ARCHITECTURAL THESIS
GARTH MOUNTAIN VILLAGE

STEPHEN A. MOUZON
This book is dedicated to Mother and Dad for caring enough to teach me that the only difference is attitude, and to Wanda for standing by me and dreaming with me.
Abstract

This book is the documentation of the exploration of an idea about the built environment through a hypothetical project. The idea centers around the belief that there are certain needs imbedded within the human psyche which do not change appreciably, at least over the course of several generations. This assumption leads to the conclusion that an understanding of those needs is a desirable capacity of those who design the built environment. The project was structured so as to deal with elements of human habitation which are constantly encountered: the home, the workplace, the market, and the city. The project specifically involved a community of about one hundred eighty homes adjacent to a market and workplace community. The project was located in Huntsville, Alabama, which is my hometown, in order for me to be able to deal with issues of which I have a most intimate understanding.

It was my intention in this project to resolve a number of these ideas concerning human needs into a unified field theory of architecture. It was first necessary to discover an appropriate value base by which various needs could be evaluated and categorized. This yielded several very specific intentions concerning architecture. It was then possible to develop a structure by which these concerns might be implemented.

These categories of human needs were next used as criteria for determining the specific needs of this project in relation to both the basic necessities of an intensely alive environment such as the pragmatic spatial needs, the shaping forces of the local society, the local climate, and the site characteristics and configurations, the need of some degree of autonomy and self-sufficiency, and the possibilities of the stimulation of the functions of delight. This format was used to discover the specific needs associated with each level of the environment, and it dealt with needs only within that level. In other words, the resolution of the needs of a particular house was structured so as to augment and fulfill the resolution of the house cluster, for example, but the specific internal needs of the house were assumed to not be known at the time of the layout of the house cluster. In this manner, the resultant environment is a product of several levels of resolutions of conflicts. Each part helps to fulfill the whole, but each part is also true to its own needs.

At this point in each level of the design, the needs of that particular part had been determined in the form of patterns of space and activity to be implemented. This book next illustrates the resolution of all of the larger levels of the environment. It was my intention throughout the project to solve problems in the manner in which they would actually be solved. It first illustrates the manner in which the site can be developed to help the surrounding Jones Valley Community to most fully come alive. It next shows the development of the framework of Garth Mountain Village within the context of the Jones Valley Community. It next shows both the development of a framework for the shopping street and a typical pattern for house clusters applied to one particular cluster. At this point, the designs of each of these parts is a little hazy and unmaterialistic, with only the essential parts defined. These larger patterns do not create an environment; rather, they form a context within which living environments can grow. Now, common land has been outlined, paths laid out, and community functions roughly placed. It is up to each individual act of building to fulfill that which up until this point is only an idea.

It is at this point that a method must be developed to make the preceding ideas concrete. It therefore becomes necessary to develop some very specific patterns of structure and building systems to allow this environment to be built. Decisions concerning the nature of the substance of the buildings are also made within the framework of fulfilling the human needs which have been outlined. What has effectively been developed here is a structural idea which can be moulded around some specific pragmatic needs of the user and fit to the site. No standardized dimensions or major premanufactured parts are used because they by the very nature of their existence could not respond to the nature of the site and the needs of the user. It is also the intention of the structure and systems to be extremely explicit concerning their intrinsic functions. They are formed with the intention that they communicate their purpose to the user of the building. In other words, a building part ought to look like it is doing what it is doing: a column ought to look like it is holding up a load; a roof ought to look like it is shedding water; etcetera. These structural patterns are the tools that give form to the succeeding buildings.

This phase of the project again imitates the manner in which the community would be designed and constructed. Each building was designed individually within the context of its responsibilities toward fulfilling the larger community functions and the context of the structural and systems building patterns. The needs of each hypothetical client were the forces which gave form to the buildings. During the course of this year, and for the purposes of investigation of those building types, I designed several buildings within the established framework, including a house for a single person, a house for a couple, a house for a small family, a house for an extended family, the birth place, and several of the offices and shops within the shopping street. In the interest of brevity, I have included only two of these buildings within this documentation: the architects office and a large office on the tower end of the shopping street with an apartment above. These buildings are, however,
typical of the results of the methodology and the concerns present in this project. In effect, one could easily imagine, given a specific site within Garth Mountain Village, a specific client, and a specific building function, what sort of building would come to life.

**Finally,** for the purpose of concreteness of illustration, I have included a few typical details. They are a hard manifestation of the concerns present in the structural and systems patterns. I hope that they sufficiently illustrate my concern for structural clarity: a building looking like it is doing what it really is doing. The details illustrate a number of typical conditions found especially within the shopping street. Many of them also occur in the housing in the adjacent neighborhoods, but those concerning the shopping street were given special emphasis.
Contents

DESCRIPTION OF CONCEPT 8

STRUCTURE OF PROJECT 20

COMMUNITY DESIGN 28

STRUCTURE & SYSTEMS 44

BUILDING DESIGN 50

CONCLUDING REMARKS 68
PERSPECTIVE view of shopping street from the east; community green and tower are in the foreground, pedestrian overpass over Airport Road to North Jones Valley Estates is to the left, and Westbury Community is in the valley beyond.
There are certain human needs which, as well as we can determine, do not change, at least over the course of several generations. It appears that these needs are embedded in the human condition and are subject to very slow evolution, if they are subject to change at all. This can be said because in all instances of which I am aware where people were free to choose ways to make their own habitation, they chose some structure which would fulfill these needs. I can even more justifiably say this because I am acutely aware of these needs within myself. I can also observe these needs being manifested in others, especially those who are relatively unindoctrinated in contemporary architectural dogma.

It was my intention to attempt to resolve a number of these ideas concerning human needs into a sort of unified field theory of architecture. In this manner, one can be aware of conditions in which a certain sort of person is likely to exhibit specific needs. This chapter will first deal with the establishment of a value base by which architecture may be evaluated, because I feel that it is always necessary to have some sort of idea how a decision is to be made. I will next discuss some of the intrinsic characteristics of architecture in order to understand the material which the value base will be used in evaluating. Next, I will investigate what some specific concerns might be which would emerge from the evaluation of the preceding definition of architecture by the aforementioned value base. Finally, I will discuss a structure whereby these concerns might be given form within the built environment.

It seems that man has always felt the necessity of seeing what he may be doing as just and true. It is probably not possible for man to sustain the belief that he himself is evil and maintain a sound mind for any extended length of time. As a result, he usually structures a system of morality around whatever he happens to find himself engaged in at the time. This seems to be true also among architects. There seems to be a widely-held assumption, at least among the more idealistic of us, that an architect ought to be forever in search of some perfect form or harmony, and that this search, if faithfully conducted, will result in some form of redemption, or at least self-justification, and will in turn set that noble soul above the teeming masses of the heathen who are engaged in the design of buildings purely to make money. Furthermore, it is usually assumed that only those with some sort of mystical personal abilities have any right to access to this architectural holiest of holies. I believe that these attitudes are purely self-justifying nonsense. I do not believe that there is such a thing as perfection through architecture. There is no such thing as a Great Spirit of Architecture, and to believe so is only self-delusion, and a waste of one’s efforts. Architecture has no intrinsic moralism. Architecture is nothing other than objects in the service of man.

It does not seem to be wise, however, to state that the built environment should entirely escape evaluation, or that its creators should not be judged. I have stated only that architecture is an entirely human endeavor, and should be treated as such. It is true that there is a need for a value base in nearly any activity by which the success of that activity may be appraised. This is necessary from at least a pragmatic standpoint in that a framework of evaluation provides a body of knowledge through which succeeding efforts may be enhanced and the following accomplishments made more significant. This leads to the recognition of the nature of architecture as a mode of accomplishing something through a set of rules structured after the nature of the desired accomplishments. This is the essence of all human activity: all of it is structured in some manner with the intention of accomplishing some specifiable thing. Also, any activity evaluated by the rules set up to guide another sort of activity is quite likely to seem rather silly. My intention, therefore, is to structure my own value base around those things which have verity for me. The value base, which is established on some spiritual and assumed non-worldly values, is the entity which guides the direction of the intended accomplishments.

Therefore, although I do not feel that I can obtain any personal redemption or anything of the sort, I do feel that I ought to set out what I am trying to accomplish in architecture within the bounds of my own spiritual or at least moral beliefs. The essence of those beliefs as they relate to architecture is as follows: First, I do not believe that there is any such thing as human perfection through one’s own abilities. It sounds like a wonderful, although elusive, sort of thing, but several thousand years of recorded history have suggested that it is not possible. This correlates with the belief that working for one’s own glorification is quite foolish. All of our own accomplishments will fade, and will eventually be destroyed, at least as far as we are concerned. It is true that some contributions have effects that far outlive the contributor, but the glory is something that that person had to leave here, and we usually do not even know their name. Personal glory and the acclaim of man, therefore, are things which the permanent value of attainment is quite small. This attitude is comfortable with the idea that seeking the good of others is a healthy activity. This mentality does not encourage self-glorification or other related eventually worthless activities.

The resultant value base is one which is centered around meeting the needs of those with which we deal. This implies that we strive to meet those needs which are intrinsic to the human condition in relation to architecture. These
needs are similar in nature to other necessary human functions such as eating and sleeping: they contain no explicitly predetermined right or wrong, but they unquestionably exist. It is assumed that when these needs are met, it will accomplish two things: first, it will provide a stable base on this earth from which man may engage in other profitable activities. Second, it will in some way enhance the lives of all who come in contact with the resultant environment in such a manner that their other accomplishments are intensified. It is worth noting that under no condition do I feel, contrary to early Modernist doctrine, that architecture can cause a person to do good. If it could, then there would be grounds for an argument supporting architecture as a device of redemption. All it can do is enhance and contribute life to whatever is done by the inhabitant. It can, therefore, only present the possibility for enhanced good to be done.

I have now established a value base within which I intend to work. It is imperative, however, to discuss the context within which we are working before attempting to deal with the specifics of the necessities involved. In other words, it is important to understand the nature of the problem in order to understand the manner in which we might deal with it. It seems that the built environment may quite likely occupy a category all its own within many responsible orders of the universe. I propose an order (an entirely synthetic sort of thing) in which there are at least four categories of tangible material elements within our frame of experience: the cosmos (inanimate), organisms (animate), tools, and finally objects of habitation. These categories were formed from consideration of classifications of intrinsic human needs. This is obviously a human-centered categorization, but not necessarily an individual-centered one. (It deals with how we are all affected as a species, not just me.) The first category includes all things and substances which we know of (and assuredly many which we do not know of) which are nonorganic and are fundamentally unshaped by animate forces. They are usually shaped by relatively simple combinations of the four forces: the strong nuclear force, the weak nuclear force, the electrical force, and the gravitational force. Examples include stones, water, the atmosphere, planetary bodies, and so on. In order of radically decreasing energy and mass, organisms are the second classification. These are entities which continue to exist due to extremely complex interactions of the four natural forces. Additionally, they ordinarily have the power to in some way alter themselves by design, and sometimes they have the power to alter their immediate surroundings. The third classification is that of tools. These are things which organisms, most notably man, have fabricated from substances external to themselves for the purpose of aiding them in a particular task or set of tasks. Their end result is that they make something possible to the organism which was not possible solely within the framework of its own body. The fourth classification is that of objects of habitation. An object of habitation is not created to make a specific task possible, but rather to provide a shelter and a place for that organism.

The intent of this entire classification is to attempt to clarify some things about the nature of objects of habitation, or more specifically buildings. There are certain properties specific to the nature of habitation which must be understood in order to understand the nature of architecture. A building is neither a tool nor an organism, neither is it a tiny fragment of unaltered cosmos. It is specifically a building; a thing within itself, and the nature of such must be adequately understood in order to achieve all or at least much that architecture is capable of. Objects of habitation (man-made places, buildings, furnishings, clothing, etcetera) are similar to tools in that they are both man- or at least organism-made. There are, however, striking differences. First, the need which creates a particular tool is usually quite specific to a certain culture, a certain technology, and a certain time. It could not have been created for the function for which it was created if the conditions were altered significantly. The needs which caused it to be created are usually dependant on other necessities, which are usually dependant on other necessities, and so on until they are traced back to some basic human need which was channeled by the particular society. The need which causes an object of habitation to be fabricated, however, is usually one of the immediate inborn human needs. Although the specific forms may vary widely, these same human needs can always be identified as the cause of a living object of habitation. Therefore, objects of habitation are much more specific to a basic human need, albeit much more general to the human species as a whole, than tools. Second, a tool is fabricated to help with or eliminate a particular task that man is confronted with. It, in effect, lessens the effort which man must put into a particular chore. The essential function of objects of habitation, however, is to provide both a tangible place and possibly arguably a spiritual base for the body and spirit of the human. They do not usually alleviate any chore, but in nearly all climates, they are necessary to man for survival. Finally, the efficiency of a tool rests in its quantitative precision. The efficiency of an object of habitation rests in its precision of relationships. The tasks that an object of habitation performs is not the precise, mechanical, quantitative sort that tools perform.

