

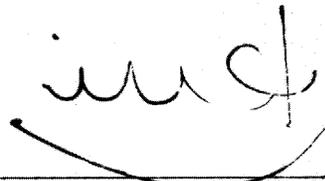
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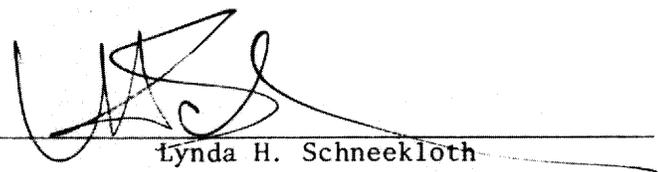
Lee Ann Solomon

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

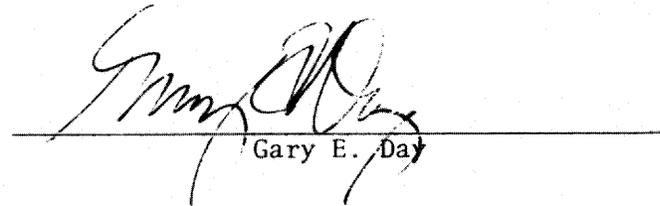
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In Dedication
to
Jan Lion Solomon
My Father

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INTRODUCTION

Architecture gives the environment meaningful forms and is therefore, a symbol giver. Man conceives the order, relationships, qualities, and facts in nature with symbols.

Nature inspires symbols with which to generate form. One difficulty with current architecture is that it appeals only to the rational intellect and lacks the inspiration of nature. Signs and symbols are tools for the human brain to think and solve problems. Advances of thought occur with new symbolic transformations; sign making to symbols, symbolic gesturing to ritual and discourse. Subtle meanings are grasped in forms, dreams evolve into visions of an orderly universe. Language as a sign and symbol process is not always expansive enough to express new ideas and meanings.

Perfection of form is the constant challenge in achieving significant form. Self-expression produces symbols which are deep enough to give a universal meaning to form and spark insight. Feelings and perceptions translate into a new form to serve as a symbol to convey understanding. A philosophy of symbolism seeks to give a definition of meaning for design use. Architecture offers possibilities for enhancement of life which each individual can only experience in their own soul. The visual arts convey ambivalence which words cannot. An architectural form's symbols cannot be taken out of its context and understood as the experience of architecture cannot be grasped in absence of the spaces.

Signs correlate directly to a thing and represent it. Symbols fill the gap between experience and synthesis in the brain. In handling symbols one uses sense data for conception and expression. Symbols have no reality in themselves, they mean a phenomenon in reality.

All symbols convey meaning through reason or intuition. From all the impressions we receive through our senses, we make an order with our ability to conceive symbols. The order of perceptual forms prove true to our symbolic applications in the conception, expression, and comprehension of our intuitive nature. In this process emotions are articulated.

A linear form of verbalized symbols is referred to as discursiveness. Unless one can formulate a proposition in a symbolic form it cannot be thought. These unthinkable structures are symptoms of emotions and do not have the latitude which language has. This limitation upon thought as requiring discursive symbolism for validity necessitates the re-evaluation of the basic premises of symbolism in relation to thought.

Thoughts tend to exhaust all conventional manipulations of symbolism, becoming truth or spurring on new symbolic forms. New ideas are difficult to express in verbal language. In the foundation of analysis new ideas manifest themselves uniquely in the creative mind. With no precedents for expression of new ideas and their meanings, new symbolic forms evolve.

Language only conceptualizes formulations or expressions of needs rather than desires. Denotation frees the symbol from the instinct of verbal language to go beyond the circumstance to formulate a symbolic language.

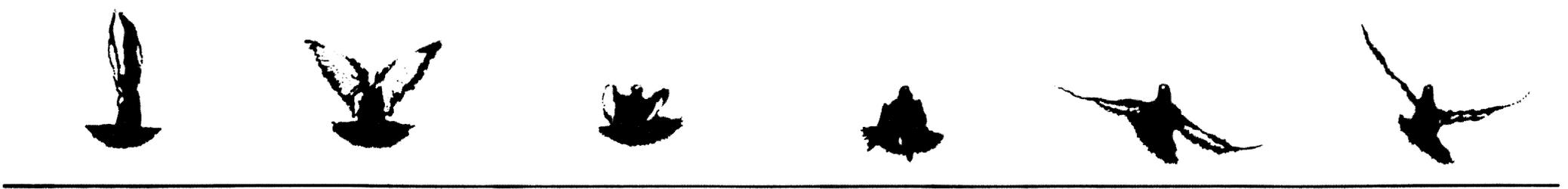
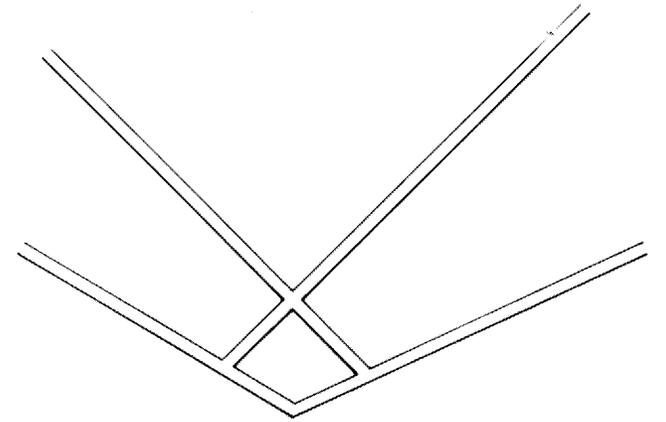
Facts link the creative mind with experience. The places in between facts allows for signs and symbols to play a part in the creative process and the search for understanding. Through perception and denotation, signs and symbols synchronize our focus. Symbolism is discursive and non-discursive.

Although visual forms are non-discursive, both visual forms and words can be articulated. Non-discursive symbolism conceptualizes the sense patterns into concrete forms. Just as verbal languages have rules of arrangement to make symbols for meanings, so does a visual language.

Understanding a direct experience through a figurative symbol makes a metaphor transcend the practical level of reality. Circumstance and inventiveness comprise presentational discourse. Metaphors abstract various levels of experience. Visual experiences and images have properties essential for symbols for which to abstract concepts and yield broad ideas. Images trigger references to other concepts in creating form.

The larger the proportion of an organism the greater the forces from the environment which oppose it. Gravity does not affect small creatures allowing surface tension to determine the simple forms. Mass and surface areas are related. Nature builds large and small things in basic units.

To translate organic principles for a spatial order, one provides emotional, intellectual, and physical qualities of physical comfort. To achieve growth; human scale, and variety are essential.



Subtleties seldom are captured in words as they are in emotions. It is the subtleties which bring truth to ones intuitive handle upon the world. Langer states that "All living creatures are constantly consummating their own rhythm. The slight fluctuations of emotions play upon this rhythm."

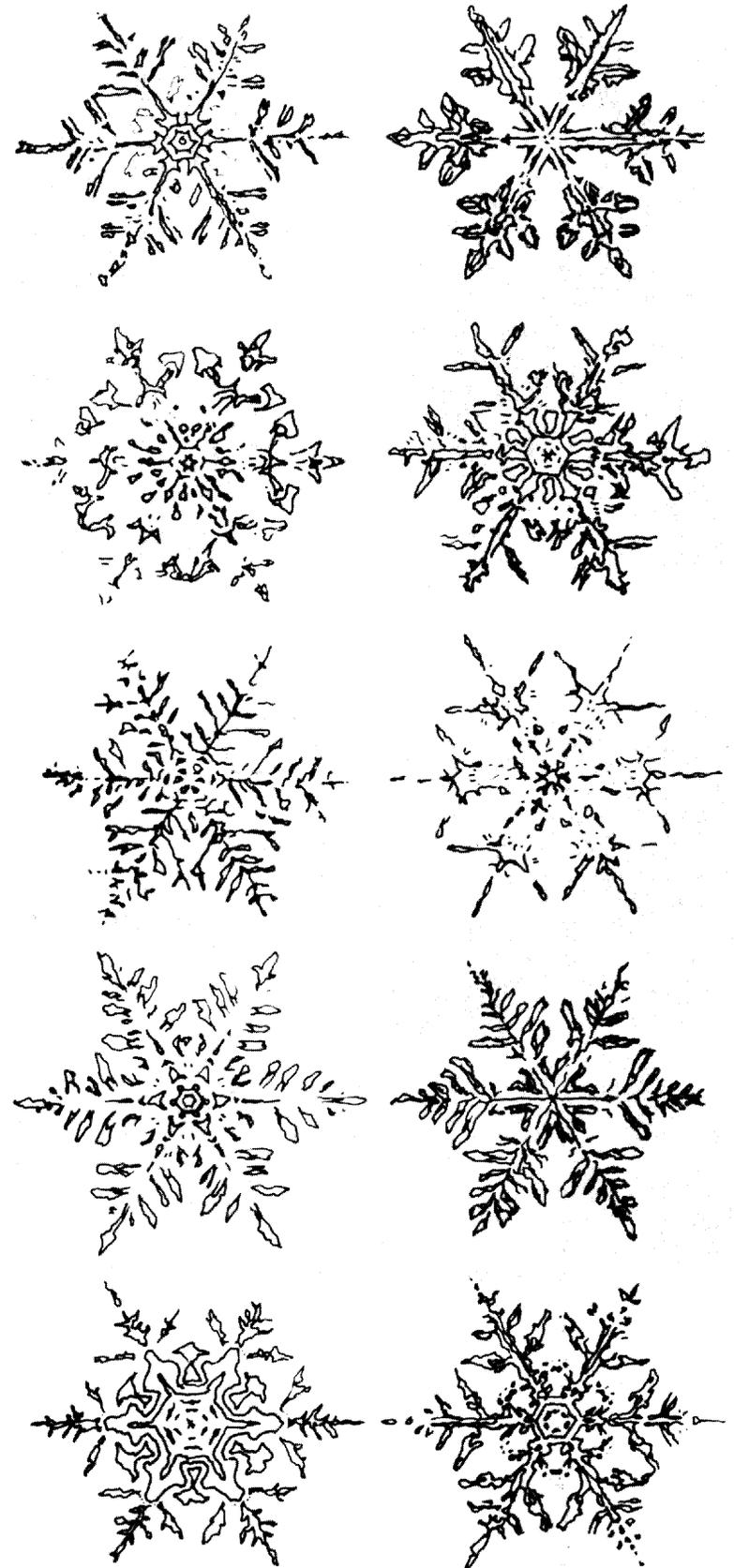
Designs in nature follow a law of minimal areas. In general, pieces fit together according to structural parts in the simplest direction of combining. Different and alike forces combine according to basic rules of efficiency. Three alike fluids meet with 120° angles from each other. The hexagon form appears frequently in nature. A snowflake is a hexagon with smaller hexagons added about its three axes with angles equal. Balance, unity, and equality of the hexagon also express natures law of growth.

The creative process involves experiencing an important form and through the discovery interpreting through one's own sensibilities to copy and make something new. Eyes need to be expansive so as to experience the essential forces of human nature and life in forms. All art forms are interpretations of models. Architecture communicates throughout the essence of being. One must first be familiar before capturing the gestalt of form. An understanding of visual forms depends upon the whole and not the individual parts.

As reality is perceived and understood, one can use the principles of nature to create an order attuned to the environment. People find geometry and order according to it, while nature is far more complex. Geometry is intellectual while nature has an intimate organic unity. We respond to the symbols of nature with all the senses captured in qualities which expand beyond an experience, to be abstracted and manipulated in forming relationships.

The drive to explore forms having human resonance leads us to connect various actions. A gesture symbolizes an intellectualized emotional meaning and gives insight into the imagination.

