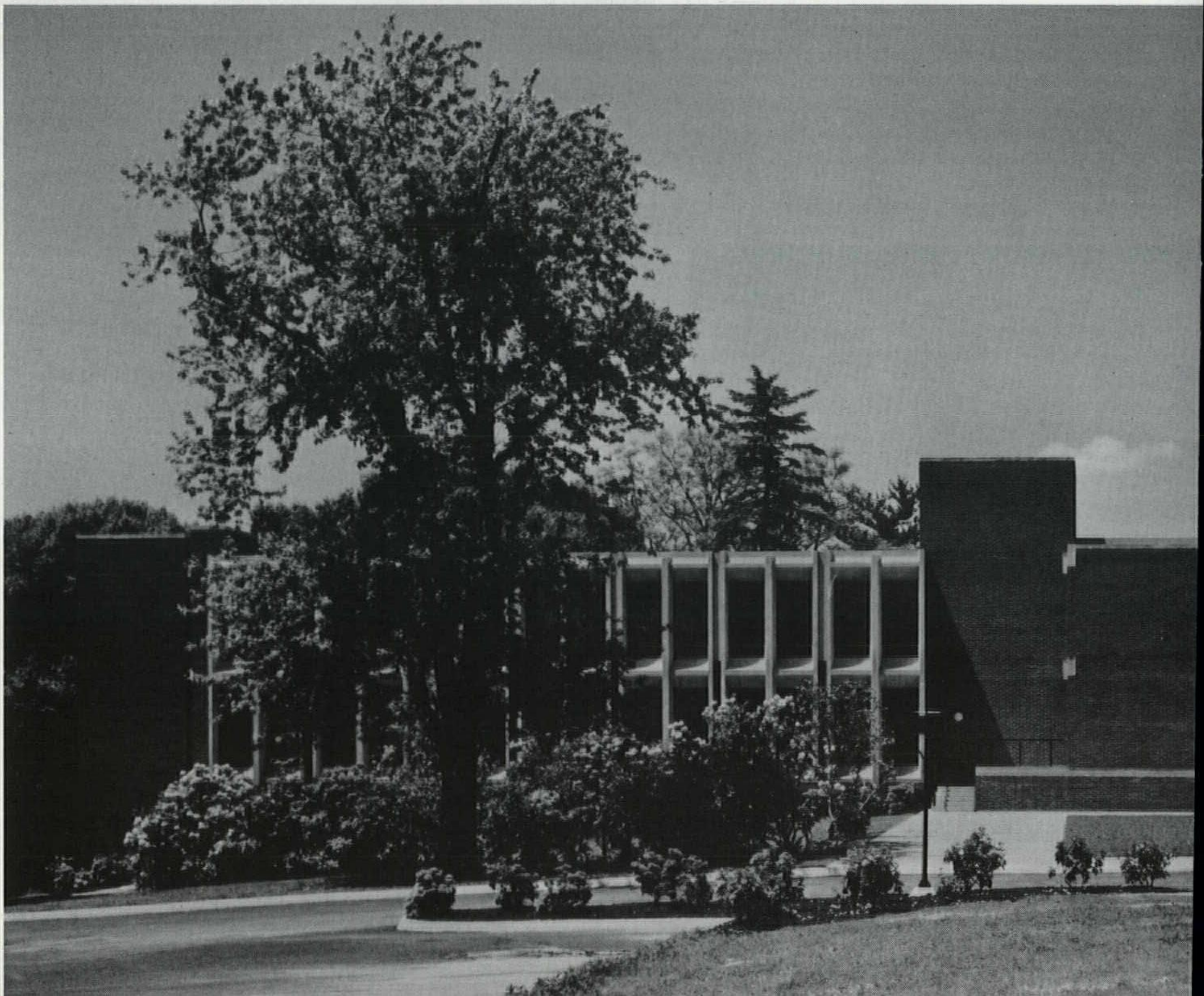
Offices Near Philadelphia



AMERICAN CENTER FOR INSURANCE EDUCATION • BRYN MAWR, PENNSYLVANIA • MITCHELL & GIURGOLA ASSOCIATES, ARCHITECT • SCHULCZ & PADLASKY, STRUCTURAL ENGINEERS • FRED S. DUBIN ASSOCIATES, MECHANICAL ENGINEERS

The designers of this building hope that its "appearance and substance stem from the observance of the order of the building's operation, from the architectural identity of the component parts expressed also in their hierachy, and from the appropriate employment of precast-concrete technology."

