diary of hillhousing
as an approach
to design

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ABSTRACT

On the edge:
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Submitted to the Department of Architecture on October 15, 1982 in partial fulfillment of the requirements for the Degree of Master of Architecture.

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This thesis seeks to address and synthesize three fundamental, personal concerns: (1) a design process which attempts to integrate various yet complementary design theories, (2) urban living environments in general, and (3) hill housing in specific. Herein, being "on the edge" connotes not only the sense of place, upon a hillside, but the notion that no singular theory attributable to one designer/theorist presents the "correct" or "best" way to building/dwelling/making place.

The contents are arranged in four parts. The first part deals with the defining of a design process as an amalgamation of different, and possible divergent, yet related thoughts on architectural design. In fact, many different architects or theorists expound upon similar, if not exactly the same topics; I call these corresponding thoughts "parallels." These "parallels," comprising Part One, are grouped into the following categories: (1) MIT "built form" theories, (2) Theories of Place, (3) Inclusive Architecture/Participatory Processes, (4) Environmental memory and Associative images, (5) Body-Image theories, (6) Relation to Dance/Movement/Choreography, (7) Relation to Other Arts/Language, (8) Opposites, and (9) Variety.

The second part, coincidental with the beginning of a design process, reviews the current literature and other resources on the topic of hill housing as a type, making observations from the field as well as coordinating known "patterns" into a "language" for later reference. Part Three makes use of a photo description/analysis of the site within its context (Mason Path on Corey Hill in Brookline), a program for housing and associated mixed uses, and a list of design objectives as a link between the general approach and the projective design.
Part Four consists of an account, a literal "diary," of a five-week exploration in the design of a multi-family hill housing project on an urban site, as a means of testing out some of the theoretical processes mentioned in Part One. It is not intended that the work in this part be complete, (nor could it, short of being built, inhabited, essentially "dwelled in,") but representative of an iterative process at the schematic stages.

The aim of the thesis is not so much to impress upon the reader the intrinsic value of any one specific principle referred to, as much as to, hopefully, spark new interest in clarifying what is mutual, what is collective, and thus perhaps more valid, in our approach towards quality architecture.

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... For my parents and sister
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But most of all, to Gary, without whose enduring patience, understanding, and active support, this thesis, among other things, would not have been possible.
The original intent of this thesis, formulated over a year ago, was to concentrate upon multi-family hill housing as a distinct building type. It involved a search through both direct observation and published material, for generic patterns of clustered or "organic" forms related to such factors as: density, slope gradient, access, orientation, circulation, and climate. Although hill housing may not be a panacea for the problems of dense urban housing, (it necessarily complicates certain issues), it proposes some real and perhaps more interesting solutions to common high density housing today.

First, the scarcity of flat, easily buildable land near urban centers of today: Los Angeles, San Francisco, Hong Kong, Caracas, and Pittsburgh, to name a few, suggests the use of hill sites to accommodate the residential density. Second, certain problematic social and formal issues of dense urban living, such as: lack of either individual or communal identity, privacy, outdoor space, ground contact, and contextual fit, may be overcome through the inherent advantages of hill housing. And third, perhaps there is something in common between the condominiums at Sea Ranch, California, and the mediterranean hilltowns; if not, each offers a separate, yet valuable lesson on living on hills. Together, these begin to constitute a case for focusing upon hill housing as a particular "type."
Although the subject matter of the work remains as hill housing, the main emphasis is upon developing a personal process, applicable to architectural design in general. The thesis thus serves as a vehicle through which the author may reflect upon, evaluate, and attempt to assimilate over six years of architectural education. It provides the means to finding connections between numerous, varied thoughts on architectural design, and interests having something to do with architecture and its process. Some of these related issues may be: energy-conscious/passive solar design, participation, urban living environments, housing and mixed use, drawing, patterns, life associations, movement and dance. The following quote from Edward Relph's *Place and Placelessness* sheds further light on this search for an approach to design.

The creating of a variety of places which give pace, orientation, and identity to man is clearly no simple task. It involves what Nairn (1965, p. 93) has called "the terrific assumption" that "each place is different, that each case must be decided on its own merits, that completely different solutions may be needed for apparently similar cases." To acknowledge this does not mean that humanist place-making must be chaotic and unstructured, but rather that its order must be derived from significant experience and not from arbitrary abstractions and concepts as represented on maps and plans. The implication
is that selfconscious and authentic place-making is not something that can be done programmatically. A method like that developed by Christopher Alexander (Alexander, 1964, 1966; Alexander and Poyner, 1970), based on the decompositions of sets of environmental objects and activities into their atomic elements, and the reconstitution of these into a design solution does have a considerable value for improving current design strategies and possibly for achieving designs that fit local situations well; and approaches like Gordon Cullen's analysis (1971) of the structures of visual experience of townscape are potentially of great use in improving the quality of appearance of landscapes. But these, and almost all the other procedures of environmental design, are either too formal and too rigidly prescriptive, or they treat experience and meaning only as other variables capable of manipulation.

What is needed is not a precisely mathematical procedure that treats the environments we live in like some great machine that we do not yet quite understand, but an approach to the design of the lived-world of both everyday and exceptional experiences -- an approach that is wholly self-conscious yet does not seek to create wholly designed environments into which people must be fitted, an approach that is responsive to local structures of meaning and experience, to particular situations and to the variety of levels of meaning of place; an approach that takes its inspiration from the existential significance of place, the need that many people have for a
profound attachment to places, and the ontological principles of dwelling and sparing identified by Heidegger (Vycinas, 1971). Such an approach cannot provide precise solutions to clearly defined problems, but, proceeding from an appreciation of the significance of place and the particular activities and local situations, it would perhaps provide a way of outlining some of the main directions and possibilities, thus allowing scope for individuals and groups to make their own places, and to give those places authenticity and significance by modifying them and by dwelling in them.

Being on the edge: recognizing the many correspondences amongst varied architectural theories, searching for the inbetween, with no two feet in any one school of thought, is a way of seeking this approach.

Perhaps what provided the final impetus for this study were two consecutive nights in the spring of '82 lecture series; one given by Robert Venturi at the HGSD, and one by Aldo Van Eyck at MIT. Venturi said that he "cares only about the image, not form, or the process of making it," and that he would do anything even at the risk of being called "eclectic," to achieve his purpose of "desired image." Van Eyck, on the following night, said he "cares about purpose, the function of a building, for people, for use," and is "eclectic" in going about choosing freely his means of
achieving this. Both architects were put on the defensive in reference to their being labelled "eclectic," thus being associated with another, separate group/class of architects. Although their final intentions may have differed, parts of their "eclectic" processes might have been quite similar. The lectures spawned both interest and tedium. Having made mental notes over the years of similarities between approaches, references, and even built work of so-called "different camps," I grew weary of the "snubbing of noses," and the mudslinging amongst us.

Therefore, pardon, should any point be made too large or small of, or even slightly stretched, in the following pages; and most especially should a name or notion come to mind that I have not mentioned, for that is exactly the point.
A city is a natural phenomenon as well as a work of art in the environment. Form in nature is not a result of preconceived order. It evolves as it grows or happens, as mountains develop by up-thrusting, boulders by glacial dropping. An art form to me is a result of the inherent nature of materials and the process of putting them together. The art of urban design, as other branches of modern art, follows a naturalistic process. The designer does not give form to a preconceived idea, he takes the elements and allows them to come together. In the process of their coming together, he finds new relationships between things, and only then does he exercise control by making selections. The form evolves as the total process is in progress. The search for form is a search for valid processes.

Lawrence Halprin
from Cities
There exists a great chasm between those on one side, who relate everything to a single central vision, one system less or more coherent or articulate, in terms of which they understand, think and feel -- a single, universal, organizing principle in terms of which all that they are and say has significance -- and, on the other side, those who pursue many ends, often unrelated and even contradictory, connected, if at all, only in some de facto way, for some psychological or physiological cause, related by no moral or aesthetic principle; these last lead lives, perform acts, and entertain ideas that are centrifugal rather than centripetal, their thought is scattered or diffused, moving on many levels, seizing upon the essence of a vast variety of experiences and objects, for what they are in themselves, without consciously or unconsciously seeking to fit them into or exclude them from any one unchanging... at times fanatical, unitary inner vision.

Isaiah Berlin
from Collage City
A "parallel" may be defined as: "Having comparable parts, analogous aspects, or readily recognized similarities. Anything that closely resembles or is analogous to something else. A comparison indicating likeness or analogy," according to the dictionary. In an architectural sense, "parallel" is the term I use to mean all those different theories of architectural design, or parts thereof, which say the same thing. Thus, "a parallel" is a singular thought or principle which two or most probably many more people (theorists/designers) believe and/or expound upon.

These parallels range from explicit reference amongst one another (where the correspondence is named and sometimes quoted, for example:

It is possible to talk about the general spatial structure of a man's being in the world, as I pointed out about ten years ago in Existence, Space, and Architecture, where I also referred to the related conclusions of Kevin Lynch. Man does not wander aimlessly but acts in relation to centers, paths, and known domains.

or

... a work of architecture organizes space and embodies characters, and thus orientation and identification become possible. What was hidden as a possibility is brought out into the open and

...
becomes an existence. "In space lives the will to exist in a certain way," said Louis Kahn. both from "History and the Language of Architecture" by Christian Norberg-Schulz
to exposure (in some cases undeveloped) as a result of my juxtaposition here.

The intention in this first section is to reveal a combination of compatible thoughts and organize these similarities into a group of principles upon which to base a process of design. The parallels fall roughly, in no particular order of priority, into the following categories as a means of convenient organization:

(1) "built form" theories
(2) theories of place
(3) inclusive architecture/participatory processes
(4) environmental memory and associative images
(5) body-image theory
(6) relation to dance/movement/choreography
(7) relation to other arts -- drawing, music, poetry/language
(8) opposites
(9) variety

(These last two categories are larger subsets of "Parallels," as they themselves are embodied in all the other groupings.)

Now a word might be said here on the scope of this research. It is not extensive in relation to the inexhaustible amount of
material available, nor does it attempt to be complete in its listings. Some parallels are drawn only as suggestions of intent, where an intuitive connection has been made but not necessarily fully documented. As presented here, some parallels are stronger, some are weaker, but the aim is to lay them out on the table and to perhaps evoke more thought on the subject. It is a means to a broader perspective of evaluation.
... it is unwise to harp continually on about what is different in our time to such an extent that we lose touch with what is essentially the same.

Aldo Van Eyck
on 'the identity of places,'
from Place and Placelessness
(1) Assorted Parallels to some MIT "built form" theories

Many parallels exist between some MIT theories on built form and those acknowledged by other designer/theorists, and even separate but interdisciplinary fields. For example, a concern in ecology and the study of natural succession in edges, boundaries of natural territories, continuity and variety seem to remind one of related thoughts proposed by M. Smith and colleagues. Ecologists are concerned with "intensifying the edges" -- "the relation between two fields (natural territories) where an eco-system is richer at its edges -- at the boundaries; meaning productivity is higher where species diversity is higher." An example of this is the edge of a field of grass where a new asphalt road has been laid. New life forms such as flowers, different weeds and plants as well as insects spring up along this edge zone as a result of the added heat and contacts brought about by the road edge. According to both fields, edge intensification leads to "differences" and this "diversity produced is the nature of our relation in the landscape." Intensifying the edges of natural or man-made territories helps to define/make place and continue variety in life. A similar notion may be found in the book Body, Memory, and Architecture, by K. Bloomer and C.W. Moore, where "thickening the edge" becomes a means of identification.