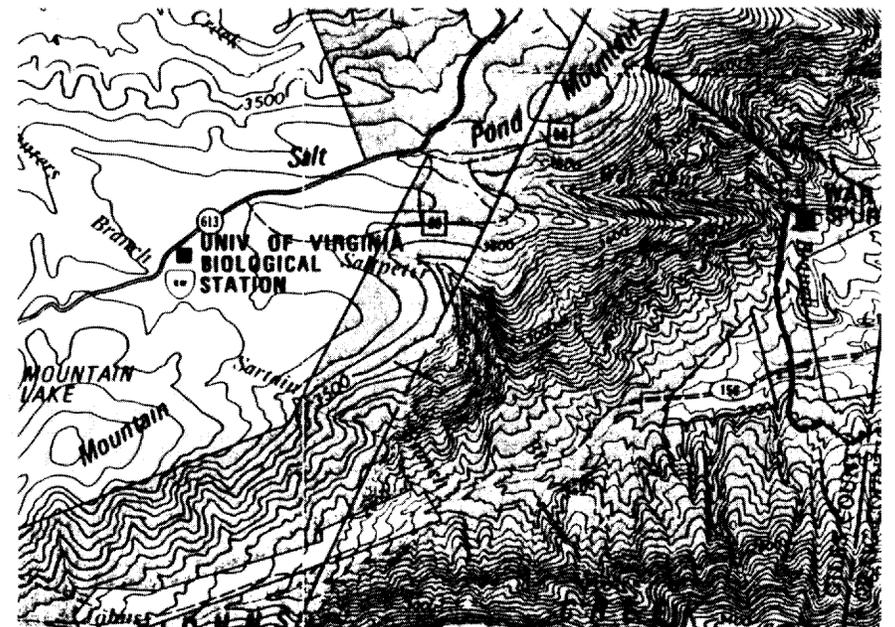
a metamorphosis of the six stems of a snowflake provide a gesture with which to design a community.



With signs and symbols we establish a sense of security by orienting ourselves in nature. A concept of spatio-temporal world balances between symbolic thought and sign perception. Thought is essential in comprehending order. Transcending common sense, the creative meanings of form come alive. The context of myth is reality and the interactions represent the cosmic forces human beings experience. Human life sees nature through the intuitive impulse. Both a physical and an emotional response is triggered by the totality of nature. Natural settings enhance a sense of human potential.

The limitation upon choices of site, climate, social function, technology, materials, and energy provided constraints with which one discovers the inherent order and expressed social and environmental laws. So many contemporary decisions are capricious and arbitrary since there are so few limitations. Yet, there is more potential than ever for physical comfort, spiritual comfort, and involvement with nature.

a site in the mountain lake area of southwest virginia offers an eastern slope, a dense forest, and a river. the strong vertical force of the trees and the lack of a focal point suggest a horizontal contrast and a need to rise above the trees. the slope provides an opportunity to work with earth sheltered structures.

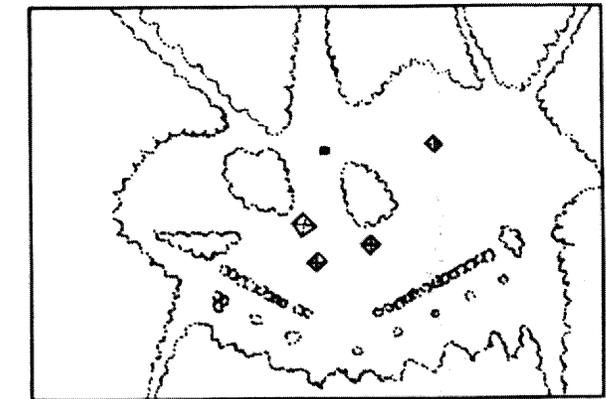
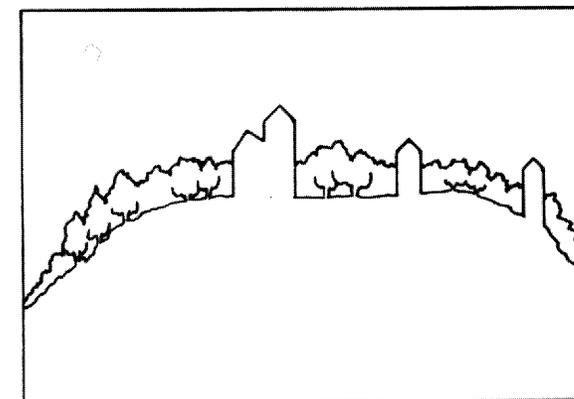
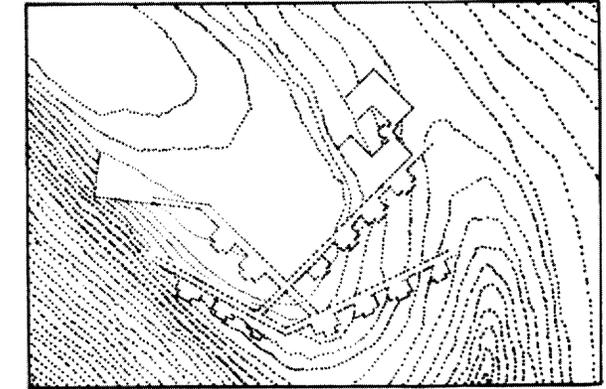
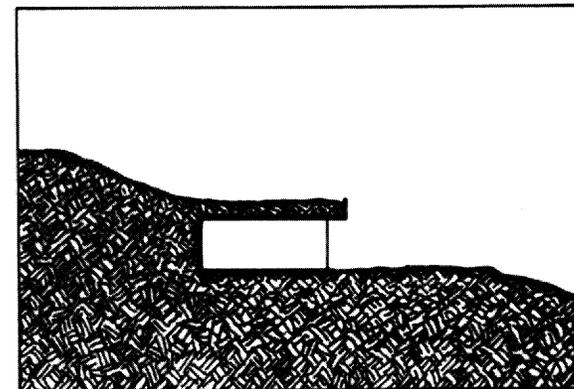
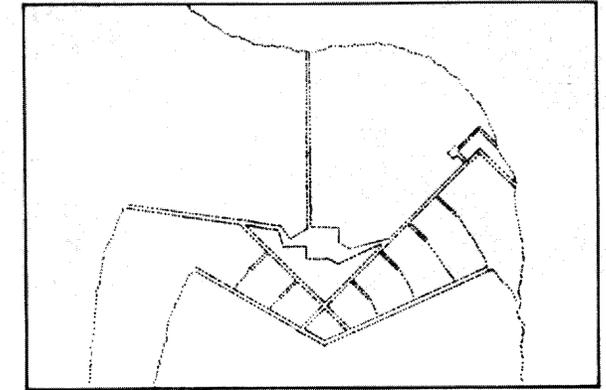
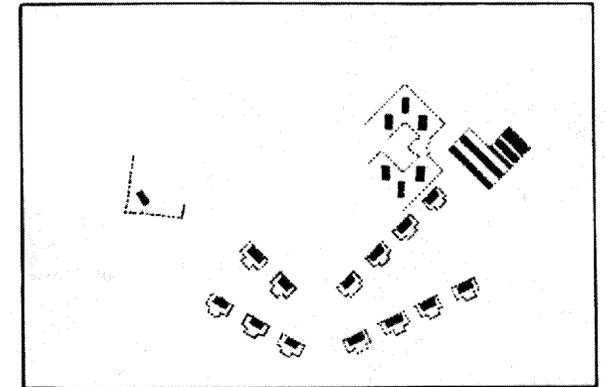
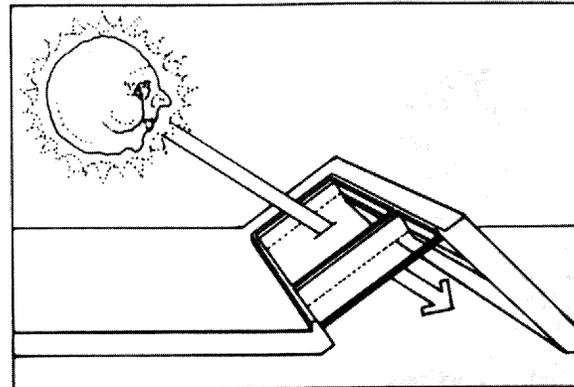


Symbols of nature catalyze creative transformations of subjective fiction to a vision of world drama. The order and changes in nature bring comprehension of human life in the universe. Rhythms outside of human behavior offer potential metaphors for conceptualizing meanings of growth and decay. In the search for understanding, patterns in nature are symbolized. Abstracted concepts and their framework make up a philosophy of nature. Mathematical abstractions of nature are symbols.

Human behavior is artificial since it is adapted to goals and therefore shows behavioral characteristics which are constraints upon adaptation. The complexity of the environment, influences the relative simplicity of man's behavior system to grow and appear more complex. Artificial phenomenon are shaped to fulfill needs of the environment.

Before meanings can be grasped, one must become familiarized with the visual vocabulary. An object construed and experienced becomes a symbol for its concept. We naturally abstract a form from our perceptions and conceptualize it as a thing. There is a fundamental pattern which various conceptions all share and form a concept of an object. Abstracting occurs in recognizing a concept which appears in various arrangements of experience and develop into a concept.

fire, water, earth, and air are the primary elements which man has celebrated since the beginning of time. to bring these elements into a sheltered environment skylights, waterways, earth sheltered pavillions, and towers were designed.



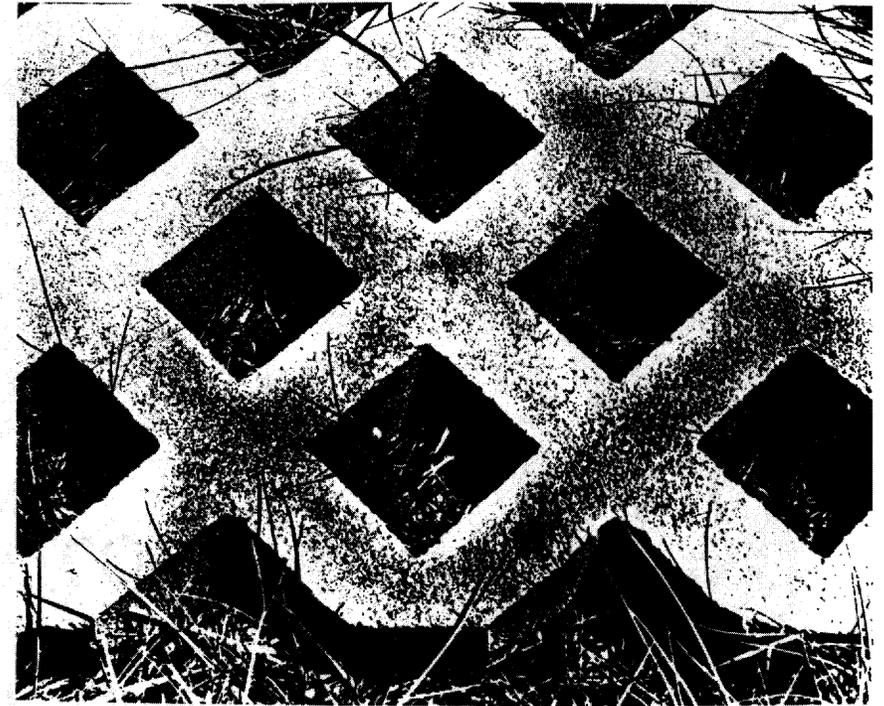
The following lists by Bruno Zevi summarize what is meant by organic and inorganic in design.