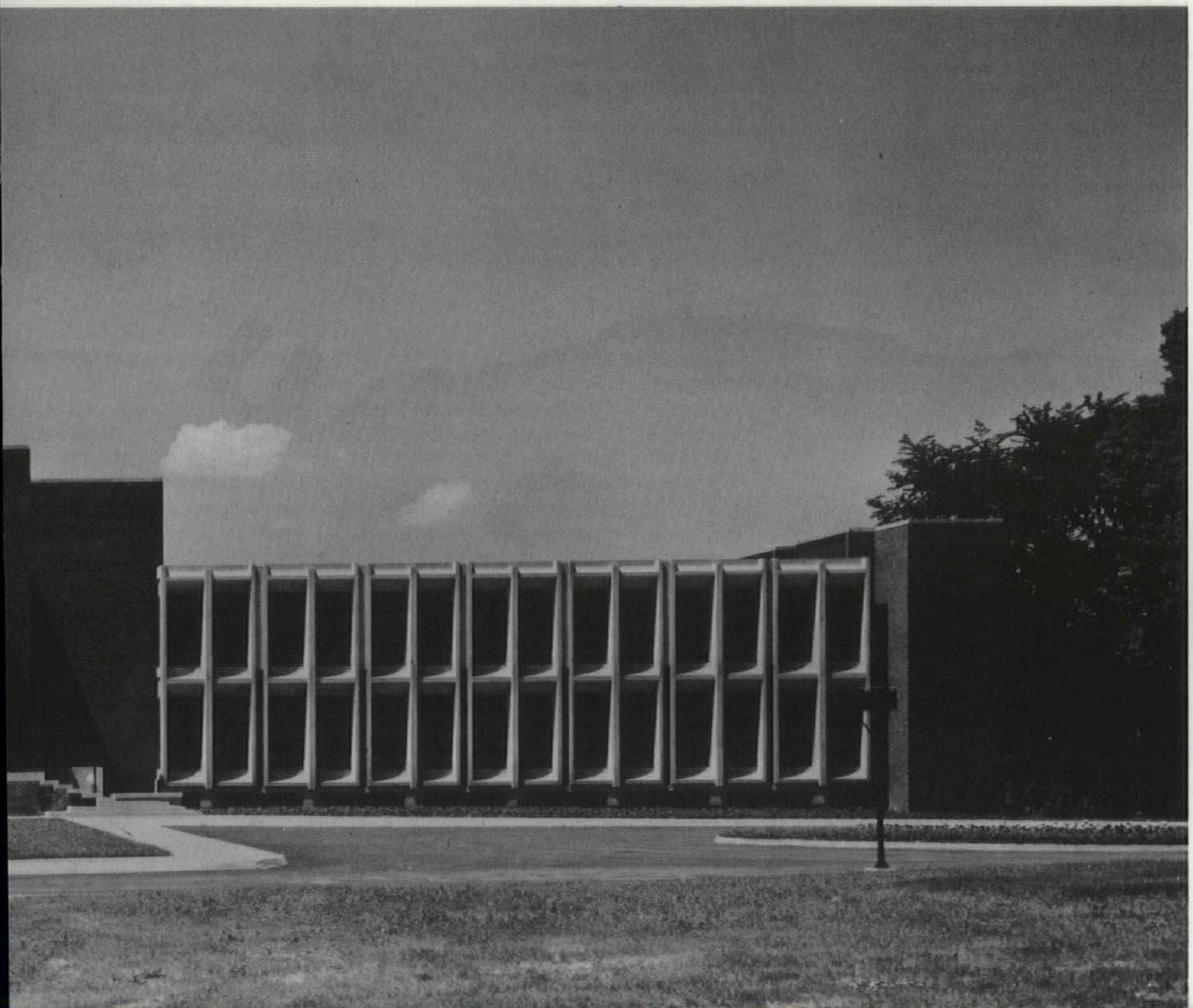
The building houses offices of several organizations, whose function is to administer, promote, and regulate educational programs and professional societies of the life and casualty insurance industry. The four floors of the two-story wings were apportioned among the different organizations. The wings are terminated by service spaces and stair towers, around which future expansion can take place. The center core contains spaces that are used jointly, and serves as both a link and a separator between the organizations.

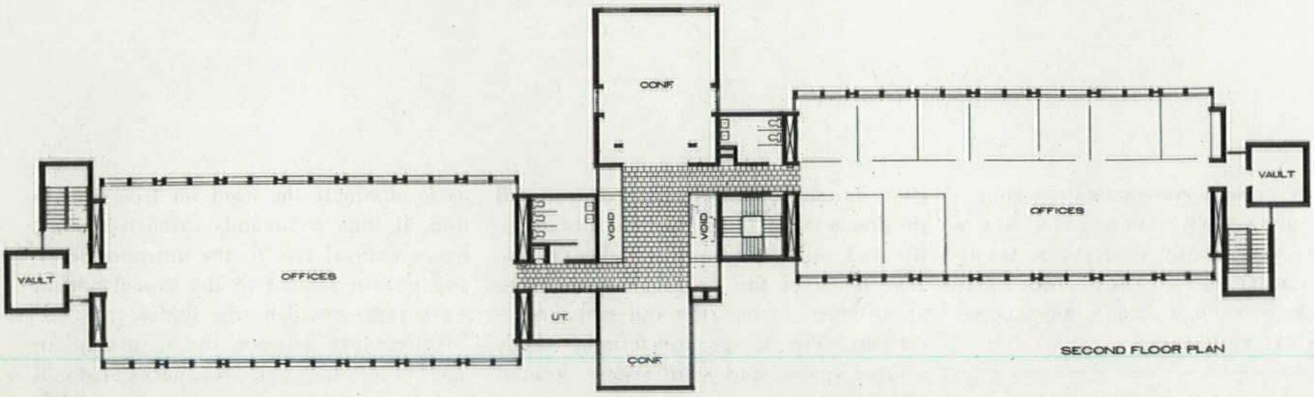
The 10-acre site is at the edge of a high-income residential area and is suburban in character. It boasts rich vegetation dominated by a large linden tree. The building has been placed along a ridge that dominates the site, and positioned so as to eliminate the need for tree demolition. It thus commands extensive views, has a natural rise to the entrance level, and is also related to the topographical mark represented by the linden tree.