Due to the above factors, the concept of object of habitation is significantly different to that of a tool, and is obviously different to that of an organism, which creates both and is created by neither. Several significant facts can be interpolated from the arguments above. Most importantly, since
the need for an object of habitation comes much more directly from the human condition than the need for tools, it can be inferred that a person may feel inclined to put much more of his own spirit into the creation of his own place than he would into the fabrication of a tool, and that he would feel much more of a union with the place than with the tool. This implies some quite serious consequences for places created with a tool mentality. (Need I mention Pruitt-Igoe?) There also seems to be quite a current fascination with constructing supposed objects of habitation in the manner in which organisms are supposedly conceived. I feel that it is worth mentioning that while any object of habitation which is in harmony with its origin (the needs of an organism) may incidentally display some organic characteristics, any attempt to achieve the perfection of the organism is necessarily futile. I prefer to believe that that capability is one which God has reserved for himself. Incidentally, it also seems that it would be against the nature of the object of habitation to make it in the manner of the organism. In essence, the house is unquestionably not a porcupine. Also, the house is absolutely not a machine for living. A house is a house.

I have therefore established both a value base which I feel is appropriate around which to structure the rules to guide design, and some assumed intrinsic characteristics of the nature of the thing with which we are dealing: architecture. I have also stated what this leads me to in terms of intended accomplishments; the satisfaction of the human needs which necessitate architecture. These needs seem to fall into two general categories. The first category of need is met by what I shall call the base functions. These have to do with the more pragmatic, possibly the more necessary elements of habitation. The essence of the base functions is that they provide a solid, functional base for man within the frame of his existence. The second category is that of the functions of delight. These are the functions which are capable of elevating the spirit of man, both on an extremely sensual and non-cerebral level, and on an intellectual level.

There are several possible categories of base functions, and it is entirely possible that I have not recognized several of the important ones. I have, however, identified several functions which I feel ought to be included among the base functions. These include the fulfillment of pragmatic spatial and functional needs, the recognition of natural shaping forces, the need for some degree of self-sufficiency and autonomy, and the need for a psychological or spiritual base.

First, it is probably quite impossible for a place to help someone to live most fully if it does not meet or at least provide the possibility for the satisfaction of several of the pragmatic needs of daily life. This seems like quite a simple statement which almost does not need to be said, but I feel that it is necessary to include this need if just simply to place it within the context of the following ones. In other words, it is only one of several of the base needs.

The second important base function is that of recognizing and responding to local formative forces. These forces include the characteristics of the indigenous society, the local climate, and the whole range of site characteristics. The forces which an existing society may exert have to do with their entire tradition of rituals concerning the manner in which they interact with the built environment. Designing a building structured around rituals or traditions of which the users have no knowledge or exposure is counterproductive and may leave the inhabitants in a state of unresolvable conflict with the environment. The climate of an area has a great influence upon responsive buildings. A building which ignores the local climate may be at worst economically impossible to live in and at least quite uncomfortable physically and psychologically. This latter factor has to do with the established fact that an architect who is quite sensitive to the local climate has a much greater ability to make a wide range of activities and situations possible with very little effort than one who disregards climatic conditions. In short, in a building which is not designed with the local climate as a primary formative factor, so much energy is taken up both in solving the climate-related problems during construction and in maintenance in succeeding years that very little energy and resources remain to make a pleasant living environment. On the contrary, those who are intimately familiar with the local conditions can powerfully exploit them to make possible enriching opportunities which would otherwise be utterly impossible. This familiarity with the environment must necessarily go much deeper than just a knowledge of solar input tables. This sense is best developed by living in the given environment for an extended period of time, and results in a familiarity with the feel of the summer breezes drifting across a pond, the sparkle of an autumn night, the intensity of an early summer thunderstorm, the warming of the sun on a winter afternoon, and the stilling heat of a scorching August afternoon. Only with this level of familiarity with the local climate and a corresponding knowledge of its effect upon the built environment will a designer be able to exploit the climatic conditions as greatly as possible.

The third and most explicit formative shaping force is that of the site characteristics. This has to do with the entire range of possible forces which may be exerted upon a building by its place upon the earth. These forces range from extremely large-scaled ones such as the ability of a major highway to affect those who view the site or a regional planning body's decisions concerning that par-
ticular area to smaller-scaled, more internal factors such as the slope up to a wooded knoll, the tracing of a stream along the periphery of the site, the presence of an enormous cedar at the back of the lot, or the killing frost in a sunken glade. It is only sensible to understand that intervention in the form of architecture which takes advantage of and heals forces found on the site will accomplish more with less effort than buildings which do not recognize these forces. Further, I feel that the appropriate attitude to employ concerning a site has to do with the concept of site repair. The essence of the idea of site repair is that it is totally unwise and counterproductive and unwise to build upon the nicest and most living portions of the site. Rather, one ought to strive to preserve those portions, building upon the most unhealthy parts of the site. In this manner, the unhealthy portions will gradually be healed and returned to a vigorously alive condition and the wonderful parts of the site will be preserved. This attitude, of course, is entirely worthless to those of us who feel that natural conditions can never be quite so wonderful as their own creations. Obviously, I do not subscribe to that position.

The third, and equally important, base function is that of self-sufficiency. It has been my observation that an entity cannot be most fully alive if a significant portion of it sustenance is imported from abroad. The most obvious example of such with which I have had any personal contact is Disneyland. The experience of Disneyland is absolutely enchanting. The physical substance of it and its capacity for the functions of delight are entirely unparalleled. In other words, its physical being is nearly the most delightful which I have ever encountered. There is, however, a nagging sense of unreality. This is a direct product of the recognition that everything which provides that environment is imported. Without importing people, resources, and energy, it would die immediately.

This, I hope, is an illustration of the fact that any entity which cannot sustain itself is incurring a quite tentative and precarious existence. There is ample evidence of the foolishness and resultant stress of this condition in the current world situation. In summary, I do not feel that a place with which a person has daily contact can truly help that person to become intensely alive if a significant portion of that place’s existence is owed to entities which are remotely removed from that place. I feel that this concept of self-reliance, which incidentally is at the heart of the American attitude, is applicable in several fields, not simply the much-publicized area of energy. There seems to be at least two major divisions of desirable self-reliance: economic, and social. Economic self-reliance would of course include such areas as heating, cooling, lighting, resource, and caloric self-reliance.

The first two, heating and cooling, have recently received masses of much-deserved publicity. The dangers of reliance upon energy from afar leads to such unimaginable horrors as the spectre of nuclear power generation accidents, the disposal of nuclear waste, and acid rain, to name a few. This is totally foolish, especially in light of the fact that with only a different, and usually much more liveable design, houses can be made to provide nearly all of their own energy from the sun, the earth, and conservation. The remainder which they cannot supply directly through the abovementioned methods can normally be procured from a localized source, such as locally-grown wood or the developing resource of locally produced fuel alcohol, for example.

Lighting self-sufficiency has much to do with the condition of the previous two problems. It, however, is set somewhat apart in that it presents such a possibility for positive impact upon the environment. The physiological effects of importable, thus artificial, lighting sources upon humans are just beginning to be documented. It appears that there is simply no healthy substitute for natural light and sunshine. The others not only deprive us of necessary conditions, but are in many cases, especially with the newer lighting technologies, downright unhealthy. Additionally, the concept of natural lighting applied to the built environment can have positively wonderful effects. A building that is entirely naturally in the daytime is incomparably nicer as a living environment than its artificially-lit counterpart.

Resource self-sufficiency, yet another sort of economic self-sufficiency, is a much broader yet less-understood category than the previous ones. Resource self-sufficiency involves obtaining all resources, and especially in the case of architecture, all building materials from as local of a source and as controllable of an entity as possible. This implies many things about front-end choices concerning materials, not just the careful procurement of carelessly selected materials. This division concerns not only the geographic proximity of a resource, but the controllability on a local level of that resource. For example, if a product or service is available locally yet all significant decisions concerning this resource are made by a remote entity such as a major corporation or a nationwide union, for example, then these criteria suggest that it would be wiser to deal with a manufacturer or a supplier who is responsible to local input. This category also deals with the materials and resources, including labor and skills, which an environment might require as part of routing maintenance throughout its life. Apart from all economic considerations, one can make a significant case for using locally-available resources simply due to the fact that they are more understandable and comfortable in the environment in
which they naturally occur.

Finally, there is the possibility for caloric self-reliance. Again, the manifold problems of a food supply system which is in some respects worldwide have come to light in recent years. The strain which it places upon our resources purely in terms of transportation are truly monumental. The problem of lack of input as to the composition of the foods has also been well-publicized. Food production and preparation in the hands of major agribusiness must by its own nature concentrate on profit at the expense of the consumer and must deal with the problems of providing seemingly fresh foods after long trips or long times in the warehouse by the mechanisms of chemical additives and the like. That does not seem to be a remediable situation; it is a part of the nature of their existence. Of course, if you want bananas in Indiana, there is no alternative but to import them from several thousand miles away. For most foods, however, the prospect of producing them intensively locally usually promises a significantly higher quality with a much greater degree of consumer determination of their contents and significantly less stress upon our transportation resources.

The second major categorization of self-reliance, that of social self-reliance, is probably equally as important as economic self-reliance from a standpoint of stability of environment. It seems, however, to be much less publicized. This situation is typified both by the bedroom city, where people make their homes although their work is elsewhere, and by mega-government, where the decisions impacting people and the origin of the bodies which make those decisions are so far removed from the people as to make them inaccessible and irresponsible. This suggests that we do whatever can be done to create an environment which encourages, or at least makes possible, situations where more localized groups have control of decisions which directly affect them. Of course, just as I have said that I do not believe that architecture can cause a person to do good, I also do not believe that architecture can either initiate or create social or political change. I do believe, however, that it can permit situations which allow or even encourage these changes. For example, as opposed to developing the city as an endless sprawl of undifferentiated houses, the designer, taking clues from the idiosyncrasies of each individual part of the city, can cluster and structure the homes in such a manner that they suggest several layers of belonging from communities of five to ten thousand to subcultures within those communities to neighborhoods to house clusters to the individual house. In this context, with these levels of community defined by the physical substance of the environment, it will be easy and even natural for a group to take control of those decisions and issues which most directly impact them. Of course, this is only a single example of the possibilities of social self-reliance. This attitude also implies an intention of preservation of locally-originating cultures and customs, because I feel that the situations which evolve locally are almost always best suited to solving the problems and meeting the conditions of that people simply due to the nature of their existence. This can be seen to be equally applicable to the concept of economic self-sufficiency.

The first three base functions necessary for a living environment; the fulfillment of pragmatic needs, the recognition and exploitation of the shaping forces of the local society and climate and the characteristics of the site, and the objectives of both economic and social self-sufficiency are quite tangible, sensible, and understandable. The fourth base function, that of providing a psychological or spiritual base for man within this world is not quite so easy to grasp. It is the base characteristic which I readily admit that I understand the least. I feel, however, that it is urgently necessary as a component of a stable existence. One of the easier components of this idea seems to be that environments must be comprehensible on all levels. This means, I feel, that it must be immediately apparent to the resident what each of the functions of each of the parts is. This also means that the resident ought to have some familiarity with the processes of creating the environment. Two simplistic examples of what I feel that this means are as follows: first, as an example of functional clarity, a column which does not appear to be holding up a load, but instead appears to be a thin, spindly delicate member not capable of supporting itself can never truly function as a column. It ought to recognize the compressive nature of its function by flaring slightly at the ends. This is both visually and structurally true to its nature in that it also helps to transfer the loads more efficiently from the beams. Also, stairs, for example, ought not to be floating planes which seem to deny the law of gravity. They ought to express their nature as a device both to facilitate climbing and to serve as a stage for sitting and the like. In both cases, it is their nature to be a solid, structural element, not an assembly of floating planes. The second example has much to do with cultural preferences. The essence of such is that certain vocabularies have been developed to deal with certain building functions. These vocabularies have usually been developed through an extended and sensitive process of evolution, and to ignore them is foolhardy. In short, a school ought to look like a school; a courthouse ought to look like a courthouse. This idea is dealt with in greater detail later. Without this characteristic of understandability, it does not seem that an environment can function as a stable base for a person's existence.

