MODERN CHURCH ARCHITECTURE

24. ROBERT F. CARR MEMORIAL CHAPEL

Illinois Institute of Technology, Chicago, Ill.
Dedicated 1952
Ludwig Mies van der Rohe (b. 1886), architect

"Less is more." — LUDWIG MIES VAN DER ROHE

The Robert F. Carr Memorial Chapel, which is part of the integrated campus plan for the Illinois Institute of Technology in Chicago, is a building the untrained eye would be quite apt to pass over. It is small, it is unpretentious, and it does not look like a church; yet as an example of a philosophy of modern architecture, it is one of the more important churches in this book. It is designed by Ludwig Mies van der Rohe, a man whom some critics rank among the three greatest architects of our day, the others being Frank Lloyd Wright and Le Corbusier.

In his approach to modern design, Mies is the antithesis of these other two giants who have dominated advanced thought in their field; Corbusier for over forty years, Wright for over sixty. These two men, superficially quite unlike, are both personal artists of the highest order and their solutions to architectural problems are always individual. Mies, too, is an artist in his clarity of expression, his purity of linear and formal relationships, and his infinitely meticulous detailing. But in his approach to design he is bluntly a builder. The solution he seeks is not an individual response to a particular problem. It is instead a system of building, universally applicable to all structures of whatever type, function, or size, and universally appropriate to our technological age.

This is an age from which the traditional hand craftsman is disappearing, the cost of labor is signal high, and the greater part of construction occurs in cit far removed from the immediate sources of tradition materials. The logical answer to this building proble lies in standardized, factory-fabricated elements that c be shipped easily to the site, and there easily fitted t gether to produce structures in a variety of sizes, on module capable of extension either vertically or hor zontally. Moreover, these standardized building com ponents should be compatible with modern mechanical equipment, such as elevators, heating and cooling plants, bathroom and kitchen fixtures, ducts, shafts, and conveyors — most of them rectilinear, or at least fitting most easily into rectangular spaces.

The system Mies has developed is therefore repetitive, rectilinear, and modular. The basic materials with which he works are precast steel and other metals, reinforced concrete, glass, and brick. He rejects the exploitation of the plastic qualities of concrete or laminated wood as incompatible with a rectilinear system. He rejects also the use of a natural material such as stone, since it is too irregular to fit easily into a standardized module, and is not a manufactured substance, universally available.

The limited palette to which Mies has deliberately held himself finds its primary expression in the skeleton frame combined with a lightweight curtain wall — a

reduction of structure to the bare bones of building. This is indeed one of the basic building systems of the twentieth century. The towering skyscrapers, which represent its most dramatic use, are buildings that proclaim themselves unique to our day, unprecedented in the history of the world, and probably the building type by which our age will be remembered, just as the marble temple is inextricably Greek and the stone cathedral inextricably Gothic.

Mies van der Rohe is not the originator of this system. It was developed in nineteenth century America, and was brought to its first pure expression by Louis Sullivan, the Chicago architect who dared to reveal the framing pattern of his multistory buildings and to expand their windows to nearly fill the grid. This honest expression of structure, at a time when other architects were burying the steel frame beneath heavy masonry walls and intricate applied moldings and cornices, came to be known as the Chicago School, and its originator as the father of modern architecture in America. It is doubtless coincidental, but certainly appropriate, that the German-born exponent of the International Style, Mies van der Rohe — who is considered the foremost practitioner of the architecture of the exposed frame — is today carrying this concept to its ultimate expression in the same city in which Louis Sullivan conceived it.

However, the contribution of Mies van der Rohe is not limited to the furtherance of a concept originated by another man. Mies has taken the grid and expanded its application beyond that of frame and curtain wall construction. In certain small buildings to which the frame is inappropriate (including the Carr Memorial Chapel shown here), Mies may substitute brick bearing walls, incorporating this different system of building into his repetitive, box-like pattern without so much as breaking his architectural stride. By the discipline of the grid, he has been able to resolve the contradiction between different materials and methods, conferring upon each the gift of consistency. Yet within his rectilinear pattern, great flexibility of height, breadth, transparency, or opacity can be achieved merely by an extension of the module or a shift from one material or structural system to another.

