


FORM + ORDER

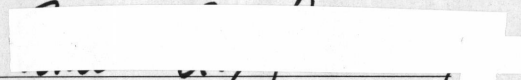
*investigations into
architecture + the architectural*

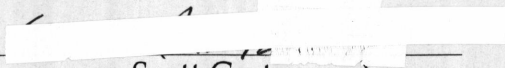
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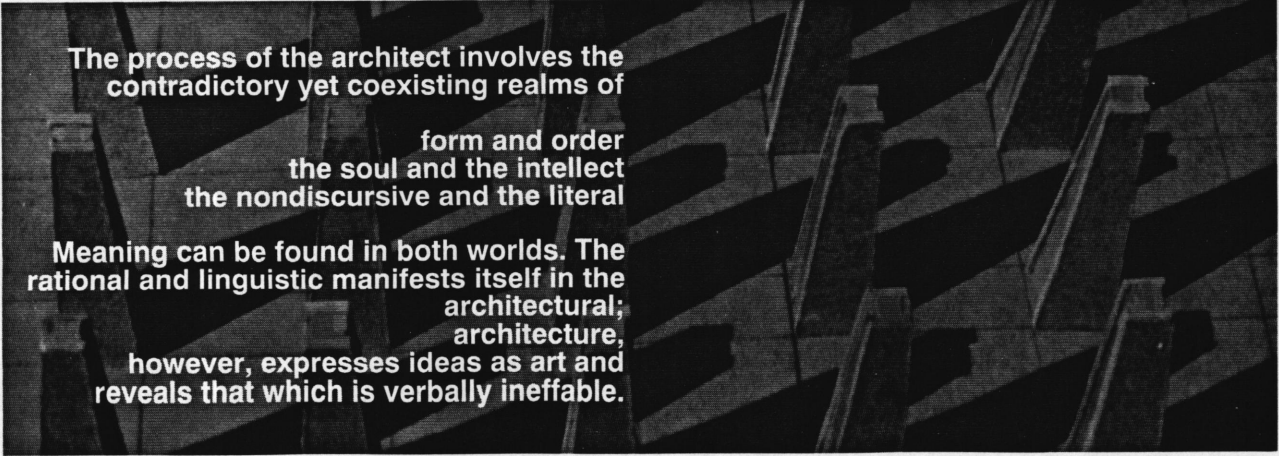
CRAIG FRANKLIN DEAN

Thesis submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
MASTER OF ARCHITECTURE


Michael O'Brien, chairman


William Galloway


Scott Gartner



The process of the architect involves the
contradictory yet coexisting realms of

form and order
the soul and the intellect
the nondiscursive and the literal

Meaning can be found in both worlds. The
rational and linguistic manifests itself in the
architectural;
architecture,
however, expresses ideas as art and
reveals that which is verbally ineffable.

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dedicated to the memory of my mother

My studies have involved order and form in architecture. Both of these aspects can hold significance, but I would like to make the distinction that order is architectural and form is architecture. This apparently simple statement is, I feel, necessary in a time when the philosophical and linguistic are assuming a prevalence over the visual and spatial in art and architecture. Perhaps more than any other art, architecture demands a high degree of order, which in turn leads to literal explanations of the process. These conceptual ideas are the architectural; that is, they are rational concepts that may be abstracted and applied from building to building or even to other objects. Like all arts, however, architecture exists as *form*, where the expression of an idea is inextricably bound in the object itself.

In the process of the artist, this division is not so clear. Intentions in order and intentions in form affect each other to the extent where it becomes impossible to separate the two. What role do each of these two opposing yet coinciding forces play in the generation of a work of art? The following examination will show that both fulfill human desires but of entirely different sorts.

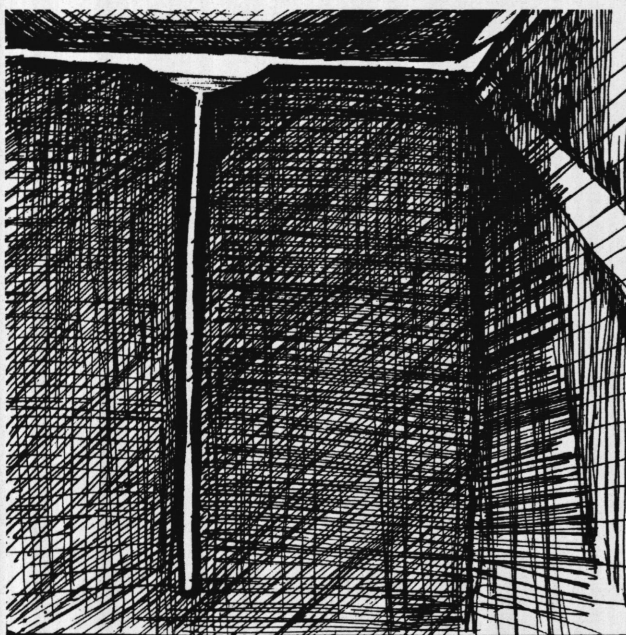
Architects, both currently and historically, have used order to give meaning to their work. The establishment of relationships in building has always been a concern of Western architecture. Historians can track the evolution of architecture by the changes in ordering concepts. Paradigm shifts occur as the world reaches a new understanding of order, which is in turn reflected by a culture's architecture (as can be seen in the emergence of the Renaissance out of the Medieval). Presented briefly here are two ways in which these thoughts have been dealt with in the recent past.

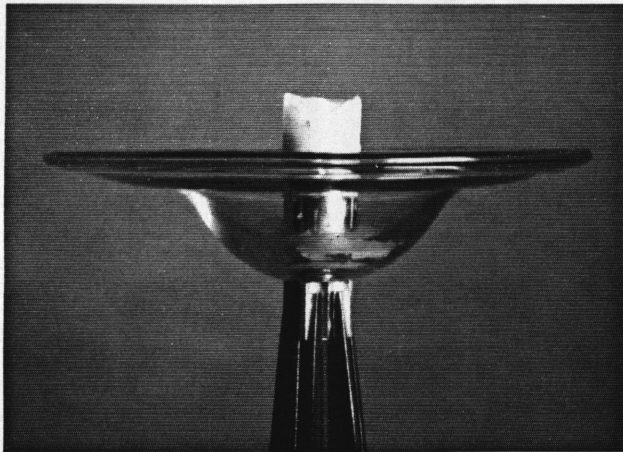
First, there are those who use order as an analogy of some external reference or seek to take an outside structure and apply it to architecture. An example of this is the Danteum Project, where Terragni's studies of the *Divine Comedy* revealed a literary structure that he assimilated into an architectural one.¹ Another, though slightly different example of this thought is seen in the early work of Eisenman and Graves as they adopted a linguistic structural model to explore buildings as a system of signification, with Eisenman seeking syntactic relationships and Graves semantic.²

Secondly, there are those such as Kahn, van Eyck and Hertzberger where order can be seen as having no

reliance upon externalities. This is not to say these architects work in a vacuum or outside of tradition, but rather that they understand the establishment of relationships is a meaningful thing in itself. This self-referential approach to order seems to be one interpretation of Kahn's "Order is." These relationships can be found in almost any aspect of architecture, including geometry, elements, material, materiality, function, construction, natural forces, and so on. Complexity and layering occur as these overlap and influence one another.

Analogy and autonomy indicate two very different ways of developing architectural thought. The former is related to narrative in that meaning rests in something outside of architecture, while the latter is related to abstraction in that it recognizes the power of architecture to convey





meaning via its own elements. In my work, I have tried to order self-referentially, seeking relationships that are appropriate to a given project. Ultimately, however, order gives the architect a rational framework which satisfies the human need to structure the world in a coherent and significant manner. It is a powerful tool used to govern the parts and the whole; one can use order to establish how the floor meets the wall, how the building resists gravity, what material is used where, et cetera. It answers these *architectural* questions; architecture, however, is more than just a sum of such decisions. Instead, architecture exists on the level of form. That is to say, the power of architecture, like all arts, is the ability to express significance through its presence alone.

"Form," according to Langer, "in the sense in which artists speak of 'significant form' or 'expressive form' is not an abstracted structure, but an apparition; and the vital processes of sense and emotion that a good work of art expresses seem to the beholder to be directly contained in it, not symbolized but really presented. The congruence is so striking that symbol and meaning appear as one reality."³ In this powerful statement, Langer shows that the thing itself can convey thought and can hold meaning. Form has a physical existence but the root of form lies in an idea which can be expressed in no other manner. Language, the most thorough and complex system of communication, cannot relate the ideas that expressive form can.⁴ While concepts of order can be easily defined, justified and explained, we cannot really speak well about art because it exists in a realm outside of language.

Form in architecture is not limited to an object to be viewed in a glass box. Architecture can be experienced over time (like music) and space (like sculpture), so form can be found in everything from a colonnade to a doorknob. Form can be sublime, resulting in a kind of transcendental experience, or commonplace, where a nice condition is recognized. Form is not the same for all, it is subjective in its generation by the artist and its perception by the viewer. As we educate our eyes, forms are opened up to us. For this reason, an architect sees a barn quite differently than the farmer who uses it daily.

The existence of a great building gives us feelings that transcend the rational devices used in designing and constructing them. The architect has expressed a nondiscurs-

sive thought with walls, columns, beams, shadow, and space which has a meaning above and beyond any other.