This function of psychological or spiritual base seems to be in some ways a microcosm of the entire concept of base
functions coupled with functions of delight. This is true in relation to the fact that understandability of environment is essentially a base function to the true function of psychological/spiritual base, while both of these together form the culmination of the base functions to the functions of delight. The true function of psychological/spiritual base seems to be the most elusive concept of all, and I have only begun to understand its mechanism. The essence, I feel, of its mode of operation is that architecture can be a tangible entity upon which the hopes and dreams of man can be attached. This seems to be strongly connected to the aforementioned idea that objects of habitation are more essential to the human psyche than tools due to the closeness of the origin of their needs to the root of the human condition. This is congruent with the notion that activity and place can scarcely ever be entirely detached, especially within the human mind. I do not feel that this entire notion entirely precludes the possibility of a mobile society, although it seems to have much to do with an established homestead. The concept seems to be most centered around the ability of a place at any given time to function as a point of attachment for those dreams and subsequent memories. This concept seems to be at the heart of the incredibly powerful human need to go home, or more abstractly to discover or reattain one's origins. The concrete ramifications of this currently unestimably important function seem to be concerned with identifiable place and with expression of one's inner self. The first concern, that of identifiable place, is derived from the notion that the meaning that is deprived by creating a multitude of identical environments is absolutely critical to the failure of those environments. This idea can be best illustrated in an intensely urban setting. If all, or very many environments are identical, as occurs when a group of structures is mass-produced, then an activity, and subsequently a memory, can just as easily be associated with one of the environments as the other, and when this occurs, the specific place becomes meaningless, leaving us with no point of attachment for those dreams and memories. This seems to me to be a tragic condition.

The second related concern, that of architecture as an expression of one's inner self, seems to have a purer connection with the idea of objects of habitation having an intimate connection to intrinsic human needs than does the idea of architecture as a base for hopes and dreams and memories. The essence of this concern is not only that a specific place should be identifiable, but that this character which makes it identifiable should somehow have emanated from the identity of the resident or owner. This is easiest to apply when concerned with new construction, but it is also accomplishable with existing buildings. The crux of the issue is that an environment, especially a home, ought to be created from the basic human needs which necessitate objects of habitation and that they ought to be structured according to that person's life experience and of course be channeled by the society of that person's origin or existence.

It is certain that there is much to this issue of psychological/spiritual base which has yet to be touched upon at all. I feel, however, that some of the essentials have been offered for thought and consideration. I wish to understand this base function more fully. These four base functions thus consist of the fulfillment of pragmatic functional needs, the recognition of local shaping forces, the objective of self-reliance, and the objective of architecture as a psychological/spiritual base for man within this world. These functions will if properly respected, I feel, provide a stable and encouraging base for the existence of man. I feel also that the recognition of these function is as seriously needed by humans, at least on a cerebral level, as are food, water, and clothing. The base functions are also necessary to insure that the functions of delight have significant meaning.

The functions of delight are by no means less important than the base functions, but they do seem to be more entrenched in cultural preference, individual building function, and intellectual level of the user. At the outset I feel that it is necessary to clarify that there are several levels of functions of delight. These range from the resolution of pure organic habitational conflicts and functions of pure sensual delight, which requires neither thought nor association, up to the representation of the ideals of a particular culture. The understanding of this level of function can be quite deep and dense with meaning and can require quite careful and deliberate thought. This function (representation of cultural ideals) is a part of a category which I call "place as elevated representation". Below that, there is place as base representation. Lower still, there is vocabulary as an evolution of an understandable language, and below that there are the above functions of sensual delight.

I feel that it is necessary to mention my perceptions of the structure of functions of delight. The lowest functions involve only pure sensual activities. Responses to them are essentially gut reactions. They require no language. The next level up involves the development of a sensible and logical language. The next level involves use of that language in a manner which approximates prose; it is an attempt to see a place as a representation of oneself on a quite banal and simplistic level. The fourth level involves the use of that language in a poetic mode. Meanings are dense and often multiple, and for the initiated, they are quite rich. I am enough of a populist to believe that these functions ought to be structured in all buildings in such a manner.
that the entire range of users can obtain something of the message. An appropriate analogy involves the current state of art. In past times, works of art were usually created in such a manner as to be explicitly representational of something tangible within the lifetime experience of the artist. The artist may well have been conducting some sort of investigation, but even to the peasants, there was some meaning due to the skill of the representation. Recently, however, the demise of representationalism has left us with an unfortunate situation: either the viewer has been introduced to the program of the art, or there is essentially no meaning in it for him. This is supremely elitist, and in the vernacular; pure hogwash.

The populist view of this situation is that if the work offers something to very few of its viewers, or in the case of architecture, its users, then its true value as a piece of art is negligible to most of us. (How many of us have parents who understand or appreciate a De Stijl painting, even in a small measure? Is their existence therefore invalid, or is its value diminished? My answer, obviously, is: absolutely not! The artist did not fulfill his obligation to these people. That is where the fault lies.) I feel, therefore, that the levels of delight which ought to be incorporated into architecture has everything to do with the intended users and viewers. Most of all, it ought to offer at least the basic levels of sensual delight which we can all appreciate and enjoy, and depending upon the users, it may well incorporate some or all of the higher levels of delight.

There are situations, however, where the lower functions might be limited in favor of an especially intense presence of the higher functions. This idea is bound up in the notion of the variation in building function. That is, place where one stays for considerable lengths of time are those where the necessity of the lower functions is greatest. There are places, most notably buildings of civic or at least public functions where a person is present for a limited time only. In this case, more of the higher levels of delight might necessarily suppress the lower levels in order to accomplish a more intense ennoblement or information for the visitor. The point is that in determination of levels of delight to be incorporated into a place, both the composition of the users and the building type are of great importance.

The lowest levels of the functions of delight have been designated as the functions of pure sensual delight and the resolution of organic habitational conflict. I have discovered that Christopher Alexander has much to say regarding especially patterns of space and activity which have to do with these simpler functions. Much of what I will use as illustration here, including the two following illustrations are taken directly from his insightful book, A Pattern Language. Many of the attitudes expressed here are those which I had the seed of before, out of the essence of my own humanity, but were expanded by the vision of Mr. Alexander as expressed in The Timeless Way of Building. Other attitudes had been more fully developed, and the writings of Mr. Alexander were but "splendid confirmation", in the words of Mr. Wright. At any rate, Mr. Alexander describes an example of an organic habitational conflict, the thrust of which is as follows: humans are naturally phototrophic creatures: we are drawn to light. It is also quite natural to want to sit in a comfortable position and location. If there is not an opportunity in a room to sit where there is natural light (a window), then we are unresolvably locked into inner conflict between these two inborn desires. The resolution of these two needs will invariably take the form of a window place. The window place is simply a single or collection of comfortable places to sit near a window where the daylight and sunshine can stream in upon us. It may specifically take the form of anything from a modest window seat to a glazed alcove. The point is that this specific pattern is the resolution of these natural forces.

It has also been noted that there are functions of pure sensual delight. An easily illustratable one, which also has to do with light, is that of filtered light. There seems to be something especially pleasing about light, especially sunshine, being filtered and broken up by some sort of sieve. This may take the form of a window of many panes, ivy growing over the lintel and filtering the sunshine, the leaves of a tree swaying in the wind immediately outside the window, or a host of other methods. The specific mechanism is not so important as the effect; the pattern. The point of both of these patterns and all those like them is that you do not need to think about them; you just enjoy them. It is entirely non-cerebral.

The next level of functions of delight is that of discovering building vocabularies which have evolved in the region as an understandable language. It is my hypothesis, as was suggested in the analogy of modern versus pre-modern art, that a work can have little value to a person if the vocabulary and the theoretical basis to that work are not based on something which he understands. It could be argued that the scholar, upon identifying something of possible worth, will investigate the matter until he discovers the basis of such. Unfortunately, the vast majority of us are not scholars and never will be, so as stated previously, I feel that it is the responsibility of the designer to also deal in terms which that person can understand. This leads directly to the argument that a world that is in constant revolution can have little or no value to the masses due to the fact that the vocabularies are constantly being redefined in "new and original and wonderful and so
work: its multiple layers of meaning within other multiple layers. Finally, I believe that as long as we perpetuate any of the ideals of our Western classical cultural heritage, we will also perpetuate a continuation of the vocabulary of classicism.

At this point, I have established a value base for the structuring of decisions, an essential content for architecture, and specific human needs that have to do with both base functions of living environments and functions of delight. At this point it is essential to set up a framework whereby these concerns might be implemented in a concrete manner. The implementation itself is quite simple; it involves first the recognition of needs, second the development of a pattern language based on those needs, and finally the implementation of those patterns from the large community scaled down to the very smallest. The simplicity of this approach is its strength. It is an approximation, as far as we can tell, of the manner in which most vernacular architecture was conceived and constructed.

The first step of the process involves the recognition of needs on several levels. First it must be determined in what basic manner the base functions impact the project. For example, in the category of resource self-sufficiency, it must be determined what resources are likely to be required, and if possible what some possible schemes might be for obtaining them in a self-reliant manner. The second need which needs to be determined has to do with the function of the project. It must be determined what sort of place it is to fill within the local culture and what responsibilities that puts upon the project. For example, it would be extremely important in the case of a library, a judicial building, or some other civic function to determine what needs the community has which can be best or only supplied by that building function. Finally, the needs of the users in relation to the range of their levels of sophistication ought to be determined. For example, if a post office were to be constructed in Kelso, Tennessee, it would be important to understand that highly complex multiple levels of meaning would likely go unappreciated throughout the entire life of the building. These multiple levels of meaning, if ever perceived by a visitor, would be read immediately as having been imposed from outside and as being highly incongruous with the humble albeit noble manner of life of those people.

Next the pattern language based on these needs is developed. It has been my experience that the only successful way of structuring the pattern language is by scale of pattern as opposed to some other method such as level of need. It is worthy of note that the base functions are best handled in two manners; as a programming criteria, or as a pattern-handling criteria. An example of the first method can be found in the way I achieved the housing density for Garth Mountain Village. I knew, among other things, that I wanted all the auxiliary heating to be accommodated by hybrid poplars grown on unbuildable portions of the site, the quantity of which I knew rather precisely. This quantity was used to determine the maximum number of houses which the site could support from the standpoint of heating. This base function did not give form, but rather, it gave quantity. The second manner of dealing with the base functions, as a pattern-handling criteria, can be illustrated as follows. Throughout the course of all levels of the project I was developing quite precise webs of patterns. Still, they did not dictate a form. At times, for example, I would use the site as a specific forming device. This situation was quite common. At other times it was expedient, for example, to use the criteria for understandable buildings set forth in the discussion of architecture as a psychological/spiritual base. As a related issue, I kept close at hand at all times examples of other regional vernacular architecture which solved some of the same problems that I was dealing with. In this manner, I was able to continue and expand upon existing traditions. Finally, I feel that it is important to note that I feel, although I did not deal with these levels of the functions of delight within this project, that the intricacy of allusions necessary to satisfy the needs of the most cerebral observer may not be achievable purely through a pattern language. As an example, although there are many patterns of sensual delight present in Jefferson’s University of Virginia campus, I cannot help but believe that many of the larger ideas were implemented in some manner other than one pattern at a time. This question, however, is entirely open at this time. I intend to vigorously pursue it in the near future.

Finally, at least in this situation, the patterns were implemented one level at a time. In this manner, each succeeding level completes and fulfills the one before it.

In conclusion, I feel that it is necessary to bring a few facts to light in regard to the nature of these objectives and this process in relation to real changes that do occur which the architecture of the time must deal with. First, the assumption that there are basic human needs with regard to objects of habitation that do not change over the space of a few generations is my thesis. It is absolutely essential to all that follows. I will believe that it is true until and if I discover that it is not. I do recognize, however, that there are a host of other changes occurring which incidentally are not involved with the human condition. To ignore those changes would be extremely unperceptive and sheer folly. They do, by the very nature of the new problems which they present us with, suggest new and somewhat different solutions. The car is a primary example. It has had previously unimaginable effects upon the built environ-
on" ways. The corollary attitude is that a vocabulary which has meaning to most people is one which was developed through a gradual process of evolution and refinement. The concreteness of my process as it relates to this idea is that I determined that if I were faced with a problem similar to a problem which the traditional indigenous architecture of Huntsville and surroundings has addressed (yes, dear Modernists, that situation occurs quite often, in fact), I would attempt to solve my problem in a manner which was comfortable with the existing traditions. I found several instances where I was able to expand upon and further develop the existing traditions, and some instances when I simply perpetuated the existing traditions. I found not a single situation, however, which necessitated the negation of or abuse to an existing building tradition. It was simply not necessary and would have been quite rude and unthoughtful had I done so. I have greater regard for the residents of Huntsville and the people of Alabama than to perpetrate a thing which flies in the face of their entire culture. In the words of the late Ronnie Van Zandt, "there's good people in Alabama, and let Mies know that, too!"