Organic Architecture

1. Formative Art
2. Product of intuitive sensations
3. Work of intuitive imagination
4. In close contact with nature
5. The search for the particular
6. Delighting in multiformity
7. Realism
8. Naturalism
9. Irregular forms (Medieval)
10. Structure like an organism that grows with its own laws of own individual existence with own order in harmony with own functions and with environment. Like plant or living organism
11. Dynamic forms
12. Forms based on freedom from geometry
13. Product of common sense (native architecture)
14. Anti-Composition
15. Product of contact with reality

Inorganic Architecture

1. Fine Art
2. Product of thought
3. Work of constructive imagination
4. Contemptuous of nature
5. Search for universal
6. Aspiring towards rule, law system
7. Idealism
8. Stylism
9. Regular forms (classic)
10. Structure like mechanism which all elements disposed in accord with absolute order, in accord with immutable law of an a priori system.
11. Static form
12. Forms based on geometry steeometry
13. Search for perfect proportion, for golden section, and for absolute reality.
14. Composition
15. Product of education

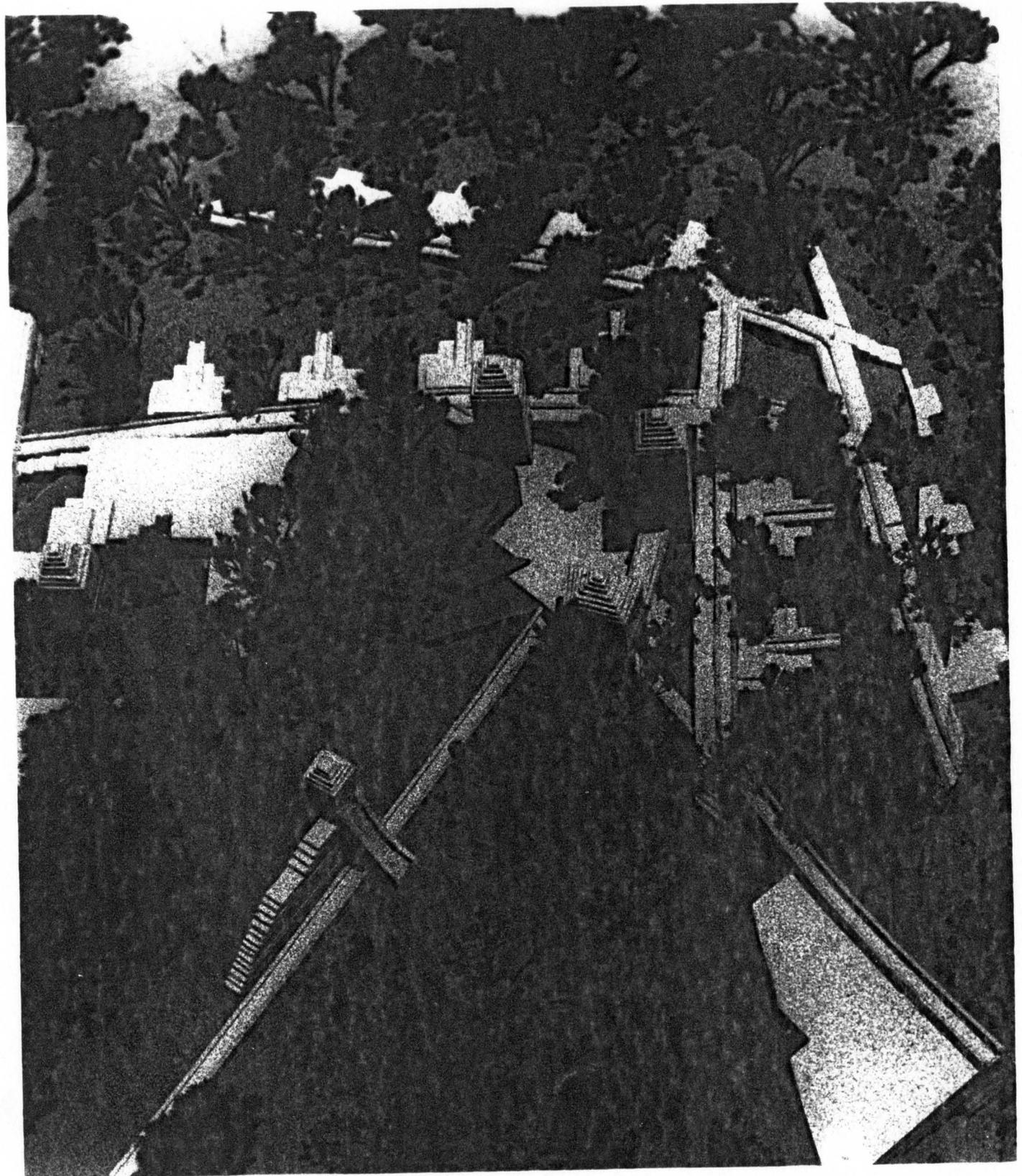


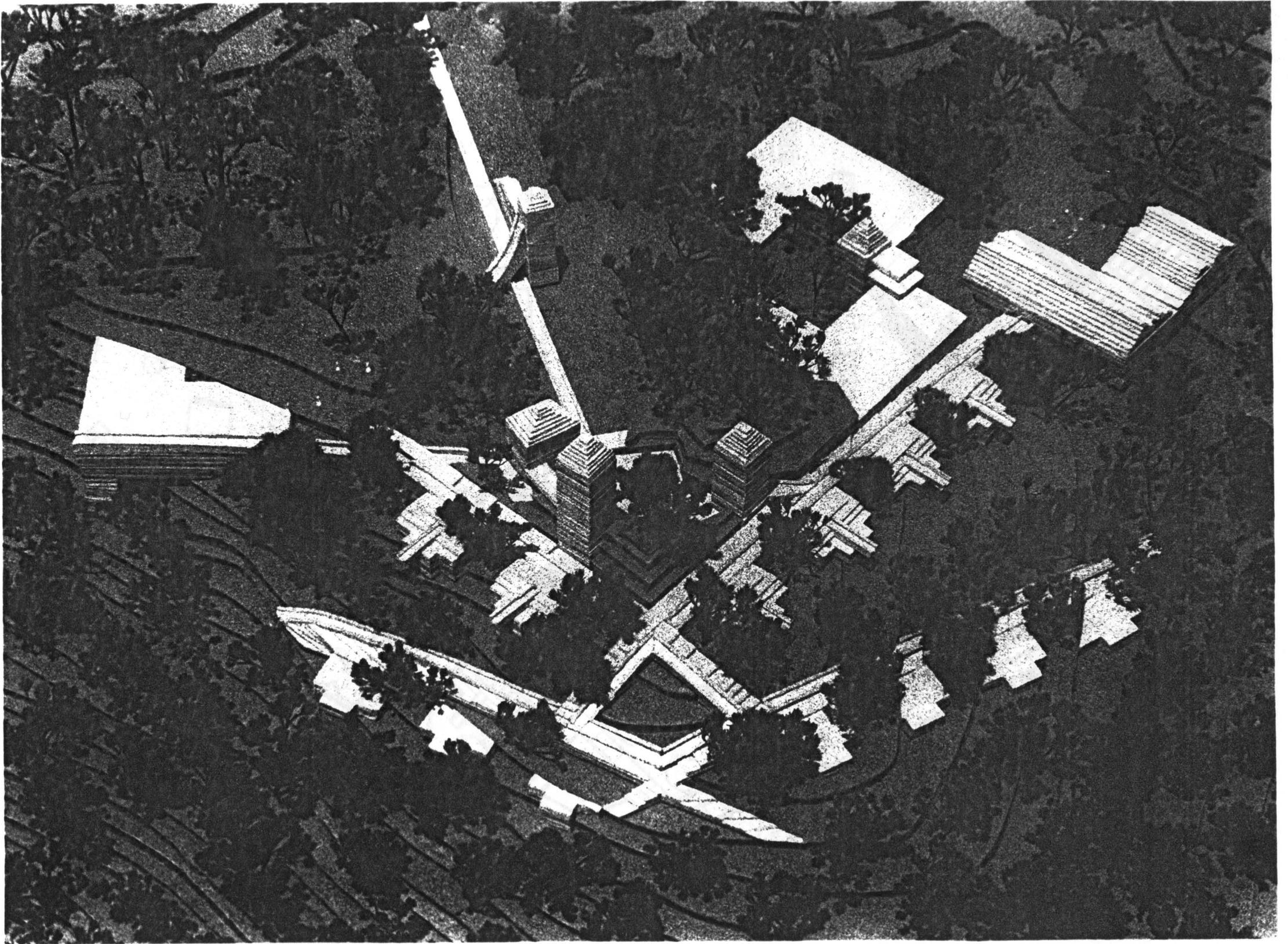
Both inorganic and organic ideas are necessary to design and give biologically pleasureable experiences to human beings. The human being is the measure, catalyst, and judge of architecture. Details are essential for human beings to feel good in a place. Form offers potentials for human experience. The Cubists conceive of a fourth dimension involving a context of time, movement, and several reference points and so space as delineated by planes is understood as organic.

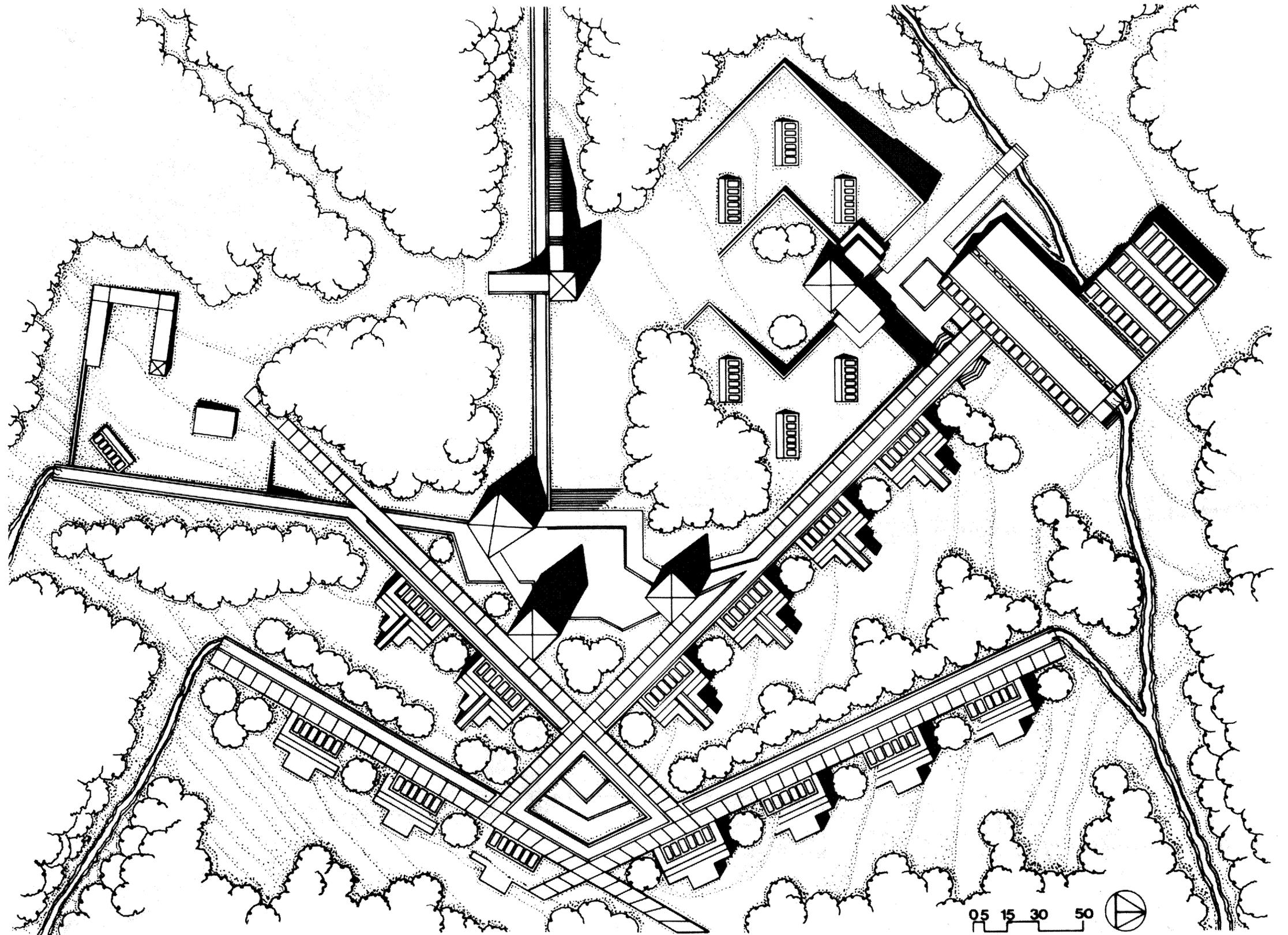
D'arcy Thompson states that "The effect of scale depends not on a thing itself, but in relation to its whole environment; it is in uniformity with the things 'Place in nature,' its field of action and reaction in the universe. Everywhere nature works true to scale, everything has a proper size accordingly, narrow range of absolute magnitudes. All measured in terms drawn from our own selves of our own doings."² Thompson states "Growth and form are of composite nature, every visible action and effect is a summation of subordinate actions. Mathematics combines and generalizes."³