This presents a problem to the student of architecture, where the chance to build is rare. The search for form, then, must take a different turn. There must be the dedication to making architectural things, to finding the material expression of an idea in metal, wood, clay, concrete, film, poetry, paint, cardboard, et cetera. These objects, which may embody ordering devices related to architecture, exist as form also. At their best they reveal something about the artistic ideas we want to express as well as leading to a greater understanding of architecture. Le Corbusier understood this, saying "There is no such thing as a 'pure' sculptor, a 'pure' painter, or a 'pure' architect. The three-dimensional event finds its fulfillment in an artistic whole at the service of poetry," and "I am known only as an architect and no one wants to recognize me as a painter but it is through painting that I discovered architecture."⁵

For this reason, the thesis is not solely the presentation of my thoughts on the art of architecture. The making of the objects presented in this book — a candleholder, pottery, and a short film — is an equally important part of my investigations. These things offer me the chance to realize some of my architectural ideas in another media and at another scale while also embodying form themselves.

It is also necessary to acknowledge the secondary nature of the search for form in an academic project, where the ideas of architecture come to life in drawings and models, not as a built form. The question of where the reality exists in these explorations becomes important. Is it the measured drawings like the plan, section, and elevation? Or the perspective, a measured drawing with experiential qualities? Or does the sketch contain the truest idea of form?

I think my sketches and model photographs, both of which give edited views of the whole, convey my ideas about architecture best in that they best capture what Langer calls the apparition. The sketch brings out the idea most directly, while the model offers the resistance of having a three-dimensional existence. I find the measured drawings are most helpful in presenting ideas of order, but as I work between the sketch, hardline drawing, and the model, each media shows something the other does not and brings my intentions of form and order towards a coherent whole.

NOTES

¹Schumacher, Thomas. "Levels of Meaning in Terragni's Danteum Project," *Parametro*, May 1976, no. 46.

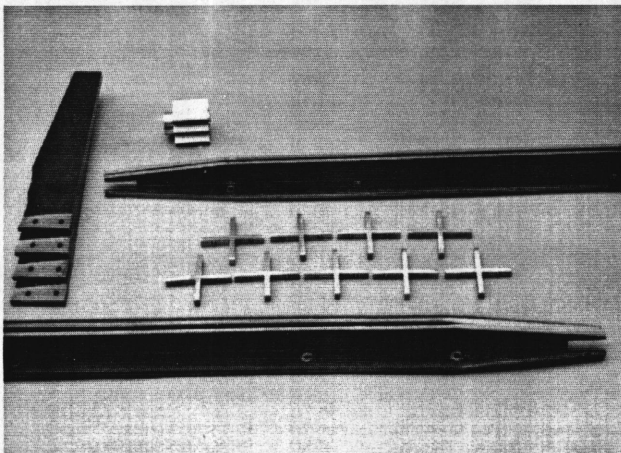
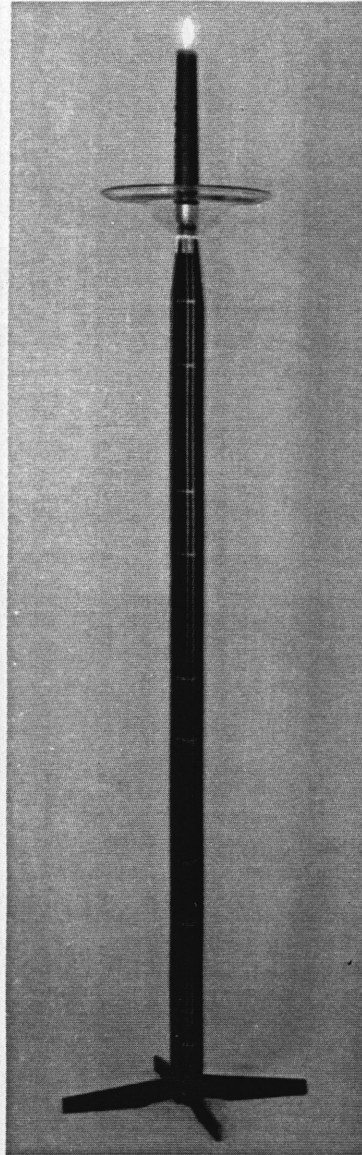
²Gandelsonas, Mario. "On Reading Architecture," *Progressive Architecture*, March 1972.

³Langer, Susanne. "Expressiveness," *Problems of Art*. Charles Scribner's Sons, New York, 1957.

⁴Langer, Susanne. *Philosophy in a New Key*. Mentor Book, New York, 1951.

⁵Moos, Stanislaus von. *Elements of a Synthesis*. MIT Press, Cambridge, Mass., 1979.

CANDLEHOLDER

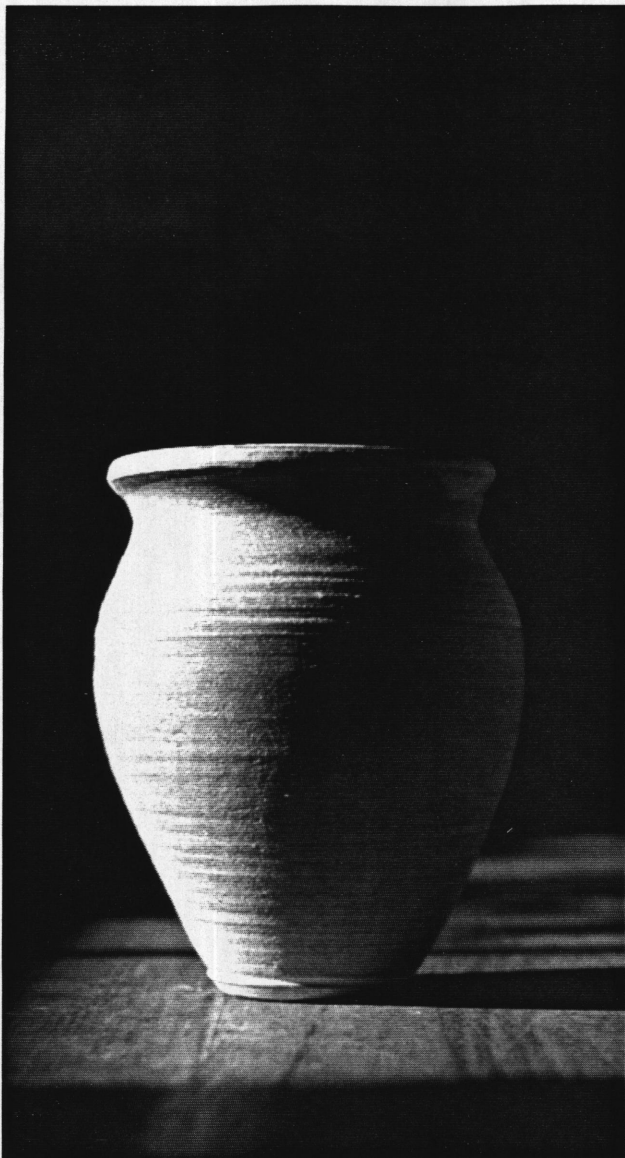


The candleholder for the chapel, which also became a prototype for the steel columns of the library, embodies many architectural intentions. The establishment of a vertical hierarchy within the object was a main concern. The feet are milled to defer to the shaft which in turn defers to the glass bowl and the candle. While the feet and shaft rely upon bolted connections (which realize ornament as well as give scale), the glass bowl is attached by means of a machined aluminum piece that is held by the steel angles without the use of hardware. Thus, both the type of connection and the material mediate the vertical movement.

