

TRANSFORMATION:
A
CHANGE OF ORDER
AND THE
GROWTH OF FORM

by

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of**

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Approved:

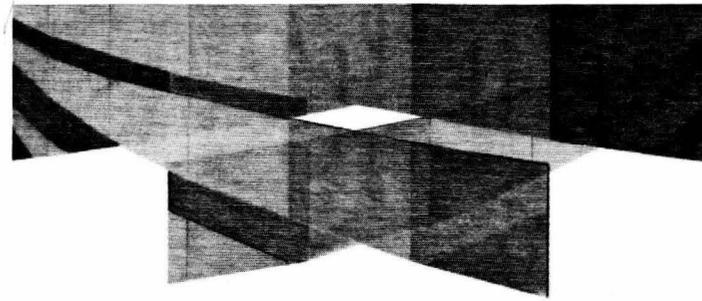
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February, 1991

Blacksburg, Virginia



TRANSFORMATION: A CHANGE OF ORDER AND THE GROWTH OF FORM

(ABSTRACT)

Through an analogical process, this thesis explores the concept of transformation as it affords opportunities for order and structure in architecture. Beginning with the square as the seed from which the projects develop, orthogonal grids are employed as a means for developing ordering geometries as form-giving

structures. A historical reference, deriving structure and form from a square grid instantiates development of the theme. Having examined some conditions of transformation in architecture, the work turns to a

consideration of some personal explorations of transformation that may be of use in future architectural undertakings. The consequent forms are not intended to justify the particular transformational grammars; rather they are to be taken as models for future development.

ACKNOWLEDGEMENTS

To
Jesus Christ
My Lord, Savior and God
Through whom this work was formed
and continues. May His name be honored herein and
forevermore.

To
My brothers and sisters in Christ who, through their
prayers, undaunted support and enduring love have
urged me onward and can now share with me the
fruit of this labor.

To
for his life as an example of walking with
Christ and the housegroup for continuing support.

To
My committee for their patient instruction and insight.

To
My mother, , for her endless giving of herself to me.

To
The Lord
through whom all things are possible.

Thank You ...

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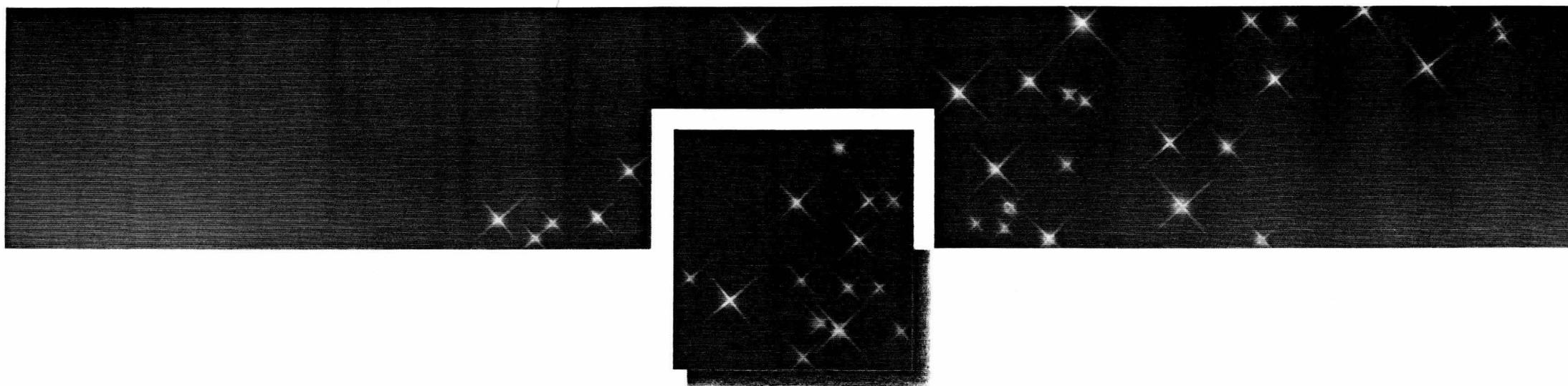
PREAMBLE

How didst *Thou make the heaven and the earth*? It was not as a human artificer, forming one body from another, according to the discretion of his mind, which can in some way invest with such a form, as it seeth in itself by its inward eye . . . Verily, neither in the heaven, nor in the earth, didst *Thou make heaven and earth*; nor in the air, or waters, seeing these also belong to the heaven and the earth; nor in the whole world didst *Thou make the whole world*; because there was no place where to make it, before it was made, that it might be . . . For what is, but because Thou art? Therefore *Thou spakest, and they were made, and in Thy Word Thou madest them.*"

St. Augustine

In the beginning was the Word, and the *Word was with God, and the Word was God*. The same was in the beginning with God. *All things were made by Him* and without Him was not any thing made that was made.

The Gospel of John, The Bible



INTRODUCTION

Throughout time, man has attempted through much thought and question to comprehend that which is far and above his capacities of reason. Words like "sublime", "ethereal", "divine", are vague attempts of explanation for eternal things and they can perhaps frustrate man's understanding of his world. In an effort to explain the ineffable, man has looked to the natural world; for it is there that he sees the touch, the hand of its creator.

When I consider thy heavens, the work of Thy fingers,
the moon and the stars, which Thou hast ordained;
what is man, that Thou art mindful of him? And the
son of man, that Thou visitest him?¹

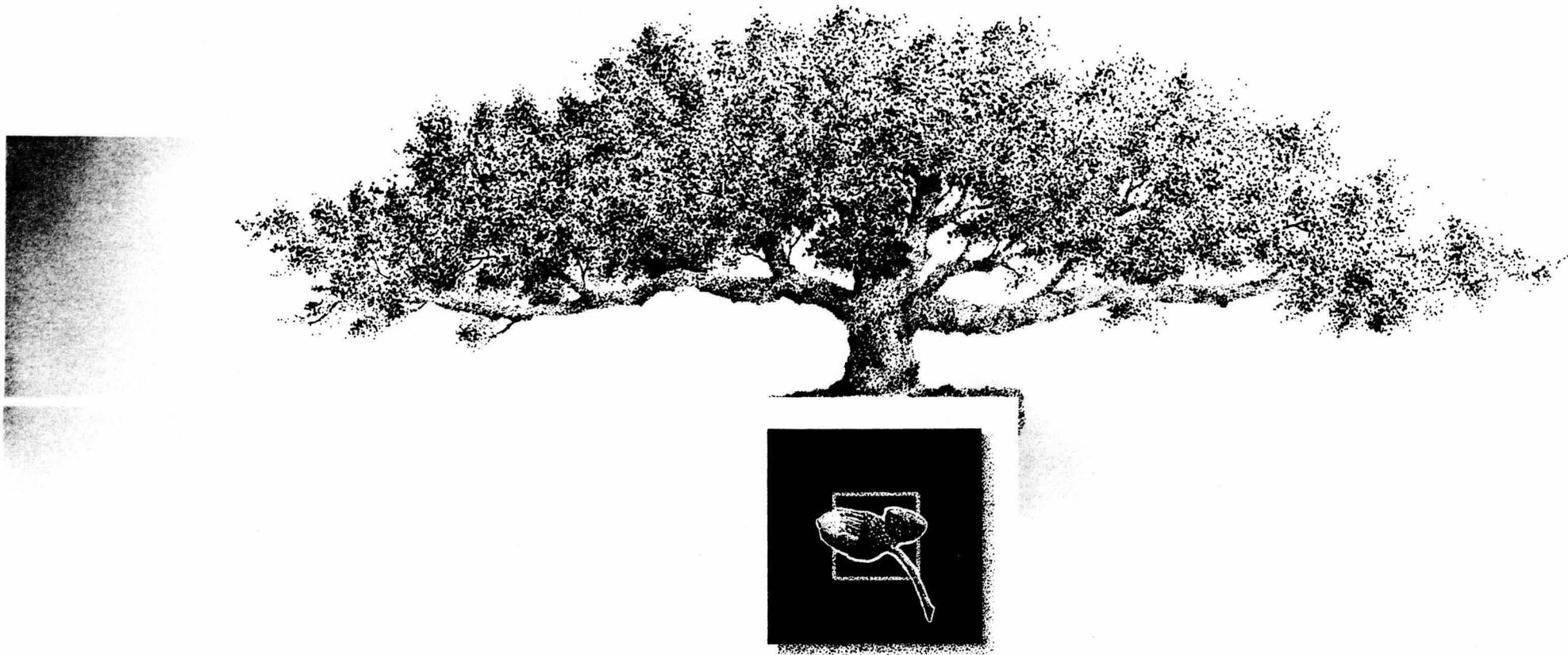
There is a pervading pattern of order and coherence; an unexpected presence of order in what appears to be an environment of innumerable interacting forces. Man knows that "order is". Because order is evident to the senses, it needs no proof. **Order is.**

Hence, we must say that the distinction and multitude of things come from the intention of the first agent, who is God. For He brought things into being in order that his goodness might be communicated to creatures, and be represented by them; and because His goodness could not be adequately represented by one creature alone, He provided many and diverse creatures, that what was wanting to one in the representation of the divine goodness might be supplied by another.² The very order of things created by God shows the unity of the world. For this world is called one by the unity of order, whereby some things are ordered by others. But what ever things come from God have relation of order to each other and to God himself.³

Here, one sees that the multiplicity of diverse creatures in relation to one another is an aspect of creation which is a determinant of its order. Relationship is inescapable where parts are concerned. **Relationship appears as a principle of order.**

ORDER

RELATIONSHIP



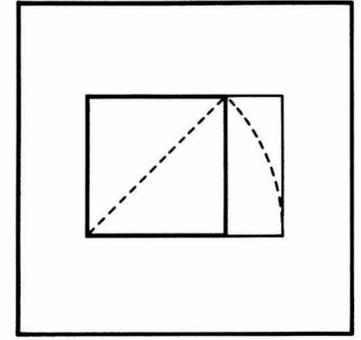
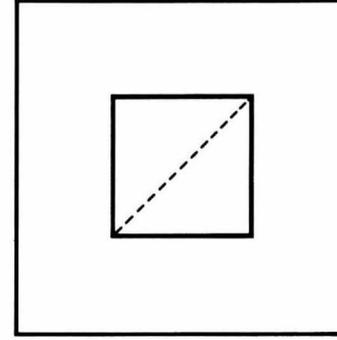
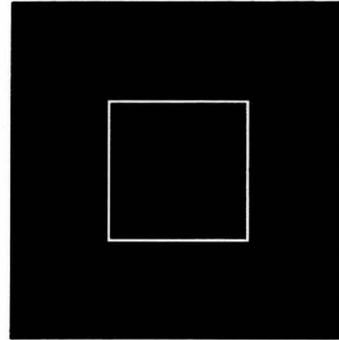
God has ordered all things in measure and number and weight. The parts of the universe are ordered to each other according as one "acts" on another, and according as one is the end exemplar of the other.⁴ First comes goodness and the end, moving the agent to act; secondly the action of the agent moving to the form; thirdly comes the form.⁵

As things are causally related to one another, new relationships are formed as a result of the actions and interactions of the parts. Ours is a mutable world; all at once living and then dying. Nothing in creation escapes change. **Change appears as a principle of order.**

In order there is relationship and change. A natural analogy can be seen in the small acorn. Here, we find the full embodiment of the design element; the potency and necessary genetic information that will determine the kind of tree the seed will produce; for every tree grows according to the nature of its seed. This is not an isolated process because as the seed falls into the ground and dies its life becomes a response to an interaction (inter+action) with another (an+another) part. Though the seed retains its inner essence, because of this new relationship it is transferred altogether into a new creation attaining to something that it was not before.

What you sow does not come to life unless it dies. When you sow, you do not plant the body that will be, but just a seed, perhaps of wheat or of something else. But God gives it a body as he has determined, and to each kind of seed He gives its own body.⁶

CHANGE



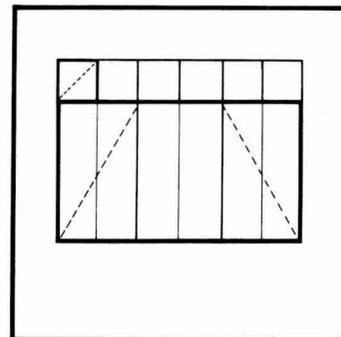
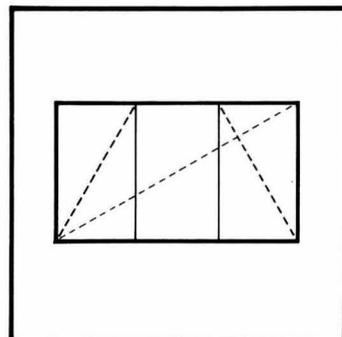
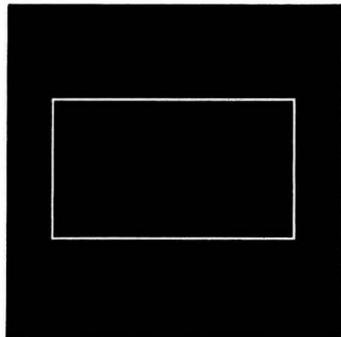
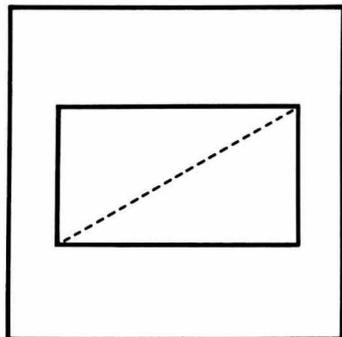
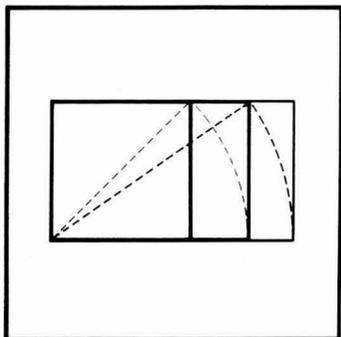
A SEED