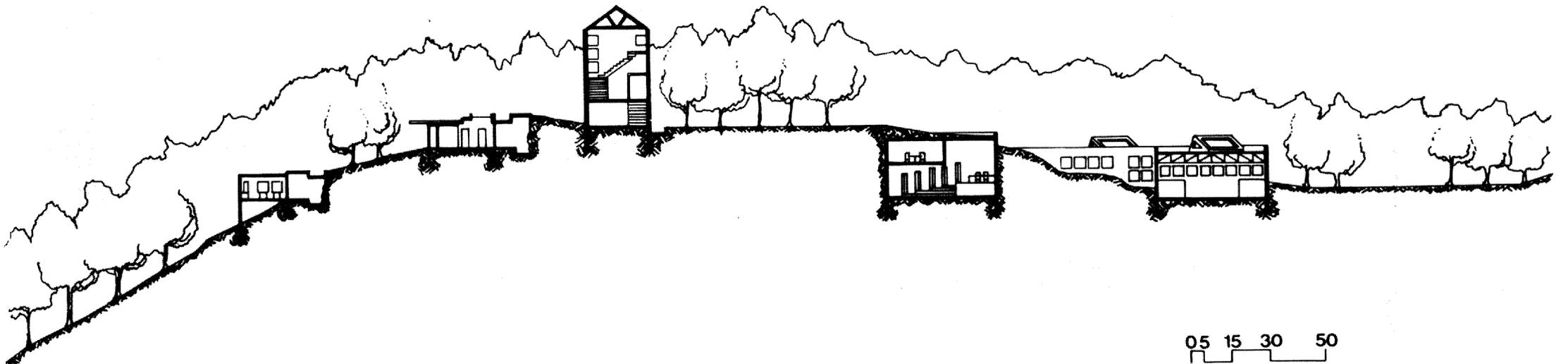
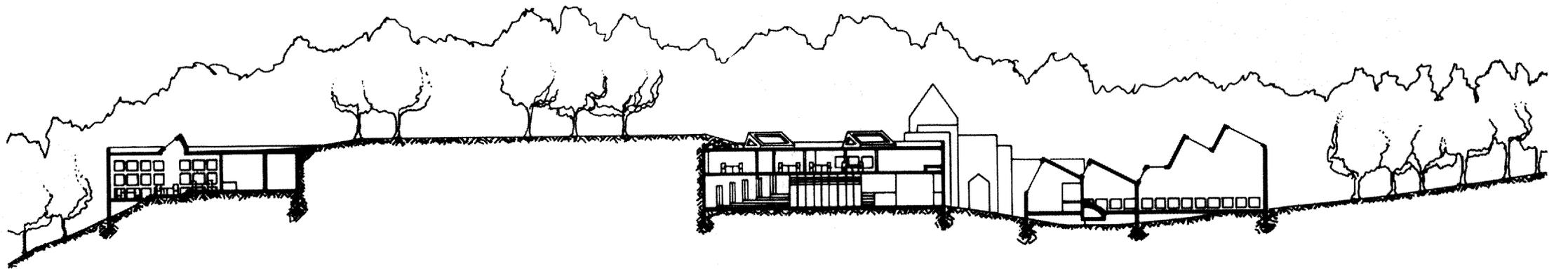
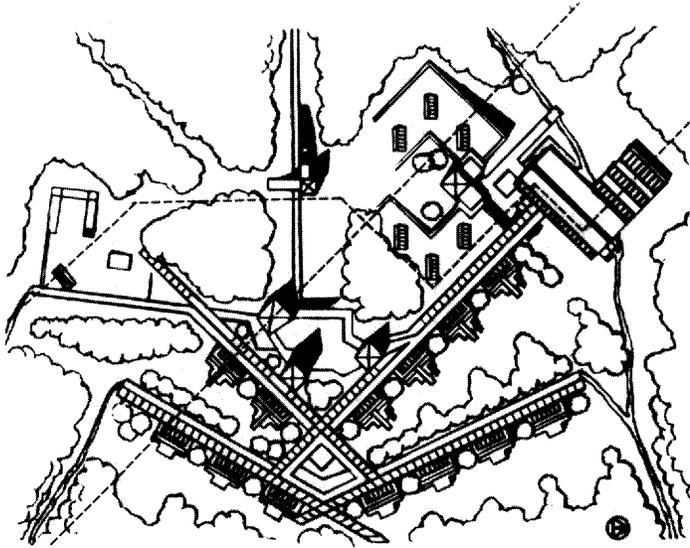
Structures and materials in nature answer to resistances and pressures as they occur. The principles of tension, compression, and shear observed from nature find application in the design of artificial forms. Nature tends toward flexible structures, while engineers design for rigidity. The constraints in mathematics in regard to organic forms, provide a framework to work with or against.

It is easiest to see harmony with nature in old villages. The archetypal symbols represent a strong value system. In primitive cultures nature and symbols were integrated. Nature was for the spirit and symbols embodied the notions of nature. Therefore, symbolic connotations took a higher priority over comfort and the various scales of buildings in older cultures symbolized the hierarchy in the social structure. Today nature is considered in terms of natural law and historic fact. Symbols are an intellectual process.

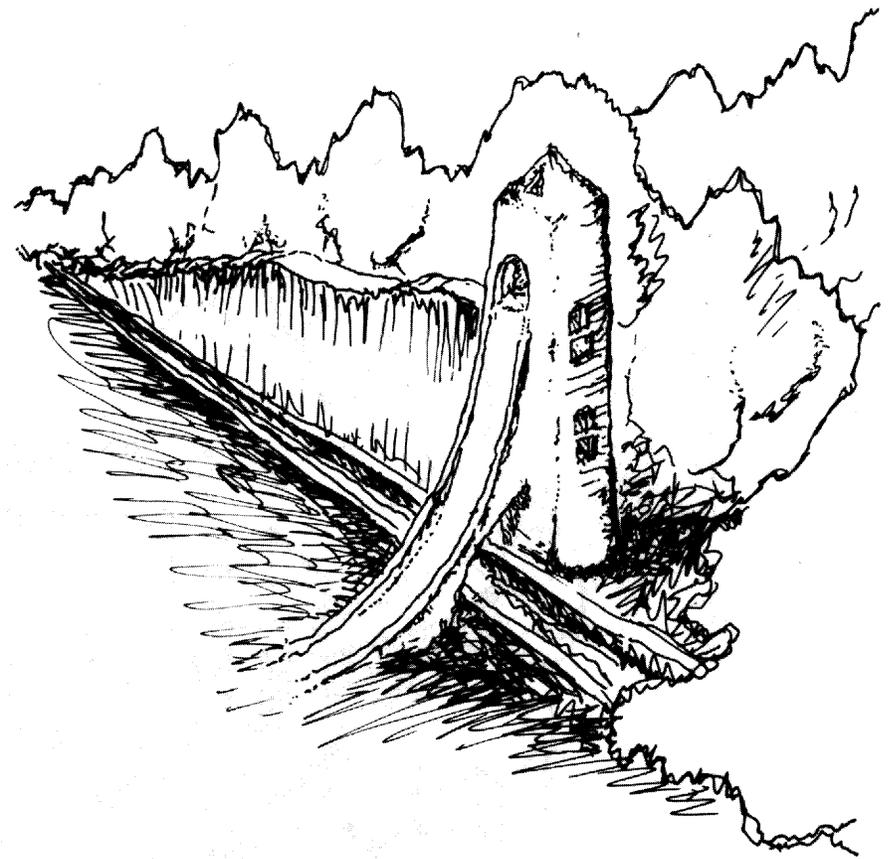
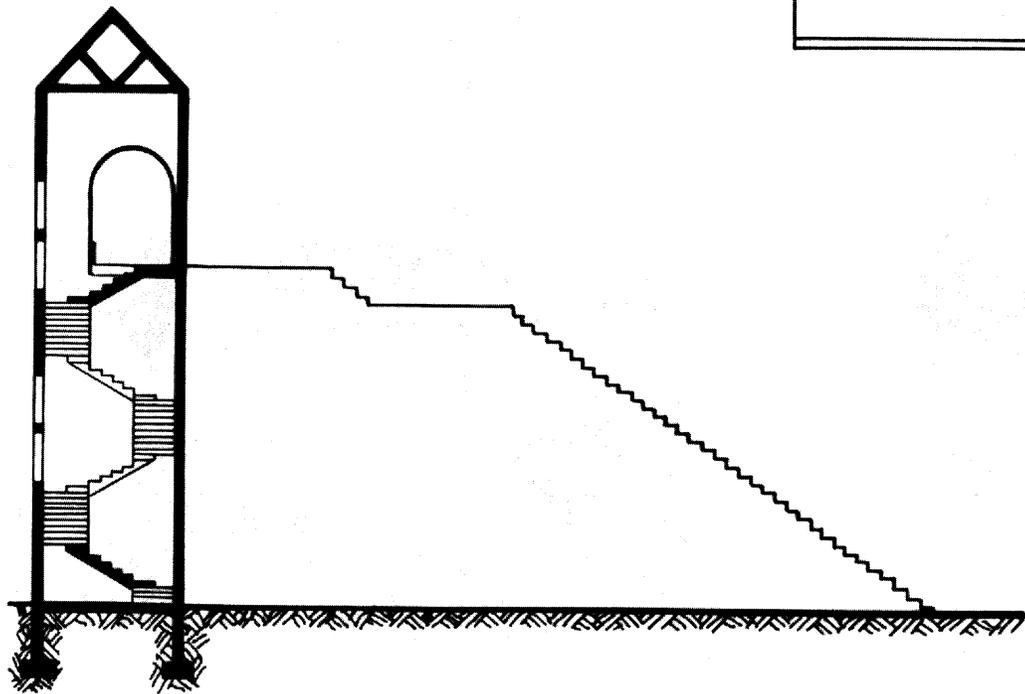
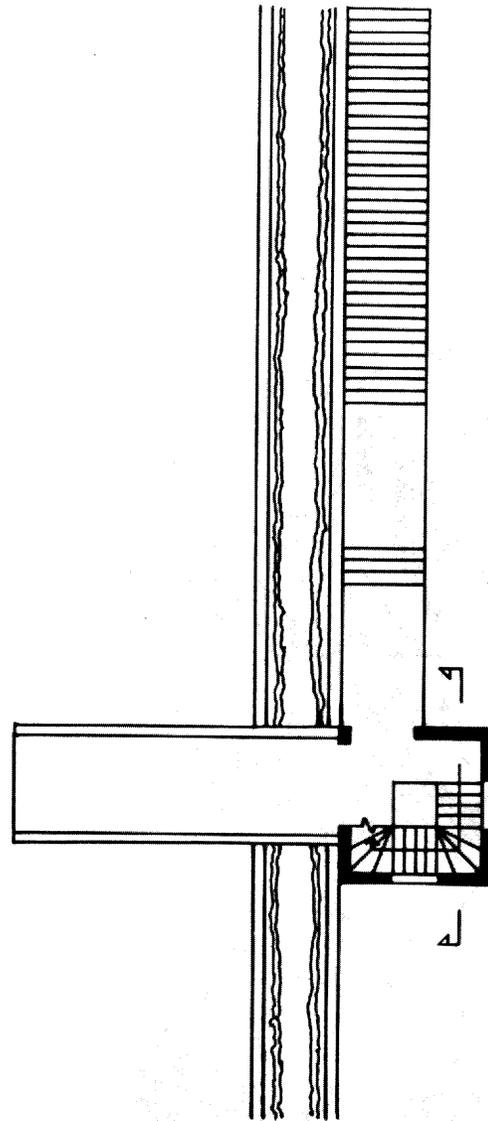
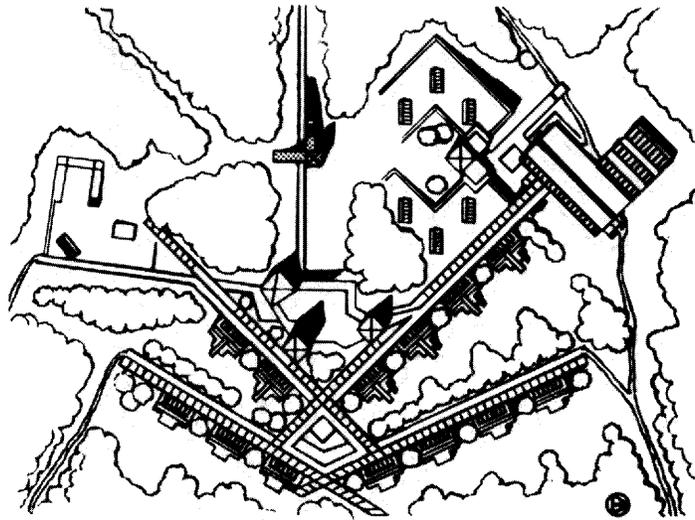