2 Ibid.
Thus, a goal in providing for this diversity could be a "full range of options," providing for diversity (variety) in a continuity (landscape) which produces a sense of individual and whole at once. Exemplary of this is the range of life, form, and uses, between forest and field, water and land, and other reciprocal natural territories.

The idea of "multiplicity," of multiple uses or references, by association, analogy, or metaphor, of a single element, is also mentioned in ecological, architectural, and artistic terms. For instance, in explaining the "edible landscape" concept, and a solar algae pond in specific, Quinney claims that "elements in the landscape should be designed for as many functions as possible." 3 Or consider Charles Moore's references to Gaston Bachelard's analysis:

In the places away from the hearth, especially above (in the attic) and below (in the basement), lie the domains of fantasy. Vivid descriptions of the significance of these realms are developed in Gaston Bachelard's *The Poetics of Space*, where he explores the parallels between attics and the mind and the superego. The sheds and gables and lanterns which enclose them are more than utilitarian; they top off the house and mediate with the sky. 4

(my emphasis)

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3 Ibid. For more information see *The Integral Urban House.*

Colin Rowe and Fred Koetter make a similar statement by emphasizing the phenomenon in art: "The alternative and predominant tradition of modernity has always made a virtue of irony, obliquity, and multiple reference. (author's emphasis). We think of Picasso's bicycle seat (Bull's Head) of 1944." Further, Jack Myer reminds us that multiplicity occurs at both conscious and subconscious association levels, when he speaks of a cluster of Wisconsin farm buildings:

They do not stand stark against the land, but are nestled into it, made from the wood that surrounds the fields and in that way becoming
part of the landscape. They are multiple in use, giving shelter and places for work and storage, connected and interdependent, all parts can be seen and understood. There are high buildings and low ones of the same form like the hills about them, and silos stand as single trees in the landscape.

On the principle of continuity, we may relate the observations of Christian Norberg-Schulz and Christopher Alexander to those of M.K. Smith and others.

Entering the city (Urbino), we are struck by spaces which seem to be man-made continuations or interpretations of the nature of the surroundings; the continuity of the surroundings is reproduced in the man-made spaces.

(my emphasis)

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In The Timeless Way of Building (p. 523), Alexander describes a window place with an "ageless character" that is strikingly similar to what M.K. Smith refers to as the "principle of continuity."

Compare this with another window. Imagine a pair of columns outside the window, forming a part of the window space. They create an ambiguous space which is part of the outside, and yet also part of the window. Imagine splayed reveals, which help to form the window, and yet, also, with the light reflected off them, shining in the room, they are also part of the room. And imagine a window seat whose back is part of the window sill - not a seat leaning against the window sill, but a seat whose back is indistinguishable from the window sill, because it is continuous.

This window cannot be lifted out. It is one with the patterns which surround it; it is both distinct itself, and also part of them. The boundaries between things are less marked; they overlap with other boundaries in such a way that the continuity of the world at this particular place, is greater.

Many other parallels exist between the thoughts of Smith and Alexander, such as the belief in "differences," or "greater differentiation," respectively. Perhaps a real relation exists between "edge intensification" and Alexander's attention to details, trim, ornament and even transition zones.
In the quotes below, from *Genius Loci*, read "openness" as a form of continuity and "zone of transition" as a "zone of exchange."

The character of a man-made place is to a high extent determined by its degree of "openness." The solidity or transparency of its boundaries make the space appear isolated or as part of a more comprehensive totality. We here return to the inside-outside relationship which constitutes the very essence of architecture.

Zones of transition may also be used to relate the internal structure of the place to the structure of the natural or man-made environment. We may in this context again remind of Robert Venturi, who says: "Architecture occurs at the meeting of interior and exterior forces of use and space." Evidently this meeting is expressed in the wall, and in particular in the openings which connect the two "domains." 8

In the latter, although the dimension of the zone defined may be more or less (than the wall thickness here), the concept is essentially the same.

Speaking on the "protogenesis of form," in drawing, Paul Klee's thoughts relate to characteristics of "built territories" and collages.

The active part, the line, can accomplish two things by its impetus: it may divide the form into two parts, or it may go still further and give rise to a displacement. 9

(my emphasis)

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Another principle which is shared in some way by many, (among them: C. Alexander, M. Smith, J. Wampler, L. Lerup, H. Hertzberger, and A.I.T. Chang via Laotzu) is that of "the Void" and potential for organic additive growth. This may also be thought of in terms of "slack," or dimensional allowance. One of the thirteen geometric properties which Alexander proposes as characteristic of the Quality Without a Name is "the Void." 10 To me, this is a direct transla-
tion of eastern thought into an architectural application. To quote Chang:

The basic idea of Laotzu's thinking is, as has been said, that once the point of tangible fulfillment is reached, the potential of growing is exhausted. He speaks of a factor which by its intangibility leaves an almost unbounded possibility of change for further development. This general point is most powerfully expressed in terms of the constituency of physical space: 'Moulding clay into a vessel, we find the utility in its hollowness; Cutting doors and windows for a house, we find the utility in its empty space. Therefore the being of things is profitable, the non-being of things is serviceable.'

(Tao Te Ching, Chap. 11)

This statement in relation to architecture suggests that the immaterial, that which is likely to be overlooked, is the most useful. Void, conventionally regarded as negative, actually is more important because it is always capable of being filled by solid. 11

Here time is also mentioned as an intangible, but important dimension of human life experience. This bears an analogy to Lars Lerup's proposed "building the unfinished" posture, and the tendency in "built form" to appear ongoing, or at least capable of easily accommodating addition, or change.

Thoughts on design

The essential purpose of design is to create the possibilities for events to happen.

The limited qualities of perfection in design is that it is then fixed. No more can happen. It is ended. Anything added or subtracted from a perfect design demeans it & lessens its impact.

On the other hand an imperfect design accepts change & is enhanced by it.

By imperfect I mean incompletely.

Incompletion allows for addition or subtraction which enables a person to feel a part of it.
The static complete design can only be seen from outside, viewed as if through a viewer. A person cannot feel part of it because it does not need his participation.

A garden in which all is fixed is limited in time & space and humanity. I want a garden which is enhanced by chance occurrences which is enriched by weeds & suckering growth & the changing pattern of sunlight & shade & the brach falling on the terrace. It is better because I am a part of it. It is not finished.

Sunday, March 24.
Through non-formal contemplation, I am inclined to believe that it is the existence of the intangible elements, the negative, in architectural forms which makes them come alive, become human, naturally harmonize with one another, and enable us to experience them with human sensibility. 12

This is Chang's aim throughout the book in his analysis primarily of the visual in architecture.

Finally, the significance of collage, as both noun and verb, parallels the notion of the architect as "bricoleur" cited in Rowe/Koetter's Collage City, (pg. 102-3); and artists such as Jean Dubuffet, Joseph Cornell, the Dadaists and Constructivists.

"All my work with assemblages... (was) not so much undertaken with the idea of realization as in the spirit of preliminary research, with a view to future realizations. In short, they were for me what preliminary sketches of a painting are for other painters. This assemblage technique, so rich in unexpected effects, and Dubuffet describes his drawing-collages thus: with the possibilities it offers of very quickly changing the effects obtained through modifying the disposition of the haphazard pieces scattered on a table, and thus of making numerous experiments, seemed to me an incomparable and an efficacious means of invention." 13

12 Ibid.

The Art of Assemblage

is important because it gives sharp focus to the idea that art & life are the same but different facetted. It clarifies the fact that art is life sharpened, brought into focus, organized, concentrated, emphasized...but the same elements!!

It is particularly meaningful to anyone designing for environment because it makes clear the breakdown of "art for art's sake" as a separated function; just as it breaks down the difference between painting & sculpture. Here one sees the ordinary cast-offs of our civilization concentrated in space & time into organized "things" which one can call works of art only because of the "purpose" behind their creation. i.e., the creation is in the act of putting them together, the process and not in the technique or the manufacture of the elements which already exist.
How important this is for us to understand - the simplest elements of a machine-made civilization put together awkwardly into creative things. These can go beyond the smallness of these museum created works to our real environment - land - buildings - freeways - the machines (automobiles etc etc). Why should we stop there? Theatre - why in a building or a special place? - But in the world - in plazas, in streets, in the market place - as in medieval towns - the Passion Plays. Art invades life not as decoration applied or even as specially designed or functional but as a brightening of life's process.

from Lawrence Halprin
Notebooks 1959-1971
Revello
from Carver, *Italian Hilltowns*, p. 10.
(2) Theories of Place

Another group of theories center around the topic of "place." These include all of the familiar expressions of: "sense of place," "genius loci" (spirit of place), "dwelling," "making place," authenticity, and topophilia. Yi-Fu Tuan's definition of "topophilia," or "love of place," communicates the broad base upon which these ideas find some real human foundation.

The word 'topophilia' is a neologism, useful in that it can be defined broadly to include all of the human being's affective ties with the material environment. These differ greatly in intensity, subtlety, and mode of expression. The response to environment may be primarily aesthetic; it may then vary from the fleeting pleasure one gets from a view to the equally fleeting but far more intense sense of beauty that is suddenly revealed. The response may be tactile, a delight in the feel of the air, water, earth. More permanent and less easy to express are feelings that one has toward a place because it is home, the locus of memories, and the means of gaining a livelihood. 14

Charles Moore and Gerald Allen, in speaking for an inclusive architecture (rather than an exclusive one) state:

If architects are to continue to do useful work on this planet, then surely their proper concern

must be the creation of place -- the ordered imposition of man's self on specific locations across the face of the earth. To make a place is to make a domain that helps people know where they are and, by extension, know who they are.

The most powerful places which our forebears made for themselves, and left for us, exist as a series of contiguous spaces. They organize a hierarchy of importance -- first dividing what is inside from what is outside, then somehow arranging the inside things in some order. Objects confer importance to location, and location confers importance on objects. 15

Edward Relph, in his marvelous little book, Place and Placelessness, links a sense of place, of home, with security and identity necessary to the individual and the collective.

If places are indeed a fundamental aspect of man's existence in the world, if they are sources of security and identity for individuals and groups of people, then it is important that the means of experiencing, creating, and maintaining significant places are not lost. Moreover, there are many signs that these very means are disappearing and that "placenessness" -- the weakening of distinct and diverse experiences and identities of places -- is now a dominant force. 16

But if we are really rooted in a place and attached to it, if this place is authentically

our "home," then all of these facets are profoundly significant and inseparable. Such home places are indeed foundations of man's existence, providing not only the context for all human activity, but also security and identity for individuals and groups. 17

Perhaps one of the most comprehensive statements on the subject is given by Christian Norberg-Schulz, from his phenomenology of architecture, *Genius Loci*:

When anything happens or occurs, we say that it 'takes place.' In general we say that life 'takes place.' This is a very significant statement indeed, as it implies that it is impossible to talk about life without reference to a 'place.' Place is intrinsic to life, and therefore one of the conditions for a meaningful life is a 'sense of place.' First of all, there is the sense of belonging to a place and belonging means necessarily sharing the place with others, which is participation. But also important is the understanding of places visited ... To give a sense of unity to such a pluralistic society, I think the feeling of participation in a place, of having a place in common, is extremely important. 18

When a man possesses such a sense of place, we may say that he 'dwell.' Today, we usually define dwelling in a material, quantitative

17 Relph, p. 41.
sense as a shelter with a certain number of square feet, but dwelling is really a psychic or qualitative condition. It means that we identify with a place and thereby gain what we may call an existential foothold. Dwelling in this sense demands something from us and from our places. We have to be open to the environmental qualities, and the places have to be such that they offer possibilities for identification.