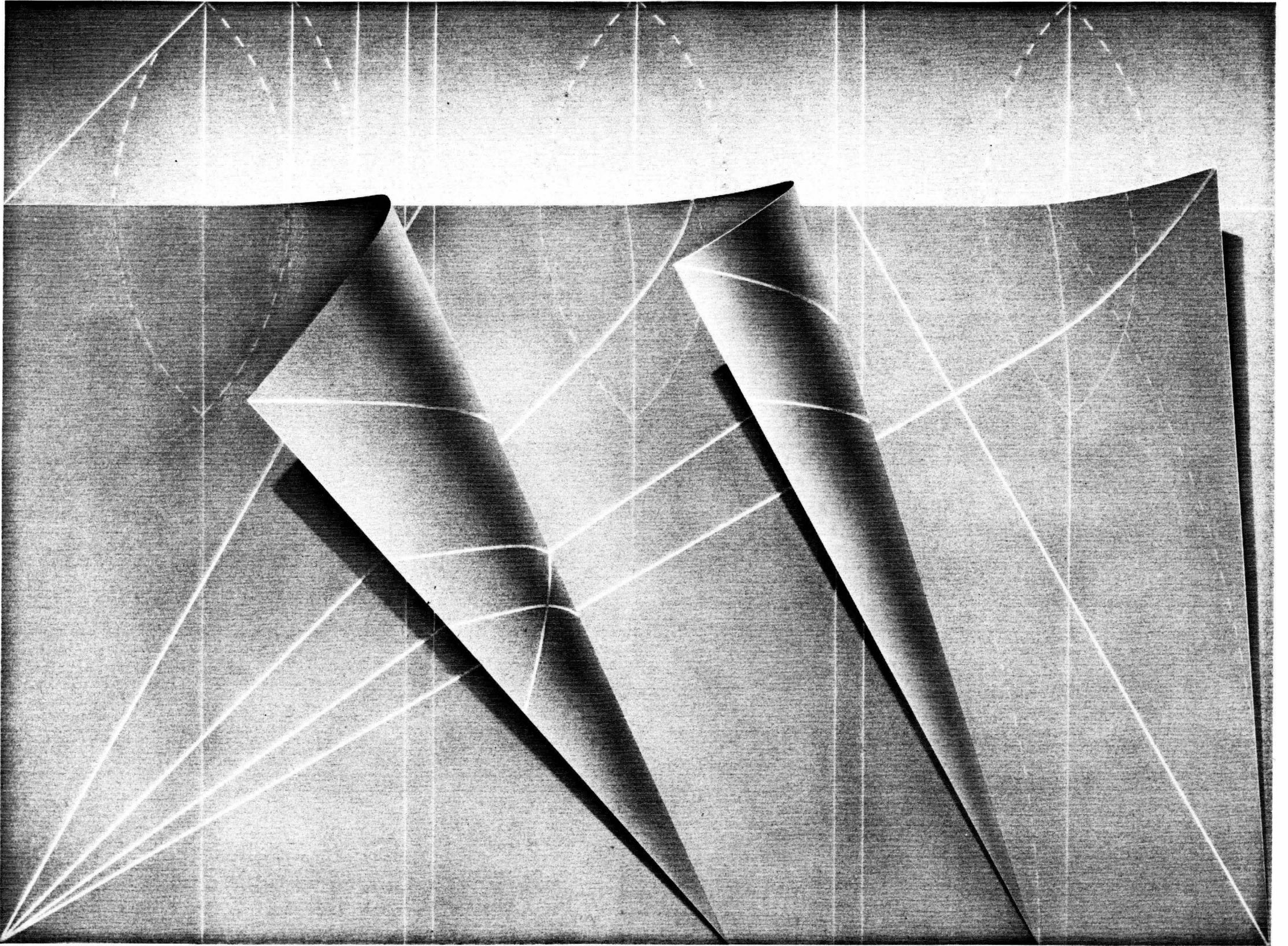
Natural life and growth can be understood as a picture of the spiritual reality. As the seed is a biological symbol of this greater reality so the square becomes the base type of a transformational grammar in architectural design.

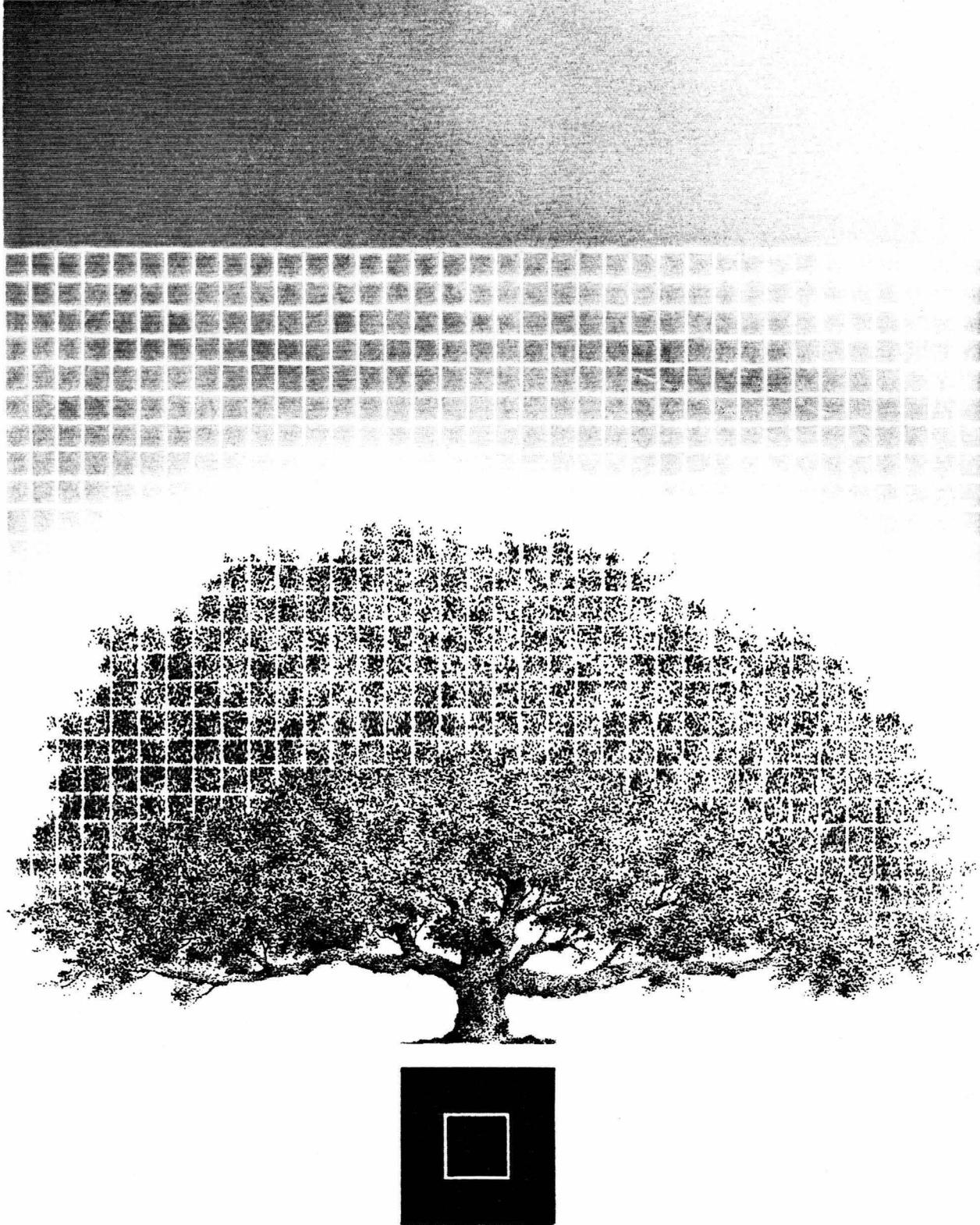
Design is, always has been, and always will be conceived at its central core with the manipulation of form, with composition, understood as the putting together of two-dimensional and three-dimensional components, either spaces or material elements, in arrangements or configurations.⁷

Verily Verily, I say unto you, except a corn of wheat fall into the ground and die, it abideth alone: But if it die, it bringeth forth much fruit.

The Gospel of John, The Bible

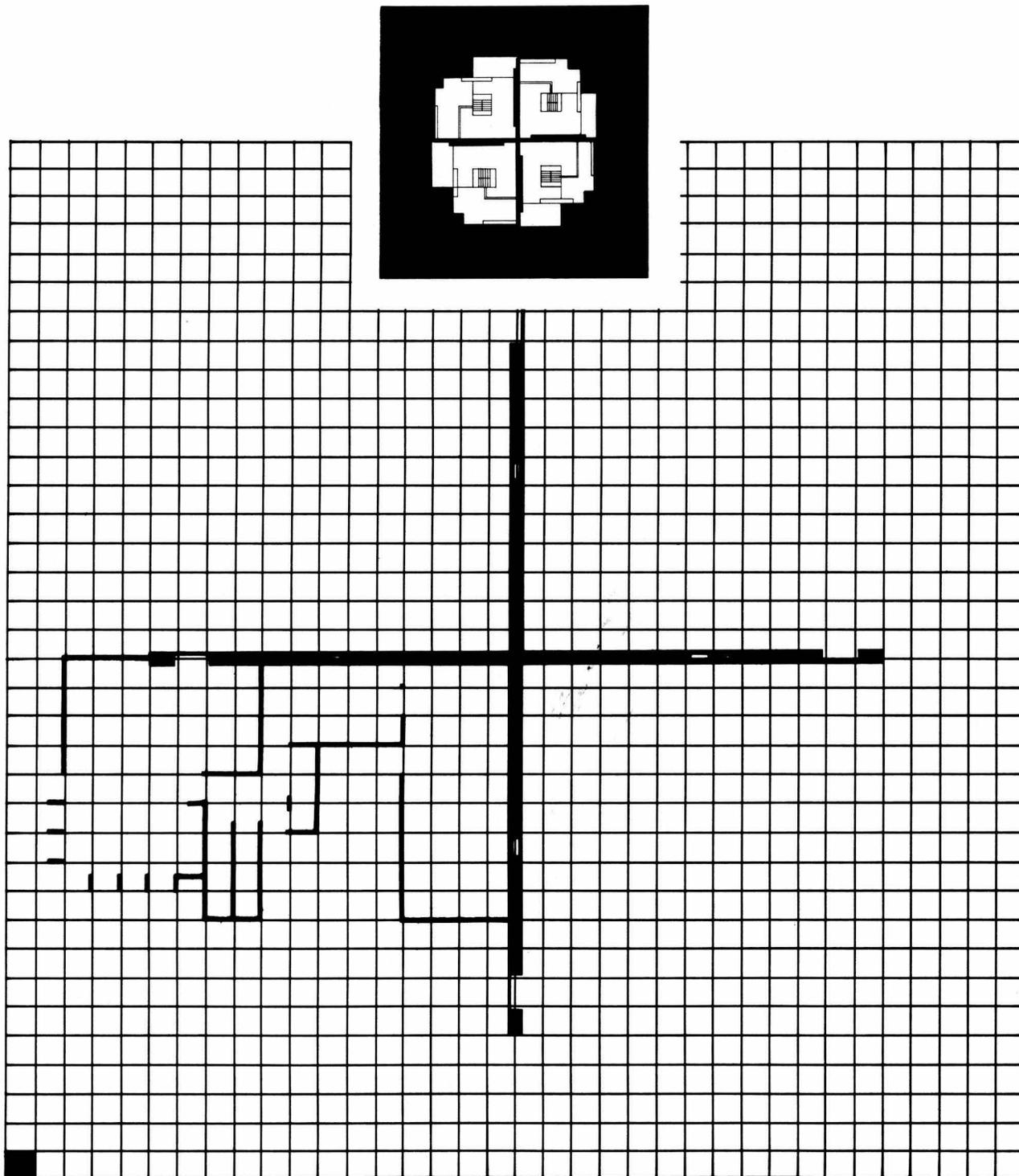






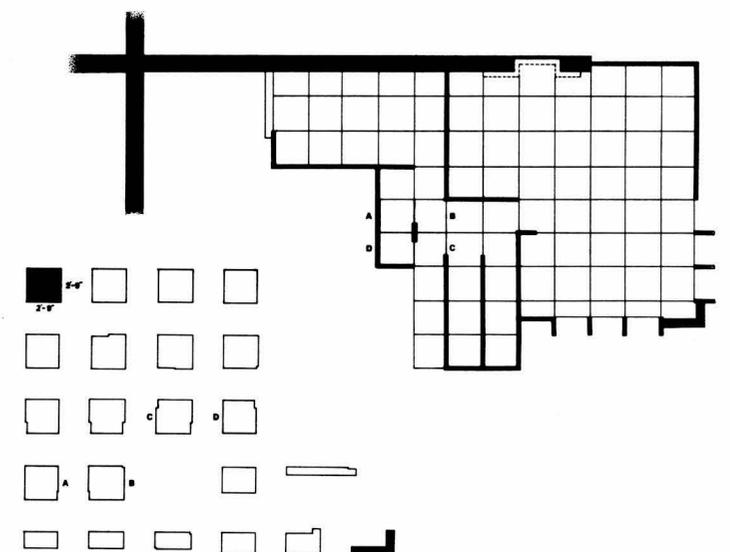
OF ORDER

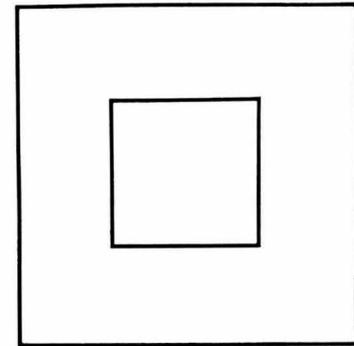
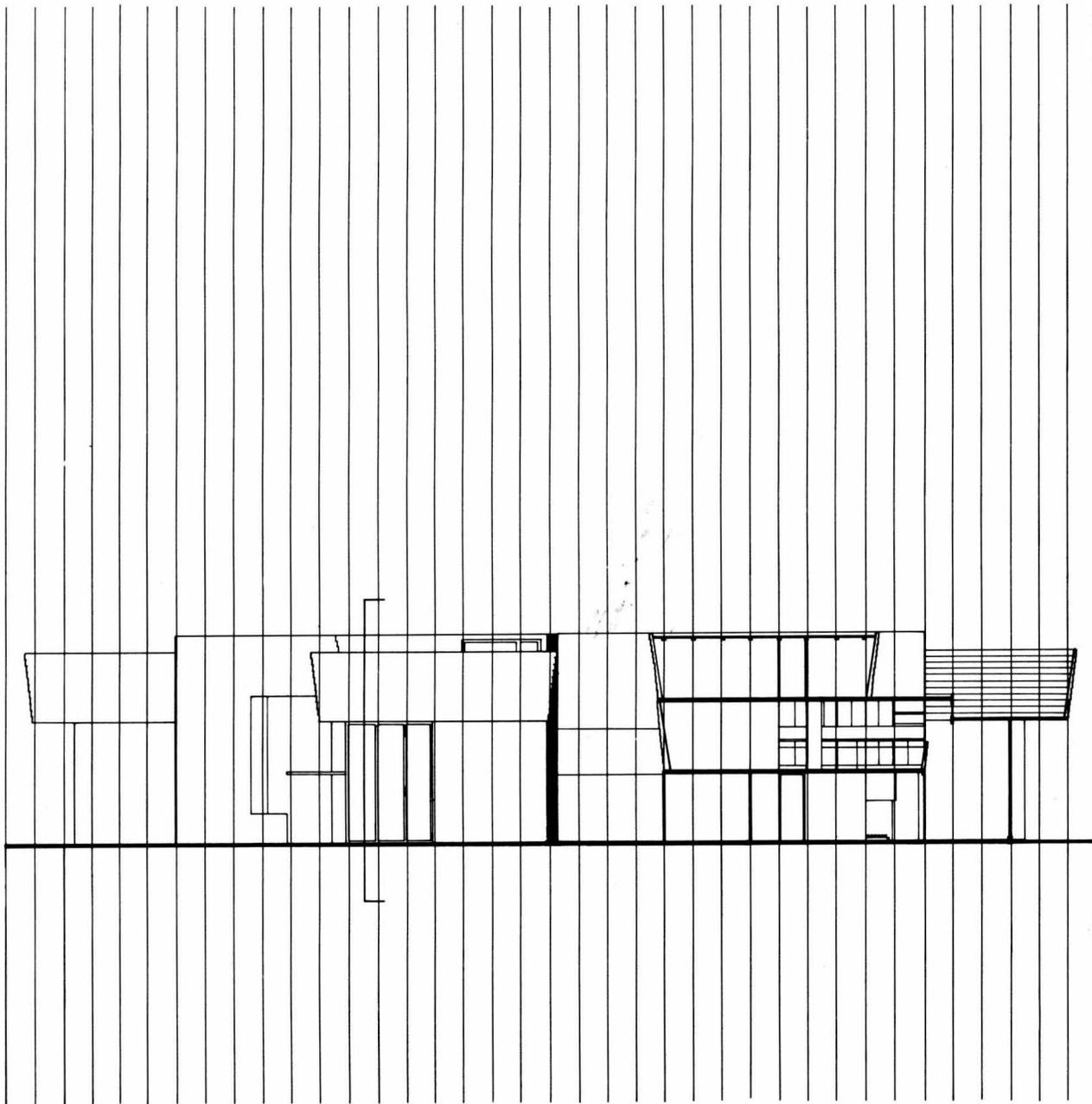
From the geometry of the square the grid is derived. Its inherent qualities of equal and repetitive geometry establishes a matrix of regularly spaced points and fields. The neutral, non-directional and non-hierarchical character is its pattern seed of order.