The third level of the functions of delight, as has been stated, involves the simple, prosaic use of the language recognized at the second level. I found successively less need for the use of patterns existing at these upper levels in this project due to the nature of the project and its users. I will, however, discuss what I feel some of the contents of these last two levels might be. The third level involves a place as a base representation of self. I can ascertain that the need for this level exists, just as I can with other levels, because of times over and over again when people exhibited these needs in their buildings. The possible manifestation of the need to represent oneself in a simple manner can take at least the following forms: the explicit representation of oneself, the representation of a real or a mythical parent society, or the representation of one's wishes or dreams. The first form, that of an explicit representation of oneself, can take at least two forms. Perhaps the most simple is that of anthropomorphism. It seems that the uninitiated feel most comfortable with buildings which mirror their own bodily form; thus the development of symmetry is from a very natural and predictable source. The second, also simple form is the representation of a desired self-image. This seems to be attempted by a host of middle class homeowners in the form of yard decorations, possibly because the total inflexibility of the house itself to adaptation to the owner's person channeled the needs to the yard.

The second form of place as simple representation, that of representation of a real or mythical parent society, is also accomplished with relatively little need for intellectual effort. This can be almost subconscious at times, such as the manner in which early American settlers carried building traditions with them to the new world; they knew no other way. At other times, people may feel a need to express their cultural heritage through the possibly questionable mode of the importation or at least synthesis with the local of the traditions of their parent society. The other manner which this may be accomplished is when for some reason a society feels some real or imagined kinship with another, they may purposely impose the style of the other society upon their place of abode. This attitude is not congruent with certain attitudes regarding the scientific derivation of a vernacular, but it is something which people have felt a need to do several times that we know of.

The third form of place as simple representation, that of a representation of dreams or other imaginary images, is similar to those previously mentioned. The significant difference here is that the image which is applied is one that is entirely synthetic or imaginary. It can be assumed that the builder feels that this is the purest expression of himself possible. This type of simple representation is relatively uncommon.

The final, highest level of the functions of delight is intended to please and fulfill those who are somewhat initiated into the meanings behind these images and who are willing to go through some degree of intellectual effort to understand the meaning. There are at least three avenues for this sort of expression in order of increasing complexity: place as representation of a personal philosophy, place as a representation of certain attitudes of a particular society, and finally place as a representation of the most abstract ideals of a culture. This final objective, in my opinion, is what originally gave rise to classicism. It is my opinion, although it is a relatively unsubstantiated one, that this highest level is itself also a microcosm of the functions of delight in that there are levels which are merely felt, and can be felt by all, and there are increasingly complex levels which can be read by the informed. An example of such is Thomas Jefferson's campus for the University of Virginia. Any person can walk up to the library or stroll along the lawn and can obtain a very intense sense of ennoblement without knowing any of the specifics of Jefferson's allusions. Those who were aware of his attitudes, however, can read all sorts of messages from the building such as that of the unity of education through the colonade, or such as several implied sets of relationships between faculty and students from relative heights of columns or placement of buildings. Jefferson also accommodated many of the most basic of the organic habitational conflicts and the functions of delight, especially in the gardens and living spaces. The point of all of this is that this is a very complex work which is both beautiful to the common man and extremely informing to the intellectual. Therein lies the beauty of this
ment, and is unparalleled by any previous development in
the history of architecture. The point is that it is not correct,
given my value base for architecture, to create a world
designed primarily for the car. Rather, we ought to design
an environment where the previously mentioned inner-
most needs of man related to objects of habitation are the
objectives, and elements such as the car are tools of refine-
ment or alteration. In other words, we ought to attempt to
discover ways in which the car can be handled in order to
help the environment to best meet those inborn needs. I
believe that this is indeed possible; the car can find its
rightful place within our world. In terms of the
developments of technology in general, my attitude is
similar to my attitude regarding the car: if a new technology
can better solve one of the inborn needs of man in relation
to objects of habitation, then so be it. The technology ought
absolutely not, however, to be imposed upon architecture
simply because the technology exists. Such is sheer folly
and is totally unresponsive to the nature of architecture.
The conclusion of the matter is this: man is the most im-
portant thing in architecture. This is not because of his own
greatness, for he is a weak and mortal creature, but simply
because architecture is his only earthly home.
Chapter Two

Structure of Project

The real validity of an idea, at least in more concrete realms such as architecture, is measurable by its ability to accomplish something. It was therefore my intention to explore and refine the ideas which I have discussed in the form of an architectural project. This was the only manner of which I am aware (short of actually building something) where ideas could be tested against a surrogate reality.

It has been stated that the first step towards the solution of a particular problem is the recognition of the needs involved. There were two major sets of needs with which I chose to involve myself. The first was the set of needs which I had concerning what I wanted to learn from this experience. The second was the specific internal needs of the project which emerged.

First, I believe, of course, that architecture as opposed to other entities has internal meanings which separate it from those other modes of existence. I also feel that within architecture, different building types and also different vocabularies have internal meaning which cannot be dealt with without dealing with some form of those elements themselves. I felt that it would be advantageous to deal with vocabularies and building types with which I am likely to deal throughout my career. In other words, I do not believe that designing a set of flatware or a world research and performance center for tuba players would help me to understand the essence of a house as much as dealing with a house. Therefore, with the attitude that the ordinary and common buildings ought to be done well also, I chose to deal with functions which are central to the daily lives of almost everyone: the house, the market, the workplace, and the structure of the city. I also feel that in order to understand a culture as intimately as may be possible, it is good for the designer to have lived amongst those people. I therefore chose to do my project in Huntsville, Alabama, which is my hometown. I feel that this is the place and the people with whom I have the greatest understanding and empathy.

Secondly, there were the issues which were internal to the project itself. At this point, I had chosen a site and an approximate function which was capable of supporting the sort of investigation which I was interested in undertaking. The site chosen was a hill along the range that forms the spine of south Huntsville. The site is within one mile of my parents’ home, so it is an area with which I am quite familiar. It is potentially a part of the Jones Valley community, a group of about one thousand five hundred families (population approximately five thousand) clustered on the foothills of the fringes of Jones Valley. The community at this point is quite strong, but it has no center the functions of which involve all of the residents. For this reason I felt that this might allow an investigation of some of the non-housing functions.

The structure of the project at this point evolved as a system of recognizing the needs of each level of ownership and citizenship with which I was dealing. From those needs, a pattern language would be developed. This same process was carried out throughout the project at all levels.

The first necessity was that of identifying the groups of people with which I was dealing. Some of the concerns mentioned in the Discussion of Concept dealing with social self-sufficiency and autonomy were given form here. It was felt that, given the current attitudes concerning returning the power to the people, it would not be inconceivable to assume that groups as small as the Jones Valley Community might in the near future be allowed to make some decisions which are purely internal such as the handling of zoning. It is also a logical extension of both the condominium concept and the developing shortage of land that groups as small as neighborhoods or even house clusters might be able to make decisions concerning their common land. I dealt, therefore, with the needs of several levels of community, including those of the Jones Valley Community, Garth Mountain Village, individual neighborhoods, the shopping street, and individual house clusters. For the purpose of illustration, I will deal with only the needs of the groups above within the following format: basic description of group; description of base function needs, description of the needs associated with the functions of delight. The same sort of need-identification process took place, however, at all levels of design.

HUNTSVILLE, Alabama is located in the heart of the southeastern United States. North Alabama encompasses much of the southern foothills of the Appalachian Mountains, the most notable of which is Lookout Mountain, which extends from Chattanooga nearly to Birmingham. The Appalachian range is old, being much altered and softened by erosion, in contrast to such as the Rocky Mountains. The Tennessee River originates in the Smoky Mountains and runs southwest through Knoxville and Chattanooga before turning northwest at Hobbs Island just south of Huntsville. From there, it continues north through Tennessee to join the Mississippi River north of Memphis in Kentucky.

The society of the southeastern United States is presently in a state of monumental change, such as has not been seen since the reconstruction, that heartily-despised era occurring immediately after the War of Northern Aggression. The past decade has done much to heal, or at least allow Southerners to forget the bitter attacks launched against them by other regions of the country, particularly the industrialized North, before and during the sixties. At least
two attitudes have emerged from this change. First, Southerners have reconfirmed their traditionally strong biases against being ruled by other sectors of the country. This is a corollary to the attitude of allowing and encouraging small groups to govern themselves. Secondly, however, there has been a largely unnoticed, at least by non-Southerners, softening of racial biases. This is producing a significantly more unified South. Thus, a new era of optimism and progressivism is underway, although it is being framed as much as possible within the context of the widely held, although highly romantic, view of The Southern Experience.

This new progressive era has done much to fuel the Sun Belt industrial/technological explosion that is currently taking place. A very important factor in this has been the near-absence of the union, long a hated and supposedly oppressive and even Socialist entity in the South. It is noteworthy, however, that the industrial explosion is taking place somewhat on the fringes of Dixie, in places such as Texas and Georgia, with parts of Louisiana and southern Mississippi also being involved. The heartland of Alabama, Mississippi, and central Tennessee, while being affected by the attitudes of the Boom, have been relatively bypassed by the economic benefits.

The transportation hub of the Southeast is generally accepted to be Atlanta. Nearly all air traffic is routed through the new Atlanta airport, reputed to be one of the busiest in the world. Interstates 65 and 75 carry a good deal of the north-south traffic through the region. Interstate 65 runs from Mobile to Chicago, coming within twenty miles of Huntsville. Barge traffic on the Tennessee River connecting with the Mississippi is still significant, though not at the levels which it once attained.

The climate of the region is most strongly affected by warm, humid air masses moving off the Gulf of Mexico. The flat coastal regions are characteristically very hot and humid in the summertime and mild in the winter. The Appalachian area tends to be considerably cooler in the summertime, to the extent that one can usually be comfortable in the shade with a bit of a breeze. The winters, with the exception of an occasional invasion of frigid arctic air, tend to be quite mild, with the temperatures seldom below 20 and usually averaging about 45. The northern reaches of the mountains, of course, are considerably colder in the winter with snow often becoming a notable factor.

There are a few needs which proceed out of regional characteristics which have an impact upon the project. Of the base functions, the social shaping force coupled with the objective of social self-sufficiency are probably most important. The existing attitudes concerning autonomy and nobility of the individual make it quite probable that several non-traditional levels of groups of people might be allowed to control the parts of their environments which only affect them. The consideration of the local climate as a formative force coupled with the objective of economic self-sufficiency suggest that it may be a simple and desirable matter to provide for passive on-site methods of heating and cooling.

The functions of delight exhibit some need here in the form of dealing with a traditional understandable vocabulary. Most of the region seems to have two perceived major cultural sources. The first is the colonial and post-revolutionary culture of tidewater Virginia. Thomas Jefferson is seen very strongly as the major father figure of the region. The second source is the neoclassical tradition of the antebellum aristocracy.

Huntsville is located in the extreme northern end of the state of Alabama. It is here that the southwestern foothills of the Appalachians end. The Tennessee river emerges from the mountains a few miles east of Huntsville, and the broad and fertile rolling Tennessee Valley extends far to the west. Much of the mountainous area east of Huntsville is wooded with pastures and fields interspersed throughout. The gently rolling land to the west of town is more predominantly farmland.

The social system of Alabama is somewhat unique among southern states. Alabama has long been considered somewhat of a standard bearer of Dixie, as demonstrated both by the location of the capital of the confederacy (Montgomery), and the sites of numerous civil rights activities. Alabama never has, however, been the true financial leader, as that role has fallen most recently to Georgia, and in particular, Atlanta. Thus the legacy of being the "Heart of Dixie", at least spiritually, stands strong in Alabama. It is interesting to note that there is a very definite social division between North Alabama and South Alabama which occurs around Montgomery. The northern cities, particularly Huntsville and secondarily Birmingham, show evidence of a more progressive brand of Southernism. This has been augmented by the presence of Redstone Arsenal, Marshall Space Flight Center, and the Army Missile Command in Huntsville.

Transportation within the state centers around Interstates 65 and 59, both of which run through Birmingham. The Tennessee River, the largest in the state, has become perhaps more of a recreation center than a transportation asset. The TVA dams, most of which were constructed in the thirties, provide many square miles of lakes in the northern end of the state.
Garth Mountain Village is located about three miles directly south of downtown Huntsville. It is adjacent to Whitesburg Drive, a major north-south residential route. Huntsville is situated principally between two ridges. The western ridge separates the city from Redstone Arsenal. The eastern ridge, the larger of the two, is the eastern boundary of the city. Between them is a minor ridge upon which much of the housing in South Huntsville is located. My site is the only part of the ridge within the city limits which has not been developed. The valleys, at least until quite recently, have been left relatively open and much of them is farmland.

