

Chapter 8

Knowledge and Aesthetics

Artists experience knowledge which cannot be stated. The quality of artists' works is dependent on their knowledge. If we agree that their works are highly effective, then we must agree that so is their knowledge.

Systems and machines cannot manipulate the knowledge of artists, only consciousness can.

What we call aesthetic satisfaction is an increment of knowledge. A perception is a unit of consciousness dependent on the elemental triad (abstraction, concrete, spirit). Each unit of perception is accompanied by a feeling of satisfaction (noted page 22). This feeling of satisfaction is the basis of aesthetics and the basis of knowledge. This feeling is of the spirit realm. These increments of feeling are capable of evolution just as physical structures are. These increments are our knowledge and we build form from them as we are satisfied by them.

As an example, let's consider a child's perception of mother. This perception is a creation of mind. It involves abstractions of the relationship between the child's self and the mother. It involves the abstract grouping of the separate experiences of mother into the generalized group that is mother. This perception involves the concrete experience of the touchings of the mind and all the senses. As a child relates this data and creates the perception of mother, there is a feeling of satisfaction in the creation. This feeling of satisfaction continues at each perception of mother. (Perhaps this feeling of satisfaction is the shape that is the collective appearance to mind of all the subunits called mother.) This feeling is also the knowledge of mother. Some statement from this knowledge can be made in words, but the words lose meaning without the feeling. This feeling is also aesthetic satisfaction.

There is no unit of human perception that is without aesthetic satisfaction and knowledge. Knowledge and aesthetics may be experienced as well from the viewpoint of magic, miracles, and faith as from the viewpoints of ideas and structures (see elemental form wheel, page 13).

We are all artists dealing with knowledge and its evolution. Our consciousness is the only facility for this evolution. We can devise tools, books, paintings, formulas, laws, computers, etc., but knowledge and its evolution are dependent on the healthy state of our consciousness.

Our feelings are vital to the evolution of knowledge. Feeling and knowledge are inseparable; they evolve together. A low state of feelings is as poor as a low state of knowledge. We cannot leave poor feelings to develop refined knowledge, nor can we leave poor knowledge and develop refined feelings. Both knowledge and feeling are of the same thing.

If we mistrust our feelings, then we must develop them so they can be trusted. We cannot make knowledge objective and detach it from feelings because our feelings are poor and we mistrust them.

The paths to and from knowledge are not necessarily logical and structured. Knowledge is an organic form. It is rhythmic and gains impetus in ways similar to ignition or the flows of a river.

Artists and scientists both experience inspiration as a source of knowledge. They both try to encourage and maintain the flow of ideas and the stream of creative energy.

All people experience these things. We all recognize the vitality of the stream of inspiration.

Constant interruptions impede the flow of knowledge and inspiration. These interruptions take many forms. They are the overlays of mechanical grids we have made in our attempts for constant objective checking. They are the grids of our number systems, the grids of our cities, the grids of our specializations, the grids of our testing and learning systems, the grids of our time systems, our clocks and work schedules.

While organic design is unitized, the units are perceptive, rhythmic, flowing, and subjective rather than ridged, constant and objective as are grids. We must judge knowledge against real form, the organic units, not against the mechanical form of grids. The grids often give us the impression of gains in knowledge when there is only the complication of the overlay of grids. Without the grids we often feel lost because we are then faced with our own ignorance. We must learn to be inspired, perceptive, fully conscious, and we must face both ignorance and knowledge.

The definition of both knowledge and aesthetics in a single entity and its organic nature, spiritual setting, and conscious form is vitally relevant to organic form building. Though the actual form built is conscious form and is in the mind, the external form we build and the process of external form building are important parts of our experience.

We need to see this external form building in terms of its organic patterns and realize its educational and evolutionary potential. We need to find and use organic paths to building form.

We are physically limited by the state of our consciousness. However, we have been able to build extensive physical form by systematically applying externalized principles. They have substituted for a live conscious building of form. Though we are now dependent on this physical form and its processes, our evolution must be toward an increase in conscious knowledge and power where we accept the responsibility of consciousness and are not dependent on mechanical systems.

When we build with systems that allow the workers to be unconscious of the form and process, where workers don't need conscious creative knowledge, then we inhibit our growth even if we increase our physical abundance.

We are all such workers and must accept our responsibility for growth. We must extend the limits of our consciousness..

People need to be told, "If that's the best you can do, then do it." That is the only way to get better, not by giving in to another person or a system. Give in to consciousness! Learn patience, relax, give in to inspiration, have faith, recognize substance, live, rest, return,

The next section deals with some applications of the theories of this section.

The essential theoretical concepts of organic design have been stated in the previous chapters. The task now is to discuss their implementation in the structures of our civilizations.

Certainly we cannot immediately change all existing structures which are not in conformance with organic design. The existing structures even with the problems they cause are performing for us, and changing them is an evolutionary process. This change will take place as we embrace more healthy perceptions. The following chapters provide suggestions for the performance of this evolution and further clarifications of specific applications of organic design.

Chapter 9

Designed Objects Placed in Our Natural Environment

Now we begin some considerations of the placement of objects of our own creation in the world of nature's forms. These object forms range from simple tools to whole cities, and from relatively static forms in solid materials to the relatively dynamic forms of events, schedules and systems of thought.

Our main focus in this consideration is on the objects of our homes, jobs, and cities. These objects which we create in our environment are not isolated theoretical forms. They are forms which exist in the context of other forms and systems. We need to understand these forms we build in context with the other forms of which they are parts.

Three major forms that we build in our environment are: (1) the system of physical structures, (2) the system of consciousness, (3) the system of evolution.

The System of Physical Structure

The physical structure is the whole complex of physical relationships of our environment. In this area of form our structures have excelled.

Our physical sciences are effective studies of these relationships and we are effective in our physical engineering.

However, our physical structures have been directed primarily toward the abstract pole of the elemental triad, while nature's structures are more centered in this triad.

Dealing with our structures as processes and relating these processes to our own physical form will cause our structures to be more centered in the elemental triad. Our structures need to be affected by particular variations and find value as they relate to spirit functions.

Our structures need to relate effectively to the physical processes of geology, biology, and ecology. We need to be sensitive to the physical insertion of our structures in these systems at the particular sites where we build or place them. These physical objects which we place in our environment should be of benefit to both us and the systems of the sites.

We can find many examples of our physical structural insertion into nature's systems from dams to cities to automated factories producing throw-away cans. The success of these structures needs to be decided in a broad perspective which considers their harmonious integration into the physical systems needed for the support of evolution.

The System of Consciousness

The insertion of an object into our environment has more than a physical effect. The object exists not only as a physical structure but also as a percept in our consciousness. It becomes a part of our experience.

The perceptual form of mass production exists in our consciousness along with its physical counterpart in the physical structures of our technology.

Our consciousness operates as a developmental process where through experience awareness of the forms of our environment increases. Our ability to function improves as our conscious awareness of our environment (the universe) increases. Our form building is a learning process which facilitates our development from our early unconsciousness to our developing universal consciousness.

Most of us experience environments in which the objects we have created dominate, and some of us experience environments almost totally created of human-made objects. Because these objects are so dominant, we need to consider carefully their effect in the system of our consciousness and the process of its development.

It seems that the quality of the objects we place in our environment can enhance or impede the educational process of the development of our consciousness. This is because they reflect our percepts and also because our experiential interactions with them form a continuing platform for the process of developing new perceptions.

It seems we have two safeguards in assuring our conscious contact with natural form. The first is to continue to leave part of our environment in a natural state and to enforce some experiences with it. The second is our habitation of the natural structures of our own bodies and minds. We have only to see ourselves to maintain contact with nature. Our consciousness is at the threshold of inward and outward experience. We can look inward to the natural structures of the mind. We can consciously penetrate the past levels of natural evolution in us. We can consciously experience what was unconsciously formed in natural processes. We can also imagine the future as a continuation of these natural processes.

We need to avoid cluttering our environment with objects which impede or mislead our development. Rather, the objects we produce should form a

bridge for our developing consciousness of increasing complexity and increasing penetration into the realities of nature, which we at first did not consciously penetrate. Objects which are conceived of all three elements of the triad will nourish the procession of our consciousness.

The System of Evolution

The objects which through our design and production we place in nature are not actually live parts of natural forms. They do not directly join in the organic systems of nature. They are neither directed nor supported by the consciousness of nature. These forms, in their production processes or in the space they occupy, are often destructive to highly evolved natural forms and systems.

These forms which we produce are valuable only to us as a part of our educational process. The role of these objects seems to be in allowing us to externalize the steps of our own perceptual development which is the evolution of our consciousness.

We risk two dangers from the objects we produce: one is that these objects will pollute the more highly evolved forms and systems of nature, and the second is that these objects will become shelters screening us from the very experiences we need in nature's systems which can stimulate and shape our continuing evolution of consciousness.

A successful approach to the use of these objects seems to be that we control them to provide the momentary shelter we need but continue the amount of exposure we can survive. We need to balance shelter with exposure till our consciousness evolves to a state high enough to survive direct exposure to nature.

Perhaps we cannot logically know what environmental conditions are most fruitful for evolution, but we can know that a totally logical environment cannot evolve or provide an environment for evolution.

We do not yet know what we eventually will become. The process of evolution will take us there. Our future evolution is a process beyond analysis. The structures of the natural world are a fertile place for the enactment of evolution. We must be careful that the structures we build will not abridge this fertility. There need to be some unplanned objects in our environment, or evolution won't work --- to trick the system into doing something new and unexpected.

Chapter 10

Our Need for Stability and Diversity

We are between the realms of the abstract and the concrete. These translate to stability and diversity, respectively. We consciously measure form by comparing our perceptions of these two realms. The realm of the abstract is that of stability, generality, and geometry. The realm of the concrete is that of diversity, particularity, and randomness. (See chapter 2 for more comments on the form wheel.)

We can perceive stability and diversity in all form; this is the nature of our consciousness and the nature of form. We can control both our designed forms and our conscious attention to put emphasis on either stability or diversity. Extreme diversity agitates and frightens us while extreme stability bores and dulls us. Either extreme can cause decreased ability to function. A form or a conscious perception can embody both extreme diversity and extreme stability at the same time. Such forms and perceptions are extremely fertile and extremely satisfying.

One of the major modifications we have made of our natural environment is to provide greater stability of vital resources. We have provided for stability of protection from all kinds of aggressors.

These stabilities seem essential to our civilization; however, we have extended them in greater proportion than is needed and to matters which are not clearly essential.

Stabilization is easily transposed to standardization and we are standardizing everything.

In our original natural habitat there were many diversities. The land was often hilly and rocky and filled with supplementary, complementary, and competitive organisms. We were more reactive to these various forms than we were active from our own centered consciousness. The development of our cultures has often been the stilling of these variations.

We have flattened the land, dammed the rivers, channeled the drainage, caged the animals, plowed the fields, hybridized the plants, sterilized the surfaces. We have measured, counted and systematized all structures and processes. We have cataloged all actions, all behaviors, all variations. We are all predictably happy or unhappy.

Though we have needs for stability, we also have needs for diversity. We need the germination of unpredicted ideas out of random ferment. We need the stilling of our logical analytical faculty through miraculous flowering out of intimate contact with mysterious and unknown variations.

We need the stability of perceptions which can unify all variations. Our imagination and energy needs to feed off the thrill of countless diversities.

It has been a misjudgment that we seek to develop greater mechanical stability when we need to develop greater perceptual stability instead. The greater the diversity we can handle, the greater is our perceptual stability and our centeredness and our consciousness. An environment which is mechanically stabilized discourages the development of this perceptual ability.

Chapter II

Mechanical Forms in Our Environment

We must now recognize that our geometric and mechanical structures are a form of pollution in our natural environment.

These structures are acceptable as a part of a learning process. This process can operate by controlling the degree of our direct involvement and competition with the other forms and organisms of nature, as a flat plane protects us from interruptions and a shelter protects us from the weather.

Our progress should be toward eventual conscious unification with the natural environment rather than toward isolation secured through mechanical structures.

Mechanical structures have no value to us other than the part they play in this learning process. What has value to us is the strength of our consciousness to experience and know the forms of nature.

We can be protected by structured mechanics to survive so we can be thrust back into the natural experiences needed for the development of our consciousness. Mechanical structures can also serve as a testing ground for our logical intelligence.

We must guard against the desire for too much security and too little challenging experience. We must expect more from ourselves than slavery to our own mechanical systems. Our factory workers, tradesmen, and accountants must be freed. This is true of all others who are being used as components in our mechanical systems. At this time many of us would not survive much freedom. We need to develop the conscious strength to flourish as free people.

We need to regulate our mechanical systems to insure that they provide a path to greater consciousness.

Of course, conscious unification with nature for most of us is a long way off. It will not likely occur in these bodies. The statement concerning conscious unification with nature is to show the direction of evolution. And it is a warning not to become finally dependent on our mechanical structures.

Many of the mechanical forms we have created are truly helpful, such as, the extensions of our senses and limbs through tools which enrich our lives.

However, many mechanical forms have potential for enrichment or enslavement depending on how they are used. Mathematics, the abstract basis of mechanical forms, is enriching or limiting depending on how it is used.

The limitation of mathematics is that it is unable to make a touching correspondence with real form since mathematics is imagined form and conceived purely of the abstract element. Mathematical data parallels the abstract element of real data, but it is not real data. To know something mathematically is not a complete knowing as is knowing in real experience.

Expecting reality to conform to mathematical standards is limiting. Shaping our environment after mathematical models severely limits our experiences.

Mathematics is enriching if it is used as a tool to learn about the abstract aspect of form.

Two main types of mechanical structures we are building which have great potential for enrichment or enslavement are our city systems and our computer systems.

If these mechanical systems are to become paths to greater consciousness, we need to shape them to serve human needs rather than be hypnotized by their mathematical beauty.

Cities provide dense structures which allow people close contacts encouraging actions in concert and enriched experiences. This can be a path to greater human enlightenment.

While dense city structures need efficient organization to provide the necessary services, this efficiency can create severe limitations of choices and experiences.

