

Architectural Forum / the magazine of building / March 1959

The background of the cover is an abstract geometric pattern. It consists of a grid of squares in two colors: a dark, forest green and a brownish-olive. The squares are arranged in a checkerboard-like fashion, but some squares are missing or replaced by larger, irregular blocks of the same colors, creating a complex, layered effect. The overall texture appears slightly grainy, typical of a printed magazine cover.

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Cover: Design by Ray Komai based on the plan for a proposed housing project (story, page 130).

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Criticism

The importance of good connections

A new classroom addition at the University of Pennsylvania shows how a building can be fresh and vigorous in itself, yet fit in well with others. A study in "articulation."

BY OGDEN TANNER



Just off 33rd and Walnut Streets in Philadelphia, on the University of Pennsylvania's venerable, brown-hued campus, a small new laboratory-classroom structure sets a thoughtful example in the art of putting buildings together—and relating them to others. The new wing of the Moore School of Electrical Engineering, by Architects Geddes, Brecher & Cunningham, is an unusually strong, well-knit composition, much more so than its traditional neighbors. It is all the more remarkable in that it is also a good link between them, a much better one, in fact, than either a pallid imitation or a sleek modern nonentity. Like any strong performance, of course, it has its debatable features, and something can be learned from these as well as from its more obvious successes.

The new addition is built across what used to be a minor, block-long street on the eastern fringe of the campus, just up 33rd Street from Franklin Field. To its left is the Towne School for various engineering faculties, a turn-of-the-century Jacobean pile which gains a certain elegance from the sturdy, well-spaced, and simply ornamented openings that pierce its bearing walls (see lower photo, opposite page). To its right is the Moore School itself, a typical late twenties' effort in brick and concrete frame, originally built as a factory for the manufacture of musical instruments and still suffering from a discordant multitude of window panes. Between these two generations, the new Moore annex stands out nicely as a third generation, clearly suggesting its interior functions behind the strong bones of its newer concrete framing system.

The new structure is a striking example of the architectural principle of "articulation"—the distinct and separate jointing of elements to form a coherent whole. (The importance of clearly showing the joints, as they are shown in the human body—for example in wrists and ankles—is especially well taught in the architectural school of the University of Pennsylvania, on whose faculty these architects serve.)

Drama by setback

The first articulation is a very major one in the siting: rather than join their new building with the others right on the street line, thus inviting direct conflicts in scale and style, the architects elected to set it back some 25 feet from the sidewalk. The small politeness of this setback creates a welcome change of space for the passer-by, in a manner that might well be used more often on built-up city streets. It also allows the older buildings to form a deeper and more dramatic frame for the new one. And, as a practical matter, it sets the new building's central corridors far enough back to join the old school at a more or less central circulation point.

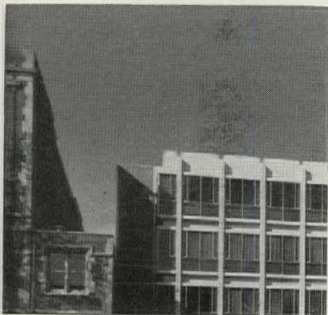


In a second articulation, the beginnings of these corridors, along with the new building's elevator and mechanical shafts, are grouped in a brick-faced exterior core, whose solid concrete shear walls act to brace the skeleton of the building itself. This leaves the main floor area free of service shafts so it can be arranged or rearranged at will. It also reduces the area of contact between the old building and the new, and at the same time lessens joining

costs and loss of light to older classrooms. Further, the core takes care of ramps and steps between the floor levels of high-ceilinged older classrooms and lower-ceilinged new ones, permitting four new floors of daylighted space opposite the older building's three plus basement.

Being windowless, the core also provides a narrow neutral ground, or visual buffer, that avoids any direct conflicts of cornice levels and window sizes between the two buildings. To make it neutral in material as well as form, the core is veneered in the same Flemish bond with dark header bricks used on neighboring buildings and elsewhere on campus. As a matter of clear expression, there is some confusion in the idea of disguising concrete with a dissimilar material, and what is actually a structural brick pattern at that. Also, the thin white line running down the cornice edges of the old building marks no real boundary at this point, and could have been left off without any great loss.