Differences between the nature of an office area, which requires spaces of standard dimensions, and the nature of other areas, suggested different design and construction approaches. This has been clearly expressed in the appearance of the building.

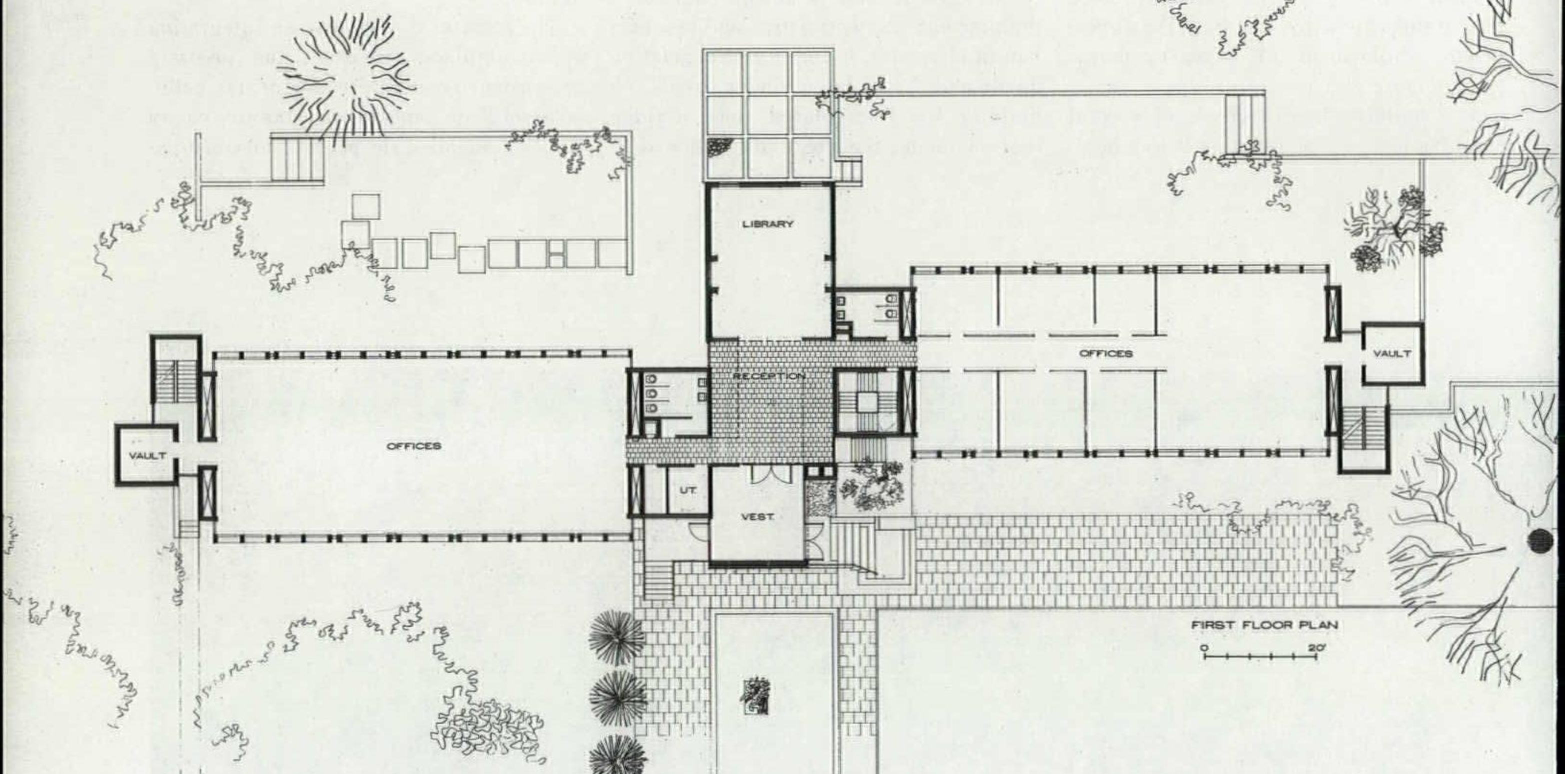
The structural system is an integration of cast-in-place-, precast-, and precast/pretensioned-concrete components; cellular-steel floor panels; and masonry cavity walls. A small-scale process of construc-