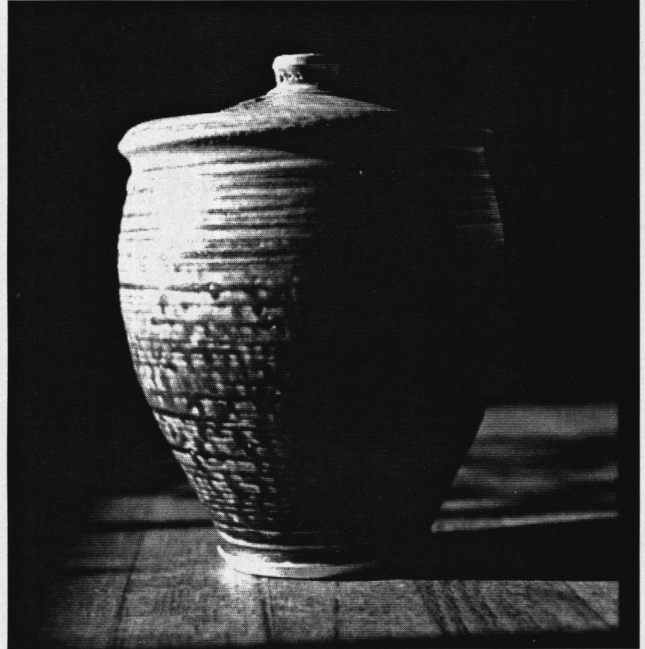
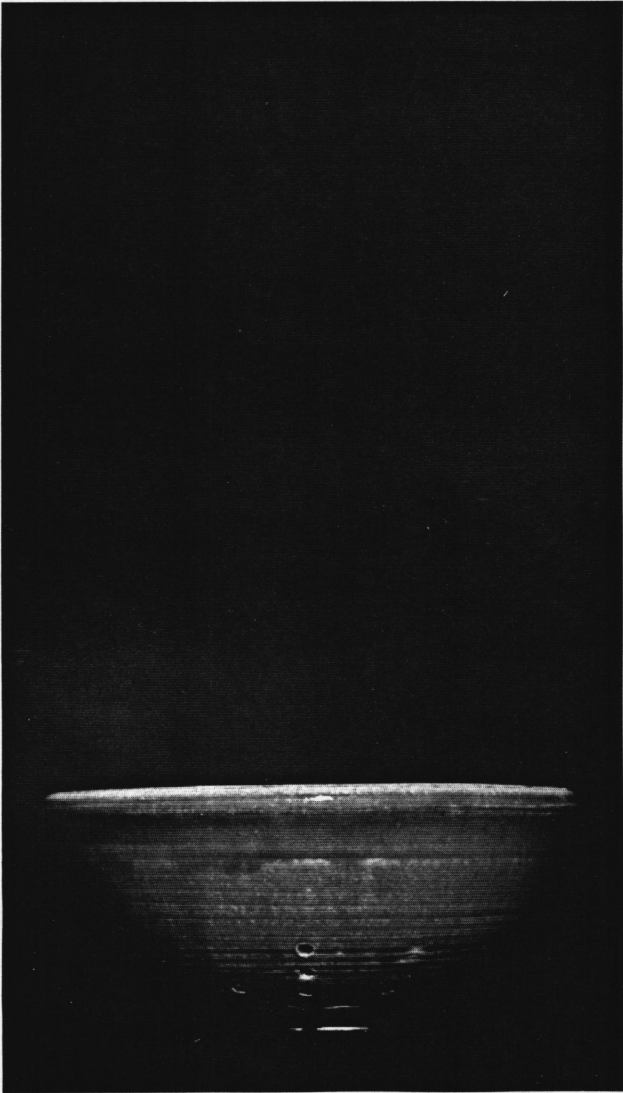
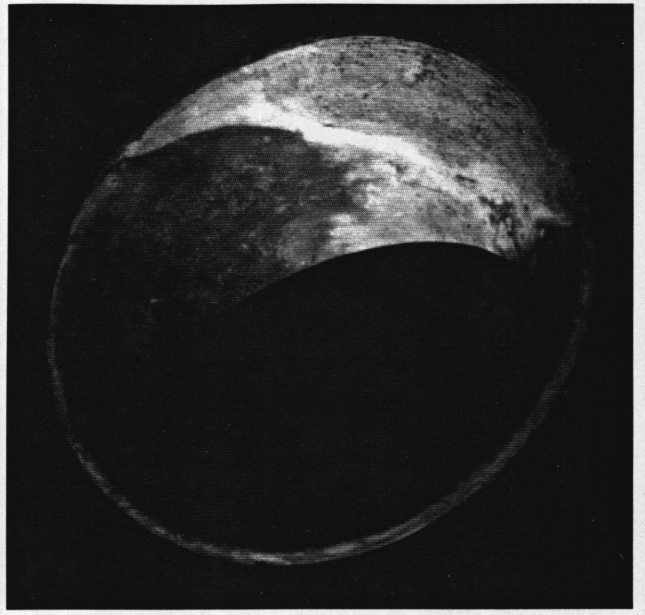
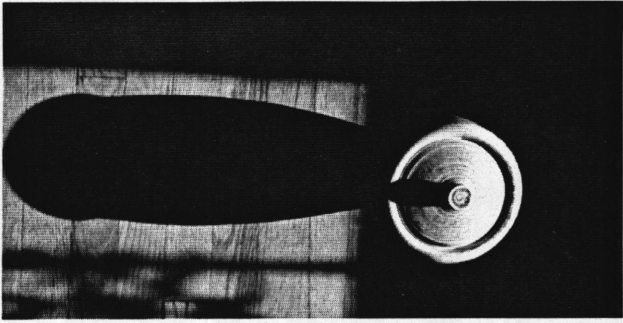
Special cross-pieces of highly polished steel serve as the joint for the bolted connections, thereby becoming a piece that keeps the four angles separate while bringing them together.



P O T T E R Y



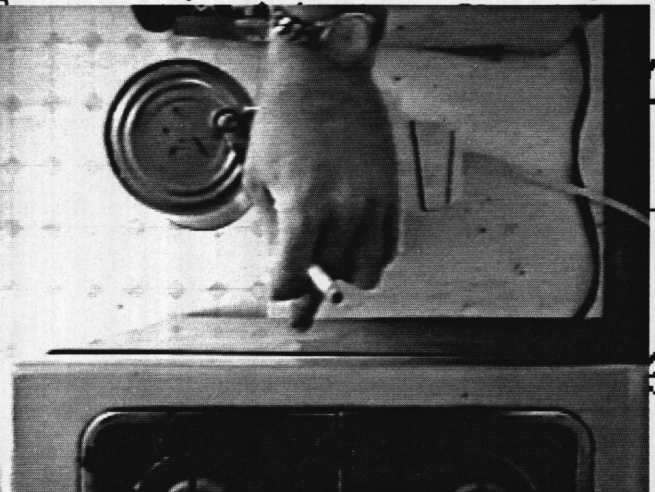
The shaping of clay on the wheel would seem to defy the architectural in many ways. The creation of space is different for the potter, where a void is made from a solid mass, and the architect, who constructs with many pieces and several materials. Additionally, throwing is primarily ordered by the geometry of the tool rather than the establishment of a rational framework. Like architecture, however, pots allow for an expression of form and an exploration into material, materiality, and the relationship of part to whole in an artistic entity. The potter learns both the capabilities and the qualities of clay. How thin can the wall get and still maintain its integrity? What opportunities do the trimming tools allow and how does the clay accept carvings or impressions? Are the foot and rim articulated as elements? These are all architectural questions.



gray with self

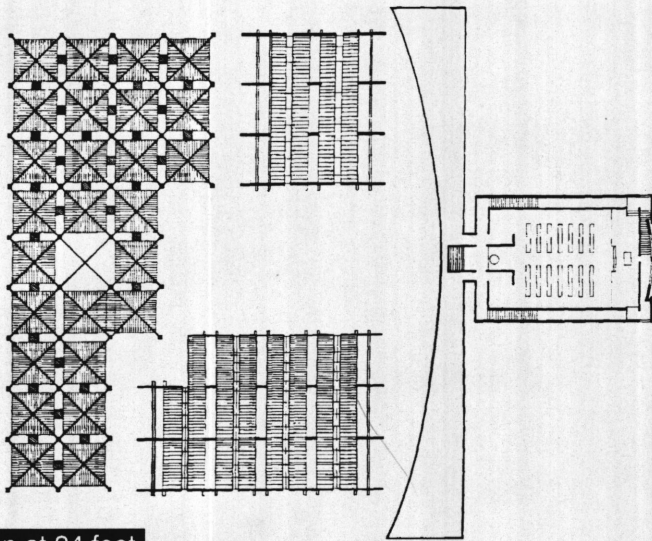
A SHORT FILM

THE SIMILARITIES BETWEEN FILM AND ARCHITECTURE ARE SURPRISINGLY MANY. BOTH REQUIRE THOUGHT ON SEVERAL SCALES, BOTH OFFER THE OPPORTUNITY FOR MANY VISUALLY SIGNIFICANT EVENTS, AND BOTH ARE MADE OUT OF A MULTITUDE OF ELEMENTS. IN FILM, THESE CONSTITUENT ELEMENTS INCLUDE AN INTERBEN... LINEARITY, COLOR AND BLACK & WHITE IMAGERY, SOUND, THEME, REFERENCE, CONNECTION BETWEEN SCENES, NARRATION, CHARACTER, PLOT, TIME, LENGTH OF SHOT, GEOMETRY, etc. AS WITH ARCHITECTURE, THE ORDERING OF THESE ELEMENTS LEADS TO THE POSSIBILITY OF A STRUCTURALLY COHERENT, YET HIGHLY COMPLEX, TOTALITY.

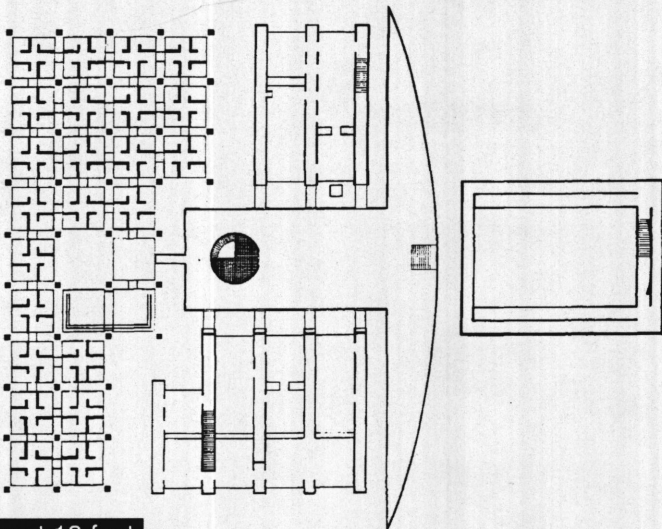


gray with self, WRITTEN AND PRODUCED WITH HOWAYNE CURD, ATTEMPTS THE STRUCTURAL COMPLEXITY. ON THE SURFACE, THE FILM REVEALS THE REALITY AND DREAMS OF A MAN AND A WOMAN FOR A SINGLE DAY. OTHER LEVELS, HOWEVER, ARE OFFERED. THE LINEARITY OF THE NARRATIVE, AND CONSEQUENTLY, THE PRIMACY OF THE PLOT, IS DESTROYED BY A REFLECTIVE SYMMETRY, GIVING EACH OF THE SCENES A LIFE OF ITS OWN. THE SEEMINGLY FRAGMENTED OR VISUAL EVENTS PRESENT AMBIGUITIES WHICH CAN BE RESOLVED BY AN UNDERSTANDING OF THE ORDERING OF THE CINEMATIC ELEMENTS.