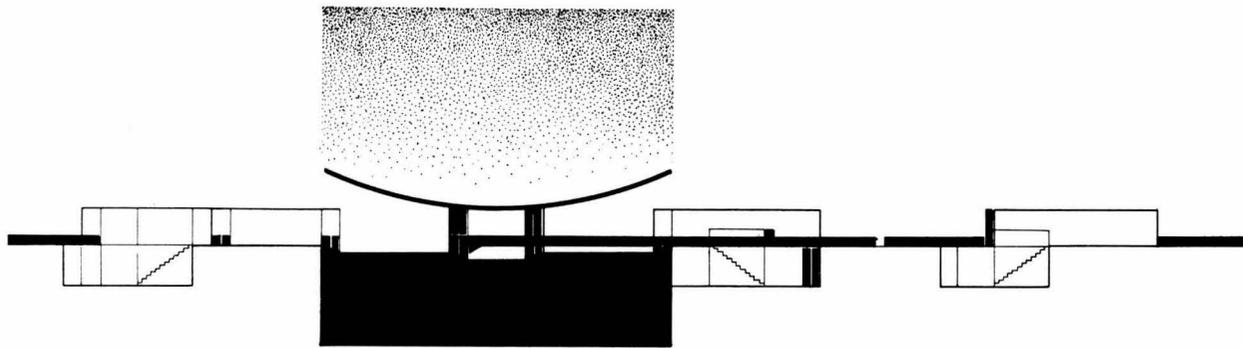
WRIGHT

The sun top dwellings are variations upon a type of Wright's houses belonging to his later career (1930-1959), which he called Usonian Houses. The four dwellings are defined by two long intersecting 16" thick crosswalls which serve as the central support for the cantilevered floors and also have within them spaces for kitchen plumbing, bath venting and openings for fireplaces. The crosswalls and interior partitions adhere to a precise square planning grid. The four dwellings are in rotation about the intersection of the two crosswalls.



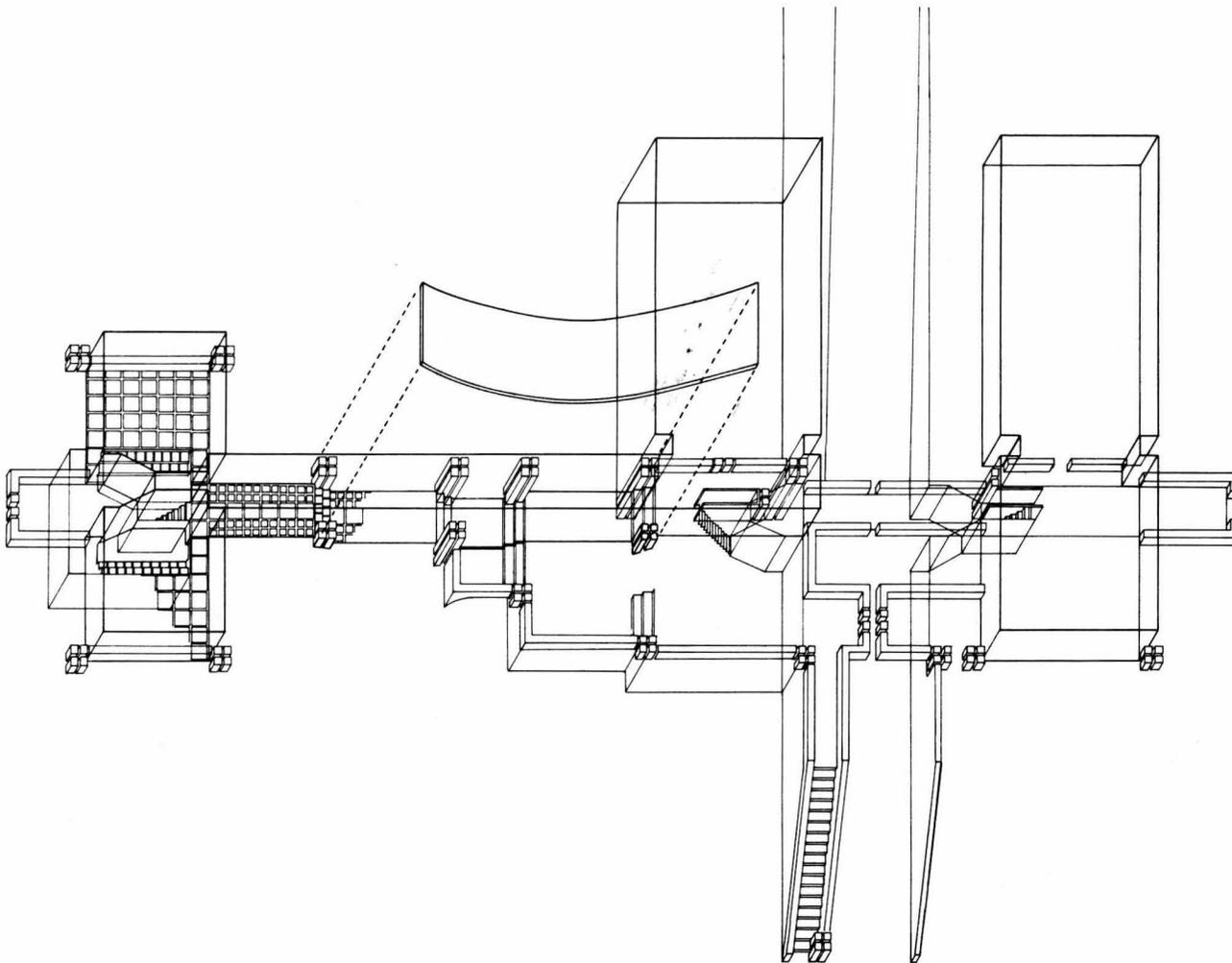


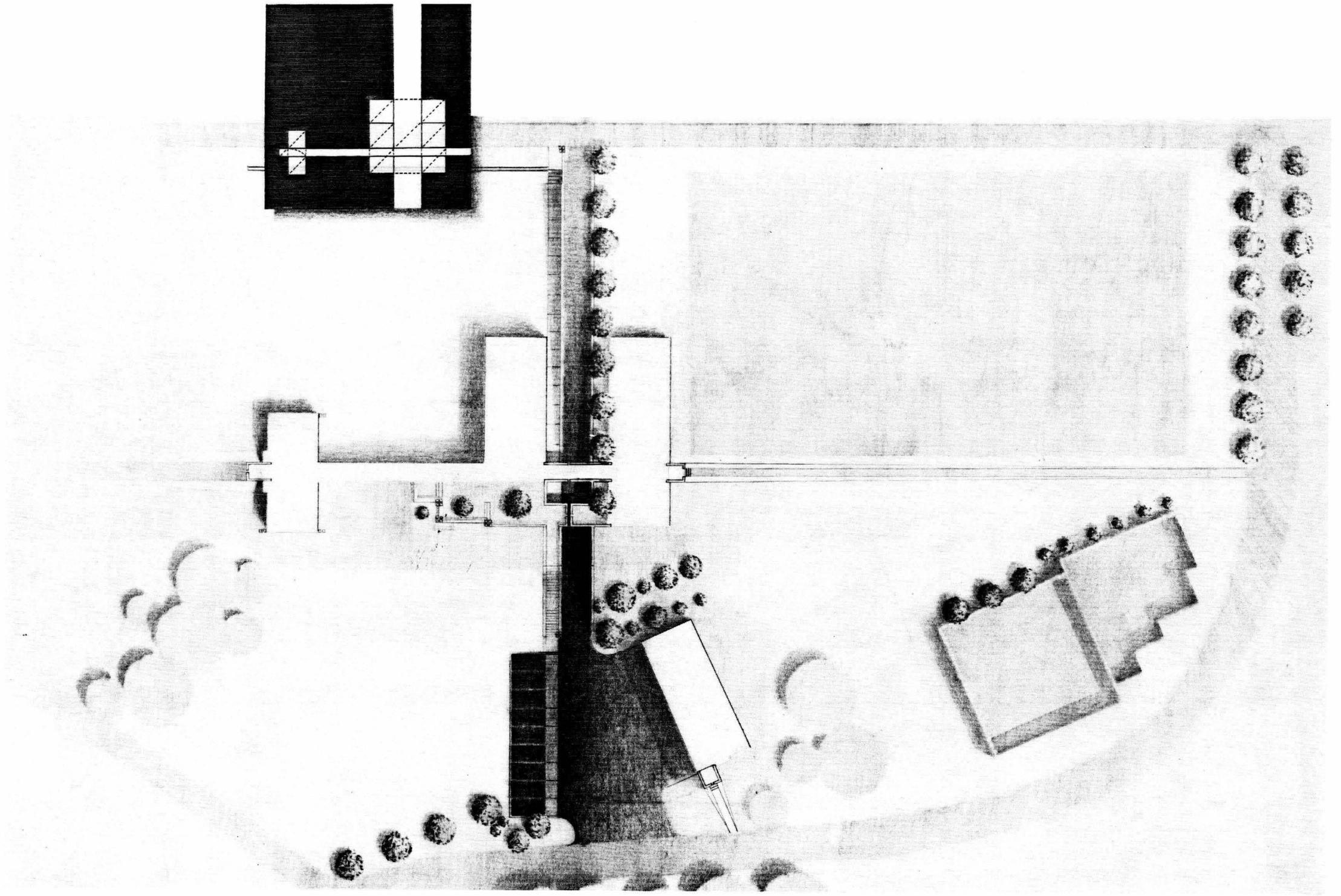
All the buildings I have built, large and small, are fabricated upon a unit system as the pile of a rug is stitched into the warp. Thus each structure is an ordered fabric. Rhythm, consistent scale of parts, and economy of construction are greatly facilitated by this simple expedient - a mechanical one absorbed in a final result to which it has given more consistent texture, a more tenuous quality as a whole.⁸