Photos, except as noted: Alexandre Georges

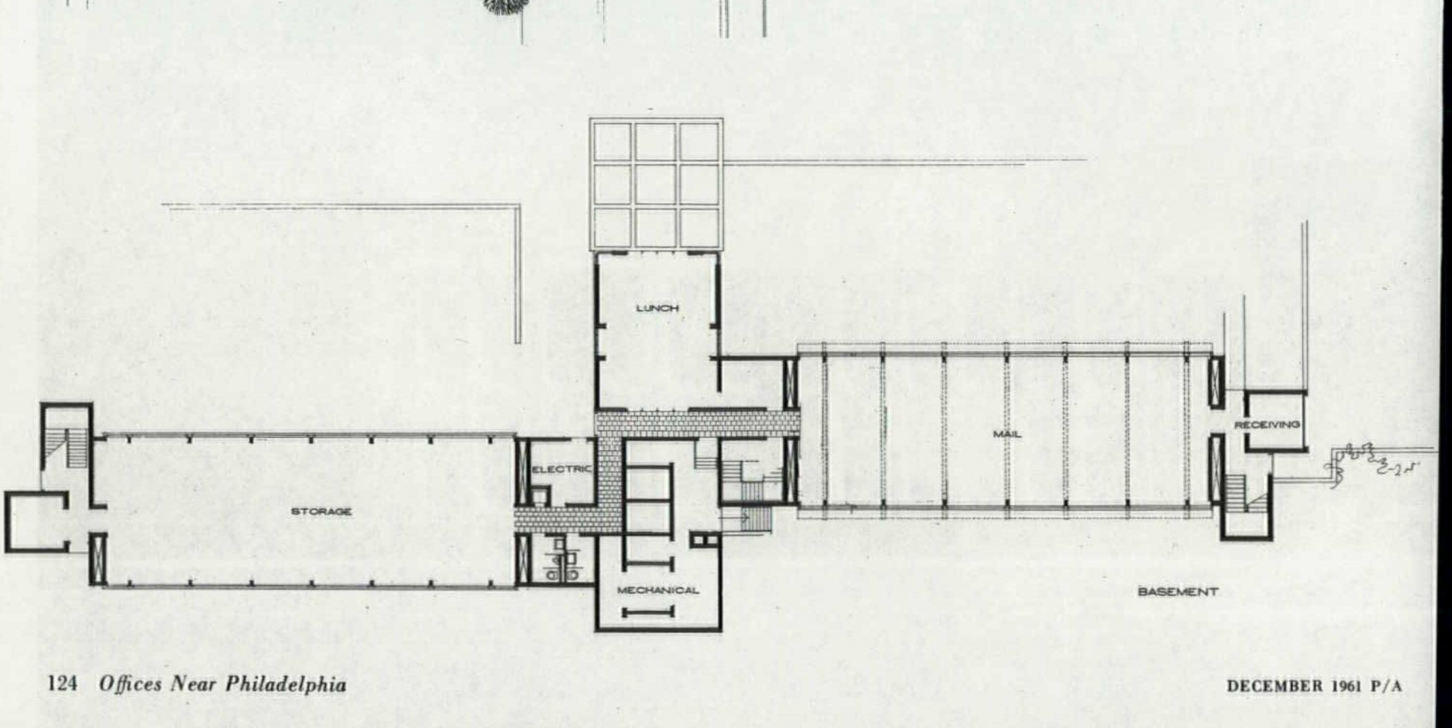




SECOND FLOOR PLAN



FIRST FLOOR PLAN



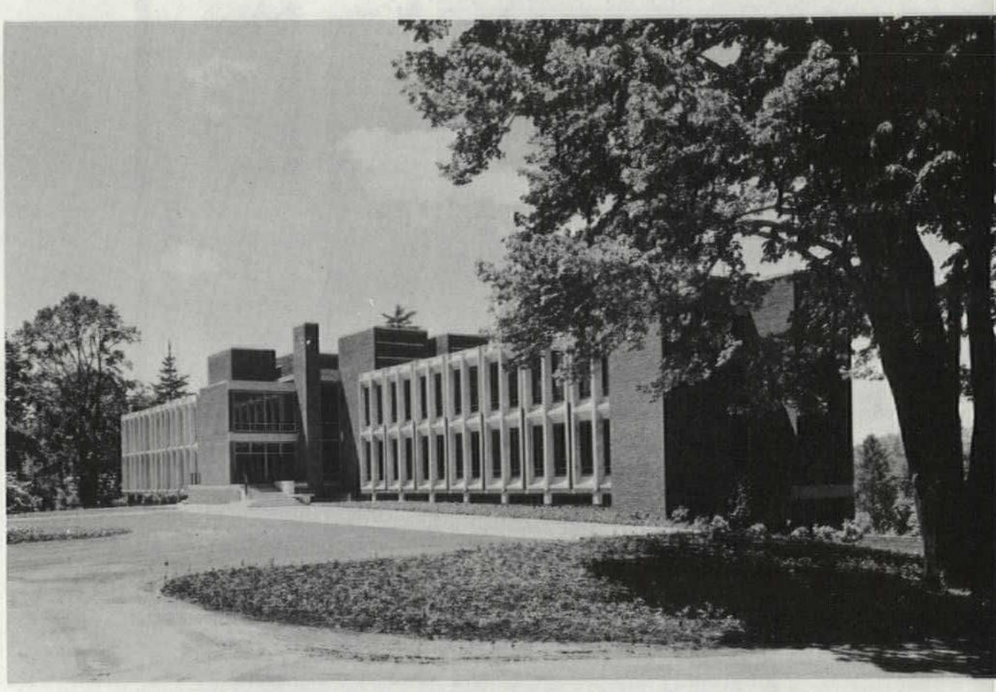
BASEMENT

tion was used for the core elements and for the end towers, where manual fitting operations were required; there, concrete floor slabs bear on brick-masonry cavity walls. Office areas, on the other hand, which are column-free loft spaces, have walls of precast-concrete structural units which also serve as window frames. These were designed to provide rigidity with a minimum of weight for ease of forming, transportation, and erection. Continuity was achieved by poured-concrete filler and dowels extending between the upper halves of the 10' x 25' framing units. To insure proper weathering, flat surfaces were avoided. In addition to carrying precast-pretensioned floor beams, the unit frames contain gray glass held in place by metal channels sealed with a polysulphide compound.

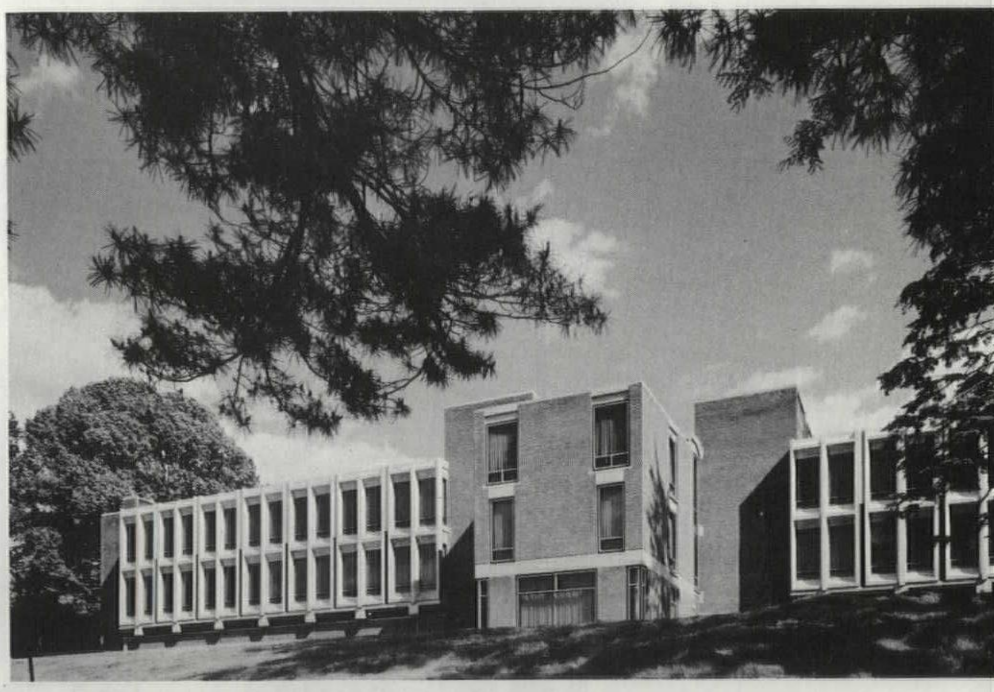
Second floor and roof construction in office wings is cellular-steel decking placed longitudinally. This structural system was chosen because it could easily be integrated with the heating and air conditioning and also offered advantages in terms of erection, trade use, and