As an example, the mega structures we are building need to provide more environmental variety than the space of a single module repeated continually throughout a whole building. The mathematical beauty of these structures can be appreciated. The experience of them even has its own hypnotic beauty, but they are mechanical imprisonments shielding us from organic realities. They need to be regulated to interact with organic forms.

The same criticism can be made of our computers. They are mathematically beautiful but severely limit our choices and experiences. They manage form well for us but tend to condition us to believe that no other form exists. How often are we told that we must be in error because computers don't make mistakes? However, computers deal with purely mathematical form which is not the form of real experience which we deal with. We must be careful to regulate computers rather than allow them to regulate us.

Chapter 12

Organic Methods of Designing and Building Our Environment

Buildings are performed through processes which involve the activities and perceptions of the builders. Building is an activity which most of us engage in at some time. It can be an important educational experience. Given the importance of our environment, we should encourage everyone to take part in its development.

Our daily activities can be viewed as units of organic form. The work we do as well as the structures we produce can be viewed as units of organic form.

An organic approach to building activities needs to consider the abstract, concrete, and spirit, the whole organic triad. Building activities need to be inspired, and this inspiration needs the strength to last the long durations required in building. We are usually inspired when we think of the projected use of the structures, the development and fulfillment of our perceptions, and the development of the community of people and form. Building activities present for us a continual educational experience developing our perceptions of both abstract and concrete entities. Builders continually deal with repetitions and variations.

Present building practices are very uncentered in the organic triad. The builders deal too exclusively with repetitions. The present experience lacks well-developed perceptions of variations and of spirit.

In organic design building activities should be centered. Building activities are filled with feelings. Feelings are an indication of spirit. Building activities always need to perceive variations along with the abstractions to deal with them. The continual adjustment of abstractions to deal with concrete variations is an activity of high consciousness and great joy.

We should redevelop our building trades so that the activities are less specialized, and we should move away from the experience of building as a form of mass production performed by robot labor. There is too much potential value in the building experience to relegate it to this level of consciousness.

Inhabitants need to participate in the designing and building activities of their communities. Designing and building activities are very intense and require large amounts of time. Perhaps not all the people of a community can take part in these activities, but neither should these activities be relegated to a few specialists. The community needs to encourage and educate many people to build and provide time for it. Everyone needs to make the selections and

arrangements of furnishings for his or her own home. Many people can be skilled in crafts and construct some of the objects of their environment. People need not be forced into these activities by a coercive culture, but the opportunities and encouragement need to be readily available.

There are many ways in which community building activities can develop. They can start with single home constructions which then might develop into communities, or communities can be intended from the beginning.

Communities need to develop in stages which allow for adjustments in design and practice as perceptions become more powerful and the forms become more complex.

As a group of people decide to build their own environment, the following are some patterns and developmental processes that can work.

Community Spirit

Building enterprises from the beginning need to recognize the concept of spirit as formulated in the organic form model. Activity proceeds from feelings and spirit (inspiration). An enterprise as large as the building of a community needs powerful and lasting inspiration.

Many possibilities and actualities of inspiration seem to occur. Think of some known cities and their inspiration. Natural vital resources are often the inspiration for cities, a source of water, fertile land, agreeable climate (feelings of a "good life"). This is usually at least part of the inspiration for a city. Commercial resources and cultural resources are other points of inspiration for cities--gold rush, steel, oil, lumbering, or perhaps university, religious beliefs, social experiments. The inspirations for cities go on and on including military bases, political advantages, strategic locations, segregation, et cetera.

Most of our cities are inspired by strong forces germane in our cultures; they are not inspired by superficial aesthetics, romantically inspired "do-gooders," or dilettantism.

The inspiration for communities is not from the individuals alone but also from a total cultural consciousness. Our cultural consciousness is in the process of perceiving the needed reaction to some presently destructive elements of our cities hostile to our natural support systems. There is real inspiration developing for the correction of these destructive systems and the development of communities in this direction. The theme of community inspiration being considered here is for ecologically fruitful and humanly fruitful forms. These themes need to be taught throughout these communities so there is continued inspiration.

The particular patterns of inspiration can vary from the leadership of an inspired individual or group of individuals to government money from legalized subsidies.

Community Economics

Though there is no attempt here to develop a system of economics, it is realized that economic factors and their systems are the lifeblood of functional interactions in a community. The often-heard cry "We would like to but we just can't afford it." must be dealt with by a community which is inspired to improve on ecological and human fruitfulness. Somehow the community needs to affirm these values and agree they can be afforded.

A democratic forum might be more expensive to operate than a dictatorship, but many cultures agree that the values returned are worth the costs. In the same way, a building community needs to affirm its values. These values need to take on a functional economic validity and the system needs to support itself or be supported by some larger element of the cultural economy.

If we realize that the essentials of human support systems are air, water, food, shelter, and social interaction, but yet the United States culture can afford to spend more than half its income on preparations for war, then we must know we can meet expenses beyond vital necessities. The long-term inspiration of a building community needs to be strong enough to afford its values and make them work economically. Or the culture as a whole needs to support experimental communities where successful patterns can be developed for eventual integration into the whole culture.

A building community needs an economic base, perhaps it is outside sponsorship by government, industry, or individuals, but eventually it needs its own industry, services, and vital resources.

Methods of Construction--Processes

Methods of construction and design need to be considered as processes and allow for the continual perceptual development of the builders and inhabitants. Mistakes need to be tolerated and learned from. They need to be corrected through continual perceptual development guided through inspiration and experience. The process needs to carry the participants in the direction of their inspiration and leave a path which can be followed by others.

Many building processes have already been developed and there are already paths to follow to variously inspired places. Some of these paths are leading us to pollution and robot behavior, but we are now developing new perceptions and looking for better places.

Here are some suggestions for approaches to building processes in harmony with the concepts of organic design.

The concepts of organic design lead us to believe that our habitat structures need to be built with continual variations. We find that nature, which we are a part of and which supports us, is structured in this way. These variations in our environment fuel our perceptual and evolutionary development.

We are also led to believe that the shapes of our habitat structures need to be extensions and evolutions of the shapes of nature and specifically of shapes which are supportive of our development.

Building in a way which accepts these two principles would presently be more costly than building models of geometric forms, but the returned value in human development seems clear and worth the cost.

In order to accomplish this approach to building, we need to remember the following:

1. Building is an educational process. It has value for all of us.
Many of us need to engage in building activities. Building is not just for a few specialists who would provide for us.
2. Unit repetitions need to be designed and created with variations and in limited rather than unlimited editions. People design and build for particular needs at particular sites, and the structural units are definite and hierarchical rather than indefinite and extensive.
Building projects are limited and supported by their inspiration.
3. There will be a progression of building skill development of individuals over a long period of time and a number of generations.
We reached our present general lack of individual building skill in a similar period of time and number of generations.

When we have continued inspiration and education and also economic support, we can begin building. The design of structures proceeds from various trials in the form of pilot programs, models, and imaginings. Effective designers learn to perceive trials in their minds and in drawings and can often proceed quickly with minimum delay. Building projects need leaders who can inspire and educate others. Inspiration needs to be passed on from person to person.

The people of a building project need common inspiration and need to take part in the design formation and application. Each person has some conscious part in design decisions as a project is under construction. We can liken this process to music production by a group of well-trained and commonly inspired musicians.

When a building group is established, preferably they are the people who will live in the dwellings. Contacts with previously accomplished, successful designers and builders is desirable. This contact might be difficult because the attitudes and methods of organic design have not been prevalent today. It is possible to start alone, but it will require more experiments and trials and faith that the inspirations can be materialized.

Outside specialists and tradespeople can be utilized, but they need to take part in the inspiration and consciousness of the project. They need to do more than get in, get out, and get paid.

Although buildings need to be well planned in advance, the building process needs to be more than the robot copying of a set of plans. Each builder takes part in creative decisions during building. Common inspiration promotes harmony.

Building needs to proceed from drawn plans, models, or previous trials. When this planning has been accomplished, actual construction can begin. Construction varies according to materials, designs, and methods. The performance of the construction will influence the planning and often the plans need to be redrawn as construction proceeds. Efficiency will increase as experience is gained, but absolute efficiency is not the goal. Perceptual development is the goal and it requires creative experimentation.

Organic design and construction is based on repeated units, but it also recognizes that all repeated units have variation. This presents a general rule of design and construction:

1. Make a series of units with variations.
2. Arrange the varied units into a rhythmic structure.
3. Do this in a way that is consistent with inspiration.

This rule is a key to how a group of builders can work in harmony on the same project.

The actual designing and building begins with the site. The builders need to look for a fertile site, one that is stimulating to the evolution of consciousness as well as supportive to the needs of the body. Sites close to water seem to provide this kind of environment.

The builders can depend on a system of supply built by people. Then they have the responsibility to see that the supplies germinate into a fertile environment. It is surprising to see how poorly many builders have accomplished this germination into fertility in most city centers. One would hope that we are more successful in the environments we build in outer space.

The selected site needs to be carefully studied in terms of resources, water, geology, life forms, topography, drainage, weather, and aesthetics. This study is a test of our perception. We need to discover how we can occupy the site for our inspiration, enjoying its support without destroying its fertility.

Another part of the building process is the specific planning of living spaces at the building site. These spaces need to be thought of as locations on the site and the sizes of the projects at these locations first, rather than as surface shapes. If possible, it would be beneficial to spend some time on the site becoming intimately aware of its nature before deciding the spaces and structures to be built.

The planning and design of living spaces proceed from two pressures: (1) the activities to be performed in them and (2) the economics of competing forms and the allowable spaces and structures.

If there are no competing forms, then space is defined by our particular activities from their source of inspiration. If there are many competing forms and the builder's source of inspiration and activity is weak, then the spaces will be defined and taken over by these outside forms.

We can design from the inside out and from the outside in and we do both. Inside out planning starts from our needs and defines spaces based on them. Outside in planning starts from the parameters of competing forms and determines how much and what kind of space can be defended and procured for our use at what cost. We certainly want more security than to take only whatever space is left over from other forms for our use, but neither do we senselessly want to destroy other forms.

Space planning needs to be coordinated with the existing land resources so that these resources are as supportive as possible.

Primitive cultures are usually extremely perceptive of the site resources as they build (see Christopher Williams' **Craftsmen of Necessity**). They are also very economical in the amount of space they choose to defend for their own use.

Our industrialized technology suffers from greed often extending itself senselessly. It is usually insensitive to existing site resources. Our technology needs to recognize the principle of extending the fertility of the site.

The physical production of usable space involves the design and building of structures. Our dwelling structures on Earth are essentially forms which extend vertically. We have developed efficient and extensive engineering for the erection of vertical structures.

The natural verticals which we can see in a pile of rocks or a tree are filled with variations. Our technology has built exact verticals with too few variations for perceptual stimulation (fertility). The geometric structures which our technology is building provide perceptually deadening (infertile) spaces.

Dwelling structures in organic design need to provide fertile living spaces which are extensions of the shapes of nature.



Notes on Illustrations, Pages 103 – 111

P. 103 Figures 1, 5, and 10 show the simple structural form while the rest of the figures show some possible variations of the simple forms. Our dwelling structures need to deal with this whole spectrum of applications. Each use of the structural form needs to be designed of the people and site for their fertility.

P. 105 Figure 1 shows a simple structure based on the cantilever principle. This is a basic statement of many contemporary buildings. The rest of the figures on this page show some variations of this kind of structure. The building systems would be more complex for Figures 2 – 5, but they would provide stimulating dwelling spaces.

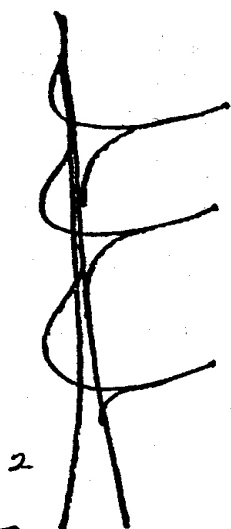
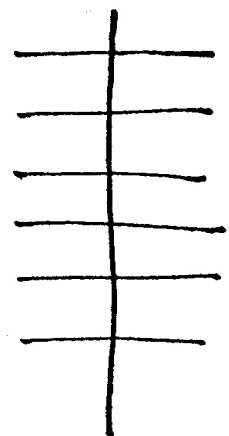
P. 106 Figures 1 and 2 show extensions of the post and beam building system with increasing complexity. Figure 3 is an attempt to design a cantilever structure with pleasing rounded spaces.

P. 107 Cantilever, pedestal, and suspended structures allow us to build without blocking the fertility of the land. These are possibilities of round structures somewhat above the land.

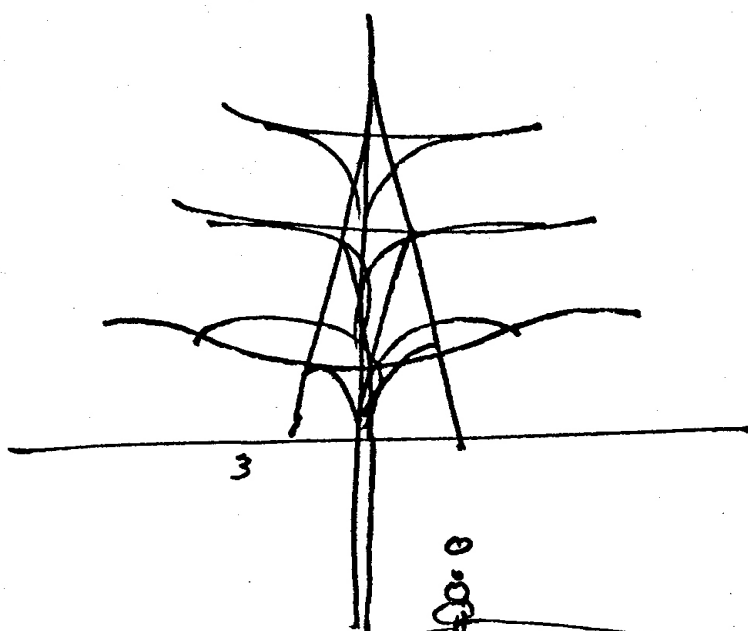
P. 108 These drawings demonstrate a process where first we create a set of varied forms and second we arrange those forms in rhythmic structures according to our inspirations and needs. Figures 1 and 2 are the same system and so are Figures 3 and 4.