At the left side of the new building, the stairs and washrooms are removed from the main interior spaces as ducts and elevators are on the other side, and placed symmetrically in another brick-veneered concrete core which butts against an older two-story addition to the Towne School. At first glance, this might imply a similar working connection. Actually, these two schools have little in common, save for one emergency door between them at the first floor. Above the second story, moreover, the new outside core is left grabbing at thin air, creating

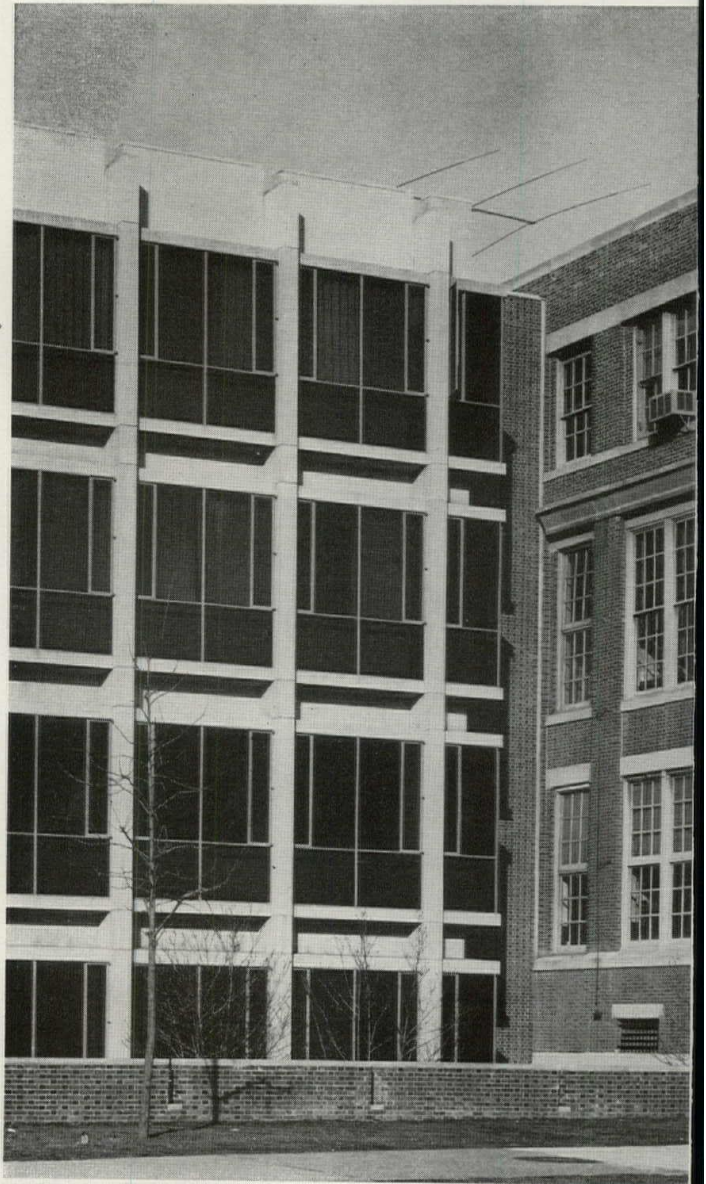


a somewhat unhappy gap. Given a less narrow, broken-up site, it might have been visually better to have attached the new wing more emphatically to its real parent, not touching the Towne School at all, or to have gone to the other extreme and fully closed the gap, functionally as well as visually, between the two schools. In either case, it might have been pleasant to have introduced an opening of some sort through the site to the old street and main campus at the rear, relating the courts newly created in front and back with a pedestrian passage like that of older college archways.

Character in concrete

Whatever fine points may be argued about the new building's generally excellent relations with its neighbors, there is little doubt it is distinctive in itself. No mirror-faced modern abstraction, it has a richly shadowed personality of its own, made all the more dramatic by its neutral brick sidepieces. Six white columns, clad in precast concrete, support broad spandrel beams, whose deep channeled shape gives the building much of its vigorous character. This channel shape marks on the exterior not only the actual line of each floor slab, but also the line of the ceiling considerably farther down, with a completeness of expression that is rarely found in modern

CRITICISM



A clear link; two debatable details.

ARCHITECTS: Geddes, Brecher & Cunningham

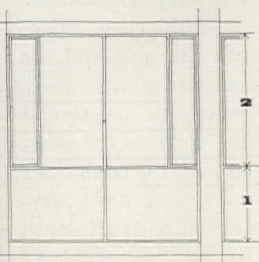
ENGINEERS: Dorfman & Bloom (structural),

J. P. Hartman (mechanical, electrical),

Bolt, Beranek & Newman Incorporated (acoustical consultants).

GENERAL CONTRACTOR: Joseph R. Farrell, Incorporated.