maintenance. Further, due to their loftlike character, the office areas were appropriate for an industrialized-type construction resulting in the achievement of an architectural character through expression of the basic members of construction.

Although there were no departures from standard erection procedures, the complementary practices produced a balanced timing of the differing processes of construction. Most of the materials used were traditional ones, but were applied in accordance with advanced technology. Precast structural/window units have hard-smooth surfaces made possible by the use of steel forms and intense vibration of the mix. Majority of exposed cast-in-place, reinforced-concrete elements on both the exterior and the interior, including bottoms of floor slabs, have bush-hammered surfaces which weather evenly and reveal the aggregate character of the material.

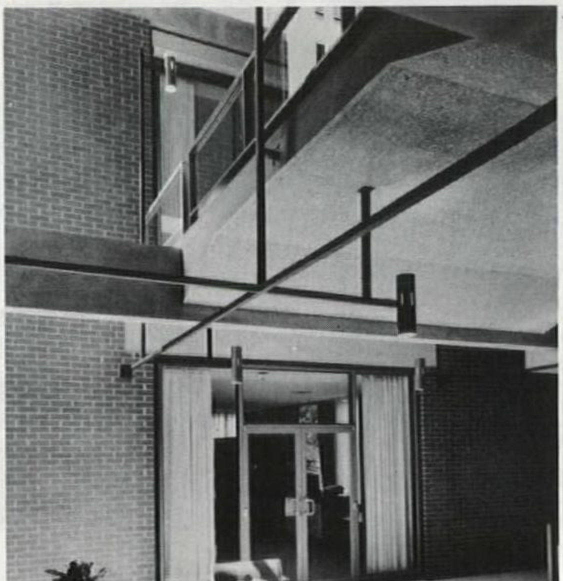
The cellular panels of the second floor and roof, the hollow-insulated masonry columns on the outside of the structure, and the horizontal masonry chases running around the building, were basic building units which readily served as means of transporting air to various sections of the building. The cellular decking provides direct conveyance of air without need of