The hills, including those which have been developed into housing, are still rather heavily wooded. Several deciduous species of trees are found, while the dominant evergreen on the slopes is the cedar. Most of the undeveloped valleys within the city are either cropland or pasture.

The society and the economy of Huntsville are both inseparable from Redstone Arsenal. It was the arsenal that built Huntsville in the early sixties from a farming community of about ten thousand people to a city of one hundred sixty thousand today. It is the influence of the arsenal and the people brought here as a result which continues to draw major high-technology industry to the city, conspiring to create a "silicon valley of the Southeast". The metropolitan area, which has a population of about two hundred eighty thousand, includes the neighboring smaller cities of Decatur and Athens. The influx of well-educated people from around the world at the beginning of the space program made it necessary that Huntsville develop what is unquestionably the finest public school system in Alabama and possibly all of the Southeast. Huntsville is rapidly becoming the cultural center of North Alabama, with cultural opportunities not found closer than Birmingham or possibly Atlanta.

Through-town north-south traffic is usually routed along Memorial Parkway which is US 231. Airport Road, which runs immediately past the site, is the major link between the Parkway and Whitesburg Drive, which is heavily used by employees of businesses near the downtown area who live in the residential areas in the south end of town.

The local climate is similar to that described for the rest of the southern Appalachians. Daily winter temperatures average about 40, varying from a daily low of 30 to a high of 51. The record low was -1 and the record high in January was 76. Summer temperatures average around 78, varying from a daily low of 67 to a high of 90. The record high is 101 and the record low is 54. Thunderstorms occur quite frequently in the summertime, but droughts of over one month are possible. Autumns are quite dry and pleasant, and the greatest rainfall occurs during the winter. Snow is quite rare, usually not over five inches per winter, though there have been snows as deep as seventeen inches.

There are several needs implied by the city information. Of the social shaping forces, it is noteworthy that due to the fact that almost all of Huntsville was built after 1960, the city is almost totally automobile-oriented. This implies a need for any commercial or professional developments to orient themselves to and structure themselves according to the car. The demographics of the area strongly suggest that residents of the site will either be arsenal employees or professional people. The climate is such that most of the heating and all of the cooling needs can be supplied passively. The site context as a shaping force suggests that the greatest area of intensity within the site ought to occur next to Airport road on the side toward Whitesburg Drive.

The objective of economic self-sufficiency determines that it is best to obtain auxiliary heating sources from onsite if this is possible. The most readily available source is wood heat from one of the new hybrid superstores such as the hybrid poplar, which can supply up to ten cords of wood per acre continuously. The number of acres usable to grow trees coupled with an assumed consumption put an upper limit on the total number of houses on the site. The objective of lighting self-sufficiency suggests that all buildings be of relatively thin dimensions as opposed to massive structures. The objective of resource self-sufficiency suggests that the relatively plentiful wood and brick (from the famous Redstone clay) found in the Huntsville area be major building materials. The objective of caloric self-sufficiency, coupled with assumptions as to the number of families which will grow all or part of their own food, effectively puts a lower limit on lot size and effectively an upper limit on the number of homes on the site.

Social self-sufficiency suggested that the Jones Valley Community needs some sort of common center. Analysis of the situation brought to light the fact that in several important commercial and professional functions, Jones Valley is not well-served. These factors conspire to suggest a community shopping street.

The fact that this will largely be a place to live suggests that among the functions of delight, the simple ones will be quite dominant. This supposition is confirmed by a knowledge of the potential users, who although nearly all will possess at least a bachelor's degree, are few are highly sophisticated in the knowledge of the arts. This suggests again that the simple functions of delight will be quite dominant.
THE language employed will of course be structured after the manner of local and regional building traditions. The reason for this is twofold. First, it is a fulfillment of the function of delight which is the establishment and continuation of understandable languages. Second, in this manner, the people here can reaffirm their connection to their cultural heritage. I believe that these people are simple enough that they will not suffer from the lack of implied associations with abstract ideas and allusions to concepts which would normally be found in elevated representation as a function of delight. I feel that in this context, which is that of a place to live for non-artists and non-scholars, it is most important to employ the simpler, more easily understood functions of delight. The most complex representational functions of delight ought to be reserved for those very special, most public places within this culture, allowing the living places to be just very intensely that: places to live.

THE site itself encompasses about 96.74 acres on the southern slope of Garth Mountain. The average slope of the gentle south side is below two in twelve. The slope of the north face is considerably steeper, ranging from around two in twelve to over twelve in twelve. The soil is typically composed of a very thin layer of sandy loam over limestone, which is the bedrock of the mountain. The stone occurs quite frequently in outcroppings, especially on the slopes. The vegetation of the site is predominantly hardwood trees with a number of cedar interspersed. The forestation is quite old and mature, with some trees on the deeper soil at the top of the mountain being over one hundred feet tall and having a diameter at the base of over five feet. The southern slope is of course exposed throughout the day to warming sunlight and protected from winter winds, which come directly out of the north. There is a slight concavity to the southern face of the hill, further protecting the central portion. The approximate site dimensions are 2400' x 2300', or about eight football fields in each dimension. The triple peaks rise about three hundred feet above the surrounding valleys.

VIEWS from the site are pleasant to the west. This view encompasses all of downtown Huntsville and much of the southern half of town. The view towards Jones Valley to the east is simply stupendous, with the one thousand foot high backdrops of Huntsville Mountain and Monte Sano. This is simply the most beautiful accessible view in at least North Alabama. The peak of the site can be seen throughout the entire southern half of town, being the most prominent portion of its range.

ACCESS to the site is by a presently unbuilt portion of Airport Road. The city currently has plans to extend Airport Road across the gap to connect Whitesburg and the Parkway with Garth Road to the east. The site is entirely inaccessible from the north, due to the slope of the hill. This factor is what has rendered this site previously undevelopable. The access to the site itself will most logically be at the top of the gap, just east of the water storage tank.

SEVERAL of both the base functions and the functions of delight find substance here. First, both the shaping force of the microclimate and the objective of economic, and specifically heating self-sufficiency, make it quite obvious that the southern slopes of Garth Mountain are most buildable. The unbuildable area useable for wood production plus the previously mentioned objective of caloric self-sufficiency conspire to suggest a reasonable maximum of one hundred eighty homes, or about seven hundred residents. Specific calculations of this sort have been omitted from the book throughout for the sake of brevity.

THE objective of social self-sufficiency suggests that of the functions within the shopping street, it would be healthy if some of the owners both operated the places of business and lived in Garth Mountain Village. This situation will be greatly encouraged through various means. This objective also suggests that the shopping street, which nearly has to occur within my site due to the inavailability of any other site, ought to contain the governmental center of Jones Valley. This ought to consist of a community meeting hall which will be open to any community groups or individuals, a meeting room where the community council can meet, and some very tiny shopfront spaces nearby where community groups such as Neighborhood Watch and community watch groups can set up operations at very low cost. This community center ought to be within the most public area of the shopping street. It ought to be useable until late in the evening and ought to be obviously community property.

RESOURCE self-sufficiency suggests that on-site materials be used whenever possible. The numerous and plentiful limestone outcroppings are the most obvious resource. Due to the amount of loose limestone easily available and the volume of buildings to be constructed, it seems reasonable that the limestone would be used both as a part of the foundation system and as bearing walls in small outbuildings and cottages in the residential areas.

THE function of a place to live as a psychological/spiritual base within the world necessitates that each home and building be non-identical with those around it and that each building be both initially structured around the needs of the original owner and alterable to mould to the needs of each successive resident. Also within this realm, the necessary structural clarity ought to be present. This means both that the framework of Garth Moun-
tain Village and each building within it ought to recognize local environmental vocabularies in order to effectively communicate their own function, and that the details of each part ought to clearly define their own function.

**Finally,** among the functions of delight, Garth Mountain Village ought to most intensely incorporate the simpler functions in order that it become an intensely living and liveable place.
PERSPECTIVE view of shopping street from the south: Airport road and pedestrian overpass are in the foreground, community green and tower is to the right, and the north end of Jones Valley and Monte Sano are in the background. The shopping street steps gently up the slopes on the left and runs along the contours to the right. One hundred eighty homes (not shown) occupy the hillside between the shopping street and the triple peaks of Garth Mountain in the top of the picture.
THE process employed to effectively determine the program for the design of the framework of Garth Mountain Village was sketchily described in the preceding chapter. It is assumed that several groups of people would be involved in the different levels of design. This chapter is intended to illustrate the succession of the application of the chosen patterns to each level of design. The actual choosing of patterns will only be alluded to occasionally for the sake of brevity. The succeeding chapter, that on building design, will include neither the determination of needs, the choosing of patterns, nor the application of those patterns because the process is nearly identical to the process described here. That chapter will include simply a documentation of the resulting buildings.

I have attempted throughout this project to design in a sequence which is as close as possible to the sequence of events which would be involved in the actual construction of these places. The first round of design would be accomplished by the resident architect-builder and representatives of the Jones Valley Community. They would deal with needs affecting the whole valley, such as the need for a unified center for the community and the need for certain retail functions. They would resolve these matters only to the level which would eventually be required to meet the identified need. Succeeding groups would meet with the architect-builder and resolve their own internal needs with the objective of fulfilling the needs of the larger body by the things that they construct.

THE next largest body represented would be that of Garth Mountain village. They would deal with needs which affected the areas common to both the neighborhoods and the shopping street. These issues would include such things as the location and content of a major community outdoor space and the placing of common facilities such as roads. In this and a few other cases, there would be a significant problem in that few if any landowners would actually be determined at this time. In such a case, the decisions would probably be made by the architect-builder, the major landowner and developer, and any landowners which would presently be known.

THE next group to provide or determine a structure would be the businessmen of the shopping street. Here again, the initial structure would probably laid out by the architect-builder, the developer, and whatever landowners were known at the time.

EACH of the neighborhoods would be laid out in the manner described above. The matters which would be dealt with at this level would be things such as locations of paths, clusters, and common land. As is the case with the shopping street also, however, the actual implementation would be the work of each individual landowner. He would work within the framework provided, and the framework would only be specific enough to provide for the needs of that group.

HOUSE and business clusters would be the smallest non-family groups to make a community design. In this case, however, each of the members of the cluster would be present during the design of that cluster, and would have direct and meaningful input into the design of the common spaces of the cluster.

AFTER the initiation of each level of community, the current members of each community would have control of decisions made affecting that person's property. For example, the members of a neighborhood would have control over further development of common property within that neighborhood. Correspondingly, the members of a house cluster would have control over what happens to their common land, as long as it is within the framework of the objectives of the neighborhood and of the community.
Jones Valley Community

A: CITY-COUNTRY FINGERS. B: AGRICULTURAL VALLEY. C: SUBCULTURE BOUNDARY. D: ECCENTRIC NUCLEUS.
THESE decisions would be accomplished by members of the Jones Valley Community and the architect-builder. Listed is the general problem, the general solution, and the solution specific to the site.

CITY-COUNTRY FINGERS: The continuation of the urban sprawl in most cities continues to make the countryside more and more inaccessible to the city-dweller. This lack of contact with the natural environment proves to be exceedingly unhealthy and disorienting.

The general solution is to maintain, even within the densest cities, fingers of countryside which is actual agricultural land that occurs in fingers at least one mile wide. Corresponding fingers of city ought to be no more than one mile wide. This provides a situation where no one is more than a short walk from the country.

This pattern exists quite explicitly in south Huntsville, and it is the major contributing factor to making the south end of Huntsville the most wonderful portion of a city to live in that I have ever seen. There are almost no houses there which do not overlook some portion of the countryside. Presently, however, there are powerful pressures to build in Jones Valley. Developing Garth Mountain into principally housing will help to alleviate those pressures.

AGRICULTURAL VALLEY: The land which is best for agriculture happens to be the land that is best for building, also. It is, however, limited. Once it is developed into city it is effectively destroyed and cannot be regained for generations.

The solution is to preserve all valleys as farmland from any development which would lock up the unique fertility of the soil. The development should be encouraged to take place on the hills surrounding these valleys. Keep the valleys for farms and parks and wilds.

This pattern is already strongly present in Huntsville. Jones Valley is perhaps the ultimate example of such: large, expensive homes at a density of one to one and one half units per acre are sited in the wooded hills surrounding the valley. The only thing which separates them from the grazing cattle is a single barbed-wire fence. Slowly, however, as the space on the hills has been used up, the subdivisions have encroached upon the valley. In this case, also, the development of Garth Mountain will help to ease this pressure.

SUBCULTURE BOUNDARY: A city is most healthy if a number of communities are allowed to develop their own different cultures. This can happen only if there is a sufficient boundary of non-residential land between subcultures. Only under this condition, where they are separated by definite physical boundaries instead of being one homogenous mass, will each be allowed to develop to full intensity.