Mies van der Rohe's intensive study of the rectangle and the module represent an attempt to bring order out of the multiplicity of materials and techniques that act to diffuse the practice of architecture in the twentieth century. But his search for order goes beyond structure to include also a universality of function, thereby placing him squarely in opposition to much of accepted thinking in modern architecture. "Form follows function," the famous phrase of Mies's predecessor, Louis Sullivan, is one of the most widely accepted axioms of contemporary design. Such a theory inevitably demands a particular solution, to fit a particular function, in a particular time and place.

But one of the salient characteristics of our age is obsolescence. Cities thrust outward, old neighborhoods decay, what was once a residential community changes into a section of business and industry. As these changes occur, stately old houses are converted to stores or rooming houses, a church is demolished to make way for an office building. And even in the new office building, a change of tenants involves extensive remodeling to create spaces more appropriate to a different set of needs. Because of these facts of twentieth century existence, Mies van der Rohe has rejected the architectural theory that form should follow function. He explains:

"We do the opposite. We reverse this, and make a practical and satisfying shape and then fit the function into it. Today, this is the only practical way to build, because the functions of most buildings are continually changing, but economically the building cannot change .... We do not let the function dictate the plan. Instead let us make room enough for any function."

This, in essence, is the thinking behind the work of Mies van der Rohe. It explains, in at least one of its meanings, his famous phrase quoted at the head of this chapter: "Less is more." By a reduction of building to its basic function — that of shelter — he has vastly increased the functional potential of every building he designs.

The Stahl Kirche (No. 18) by Otto Bartning, which opens this section, was the first application of the steel frame and curtain wall to church building, and it was unsurpassed as a particular solution to a particular problem. But the Stahl Kirche was a church, only a church, and could never have appropriately been adapted to any other use.

In the Robert F. Carr Memorial Chapel, Mies has designed a church that does not look like a church — a church which could, in the common derogatory phrase, be a gymnasium. And of course it *could* be a gymnasium. That is the architect's whole point.

But it should also be added that such a gymnasium could be found nowhere except on the campus of the Illinois Institute of Technology. Although Mies has deliberately devised an easily copied system, none of his copyists have been able to equal the original. In the hands of this master of line, proportion, and detail, a generalized modular method of building achieves unequalled clarity and simplicity. Even when solid walls of brick are substituted for the steel frame, as in the Memorial Chapel shown here, the whole retains a delicacy and refinement seldom found in the work of other designers.

Mies's buildings achieve their restrained beauty to a great extent by what he leaves out. This ability to know when to stop, where to omit the "finishing touch" that could ruin the entire design, is rare indeed. It is one more meaning of "Less is more." In attempting to explain this phrase, Mies is fond of saying "God is in the details," signifying that the joints, trim, and projecting elements of a building reveal its essential excellence or lack of it. Certainly, in his design for the Memorial Chapel, it is the purity of Mies's detailing, more than any other factor, which gives a subtle, spiritual quality to a building that is nothing more than a flat-roofed rectangle without bell tower, spire, or other identifying feature than a small exterior cross.

The Robert F. Carr Memorial Chapel is but one consistent element in a campus plan designed in its entirety by Mies van der Rohe. As head of the Department of Architecture at Illinois Institute of Technology from 1938 to 1958, and sole architect for its long-range building program, Mies has, for twenty years, enjoyed a unique proving ground for his theories both academic and practical. These theories have influenced a whole generation of American architects, far beyond those he has actually taught. Buildings in the "Mies manner," notably offices, factories, and skyscrapers, are today found in cities from coast to coast. This is as it should be, since Mies has been concerned, not with personal expression in architecture, but with devising a characteristic way of building for our age.

Nowhere, however, is the Mies system better illustrated — both in its discipline and in its subtle variety — than on the Illinois campus itself. The building vocabulary is here limited entirely to structural steel, concrete, glass, and brick. Most of the buildings are steel frame and glass curtain wall, with occasional opaque panels of nonbearing brick. However, to impart a sense of seclusion to the chapel, distinguishing it from the nearby classroom and dormitory buildings, the architect has here used solid bearing walls of brick to support a steel-framed roof of precast concrete. The steel framing of the plate glass portion of the entrance facade bears no weight. These materials are, of course, the same ones used in the other campus buildings. Here, they are employed in a structurally opposite way, but in an esthetically similar manner. Identical with the other buildings is the Mies concept of a simple, rectangular enclosure within which the space can be arranged to fit whatever needs arise.