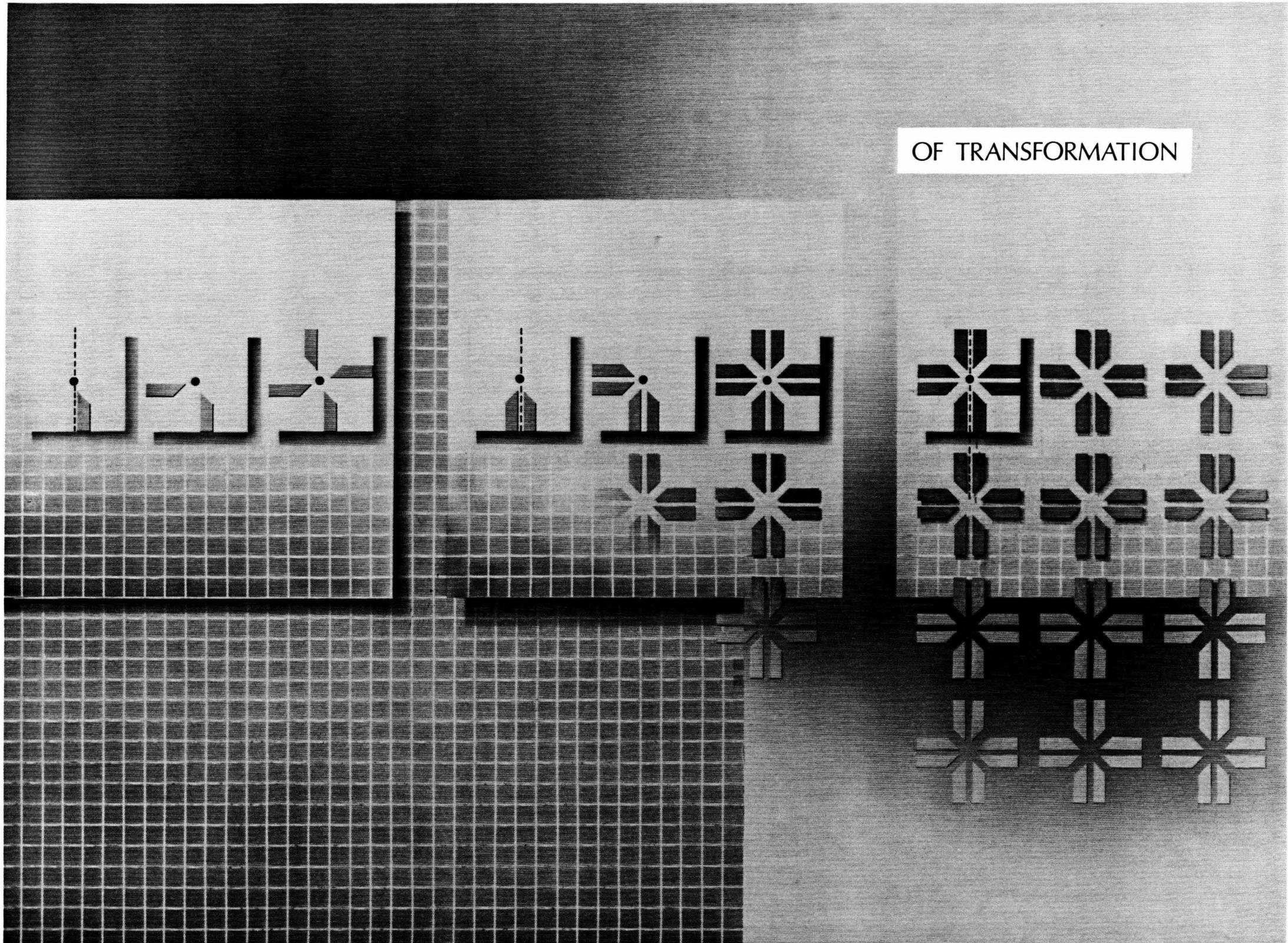
A TWO-ROOM SCHOOL

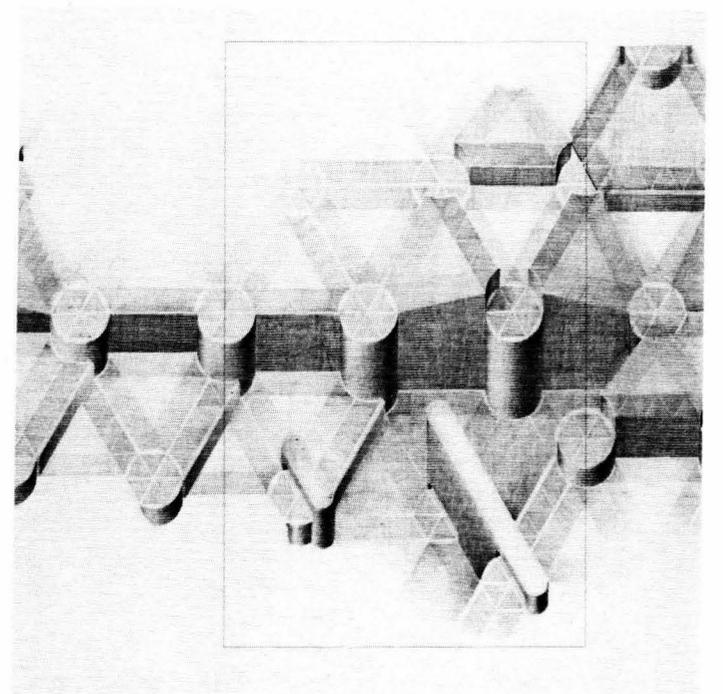
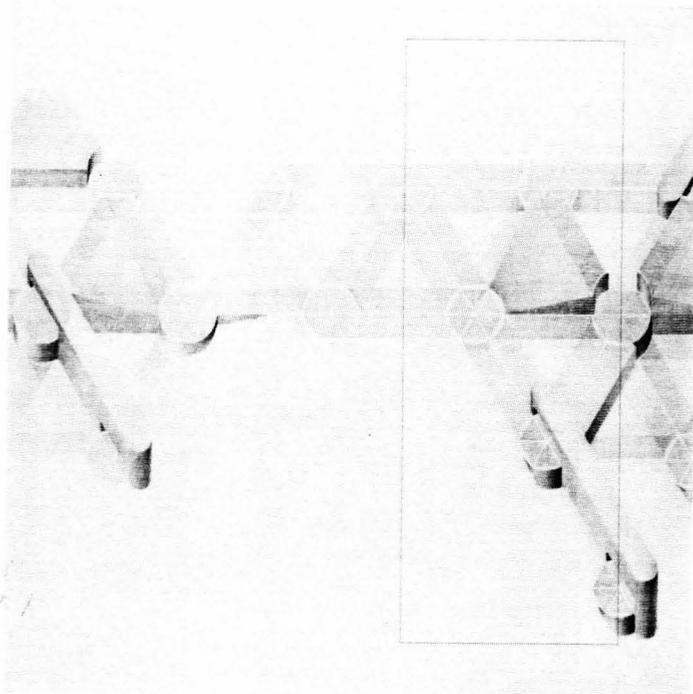
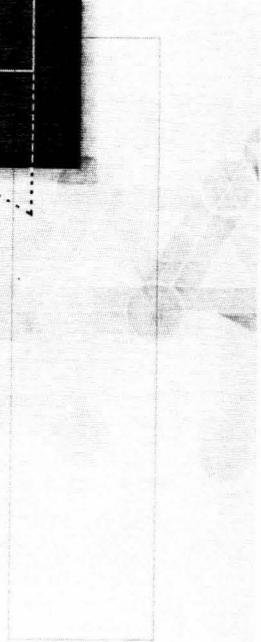
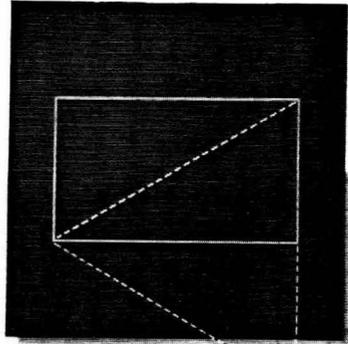
The site of the school is adjacent to a cemetery, a sports field and a small town to the north. The idea for the school is conceived as three separate, yet connected, relationships: the child, the children-administration, the administration. A longitudinal hallway holds the various functions together, while a perpendicular street from the town connects the function of the school with that of the town. The interplay of the two axes upon a square grid (a reflection of the town's grid structure) is the structural framework for the idea.

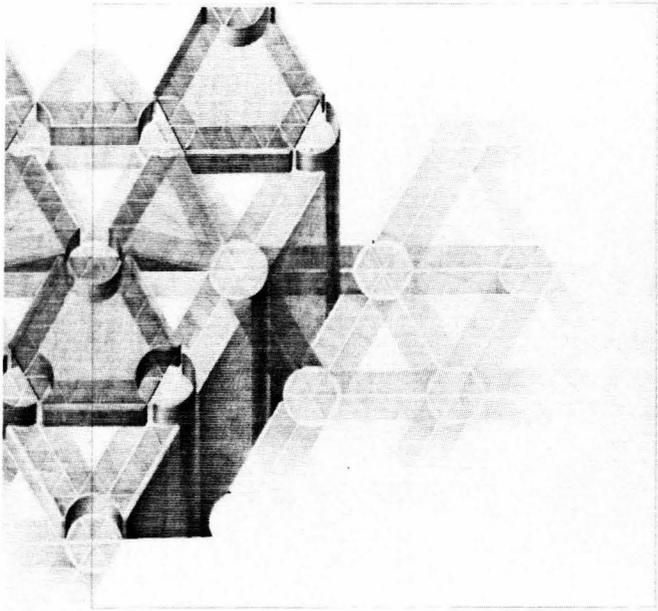




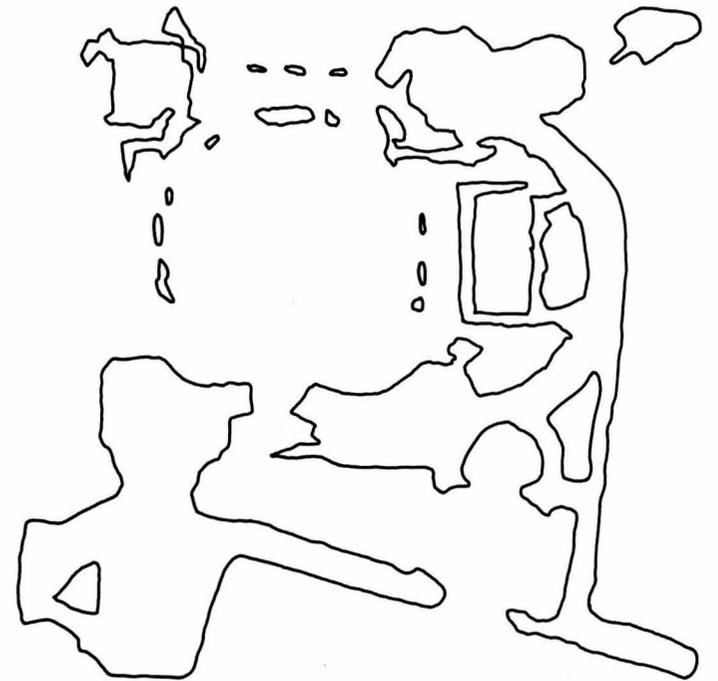
OF TRANSFORMATION



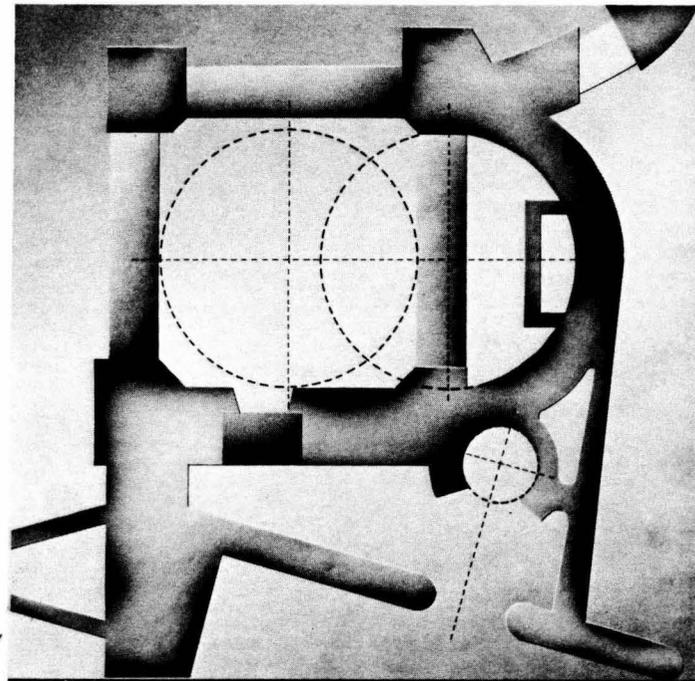
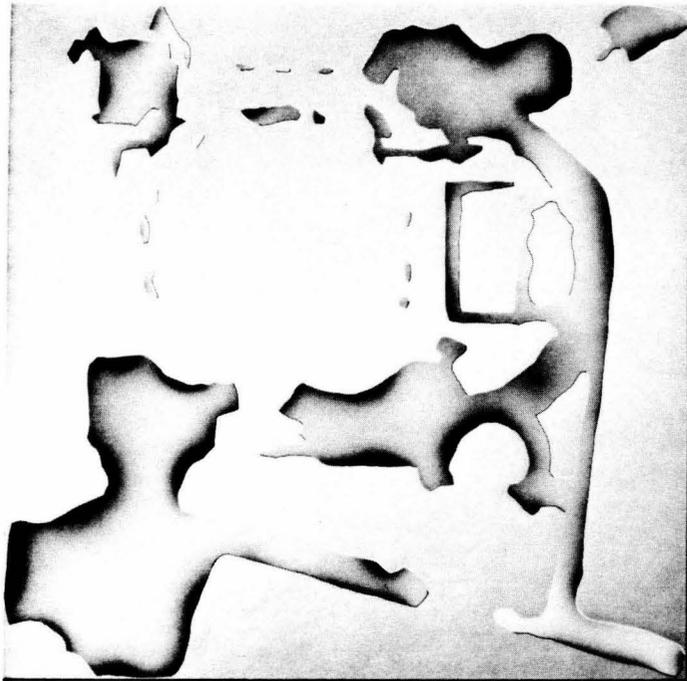




AN IMAGE

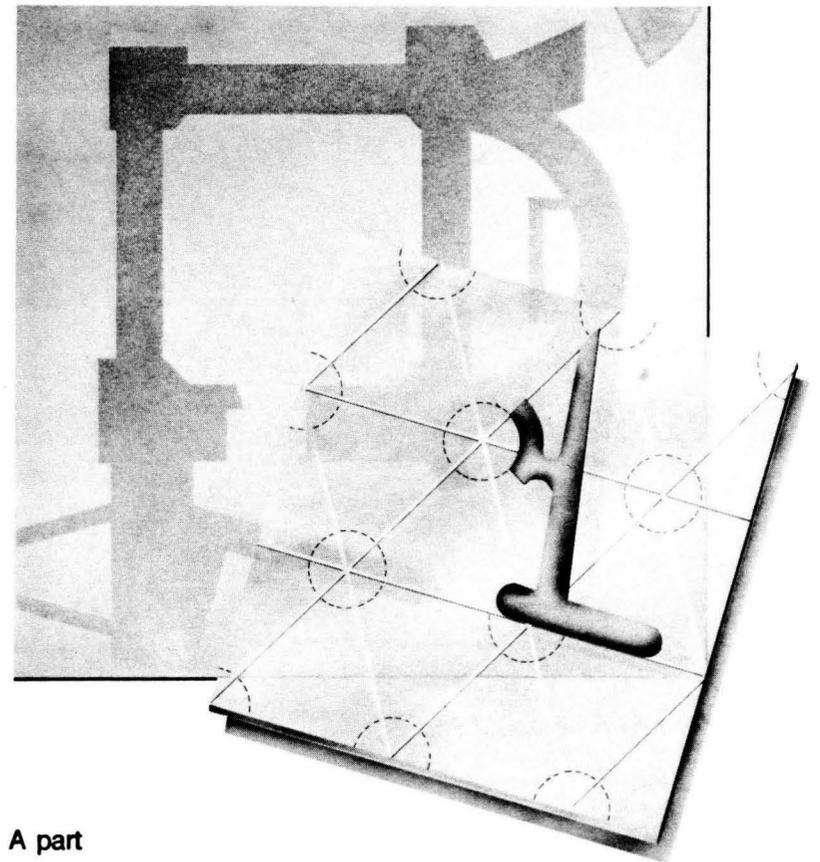


An image composed of irregular shapes.
A whole of many parts.