The term 'genius loci' (spirit of place) means that a true place possesses an identity. It is this identity which is the object of human identification. 19

Both point and parallel are furthered when Relph quotes Heidegger from Norberg-Schulz on the relationship between space, place, and dwelling:

This meaning and this relationship are profound; Heidegger (cited in Norberg-Schulz, 1971, p. 16) has written: "Spaces receive their being from places and not from 'the space'... Man's essential relationship to places, and through them to space, consists in dwelling... the essential property of human existence." 20

The importance of "dwelling" is also stressed by K. Bloomer and C. Moore:
Of course, constructing a model of perception around environmental information does not take into account the contribution of the body to personal and cultural memories. We do not aggressively seek out architectural form (unless we are lost in the streets of an unfamiliar city or engaged in a survey of architectural details). In a more fundamental sense, we experience satisfaction in architecture by desiring it and dwelling in it, not seeking it. We require a measure of possession and surrounding to feel the impact and the beauty of a building. The feeling of buildings and our sense of dwelling within them are more fundamental to our architectural experience than the information they give us. 21

A related line of thought to "dwelling," to human existence, is that of "caring" and by extension, "participation." For instance:

The places to which we are most attached are literally fields of care, settings in which we have had a multiplicity of experiences and which call forth an entire complex of affections and responses. But to care for a place involves more than having a concern for it that is based on certain past experiences and future expectations -- there is also a real responsibility and respect for that place both for itself and for what it is to yourself and to others. There is, in fact, a complete commitment to that place, a commitment that is as profound as any that a

21 Bloomer and Moore, p.36.
person can make, for caretaking is indeed "the basis of man's relation to the world" (Vycinas, 1961, p. 33). 22

Relph then continues to refer to Heidegger's concept of "sparing" of letting a place be, not exploiting them... "which is the essence of human existence and the basic character of Being." 23

What is important about places is not only their uniqueness, their differences, but their sameness. (By analogy, this is applicable to the whole notion of "parallels."

Identity of place is as much a function of intersubjective intentions and experiences as of the appearances of building and scenery, and it refers not only to the distinctiveness of individual places but also to the sameness between different places. In particular, the difference yet relationship between "identity of" and "identity with" should be noted. The identity of something refers to a persistent sameness and unity which allows that thing to be differentiated from others. Such inherent identity is inseparable from identity with other things; Erik Erikson (1959), p. 102), in a discussion of ego identity, writes: "The term identity... connotes both a persistent sameness within oneself... and a persistent sharing of some kind of characteristic with others... Thus, identity is founded both in the individual person or object and in the culture to whom they belong. It is not static and unchangeable, but varies


23 Ibid.
as circumstances and attitudes change; and it is not uniform and undifferentiated, but has several components and forms. 24

These three components of place that are so apparent in Camus' writings -- the static physical setting, the activities, and the meanings -- constitute the three basic elements of the identity of places." Another aspect of this identity, he continues, is "spirit of place," or sense of place, or genius of place, (genius loci) -- All terms which refer to character or personality. 25

Finally, there exists a difference between authentic sense of place and inauthenticity; as well as, an unselfconscious authenticity, versus a selfconscious one.

An authentic attitude to place is thus understood to be a direct and genuine experience of the entire complex of the identity of places -- not mediated or distorted through a series of quite arbitrary social and intellectual fashions about how that experience should be, nor following stereotyped conventions. It comes from a full awareness of places for what they are as products of man's intentions and the meaningful settings for human activities, or from a profound and unselfconscious identity with place. 26

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24 Relph, pp. 44-5.
26 Relph, p. 64.
More on selfconscious sense of place:

The more open and honest such experiences are, and the less constrained by theoretical or intellectual preconceptions, the greater is the degree of authenticity. 27

Although C. Alexander might argue that the only way to produce what he calls "genuine" architecture is through an unselfconscious act, Relph presents two versions:

Such a system of distinctive places can be created both on the basis of an unselfconscious and a selfconscious sense of place. The former is expressed through an unselfconscious design procedure which is based primarily on the use of traditional solutions to traditional problems; it tends to give rise to places that reflect the total physical, social, aesthetic, spiritual, and other needs of a culture, and in which all those elements are well adapted to each other (Alexander, 1964). The selfconscious and authentic sense of place is associated with a design process that is goal oriented and may involve finding innovative solutions to problems; it is founded on a complete conception of man and his relationship to the gods and nature, and on the possibilities of expressing this in particular settings (based on Heidegger) - (my note). The result is usually places which possess both internal harmony and which fit their context. 28
Perhaps the deciding factor between these two (selfconscious vs. unselfconscious) lies in the context of their application. It is easy to imagine a totally unselfconscious act of building in a rural or non-urban setting; however, in an urban context, perhaps a selfconscious, yet authentic attitude is more appropriate. Norberg-Schulz comments:

In vernacular architecture the man-made genius loci ought to correspond closely to that of the natural place, in urban architecture, instead, it is more comprehensive. The genius loci, of a town thus, ought to 'comprise the spirit of the locality to get "roots," but it should also gather contents of general interest, contents which have their roots elsewhere, and which have been moved by means of symbolization. Some of these contents (meanings) are so general that they apply to all places. 29

The innumerable thoughts associated with this thing called "place" could (and has, no doubt) constitute an entire thesis. This serves to emphasize its commonality, and thus its importance as an architectural consideration not to be treated superficially.

There have been selfconscious attempts to capitalize on the idea of place, and Jencks

29 Norberg-Schulz, Genius Loci, p. 58.
suggests that there is something akin to a "place" movement in modern architecture, in which a deliberate effort is made to capture "multi-meaning," to provide a sense of the identity and reality of place. Of course this is one among many and diverse approaches in contemporary architecture but it is important to recognize that whatever principles or theories or concepts the architect works with the created building will inevitably be experienced in some way by its users or its viewers as a place, as a center of human associations and significances. 30

Much has been written, particularly recently, upon the subject of "inclusive architecture," or one of its subsets, "participation in architecture." The latter ranges from the direct involvement of the user/client during the design process (C. Alexander's "Pattern Language," work of Lucien Kroll) to various stages of intervention after an initial "support" has been constructed (concept of N.J. Habraken, J. Wampler's "frameworks," or H. Hertzberger's buildings), from infill to "inhabitation." Here, the definition of "inclusive architecture" defines the perception of space as having more than three spatial dimensions, and includes human dimensions as well. This embraces many theories, including the "interactionist" approach of Lars Lerup, described in his early book, Building the Unfinished, Charles Moore's and Gerald Allen's participatory process, and of course, Lawrence Halprin's process by means of "scores."

Herein, though, lies an ambiguity, and it is this: does a work of architecture describe a particular perceptual space all its own? Or is it something which exists in the perceptual spaces of the beholders, as it responds to many dimensions, which can go noticed or unnoticed, and which can, when noticed, be regarded positively or negatively? We think it is the latter.
The reasons we think so have to do with the nature of choice. In the former alternative, where architecture represents a perceptual space (presumably a replica of the architect's own, and of what he could and did care to measure), choices have been confronted. But they have also been made, and the only choice left to the beholder is to accept or refuse the whole set. In the latter alternative, choices have been recognized, but not actually made.

Lately there has been much talk among architects of "exclusive" and "inclusive" design. The one presumably seeks to purify itself and attain a powerful simplicity by severely limiting the range of images and forms it emulates. The other embraces a multitude of disparate references in its lurch toward catholicity. However, a more basic definition of "exclusivist" architecture may be the one contained in the alternatives just described above. For in the former case the observer is excluded from choice; in the latter he is not. 31

This notion also bears some kin to those who are for suggestive, "evocative," imaginative architecture.

The challenge is to liberate opportunity in the environment by building a linkage between people and things through the development of the dweller's ability.

I have previously gathered this focus and concern under the slogan: building the unfinished. Many

31 Allen, Dimensions, pp. 5-6.
ideas rally under this. The need for a many-sided view is one; another is the openendedness of the environment despite our view of it as finished. All these ideas and observations suggest that we should think of the socio-material world of the dweller as largely unfinished. I have found powerful support in one writer in particular -- Thomas Mathiesen, a Norwegian professor in the sociology of law, who writes: "I have gradually acquired the belief that the alternative lies in the unfinished, in the sketch, in what is not fully existing."  

(author's emphasis)

Lerup's commendation of the incomplete in architecture draws parallels in the realm of art. When Dubuffet is questioned on the subject, he answers:

Besides, I really believe that the hasty effects and unfinished character of a painting (drawing) adds to the pleasure it gives me, and I seldom feel that the effects I have sketched need a more meticulous execution.  

Still another view of the same aspect is given by Jack and Marty Myer in their manuscript for Patterns of Association:

For most of us, the world is not just to be visited, tasted, sensed, associated with, in a life of tourism, or passive compliance. We need to engage
ourselves and our surround in an interaction over
time: to suffer loss, to take initiative, to be
creative, and thereby to engage in discovering,
in arriving at ourselves. Our surrounds become
more than associative form, they become the arena
for doing, making, a context which we can find to
be better or worse, even reinforcing our intentions
or obstructing them. It is important to contrast
this to a compliant relationship to the external
world in which the "external world and its details
.. . are recognized only as something to be
fitted in with or demanding adoption." Here ones
own intentions become subordinated to the inten-
tions and creativity of others... What is
essential to this position is the ability to take
initiative, to eventually gain mastery. 34

Richard Tremaglio connects the interactionist approach, or his version
thereof, with his definition of "place."

I continue to say that you don't make places, you
make the condition for "place" to occur... and
"place" is the result of the input of people into
a physical construct or context. So when you look
at things, you are looking for the underlying
structure; and I draw a lot, make sketches and keep
refining the sketches to concentrate gestures
toward the underlying structure of a place. 35

In some ways the concept of the Void or "intangible content"
in eastern philosophy parallels these notions of inclusive/partici-
patory architecture. It allows for the unfinished attributes and even "found objects" to take on meaning according to each personal encounter.

The word relationship is important because it reveals the fact that a part is lively primarily due to the power of its intangible content. Without its relation with the sources of supply, a city is not a city. Without its relation with the surfaces which receive its light, a lamp is not a lamp.

By so thinking, we may realize that even an empty volume of space along a riverbank could become a wharf once a footprint is engraved on its green surface... Because of this power of insufficiency, diminution of symbolic indication in a form will not necessarily reduce its power of expression. Instead, its vitality as a meaningful being is strongly intensified by its ability to induce the mind's growing experience of the breadth or the depth of physical association. Here lies the primary difference between imitational and original expression of the character of a building. The former presents itself immediately, gives imposition and leaves no room for human experience in time. The latter, though devoid of visual elements for abrupt association, has its suggestive content allowing for man's persuasive mind to grasp and digest for itself. 36

36 Chang, p. 60.
This environment is permissive. It enables you to come in and participate on your own level in any way you see fit. It does not impose many restrictions, or limitations, but not restrictions.
Briefly we review and summarize: to find a built environment which has been generated incrementally and periodically, as needed, through deploying the locally made piece of dimension lumber, gives one the understanding of how it got generated, and even the sense of being able to have generated it oneself or with a small group of others. But further this mill which has been incrementally achieved, has no fixed limit in its growth. Not only can one sense how it was built but also that he or others could readily extend it, a quality most of our modern plants lack. Like the form itself, which has no association to completeness but rather to incremental initiative, one is not blocked in physical, built form. Rather the mill is open to such initiative and even suggestive of it. 37

37 Myers, p. 32.
Round Village, Palombara Sabina, Lazio
from Norberg-Schulz, Genius Loci, p. 62.
(4) Environmental Memory and Associative Images

Although this may be one of the shorter sections, the cause may be due to its overlapping qualities; it serves as a bridge between the former section, which is somewhat dependent on "memory" as shown in this section, and the following section, which is a particularly well-developed aspect of association. Images, memories, and associations, combined with the individual imagination are capable of producing a very powerful blend of "creative genius" and truth. When these occur simultaneously, they are our strongest impressions of place.