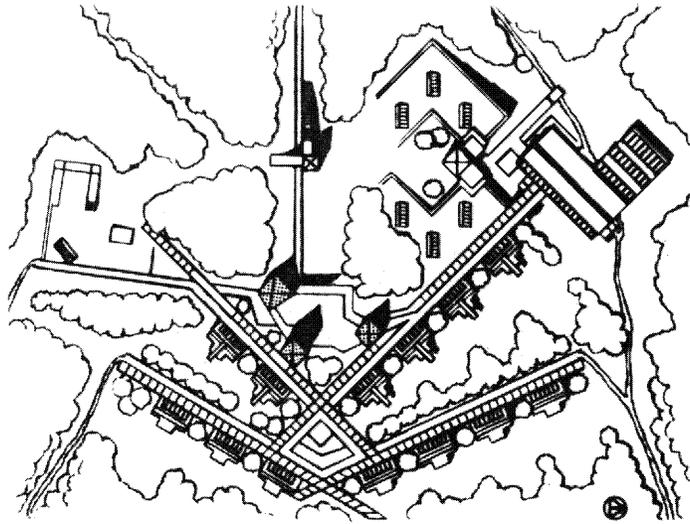
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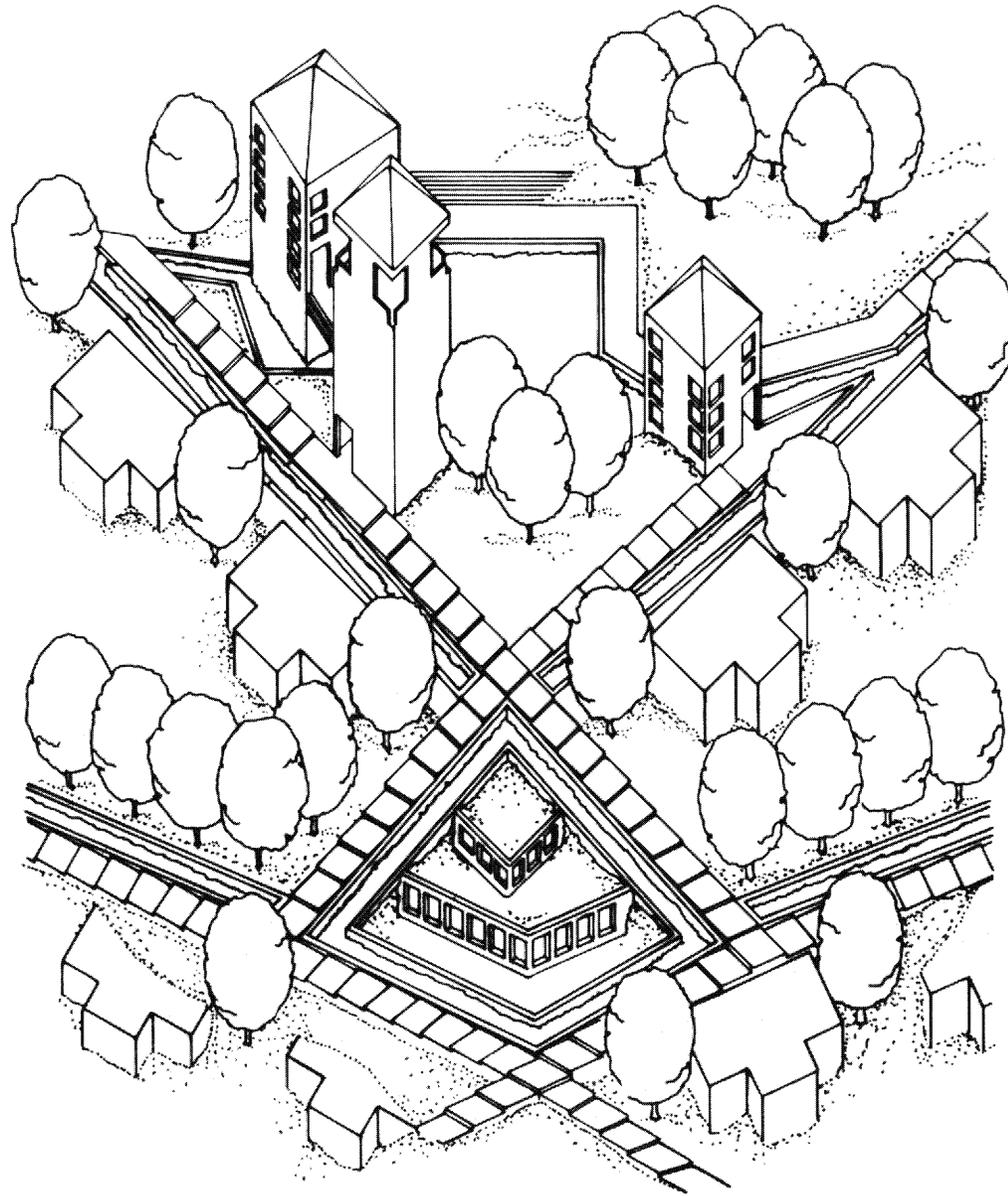
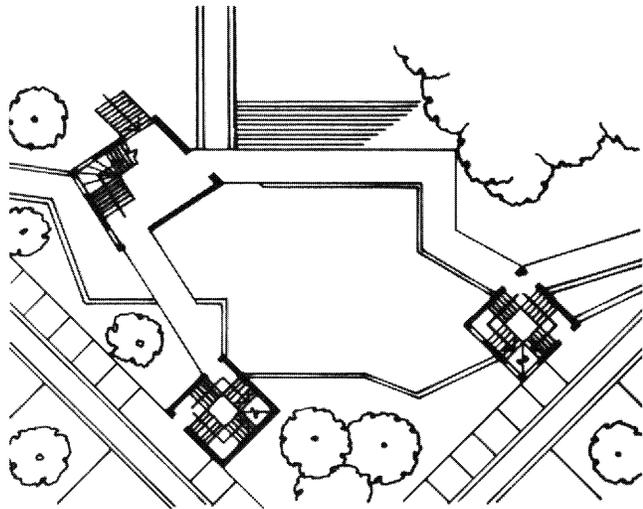
"The great step from fairy tale to myth is taken when not only social forces - persons, customs, laws, traditions - but also cosmic forces surrounding mankind, are expressed in the story; not only relationships of an individual to society, but of mankind to nature, are conceived through the spontaneous metaphor of poetic fantasy."⁴

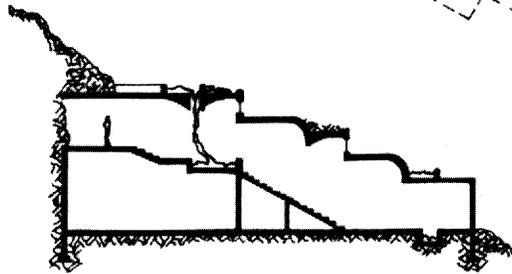
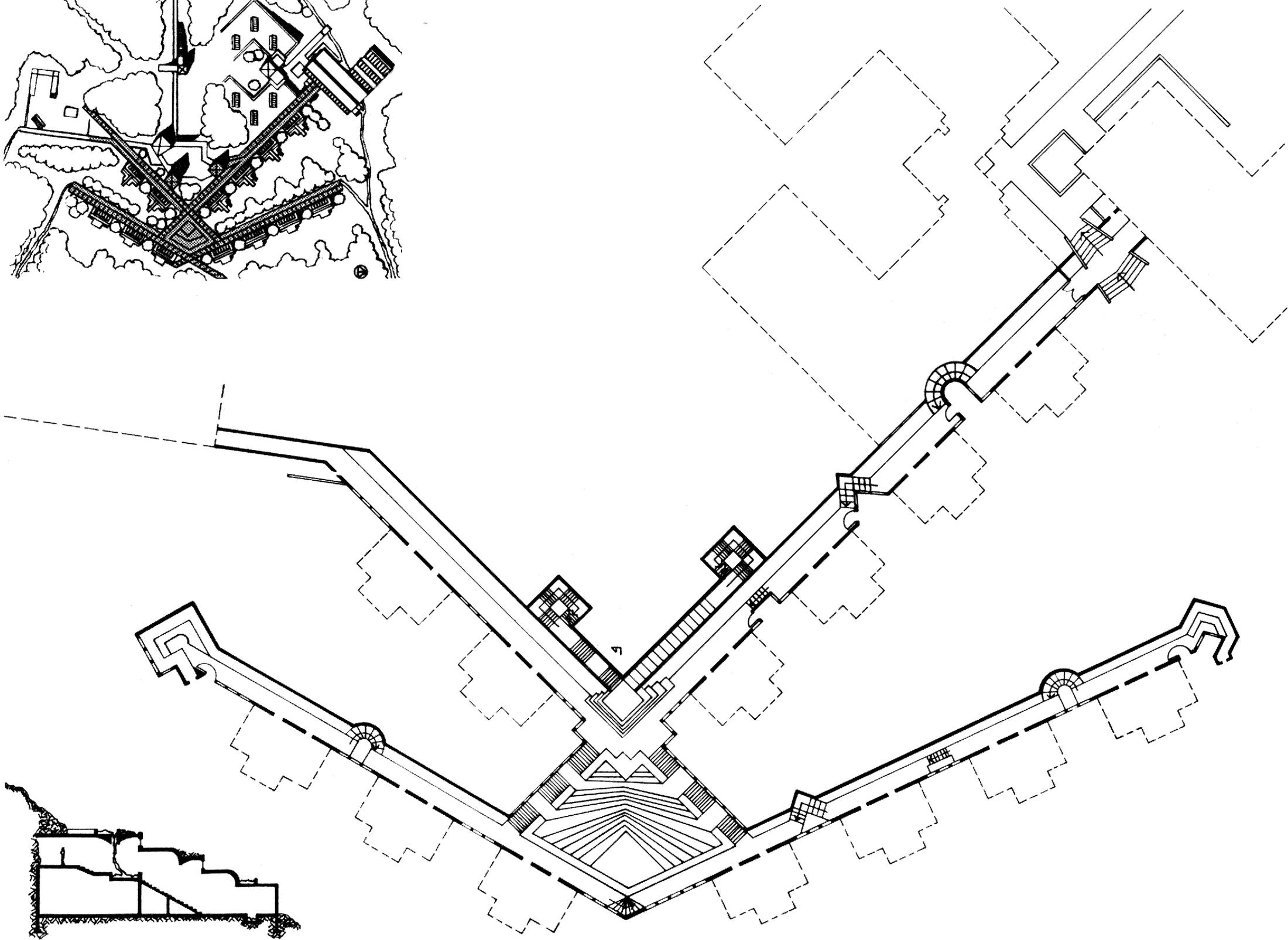
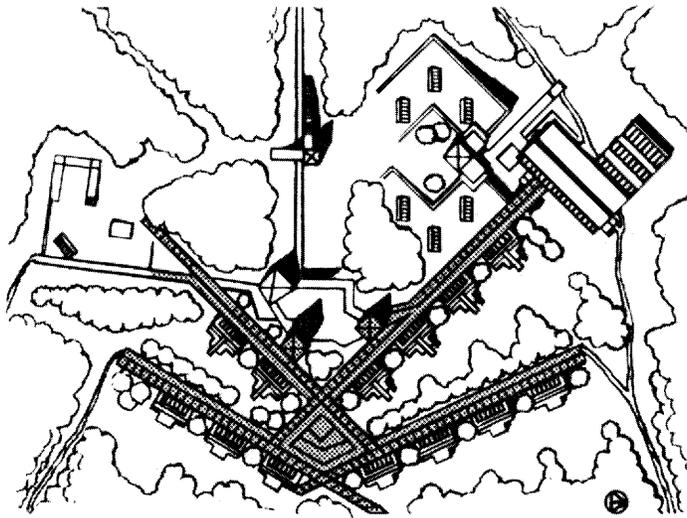
Practical meaning interferes with the direct emotional response of symbols. Art and architecture cannot be understood in terms of immediate knowledge of its function.