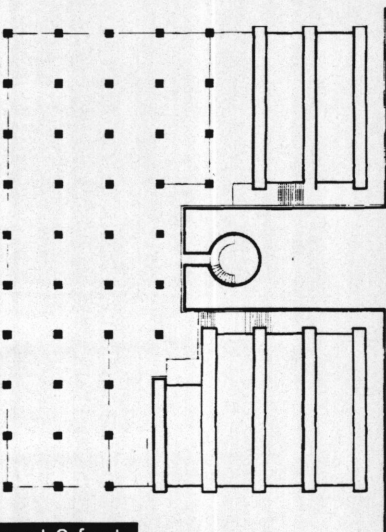
MONASTERY



plan at 24 feet



plan at 18 feet



plan at 0 feet

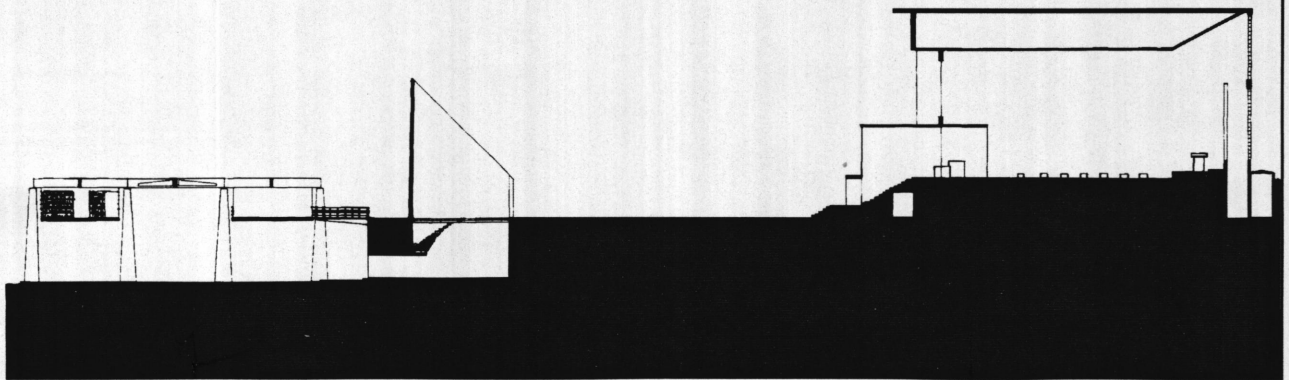
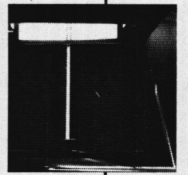
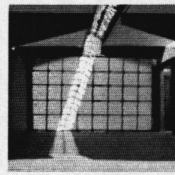
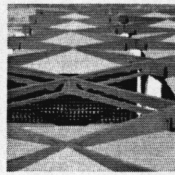
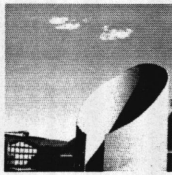
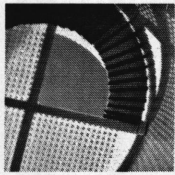
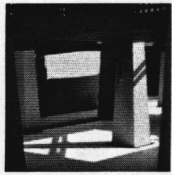
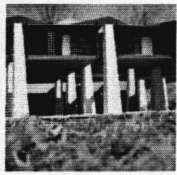
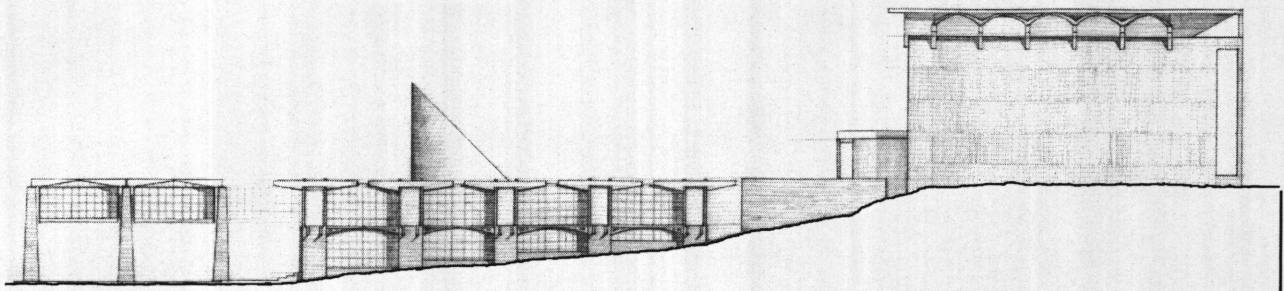
Monasticism offers one of the richest traditions of architecture ideally suited to an institution. The codified life of the monk, which has been in place for 1500 years, was defined under quite different cultural concepts than now in place. Monasticism seems removed from society's dependence on time and expediency, and its very presence in today's culture reinforces the distinction between the mundane and the sacred. This separation gives the architect an ordering device which is appropriate to the institution and the time. The articulated movement from the profane to the sacred, or the crude to the refined, is carried out in the ordering of function, elements, geometry, light, material, and materiality in this project.

The architecture especially emphasizes the elemental. The separation of elements gives each one a strength that bringing them together does not, as can be seen throughout the work of Le Corbusier. The slice of light between the roof and the wall at Ronchamp gives an existence to both elements that a solid connection could not have. The separation of the stair, the ramp, and the brise soleil in the Millowner's Building gives each element a primacy while contributing to the whole. The roof of the Weber Pavilion is lifted off the rest of the building, expressing its permanence over the changeable steel frame of the house.

The other prevalent concept is the separation of distinct functional aspects of the monastery. There exists a tripartite duality between the day-to-day activities of the monk and the religious life of the monk. This can be seen in terms of places of the body and mind, and the place of the soul. The movement from the more worldly activities of the monk to the more spiritual relates back to the initial concept of distinguishing the mundane and the sacred.

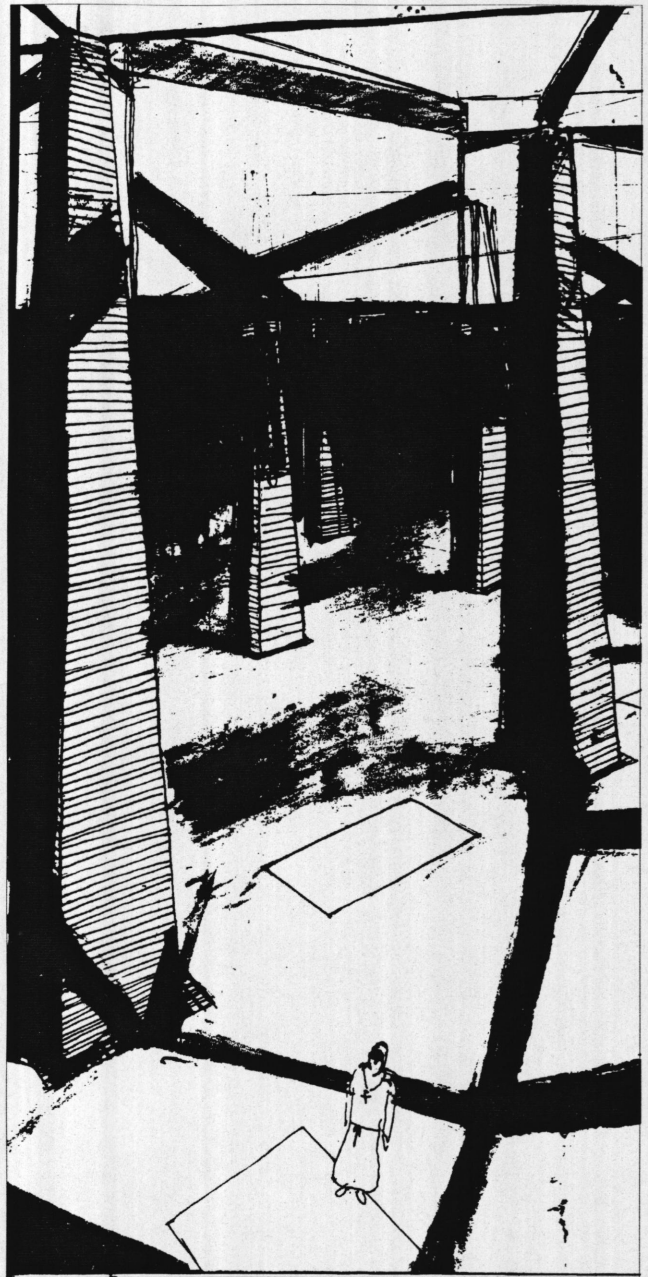
Briefly and generally, the order of the other aspects is as follows. Geometrically, an initial "sacred" grid is established, upon which a shifted, secondary "worldly" grid is dependent. One moves from bright light to dark shadow as the progression is made from the mundane to the sacred. The material order changes from the crude to the refined (sitecast to precast to steel) and the materiality order moves from expressed in the "worldly" to repressed in the "sacred."