P. 109-110 The drawings on these pages show some possibilities of relating the shapes of the structures to the shapes of the sites. The structural shapes have not disregarded the shapes of the ecological systems as rectangles usually do.

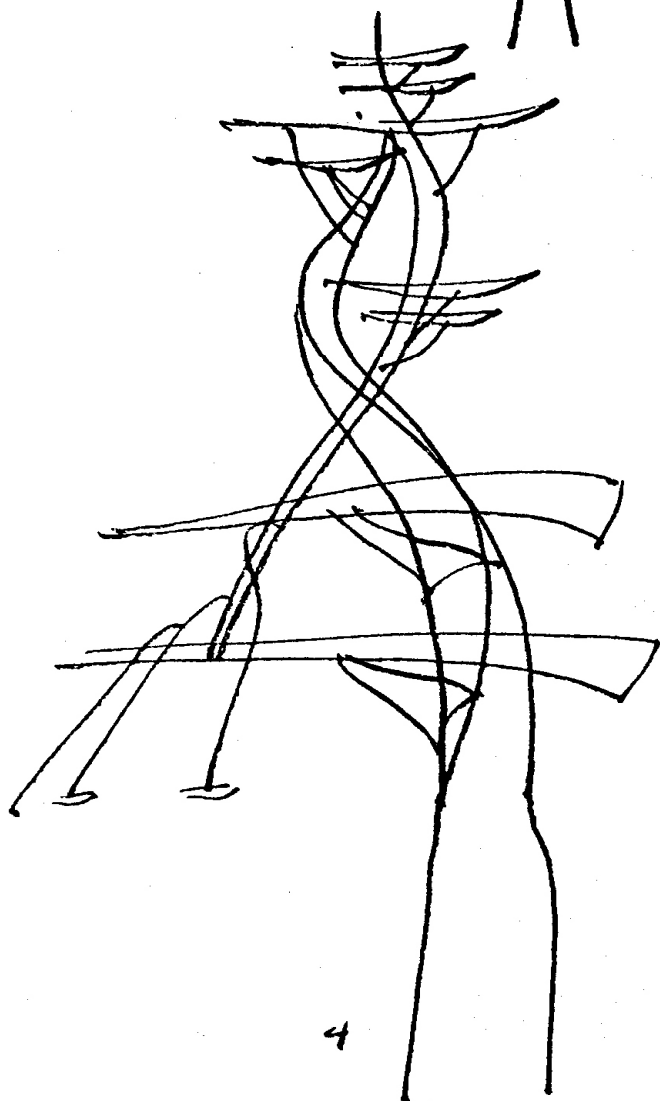
P. 111 The drawings on this page deal with transitions from exterior structures to interior dwelling spaces. Interior spaces can be refined to meet the needs of the inhabitants. Rough structural elements can support smooth interior spaces when necessary.



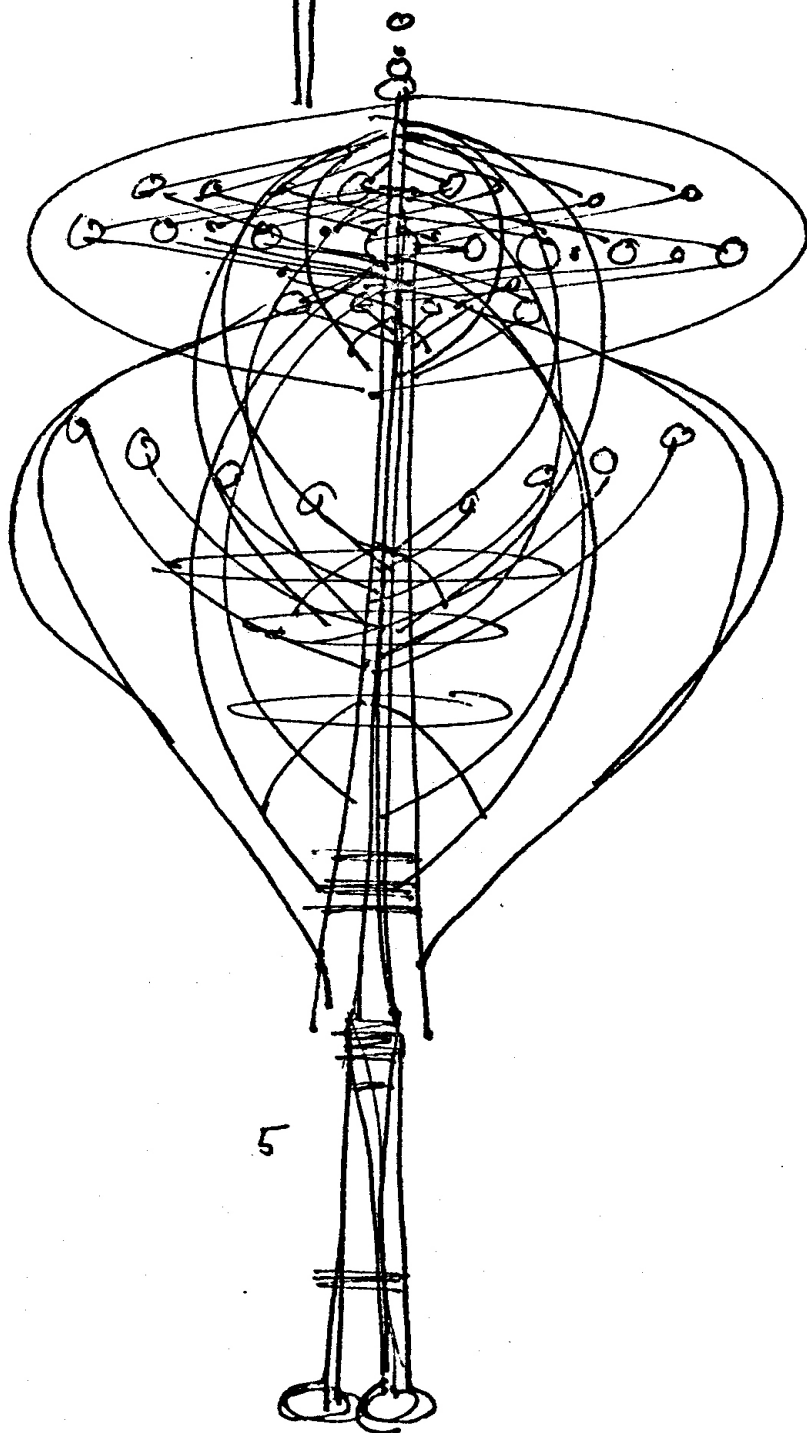
2



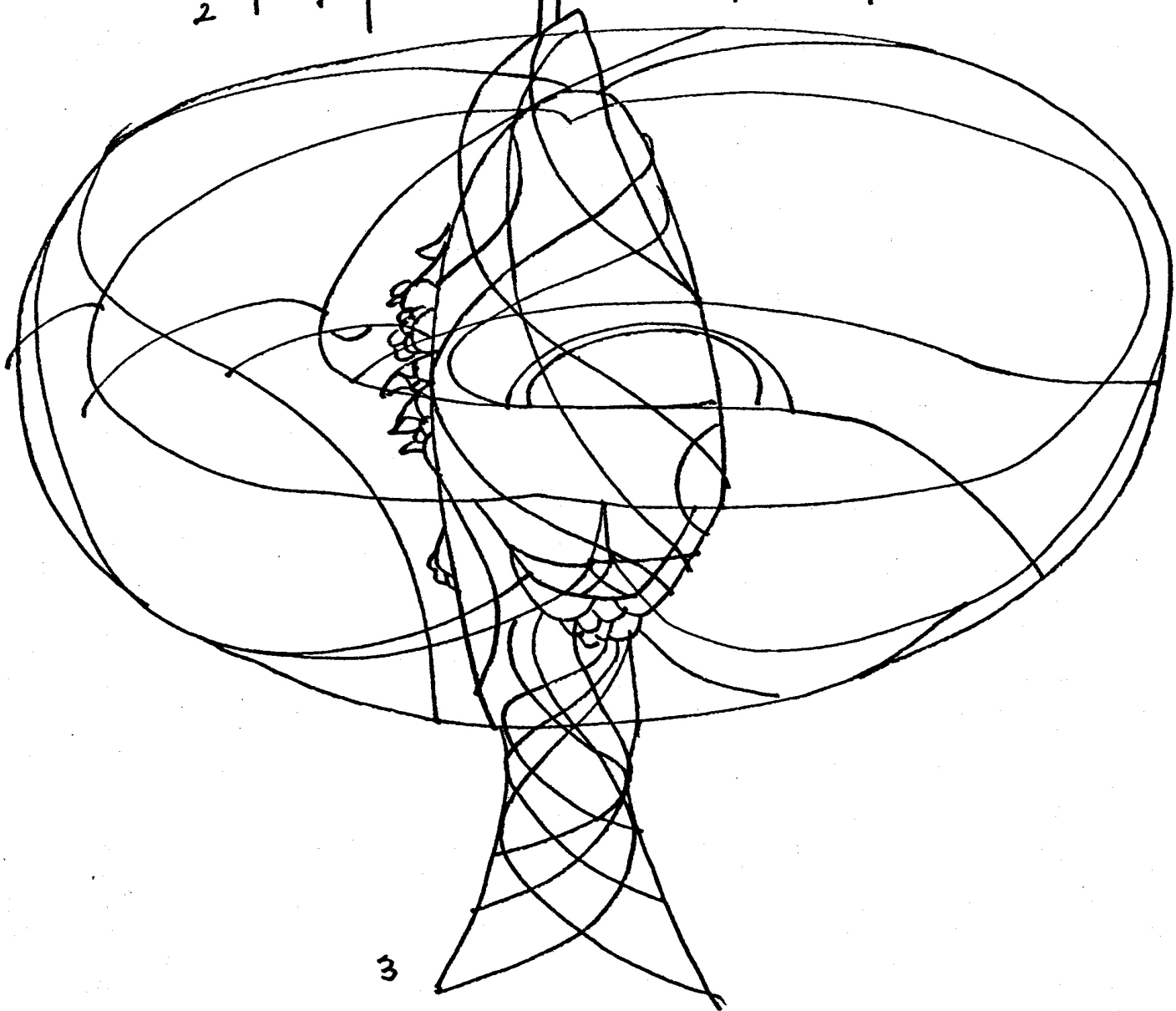
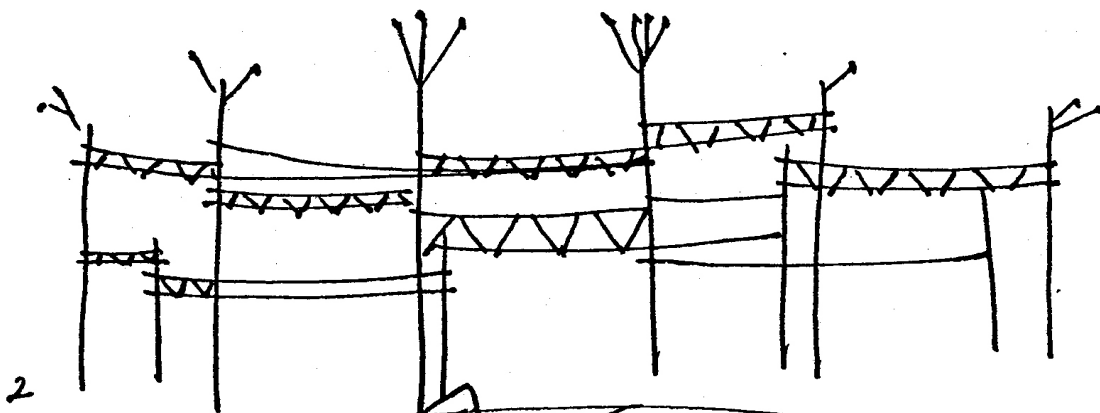
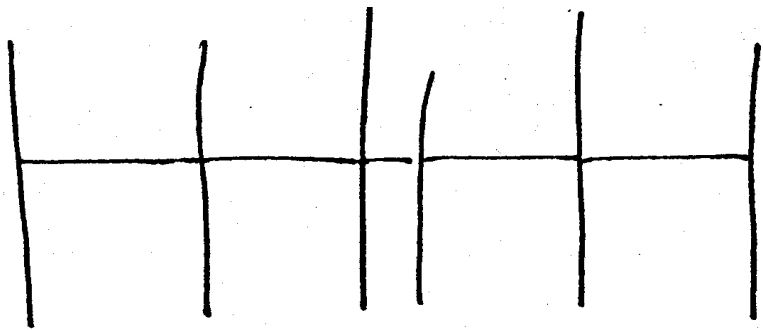
3