This pattern suggests that neighboring subcultures be separated by a swath of non-residential land at least two hundred feet wide, and preferably more. This boundary can be natural, such as parks, forests, hillsides, wilderness, farmland, or water, or it can be man-made, such as major roads, schools, or railroads. Meeting places which are to be shared by both subcultures ought to occur along the seam between them.

In this case also, it is easy to recognize the beginnings of this pattern already occurring within the community. Jones Valley is effectively sealed off from the surrounding communities by the foothills of Monte Sano and Governor's Drive on the north, Jones Valley and Huntsville Mountain on the east, Four Mile Post Road and some wooded hillsides on the south, and wooded hillsides and Whitesburg Drive on the west.

Within the Jones Valley Community, there are also some significant divisions. Currently, there is the Chandler subculture, which is composed mostly of the extremely expensive new homes of young professionals. Separating it from Toney Heights are Randolph School, Drake Avenue and Garth Road. Toney Heights is composed of homes which were built over twenty years ago and which to a large extent are owned by older merchants and businessmen. South Jones Valley is separated from the other two subcultures by my site and Jones Valley Elementary School. My site, due to the fact that it is surrounded on three sides by unbuildable wooded slopes, will likely develop into a subculture all its own. This pattern suggests that the seam between it and the rest of the community be developed into a common function or meeting place, such as Randolph and Jones Valley Elementary have become.

ECCENTRIC NUCLEUS: The random character of local densities confuses the identities of our communities and creates chaos in the pattern of land use.

Encourage growth and development of densities which follow the following characteristics: first, consider each town to be composed of communities of five to ten thousand. Second, allow the point in the boundary of the community which is nearest downtown or the principal work activity to function as the nucleus. Third, allow this nucleus to bulge in towards the center of gravity of the community, thus further shaping the eccentric nucleus.

This pattern strongly suggests that the edge of the site function as the eccentric nucleus due to the following fact: the greatest single employer of Jones Valley residents is Redstone Arsenal. Upon completion, Airport Road will serve as the most convenient and direct route to work for both most of the arsenal employees and for anyone who has to get to work on the parkway. It will, in effect, be the main gateway to Jones Valley. This strongly suggests both retail/commercial activities and shared community func-
Garth Mountain Village

A: SHOPPING STREET PLACEMENT. B: NEIGHBORHOODS AND BOUNDARY. C: FEEDER ROAD AND ECCENTRIC NUCLEUS. D: GATEWAYS.
tions which are tailored to convenience use by people coming to or going from the community. This pattern in effect places the shopping street and community center specified in the analysis of need at the southern boundary of the site. It also requires that at least the entry to the shopping street be visible to cars passing on Airport Road, and that the shopping street be obviously property of Jones Valley and not just the property of Garth Mountain Village.

SHOPPING STREET PLACEMENT: The shopping street must be placed in such a manner as to both make its function obvious to those passing in cars and to protect its users from the heavy traffic.

The general solution is to place the shopping street at a point where it opens onto a major street.

The specific solution is to place the shopping street at the southern edge of the site immediately adjacent to the TVA transmission line right-of-way. Since the gateway to the entire community seems to want to occur near the top of the gap, then it seems reasonable that the entry to the shopping street ought to occur in that vicinity also.

NEIGHBORHOODS AND BOUNDARY: People need an identifiable spatial unit to belong to. This occurs in community form at its most intense in the form of the neighborhood. The strength of a boundary is essential to a neighborhood.

The general solution involves the creation of neighborhoods as spatial units. My own experience suggests that they ought to be quite small. Those which have seemed most alive have usually been composed of no more than fifty to eighty families, with some containing as few as thirty families. The neighborhood should be defined principally by the fact that its boundary allows access only at selected points. Those points of access could ideally be as few as only two, and they should be consciously elaborated as gateways. Activities common to the neighborhoods ought to occur in the boundaries.

I knew first of all that if the neighborhoods averaged about sixty families each, that there would be three neighborhoods. I also knew that one of the strengths of a very limited access to a neighborhood was that each internal road carried very little traffic. Therefore, in order not to negate this benefit, none of the internal roads ought to be significantly longer than the other; they all ought to carry about the same amount of traffic. I also knew that to get to the top of the hill, you have to climb the hill. In other words, a major service road had to climb the hill somewhere. This implied that the intersecting local roads run along the slope. The feeder road is obviously a shared function, so it ought to occur in the boundary between neighborhoods. This implied a shared zone roughly centered between the two halves of the village. The west side was roughly twice the size of the east side, so the site zoned naturally into west side, east side, and hilltop, with the road in between. In this manner, access to each neighborhood would necessarily be limited.

FEEDER ROAD AND ECCENTRIC NUCLEUS: Shared functions between the neighborhoods obviously contains the feeder road. It ought also to contain all other shared functions. The nucleus here should be eccentric also, shifted toward the entrance of the village.

The solution is to run the road up the slope in as gentle a manner as possible, with the grade being kept below fifteen percent, which is a commonly acceptable grade in the area. This necessitates curving at certain areas to approach high grades at an angle. The community green has two parts. First, the logical location for the eccentric nucleus would be at the end of the shopping street. In that manner, the green would serve as a gateway and be sharable with the residents and shopowners of the shopping street. This ought to be the more intense space. It is, however, sloping at about a twelve percent slope. This effectively eliminates the possibility for use for the passion of the region: football. There is another area, however, at the top of the feeder road which is at the peak of the mountain and is therefore entirely flat. This area is easily large enough for all field sports, and it is within the common land between the neighborhoods. Therefore, the common land is anchored at both ends by a recreational space: the one at the bottom being the more intense and more compact and the one at the top being the more open.

GATEWAYS: A place is marked by its gateways.

The general solution is to provide gateways to every significant distinct precinct that has human meaning within a city along the boundary to that precinct where important paths cross it. This will serve to identify and reinforce that district.

We are dealing at this point with two significant entities which we know the main entries to: Jones Valley and Garth Mountain Village. The gateway to Jones Valley ought to occur right at or just past the peak of the gap for maximum impact. It ought to be something quite strong and definite; perhaps something which even spans Airport Road. The gateway to the residential portion of Garth Mountain Village ought to occur beyond the shopping street: the shopping street is the domain of all of Jones Valley. It will probably be best to place this gateway just past the top of the shopping street, however, so that the residents of the shopping street feel like a part of the neighborhoods above. It may suffice in this case to simply pull two significant buildings up tight against the road.
Neighborhoods

A: DEGREES OF PUBLICNESS. B: NEIGHBORHOOD EDGES AND GATEWAYS. C: NEIGHBORHOOD CENTERS. D: INTER-NEIGHBORHOOD CIRCULATION.
THESE decisions would be reached by the architect-builder, the developer, and available representatives of the neighborhoods.

DEGREES OF PUBLICNESS: In every group, there are those who like to be in the midst of the traffic, those who like isolation and private space, and those who like some condition in between.

The general solution is to provide within both the neighborhoods and within each house cluster the opportunity for the complete range of the degrees of publicness. There ought to be busy streets where people are passing all day long and there ought to be secluded areas in the quiet backwaters which are reached by twisting paths.

This pattern is implemented quite easily within the established framework. The areas adjacent to the common land and the feeder road should contain major paths and be adjacent to much of the traffic of the neighborhood. Areas at the furthest point from the common land ought to be reached only by those who are intending to go there. At any point during the development of a neighborhood, one street at a time would be under construction, allowing for the chance to choose a cluster at the busy end or one at the quiet end.

NEIGHBORHOOD EDGES AND GATEWAYS: As before, a neighborhood is most identifiable if only a few paths cross the boundary. The boundary itself ought to be a strip of non-residential land within which shared functions occur. Gateways ought to mark this boundary.

The specific solution here is structured according to the placement of the entries to each neighborhood. According to customs of good street design, entries onto a main road should be no less than one hundred twenty feet apart. It is best if there is no curve to the entry, but if the entry must occur on a curve, it is best if it occurs on the outside of the curve so that a driver has only to look forward instead of backwards to see oncoming cars. This effectively limited the entries to a total of six at very specific locations on the feeder road. The gateways themselves will be significant narrowing of the corridor of the road at the boundary to the neighborhood. This will be accomplished by a combination of plant materials and actual gateways.

NEIGHBORHOOD CENTERS: Districts with human meaning, especially neighborhoods, need a place which functions as a center by which the neighborhood can be identified.

The general solution is to provide a place which is placed according to the principle of the eccentric nucleus which contains functions common to the entire neighborhood.

The specific solution to this pattern first requires the placement of the center within the busy part of the neighborhood; it is placed just inside the gateways between the two entry roads. The center is also the point of origination of all pedestrian paths in the neighborhood and the main inter-neighborhood paths will pass through these centers. The function must be something which is entirely natural and non-pretentious to these people. The only thing which seemed to fit this was a children's home. This home would be at the center of its cluster. It would be a place for children of the neighborhood to come to spend an hour, a day, a night, or a week, according to the needs of the parents. It could be run by a retired couple and ought to consist of a large, rambling house containing many bedrooms opening directly onto the common land of the cluster and the major paths. Due to their placement, they are all adjacent to both of the community greens and paths leading directly into the woods, a local traditional favorite play location.

INTER-NEIGHBORHOOD CIRCULATION: There are at least three factors involved here. First, it is uncomfortable to live on a steeply sloping street. Second, traffic accidents are far more frequent where two streets cross than at T intersections. Third, there is far too much hot asphalt in the world.

The general solution to the first problem involves laying out local roads with the grade. The second problem requires that in all cases, the minor road will T into the major road. There will be no intersections of two roads. The general solution to the third problem involves the use of semi-paved surfaces on lightly-travelled local roads.

Specifically, the local roads were laid out as much as possible in the form of loops with the grade in order to provide space for house clusters of from two to four hundred feet between roads. The specific solution to the third problem involves the use of paving stones placed some distance apart in quiet backwaters of the neighborhoods where the only traffic will be that going to and from the houses there. The roads themselves are exceedingly narrow; no more than eighteen feet wide. Trees form a canopy above the road and are planted to form a small-scaled avenue. These roads, with grass growing between the paving stones, are equally suited for walking due to the low amount of traffic and suggested low speed of the traffic that does occur.
A: HOUSE CLUSTERS. B: MAIN PATHS AND INTER-CLUSTER PATHS. C: ACCESSIBLE GREEN, NEIGHBORHOOD SPORTS AND ADVENTURE PLAY. D: POOLS AND STREAMS.
**House Clusters:** People will not feel comfortable and a part of their community unless their house is part of a cluster of houses, with the public land between them jointly owned by all homeowners.

The general solution involves the creation of very rough but identifiable clusters of from four to ten households around some common land and paths. The clusters should be arranged so that anyone can walk through them without feeling like a trespasser. The existence of jointly owned common land is absolutely essential to the success of this pattern.

It has already been established that there will be around one hundred eighty homes on about forty-five buildable acres, yielding a density of about four houses per acre. With house clusters of between four and ten houses with the average being about six, the clusters themselves will average about one and one-half acres each (minus neighborhood common land), varying from one-half acre to nearly three acres. An approximately equal number of clusters were laid out in each neighborhood within the existing framework of the local roads.

**Main Paths and Inter-Cluster Paths:** Cars are dangerous to pedestrians; yet activities occur just where cars and pedestrians meet.

The general solution where traffic densities are medium is to lay out paths perpendicular to the roads but crossing them at frequent intervals. In places where traffic is extremely sparse, the roads can be built as green streets, as was mentioned above, where the road is half paving and half grass, and the cars travel at very low speeds allowing the road to be shared with pedestrians.

The local roads all travel basically along the slopes; there is no vehicular connection between two levels except at the ends. Therefore, it is obviously necessary that paths travel up and down the hill so that different levels of clusters are connected by footpaths. It is also necessary that paths lead to the neighborhood centers. In the outer reaches of the neighborhood, these paths can run along the green streets. As the paths near the center, they should run through the centers of the clusters. Main paths connect neighborhood centers, the greens, the shopping street, and surrounding neighborhoods.

**Accessible Green, Neighborhood Sports and Adventure Play:** The human body does not wear out with use. On the contrary, it wears down when it is not used. People need close open green spaces to go to. When they are over about a three minute walk away, they do not use them.

The general solution to this situation included several factors: first, greens of at least sixty thousand square feet should be included within a three minute walk of every home and workplace. Second, places for team and individual sports will be scattered throughout the project. They will be especially concentrated on the greens. These are places for tennis, football, softball, swimming, basketball, dancing, frisbees, and other sports. These are places which are easily visible as an open invitation to participate. Third, common land in each neighborhood will be connected with a series of paths that crosses only very low-speed, low-intensity traffic. Finally, there will be paths leading into the woods where children can create their own playgrounds with rocks, wood, sticks, rope, and whatever else they can find. This is truly the finest playground imaginable.