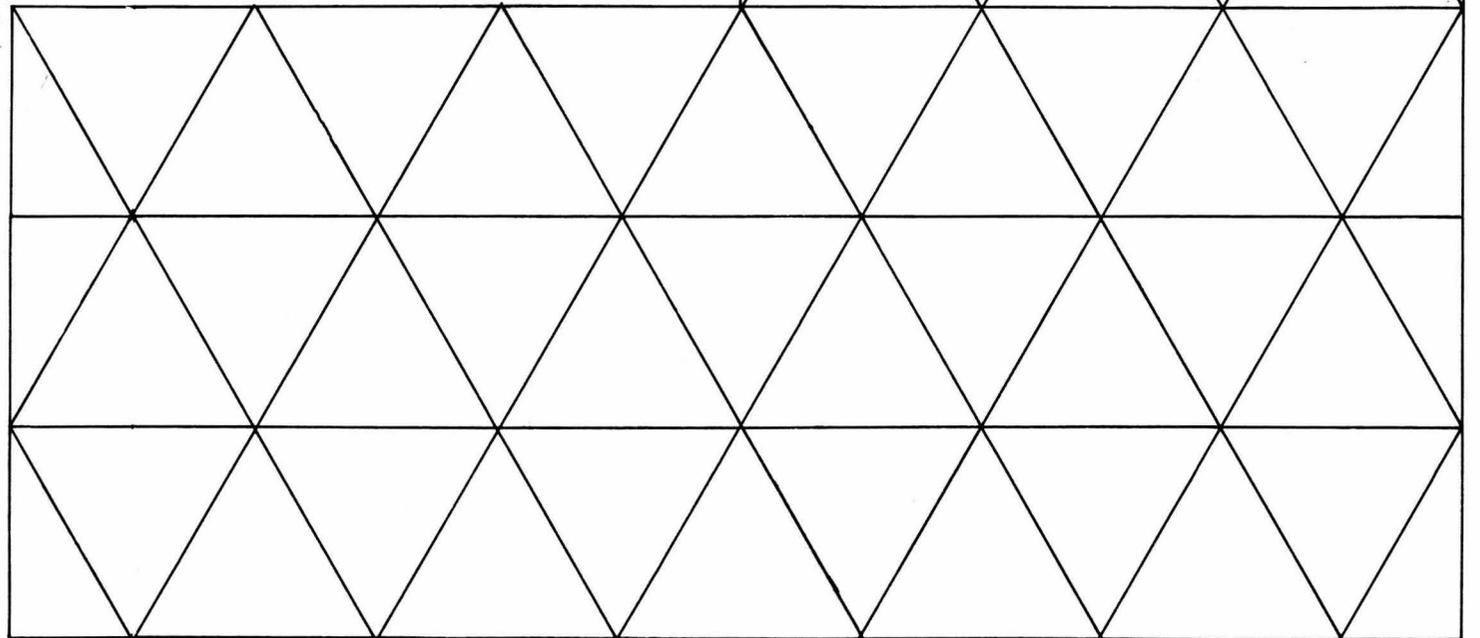
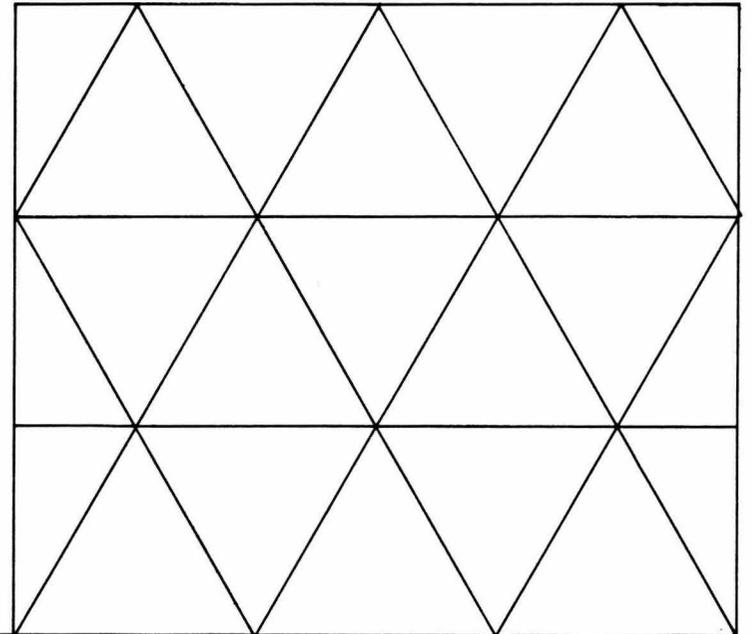
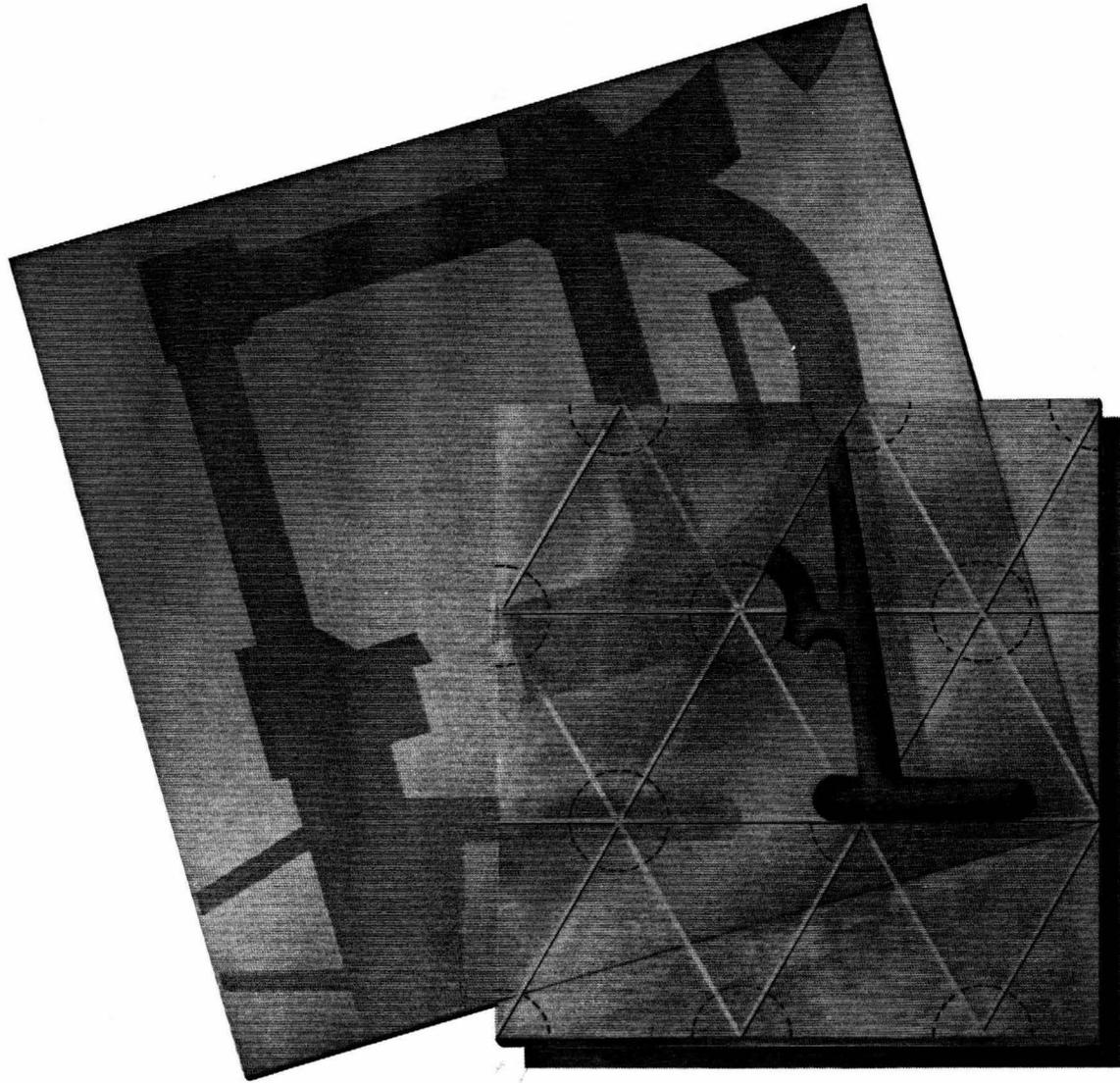
An underlying order.

ORDER

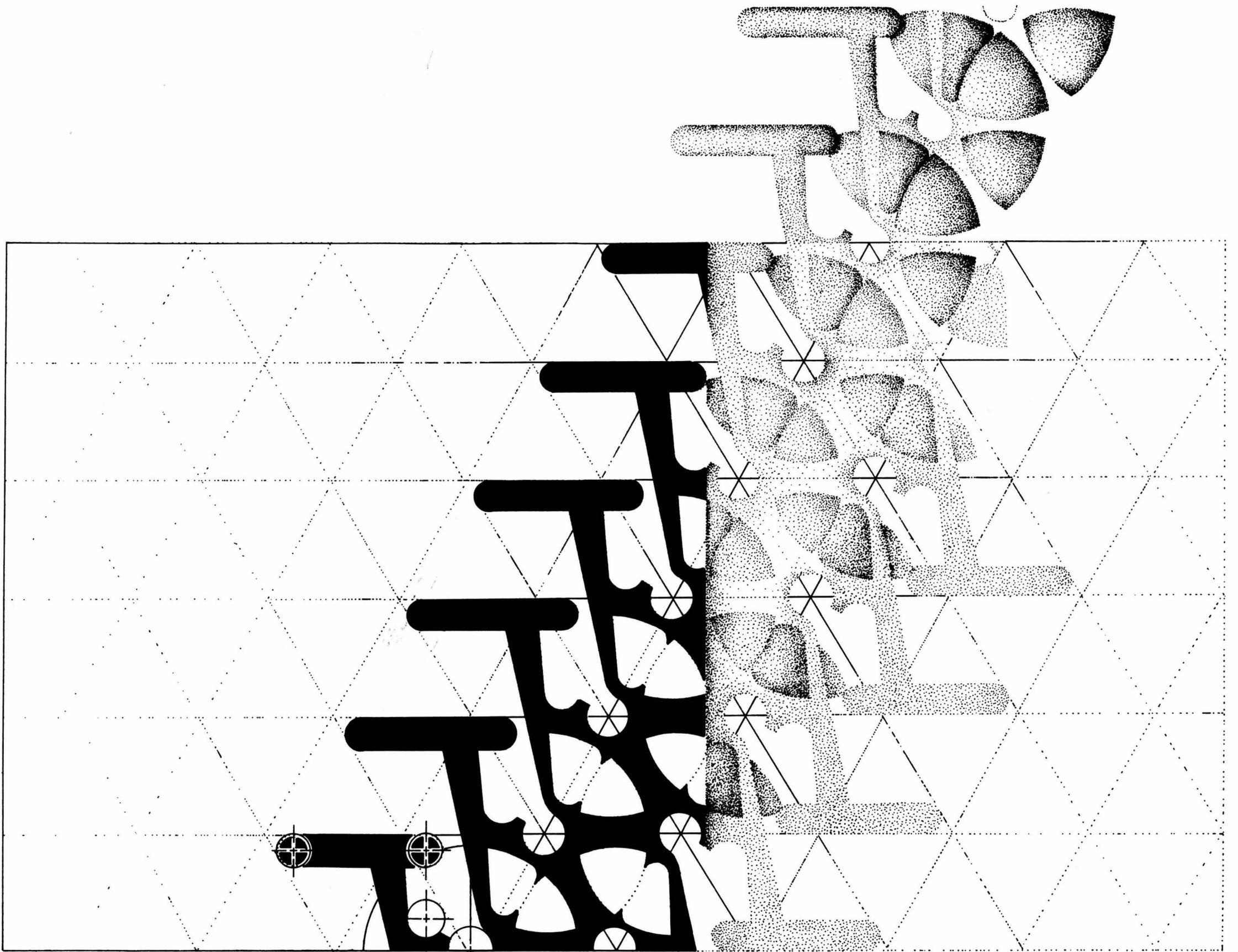


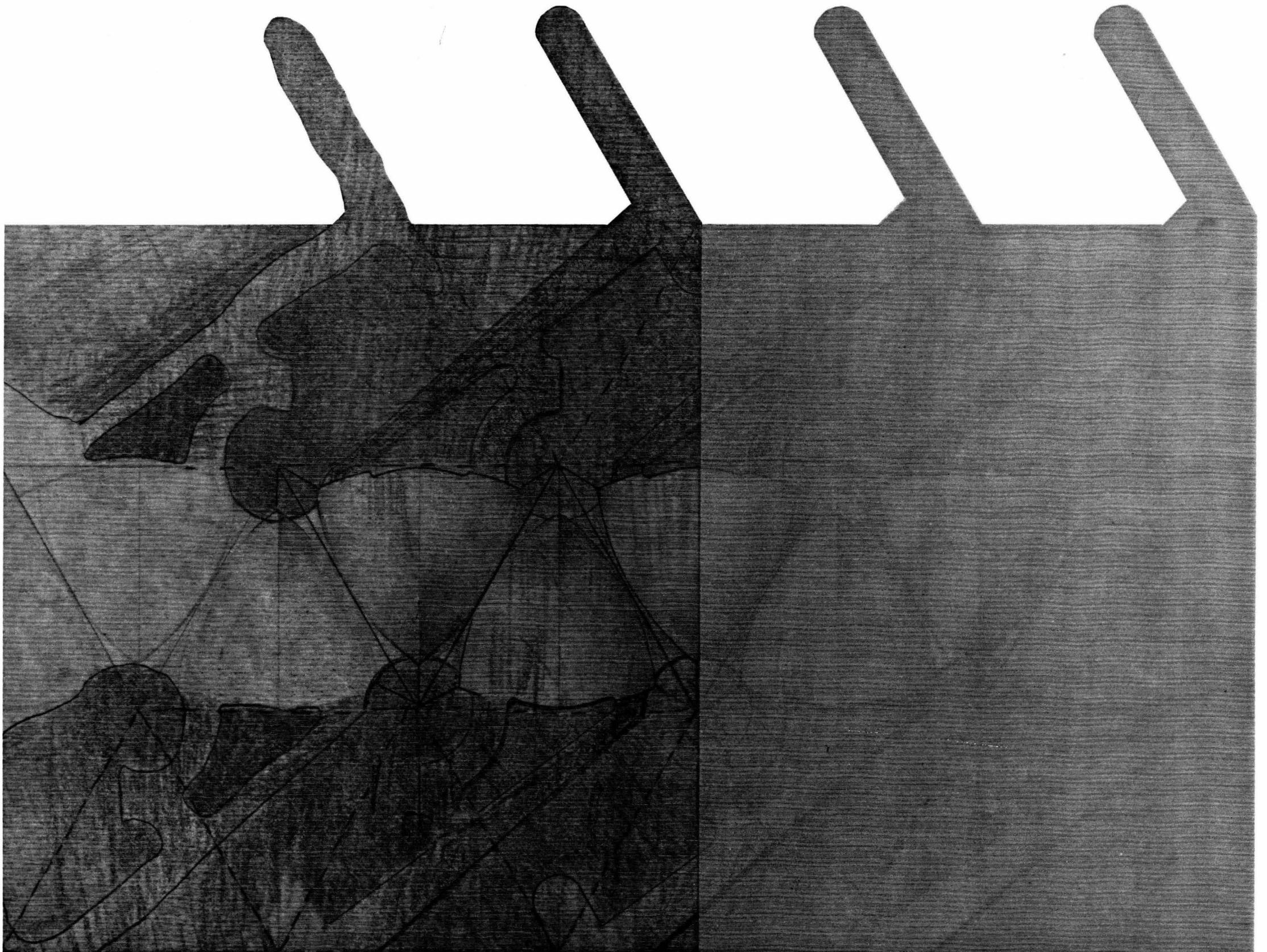
A part
of the whole
and its geometrical
relationship to the other parts.