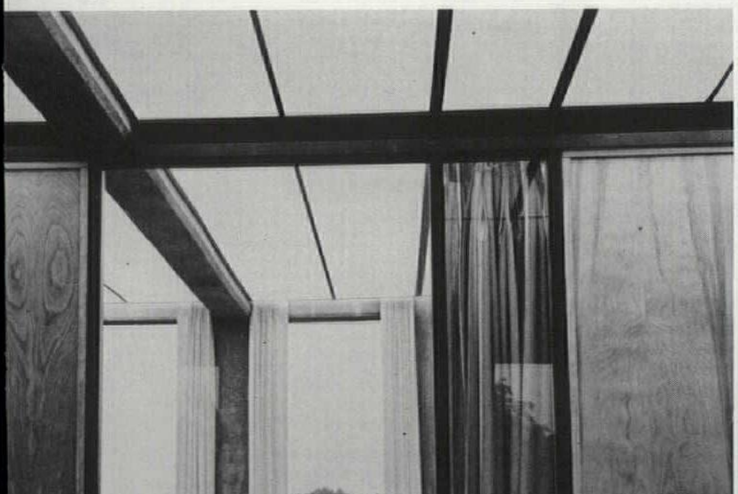


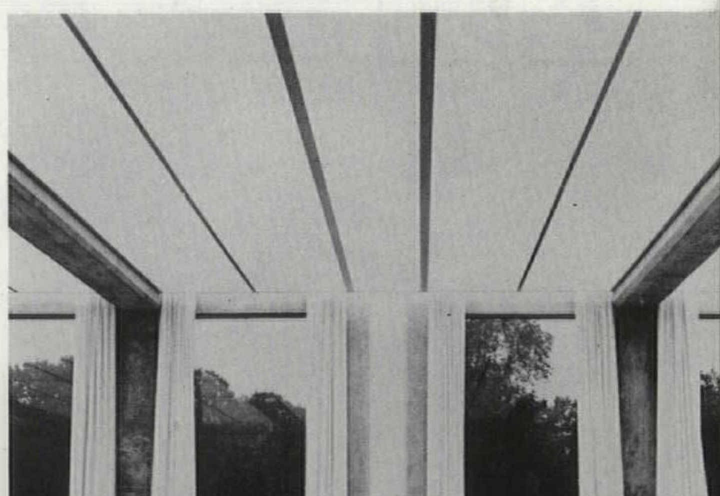
Both views, front (above) *and rear* (below), *show compositional balance of all elements.*



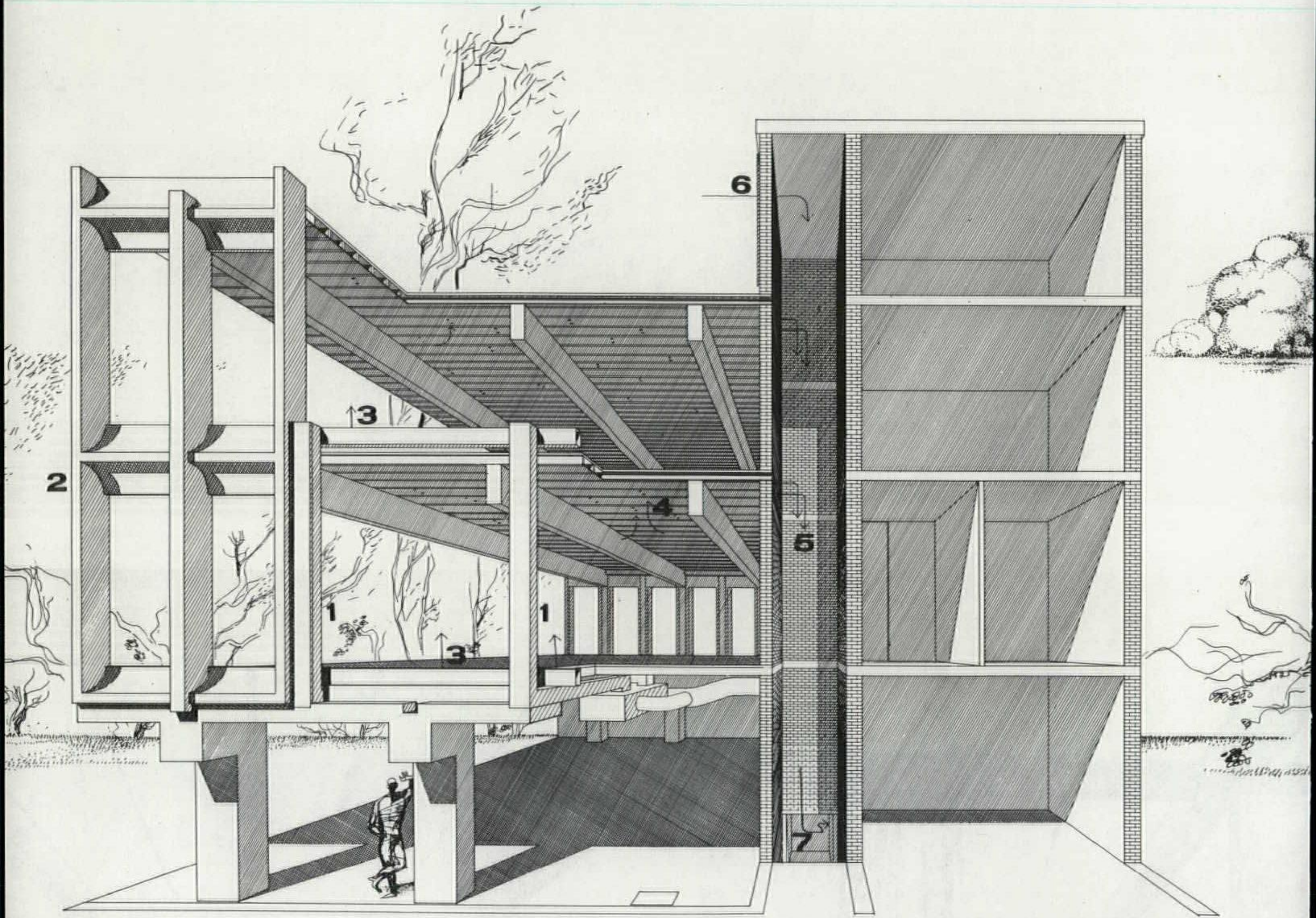
The several construction systems employed have been expressed on both the exterior and the interior. Views of the main entrance (left) *and reception area* (below) *show load-bearing cavity walls of dark red brick and bush-hammering of most areas of cast-in-place concrete components. Precast-concrete wall panels of the office wings* (left and facing page) *were cast in metal forms and have a smooth finish. Acoustically treated luminous ceilings and movable metal partitions with acoustical fillers are used in the offices. Window glass is tinted solar gray. Metal window mullions are painted gray, charcoal gray, and blue. Exterior metal cover plates for the vertical air ducts are also painted blue.*







