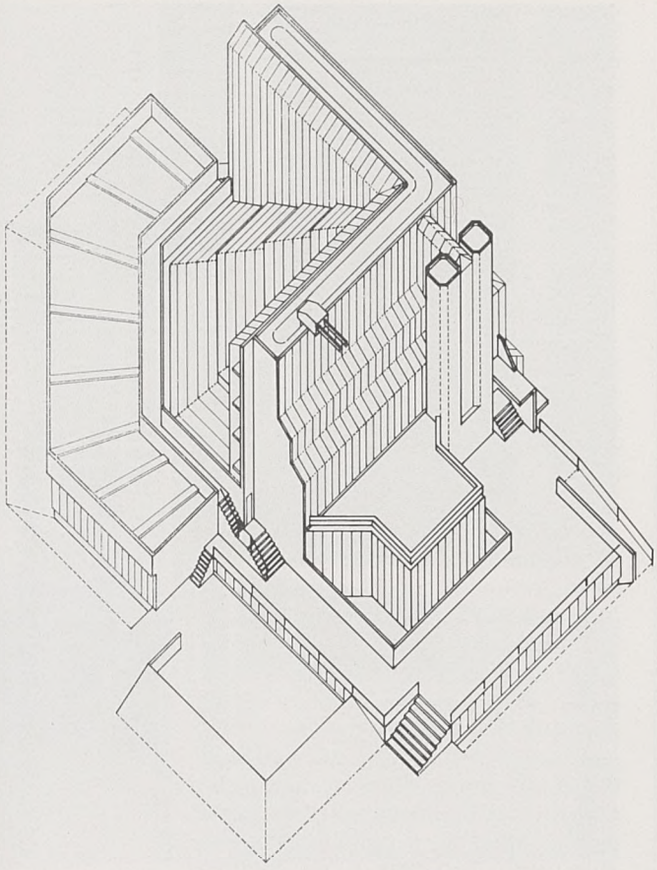
Great Britain

History Faculty Cambridge University

Architect: **James Stirling.**
Associate Partner: Michael Wilford.
Structural Engineers: Felix J. Samuely and Partners.
Quantity Surveyors: Monk & Dunstone.
Services Engineers: R. W. Gregory and Partners.