An image has been defined by Boulding (1961) as a mental picture that is the product of experiences, attitudes, memories, and immediate sensations. It is used to interpret information and to guide behavior, for it offers a relatively stable ordering of relationships between meaningful objects and concepts. Images are not just selective abstractions of an objective reality but are intentional interpretations of what is or what is believed to be. The image of a place consists of all the elements associated with the experiences of individuals or groups and their intentions toward that place.

However, images may change and are highly individualistic... 
Within one person the mixing of experience, emotion, memory, imagination, present situation,
and intention can be so variable that he can see a particular place in several quite distinct ways. 38

Again, Klee, speaking on Memory in reference to art has said:

The faculty of memory, experience at a distance, produces pictorial associations. In the creation of the picture an association is awakened which enters into the realm of life. 39

The architect's task in utilizing these memories, experiences, and associations is made clear by Charles Moore in the book, Dimensions:

Cultural preferences for one shape over another slope quite quickly into personal preferences, based partly on what we have been taught, but mostly on our memories. The sound of an outboard motor across a lake may be for some people less likely to stir up concerns about the energy crisis than to recall a carefree childhood summer. And several patterns of mullions which may divide the same window opening might have connotations -- dimensions -- very different from each other, depending on the connotations they have in our own experience, the places loved or scorned out of our own pasts. . . .

So in the end, what is the architect to do in the face of the endless diversity of human experience, the presence of personal as well as cultural and archetypal components to our perception of shapes?
One useful response is to render unto the mind's eye what is the mind's eye's, but to take care that the images do not interfere with flexibility of human use -- to keep, as it were, the myth up off the floor. Also, it seems to us useful to regard design as the choreography of the familiar and the unfamiliar -- the chance to massage our sensibilities with shapes that are likely to be familiar to us (whatever their specific connotations to our individual lives) and shapes or relationships full of surprise, which call us to attention and response, readying us for choice. 40

By referring to the thoughts of Diderot and Hume, Moore has also succeeded in joining his own beliefs to some of those of J. Myer, C. Alexander, and others:

The French philosopher and art critic Diderot in the mid-eighteenth century spoke of the aesthetic experience as being dependent on a wealth of associations. A great poet could establish relationships through analogy and associative memory which, powered by his imagination, were not the product of the classical form of exact reasoning. In England Hume actually challenged reason directly. Feeling does not have to justify itself, he said; in matters of beauty, reason should surrender over its extended authority to the imagination. Hume proposed that feelings might express a conformity between an object and an organ of the mind independent of a reasoning process, and thus "genius" might be seen as being particularly powerful, creative, spontaneous, and intuitive in sensing truth. 41

41 Bloomer and Moore, pp. 24-5.
ANTHROPOMORPHIC ARCHITECTURE

Le Corbusier's Unite D'habitation

Michael Graves' House, in Green Brook
Within the realm of "associative" architecture, there is a general body (no pun intended) of thought which associates the human body and all its life processes with the basis of houses, indeed, with the whole of architecture and all its parts. Designer/theorists whom have directly referred to variations of this doctrine range widely from social scientists such as Clare Cooper-Marcus (House as Symbol of Self), to certain anthropomorphic "post-modernists," to architects such as Jack Myer or Charles Moore.

Yet at its beginnings all architecture derived from this body-centered sense of space and place. . . . Columns were surely celebrations of the special human upright stance even before they were pressed into service to hold up roofs over human bodies. Walls had been invented to describe human territoriality (to stiffen a boundary just beyond the body itself) even before they were joined into whole systems to make rooms and buildings. . . . Qualities invested by humankind into those columns, walls and roofs gave meaning to the built world. 42

Another model of perception which provides powerful clues about our feeling of dwelling is rooted in psychoanalytic thought and has developed
as a subject called body-image theory. All experiences in life, especially experiences of movement and settlement in three-dimensional space, are dependent on the unique form of the ever-present body. It appears that individuals possess an unconscious and changing image of their bodies which is quite separate from what they know objectively and quantifiably about their physicality. . . . The most fundamental organizing principle in the formation of our body image is that we unconsciously locate our bodies inside a three-dimensional boundary. . . . The term "body-image" is not preferred by all proponents of this theory. . . . For our purpose we mean to accept the body-image as the complete feeling or three-dimensional Gestalt (sense of form) that an individual carries at any one moment in time, of his spatial intentions, values, and his knowledge of a personal, experienced body. It should be considered a psychical rather than a physical model. 43

Indeed it is impossible to imagine a spatial organization more universal, more valued, and more immediately understandable to everyone than the one provided by the human body. . . . the above relates to a common language for people, as defined by the human body. 44

Fundamental to these body-image theories, lies the fact of human scale, of using the human body as a measurement of size, and particularly, as a reference for shape and forms in architec-
ture. Further connections often germinate as a result of these initial spatial cues. For example, the Myers related these associations in a cluster of farm buildings:

The forms combine many eyes and brows, and feel like a face, conscious of the view out and drawing us to look in.

This face is most strong in the silo/watchtower element which looks out in as many directions as it can, overlooking the fields, standing by the approach to the barns. A bit strange and magical, it seems like a sentinel. Possibly it is protecting the storehouses from approach. Possibly it is also overlooking the fields, informed of adverse weather by the weathervane in its helmut. 45

As we turn to the Taliesin farm group, we become aware of the bulk of the barn's mass and feel it in our own bulk. The upstanding masonry piers are a particularly delicate and careful, cradling, unfolding of the barns' body by the land. The dark space created between the body of the barn and land makes mysterious and unrevealed the intimate bodily contact. These connections between barn and land are like the connections between mother and child. There is a sense of profound continuity akin to the continuity of mothering and the sense of lying or being in a universe of a strong being. 46

45 Myers, p. 13.
46 Myers, pp. 16-17.
... we have found some associative connections between the inner and outer landscapes: we make associative connection with the physical world which is akin to those we had in infancy -- a sense of "subjective oneness" between our body and the objective world, a resulting sense of intimacy between these two exists for us, a continuing search for our own parts in the elements of our world, and through these associative understandings, these elements become as if alive to us, become beings which have their own identity which become reinforced by architectural attributes such as eyes, faces, fronts, sides, backs, etc. 47
More often this identity is witnessed in the house, as the archetypal body image, where separate architectural elements relate to human parts: windows are eyes, doors are mouths, and so on.

In children's drawings of houses (sometimes even in countries where the houses do not look like ours) there is generally a door like a mouth, windows like eyes, and a roof like a forehead, with symmetrical enhancements in front. In real houses, however modest, details of craftsmanship and signs and artifacts are developed at critical places to tell a story about the interior of the house, just as the expressions of the human face speak for inner feelings. . . . Just as a certain roundness in the rough surface of a geode speaks to the explorer (through his memory of other geodes) of the crystalline splendors inside, the house front speaks to us about what lies behind it, and what it might be like to inside. 48

Yet, the steel mill and other industrial images are cited by Jack Myer, and many other modern and contemporary designers as well, for their associative, and thus possibly evocative qualities.

Clearly there is much associative activity going on here. The steel mill is unusually rich in this. Its entity is sensed in ours, its framework in ours, its body or bulk in our own, its bodily part in our own part, its distortion in ourselves.

48 Bloomer and Moore, pp. 1-2.
We are fatter, or thinner, stronger or weaker, crippled or whole, dominant or subordinate, with this entity or against it. Even when the parts of the mill seem to be some other being, not us, there is still associative power which is richly positive as we associate this giant body with our own mind. . . .

There is something about the concept of "empathy," as proposed by the philosopher Robert Vischer, which sheds meaning upon the body-image theories, particularly in the "projection of personal emotions" into architecture/places, and in "encountering the self."

Observing that feelings may be aroused by experiencing totally abstract objects (as well as storms, sunsets, and trees), he surmises that we may empathize with objects by projecting our personal emotions [my emphasis] into them. For our purpose the objects would be architectural settings with or without explicit functional or symbolic content.) He (philosopher Robert Vischer) suggested in this way that the feelings of the artist while making a work of art could become the content of the work of art. This was an extraordinary thought, for in the context of architecture it implied that feelings of the inner self might be projected to the walls, doorways, and domes of a building. Theodor Lipps, in his Raumaesthetik (Aesthetics of Space, 1893-7), was to characterize empathy as the objective enjoyment of self; for him positive empathy (beauty) is where the self is encountered in the object, and negative empathy (ugliness) is where the self is repelled.
The historian Geoffrey Scott, in his celebrated *Architecture of Humanism* (1914), made similar references to the body but in phrases which seem much closer to our own experience: Weight, pressure, and resistance are part of our habitual body experience, and our unconscious mimetic instinct impels us to identify ourselves with apparent weight, pressure, and resistance in the forms we see. 51

51 Ibid.
(6) Relation to Dance/ Movement/ Choreography

It is this feeling of weight, pressure, and resistance -- a continuous awareness of the laws of gravity, with which dancers move and "feel" space. The relationship between architectural theory and "dance," especially the process of "centering," has been expressed by designers such as Lawrence Halprin, Charles Moore, Robert Yudell, and a number of others.

CENTERING: in the plié, the pirouette, the stretch
Dancers, more conscious of body movements and balance, may locate the abdominal muscles at the center of their body world. However, despite the varying sites for the location of a corporeal centerplace, it is significant that a sense of center is indispensable for the ordering of stimuli and an essential key to the psychic geography of our internal world. 52

Dancers in motion, particularly in contemporary choreography, often display the principles of continuity and directional fields. Examples of such may be seen in the performances of dance companies such as Twyla Tharp, Alvin Ailey, Paul Taylor and others.
If dancers feel a critical relationship to the space outside their bodies, they also sense an essential relationship to the inside. In forms as divergent as classical ballet and modern dance the practitioners speak of the constant need to find or feel one's "center." This us usually described as being in the region of the deep abdominal muscles, but the location is not as important as the fact that "center," the inside, must be felt before the dancer can confidently move in space, the outside. This is, indeed, reminiscent of our need to sense the security inside our dwelling place in order to act with strength in the outside community. 53

53 Robert Yudell from Bloomer and Moore's Body, Memory, and Architecture, p. 58.
This sense of "center" in dance holds a mutual parallel not only to that of body-image theory, but to an architectural process coincidentally referred to by C. Alexander as "the centering process," and to whole other disciplines as well.54

Thus "center" is not a concept of geometry but one of the musculature with all its kinesthetic ramifications, of orientation in response to the pull of gravity, and of a sense or feeling of inside.

Looking at the body in space, we find that geometric abstractions and descriptions quickly assume layers of associative meaning. Rudolf Laban, an influential pioneer in graphic notation for dance, has described movement in terms of the "frontal," "vertical," and "horizontal" planes, providing a triaxial structure remarkably similar to the psychophysical coordinates of the body-image theorists. 55

This same "sense of center," lies at the root of a design process, currently being developed by C. Alexander and colleagues, at the urban design level, called "The Centering Process." (See Appendix A.) It attempts to define a process whereby one may always "feel centered" within, and that the space without is reciprocally "centered," at all points, at all times, and at all levels of scale, from the small details to the larger whole. When

54 "The Centering Process," as defined Christopher Alexander, has been discussed and formulated as part of an urban design process for piecemeal growth in a series of seminar/studios with Alexander in 78-79. This material may be published in the future.

55 Yudell from Body, Memory, and Architecture, p. 58.
this occurs, all forces: natural, internal, external, are resolved.
In Alexander's words:

The fundamental concept, is that of a center. A center is not a point: it is a whole, a shape, an area, which is well enough defined to possess or define a center, at its heart.