Although the chapel is thus held to the generalized concept of space that governs all Mies work, he has subtly particularized it by means of structural details. Note that the steel frame of the roof is exposed on the interior, repeating the steel framing grid of the glass entrance wall. Both of these grids are consciously designed to repeat in structure the pattern of the large cross suspended over the altar, and also the identical pattern of a small, black, exterior cross, centered atop the roof, which had not yet been applied when this photograph was taken. These repetitive crosses and the sheltering walls of brick are the only obeisance made to the religious character of the building.

However, the meticulous detailing typical of work by Mies van der Rohe does carry its own spirituality of economy, purity, and restraint.

The fact that the aluminum frame of entrance doors has not been painted black to match the black steel grid attests to the honesty of the Mies approach. The doors are different elements, not framing members, and so should remain differentiated from them. However, if these strips *had* been painted black, something would have gone wrong with the design. By such a small change the framing grid would have lost its subtlety. This is a good example of Mies van der Rohe's ability to stop before the "finishing" touch. What is "less" here is only a coat of paint. What is "more" by this omission is the refinement and delicacy of the entire facade.

Torkel Korling

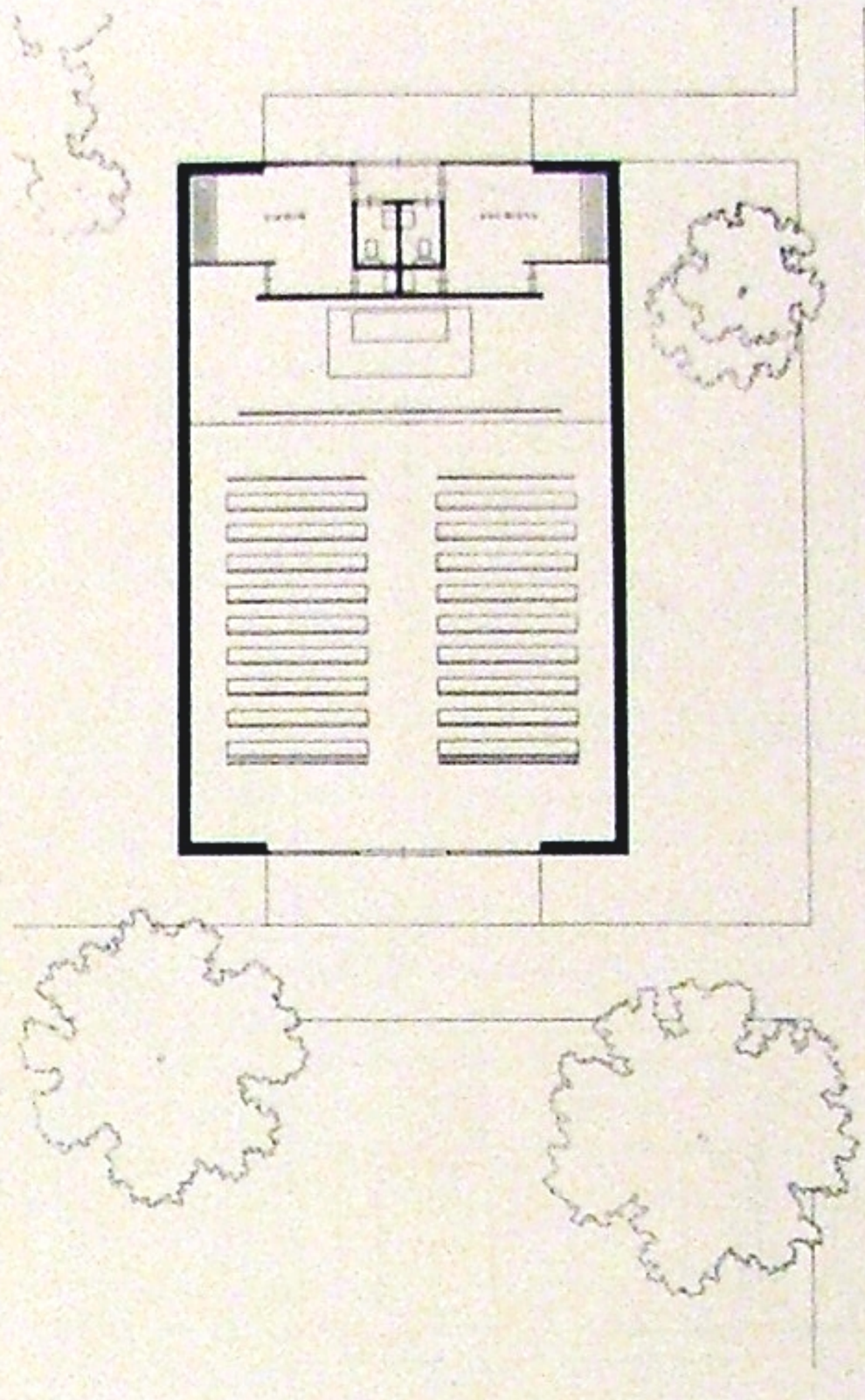
Such restraint is also carried over into the color scheme. Except for the black outlining of the steel framing members and a black-and-white terrazo floor, the chapel is executed throughout in shades of beige: buff, unglazed brick; a travertine marble altar; raw silk altar hanging; choir and sacristry screens and pulpit of clear, rift-sawn oak. The cross and communion rail are of stainless steel. This quiet monotone is brought into vibrant life during services by a wash of warm light