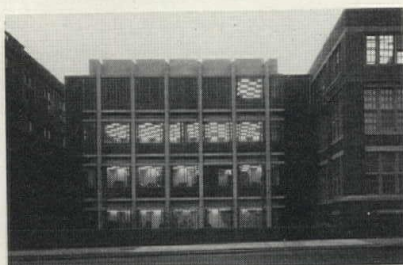
curtain wall construction. (In gaining their deep channels, the architects may have gotten themselves a pigeon and soot problem, like many historical buildings, but these things have been overcome. Within the structural pattern, window openings are squarish—9 feet wide by 9 feet 8 inches high—echoing the solid proportions of the older buildings at right and left. Brown-tinted glass from floor to ceiling, set off by slim, bright, salmon-colored sash, makes a lively contrast with the white structure.



Each opening is divided by a horizontal rail into a good 1:2 proportion, and is further subdivided by a vertical center mullion, and by elegantly proportioned side vents well-located for individual control of fresh air beyond that provided by the me-

chanical air-supply system. At the corners, the rows of windows are not abruptly terminated by heavy columns, but nicely turned around a slim steel mullion. Here, too, the channel beam is clearly expressed in profile, giving the observer an added feeling of three dimensions.

Unlike many modern buildings, whose curtain walls seem like endless patterns suddenly cut off, this one makes a good, old-fashioned, constructed ending against the sky. Precast panels form a parapet which extends slightly above the column tops, giving the columns a finished look and the building a notched silhouette that recalls the fortress crenellations of older buildings on campus. The lower part of the street façade, however, is not quite so successful. In gaining fully daylighted classroom space on the lowest or basement floor, the archi-



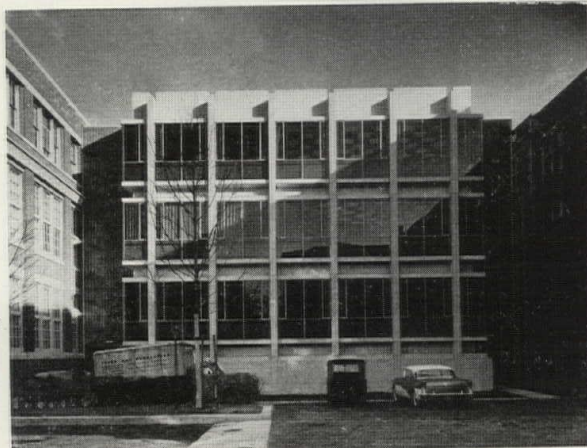
tects lost the chance for a solid base comparable to the top, with the result that the building gives the uneasy appearance of rising from, or sinking into, the ground behind its shallow light court. This movement is partially counteracted by the low wall in front of the court, notched in the same rhythm as the roof line. However, being separated from the building itself, being built of the same "neutral" brick as the building's side panels, and being topped by only a thin white cap, the wall is not quite strong enough as an architectural device to overcome the sinking illusion completely. In contrast, the rear façade of the building sits on a definite, rugged base, which fronts the upper part of a windowless auditorium half-buried in higher ground at the back. Here the composition has a clear beginning, a middle, and an end. Here, too, the "alley" character of the old street in back has been nicely softened by trees and a low length of hedge in front of a service entrance at the left.

The articulate exterior of the new addition stems largely from a well-integrated interior. Each of the