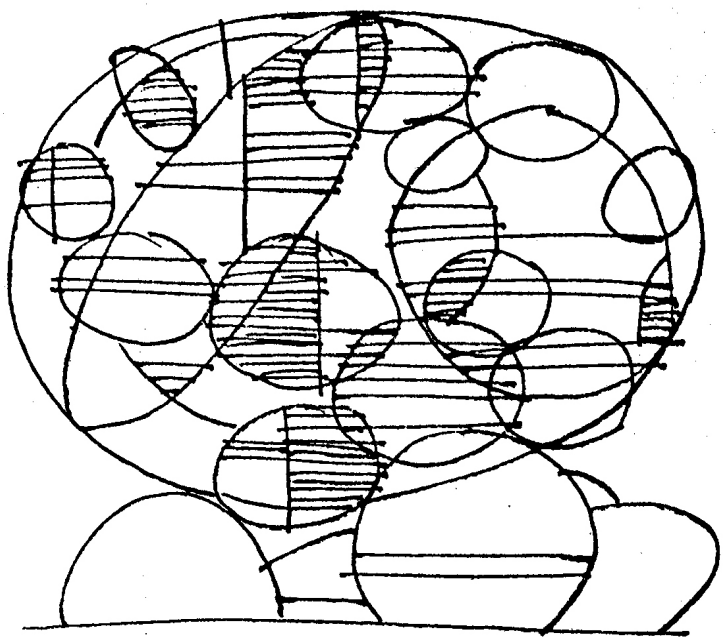


4

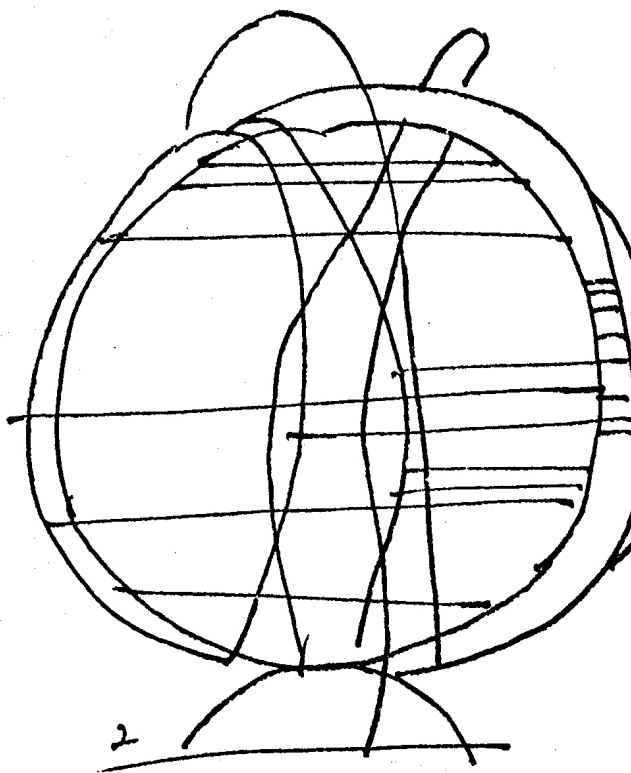


5

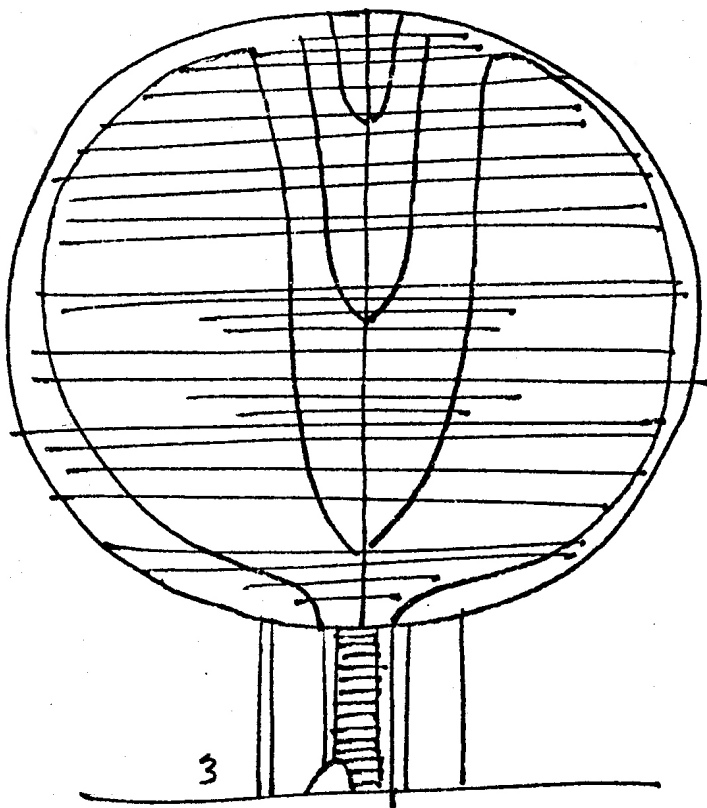




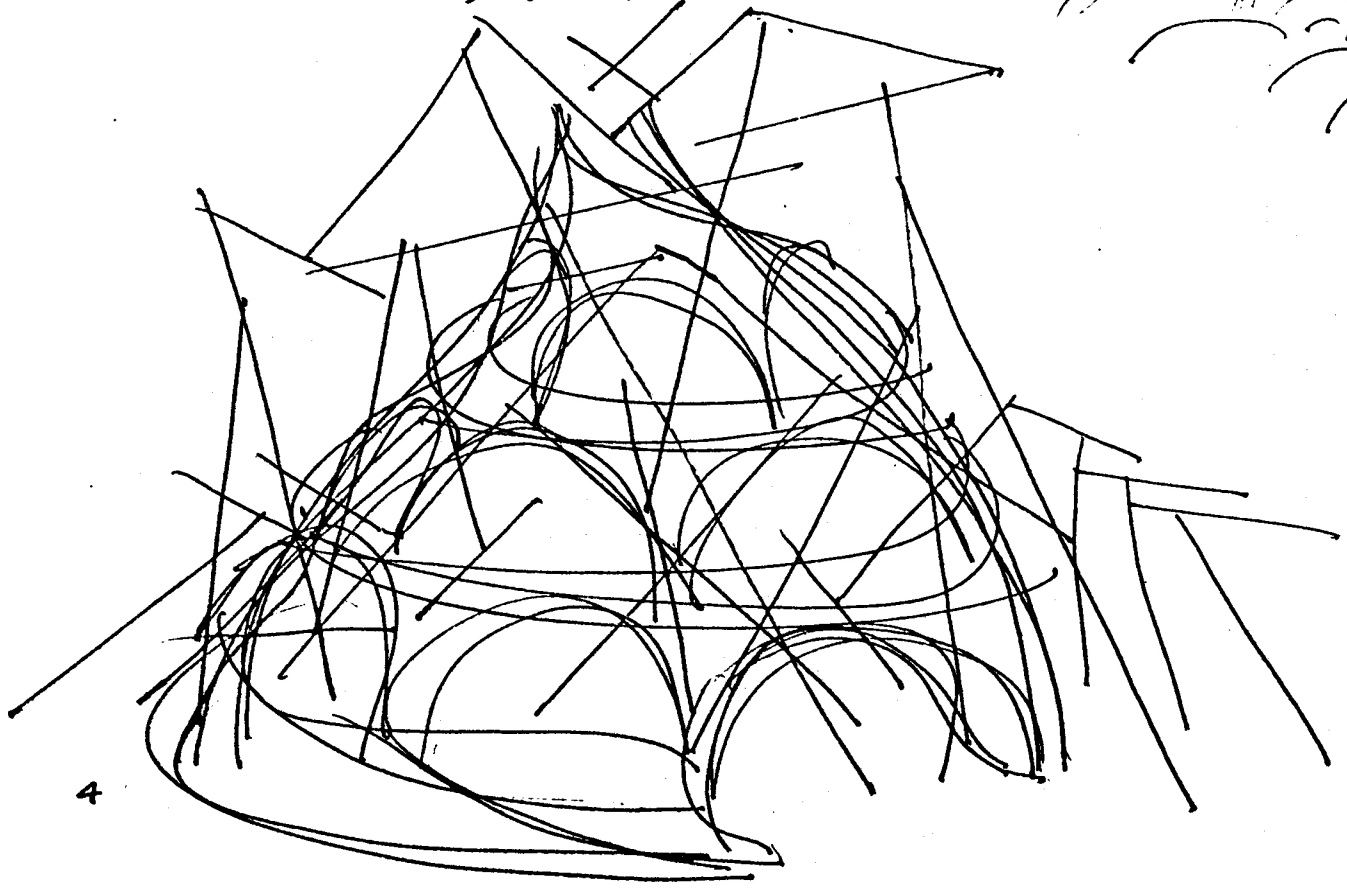
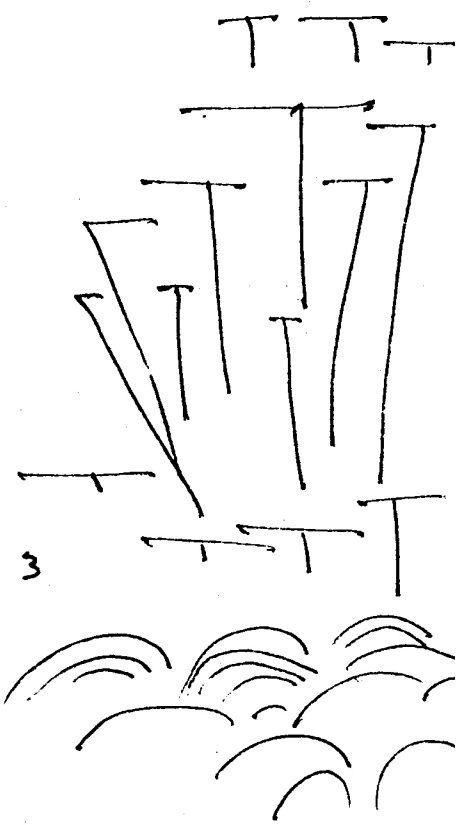
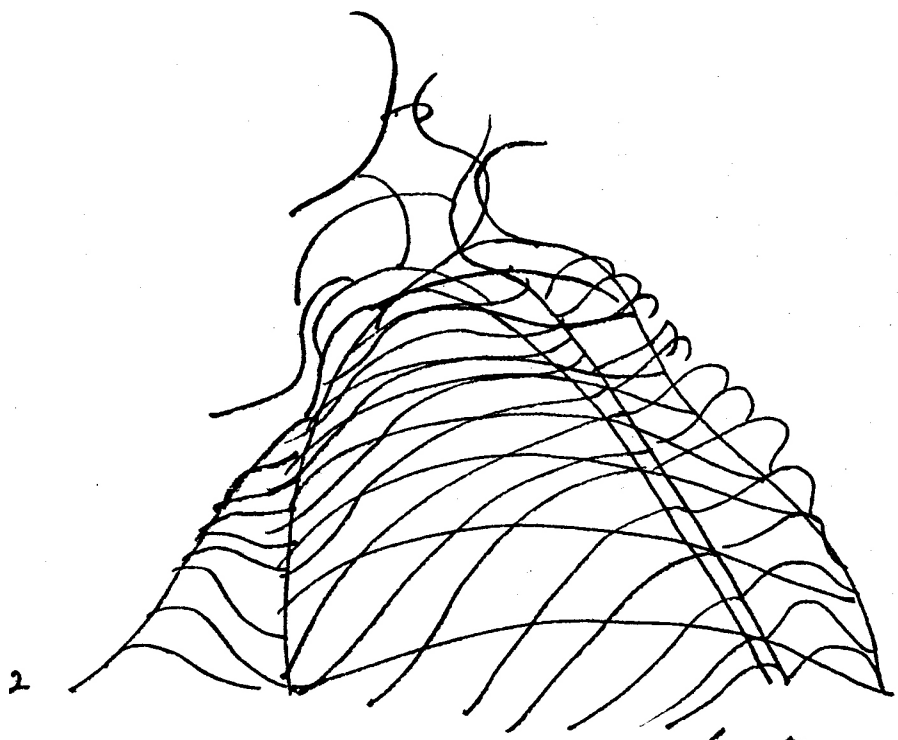
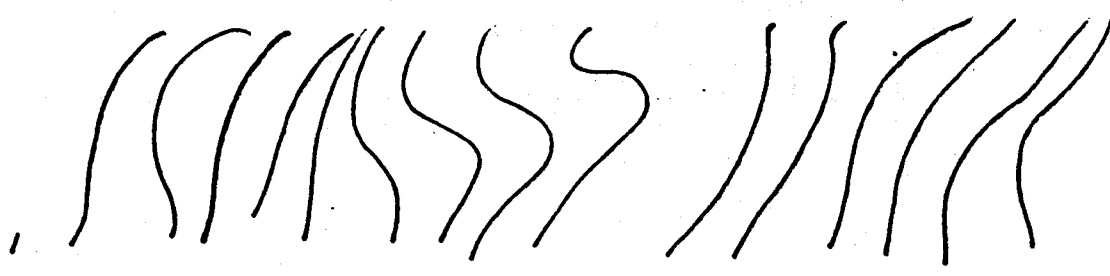
1