This inevitable interplay between ordering devices provides for complexity in the project.

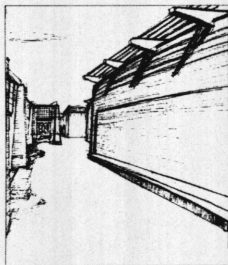




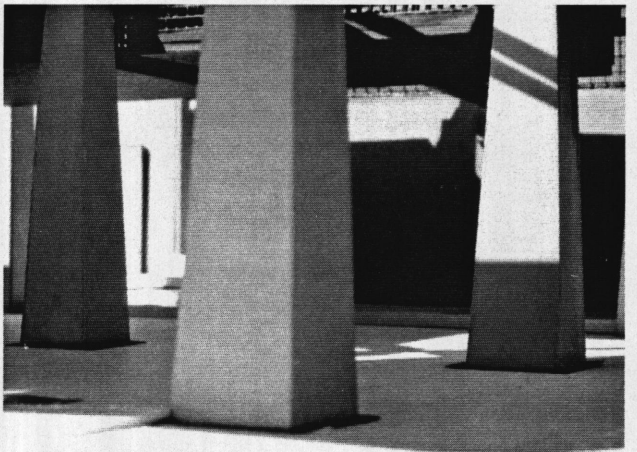
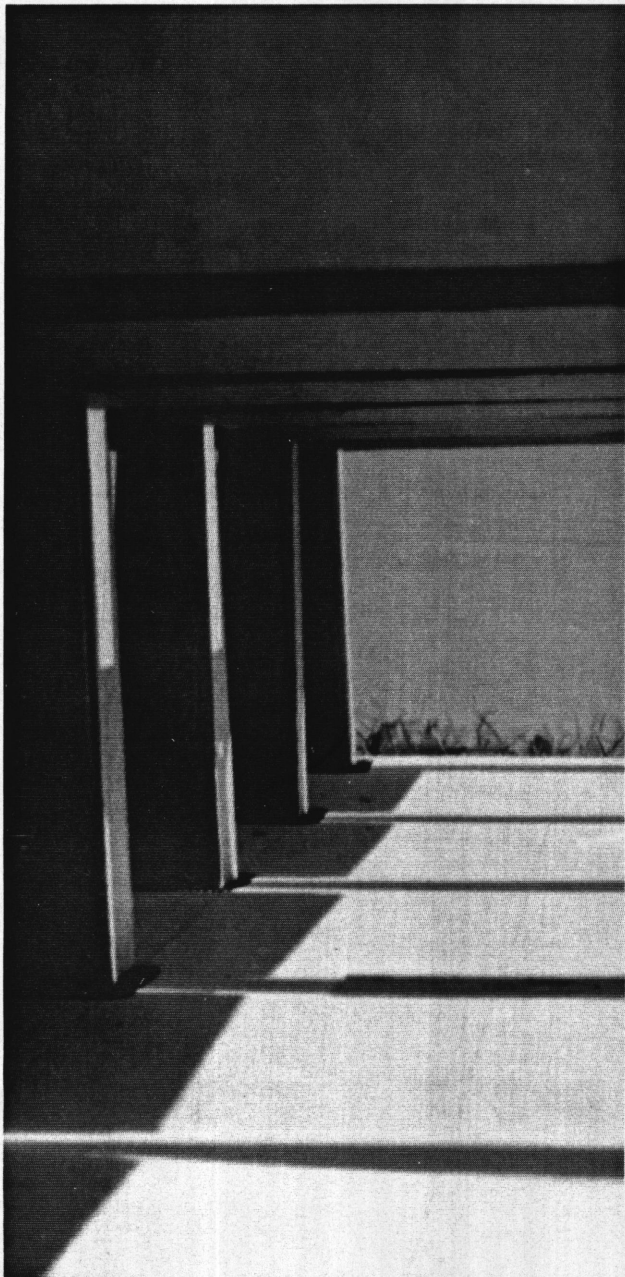
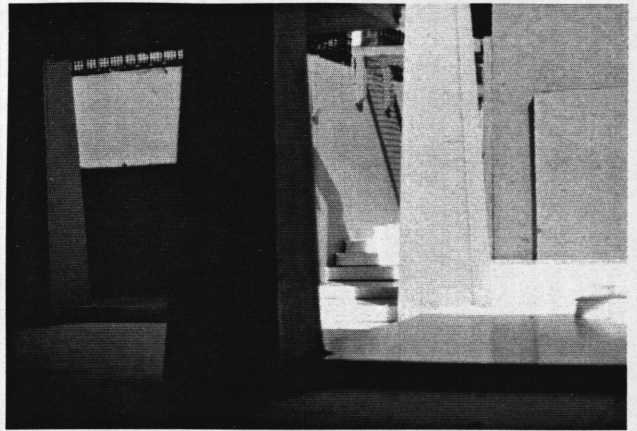