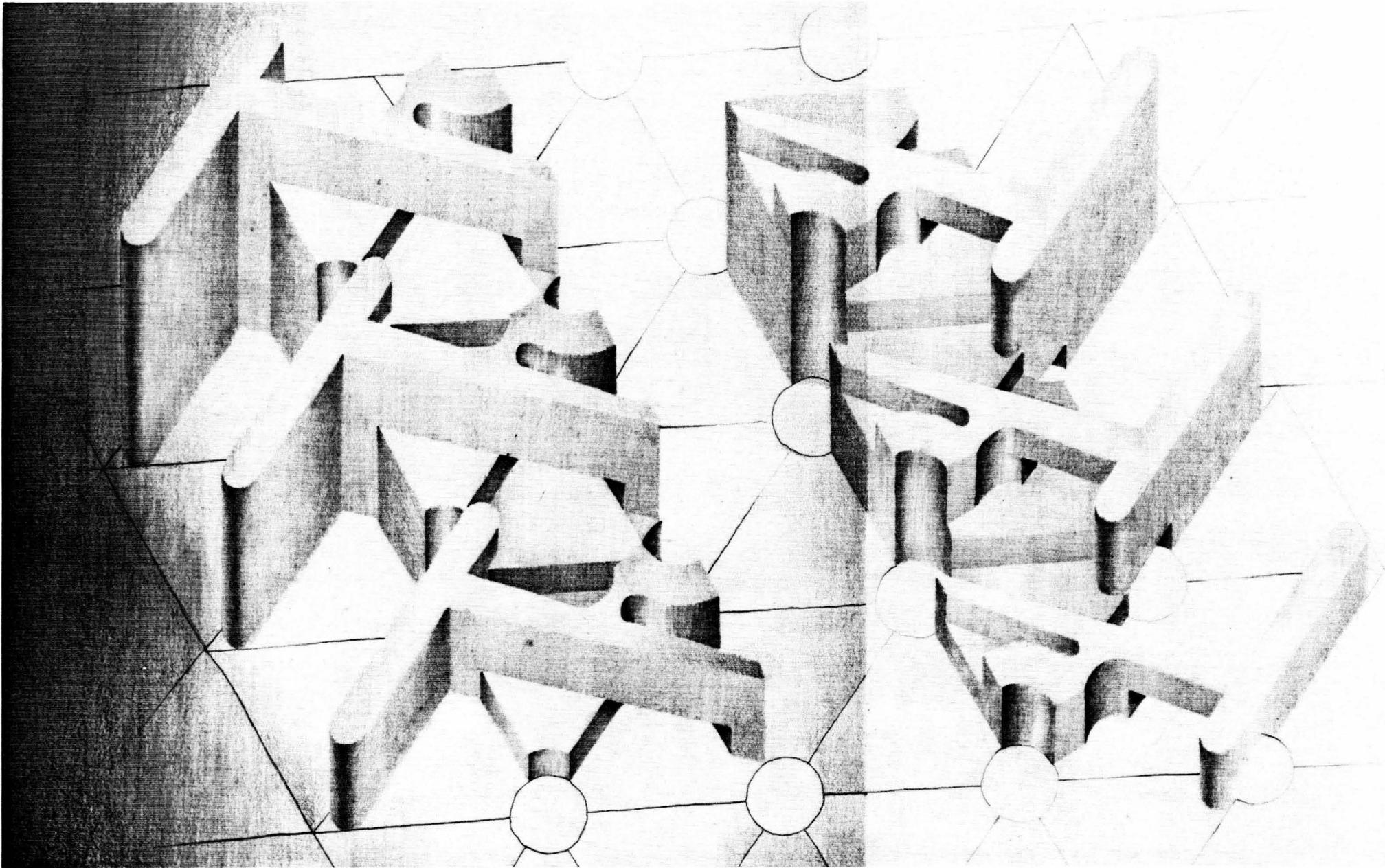
RELATIONSHIP



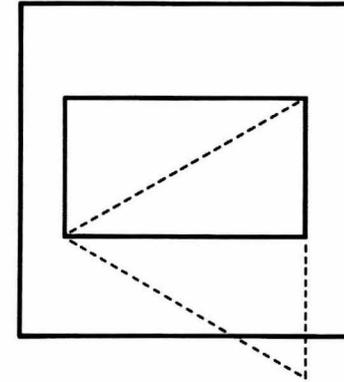
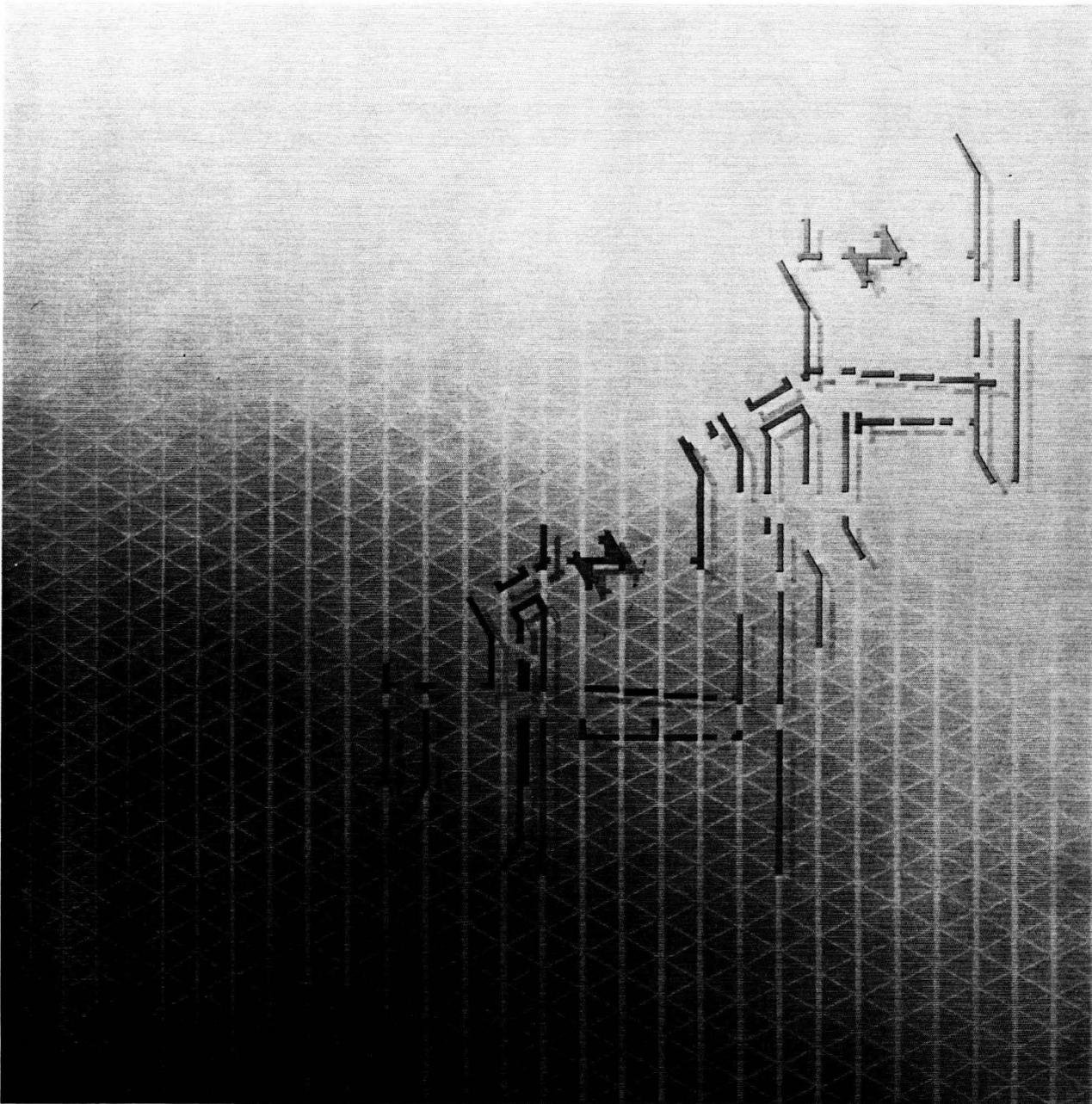
CHANGE



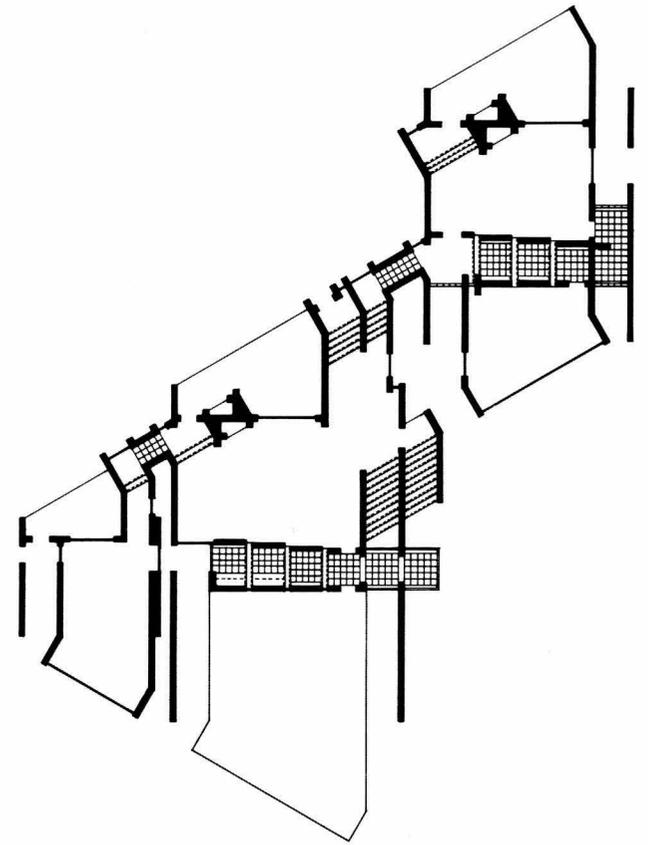
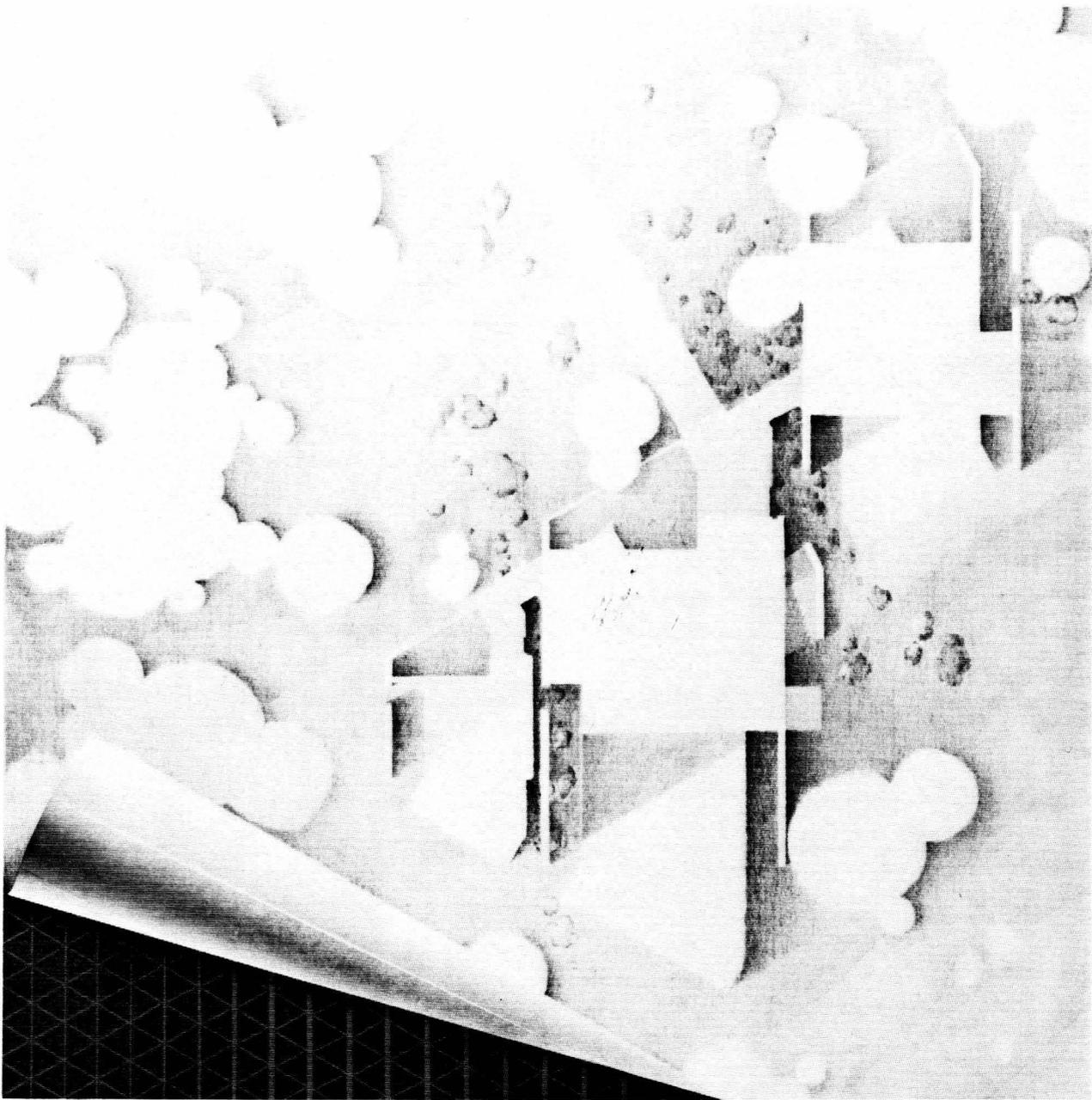