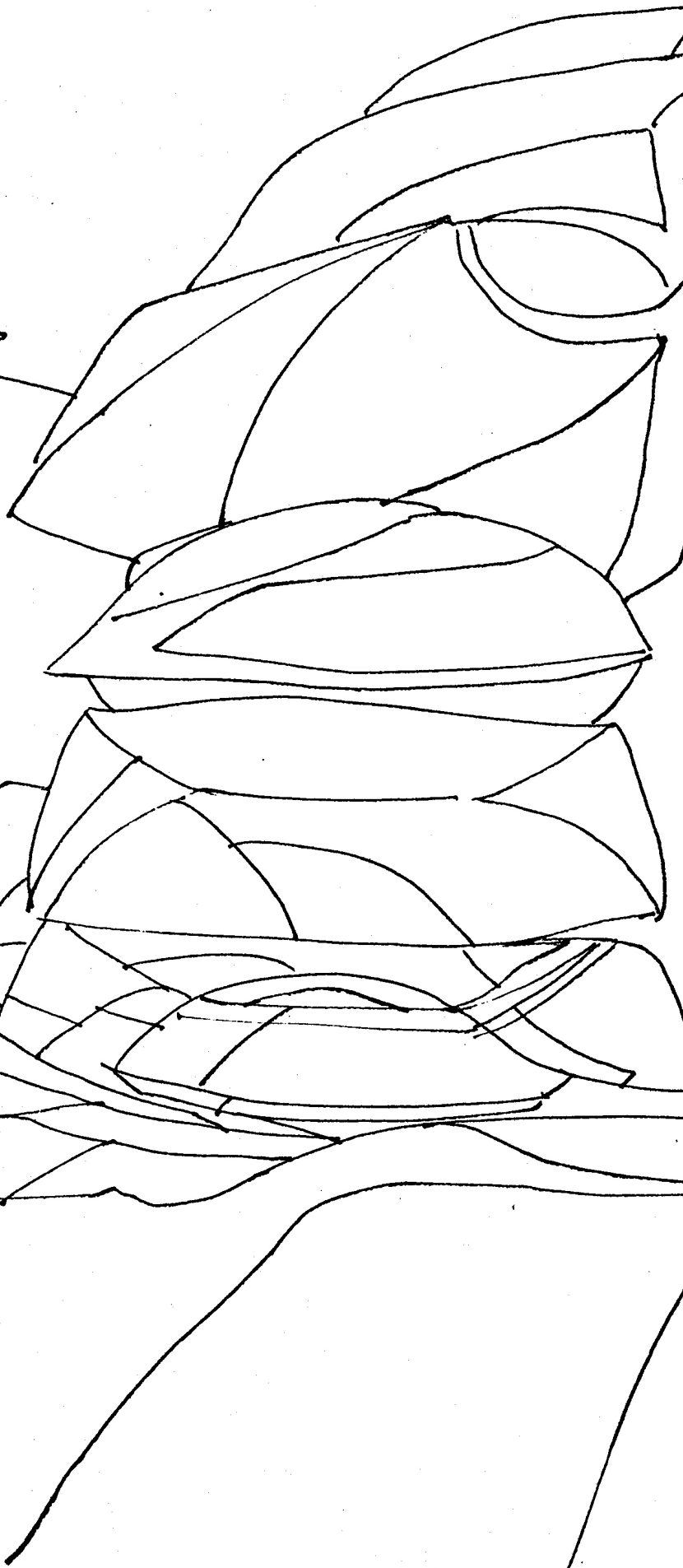
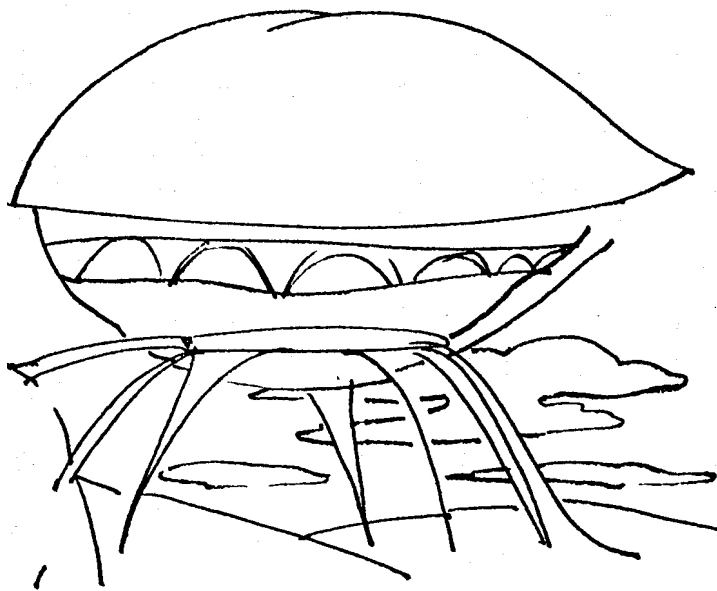


2

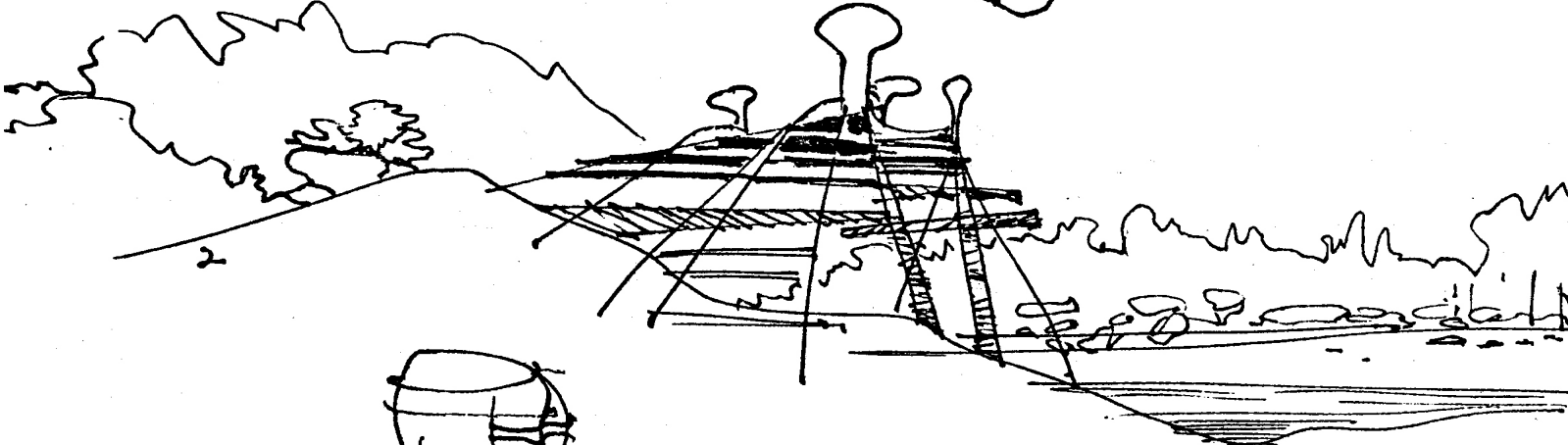
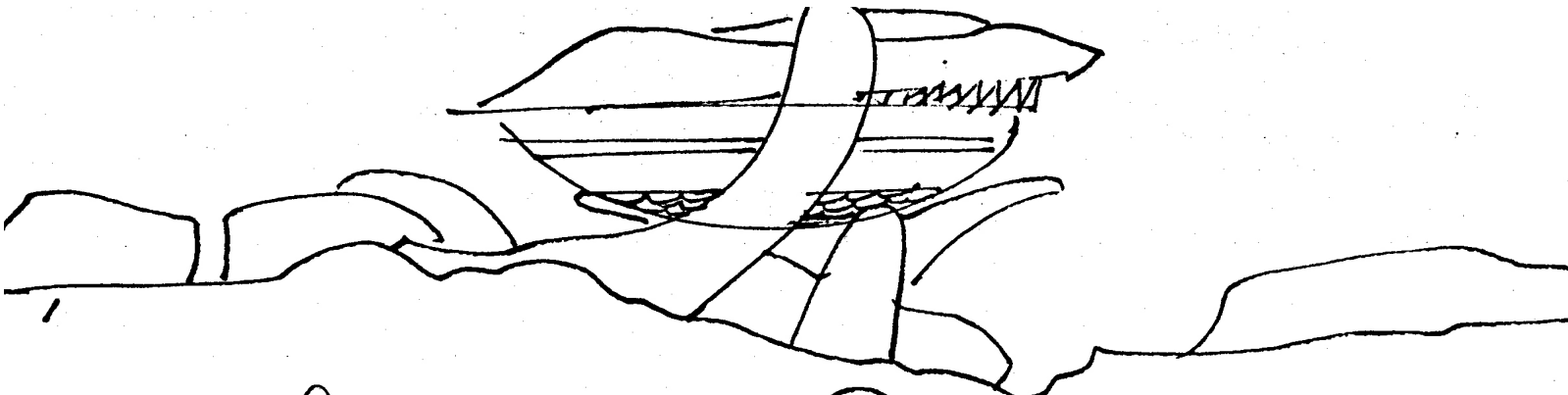


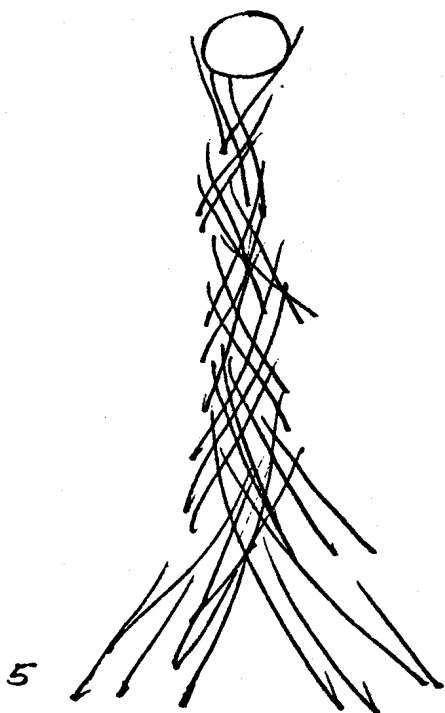
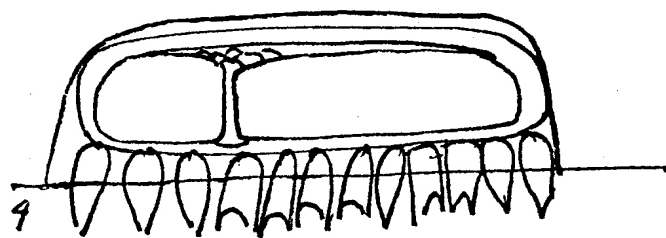
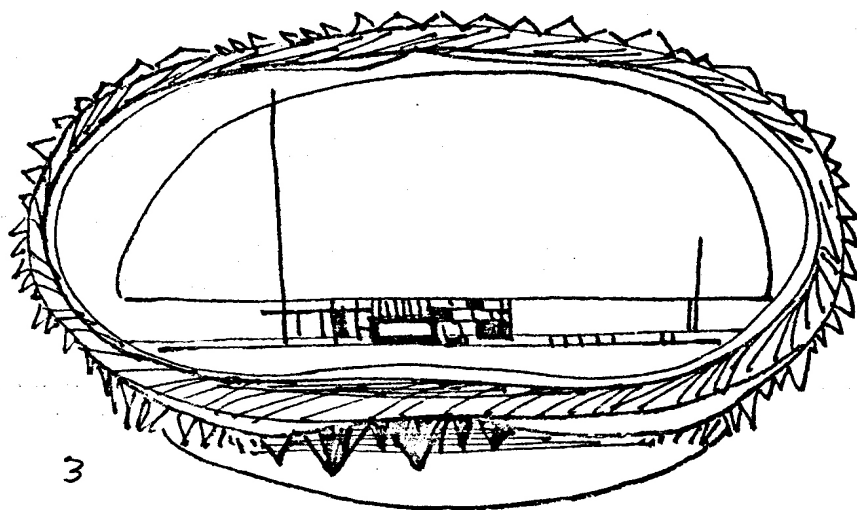
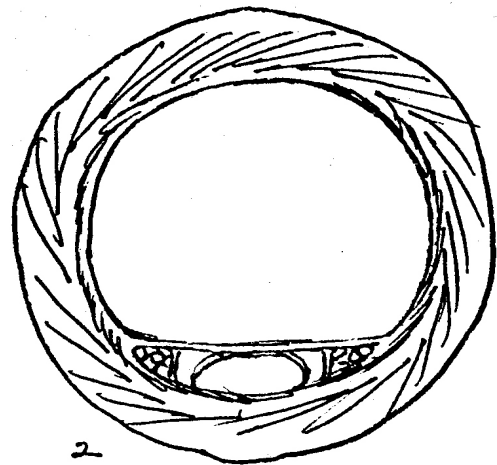
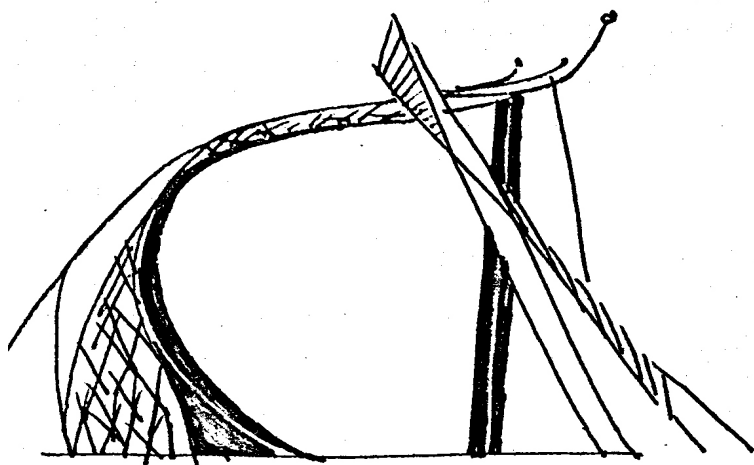
3





2





Simple organic dwelling structures are often designed and built primarily by a single person. One would think this is the best approach because the design and methods are usually so individual. However, dwellings are usually for more than one inhabitant and it would be appropriate for all inhabitants to take part. Also, in larger community complexes we have to face the need for many participants in a building project.

Let's examine approaches for group design and building of a single dwelling. As a building community progressed over a generation or so, many traditions and cooperative efforts for building could be evolved, but as a beginning assume that a single family of five design and build their own home. Many families in our present culture could not perform this activity, but let us consider one that could so that we can see the process involved.

Here our concern is the particulars of design and construction. We have already discussed other factors such as inspiration, economics, and educational objectives of building.

The building site is five acres in a low population density area, fifty miles from a large city. The site is partly forested with a small stream in the foothills of a large mountain range. The site and the family are connected with the city by occupations, roads, utilities, and social systems. For this example, rather than try to reorganize these outside structures, we will concentrate on an organic approach to the building itself.

The husband and wife have been involved in the arts for many years, and they both are very visually perceptive. In the past the man has designed and built some furniture and the woman has designed and sewn her own clothes. They have some building skills, having helped some friends build their own house. The son is anxious to learn from this present experience.

The following spaces are needed:

1. Food preparation space
2. Dining space
3. Sleeping space
4. Group social activity space
5. Workshop space
6. Gardening space
7. Car storage space
8. Laundry space
9. Toilet and bath space

It seems that Frank Lloyd Wright has already thought out most aspects of living spaces in this type of situation. Perhaps some considerations beyond Wright's are:

1. Degree of permanency needed
2. Participation of inhabitants in designing and building
3. Evolution of structure on the site
4. Evolution and integration of individual homes with communities of structure
5. Organic processes of buildings

The steps in building on a site are the following:

1. Become aware of its elements and processes
 - a. drainage
 - b. geology
 - c. weather
 - d. biology
 - e. ecology
 - f. aesthetics
 - g. fertility
2. Love the site and yourself
3. Devise structures which improve the fertility of both the site and yourself

The members of the family need to become well acquainted with the site. They need to become intimate with its forms and structures. They need to find the places on the site where they would like to carry on their various activities.