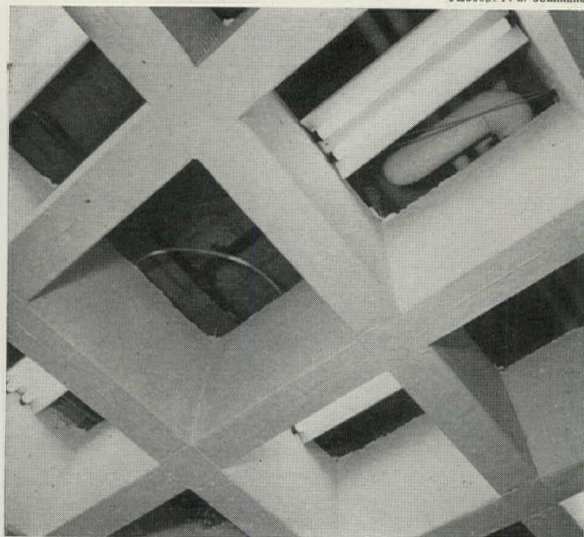
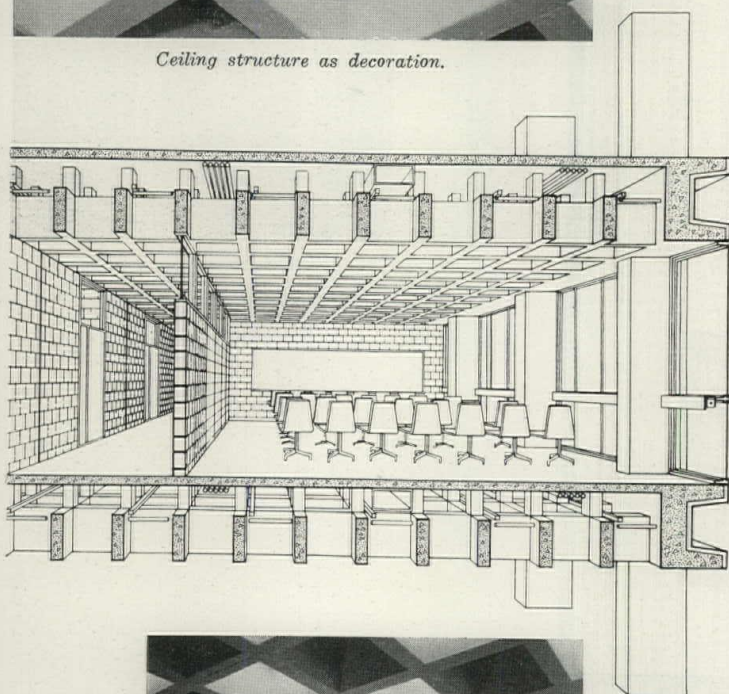
A well-turned window; a well-profiled beam.

PHOTOS: F. E. GUERRERO



A well-defined base, and a touch of trees.

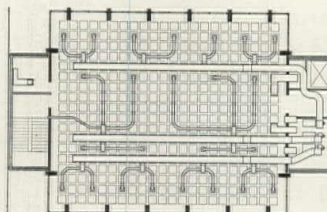
PHOTOS: P. E. GUERRERO

*Ceiling structure as decoration.**A clear meeting of many parts.*

four floors is conceived as a 50 foot by 60 foot clear space, uninterrupted by interior columns, so that classrooms, laboratories, and offices can be arranged and rearranged at will as space needs change. The floor structure itself is a complex affair consisting of a heavy concrete grid, surmounted by a forest of short posts set on the grid intersections. These posts, in turn, support a 4-inch floor slab above. All of this is framed within the big channel-shaped edge beams, which stiffen the floor frame and transfer its weight

to the peripheral columns.

The 14-inch clear space between the grid and the slab above allows ducts and wires to be strung through between the posts in all directions from their point of origin in the service stack. The great depth of the concrete grid (1



foot 10 inches) provides cofferlike recesses concealing bare lights and air diffusers wherever they are needed. Poured around overturned cardboard boxes as inexpensive and easily removable forms, the grid is left unfinished except for a coat of white reflective paint. Lights, which are placed in alternate coffers throughout the building, form a striking checkerboard pattern easily visible on the exterior—an expressive display but perhaps a little too strong a pattern as a constant environment inside. It can, of course, be quite easily changed.

At the outside wall, columns are mainly inside the glass line, protruding just enough beyond the beams on the exterior to give the desired shadow lines. Between the columns, finned convector units are neatly suspended to take the chill off windows and act as guard rails a few inches from the glass. Under these convectors are hung either storage shelves for books and equipment, or simple perforated panels to protect the lower window.

Finishes inside continue the exterior's unslick, and quietly handsome, approach. Partitions of simple concrete block, to reduce noise between rooms of varying functions, are painted a sturdy battleship gray; vertical mortar joints from floor to ceiling at intervals prevent cracking resulting from deflections in the floor frame, also permit clean removal and relocation of partitions when space needs change. Doors are of natural Philippine mahogany plywood; planks of the same rich wood are used at each end of the building for corridor and wash-room ceilings and the underside of stairs, where they echo the rough pattern of form boards left showing on bare concrete walls.

Inside and out, the building shows a rough honesty of approach. Each structural part comes together with its neighbor, unconcealed and largely unblurred, in an attempt to reveal each part and the function it performs. The handsomeness of the building derives not from sleek machine finishes, but from sturdy proportions and rhythms of structure, and simple, natural colors. As architect Louis Kahn has said, architecture "starts at the joint." This building makes a good start indeed.

END