which makes the altar curtain and brick walls of the interior appear a tawny, almost orange color, while the exterior remains a neutral frame. No attempt is made, however, to dramatize the altar or to provide a sense of mystery by subdued illumination in the seating area. All is one unbroken space, open, clearly visible, and as rational as the architecture that contains it. By this means, the chapel symbolizes what some theologians consider to be the essence of Protestantism, as opposed to the mystique of the Catholic Church.

However, this is not a generally accepted Episcopal concept. The chapel was agreed to only reluctantly by the Episcopal Diocese of Chicago. Although this body had already conceded that the chapel should conform to other campus buildings, a detailed explanation of the design had to be given by the architect before consent was granted and funds provided. However each of the several pastors who have served this chapel came to be proud of the church as a building. The authors therefore advise the reader to turn back to this design occasionally after looking at other churches. Because of its severity and its complete lack of traditional symbolism, its spiritual beauty is not immediately apprehended. But whereas the more obvious expressions of spirituality may pall, this is a design of which one can never tire.

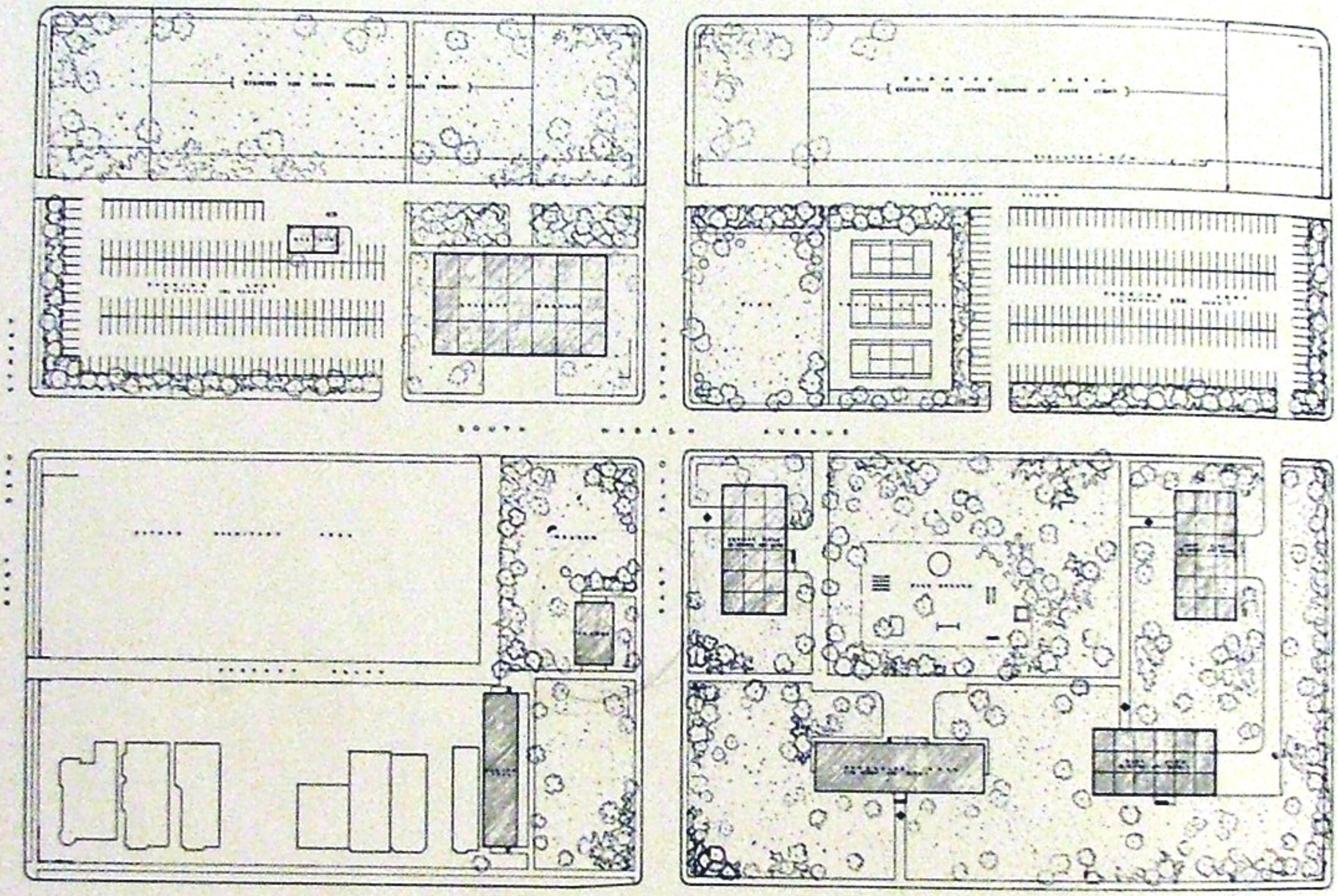
Hedrich-Blessing

Probably in no other church have the altar and its platform been reduced to such utter simplicity as in this small Episcopal chapel. They are simply solid blocks of marble, undecorated except for the modest inscription at one side. By contrast, the silver candlesticks, themselves quite simple, appear richly ornate. The solidity of the altar is in striking contrast to the crystalline delicacy of the glass wall at the front of the church and to the graceful drapery of the altar hanging, emphasizing — merely by the material used — the purport and solemnity of the sacramental table.



The plan of this chapel is just as simple as its structure: a rectangular, open room, with choir and sacristy flanking utilities behind the altar curtain. Pews shown on this plan have not yet been installed. The chapel accommodates 150 students in a total area of 2,300 sq. ft. At a cost of $75,000 — or $30.50 per square foot — the Memorial Chapel is probably the most expensive church in the entire book. However, although the cost of space is high, the cost per seat is low — only $500. This is because there is no waste space anywhere in the design: no narthex, no large and intricately designed chancel, no separately partitioned, subsidiary rooms. By far the greater part of the interior can be used for seating.