Photos this page: Giurgola



1 *Air-distribution vertical duct*
2 *Precast-concrete unit 10' x 25'*
3 *Air-distribution horizontal duct*
4 *Air return*
5 *Air-return shaft*
6 *Fresh-air intake*
7 *To air filters*

ductwork above the suspended ceiling. Ductwork is, however, installed in the masonry columns and chases. The advantage of using it in the latter is that both of these architectural/structural features are arranged on the modular scheme determined by the office layout. The location of air-supply outlets, in order to complement the flexibility of the modular scheme, should also be located on a similar modular pattern. Consequently, the fusion of these two concepts lends itself well to the delivery of supply air to rooms via these masonry chases.

To reduce the noise level produced by this high-velocity air system, the main supply-fan cooling chamber and heater chamber are located in the basement in a reinforced, insulated, concrete room. Major equipment consists of a direct gas-fired heater, a 76-ton direct expansion refrigeration unit, and an evaporative condenser located on the roof and concealed by an open-brick screen.

In the basement, the high-velocity hot- and cold-air ducts run exposed at the ceiling to blender boxes, also exposed in the ceiling. Separate blender boxes serve the various zones. Single ducts run from blender boxes through masonry columns and chases, and furnish air to rooms through induction-type floor diffusers. These air-to-air induction diffusers use the primary air supply to pull a predetermined percentage of ambient room air into the diffuser, to be mixed with the primary supply and introduced into the room at a desirable temperature and quantity. By using this type of diffuser, smaller quantities of high-temperature air (or cold air on the cooling cycle) are handled by the ductwork system; this results in smaller duct sizes and facilitates their integration with the architectural design.

A suspended louverall ceiling is used to light the main office areas; however, no ductwork runs above this ceiling. Return air rises through the louvers, picking up a large portion of the heat from the lights, and passes through openings in the cellular floor. It is then conveyed by the cellular floor to the masonry column shafts. A portion of the air in these shafts goes to the main return-air masonry trench under the basement floor, which brings the air back to the main circulating fan. Excess air is exhausted directly from the shafts at roof level. Fresh air is also brought in at roof level through one masonry shaft which conducts the air to the main supply fan in the basement.

The cost of the building was $21.20 per sq ft for a total bid of $579,568.