In many cases the middle itself will be void, but the whole, by virtue of its overall organization, creates a virtual center.

The process by which we shall create this structure, consists of one operation, which will be performed over and over again. This operation consists of making, elaborating, strengthening, completing, some center which exists, or begins to exist.

The whole thing emerges simply, from the desire to knit space together, as strongly as possible, by forming centers at all scales. 56

Without elaborating in too much detail upon this one process of design, which is only vaguely represented by The Timeless Way of Building or demonstrated in The Linz Cafe, by Alexander; he links the centering process to that which he calls a "vision":

The authentic vision, comes into your mind, because it springs from your understanding of the
whole, as the form of life, the place, the organization which does most to bring the entire thing
to life, still more, as a totality.

The same is true of centering. It is the essence
of the centering process, that you always search,
in your mind, for the most poignant gap, the most
needy spot, for the rift whose mending will do the
most to heal, and help to form the not yet known
emerging whole. . . . 57

The process of centering serves as a reference in other fields,
such as Mary Richards, a potter, poet, and teacher, describes in her book:

Because I am a potter, I take my image, CENTERING,
from the potter's craft. A potter brings his clay
into the center on the potter's wheel, and then he
gives it whatever shape he wishes. There are wide
correspondences to this process. Such extensions
of meaning I want to call attention to. For
CENTERING is my theme: how we may seek to bring
universe into a personal wholeness, and into
action the rich/life which moves so mysteriously
and decisively in our bodies, manifesting in
speech, and gesture, materializing as force in the
world, the unifying energy of our perceptions. 58

57 Ibid.

58 Mary Richards, Centering (Middletown,

The comprehensive quality of her stance is enriching, and actually
quite expressive of the kind of thing, a sort of way of life, of
designing, upon which I believe Alexander bases his formulation. There is potential for a deeper analogy between her concept of centering and architecture as she continues in the book with two chapters on "Centering as Dialogue," and "Centering as Transformation," respectively. (In the last section of "Parallels," these themes -- of dialogue and transformation -- are elaborated upon in relation to the process of drawing and architecture as a language).

The idea of Movement as a form of communication, a means of experiencing and feeling centered within ourselves and in architectural space, is also related. In "The Building as Stimulus for Movement," Robert Yudell states:

All architecture functions as a potential stimulus for movement, real or imagined. A building is an incitement to action, a stage for movement and interaction. It is one partner in a dialogue with the body. 59

He cites examples of children's movements, of skipping over sidewalk cracks, ways of seeing, using steps, and so on that remind one of L. Lerups's interactionist approach and Jean Piaget's Child's Conception of Space.

Movement upward can be interpreted as a metaphor of growth, longing, and reaching, and movement downward as one of absorption, submersion, and

59 Yudell from Body, Memory, and Architecture, p. 59.
compression. Since the images of womb and tomb are associated with the earth, and images of resurrection and the afterlife are related to the sky, the vertical axis is also closely bound to the concept of transition through the cycles of life.

In contrast, movement in the horizontal plane relates only to the earthly stage in that cycle. Laban has identified this plane as the zone of communication and social interaction. The communication or change, however, is not related to the personal longing which is associated with the vertical axis. 60

This associating of life processes with directional movements prompts another parallel related to the Myers' Patterns of Association. One is reminded again of the bond between movement, body-image, and architectural form:

You always, in contemplating objects, especially systems of lines and shapes, experience bodily tensions and impulses relative to the forms you apprehend, the rising, and sinking, rushing, colliding, reciprocal checking, etc. of shapes. . . . 61

Certainly the intrinsic relationship between movement and path is obvious enough; thus we may extend the dance analogy to embrace "choreography" (simultaneously "path," the process of creating it, and a means of experiencing it), as a useful correspondence to architectural design. Again, quoting K. Bloomer and C. Moore:

60 Ibid.
61 Bloomer and Moore, p. 27.
The special, immaculate collision, in which building or landscape pieces come sharply up against one another without loss of their individual identities or spirit, is especially important in the making of memorable places. A classic example is the gridiron plan of San Francisco, which collides with steep hills in a balance which has not surrendered the identity of the hills but indeed has strengthened their image in the welter of detailed arrangements or stairs, walls, tunnels, walks, and switchbacks which make the grid functional and more memorable than ever.

Architectural design becomes, in such an instance, a choreography of collision, which, like dance choreography, does not impair the inner vitality of its parts in the process of expressing a collective statement through them. Choreography, we believe, is a more useful term than composition, because of its much clearer implication of the human body and the body's inhabitations and experience of a place. 62

(my emphasis)

"Choreographing the path" will be amongst the main tasks of the design work documented later. However, as a summary statement, Moore engages many of the parallels reviewed thus far:

We start with the house staked out in close homage to the human body and note how the choreography of arrival at the house (the path to it) can send out messages and induce experiences which heighten its importance as a place. Far beyond the boundaries of the house lies the edges of cities, and

62 Bloomer and Moore, p. 106.
beyond them the outer boundaries of whole societies... And some pattern of connections will be laid upon the earth within those boundaries, generally producing a set of inner edges upon which our comprehension of the place depends.

The inhabited world within boundaries then, can usefully be ascribed as a syntax of place, path, pattern, and edge. Within each of these four, architectural ordering arrangements can be considered which are made to respond to the natural landscape as well as to human bodies and memories. 63

Edward Hill, American, 1935 -

Melancholia (1964), lithograph on buff paper, 18" diameter.

63 Bloomer and Moore, pp. 78-9.
The next collection of parallels deals with those organizations or processes in the arts (music, drawing, poetry, language, etc.), which resemble models in architecture (or vice-versa). Overlapping parallels have already been mentioned; for instance, the notion of "centering" in pottery work, collages as means of invention, or the unfinished character of artwork which is analogous to open-ended, inclusive architecture. Therefore, this section will concentrate its efforts on those relations to the arts which have not been previously touched upon.

One of the main organizations, which occurs in music, dance, and the visual arts such as painting, drawing, printmaking, or photography, is that of "theme and variation." This ordering principle holds many applications in different fields. For example, in discussing a series of prints (as a representation of an artist's work in general), Edward Hill claims:

> From a large score a composer may take a fragment and develop it into a separate piece, complete in itself, yet not exclusive of the greater whole."

"Melancholia" (one of a series of lithos) came about similarly. The entire group of studies were responsible for the nascence of a thematic idea, an idea which still is to be given maximum form. . . . Many ideas which engage an artist's mind become recurrent themes in his work. The bending figure is that sort of image for me. 64

64 Hill, pp. 88-89.
Norberg-Schulz's statements exhibit a concern for theme and variations not unlike those of N.J. Habraken and his work on the "SAR methods," of "supports" and "variations." (For more details, see The Grunsfeld Variations and other Habraken publications.)

We may study spatial organization and understand that there are certain principles involved in it which, although they can and should be interpreted in ever new ways, are still there as basic principles. These include the principle of centralization, the principle of axiality or longitudinal organization, and the principle of axially or longitudinal organization such as a
grid. ... I think in the past it was as basic to architecture as it was to music that one worked with certain valid themes... if one looks at the old parts of Cincinnati (or any city) one sees that it is also based on theme and variation; and we may, through studying the thematic structure of spatial organization, learn something which can also be useful in architectural practice. 65

Another parallel within the art world is that of the process of drawing, and by extension, intellect and language itself.

The intellectual act is one of seeking connection, and to draw is to seek connection. Drawing and intellect -- most twentieth-century artistic theory stands at odds with any reference to intellect, or is at best suspicious; yet a very real relation exists. Intelligence attempts to give an order to experience and does so by means of a discipline which by nature is ordered -- language. Language allows us to communicate and express; but before that, it clarifies, connects, and forms thought. Drawing does the same. The first function of both is precommunicative: to sharpen perception, to clarify it, and to give it an ordered form. 66

The relationship between "thinking" and "drawing" has often been commented upon by artists and architects alike. From an interview with R. Tremaglio on process:

DRAWING: sharpening perception, clarifying it giving it an ordered form

H. H. Richardson, ARCHITECT.

Q. "When you're sketching, does thinking precede drawing, or drawing precede thinking?"
A. "It happens together. I don't see them as separate at all. If I think about solutions, I'm thinking about myself sitting there drawing them as opposed to trying to imagine the exact solution. It's like gesture drawing and life drawing -- the presence of the gesture and the drawing occur simultaneously. It's not representational so much; it's much more projective kind of drawing." 67
The parallel between drawing and the process of architectural design returns full circle through an analogy to "drawing as dialogue" and "drawing as transformation."

The second point concerns the changes that occur in the form of an image during the process of drawing, the metamorphosis of an idea. In Cozen's scheme, the draftsman begins with a general concept which guides him in making the freest sketch. He then responds to forms suggested in the resulting patterns and determines the final forms from successive interpretations. In other words, the results were not predetermined, only the method. . . . The whole is a process of seeing. Though one be possessed of an idea, a vision, the final form remains indeterminate until the entire process of making is complete. If true, then as artists we do not really see until we have given concrete and integral form to an image. 68

Other interpretations of the architectural design process analogous to that of "dialogue" liken architecture to language, and poetry as a particularly appropriate literary form. The vivid and free expression of poetry admired by Bachelard in The Poetics of Space is demonstrated by his following description:

And what a dynamic, handsome object is a path! How precise the familiar hill paths remain for our muscular consciousness! A poet has expressed
all this dynamism in one single line:
"O, mes chemins et leur cadence"

- Jean Caubère, Deserts

(Oh, my roads and their cadence.) 69

Both architecture and poetry communicate through images and appeal
directly to our senses. They perform multiple, simultaneous
functions, relying on careful assemblage and structure in order
"to be," and thus "to mean." Poet and critic John Ciardi, from
his book, How does a Poem Mean?, identifies the poem as a:

formal structure in which many elements operate
at the same time. . . . the unphrasable and
undiminishable life of the poem lies in the way
it performs itself through the difficulties it
imposes upon itself. The way in which it means
is what it means. 70

The use of the linguistic analogy ranges broadly, from the
study of architecture as semiotic systems (C. Jencks et al.), to
poetry, to its use in architectural education, and all that lies
inbetween. The purpose here is not to review all of the diverse
branches, but to include two levels of this analogy to the list of
parallels.

First, the application of pattern languages, mentioned before,
may be expanded to include architecture as a form language, a
vocabulary for which consists of different use/forms, sizes, and materials. This vocabulary, when linked to a set of combinatorial rules, or patterns of relationships, may then become the basis for form generation.

Second, the analogy between design education and language education merits some discussion. This embraces the exploratory, intuitive communication found in children's learning cycles.

An infant learns to manipulate language intuitively. He does not need to read or spell or cognitively categorize to communicate. Children learn to manipulate language through intuition, observation, and imitation. They learn to intuit syntax and meaning. Children's available vocabulary and associated meanings are often used creatively (ungrammatically) and poetically, and if expression is allowed to be creative and satisfying, it arouses an interest in enlarging vocabulary and a need to achieve conciseness and logical order, of which exposition and analysis are a later part. . . . Language exploration is random and intuitive, as the early design exploration should be. Design exploration at its best involves the same elements of intuition and personal involvement/investment that one brings to the manipulation of his native language. 71

Finally, Prof. D. Schon of MIT, among others, draws upon "architecture as a language" through the use of "dialogue" in

making explicit a process he calls "reflective designing." In a draft for the Mellon Foundation Architecture Education Study, he relates the iterative studio design process to a reflective conversation between the designer and the work itself:

I shall consider designing as a kind of conversation with the materials of a situation. A designer makes things... he works in particular situations, uses particular materials, and employs a distinctive medium and language. Typically, the making process is complex. There are more variables, kinds of possible moves, norms and interrelationships of these than can be represented in a finite model. Because of this complexity, the designer's moves tend, happily or unhappily, to produce consequences other than those intended for them. When this happens, the designer may take account of the unintended changes he has made in the situation by forming new appreciations and understandings and by making new moves. He shapes the situation, in accordance with his initial appreciation of it, the situation "talks back," and he responds to the situation's back-talk.