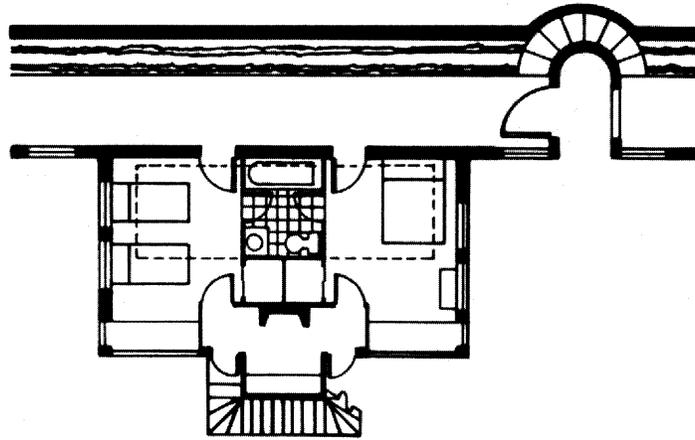
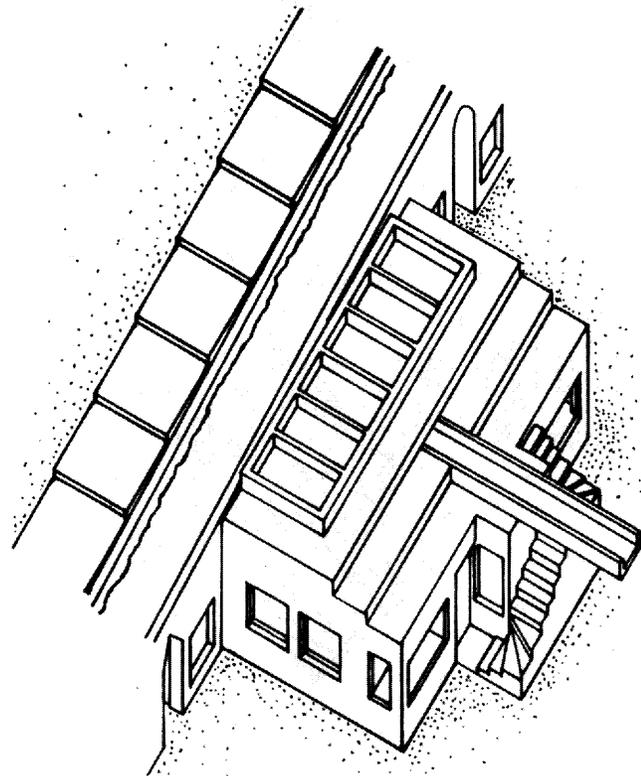
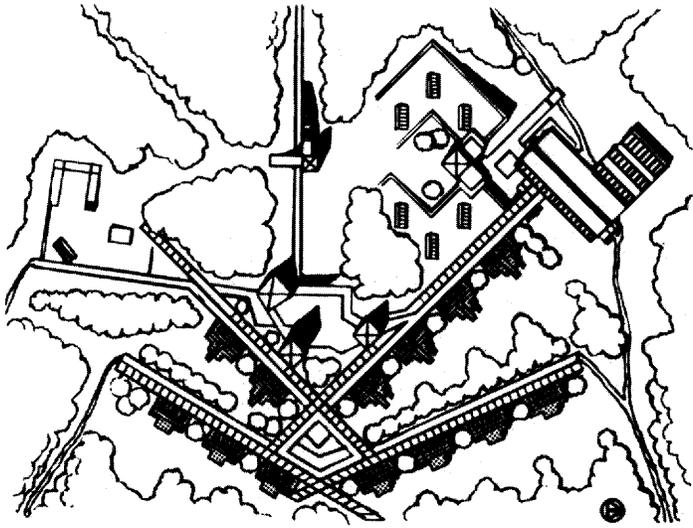
a tower to bring one closer to the sky and stars embodies the symbol for the elements of air and fire.



tower stairs lead up to
observation decks and
down to the earth
sheltered dwellings.

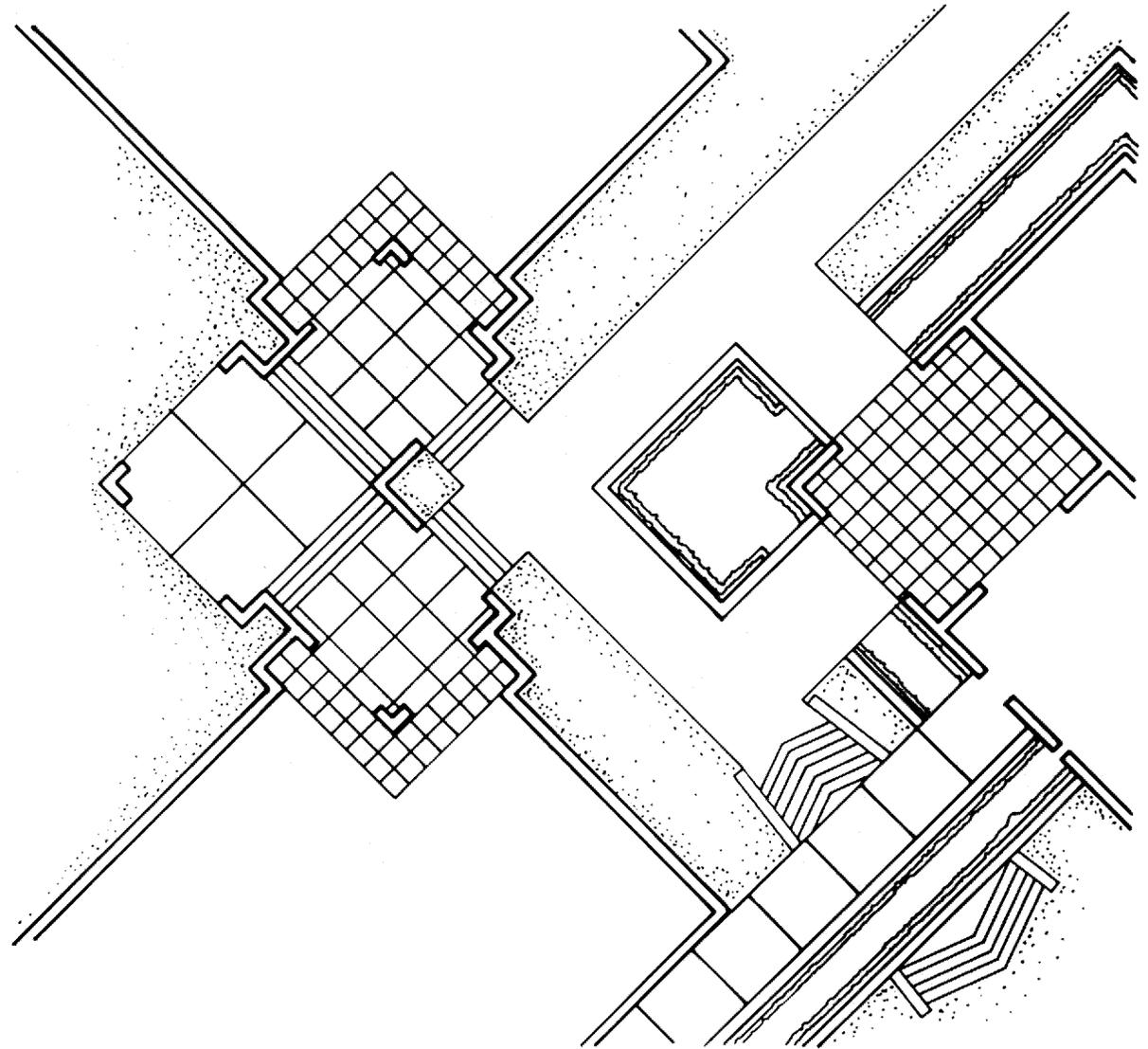
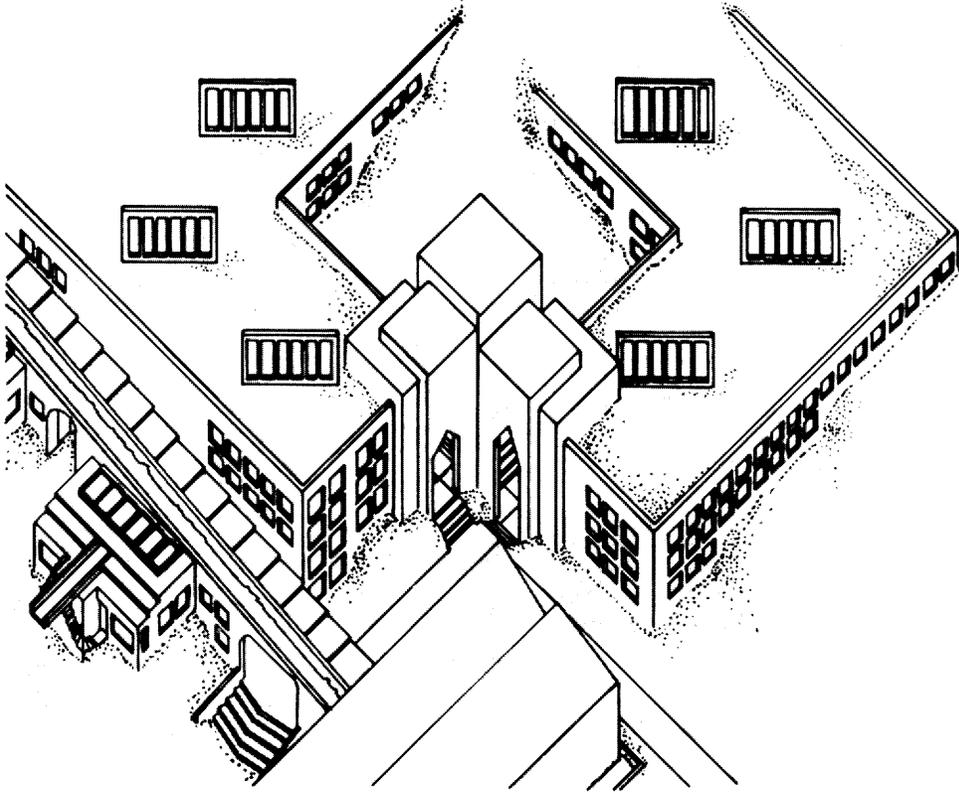
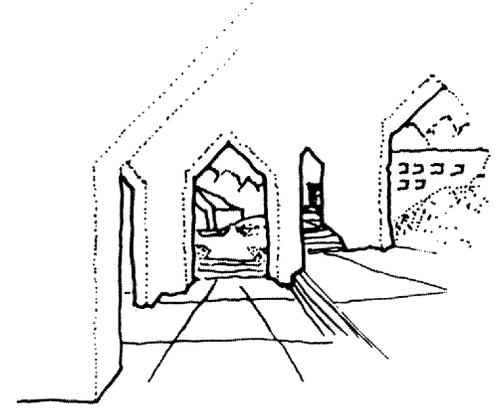
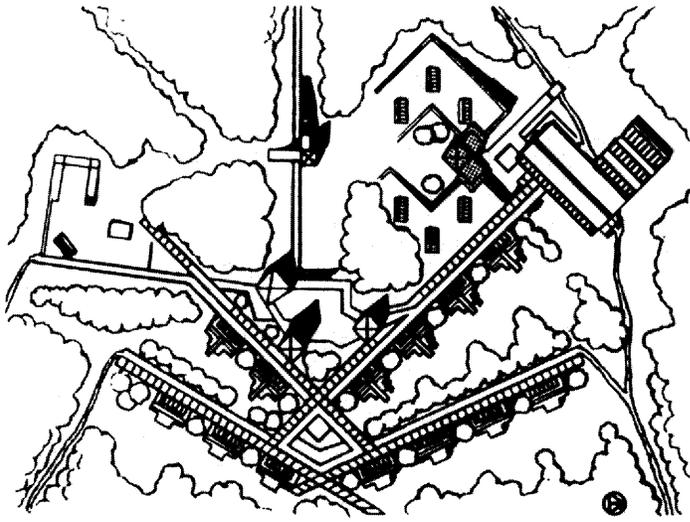