The specific solution centers around the two greens and connecting common land already described. There are two paths to the upper green from the backs of the neighborhoods which cross no significant traffic. These paths terminate at the opposite ends in the woods, where the children can create their own forts and hideouts and whatever else they can imagine. This is their domain and it can never be taken away from them like a vacant overgrown lot can be.

**Pools and Streams:** Water seems to play a fundamental role in our psychology. We need constant access to water in all its forms on a daily basis, but in the city, water is entirely out of our reach.

This problem suggests that we preserve all existing water features and help others occur in natural locations. Wherever possible, rainwater ought to be caught in pools or allowed to flow above ground. Places without natural running water will benefit from fountains in the streets.

This problem is attackable on several levels. First, the fact that steeply sloping sites such as this shed rainwater quickly conspires with the objective of caloric self-sufficiency to create the need of some sort of rainwater holding pond in each garden as a form of irrigation in the occasional summer droughts. These ponds need not be very large, but they can be used in a manner which greatly enhances the character of the garden. Second, there can be larger ponds for possibly swimming in selected house clusters such as the neighborhood centers. Finally, Huntsville's love of swimming in the summer fairly cries out for a large swimming pond and beach at the lower green.
House Clusters

A: COMMON LAND AND PATHS. B: DEGREES OF PUBLICNESS. C: CONNECTED BUILDINGS. D: SMALL PARKING AREAS.
THE specifics of these decisions would be accomplished by the architect-builder and the owners of the houses to be built. For the purpose of realistic simulation, I have assumed that there will be two houses for one person, four houses for couples, and two houses for small families within this cluster. The overall community balance is slightly more weighted toward houses for small families and away from houses for one person.

COMMON LAND AND PATHS: Without common land no social system can survive.

Generally, one-fourth of the land in house clusters must be given over to common land which touches, or is very near the homes which share it. The effect of this pattern, apart from the monumental social good which it does, is to effectively give everyone a large back yard in a development of four homes per acre.

The cluster illustrated is the northernmost cluster of the western neighborhood. The common land is laid out along the north-south path due to the fact that the east-west paths are running along the green streets at this point. The common land is shaped simply so as to allow it to touch the land of all of the homeowners around it.

DEGREES OF PUBLICNESS: It is desirable also at this level to provide opportunities for varying levels of exposure to activity.

The house cluster ought to be set up in such a manner as to provide busy areas and quiet backwaters.

The device used to accomplish this was a very short dead-end green street. In this manner, there are houses on the main road and there are houses on the cul-de-sac within one hundred feet of the main road.

CONNECTED BUILDINGS: Isolated buildings are symptoms of a disconnected sick society.

The general solution is to connect buildings wherever possible to surrounding buildings. New buildings ought to attempt to form continuations with the buildings around them.

The density of the house cluster prevented the actual physical connection of buildings by party walls. I feel that it is important, however, to strengthen the impact of the cluster by connecting the houses in some other manner. The actual connection will be composed of a low wall around the cluster punctured only by gateways and backed by lush plantings; perhaps fruit trees. The placement of the houses will be along this wall and slightly behind it to strengthen the impact.

SMALL PARKING AREAS: Vast parking lots wreck the land for people.

The general solution here is to make parking areas which are used on a regular basis small and shield them as much as possible from view. Treat overflow or occasional parking areas in such a manner that they are not immediately visible when not in use.

The specific solution includes two parts: first, homeowners must have garages or on-street parking which is entirely invisible from the street for all their cars. It is presumed that most of them will opt for garages. Second, visitor parking is treated as a band of parallel parking along both sides of the road. The paving surface itself is mostly grass with occasional paving stones so that it appears upon casual glances to be simply grass.
Shopping Street

THE original framework design of the shopping street will be accomplished by the architect-builder and the developer, along with any already-determined shopowners. Functions which would be well-suited to this shopping street were determined in the following manner: first, a survey was made of all the census tracts within Jones Valley and about five surrounding communities, the population of which was around forty thousand. Second a survey was made of the U.S. Commercial Census to determine what the existing catchment area was for all commercial and professional functions within the city. Next, the physical configurations of a catchment area were approximated for each of those functions were they to be located within the Garth Mountain Village shopping street. If a similar function was located within that catchment area or reasonably close to it, then that function was discarded as a possibility. If not, it was retained for consideration. Finally, each function was examined to determine if it were better suited in a shopping mall or other regional shopping area. In this manner, a list of functions which did not already serve this area well was compiled. The approximate square footage and land area requirements were determined through other calculations from this list. The final land area requirement was very roughly five acres.

BUILDABLE SITE: It was determined through many calculations that the maximum buildable slope for the shopping street was fifteen percent. The amount of fill required in platforms for various parking configurations was a major consideration. (Maximum fill will be limited to three feet four inches, and there will be no cut due to numerous bedrock outcroppings.) All area near the southwest corner of the site which was below fifteen percent slope was included in the buildable site.

ENTRIES: The entrie(s) on the intense commercial and community center end of the shopping street ought to open directly onto Airport Road. The entrie(s) on the end of the professional offices should open from a quieter road.

The major gateway to the shopping street is at the top of the gap immediately beside the main gateway to Jones Valley. The gateway to Jones Valley is in the same location as the main pedestrian pathway into the shopping street from South Jones Valley, strongly suggesting that the gateway may be an overpass. The entries to the professional office end of the shopping street were placed on the main feeder road opposite the community green.

ZONING: The site automatically zones itself into the following areas which had been determined from the assessment of needs: high intensity retail and night functions at Airport Road, medium density retail behind, professional offices at the other end, and the community green across the road.
SHOPPING STREET STRUCTURE: Shopping centers depend on access; they need locations near major traffic arteries. However, the shoppers themselves do not benefit from the traffic: they need quiet, comfort, and convenience, and access by pedestrian paths from the surrounding neighborhoods.

Local shopping centers should be encouraged to grow in the form of short pedestrian streets at right angles to major roads and opening off these roads. Parking should be behind the shops so that cars can pull directly off the road and yet not harm the shopping street.

The structure of this shopping street follows this pattern quite explicitly. The pedestrian street is the continuation of the path from Garth Mountain Village to South Jones Valley. The shops are strung along this path, and the parking is immediately behind, with several points of entry to the shopping street.

PATHS AND SPACES: Streets should be for staying in, and not just for moving through, the way they are today.

The general solution is to make a bulge in the middle of a public path, and make the ends narrower, so that the path may form an enclosure which is a place to stay, not just a place to pass through.

In the case of this shopping street, I immediately had two major spaces already: the community green at the north end and the community center at the south end. Several minor places were created along the way at or near places where paths from the surrounding neighborhoods or paths from parking areas entered the shopping street.

DESCRIPTION OF SPECIAL FUNCTIONS:
Public Outdoor Room: a room with a roof but no walls which is possibly raised slightly from the level of the shopping street. People can spend as much time here, outdoors with the sun and the breeze and the trees and the birds and squirrels as they care to, and yet be on the shopping street.
Night Place: several functions are clustered around this space which are open until midnight or so. They include: a pizza hall, a video arcade, a cafe, a travellers' inn, a quick food stand, a bookstore, community meeting rooms, and a community hall. The intention is to provide a place with several complementary functions where people can go at night if they just want to go "out", but do not have any particular activity in mind.
Travellers' Inn: small, family-run country-style inn with a capacity of about twelve guests.
Market: a food market of several specialized shops. The market will specialize in fresh and non-processed foods, such as you can not usually obtain at the local supermarket.
Apartments: over the shops; they occur at the second and third level of some of the retail and professional establishments along the shopping street. These homes are intended to be owned by the owner of the shops below who may either choose to live there themselves or rent them out to help defray the overhead of the shop. Each includes a garage and a small private garden. Together they essentially form two house clusters.
Tower: the only true high place within the community. The observation deck, at an elevation of forty-six feet, affords a stupendous view of Jones Valley and the mountains on the other side. A bandstand, a public outdoor room, and a shower and lockeroom for the pond occupy the first level. There is an intermediate observation deck at eighteen feet.
Pond: man-made with sand covering a concrete bottom, this pond is about one hundred feet wide and two hundred forty feet long (slightly smaller than a football field). It is intended primarily for swimming. The dam is blocked off by vegetation on one side and by the tower on the other so that in order to get to the deep end, one has to swim out there. The pond starts at one inch deep and goes to about sixteen feet deep.
Health Center and Birth Place: community clinic where the intention is to keep the residents healthy. It includes facilities for birth preparation and birth itself in a homelike atmosphere. It is located in the forest uphill from the community green, and contains a private courtyard.

STRUCTURES: This particular shopping street necessitates three types of building structures. They are as follows:
Public Square: this square is intentionally quite small in order that it will usually seem to be filled with shoppers. As many activities as possible open onto the square.
Building thoroughfare: the market is structured as a building thoroughfare. The indoor street is a continuation of the pedestrian streets at either end. The roof is translucent. Shops open off either side. The edge of the street is both a place to sit and a place to display merchandise.
Pedestrian street: the pedestrian street intends to feel quite contained and alive. It accomplishes this by having a section nearly as tall as it is wide and by bringing as many activities as possible onto arcades and terraces lining the street. The doors of many individual offices and other functions open directly onto the arcade in an effort to encourage the use of the street for circulation instead of interior corridors.
IT is at this point that a method must be developed to render buildable the preceding patterns of space and activity. It therefore becomes necessary to develop some very specific patterns of structure and building mechanical systems to accomplish this. Decisions concerning the nature of the substance of the building are especially made within the framework of fulfilling the human needs which have previously been dealt with. What is effectively about to be developed is a structural idea which can be moulded around some specific pragmatic needs of the user and fit to the site. No standardized dimensions or major premanufactured components are used because they by the very nature of their existence could not respond as is necessary to the needs of the user or the characteristics of the site. It is also the intention of the structure and the systems to be extremely explicit concerning the nature of their intrinsic functions. They are formed with the intention that they communicate their purpose to the user of the building. In other words, a building part ought to look like it is doing what it is doing: a column ought to look like a member under compressive stress; a roof ought to look like it is shedding water; etcetera. The details at the end of the book are intended to communicate this idea. These structural patterns are the tools that give form to the succeeding buildings.

STRUCTURAL GROWTH CONCEPTS: The following illustration deals with a typical house in one of the neighborhoods. The houses are more informative of the growth concepts due to the fact that they are designed for much greater expansion than are the buildings along the shopping street. The concept in both cases is based upon the idea of a main building and connecting portions. The shopping street especially is constructed in this manner. Large individual buildings are constructed which contain the main "people spaces". The connectors contain service functions and often provide for roof decks above. This is well suited both to the nature of additive building and to a sloping site. In this manner, each unit is constructed in unity with its immediate surroundings and are connected with perceived "negative" building mass. Open stairs to the second level also occur in this seam.

THE house also illustrates several characteristics which the shopping street concept does not exhibit, in addition to the main building/connector idea. Other concepts include those of secondary building, greenhouse, lean-to addition (which is partially illustrated in shopping street north side storage), cottage, or outbuilding expansion, and expansion into the attic with the help of dormer light and space. These are all concepts which were developed to a significant level by local indigenous architecture.
Structure
STRUCTURE: This illustration deals with the manner in which the buildings would actually be constructed. The roughness of the site necessitates one of two things; either we build a mighty plateau and construct all buildings upon that, or develop a construction system which has the capability of fitting intimately with the site. I elect to accomplish the second objective for obvious reasons. This system is one with which the building can be constructed directly from rough drawings. The spaces are first laid out in string from the sketches. Column points occur at the corners of spaces and at some even acceptable spacing in between. Holes are dug at column points down to bedrock, which is usually nearly at the surface. Piers are constructed of limestone collected on-site with rebar inside which has been grouted into cracks in the rock. This forms a sort of root foundation. Next, the wood floor is constructed. After that, perimeter columns and beams are erected. Locations of doors and windows are determined now by standing within the appropriate space. Studs are applied to the column and beam structure to stiffen it and to provide a nailing surface for cedar siding. In the case of the brick buildings, an exterior brick bearing wall is erected instead. At this point, the roof is being constructed. After that, finish materials are applied.
Systems

A: SOLAR CHIMNEY HEAT EXCHANGER. B: VENTED ROOF. C: COOL TUBE. D: CLIVUS MULTRUM.
SYSTEMS: Four important systems concepts are as follows: first, the heating and cooling mechanism is centered around a fireplace and chimney. In the summer, hot air is pulled out of the solar chimney, pulling 55 degree air in through the cool tubes. In the wintertime, stale air leaves through a heat exchanger, thus causing nearly no heat loss. Second, the roof consists of two layers. The roofing is reflective metal and the draw of the air space between removes any other heat before it has an opportunity to enter. The cool tube is a heat transfer device that uses the mass of the bedrock as storage. The Clivus Multrum is an efficient dry-composting device.
Chapter Five

Building Design

PERSPECTIVE of shopping street from the west: the public square is in the foreground. The market steps up the slopes to the left. The tower and pond are at the end of the pedestrian street and Garth Mountain slopes up towards its peaks away to the left. Jones valley is just out of the top of the field of view. The pedestrian street winds along the contours as gently as possible in an attempt to keep the street nearly level. The slope of the street is never over ten percent.
THE shopping street was programmed and designed in a manner nearly identical to that already described for the community design. In the interest of brevity, however, there will be no accompanying text to explain each and every decision arrived at. It is my hope that much of it will be obvious.