The major expenditure — $64,000 of the total — was for the structural shell. This attests to the high price of perfectionism, and also to the fact that technology has not yet caught up with Mies van der Rohe. His designs typically start with a redesigning of the basic manufactured elements that make up the building. This chapel is therefore truly a "custom-built" design, comparable in cost to a specially designed car in the automotive industry. However, more and more Mies-designed elements, from framing members to hardware, are today being offered as stock items by industry. Eventual mass production and mass sales could considerably lower the cost of a building designed in the Mies manner.



Site plan of a portion of the Illinois Institute of Technology campus shows the chapel centrally located near the Student Commons, and a group of four tall apartment houses, beyond East 32nd St. This is a convenient location adjacent to living quarters and student meeting places. The academic buildings of Illinois Institute of Technology are not shown here; they lie to the left, beyond East 33rd St. A total of 18 buildings have been completed. In this part of the plan, buildings indicated only by outline are existing structures that will eventually be torn down. Note the difference between these buildings, with various juts, and awkward massings, and the simple, clearly spaced rectangles of Mies van der Rohe.

The unique feature of this campus plan — indicating the lengths to which Mies will go in his search for order — is its modular basis. All buildings, no matter what their size, are designed on a repetitive module, with bays either 12 or 24 ft. in breadth and depth and 12 ft. in height. But not only the buildings are designed on this basis. The open spaces between them are also based on the same module. In this way, if buildings must be connected at any future time, the space between them can merely be filled in with more of the standard modular elements.

This provision for expansion is an incidental benefit, however. The primary aim of such meticulous planning is the achievment of a subtle, visual rhythm throughout the campus as a whole. Although all ground space is modularly calculated, there is no grid siting. Buildings, usually of different sizes, and grouped about open courts, are never placed entirely on a straight line or in a marching square. Instead, they are sited as though pushed slightly to one side, or forward, or back from each other. This provides a subtle variety that saves the similar design of the buildings from monotony. But because of the modular spacing, a basic order and regularity shines through the site planning, even though no formal or axial symmetry has been used.

The total effect of this campus thus adds up to much more than the sum of its buildings, each taken alone.

References

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