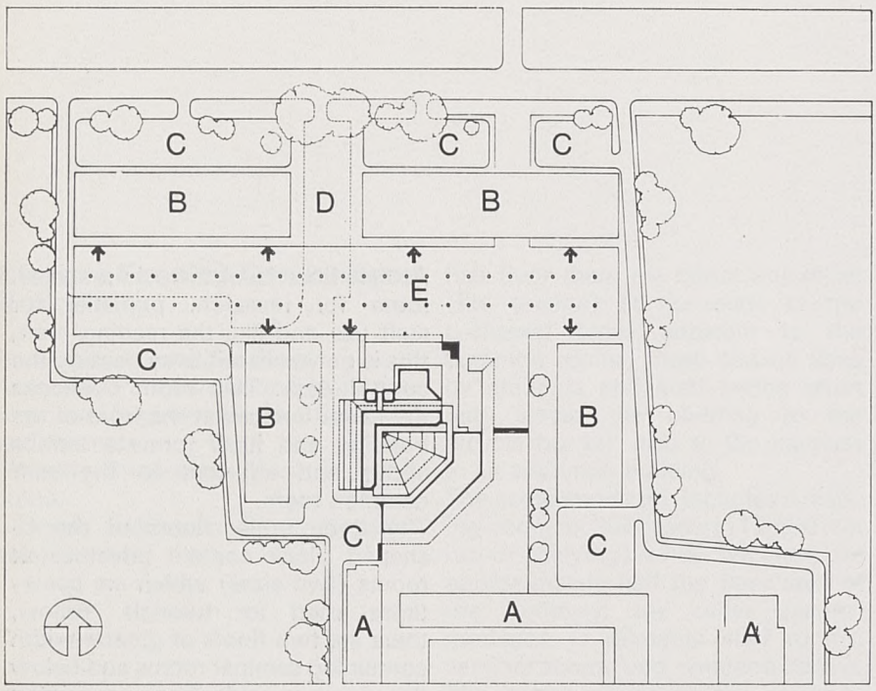
This building was the subject of a limited competition and, apart from changes in siting, is almost identical to the original project.
The designated site included land directly west of the present building position. After the competition it was found that about half the land was unavailable and at short notice the building had to be re-sited in a more central location and turned from facing east to north, away from the existing buildings of the Sidgwick Avenue Development. Until the campus is further extended, the History Building will appear somewhat isolated. However, when further development takes place, the History Faculty will be established in a position of central importance and the terraces at the front will become fully walked over providing short cuts and routes for student circulation. A possible development for the northern half of the campus would be to make an east/west mall onto which all new buildings (including History) would front with their major entrances facing onto this mall.
In this eventual focal position it was necessary to provide multidirectional approaches to the History Building. Four entrances have been provided, two of which are at ground level into separate entrance lobbies connected by the corridor adjacent to the reading-room. At the front of the building there is also an approach via ramp to the staff entrance and at first floor there are minor entrances (fire escape) at the ends of the L-shaped block adjacent to the common rooms; these can be used by students and staff taking short cuts across the building to the bicycle bunker, also to the canteen in an adjoining building.
The accommodation includes a reading-room for 300 readers (12,600 feet run of shelving) which accounts for approximately half the floor area of the building; the other accommodation is primarily staff rooms, seminar rooms and common rooms. The entrance/exit to the reading-room opens directly into control and enquiry area where the catalogues are housed; beyond and 4 feet below this level is the reading-room. The book stack is on two levels and the shelving units fan radially on sight lines from the control desk, which thus has total supervision of the reading-room and book stack. The control desk is also a console from which heating, lighting and ventilation is adjusted. The extract machines at the top of the glazed roof are also controlled from this desk.
A variety of seating has been provided in the reading-room either in specialist reading bays (12 feet ceiling height and clerestory windows) or, in the majority case, at large tables in the main space. Beyond the bookstack there is a continuous bench top, also for student use. The book shelf units are on two levels and the mezzanine can be approached directly from the control area or from the floor of the reading-room.
The steel truss roof over the reading-room has upper and lower glass surfaces with the upper containing adjustable louvres to ventilate the space formed by the roof trusses between the two skins of glass. The roof space is up to 12 feet high and, at various levels, there are catwalks providing access to the lighting installation and the extract machines as well as being used for maintenance. The under skin of glazing is translucent, producing shadowless natural light on the reading-room tables. The rising chimney shape created by the sloping glass ceiling causes heated air rising from the floor to be drawn upwards and disperse through ventilators at the apex of the roof. In hot weather this process is intensified by using three separately operating extract machines.
Inside the roof the glass surfaces are cleaned by using long-arm vacuum cleaners from the catwalks. The external roof glass is cleaned by way of the gutters which act also as ladders and expansion joints. These gutters separate the inner façade of the L-shaped block from the glass roof and a ladder running on fixed tracks provides access to all parts of the roof. The glazed ceiling is cleaned from a mobile and demountable scaffold tower during the long vacation as it is necessary to move the reading tables for this operation. The step back glass façade of the L-shaped block is cleaned from a boat which can move at right angles to the building as it is suspended from a mobile roof gantry.
The Faculty considers that close contact between the reading-room and the other accommodation is essential and the arrangement of corridors as galleries around the reading-room is a principal factor of the planning. Continuous horizontal windows set into the corridor walls appear under the roof and run around the upper floors above the reading-room. The corridor windows and the laybys, which project into the air space of the reading-room, allow students in the upper floors to maintain a visual but non-intrusive contact with the reading-room. The laybys also provide standing space allowing students to congregate for seminars without blocking the corridors. The structural upstand walls flanking these corridors are high enough to prevent students circulating in the corridors being seen from the reading-room. The reading-room side of these walls are veneered in fibrous plaster with a closer frequency of sound absorption slots at the lower levels where most required.



At first-floor level there is a special room for research, primarily for staff use and like the reading-room this is only accessible by passing the control desk. This room overlooks the lower terraces at the front of the building and itself forms a terrace above and adjacent to the staff common room.