Next, they need to propose some structures that would increase their ability to use the desired spaces on the site and yet maintain the site's ecology and beauty. These proposals can be in the form of drawings and models, and all members of the family should be encouraged to participate. They need to remember and renew their inspiration and commitment to organic values as the designing continues. They need group interaction skills so that they all embrace a similar inspiration and design. They all need to be happy with the eventual proposal. This is an important and sometimes difficult learning situation. There needs to evolve a real unity among the individuals rather than misunderstood compromises. They should learn their limitations and strengths. This designing is an important educational activity. The members of the group with the greatest design skill and inspiration have the greatest responsibility for helping the others to learn and be inspired. Building should not proceed in a dictatorial manner. This has often been a problem for individual designers who had vision greatly beyond that of their community. Visionaries can design for us, but there needs to be continuing good faith and an educational path

to follow toward greater enlightenment. Within the enlightened structure learning spaces need to be provided for the less enlightened.

When all members are agreed on a design, building can proceed. The design needs to be compared with the concepts of organic design and improved if possible.

The plan need not specify all details of construction, but needs to concentrate on the essentials of the structural form. Walls, skins, fabrics, colors, textures, and ornaments can be decided as the project grows and will be influenced by the materials selected and choices of individual builders. Major structural changes would be difficult to make as the building proceeds, but many minor variations can be attempted as there is inspiration. As always there is both stability and diversity to consider. The unity of both the structure and its inhabitants is important.

It would be sensible to begin on a small structure as a learning experience before a large one is attempted. Each successive structure could become more accomplished. Building models would also be a good learning experience. (James Hubbell's home in Wynola, California is a good example of the evolution of a series home structures .)

Labor needs to be divided among the various builders, but meetings need to be held to inspire and inform concerning the objectives of each project. And loving criticism should be engaged in to maintain quality. Criticism is difficult but necessary. Poor criticism is destructive, and it can effect senseless controls over the less dominant builders. Self criticism is the best kind. Love, humility, and knowledge in criticism can be an effective process toward high quality.

Many structural methods are possible in organic design. However, the frequent need for curves makes balloon or platform framing an awkward method. Post and beam construction is better but needs to be stressed internally instead of depending on gravity for stability. Many varieties of forms can be hung from a basic post and beam framework. Some of the most appropriate construction methods for organic design seem to be cantilever frameworks, rein-forced masonry which has excellent potential for curves, reinforced concrete, lamination, shell structures, cable structures, et cetera. Wood has good tensile strength for small cantilevers, but steel would have to be used for large dramatic forms.

Flexible joint systems would be an inducement to the structuring of organic designs. They would allow a set of varied members to be produced and still joined in a unified form. This would allow more decisions and adaptations to be made as work progressed. It would come closer to the natural process of members growing together than the existing systems of rigid predetermined jointing. Welding, splicing, and flexible materials could help. (Photos of some of my wire modules)

Our family of five could successfully follow the processes outlined and produce a dwelling structure for their own benefit. This structure could take anywhere from six months to two years to build. Three months of concentrated full-time effort by three people can accomplish a surprisingly great amount of building.

James Hubbell, a sculptor in Wynola, California has built a family dwelling which is similar in concepts to the concepts described here. (Photos and comments on James Hubbell) Descriptions and photos or Bibliography of specific structural methods which could be employed in single-family organic dwellings--Hubbell, Solari, Domes, Wright, Christopher Williams' "Craftsmen of Necessity".

Chapter 13

Building Cities

It seems obvious that we are not satisfied to live alone. Our history shows us living in communities and in this century many communities are populated by millions.

Living in groups seems to be a better environment for us than living alone, yet the natural ecology limits the population of any given space.

Cities are the structures which allow us to live in groups in densities beyond what the ecology of the land can provide. In this aspect cities present an increase from the original fertility of the land.

The structures of cities are the results of all the processes of group interaction being performed in them.

The structures of cities affect the consciousness of the people who build them and live in them.

Our life objectives seem to be our continued growth and evolution toward the glories we dream of. Our city structures need to support this process, evolving as we do and helping us to learn our lessons.

Communities can be of various sizes and we need to remember to allow variation so that various personalities can find the forms suited to them. The sizes of cities are affected by the functions which can best be performed at various levels of size and also by ecological needs and balances.

Perhaps the greatest influences on city size are factors of growth and expansion and our view of growth and expansion. If we are a part of a continually expanding population of life, if a continually expanding physical evolution is taking place on this planet, then the continual re-distribution of this planet for our support seems obvious, and the continual development and re-development of super-cities is also obvious. This form of growth and expansion would thrust us out past the planet into space station cities, then to other planets and eventually past our own solar system.

Though this continued physical expansion is the path we seem to be traveling, another view of the process seems possible. It seems possible that our evolutionary path is not necessarily physical, and that the physical phase need not be extended to the complete physical domination and population of this planet, the solar system and beyond. Perhaps our physical lessons will be learned without resorting to tremendous technology and super-cities.

Perhaps continued stages of evolution are not only in less physical space but less physically formed. Perhaps the being which we are will continue its evolutionary formations in some space which is not physical.

Perhaps the needed physical lessons are already at hand in existing organic Earth environment. We know of men like Christ, Mohamed, and Buddha who did not need advanced physical technology to reach the highest levels of being.

This view suggests that rather than being at a dead end without continuous physical development there is non-physical space where evolution continues without a physical counterpart and super technology is not necessary for continued progress and evolution. Super technology might even be an infertile path, a dead end.

In this view we would reach a physical equilibrium in the process of development. We would move on to some other kind of form in our continued evolutionary development. We could populate the solar system and the universe in a non-physical form. The organic elemental triad could still operate in non-physical space.

Our life activities in this view would be centered around our perceptual development in intimate experience with organic Earth. And we would preserve and continue the organic processes and forms on Earth as a learning place.

The population of Earth would not necessarily expand continuously, but many beings could learn their lessons here and move on.

The initial proposition concerning cities and ecology is that cities need to improve upon the existing fertility of the land. This fertility is two-fold. The first concern is the fertility enabling the continued growth and survival of life organisms including people, the second is the fertility enabling the continued developments and progressions of the evolution of life.

It is conceivable that life organisms could atrophy and die in an inadequate or unhealthy environment. It is also conceivable that an environment could be constructed allowing life to continue but discouraging it from continued evolution. Fertility in environment needs to nourish continued evolutionary development.

As we are unsure of the necessities of evolution but know it occurs out of the raw environment of Earth, we must continue to preserve this raw environment and program it into the experiences of our lives. In the development of our city environments, we must be aware of a distinction between the refining of the natural environment and the screening or obscuring of the natural environment.

Though we are building forms we can deal with and which seem to extend our power, we are not necessarily developing the personal power to be conscious of nature and the natural form which supports us.

As we extend our relatively undeveloped consciousness through cybernetic mechanisms to extensive and powerful systems, we could end in limbo protected by the environment we have created from the natural environment realities which we personally need to learn to deal with for our own conscious development.

The extension of form through the exact repetitions of mass production creates a screen shielding us from the environment of nature and its dynamic variations.

No matter how effective our city structures seem as a refined environment, we need to preserve our contacts with raw nature as a nourishment which we need for the continued development of our consciousness.

It is the perceptual power of our consciousness that is our wealth. A highly developed consciousness can deal successfully with the forms of raw nature. An undeveloped consciousness can be protected by material refinement. A highly developed consciousness does not need material refinements but produces them itself.

The computer is a tool which can create material form for us, but we must supply the consciousness. If we cannot consciously inhabit the form we create, it is useless. We needn't create more than we can consciously inhabit. Only the first of a set of mass produced forms is conscious.

Goals for City Environments.

1. An educational system that deals with shelter
2. Successful group interactions
3. Successful individual places for each person
4. Successful ecology--air, water, food, sun
5. An educational system which promotes successful evolution

Based on the premise that we build to improve our environment, these are some improvements cities can provide in our life experiences.

1. Fruitful interaction with other people (stability, diversity)
2. Controlled interaction with nature (nature preserve, gardens, as much raw nature as we can handle)
3. Personal production of form at high levels (many media, conceptual)
4. Access to information
5. Vital and aesthetic needs met in a variety of ways

6. A sense of being part of powerful and fruitful cultural form
7. Flexible and stable schedules of daily activities

Things we need to avoid in our personal experiences in city environments

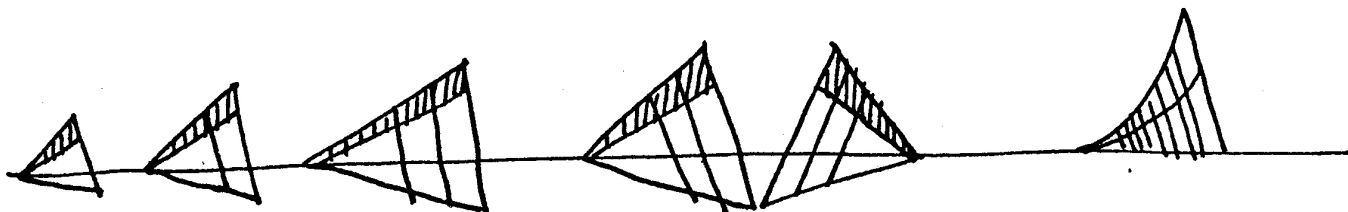
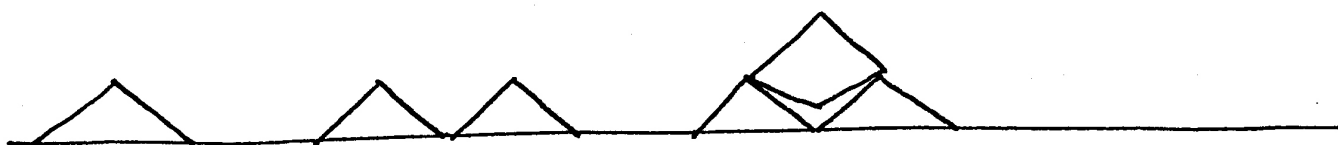
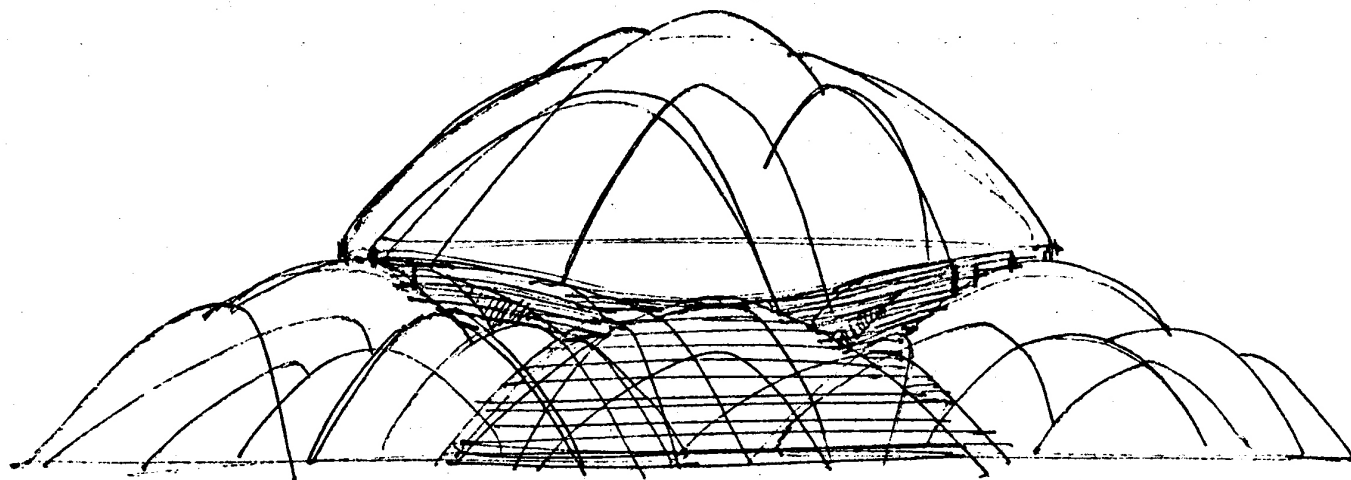
1. Starvation of any kind: light, color, vital needs
2. Slavery: working without spirit and consciousness
3. Shape and space pollution--problems with shape of skyline
4. Discontinuity of spaces, functions, and experiences
5. Isolation, loneliness
6. Regimentation in space, function or activities

Though we can pre-form models of cities, the actual performance of those models requires periodic re-design based on experience.

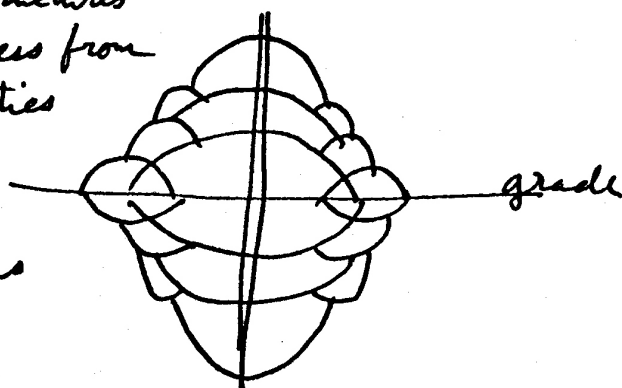
The process of building requires hierarchical structures where people relate as various groups and the groups relate as various communities and the communities relate et cetera. Cities are built by people working together rather than alone. A synergy takes place as people have more in a group than they have alone. The structures of the city become more complex as the groups of people become more complex. This is a developmental process.

As a city reaches a certain size, power, and complexity, it can be built in three dimensions as Soleri is demonstrating. The individual needs to grow strong at the same time the group grows strong.

