals of Choisy's schematic axonometrics that offered, towards the end of the 19th century, a rationalist construction-centred view of architecture. The up-views were an uncommon, if not unique, mode of representation in the 1970s because they depicted a virtual view from an impossible angle and therefore did not really give information about the looks of the depicted building. But this was precisely the reason they were so appealing to Stirling: they enabled the representation of a concept, a scheme, in a diagrammatic manner. Unlike Choisy, an architect/engineer who used up-views to represent the structural and constructional principles of a building, Stirling used them for other purposes: he was interested in showing the essentials (and only the essentials) of the relationship between form, space and movement. This choice of means turned out to be so appropriate in terms of Stirling's intentions and the image he wished to project that up-views became a standard stock of his office, almost its trademark. Figures 2.6 and 2.7 show up-view axonometric drawings prepared for the Düsseldorf and Stuttgart competitions, respectively.

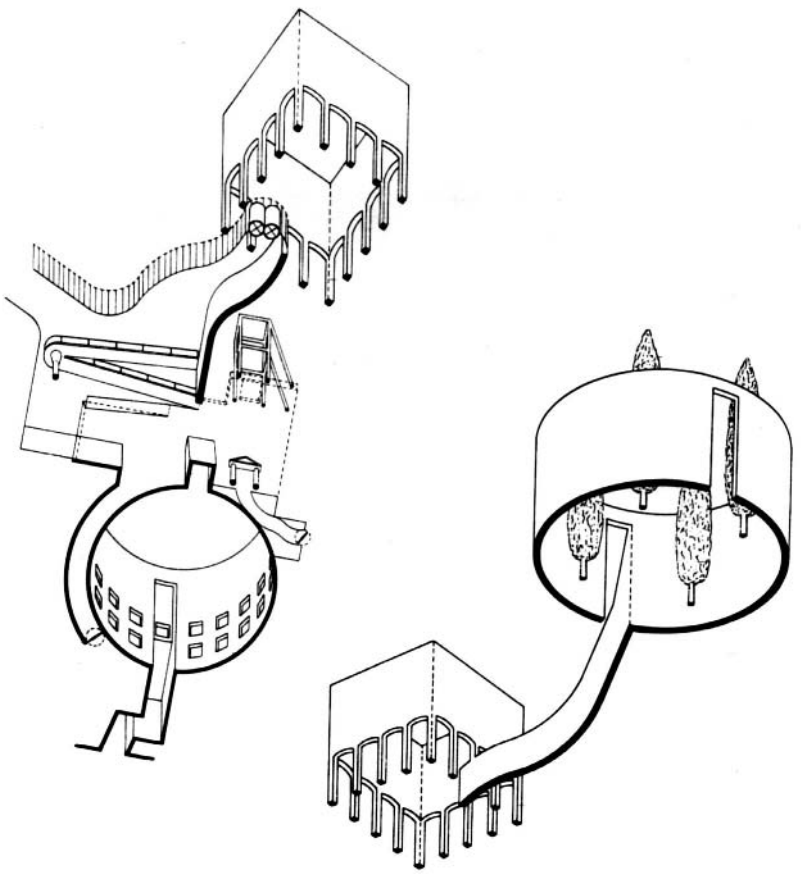

Figure 2.6 Axonometric up-views of major elements in the Düsseldorf Museum design.