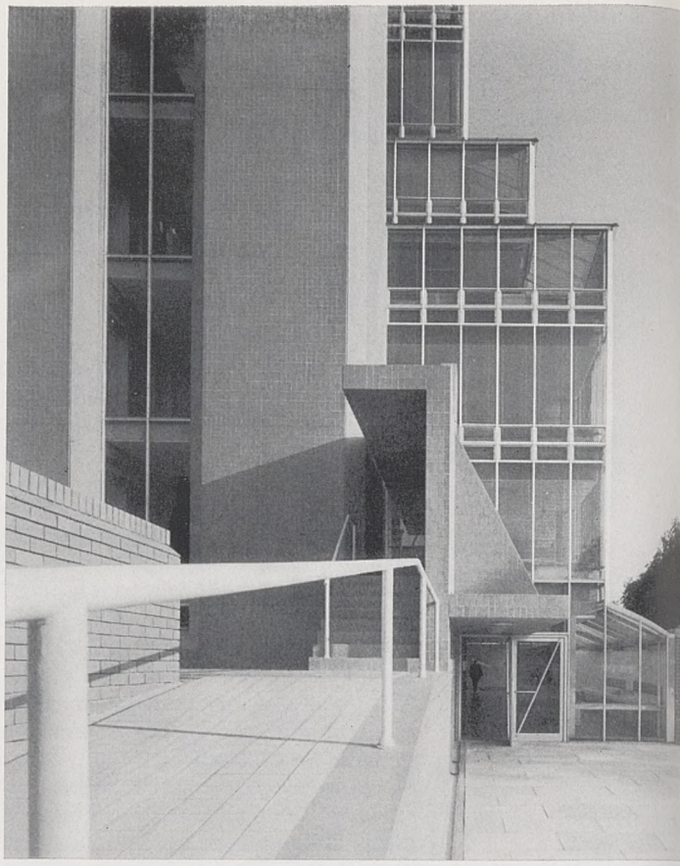
The three upper floors of the L-shaped block contain private staff rooms (two sizes) which are sometimes used for tutorials. Below, there are two floors of greater width containing seminar rooms and below this again a wide floor containing student and staff common rooms.