In a good process of design, this conversation with the situation is reflective. In answer to the situation's back-talk, the designer reflects-in-action on the construction of the problem, the strategies of action, or the model of the phenomena, which have been implicit in his moves. 72

72 Donald Schon, from a draft for the Architecture Education Study, Vol I: The Papers, pp. 80-81.
(8) OPPOSITES

The plurality of terms used to denote what I refer to as an "opposite," as typical in the field of architecture, is somewhat confusing. (Although ambiguity serves its purpose at times.)

However, they are those fundamental contrasts which, by nature, we tend to combine in pairs: up/down, in/out, front/back, public/private, light/dark, open/closed, vertical/horizontal, hot/cold, large/small, figure/ground, life/death, positive/negative, yin/yang, and a score of other duos expressing "reciprocity." These may be called opposites, contrasts, contradictions, "twinphenomena," or whatever term one chooses; they are still essential to an understanding of our lived-world.

This underlying duality in nature, our built environment, the arts, and life itself, as a principle of architecture, is in some ways a larger subset of "parallels," relative to the seven previous sections, as so many of those include "opposites" themselves. The purpose in this section is to emphasize the necessity of these tensions in architectural design. The more intense these simultaneous combinations, or the variation of their transitions to one another, the richer the experience. In some built form theories this principle of reciprocity has been expressed as a need for "differences."

The fundamental nature of "opposites" is examined first. Then, their relations to art and applications in architecture are...
Horizontals and verticals. The Hradčany over the Small Town.
The human mind appears to be disposed to organize phenomena not only into segments but to arrange them in opposition pairs. We break the color spectrum into discrete bands and then see "red" as the opposite of "green." Red is the signal for danger, and green is the signal for safety. Traffic lights use these colors for the readiness with which we read their messages. In other cultures the colors may have somewhat different emotional associations, but the general point remains valid, namely the tendency for the human mind to pick pairs among segments perceived in nature's continuum and assign opposite meanings to each pair. This tendency may reflect the structure of the human mind, but the emotional force of some bipolar antinomies suggests that the total human being, at all levels of experience, is involved. One may speculate on some of the fundamental oppositions in human experience: life and death, male and female, "we" (or "I") and "they" are among the most important. These antinomies of biological and social experience are then transposed to the enveloping physical reality.  

Although Rudolf Arnheim does not explicitly mention the idea of "opposites," his usage of them: vertical & horizontal, insides & outsides, solids & hollows, order & disorder, in organizing his thoughts on form and space, demonstrates their fundamental nature. (See The Dynamics of Architectural Form.)
Aldo van Eyck expresses his theory of opposites as that of "twinphenomena," explaining the necessity for mutual presence of these qualities in order for us to comprehend a full meaning.

For it is in the nature of dreams that things -- all things -- escape from the rigid meanings assigned to them, cross their own frontier, merge, and are significantly reshuffled; that absolutes and quantitative antonyms (false polarities) -- this concerns me especially -- are deflated and rendered meaningless; and, finally, that order and chaos, continuity and discontinuity, the determinate and the indeterminate, are gratifyingly united.

Both the Pueblos and the Dogan tell us, each in a different way, that right-size is not a quantitative matter at all. They reveal once again that what large and small, many and few, far and near, part and whole, unity and diversity, simplicity and complexity, etc., etc., mean in a qualitative and relative sense depends on what they mean in terms of each other, i.e. as a linked sequence of twinphenomena. In a valid solution -- whether it is a Pueblo or a Dogon village --, all these qualities are simultaneously present. Each acquires something of the meaning of the other and is enriched by it -- given perspective. This is what I call right-size. 74

To complete the essential property, the comprehension of meaning through the manifestation of opposites has been expanded
to include human identity itself.

Our feelings of rhythm, of hard and soft edges, of huge and tiny elements, of openings and closures, and a myriad of landmarks and directions which, if taken together, form the core of our human identity. 75

Once again, the notion of opposites finds parallels in music, art, and dance. To illustrate:

My experience with music also told me that our means of expression are structured. Some structures seem to be basic -- we could almost say invariant through time -- whereas others are only temporary. In music, as in architecture, there is, for instance, a difference between up and down -- a difference which is somehow related to a basic structure of the world in which we live. . . . Later I understood that what music taught me held true for life in general. 76

Edward Hill has affirmed the power of contrasts, and that our acute awareness of such is the essence of life. In relation to drawing, the opposites constitute the complete experience.

Visual ideas are never born whole from ether. They are the consummation of complete participation in experience. By which we mean total experience, everything -- visual and nonvisual, concrete and conjured, empirical and fantastic --

75 Bloomer and Moore, p. 44.
76 Norberg-Schulz, "History,"
that is the configuration of our lives. In order to apprehend meaning in our experience it is essential for us to see, and drawing is the instrument of an inquiring eye that teaches us to see. 77

Speaking on color contrasts in painting, Paul Klee has noted:

From the psychological point of view, primary contrasts side by side give a powerful expression. Primary contrasts with something between them move apart and the expression is toned down. Full leaps come from greater energy than do half-leaps. Secondary contrasts, even badly stated, lessen the power expressed. Elaborated, they weaken it by being over rich and lessening tension. 78

In dance, all body movement is based on the opposition of pairs of muscles which compose the human musculature. For instance, in a "grand battement" (extension, raising of the leg), one must relax the muscles on the front of the thigh to enable those on the back of the thigh to extend. This is known as a "release," as opposed to a "contraction."

In the *Tao Te Ching*, Laotzu has written:

Long and short will manifest each other; High & low will attract each other. 79

77 Hill, p. 39.
79 Chang,
Much of the *Tao of Architecture* is devoted to an analysis of visual/spatial opposites and their relation to the Void, as this pertains to architecture. Within it, A.I.T. Chang explains:

Laotzu's idea of the relationship of things concerns the growth and change between them. This is apparent in surface quality, or brightness contrast which, as has been mentioned, has no definite being itself. It becomes a certain thing at a certain moment only by being in contrast with another thing existing in immediate coexistence or experienced association. To be precise, the phenomenon of contrast in spatial form should be defined as sensory difference of two things between two obvious opposites.

Since none of individual things has definite being unless it is manifested by another thing having the obvious opposite characteristics of its own, a curved shape acquires its meaning through its contrast with straightness. With this conviction, a general survey will reveal the existence of at least three conceivable polarities of shape, namely: horizontality and verticality; perpendicularity and obliquity; and, curvilinearity and rectilinearity. Simple or compound, minute or colossal, architectonic forms are experienced as varied combinations of these elements, the hues of form.

Because of the natural rhythm between fatigue and relief, the transition of our sight from one tangible shape to another creating one existing
in the neighborhood gives man the clarity of perception, attraction of interest, and inducement to movement. All these effects of refreshment, however, are more efficient when transitional void between opposite shapes is provided. In all cases, moreover, the mental vitality created by contrast seems to explode and then to evaporate in void. The stronger the contrast, the greater volume of void to receive the explosion is needed. 80

The contrasts of constancy and change, general and local, appear as essential juxtapositions in "new interpretations" (read transformations?) as a part of maintaining genius loci.

As architects we may build in a way which makes sense in relation to this "genius loci." The phrase "new interpretation" implies both constancy and change. We have to understand something which is already there; we have to make an interpretation of an historical fact. To respect a place, to care for it and add something new to it, presupposes historical understanding. Of course that doesn't mean copying but rather a new interpretation. As any place brings together both general and local properties, so historical understanding had to be general as well as particular. Architecture is the making of places -- man-made places -- and as such it is part of history. 81

80 Chang, pp. 31-33.
Opposites are not only essential to human identity, but to identity of place as well; the two are interdependent, as demonstrated by the inside-outside dualism. The experience of differentiation between these two is the essence of the identity of a place.

The major components of the identity of place do not apply solely to places, but are to be found in some forms in all geographies, landscapes, cities, and homes. The essence of place lies not so much in these as in the experience of an "inside" that is distinct from an "outside"; more than anything else this is what sets places apart in space and defines a particular system of physical features, activities, and meanings. To be inside a place is to belong to it and to identify with it, and the more profoundly inside you are the stronger the identity with the place. . . . The inside-outside division thus presents itself as a simple but basic dualism, one that is fundamental in our experiences of lived-space and one that provides the essence of place. 82

Of course, there are many levels of intensity with which we experience this difference, and the distinction may not even be all that clear; these levels then constitute the complexity or ambiguity in life/architecture.

The most basic contrasts or opposites in built form help to establish human associations, intensifying meaning. For example:
The most important place on the house facade is the front door, to which, almost always, there is a special stepping up. On larger houses the entrance might be under a protective roofed porch, or below a fanlight or a dormer window projecting from the attic, all of which draw connotations of upness to the passage in. The rear, meanwhile, is not at all like the front. It is unlikely that symmetry will have been sought after, or any formal array of windows or doors. The attention, with all the expected anal implications, is to service, trash removal, and privacy. 83

Or:

In contrast to the horizontal wooden barns, the stone silo stands round and vertical, thus making more dramatic the covering sheltering quality of the barn. 84

As usual, the particular skill of Charles Moore in integrating all possible parallels achieves both his purpose and mine. In a discussion of "ambiguity in scales," using St. Peter's in Rome as one example, the principle of duality is again illustrated:

Most interesting, perhaps, is when the message seems a choreography of both, offering a clearly perceptible order on some terms, and a set of surprises and ambiguities on some others. Then scale works in the service of the inclusivist attitude which, rather than presenting the

83 Bloomer and Moore, p. 2.
84 Myers, p. 13.
observer with answers ("This is what it is"), includes the observer by urging him or her to ask a question, ("What is this?"). Scale can then be a device which helps achieve a quality that all good buildings possess: being at once "like" something (and having a general meaning) while also being special (and having a particular meaning). 85

(my emphasis)

85 Moore and Allen, Dimensions, p. 22.
Collage: A VARIETY OF STUFF
"Sun Box," Joseph Cornell, 1956

Variety is not the spice of life, it is the very stuff of it.

Christopher Burney
'Solitary Confinement,' 1952
The one quality which seems to be embraced by so many architectural theories is that of "variety." The former section on "opposites" might be interpreted as a particular generative characteristic of variety; for it is the composite of these differences that lead to diversity within the whole, capable of providing for a full range of uses, forms, sizes and materials.

Edward T. Hall, from his book, The Silent Language (p. 179), speaks of variety as a matter of importance in an American context:

Variety enables us to distinguish between intervals such as short duration and long duration, or long duration and very long duration. Variety is a factor in boredom, while the degree of boredom experienced depends on how rapidly time passes. . . . Our demand for variety and for something new would seem to exceed that of almost any other culture in the world today.

Variety is part of the key to individual and group identity in solving the "no one wants their house to look like any others," * problem. It prevents static boredom, having an organic, nature-like quality embodied in the phrase: "no two snowflakes are alike." Quite simply, there is a need for this multiplicity as a means and an end in itself. The loss of places in our world today gives further evidence to this fact.