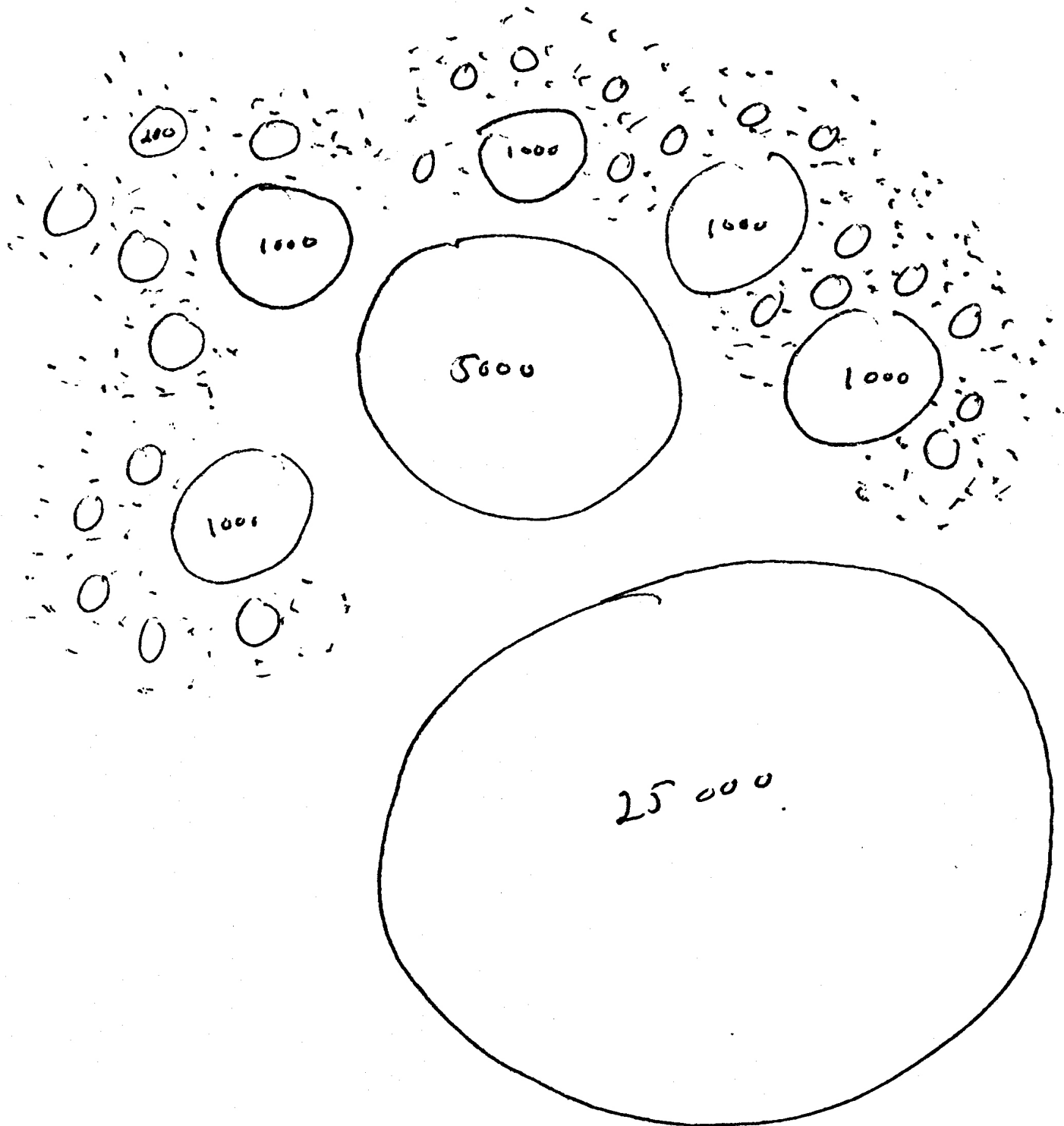
Planning city structures in stages

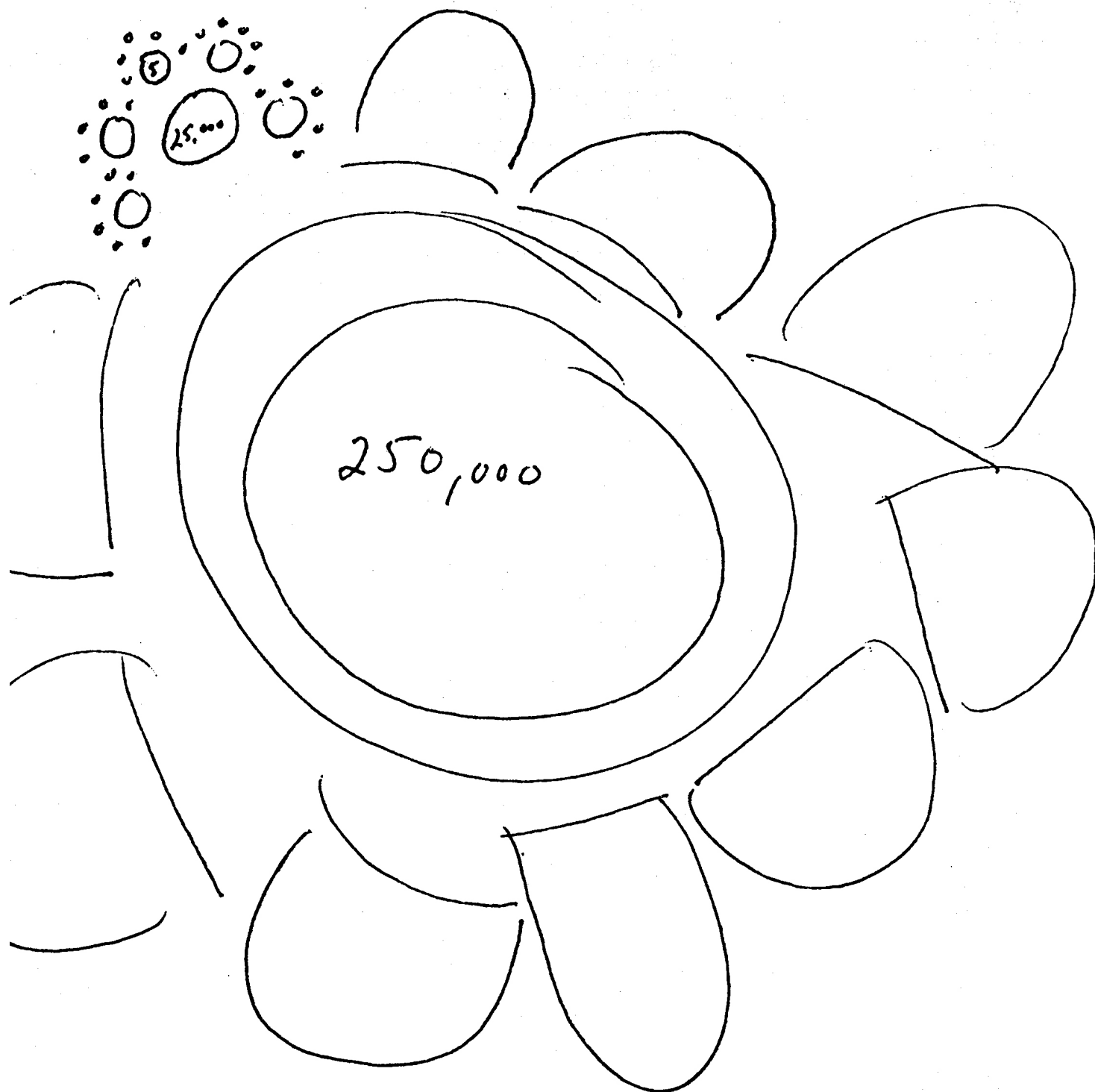


Designs for city structures
which can progress from
small communities
in increments
to large three
dimensional forms

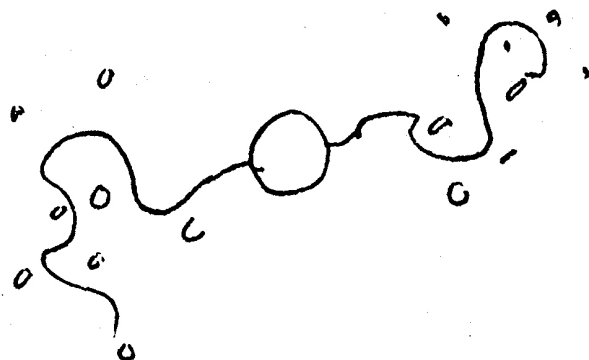
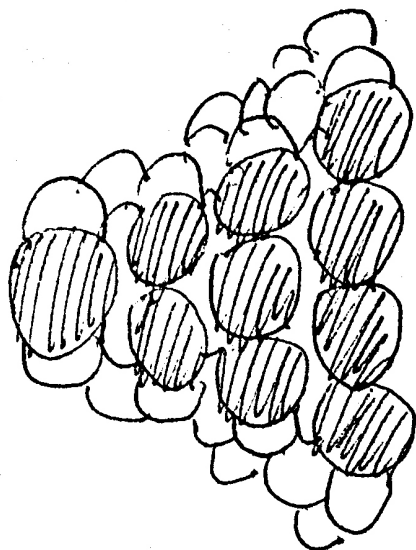


Each circle represents a community center serving the adjoining residences. These centers contain parks, cultural facilities, and business and professional services. The small communities progressively unite in this hierarchical plan. As communities join they can support more facilities, but individuals can still feel at home in their original small communities.



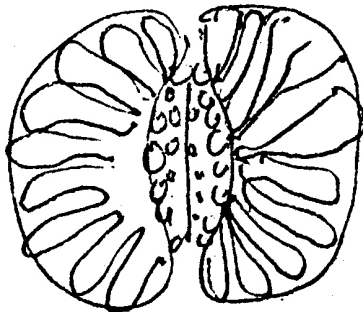
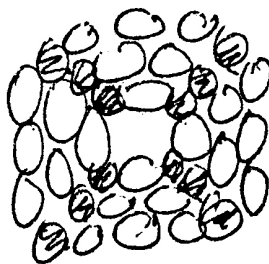
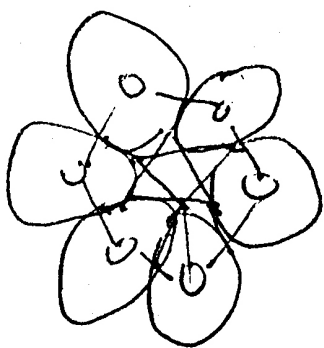
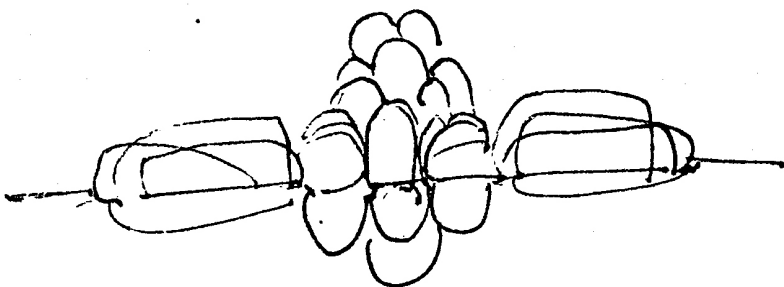
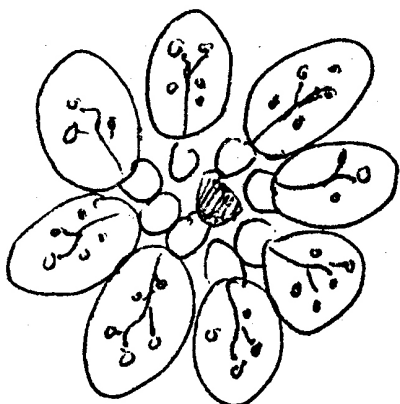


a continuation of the plan on the previous page



Plans for cities which can be built
a cluster at a time,

8000
people →

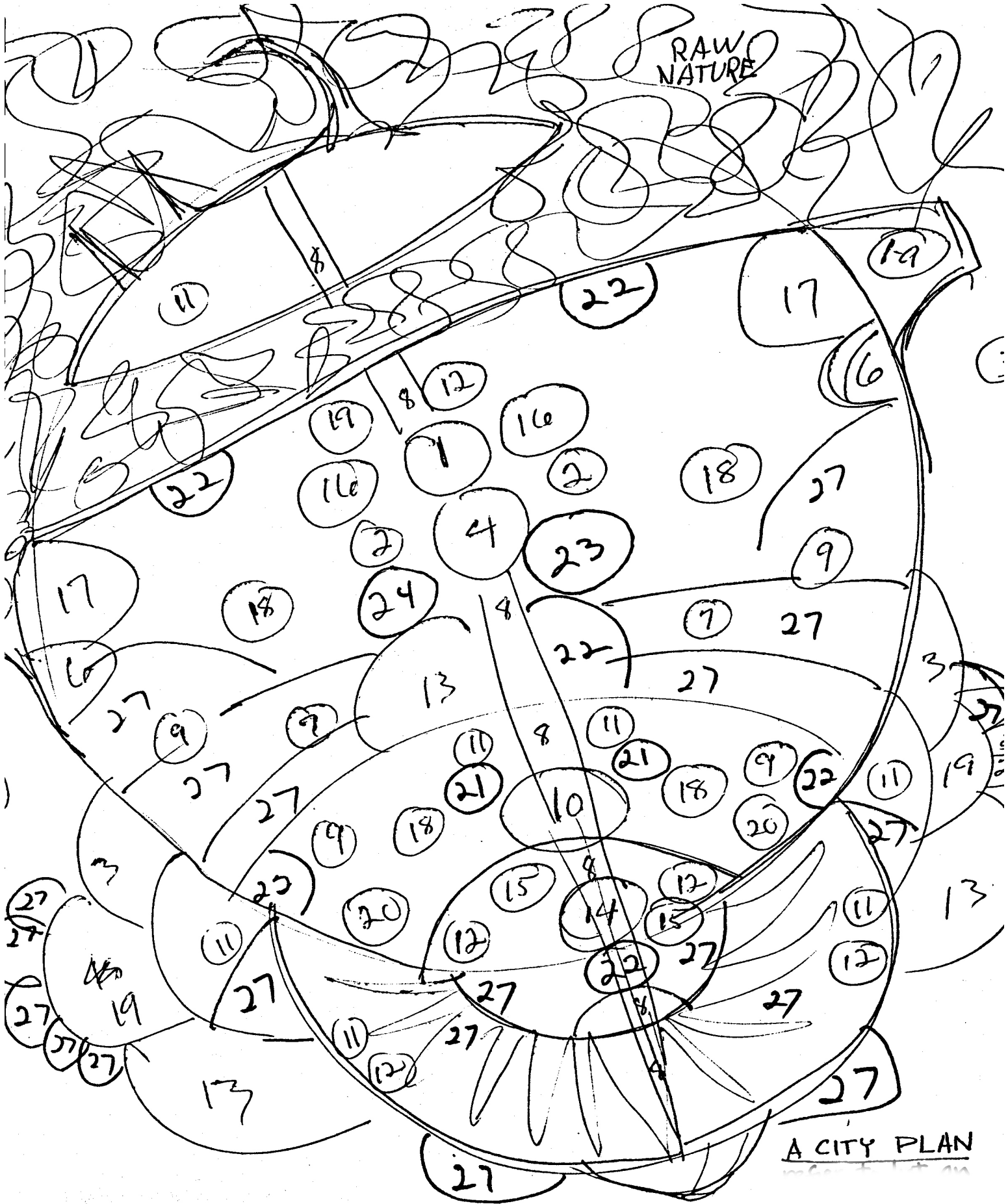


All cities need structural forms to deal with various functions. The list on this page refers to the city plan sketched on page 126. It needs to be tested in various applications of projects concerning cities. It is a first statement of some ideas.