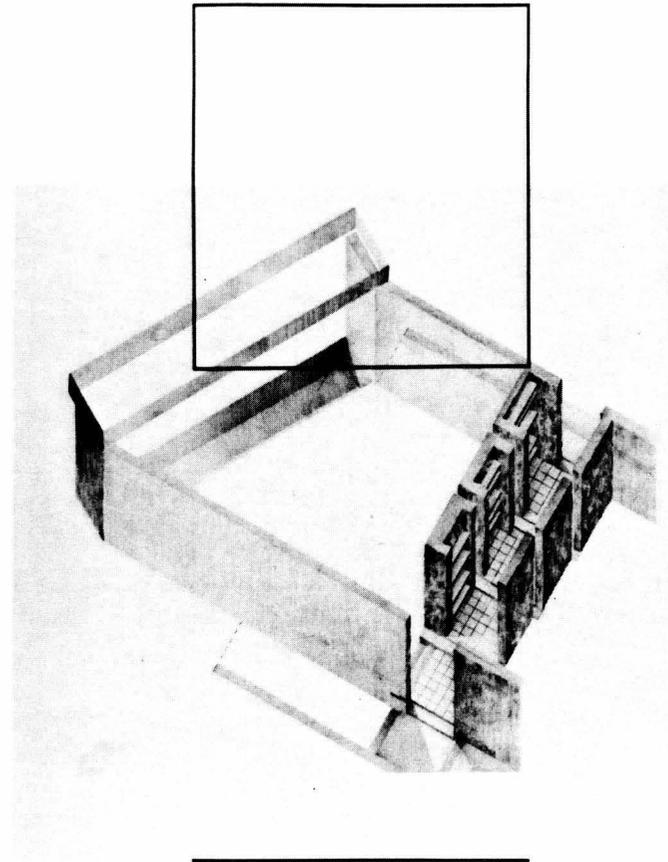
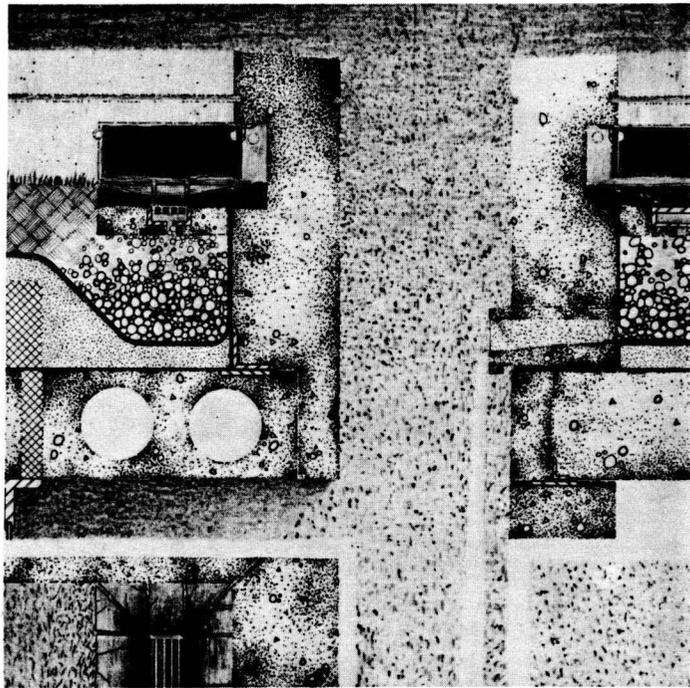
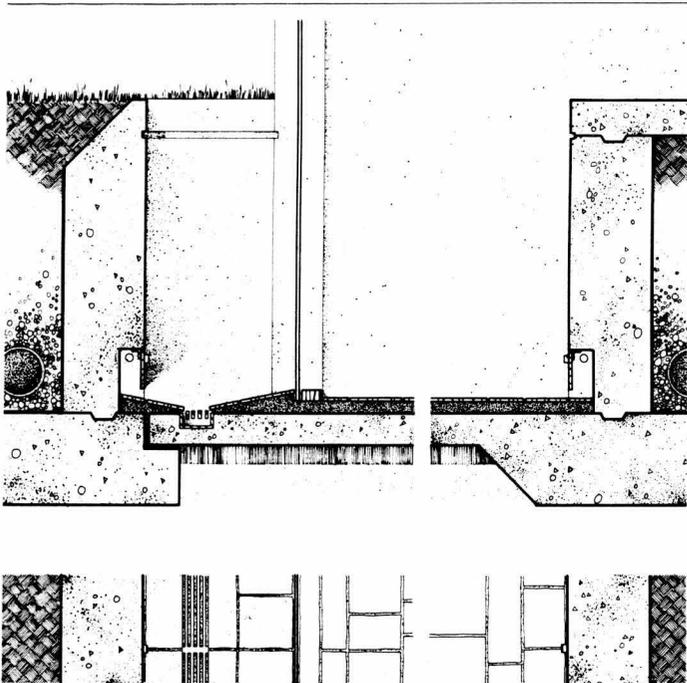


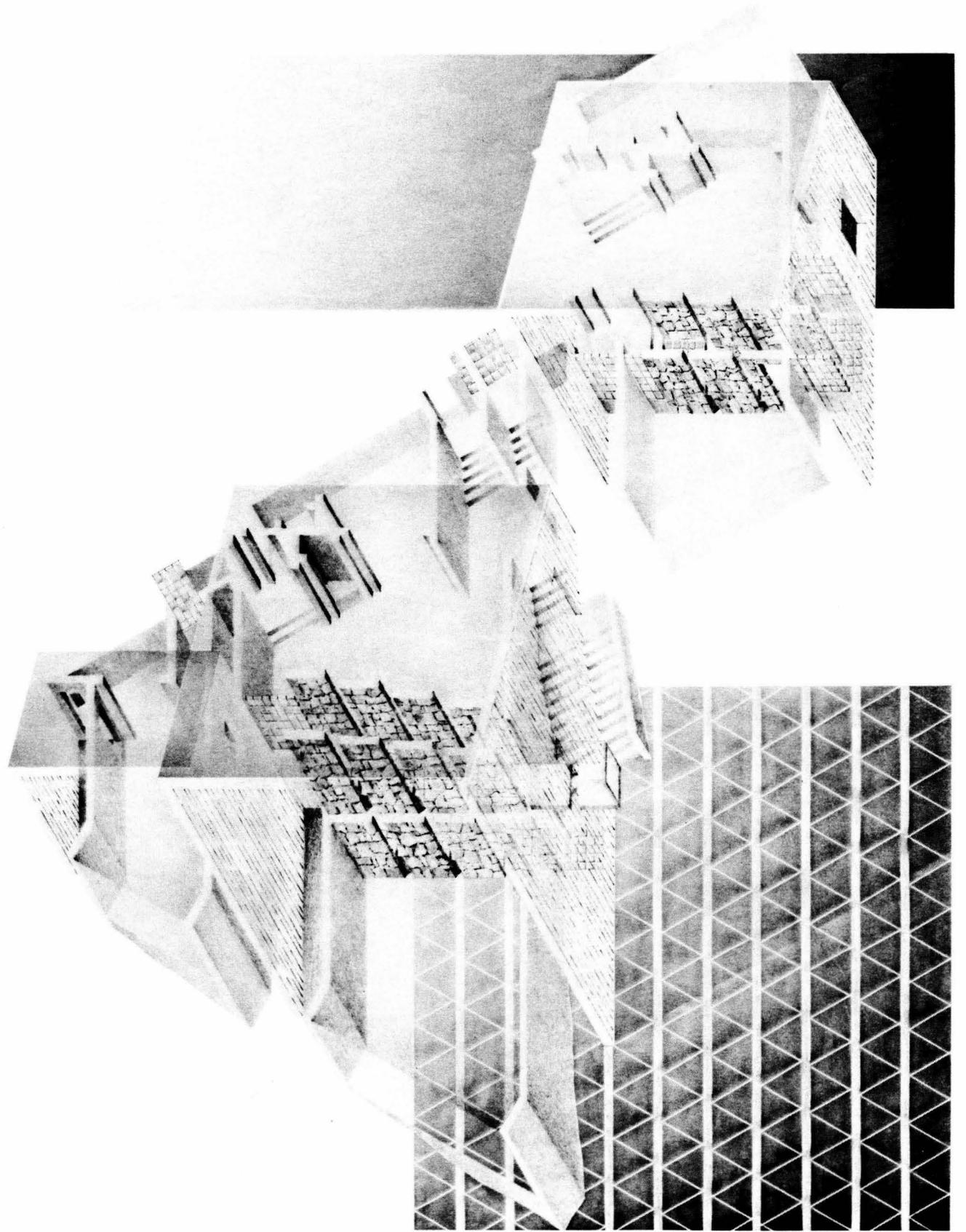
A HOUSE FOR A SCULPTOR



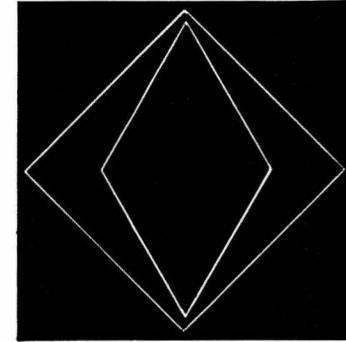
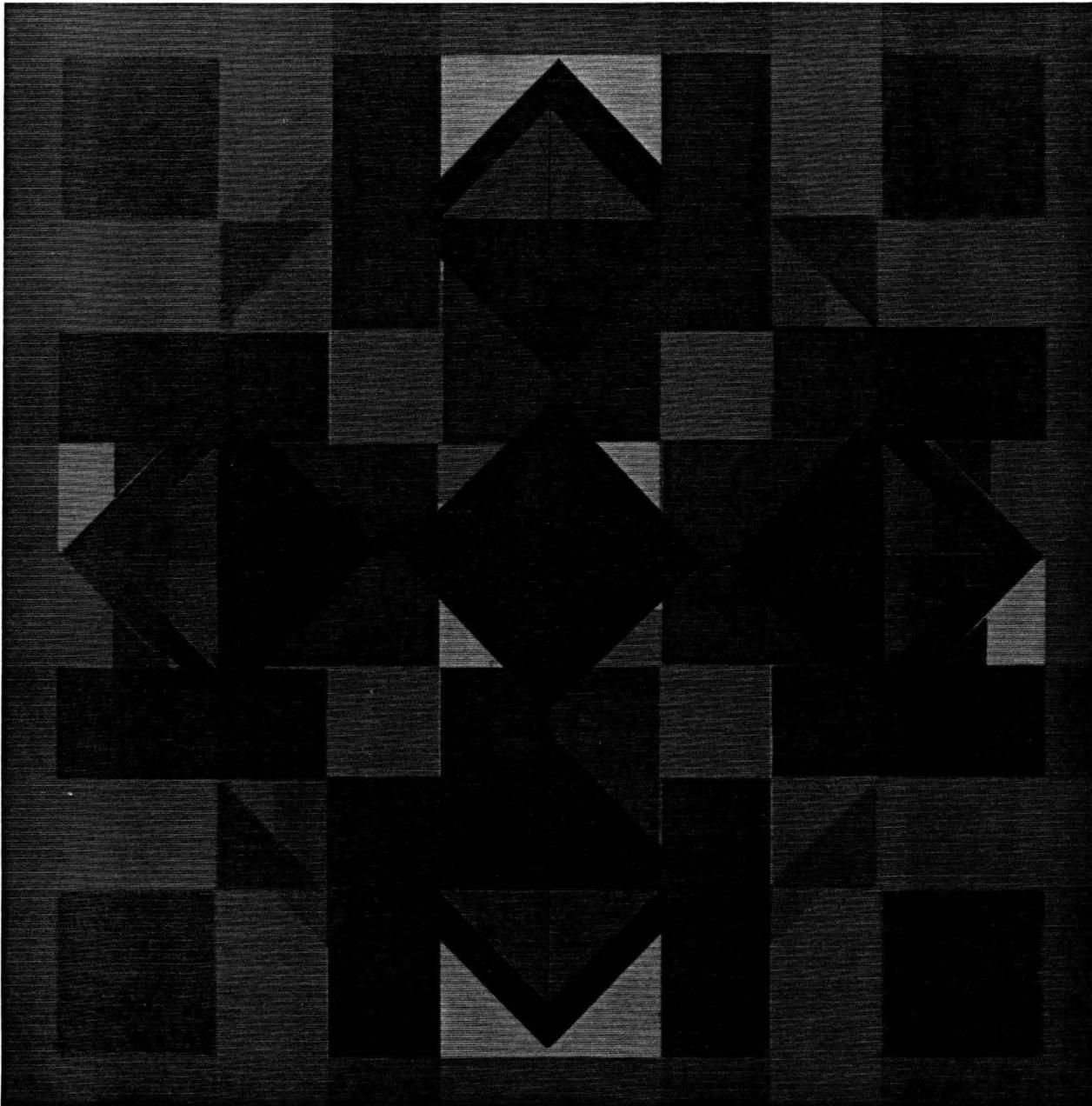
Initially, the geometry of the triangle determined the orientation of three views for this mountainside house: a view to the town, a view to the sun, and a view to the woods. A change in thickness of the vertical line of the grid created the interstitial spaces, which act as unifying elements for the three distinct spaces of the house: studio, living, sleeping.





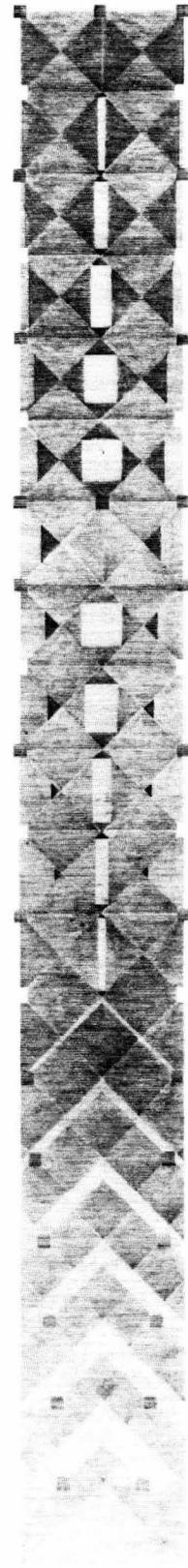
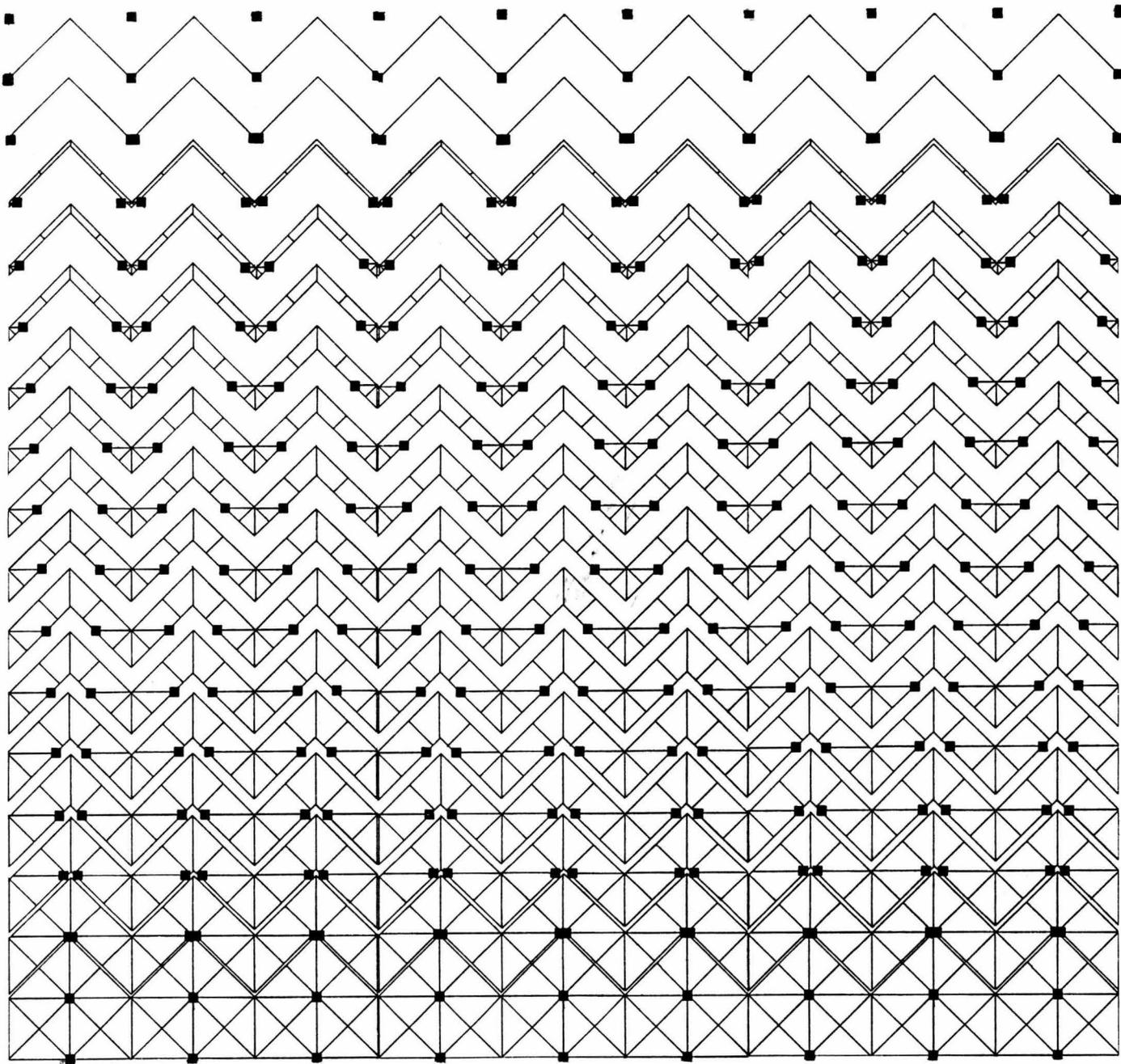