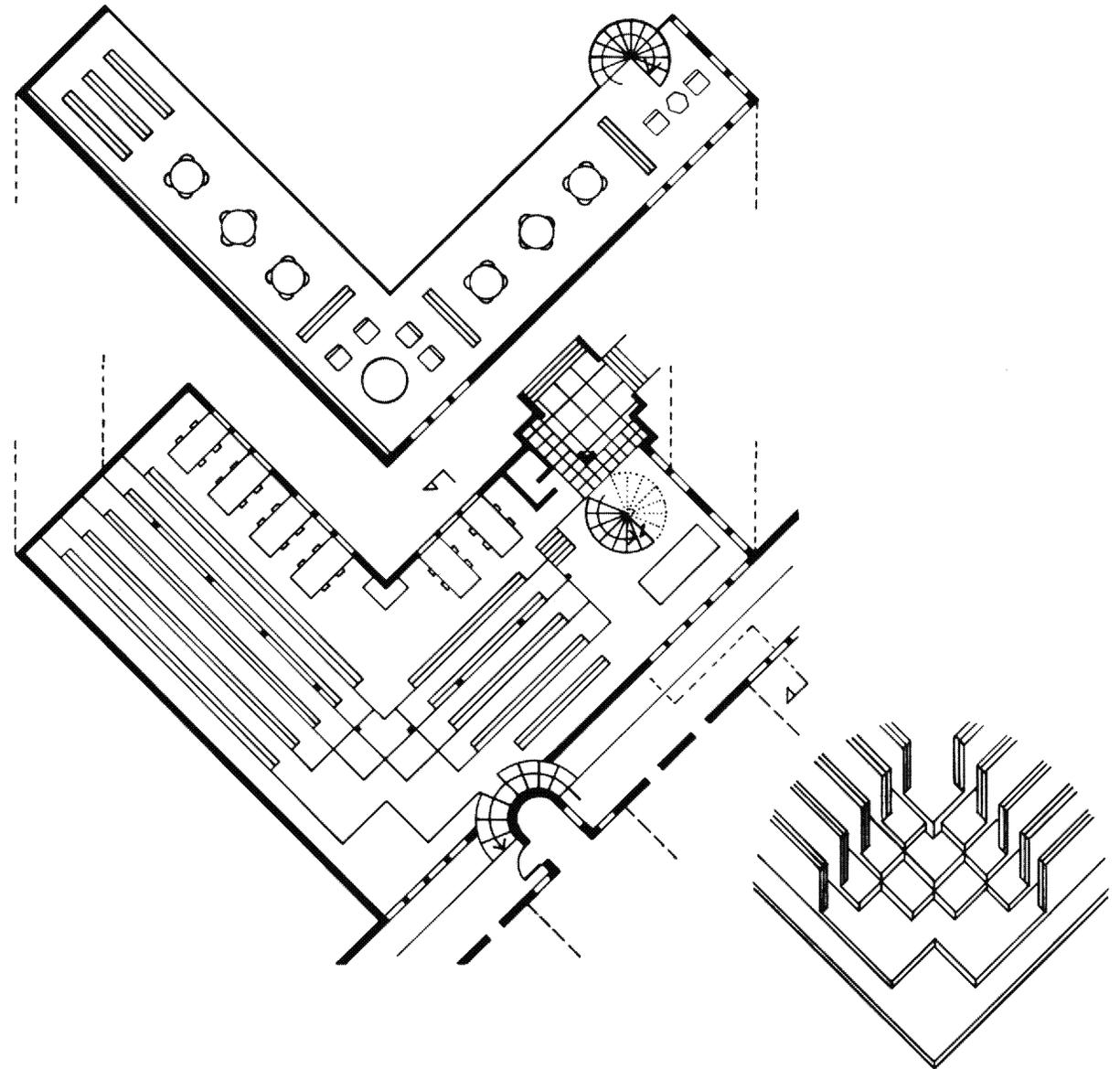
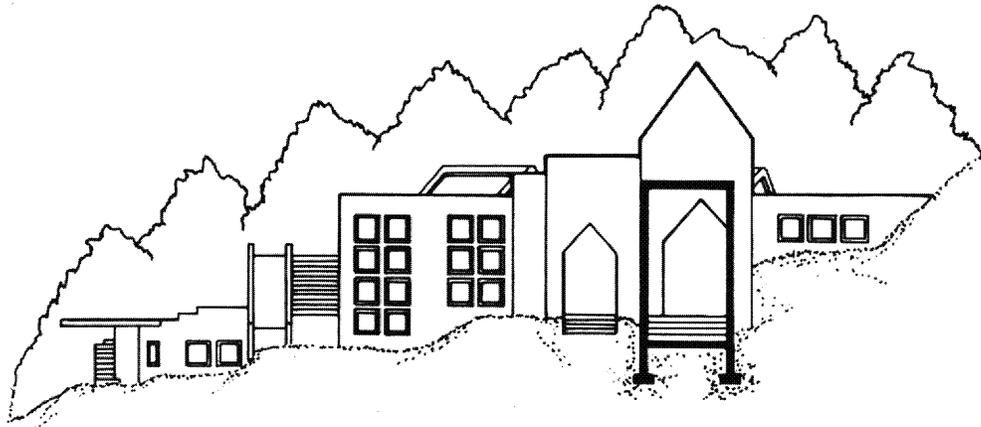
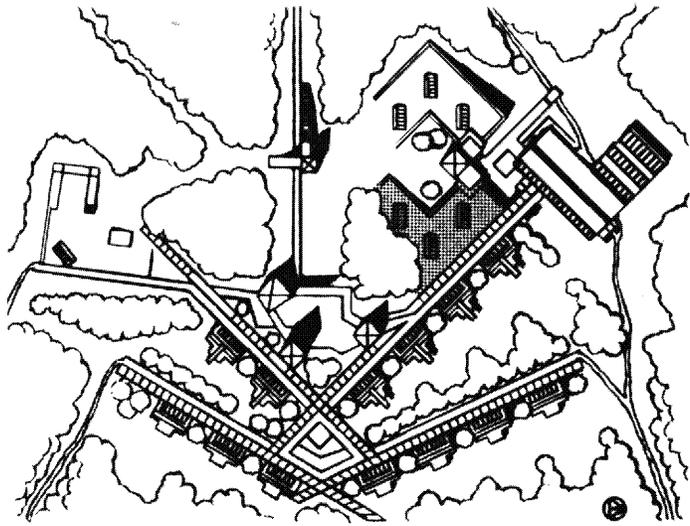


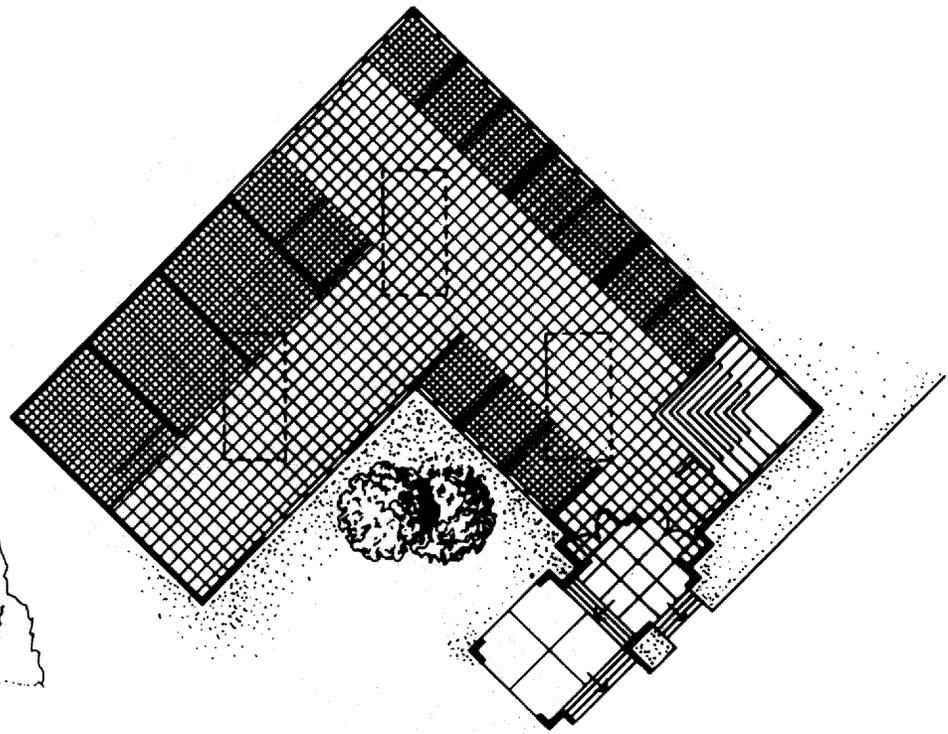
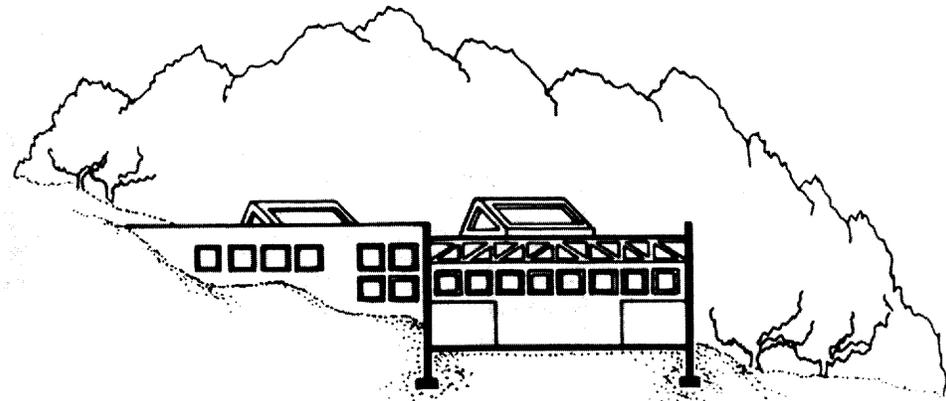
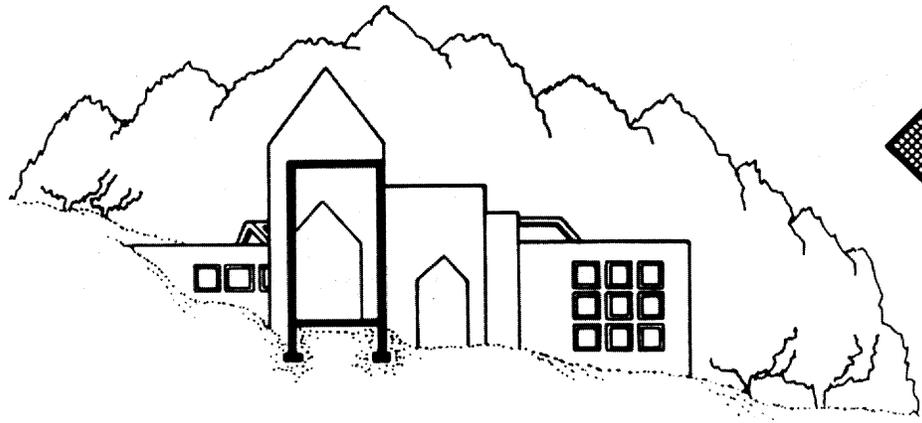
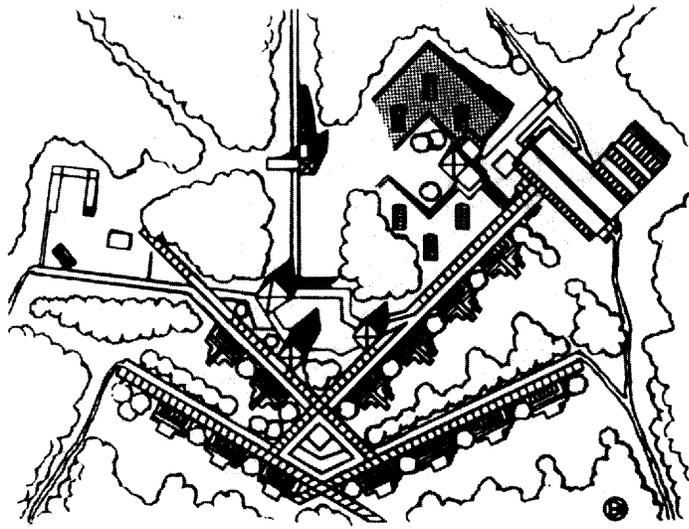


Buber defines man as

"The creature capable of entering into living relation with the world and things, with men both as individuals and as the many, and with the mystery of being which is dimly apparent through all this but infinitely transcends it."⁵