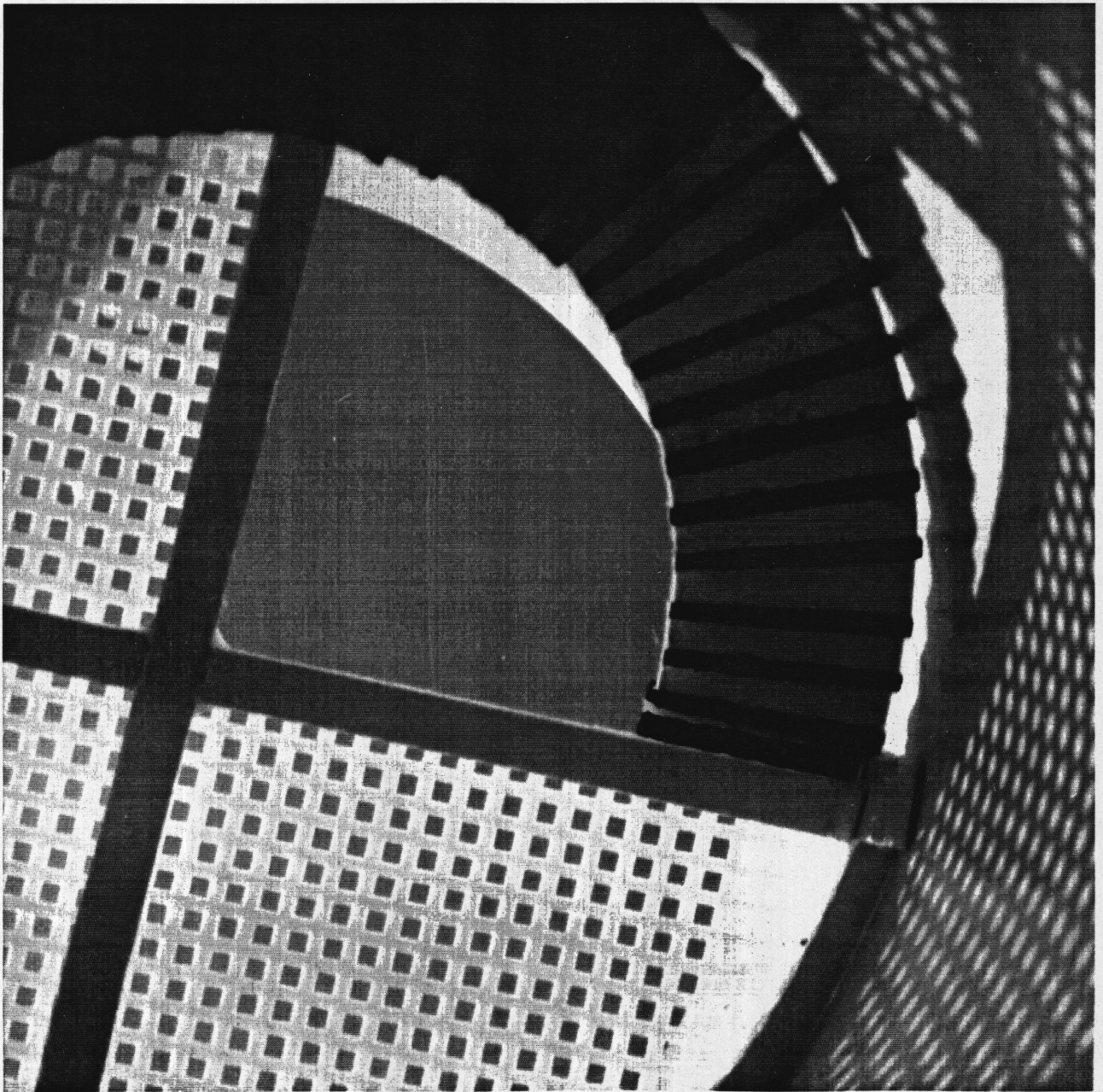


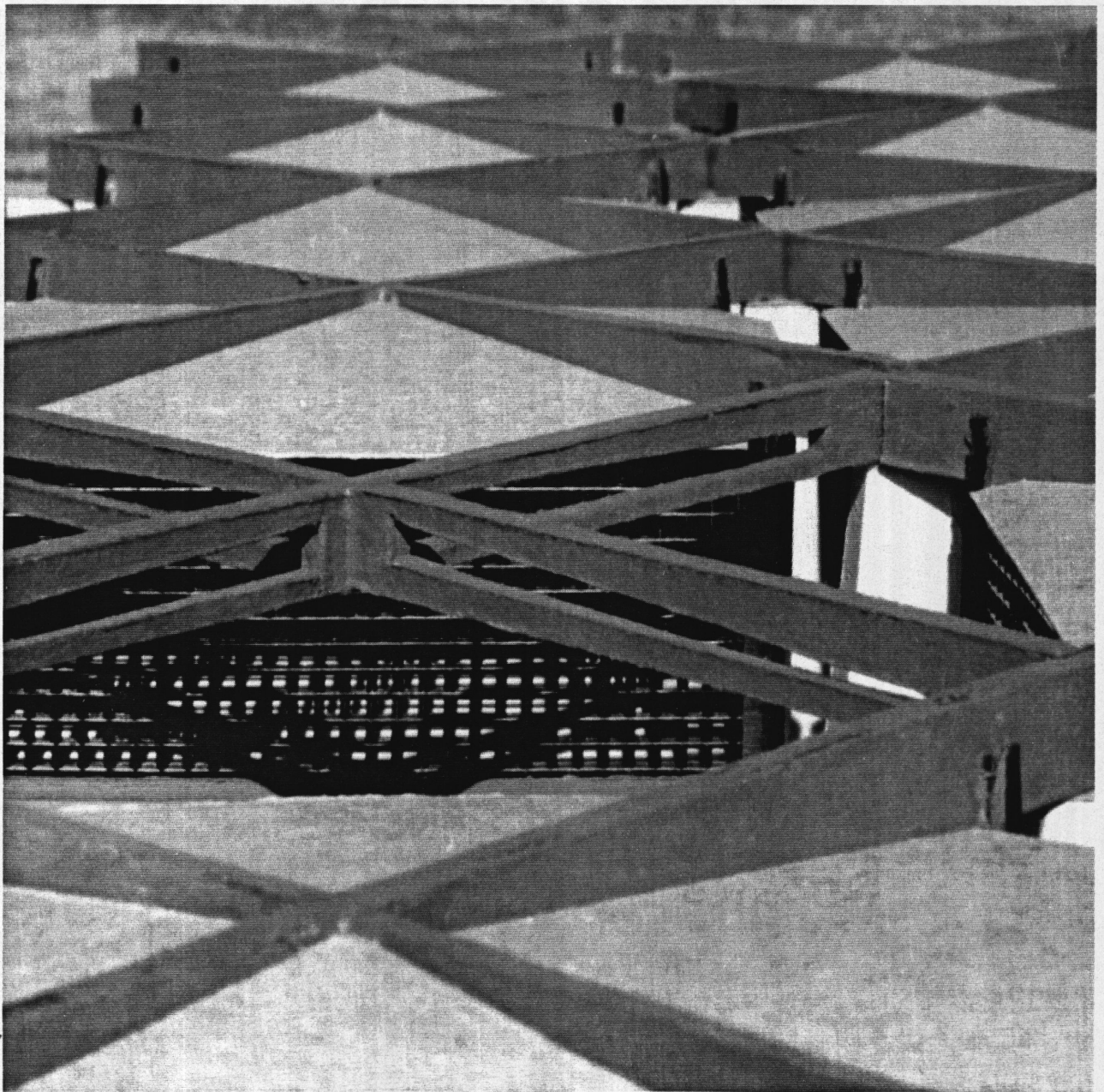
As one enters the monastery, a field of massive columns is encountered. These pillars serve as a threshold or filter from the profane world to the sacred realm of the monastery. Tombstones paved into the floor, in the tradition of monastic architecture, reinforce the sacred nature of the place.

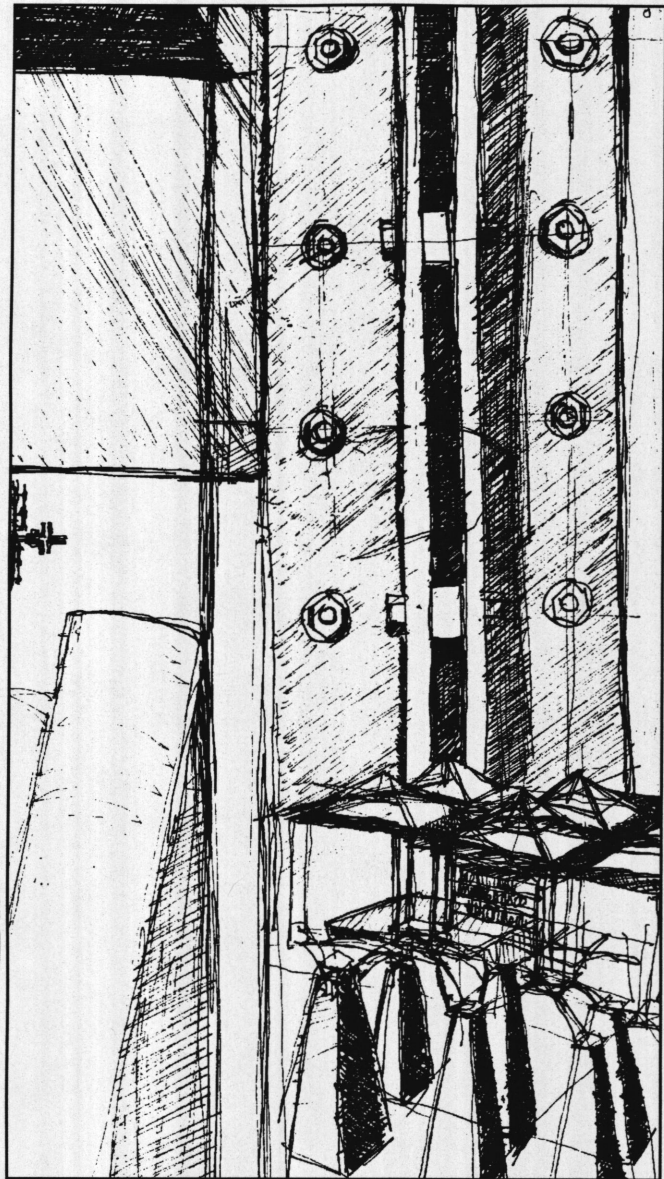
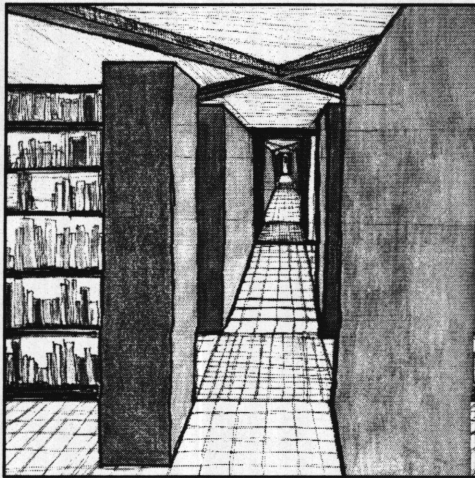
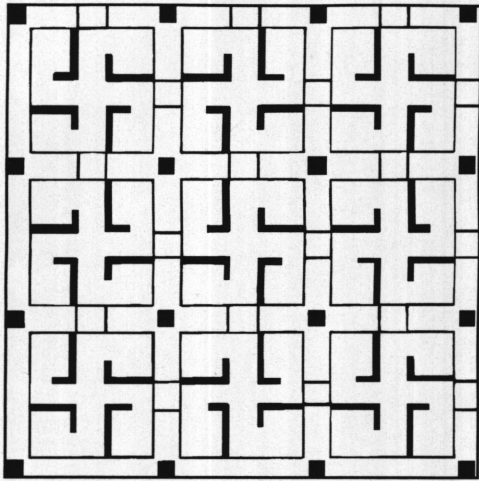


The entrance, a truncated concrete cylinder with a floor of cement framed glass blocks, houses a spiral steel stair which brings one up to the cloister garden where the monastery can be engaged.