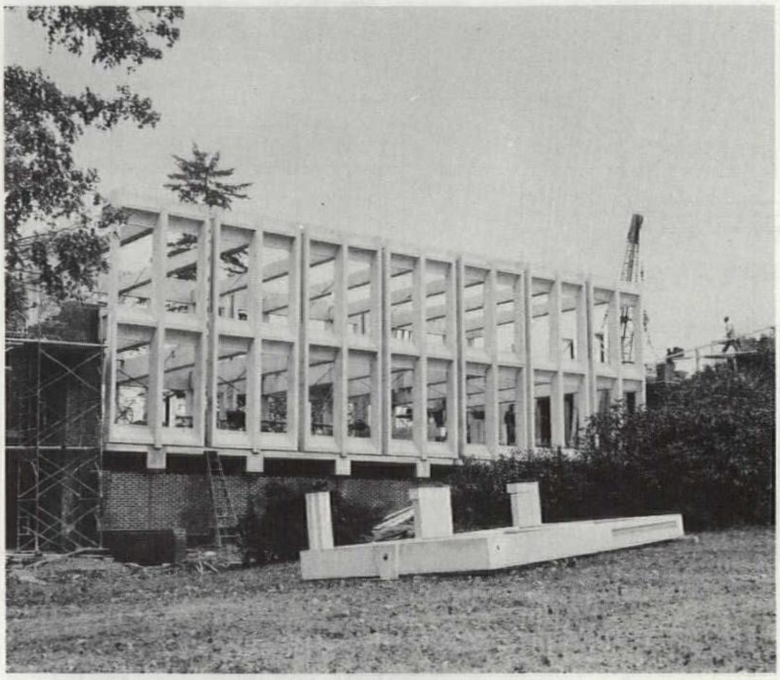
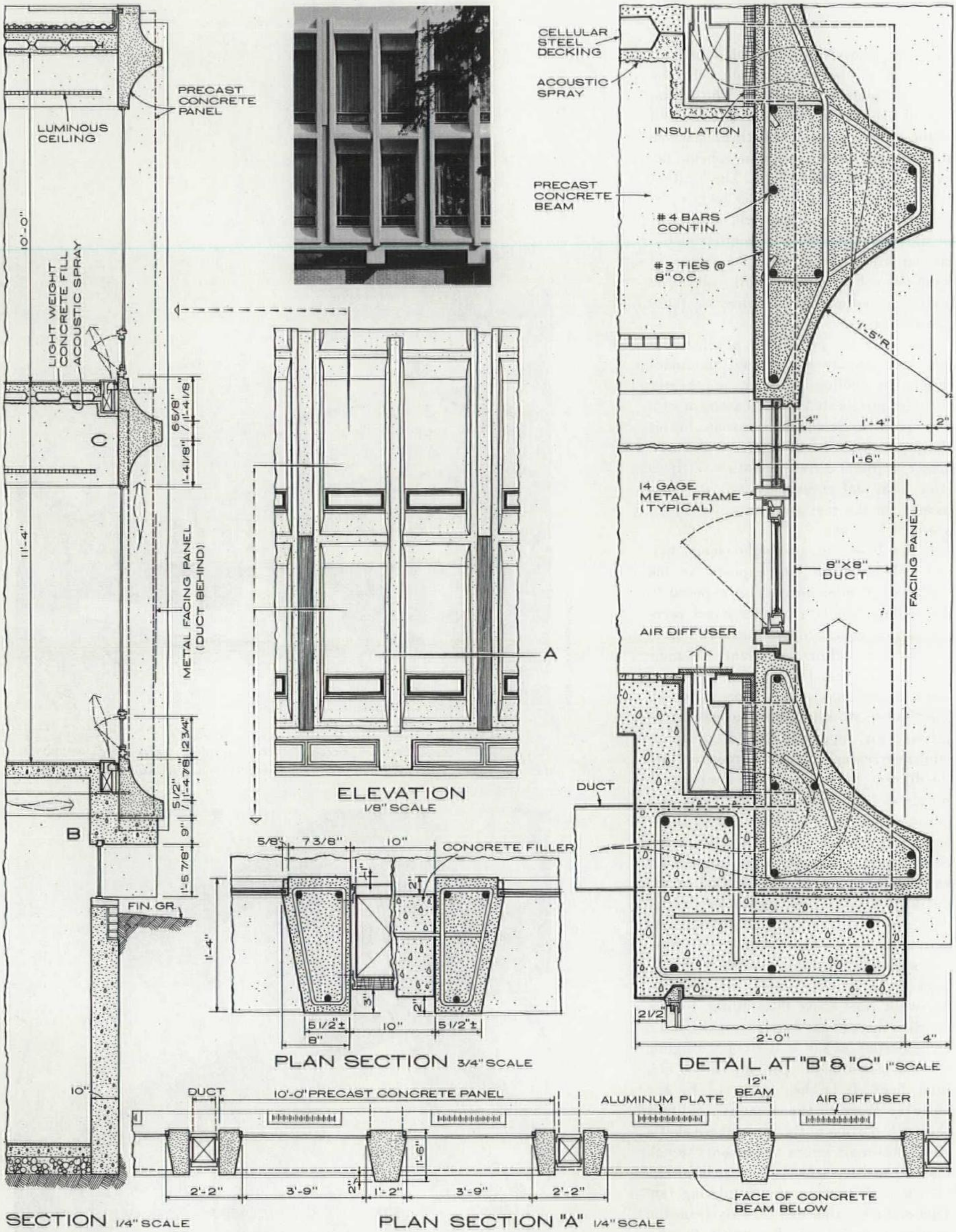


Photo: Photo Research

Ten-in. wide chase between precast-concrete framing units holds supply-air duct in lower half while upper half contains concrete filler for continuity.

Photo: Giurgola



AMERICAN CENTER FOR INSURANCE EDUCATION: Bryn Mawr, Pa. MITCHELL & GIURGOLA ASSOCIATES, Architect	SELECTED DETAIL WALL SECTION