City Functions and Activities

- 1a. Raw materials processing
- 1b. Production of buildings, building materials: steel, lumber, glass
plastics, concrete
2. Production of fabrics and cords, clothes, appliances, tools
3. Production of food
4. Production of systems of transportation: cars, trucks, mass transit,
airports, sea ports, pipelines
5. Water supply
6. Waste disposal
7. Crime control
8. Education
9. Marketing, stores
10. Planning, offices
11. Recreation, games, sports, social events, parks, nature activities
12. Cultural Arts, Performances: plays, music, dance, visual arts
13. Mass gatherings, stadiums, malls
14. Communications, information production and transmission, internal,
external, radio, telephone, television
15. Computers, libraries
16. Storage space
17. Energy production, storage, transmission
18. Repairs and maintenance of city
19. Experimental city programs
20. City redevelopment
21. City government
22. Spiritual centers
23. Department of records, tests, and measurements
24. Health and medicine
25. Death
26. Emergencies: welfare, fire, catastrophes, accidents
27. Homes

RAW NATURE



A CITY PLAN

One of the most disturbing aspects of city structures in present use is the concept of mass production and its imprint on our environment and lives. The computer if used creatively seems to offer a higher level of form than older ideas of mass production.

Mass production is based on the concept of producing identicals. Identicals do not exist in the natural environment and as they seem to exist in the products we produce they are psychologically a disturbing influence. They result in a deadening of our consciousness and in tensions associated with the attempted perception of equals.

Computers offer us the opportunity of controlled production with variations of units approaching natural variations. The desirability of these variations and their rhythms in our environment is great.

Automated factories operated by computers and controlled by human consciousness could produce forms in continuous variations and in related families of form and function.

Consumers could select from these variations the particular ones suited to their needs. They would have a need to develop this ability to select and use at a high level of consciousness.

Computers could define and display items before production when desired, or consumers could pre-define their needs and production could be by order.

Each person and family could have furniture that really fit their needs. We would experience and understand variations in form even in matched sets.

Buildings could be pre-formed in factories in units of unending variation in shape, size, and jointing. Yet all variations could be unified as parts of the same family of form.

Instead of automating people so they can produce and consume standardized products, we can put the emphasis back on consciousness where people will be conscious at high levels dealing with nuances of form and concept both in production and use.

We can automate factories, not people. People can move from handcrafts to the consciousness of automated factories, rather than to being robots in automated factories. Our environment can move from handcrafts to a highly conscious involvement with various refined and sensitive products of our factories.

Perhaps we should design city producing automated factories sensitive to and in contact with various needs and subtleties of our culture and environment

Perhaps we should all be involved in the percepts and concepts of this planning and its complement, the direct experience of nature.

The shapes of city spaces are controlled by two major influences, the method of building and the needs of the people. The needs of the people seem to be the first priority, but the building method often seems to have a mind of its own.

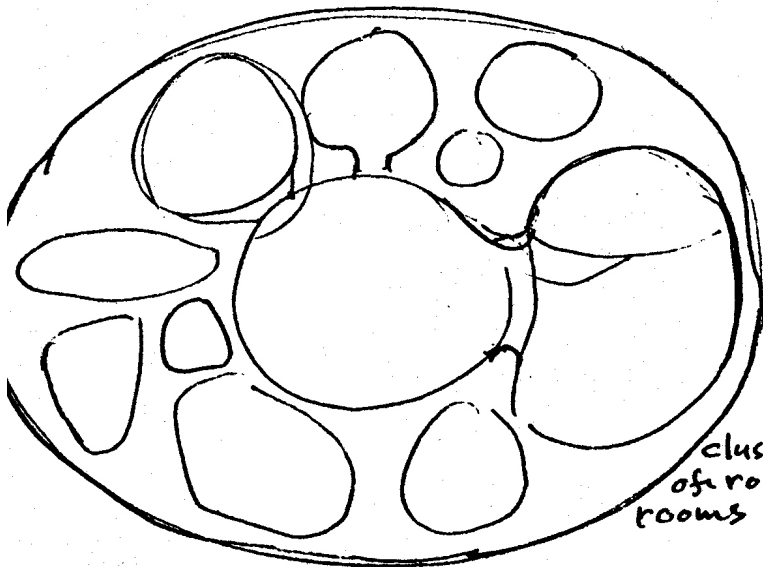
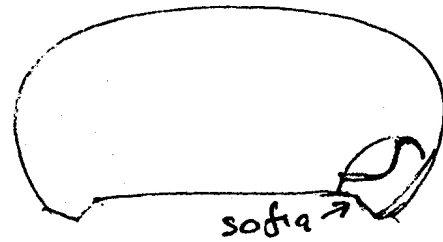
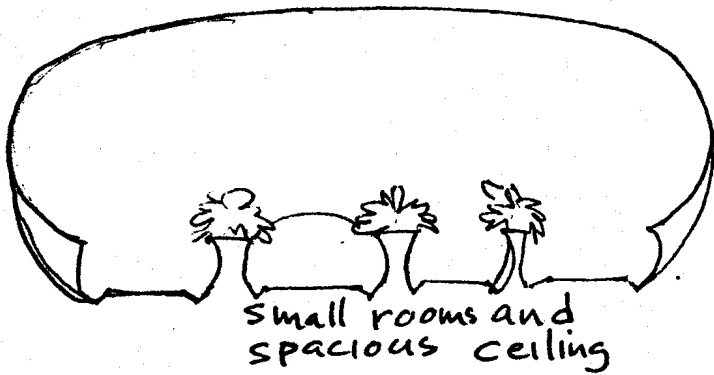
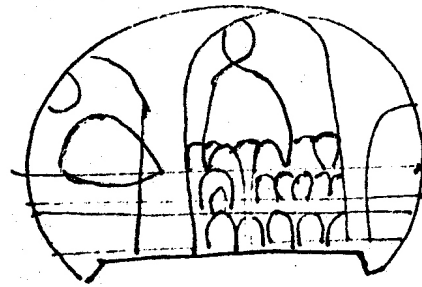
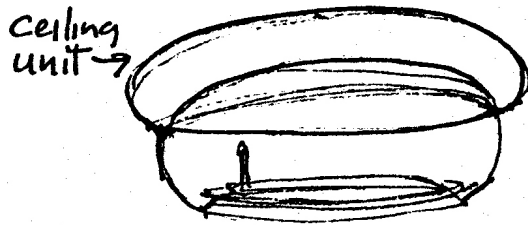
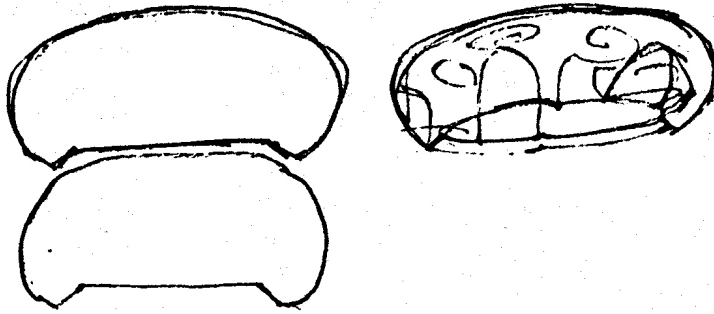
It is difficult to imagine that we need to live in boxes, yet our building methods continue to produce them. These boxes are easily produced by our methods of mass production, but either handcrafted production or computer-factory production methods could produce other forms more sensitive to our needs

Here are some concerns about city shapes and spaces.

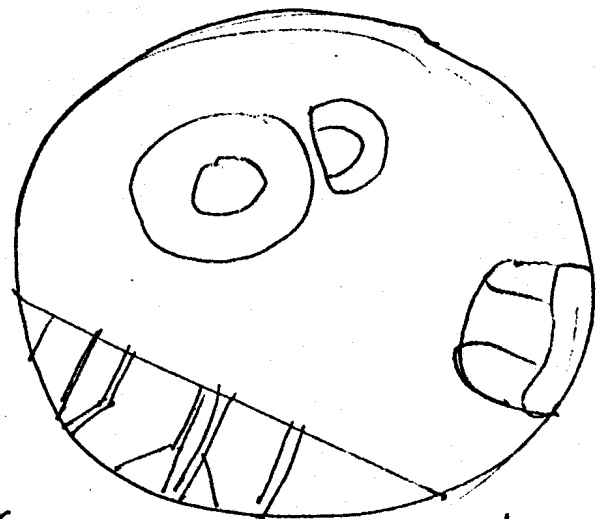
1. We need an alternation of some kind between designed and undesigned spaces and shapes. A totally designed environment no matter how fulfilling has no room for growth and evolution. Often geometric arrangements need to be alternated with randomness. Alternations between human-made form and natural form are often effective. Buildings and plantings are an effective combination.
2. The shapes of our environment need an ample amount of roundness. Straight lines, corners, and points often create awkward spaces for our habitation. We are often injured on the corners, edges, and points of objects. Flat ceilings and the corners of rectangles create awkward spaces to be in. We often find ourselves in these awkward spaces because of our building methods. Handcrafted and computer-crafted building methods could create the curves and variations we need.
3. In our Earth environment looking upward needs to be an inspiring experience. The ground is a relatively stable and flat form. In our structures we have effectively simplified it to a flat plane. From the stability of the ground we see the sky as dynamic and wondrous. The natural skyline is beautiful with countless variations of rhythmic hills mountains, trees and plants. Looking up in nature is a beautiful experience.

In the environments we have created interior and exterior to our city structures, looking up has often been a nightmare. From the ugly flat ceilings of tract homes to telephone lines, street signs, traffic lights, and the tangle of uncoordinated square roof lines or the step-terraced skyline we have generally cluttered and messed up the experience of looking upward. In our cities the shapes we make against the sky need to be coordinated and inspiring.

Modules that allow round inner spaces and spacious ceilings



cluster of round rooms



plan for round room

Organic Principles to Observe in Building Cities

1. Each unit of the city and the city as a whole are built out of all three of the elements of the organic triad. We need to balance our form toward the center of this triad.
2. Form continues its growth through inspiration.
3. The power of a form needs to be strong enough to maintain its unity.
4. Building takes place in the relationships between various centers. Edges are not always defined.
5. The shape of form is round and cyclic.
6. All forms exist in variations.
7. Form is defined through process.
8. Complex forms are the result of evolution and they are composed of hierarchies of simpler forms.

Practical Suggestions for Establishing Organic Design in Existing Cities

1. Make looking upward in our cities an inspiring experience--education, coordination.
2. Create alternations of form--parks downtown, personal services on freeways, and no dense city-centers; randomness in new office buildings.
3. Nature preserves in cities
4. Create a system of flexible, round modules and furnishings for building.
5. Establish centers where people can learn to build or re-build their own homes.
6. Establish a computer project for designing cities. Have craftsmen work with scientists.
7. Improve communication and circulation patterns of all kinds--keep processes flowing.
8. Improve the judgment of the people through education and experience.
9. Eliminate jobs that do not afford growth experiences.
10. Increase the sense of community.
11. Affirm the spirit of the city and its people.
12. Study the daily experiences of the people and help these experiences improve.

13. Build homes in clusters around service facilities, parks, and nature preserves.
14. Improve the environment of new type mega structures by including neutral and complementary spaces (alternations), gardens, many rounded rooms and ceilings. Design these structures in hierarchical sequences having all units in variations instead of the present one-to-one relationship of story-to-story, room-to-room, room-to-story, story-to-whole, et cetera. Instead use varied clusters of varied parts.
15. Plan eventually to tie mega structures together at many levels. Pre-design the potential for them to become parts of Solari type cities.
16. Re-educate building tradesmen in more generalized practices. Do repetitive work with machines, teach tradesmen to be more creative.
17. Make home building an art. Subsidize people to build their own homes.
18. Devise and use building methods that will maintain or improve on the original contours and shapes of the land.
19. Build and plan quality into all aspects of our environment. We should not have to accept less than we had when we lived in nature. Landscape parking lots, make working spaces beautiful. Shape the outsides and insides of buildings as beautiful sculpture, work at beauty and meaning in our environment.
20. Sponsor community art projects.
21. Increase the consciousness of the people of the cities in any ways possible.
22. Develop economic systems which support these choices.
Profit needs to be tied to long-term evolutionary development. We should not force people to work and live in poor human conditions for any reason. No organism honestly chooses to be poor or not to perform well.
23. There is enough time in each parson's life to build a beautiful home, to provide vital necessities, and to have rich experiences. Our economics should support these things.
24. Pass laws against exploitation of people or environment. Profit should not be made by damaging the lives of people or by damaging the environment.
25. Establish better communications and circulations between all power centers and the population as a whole.
26. Build beautiful living spaces in downtown areas.
27. As central cities become more livable, return suburbs to nature preserves. Solve the problems of cities rather than spread them into suburbs and beyond.
28. Decrease the distances people have to travel regularly.