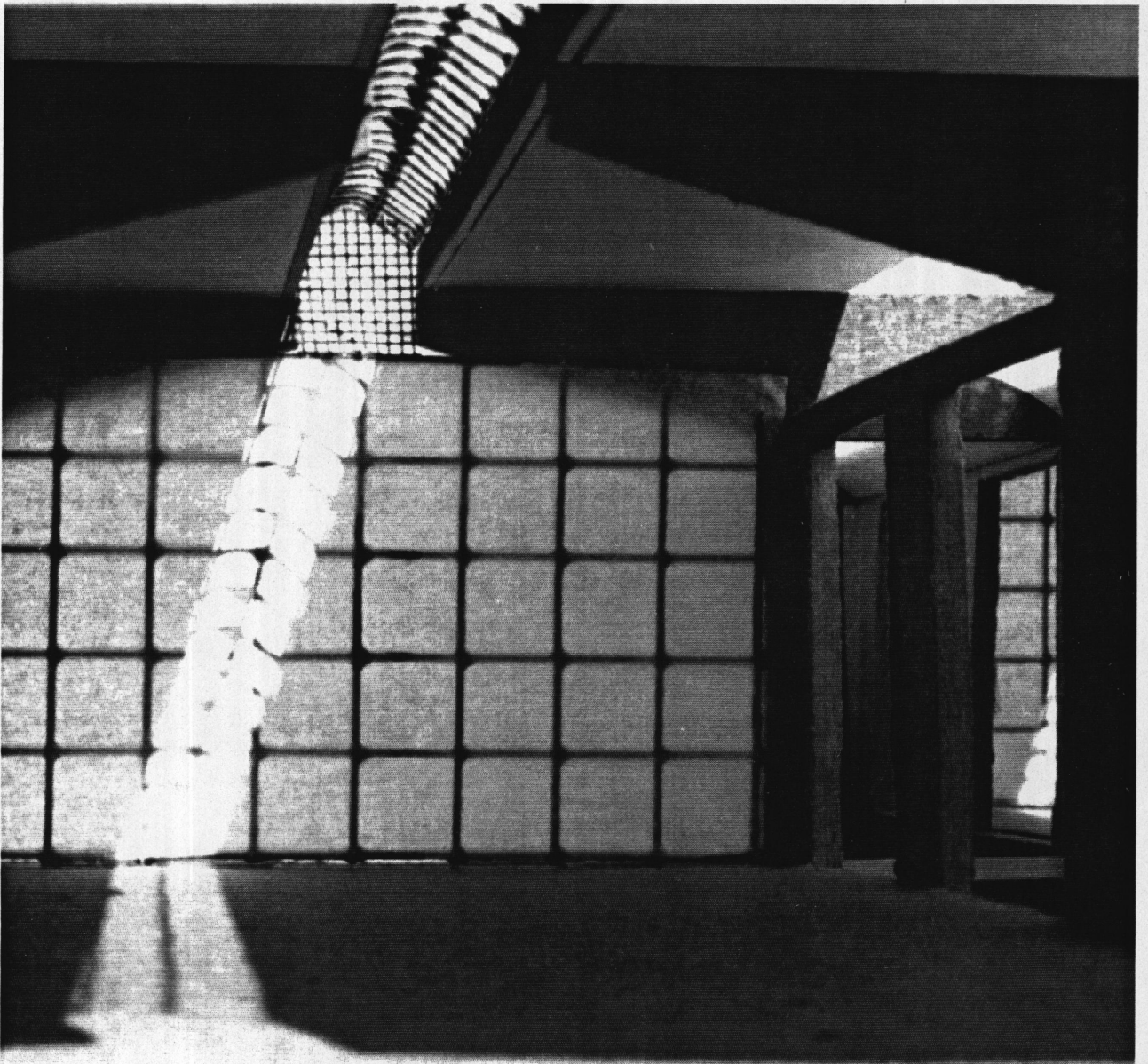


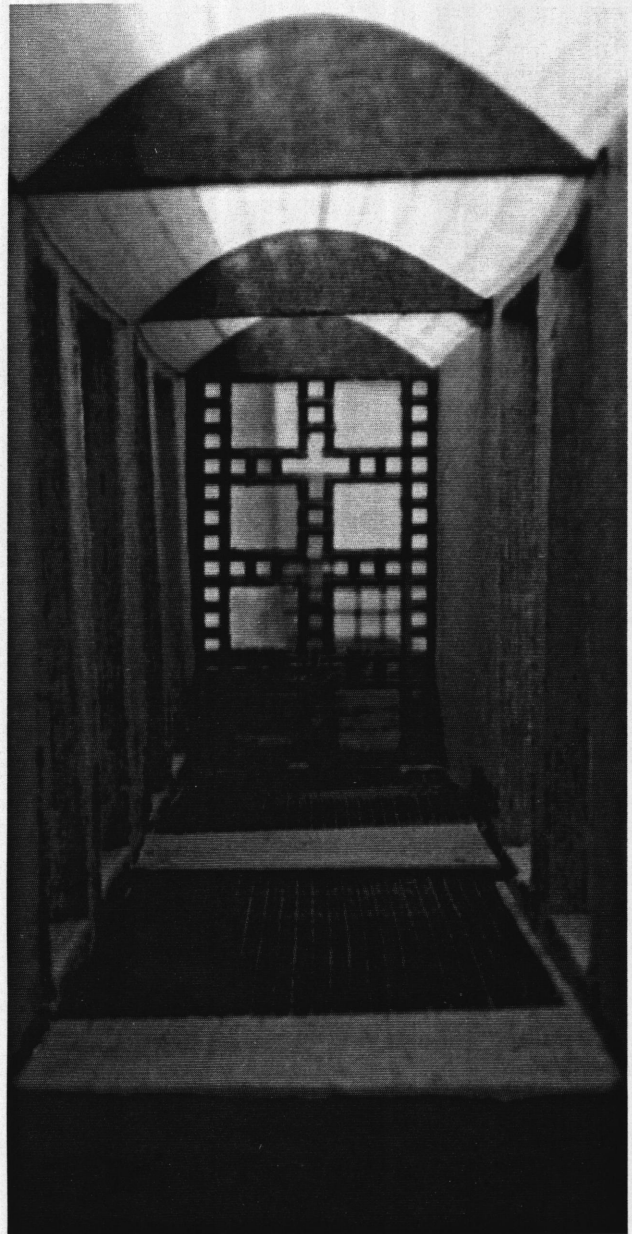




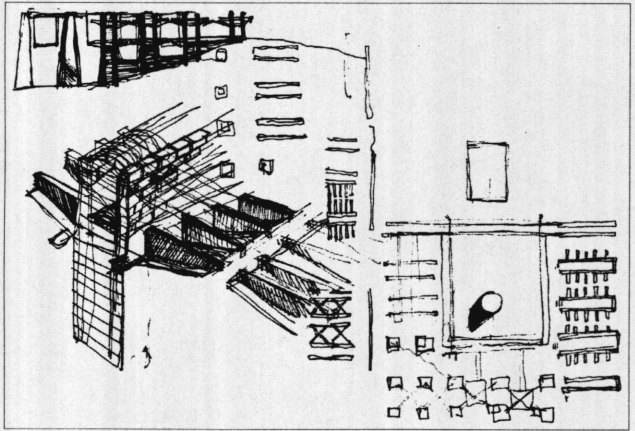
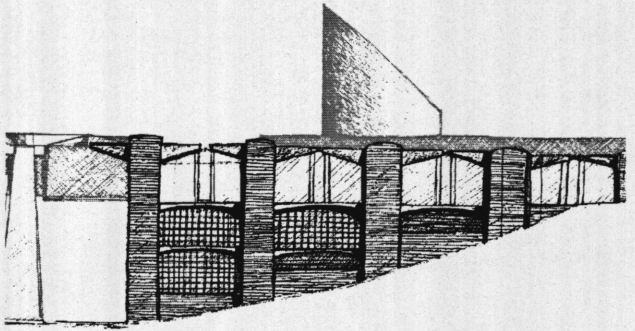
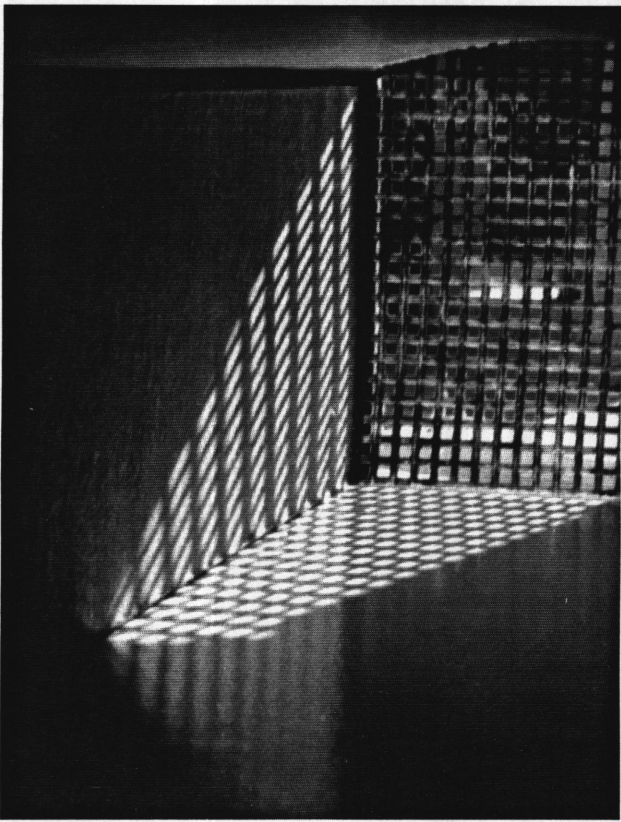
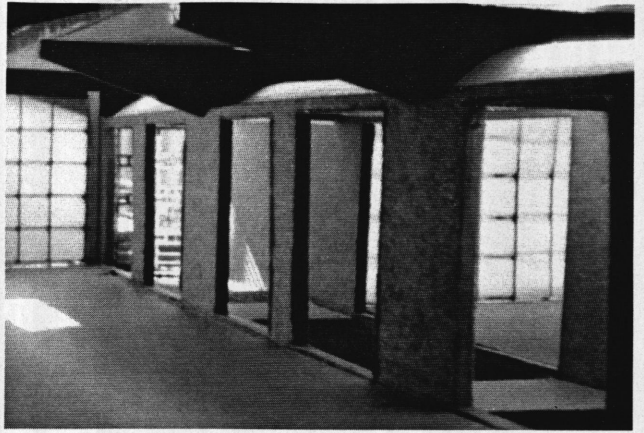
The library and chapter house comprise the places of the mind in the monastery. They are individual boxes suspended by steel columns from the precast cross-pieces which meet the massive pillars. The x-shaped precast units mediate between the initial and the shifted geometries, and a further shift gives rise to interplay between the actual and perceived spaces in the library. By suspending these rooms, the separation of elements (column to beam to column) is achieved, and also the movement from crude to refined materials is articulated.