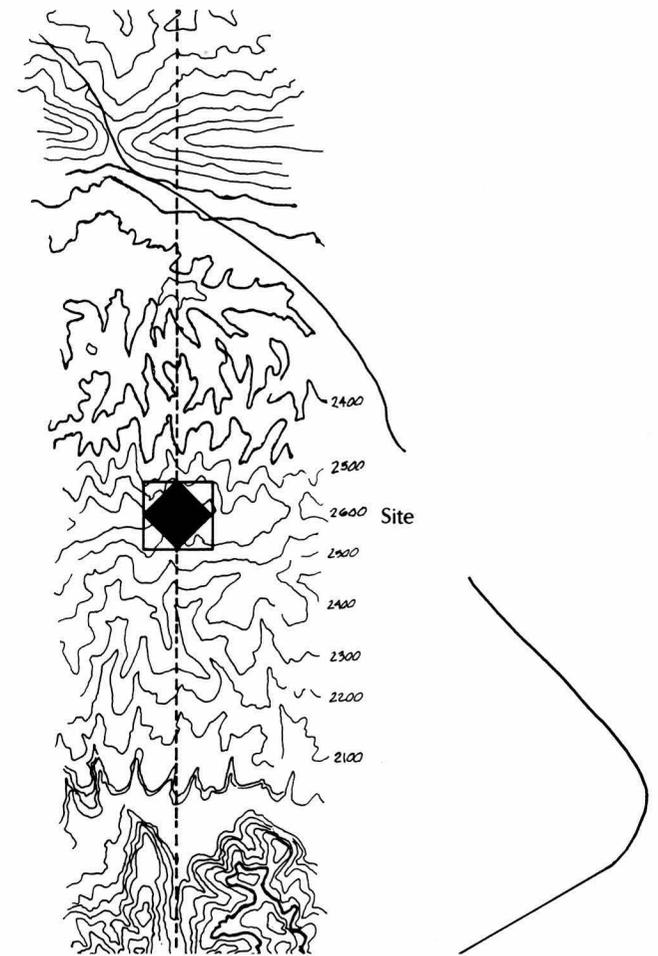
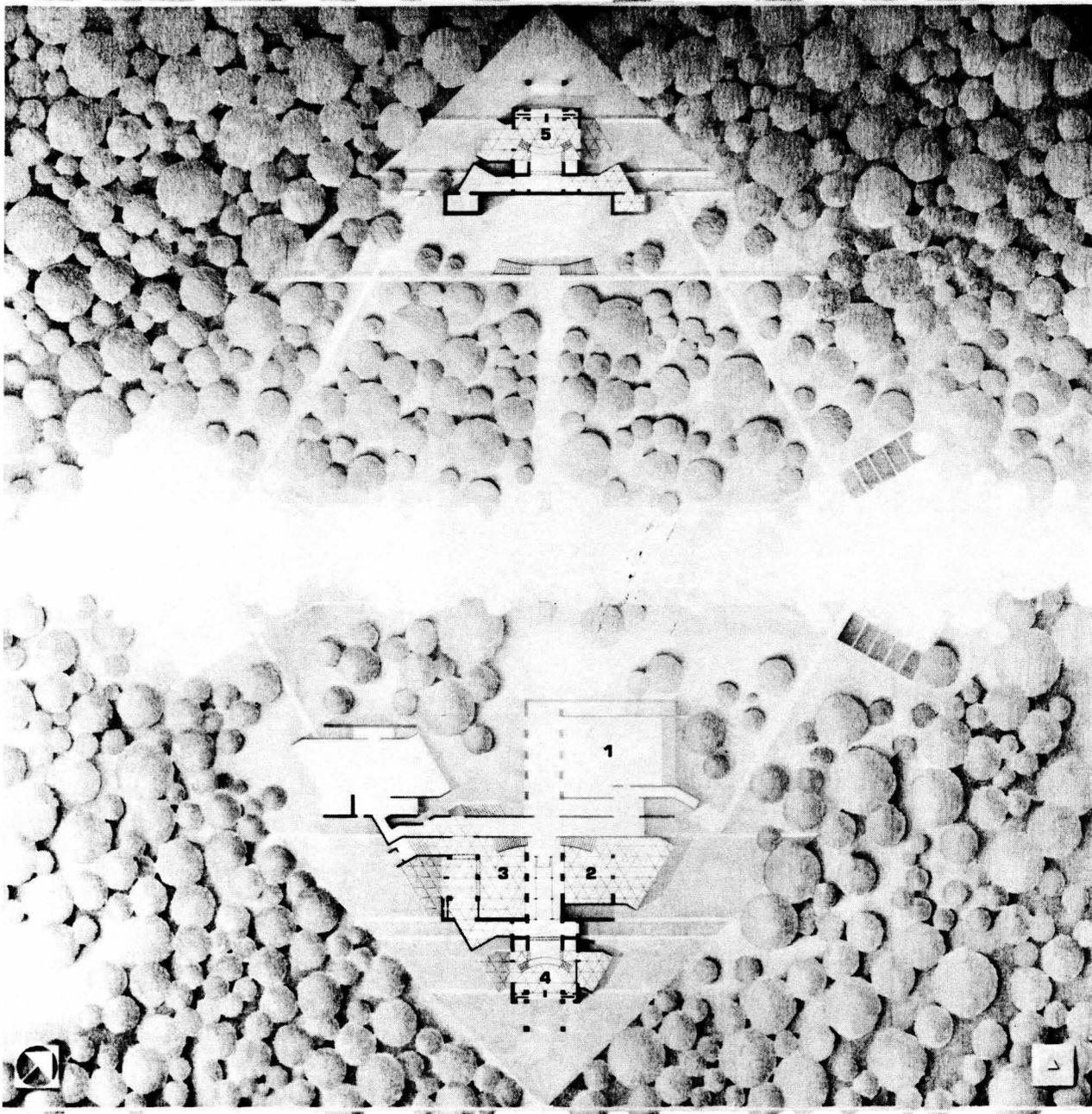
A HOUSE OF REHABILITATION



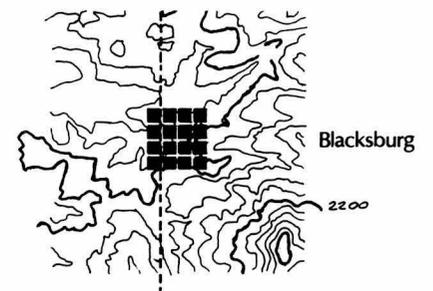
In the majority of youth with drug dependencies there exists a vacuum - a deep and penetrating emptiness - that confirms the absence of something essential to the individual, i.e., the spiritual aspect of being that only the Creator can fill. With the tendency of western society to either disregard or delimit the spiritual, and as institutions (homes, schools, even churches) become increasingly devoid of any significance, the young turn to counterfeit forms of ecstasy to fill the spiritual void. For many young people life is meaningless - lacking order, meaningful relationships or personal fulfillment. The awakening of faith in a personal, loving and forgiving God can fill the spiritual void of a drug dependent youth, such that his focus is changed from inward to outward, from death to life. His life is transformed.

The idea for a Christian rehabilitation home where people's lives can be transformed was inspired by the truth of rebirth and transformation of the author's spiritual life. The process of architectural transformation appears to be an apt metaphor for giving expression to the concept. As an architectural grammar to express the change in the occupant, the plan and structure of the home would remind the occupants of its purpose as well as facilitate the functioning within. As an example, a typical column and roof structure (Fig. 1, p. 28) demonstrates a transformation of two materials wherein the heavier, stronger steel elements forming the base give way to the lighter, wooden elements as the column approaches the dual layer roof structure, the roof form provides air circulation in and around the occupants' room. A pivotal light at the apex of the column allows light to surround the space and to control air circulation.





The floor plan depicts the total transformational process from induction: restricted spaces (1); to interaction with others: open dining facility (2); to a more open living area (3); anticipating the transformation of their lives and integration into a community of re-oriented individuals. The chapel (4) at the apex, overlooking the town, is intended to remind the occupants of their primary need to meet God personally in order for any change to take place and last. On the opposite side of the ridge, completing the square, is a chapel (5) as a reflection of the house-chapel, intended for personal retreat.



Those beautiful patterns, which through the medium of men's souls are conveyed into their artistic hands, emanate from that beauty which is above our souls, which my soul sigheth after day and night.

St. Augustine, Confessions

Construction should be decorated. Decoration should never be purposely constructed. Ornament is not only surface qualified by human imagination but imagination gives natural pattern to structure . . . integral ornament is simply *structure-pattern* made visibly articulate.

Frank Lloyd Wright

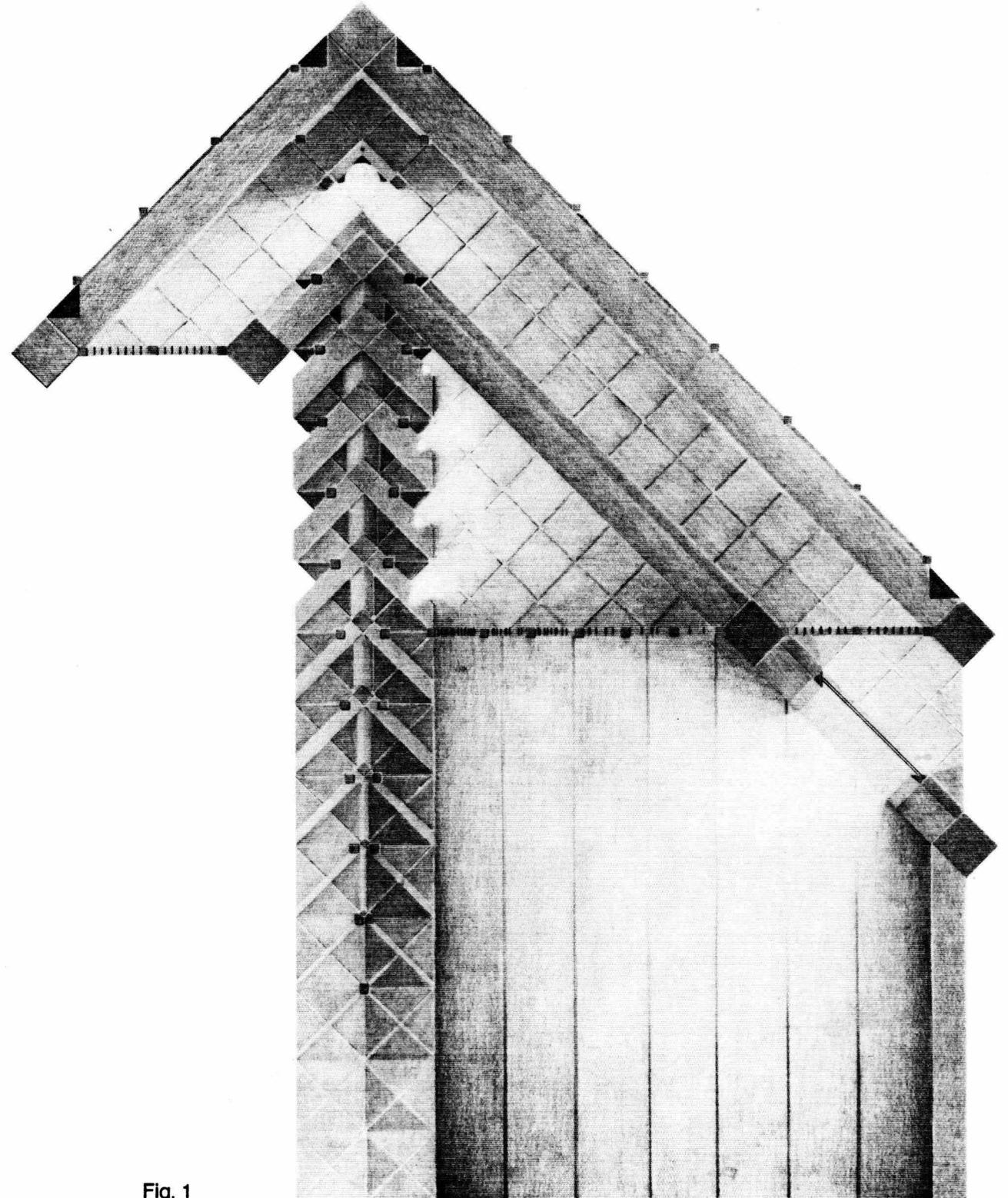
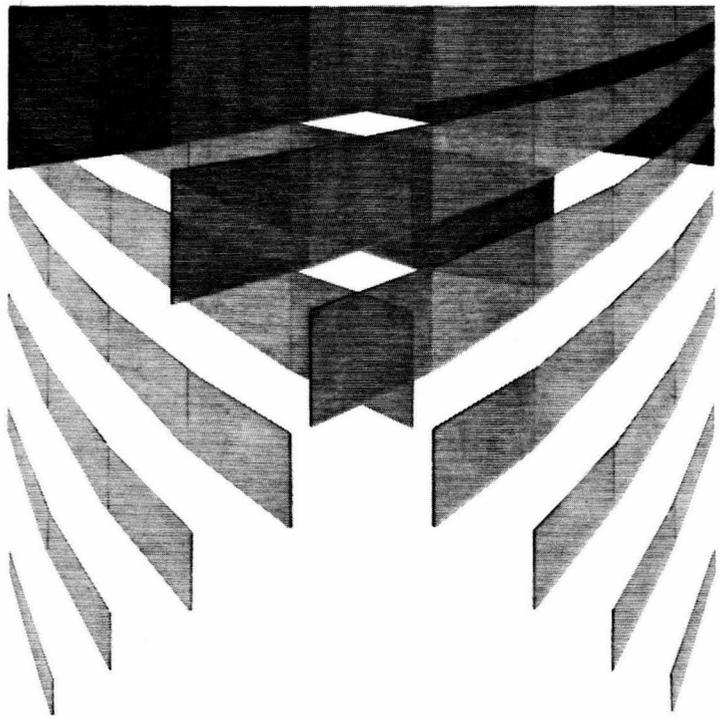


Fig. 1

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the scanned document**



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