* From Alexander and Chermayeff, Community and Privacy.
There is a widespread and familiar sentiment that the localism and variety of places and landscapes that characterized preindustrial societies and unselfconscious, handicraft cultures are being diminished and perhaps eradicated. In their stead we are creating, in Norberg-Schulz's (1969) terse phrase, "a flatscape," lacking intentional depth and providing possibilities only for commonplace and mediocre experiences. 86

C.W. Moore (in Lyndon, 1962, pp. 33-34) has written that "the richly varied places of the world. . . are rapidly being obliterated under a meaningless pattern of buildings, monotonous and chaotic;" and Gordon Cullen (1971, pg. 59), suggests of Britain that "we appear to be forsaking nodal points for a thinkly spread coast-to-coast continuity of people, food, power and entertainment; a universal wasteland, a chromium-plated chaos". . . . Such comments indicate the possibility of a placeless geography, lacking both diverse landscapes and significant places, and also imply that we are at present subjecting ourselves to the forces of placelessness and are losing our sense of place. 87

The notion of "collage" as a representation of "variety," and "transformation" as a means of achieving it, hints at an approach to contemporary architecture.

An interesting correspondence to diversity in architecture is found in an overview of modern art:
The quality which most characterizes modern drawing is diversity. Diverse media, themes, purposes, and artistic philosophies have created a topography of contrasts. If we examine this topography, the contrasts will be found both rich and shallow; but also, we will find that because it all exists in the single temperate zone of twentieth-century society, there are certain specific currents of values and concepts which distinguish the present scene from past history.88

In an architectural application, then, it would seem important to recognize these "currents of values and concepts," these various "themes" in both present and past architecture, in order to design more appropriately for the future.

88 Hill, p. 126.
PART TWO: The Resources

The fox knows many things but the hedgehog knows one big thing.

Isaiah Berlin
At the outset, I am not exactly sure why I (and many others, particularly in the design professions,) am attracted to the hills. Personally, there appears to be a history of hills, of steps in my life. I have always loved stairs (as a means of movement, as place, as stage, seats, tables, objects), having lived in houses on a steep hillside or sloped lots (as well as flat), and having always wanted to be on hillsides. For me, it is a combination of things: of view/orientation outwards while still being able to optimize privacy, as well as natural daylight, volumes, and vertical movement within a dwelling. Since none of these qualities are restricted to hill housing forms (obviously there are more or less successful combinations in both flat land and hill housing types), perhaps it is the complex variations of such, evoked by the steep hillside that is so alluring. The topography seems to suggest the use of the "half-level" change, wonderfully taking advantage of possibilities for rising upwards within, while maintaining a close connection to the earth. Still, there remains somewhat of a mystical attachment to hill housing that refuses to be named.

Beyond the fact that flat, easily buildable land near urban center is becoming more scarce (i.e. Los Angeles, San Francisco, Hong Kong, etc.) and that in fact, developers tend to shy away from steep sites as "unbuildable," making some parcels more economi-
cally available, there are some real advantages (socially, psychologically, formally, visually) to hill housing compared with other more common, medium-high density multi-family housing forms such as the tower, mid-rise block, or even row houses. The organic, clustered forms of hill housing embody a large improvement over certain problematic social and formal issues of dense urban living. A few of these issues are: lack of privacy, individual or communal identity, outdoor space, ground contact, (particularly for families with small children,) natural daylighting, contextual fit, and loss of place; which may be overcome through the inherent advantages of hill housing. Together, these begin to constitute a case for focusing upon hill housing as a distinct building type.
History and Development of Types

Historically, the growth of many significant hill settlements began in antiquity along the Mediterranean coastline in Greece and Italy. The archetypal European "hilltowns" were developed during the Middle Ages and those in Italy, Greece, and Iberia remain among the most admired today. Since there are many references which offer an historical background of settlement patterns and development of hilltowns, I will pause only to relate two insights.*

First, the concept of building on a hill is a western idea, as in most Asian countries, residential settlement occurred on plains or in valleys, with the exception of places like Hong Kong or Japanese villages where topography is forced upon the dwellers. Mountains or hills, in an Eastern tradition, are normally associated with a religious (or power) significance; thus, the reservation of the hillsides and mountaintops for monasteries, temples, monuments, or palaces, to the exclusion of residential districts. Therefore, beyond choosing hill sites for the defensible qualities, in addition to freeing up flat, agricultural valleys, the hill housing settlement appears to have developed as a western phenomenon.

Second, as many Mediterranean hilltowns were developed as a means of defense, with high supporting walls, there is a strong emphasis on enclosure, almost to the point of omission of views out other than by accident, or as necessary for light, air, and

* Carver, Italian Hilltowns, also posed by T.Lee
minimal observation. Despite present day (American?) fascination with these medieval hilltowns, the notion of "view" as a desirable trait, intrinsic to most hill housing, appears "modern." Nevertheless, view out over the landscape or cityscape, as a means of orientation to the outer world, remains one of the most attractive characteristics of hill housing.

A brief discussion of the different forms of hill housing, as related vaguely to pedestrian access/circulation and design factors involved, is necessary before moving on to the exemplary
cases. Two British authors (Abbott and Pollit) have categorized these forms into several form "types," for reference purposes. Although in practice, these concepts may not be as easily identifiable, as a single project may consolidate more than one of these. Generally, though, we may speak of:

- hillside terraces (either individual houses or groups)
- stepped hill housing groups
- deck projects
- projects on the diagonal in plan or section
- cluster concepts
- organically conceived projects

<table>
<thead>
<tr>
<th>FORM</th>
<th>GENERAL DEFINITION</th>
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<tbody>
<tr>
<td>(1) Hillside Terraces</td>
<td>Built on a platform of ground cut into slope. (Usually low-rise, incrementally built, small scale)</td>
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<tr>
<td>(2) Stepped Hill Housing Groups (German &quot;Siedlung&quot; or Terrassenhauser)</td>
<td>Terraced forms of regularly stepped-back housing. (Usually in large developments, popularized in Switzerland by Atelier V and Team 2000.)</td>
</tr>
</tbody>
</table>
(3) "Deck" Utilizing decks or raised pedestrian street systems ("Mews"), often supported above ground on posts. (In practice, linear-type concepts, easily combined with stepped or diagonal forms.

(4) "Diagonal" Using the diagonal, either in plan or section; primarily as an easy way to negotiate steep slopes, and preserve views.

(5) "Cluster" Hillside projects that are essentially collective clusters in 3-dimensions. (Often more complex, varied forms and circulation patterns.)

(6) "Organic" Hillside housing groups that are loosely defined as "organic," both in concept and in relation to the site, utilizing natural forms. (Often synonymous with "cluster" forms.)
There appears also to be a seventh type, which is not always built on a natural hillside. These artificially built "housing hills" over parking, such as Habitat, or the Santa Monica project, unfortunately never built, by DeMars and Reay, and even suggested by C. Alexander in Pattern No. 49, constitute a more modern approach to the appeal of living on a hill. However, for the advantages of natural ground contact and others, and the purposes of this thesis, I am particularly interested in "hill housing"—defined as the clustered or organic multi-family forms that actually step up and necessarily cut into a slope; as opposed to mere terraced building forms at a large scale, or single family hilltop perches. Thus, the cases to be studied below represent my personal, and to some extent, popular preferences for some clustered-organic (vernacular?) forms.
An initial intention of this thesis was to observe and analyze (largely through available publications) different hill housing projects in an effort to put together some kind of matrix of successful design factors (variables) such as density, access, circulation, etc., according to invariables such as slope gradient and orientation. Although this would seem helpful as an aid to designers in site planning stages, it remains a topic yet to be explored in depth. The individualistic variations and endless combinations of different factors on various sites hinders the simple organization of such without extensive research and perhaps field measurements.

Therefore, the following cases are examined for their intrinsic qualities; including observations in the field from California. What generic patterns may be apparent amongst these cases are listed in the next section on "patterns." Other than this, these exemplary cases and additional references serve as analogues for intuitive interpretation/integration into the design process.
EXEMPLARY CASES
The Sea Ranch Condominium I building, depicted on the opposite page, was designed by the firm of Moore, Lyndon, Turnbull, and Whitaker (MLTW) in the 1960's. It was one of the first few buildings sensitively designed on the Sea Ranch, some 90 miles north of San Francisco, California.

As a hill housing "clustered-organic" type, it serves as a positive reference for its close relation to the natural landscape, minimal visual and ecological impact (for its density), its distinctive collective identity and "sense of place," and individual unit amenities such as solariums, sense of interior volumes, fireplace centers, and decks. All units have direct access to the site, while southern exposures and views are taken advantage of. The arrangement of units combined with the sloping roofs act as a windbreak, to the benefit of the shared courtyard; the road is screened by trees or walls for privacy.

In terms of a brief comparison with typical Mediterranean hill-town characteristics, the Sea Ranch Condo I exhibits some basic commonalities. Both show a unique sense of contextual fit, of being "one with the land." Visually, the silhouette and its pieces are harmonious with the natural landforms surrounding it. Both seem to merge with the landscape on the overall, yet accentuate their man-made built forms with towers. There are a wide variety of forms and sizes in both the Sea Ranch and hilltowns; witness the sheds, the bays, solariums, balconies/decks, entry steps, and underpasses in the following pictures, on a tour through shared territory.
VIEW FROM THE SOUTHERN APPROACH:
ONE WITH THE LANDSCAPE

CARS AND PEDESTRIAN ACCESS FROM THE NORTH--
THE NORTH--Note screened parking court
parking court and tower
AN ACCESS FROM PARKING COURT (at right) TO BASE OF TOWER
LOOKING SOUTH THROUGH THE BASE OF THE TOWER TO AN ENTRY TERRACE, VIEW THROUGH COURTYARD DOWN TO THE SEA IS AT RIGHT.

SHARED ENTRIES FROM COURTYARD AND VIEW OF SEA THROUGH PORTAL TO THE RIGHT.
LOOKING UPHILL TOWARDS THE SOUTH ELEVATION--Note solarium, bays, and balcony

SOUTH ELEVATION--Note direction of roof forms, the naturally curved path of the cluster in the foreground to the inviting void

LOOKING BACK (Towards the east) UP THROUGH THE PORTAL TO COURTYARD WITH ENTRIES
HALEN HOUSING, BERNE, SWITZERLAND
by Atelier V
This stepped housing project, completed in 1959, by the Swiss firm of Atelier V, is chosen as the second exemplary case as it is perhaps the most well-known of its terraced type, demonstrating economy as well as uniform amenities for its 77 units. Although it provides four or five different "house types" with several variations, perhaps its weakness when compared with the former "organic cluster" type, lies in its over-uniformity, providing for a strong collective sense of identity to the detriment of the individual.
TWO VIEWS OF THE MUHLEHALDE HOUSING, UMİKEN-BRÜGG, SWITZERLAND
by Team 2000
and UMIKEN-BRUGG

SECTIONS: Note the liftshaft

Another example of the same case is the Muhlehalde Housing project at Umiken-Brugg, Switzerland, by the Team 2000, completed in 1972. This later project, based on the Halen Estate, is interesting for its similar slope to the site of Corey Hill (30°), playground and open roof garden which is shared at the top of the housing, and its use of the "hillevator", or "liftshaft." The density here is slightly greater than at Halen, being approximately 25 units/acre. Although the uniform stepping of the forms serve many economic and construction advantages, it, as in the Halen project, sacrifices the individual identity to the collective.
The last of the three exemplary cases is an organic cluster infill project designed by Rothermel and Edwards between 1972 and 1973 for the British fishing village of Brixham, Devon in England. Although this project was unfortunately never built, it still serves as an interesting example of what could be possible with the cluster forms on a steep gradient of one in four. (Although the density is very low due to the program being for individual, large residences, the general approach is taken as reference here.) Cars are parked on a level below the top level of housing (there are five levels in all), while the rest of the site area is devoted to private as well as collective open spaces which are well defined. For further details on the project the reader is referred to Abbott and Pollit, *Hill Housing*. 