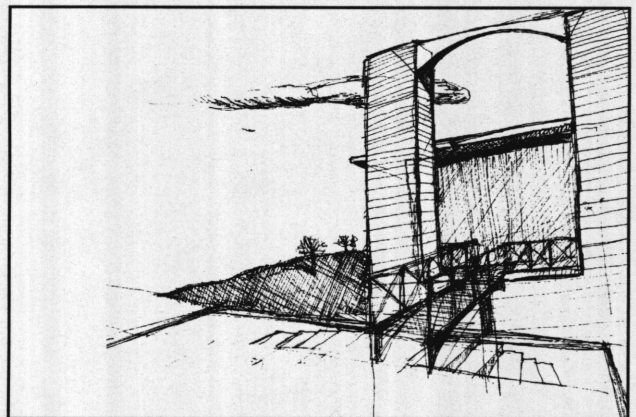
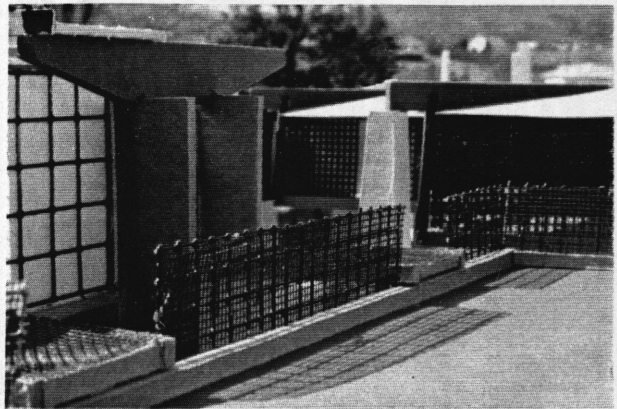




The places of the body — the kitchen, the refectory, the fountain, the infirmary, the latrine, the dormitory, the calefactorium, and the abbot's quarters — are all housed within a series of well-grounded walls. These sitecast walls are based upon the shifted grid of the library. In order to emphasize the singularity of each unit, double walls which serve as corridors are topped by glass block vaults and precast cantilever beams. The precast pieces of each corridor do not quite touch their neighbor, and a skylight bridges the gap left between the beams. The rooms are supported underneath by concrete vaults which span from one double wall to the next, effectively bridging together the series of walls.

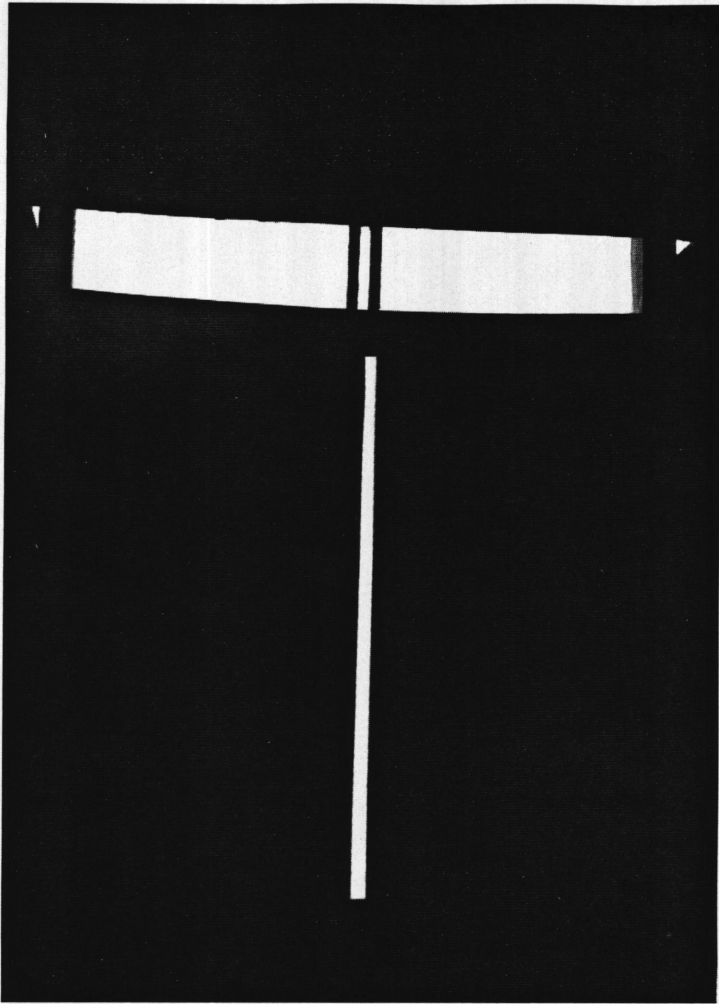




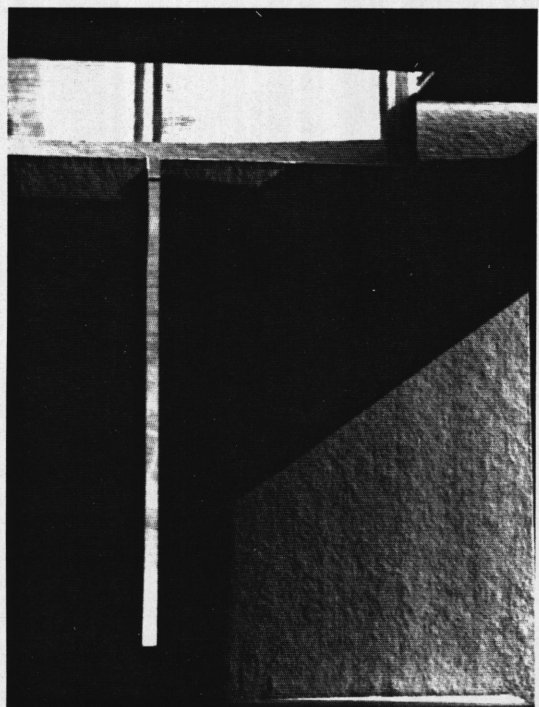
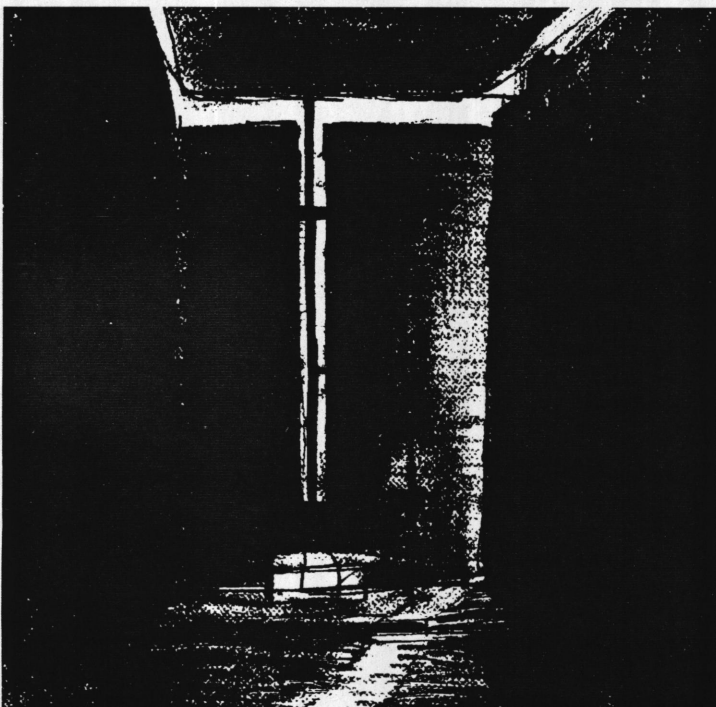


The entrance cylinder brings one up to the cloister garden. The cylinder's monumental presence as the termination of an axis from the chapel is now revealed. The cloister garden is bridged to the places of the mind, body, and soul. In the tradition of the cloister, it is both a place for contemplation and a connection to the various parts of the monastery; but in this case, the garden also serves as a separator and allows these parts a primacy of their own. The vertical hierarchy one encounters while proceeding up the hill, through the monastery, and then towards the chapel is mediated by the cloister here. The large parabolic-curved wall at the top of the garden provides a resolution between the two geometric orders present as well as giving a place for the play of shadow on a wall.





The chapel is the place of the soul, a sacred place where the monk may transcend his worldly existence. Thresholds mark the path as one progresses both horizontally and vertically from the outside world, through the places of the mind and body in the monastery, to reach this spiritual center; one has moved from the mundane to the sacred. This movement defines the hierarchical order of the whole and influences the architecture in a way that is significant and appropriate. For example, the outer walls of the chapel are, like many elements within the monastery, board-formed concrete; inside, however, the materiality is repressed and the smooth, planar walls and permeating darkness deprive one of a sense of human scale and create a feeling of vastness and infinite proportion. The outer walls and inner core also help define the cross, which can be formed by the slice of light in the inner wall and the beam supporting the glass blocks in the curved outer wall. In this manner, the cruxiform is no longer a passive object, but instead each worshipper must re-construct the cross and contemplate its meaning upon each observance.



B I B L I O G R A P H Y

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- Barthes, Roland. "The Structuralist Activity."
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