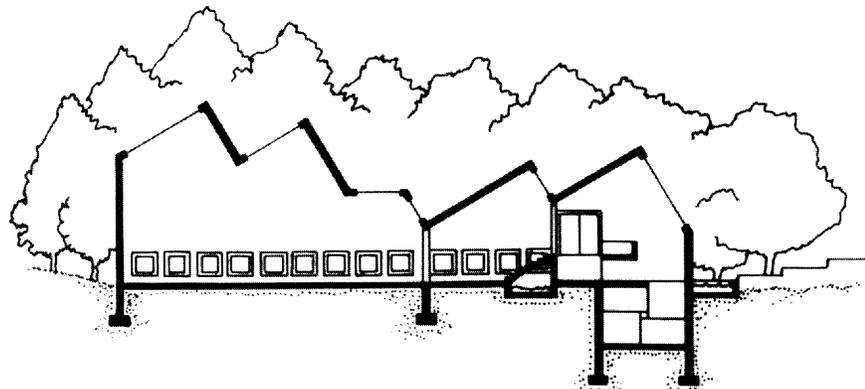
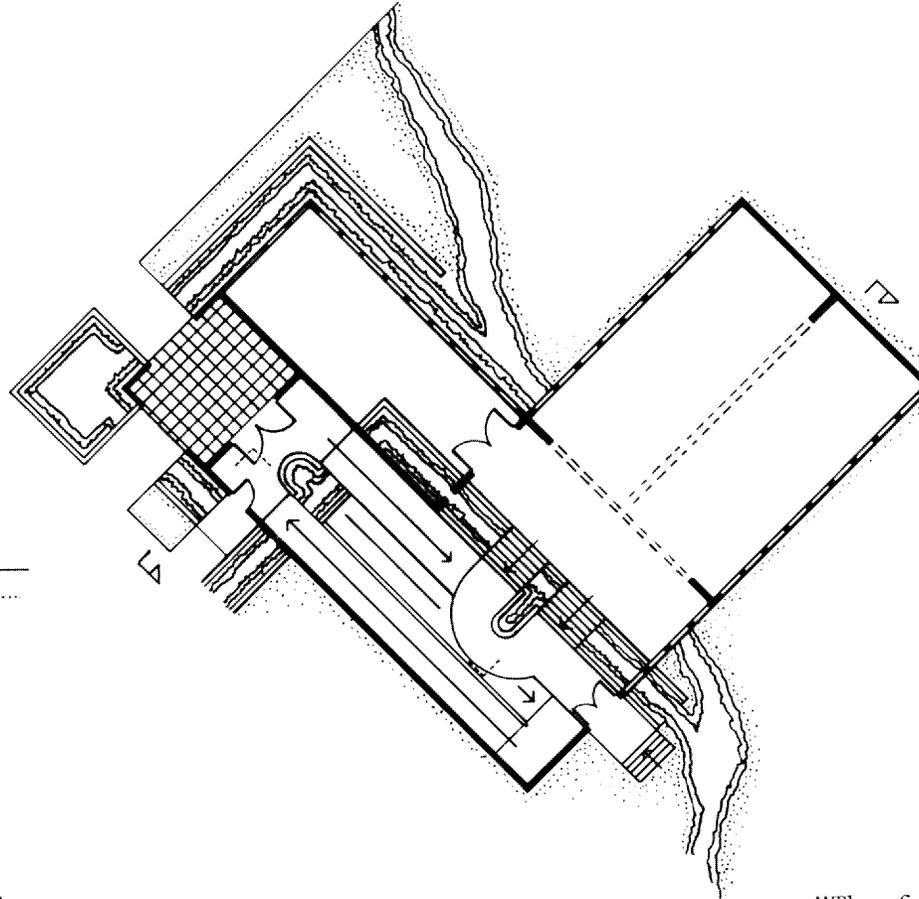
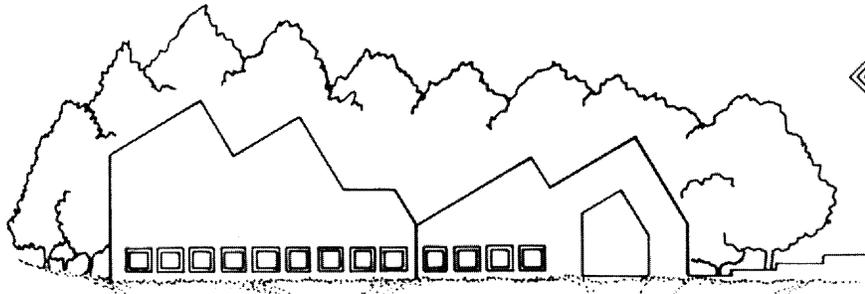
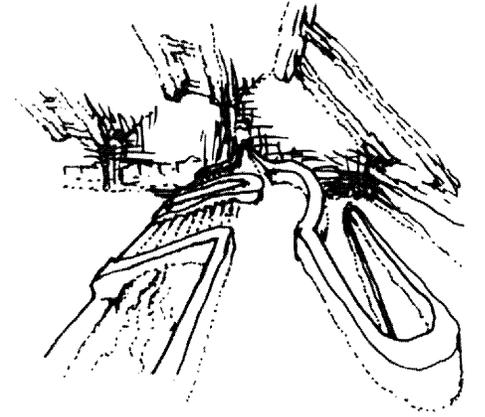
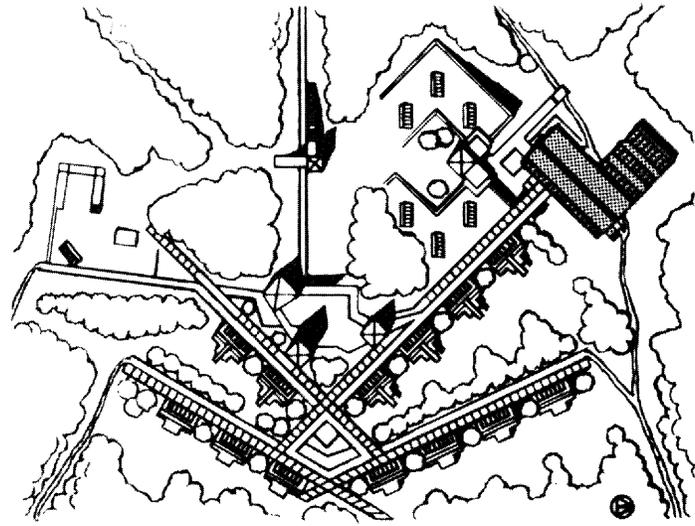




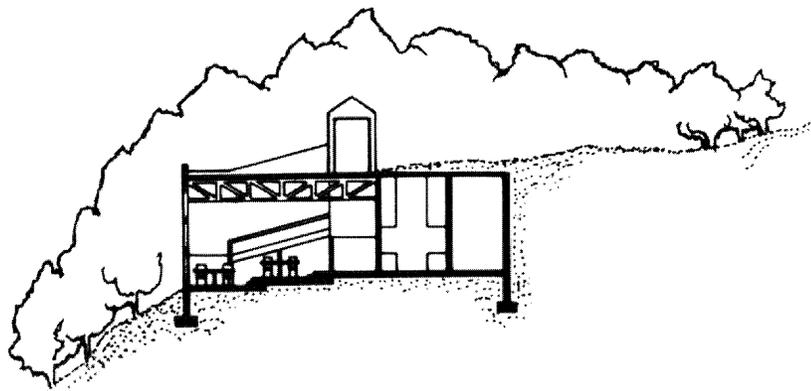
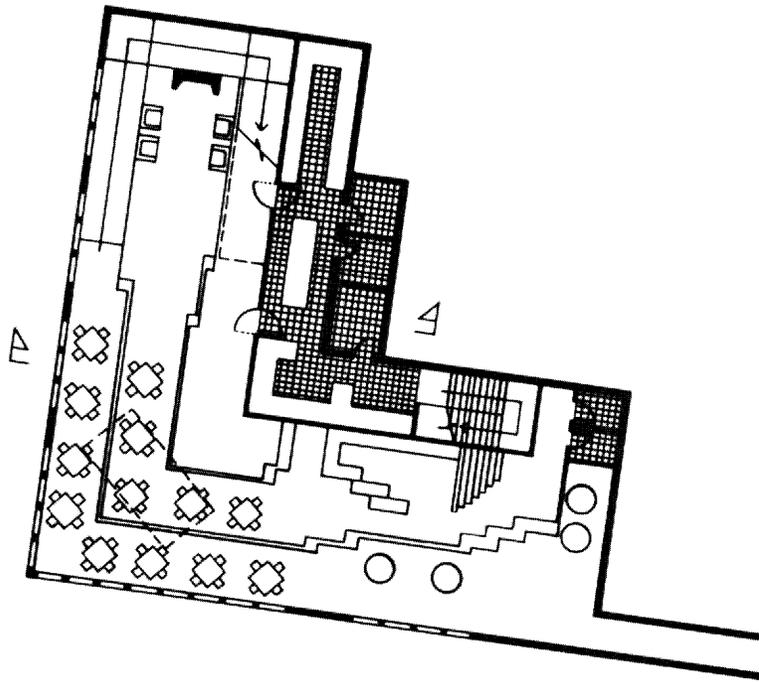
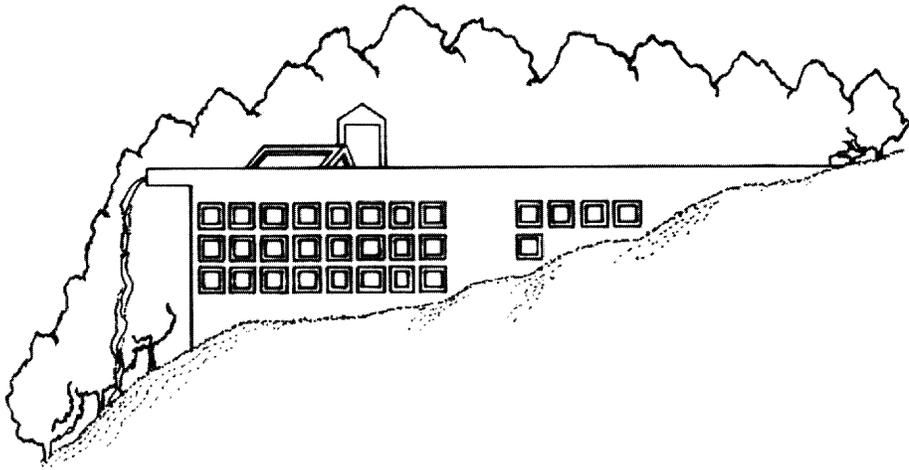
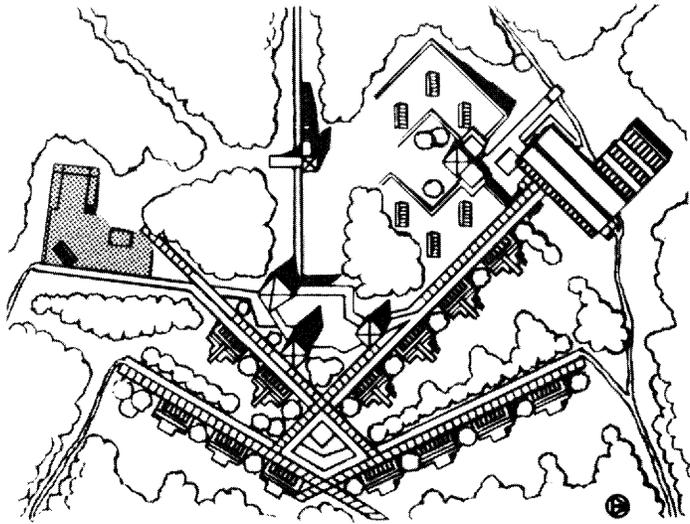


"Man innovates and thus fully expresses his humanness by responding creatively, even though often painfully, to stimuli and challenges."⁶

"Not the importance of the theme, nor the accuracy of its depiction, nor the fantasies stirred in the beholder, make a work of art significant, but the articulation of visual forms which Hoesun would call its 'melody.'"⁷



"The forms of expressive acts - speech and gesture, song and sacrifice - are the symbolic transformations which minds of certain species, at certain stages of their development and communion, naturally produce."⁸



"Free will can only operate where there is first some form of conviction."⁹

"Genius is childhood recaptured."¹⁰

CONCLUSION

Forms can capture our imagination and offer the promise of fulfillment. Potential is manifest in what is changeable and challengeable. Change and constancy as well as diversity and stability express humanness. Forms give insight and a sense of control to relationships among people, places, and structures.

Architecture uses symbols which evoke feelings - creating a place balanced in the middle of reality and the imagination. A building's symbolic value reveals its closeness with the artificial and natural environment. Architecture can serve to reflect the ideals and needs of society. Between the physical reality and the cultural aspirations represented by symbols, architecture forms the crucial interface. With an emphasis upon the natural phenomenon as the catalyst for a symbol and a generator of form, architecture will be more meaningful to the environment and to society.

FOOTNOTES

1. Suzanne K. Langer, Philosophy in a New Key, (Cambridge, Massachusetts: Harvard University Press, 1976) p. 227.
2. D'arcy Thompson, On Growth and Form, (2 ed., Cambridge, England: Cambridge University Press, 1959) p. 17.
3. Ibid., p. 270.
4. p. 180, Langer.
5. Rene Dubos, So Human an Animal, (New York: Scribner, 1968) p. 115.
6. p. 175, Dubos.
7. p. 251, Langer.
8. p. 49, Langer.
9. p. 131, Dubos.
10. p. 126, Dubos.

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AN INTERSTICE

by

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(Abstract)

In this exploration of nature and symbolism, catalyzed and expressed in architectural form, an environment emerges which provides both an intellectual and sensual world. These ideas are expressed on a general, architectural, and case study level. Nondiscursive and discursive thoughts have been applied in the hopes of bringing together people, architecture, and nature to make a place a whole.