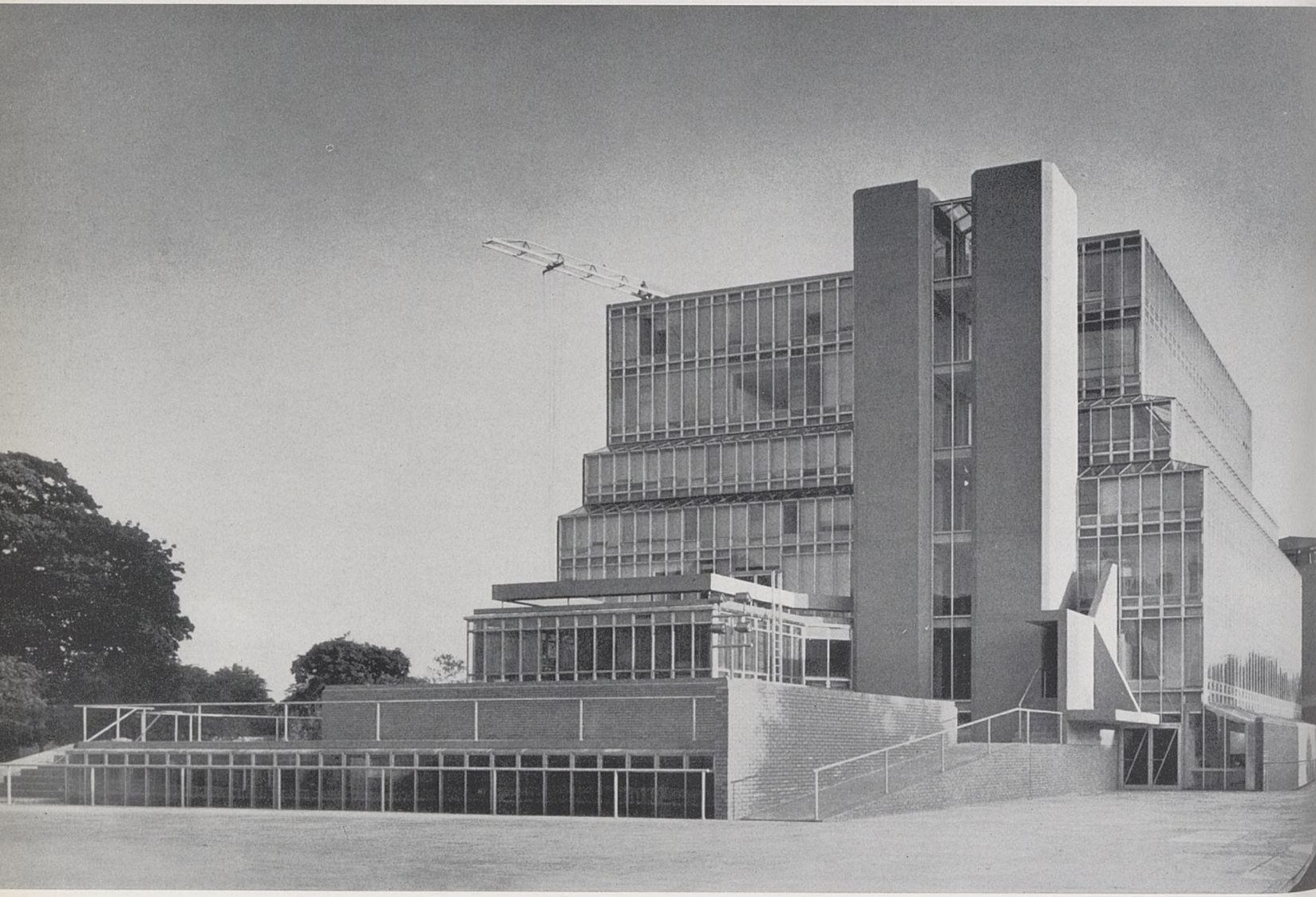
West elevation



Site plan

Key
A existing buildings
B future building
C car parks all entered from West Road
D temporary car park and vehicle approach
E proposed east–west pedestrian mall with tree planting





The staircase to the research room is accessible via the control desk and the flared column (leaning post) in the control desk supports the junction of the L-shaped block over. It is directly under the point where the roof trusses meet at sixth-floor level.

The smallest rooms are, therefore, at the top and the building section widens at the lower levels where the bigger rooms are located, thereby confining the greatest movement of people to the basement (cloaks, lavatories) ground and first floors. The staff and large numbers of students should not, therefore, be in cross circulation. The lift will tend to be mainly used by staff travelling from their rooms on the upper floors to the reading and research rooms. The mass movement of students between the basement, reading-room and common rooms will be by staircase. The transition from a thin to thick building is effected on the exterior by a step-out glass skin. In addition to the stair and lift towers at the front of the building (adjacent to and indicating the main entrances) there are fire-escape stairs at each end of the L-shaped block which are also essential elements in the general circulation.

The external surfaces are engineering brick, tile and glass, all hard, reflective, unabsorbent materials compatible with outside climatic conditions. Internally surfaces are sound-absorbing walls and ceilings and cork flooring; soft materials compatible with quietness and study.

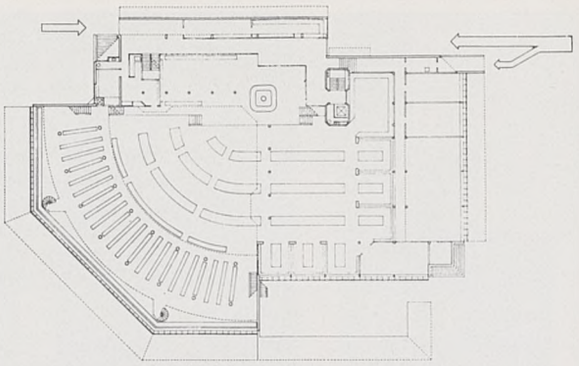
The structural systems were initially selected as being the most expedient and appropriate for a particular set of problems. The lean-to span of the sloping roof is a steel truss and the layered floor structure of the L-shaped block is in RC columns and slabs. The L-shaped block acts as a buttress stabilizing the thrust from the sloping roof and the total building is a stable but asymetric grouping resolving (and indicating) the various structural thrusts and forces.