At this point, the design of the individual buildings would be in the hands of the architect-builder and the owners of each of the shops. First, the common space along the shopping street and the square would be laid out to the satisfaction of all involved. Next, the architect-builder would work individually with each of the shopowners to arrive at a building within the concept of the entire street which would also fulfill the larger community functions to as great a degree as it is capable. Much of the professional office space and the general retail space is similar to each of its kind, with the intention that it would be flexible enough to meet the needs of a range of possible shopowners. I feel that the two functions shown here; architect’s office and general professional office, illustrate differences and similarities of attitudes and objectives dealing with both ends of the shopping street.

The growth and maturation of the shopping street would be as follows. First, all of the public spaces associated with the pedestrian street would be laid out on the ground. The construction would take place approximately in this manner. The public square, due to its status as most important place, would be constructed first. It is hoped that the community functions such as the community hall and the rentable portions of the architect’s office would be some of the first portions complete. The market of many shops would be begun almost simultaneously. In this case, however, only the gallery portion and the shops nearest the square would be completed first. The remainder of the shops in the market could be completed upon demand, yet the whole of the market would not suffer. The construction of the night functions, completing the square, would soon follow. From this stage, the construction of the retail portion of the shopping street would continue up and around the hill to the access road which separates it from the professional portion.

CONSTRUCTION on the professional portion of the shopping street would begin at the tower end soon after the beginning of the square. Buildings would be built one at a time with their accompanying apartments as they were needed. This portion would also grow down toward the access road. It is expected that the shopping street would be completed in about six years or so. If construction lingers much longer than that, then it will be perceived by residents of Jones Valley as a failure that could never be completed. The residential portion of Garth Mountain Village, in contrast, will probably take more than twenty years to complete. Even then, it will not be complete, for there will continue to be additions and alterations for many years to come.
End at Public Square

PERSPECTIVE of square from southwest: the community meeting hall is to the right, with its connected bandstand facing up into the square. The architects' office is to the upper right with the parking access road running behind it. The bookstore is toward the top of the picture, and beside it is the entrance to the market of many shops. The Traveller's Inn occupies the upper two levels and the north end of the first level of the building in the left foreground. Other functions also occupying the first level of the building are a street cafe and a video arcade, which opens onto the pizza hall at the bottom of the picture. The pizza hall is a large single space with alcoves ringing the edges and a balcony level looking down onto the main floor. Patrons of the cafe can sit at tables under the trees in the left corner of the square and enjoy a performance taking place at the bandstand below. The entire square steps and slopes up about six feet in response to the natural contours, forming a natural amphitheater. Parking areas for the square are under the trees at the extreme top right and top left of the perspective.
The public square is the single most important place in Garth Mountain Village. It will be the first portion of the shopping street to be constructed. It holds all of the community functions, such as the community meeting hall, the community conference room, and the community rental storefront spaces. The architect-builder's office is situated adjacent to the community buildings. The market of many shops opens onto the square. It is assumed that the market will be the largest single retail attraction of the entire shopping street. The building illustrated on the succeeding pages is the architect's office. It is found on the eastern side of the square.

The early morning sun will wake the guests of the traveller's inn through the generous east-facing dormer windows which look into the square and then across the lingering mist on the mountainside to the breadth of Jones Valley. Guests on the lower two levels can stroll out onto the vine-framed gallery and sit watching the shopowners opening their places of business around the square if they so choose. Later, they can eat breakfast of grits and eggs and red-eye gravy around a giant kitchen table prepared by the owners-in-residence of the inn.

Later, as they are carrying their luggage out to their cars parked nearby, the first round of shoppers are arriving for the day. Most of them park under the pines and cedars of the inconspicuous parking areas immediately uphill and to either side of the market. The majority of the shoppers are going at this time to the market, which opens onto the square. The market itself is composed of a central gallery space flanked by humble-look structures which house the actual shops. The gallery is a light, airy space with a translucent ceiling, clerestory windows which this morning are admitting a slight breeze and which will later on in the day vent the afternoon's heat. There are double columns spaced about three paces apart along the length of the gallery. The smell of the fresh fruit is drifting through the open casement windows between the shops and the gallery. There are seats all along the edges of the path, and a fruit vendor is beginning to set up a stand for his wares along the edge of the brick interior street.

It is approaching noon, and a number of the merchants and their employees are making their way down to the cafe which is on the ground floor of the inn. They pass under the trees and by the grapes which are vining up a column and on up to the gallery of the inn above. Most of the people bring their food back outside as soon as they are served, for it is a beautiful day, as many autumn days are in Alabama. There are five or six tables scattered in the square under the canopy of the shade trees. Across the way, the architect and his associates have brought sack lunches and are eating under the shade of their tree while discussing a current project. A few of the shoppers, drawn by the people sitting under the trees, drop in at the cafe and order a sandwich or a coke or something else. Some just sit under the shade or under the cool of the gallery which runs down to the pizza hall. One by one, however, the people make their way back along the shopping street to their work places, leaving the square to the shoppers.

One of the architect's associates has apparently decided that he prefers the shade of the trellised arbor, for he is out on the roof deck which opens off their studio, sketching. The other associate has thrown his casement windows fully open to the square, and a bit of a breeze from open windows on the other side of the building momentarily teases the curtain. The interior of the studio is high, reaching up to a peak about fifteen feet above the floor. Three tiny dormer windows on each side of the peak light the roof and give a soft illumination to the work tables in the center of the room. There is a fireplace with four comfortable-looking chairs clustered around it near the head of the stairs, where a deep window seat punctures a wall of bookshelves. The stairs are at first quite narrow, but they flare out at the bottom, which appears to be a likely place to sit while searching for an article in one of the magazines from the shelves. The simply furnished downstairs is high at the center with lower alcoves at windows around the perimeter. One leaves through an entrance room, which is full of small-paned windows. The arcade just outside is a continuation of the one on the other side, where the inn and cafe and other activities are located. The same vines are winding around the columns and over the beam of the porch, blurring the edge between sky and building.

From a seat on the swing here under the arcade, one can look past the outdoor room/bandstand where a couple of children are playing to the gallery in front of the community hall, where a meeting of some sort of group of apparently non-working mothers has just been dismissed. They have the opportunity to use the hall at negligible cost due to a small yearly maintainence fee that all the residents of Jones Valley contribute.

It appears to be almost suppertime, for the cafe at the top of the square is doing a brisk business. People are beginning to stream into the pizza hall, which will soon glow from the large glazed ape facing the community hall. Outside the hall, at the bandstand, an apparently country and western duo are playing for a gathering group of listeners. Slowly, the lights around the square are lit as the sunset behind the inn fades into evening. By nightfall, the place is aglow as the band has attracted quite a crowd. Guests at the inn arrive one by one and quickly deposit their bags.
upstairs and join the activities in the square. After another half-hour or so, the band packs up and leaves, but by this time, patrons from the cafe and pizza parlor are spilling out into a classic autumn evening. The doors of the video arcade are thrown wide, providing glimpses of the lights and sound inside. Finally, at about eleven o'clock, another group which was meeting in the hall adjourned. Several of those people went up to the cafe for a coke, and another went to the community storefront to check his schedule for Community Watch. Slowly, the patrons of the pizza hall trailed out, and the guests of the inn climbed to their rooms, and finally the darkness settled in over Garth Mountain.
A: NORTH ELEVATION.  B: WEST ELEVATION.

0 1 2 4 feet
End at Community Green

PERSPECTIVE of the east end of the shopping street and the tower. The buildings to the right include professional office space on the first floor and apartments on the upper levels. Visitors to residents of the pedestrian street climb open stairways that open onto the arcades on the shopping street which lead to trellised roof deck porches onto which the apartments open. Each apartment resident, therefore, can use his entry trellised porch as a private terrace on the street, enhancing the life of the street. The tower has several functions: first, it terminates the shopping street by an object as opposed to the small public square at the other end which terminates the street with a space. Second, the tower functions as a visual terminus to the main pedestrian pathway from the adjacent neighborhoods, which is itself an avenue of cedars running alongside the main feeder road. Next, the tower functions as an implied gateway to the neighborhoods further up the hill. Finally, the tower is the focus of the community green.
This end of the shopping street is indicative of the manner in which the entire shopping street has been structured: as a system of main buildings in which the most important functions occur coupled with connector buildings which house services. The buildings were laid out with the intention of hugging the contours as closely as possible. The gallery occurs along the north side of the street, giving shade to the southern side of those buildings. Private gardens are found behind each of the apartments. Visitors to the apartments park along the street in the general parking. They climb to the porches of the apartments, which are in actuality roof decks, by open stairs opening onto the gallery. All of the porches, which are built over the connector segments of the buildings, are sheltered by a trellis. The residents of the apartments park in their garages and climb to the porch from a stair that opens onto the private gardens. The gardens are only accessible at ground level through the garages. A pair of garages is often used to flank entries to the shopping street. To reach one's car from the entry, one walks along a shaded path between the private garden walls and the parking.

In order to leave the shopping street, one simply drives toward the tower. At the tower, there is a T intersection. A left turn will lead along an avenue of cedars up into the neighborhoods of Garth Mountain Village. A right turn will lead past the tower and out of the village.
A: TYPICAL WINDOW ELEVATION. B: WINDOW PLAN DETAIL WITHOUT SHELVES. C: WINDOW PLAN DETAIL WITH SHELVES. D: WINDOW SECTION. E: PORCH SECTION. F: EXTERIOR WALL SECTION AT CORNICE.
A: VENTED DORMER ELEVATION. B: VENTED DORMER SECTION. C: RACING CORNICE DETAIL. D: SHORT COLUMN DETAIL. E: BUILDING THOROUGHFARE WALL SECTION. F: TRELISSED ROOF DECK WALL SECTION.
Concluding Remarks

PERSPECTIVE view of the tower from the entrance to Garth Mountain Village. The tower is intended to function as, among other things, a gateway to the residential portions of Garth Mountain Village. It is also both the terminus of the shopping street and of the main pedestrian path from the neighborhoods further uphill. In addition to all this plus its function as a public outdoor room, bandstand, and focus of the community green, its two observation levels command arguably the finest view publicly available of Jones Valley.
In summary, I feel that this year has been an extremely valuable one for me. I feel that its worth in structuring my ideals and objectives concerning architecture has yet to be fully realized. I would like to propose the attitude to any and all readers that most of us have the capability to do nearly anything well. The important consideration is that our objectives are correct, because well-done trash is still trash. I encourage all students of architecture to consider carefully what are really the most important things to accomplish with any specific structure. Once this is settled, the building cannot help but accomplish what it ought to. It is my attitude that a poorly-done building which attempts to do the right things is better than a well-done building with irresponsible objectives.

There are some specific concerns which I feel that it is necessary to voice concerning this project. First, especially with projects involving the employment of pattern language, I feel that it is imperative that the patterns be carefully tailored to that specific project. Second, I feel that it is very important to fully resolve each pattern before going on to the next one. A second related issue is that it is very important not to put things in which have not been determined yet simply to make a drawing look good or to meet a presentation requirement. This will lead to a situation where it is assumed that those things have been rationally determined when in fact they have not. This sort of situation presents a greater possibility for wasted effort than any other which I can think of. Simply put, if a presentation requirement is not structured around the necessities of a particular project, then it is best to ignore it. Any other approach will cost significant amounts of time. The third related issue also has to do with time. I feel that it is very important to use space-modelling techniques which best fit the nature of the projects. In the case of this project, a large model was an absolute necessity, a fact which I chose to ignore for quite some time.

Finally, I hope that if this project is to have any exposure to and influence upon any student, that it will cause them to consider the possibility of architecture being structured around inborn human needs. After all, there are too many wonderful and satisfying things which architecture can accomplish to settle for a philosophy which ignores the entire realm of possibilities associated with the satisfaction of habitational needs.
Bibliography


This book was used profusely as a source of information regarding especially the simple functions of delight involving both the resolution of organic habitational conflicts and simple sensual delight.


This book was the source of significant inspiration to look at architecture as structured by intrinsic human habitational needs.