The building had to comply with U.G.C. cost requirements and the contract price was £336,750, excluding reading-room tables, chairs, and other loose furniture.

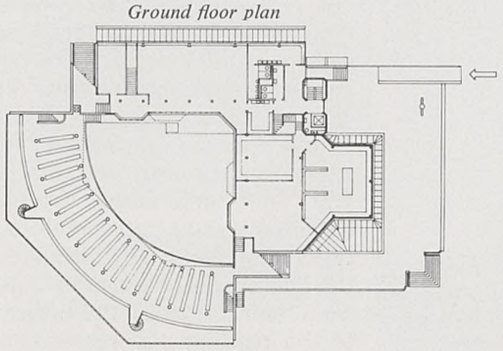
◀ *The lower terrace at the front of the building is above the large lecture room (5 ft. below ground level) which is also the expansion area for the reading-room. The room overlooking the terrace is a research room for staff use.*

Photos Colin Westwood

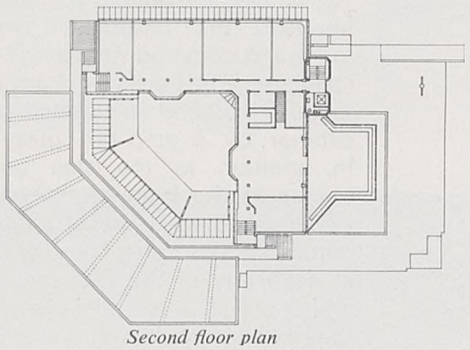
Photos Richard Einzig



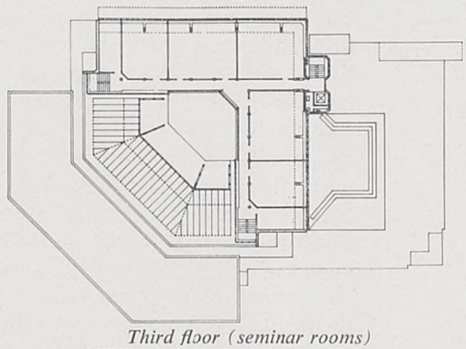
Ground floor plan



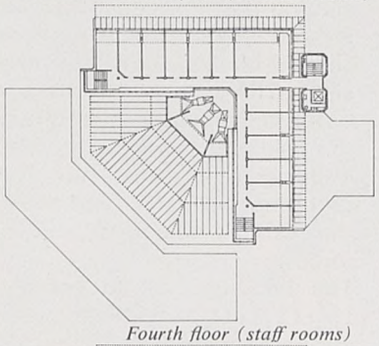
First floor plan



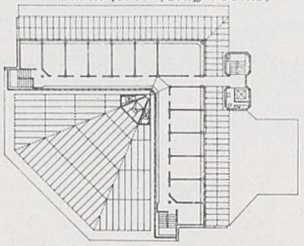
Second floor plan



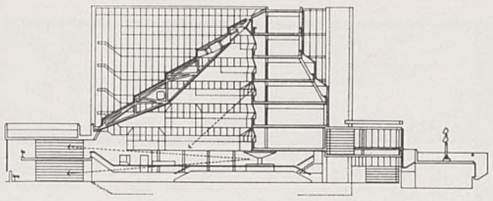
Third floor (seminar rooms)



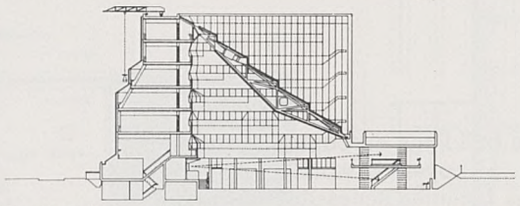
Fourth floor (staff rooms)



Fifth and sixth floors (staff rooms)



West-east section



South-north section

The corner junction of the L-shaped block is above the control desk and the reading-room floor is half a level below the control and catalogue area. The upstand walls of the corridor/galleries are structural and veneered in acoustic panels of fibrous plaster with absorption slots backed in glass quilt. The corridor/galleries are glazed for acoustic separation from the reading-room.