**SECTION L**
Pedestrian street in Ostuni from Carver, p. 142.

Castle near Aosta from Carver, Italian Hilltowns
ITALIAN HILTTOWNS

The following other references include the most obvious--Italian hill towns--to more personal places from the author's memory and background--the Filbert Steps of San Francisco or Villa Rockledge from Laguna Beach, California. These are intended to fill the reader in on references or "images" which may appear later in the design work.

Obviously not all images could be included here, nor could detailed explanations be elaborated upon, however, the few photographs included should begin to hint at a larger family of characteristics shared by all of these places of quality.

OTHER REFERENCES *

* Another obvious reference for hill housing is the work of R.M. Schindler, R. Neutra, and other Southern Californians. Such work is not included in the documentation here for lack of available material without site visits. This does not, however, mean they have been excluded from intuitive references.
The Filbert Steps, located on Telegraph Hill, San Francisco, serve as only one example of the many varied stepped paths on the hills of San Francisco. These stepped paths range from the very public (Vallejo Steps, seen in the Patterns section later), to the very private—in dimension, spatial qualities, length, orientation, form (straight, curved, winding), edges, and material detail. The Filbert Steps, as it makes its way along an east-west axis across and over the hill, passing through the access to Coit Tower at the summit of Telegraph Hill, varies from minimal, concrete and metal stairs literally "hung" of the side of a cliff at the Sansome St. side, to a boardwalk, woodsy section through the middle of private gardens, to a more public, wide, concrete section around the Coit Tower summit. The small semi-public, semi-private paths which access perpendicularly off the Steps are both access and places in themselves as they become the entrance transition zone to the individual houses or apartments of the Steps. (Napier Ln. and Darrell Place.) It is along these stepped paths that the individual and the collective identities exist in harmony, the "places" being strongly identifiable, even when the paths are small and somewhat tortuous.
VIEW OVER NORTHERN WATERFRONT FROM Pt. 'A,' Note Filbert steps leading down cliff, and housing rooftopscape on industrial building.

"BOARDWALK" TREADS OF FILBERT STEPS
LOOKING DOWN OVER GARDENS AND STEPS TO NAPIER LN.

NAPIER LANE, LEADING OFF PERPENDICULARLY FROM STEPS

DARRELL PLACE, ONE "STREET" ABOVE NAPIER LN.
MORE "PUBLIC" CONCRETE TREADS OF FILBERT STEPS JUST BEFORE COIT TOWER

FILBERT STEPS ON THE WESTERN SIDE OF COIT TOWER
Note private entry thresholds
SIDE VIEW OF VILLA ROCKLEDGE IN FOREGROUND

VIEW TO THE PACIFIC FROM SHARED ENTRY COURT
Villa Rockledge, which is located on the edge of a cliff overlooking the Pacific Ocean, and bordered to the east by the Pacific Coast Highway, is another strong "image" reference for clustered forms built on steep hillsides. Unfortunately, as this is an exclusive, private compound, no plans are available for the site or the units, which might in fact reveal some keen likenesses to European hilltowns; however, the few photographs here might begin to suggest such. The overall form is an aggregate of "Southern California Mediterranean" houses, which are linked by a winding, looped path which is stepped and broken by occasional landings with spectacular views of the ocean, and entries to individual units. The only major collective space off this path, however, other than the shared carport/entry deck above, appears to be a communal garden, entered through a beautiful vine-covered arch, blending in with the lushly planted edges of the path.
VIEW OF THE START OF THE ROSE WALK FROM EUCLID AVE.

VIEW LOOKING BACK THROUGH THE SMALL SHARED COURT TOWARDS EUCLID AVE.
The last of this series of references is the Berkeley Rose Walk, located in the Berkeley Hills, off of Euclid Ave. above the University of California campus. Designed by Bernard Maybeck, this cluster of houses along a rose planted stepped path exhibits yet another form of collective and individual identity, partially generated by its unique hillside site. The natural balance of the public path leading through some very private territories is aided by the orientation of the entries, the rich plantings, the level changes, and buffer zones of the gardens or shared public "court" in the middle of the path.
PARKING PATTERNS

MOST COMMON GARAGE PATTERN: PARKING IN NARROW GARAGE SLOTS DIRECTLY OFF ROAD OR SIDEWALK

PARKING IN COURTYARD W/GARAGES. A NICE PATTERN FOR SUMMITS, BUT DIFFICULT TO DO ON STEEP ACCESSES.
COMMON PARKING PATTERN ON STREETS WHICH RISE AGAINST THE CONTOURS (NOT FEASIBLE ON COREY HILL)

PARKING IN OPEN LOTS AT A DEAD END AT THE TOP OF PUBLIC STAIRS OCCURS WHERE STREETS ARE NOT STEEPLY INCLINED, BUT CARS OCCUPY PRIME LAND WITH A VIEW.
ACCESS PATHS: PRIVACY GRADIENTS FROM MOST PUBLIC TO MORE PRIVATE

NOTE:
Examples from California, although all access patterns for both paths and entries exist in the context of Corey Hill as may be found in Context/Site photos, Part III.

MOST PUBLIC: VALLEJO STEPS, S.F., A DOUBLE SET OF WIDE (8 ft.) STAIRS ON EITHER SIDE OF A LUSH PUBLIC LANDSCAPE GARDEN. TOTAL WIDTH DIMENSION OF ~ 40 ft. RELATES TO STREET.
SEMI-PUBLIC: LA LOMA STEPS, BERKELEY, CA. IS AT AMBIGUOUS SCALE WITH GARDENS TO THE SIDE, TYPICALLY USED AS PRIVACY BUFFERS. ACTUALLY A PUBLIC PATH, IT IS USED PRIMARILY BY RESIDENTS ADJACENT TO THE PATH, AND NEAR THE ENDS. ≈5' wide.

SEEMINGLY PRIVATE (ALTHOUGH PUBLIC/SEMI-PUBLIC), THESE WINDING BRICK STEPS (~3 wide) LEAD TO GREENICH ST. FROM COIT TOWER.
ACCESS ENTRIES: PRIVACY GRADIENTS

MOST PUBLIC, DOWNHILL FROM ACCESS PATH, SMALL TRANSITION ZONE

SHARED, SEMI PRIVATE, UPHILL ACCESS THROUGH 15'-20' SETBACK ZONE. FURTHER LEVEL OR DIRECTION CHANGES LEAD TO PRIVATE THRESHOLDS.
MOST PRIVATE ENTRY ACCESS
NO TRANSITION ZONE

VARIATIONS OF ENTRY ACCESS AND
TERRITORY THROUGH CHANGE(S) IN
LEVELS, DIRECTION(S), DIMENSIONS
OF TRANSITION ZONES/SETBACKS.
These two forms are the primary models for the work; obviously other housing forms occur which are more adapted to the slope (such as rowhouses, stacked townhouses, single family homes) rather than stemming from the form of the hill itself.

**TERRACED, "STEPPED HILL HOUSING"**
**APARTMENTS ON TELEGRAPH HILL, S.F.**

**CLUSTERED FORMS SHARING AN ENTRY COURTYARD & COMMUNAL OPEN SPACE WITH PRIVATE ENTRIES AT DIFFERENT LEVELS**
THREE POIGNANT PAIRS

SIDE ENTRY PORCH (SECONDARY), COREY HILL, BROOKLINE

SIDE ENTRY PORCH (PRIMARY), BERKELEY HILLS, CA.
HOUSE OFF SUMMIT PATH, COREY HILL. NOTE WIDE PORCH WITH DECK ABOVE.

HOUSE OFF LOMBARD STREET STEPS, SAN FRANCISCO, WITH ENCLOSED PORCH AND DECK ABOVE.
ENTRY STEPS, COREY HILL

ENTRY AND PATH STEPS, SAN FRANCISCO (NOTE THE VARIETY OF MATERIALS IN BOTH)
The following list of patterns are chosen from C. Alexander's *A Pattern Language*. These, plus other contextual patterns evident from site visits (shown in photographs) begin to form a language for Corey Hill.

**LARGER PATTERNS (potentially used, not primary)**

9 Scattered Work  
14 Identifiable Neighborhood  
15 Neighborhood Boundary  
26 Life Cycle  
30 Activity Nodes  
31 Promenade  
32 Shopping Street  
35 Household Mix  
36 Degrees of Publicness

**PATTERN LANGUAGE (for housing clusters, primary)**

37 House Cluster  
(39 Housing Hill)—variation of

41 Work Community  
46 Market of Many Shops  
48 Housing in Between  
52 Network of Paths and Cars  
55 Raised Walk
53 Main Gateway
59 Quiet Backs
60 Accessible Green

63 High Places
63 Dancing in the Street

64 Pools and Streams
67 Common Land
68 Connected Play
75 The Family
76 House for a Small Family
77 House for a Couple
78 House for One Person

79 Your Own Home
87 Children's Home
88 Street Cafe
89 Corner Grocery
91 Traveler's Inn
92 Bus Stop

95 Building Complex
97 Shielded Parking

100 Pedestrian Street

104 Site Repair
105 South Facing Outdoors
106 Positive Outdoor Space
108 Connected Buildings
114 Hierarchy of Open Space

110 Main Entrance (to Linear Clusters)
111 Half-Hidden Garden
112 Entrance Transition
115 Courtyards Which Live
116 Cascade of Roofs
118 Roof Garden

119 Arcades

120 Paths and Goals
121 Path Shape
125 Stair Seats
127 Intimacy Gradient
128 Indoor Sunlight
130 Entrance Room
133 Staircase as a Stage
134 Zen View
135 Tapestry of Light and Dark
140 Private Terrace on the Street
141 A Room of One's Own
144 Bathing Room
145 Bulk Storage
158 Open Stairs
159 Light on Two Sides of Every Room
160 Building Edge
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PART THREE: The Link
VIEW FROM COREY HILL AT THE TURN OF THE CENTURY
Corey Hill, formed as a glacial drumlin, is one of the highest points in the Brookline-Boston area. It is marked by dense trees, the gabled roofs of triple deckers, a few older Victorian homes, and taller, more modern, medium-high rise buildings at the base. This edge of the hill, along Beacon Street, has a very distinctive, public, "urban" feel to it; in contrast to the less dense "suburban" pattern of individual lots built over the majority of the hill.

The Corey Hill residents range from the very elderly to young couples with small children; mostly white, middle-class, with a current influx of young professional singles or couples. The neighborhood is generally quiet, stable, and secure; yet people are friendly and generally open to others who might wander up their paths.

The existing pattern of stairs, leading up from Beacon St., (all incomplete except Summit Path) tie in with, (or potentially do so,) the public path system of Brookline. It is these unfinished paths that suggest their completion: continuity to the Park on top, that both characterize the neighborhood and make clear the beautiful patterns which already exist or begin to, and those which could potentially be.

Perhaps a better introduction to the context would be to take a walking tour from Coolidge Corner, down Beacon St., and up through two of its paths: Summit and the Unnamed Path.
CONTINUOUS STONE TEXTURES OF BEACON ST.

VIEW FROM COLLIDGE CORNER DOWN BEACON ST. TOWARDS COREY HILL (In background, blocked by 10 storey building.)

CONTEXT:
COREY HILL IN BROOKLINE, MASSACHUSETTS
TYPICAL 4-STOREY BLOCK BUILDING LINING BEACON ST. WITH HOUSING AND/OR OFFICES ABOVE COMMERCIAL SHOPS

TYPICAL URBAN PATTERN ALONG BEACON ST.: RESIDENCES ACCESS UP, COMMERCES ACCESS DOWN.
The photographs on these and the former two pages represent the "urban edge" of Beacon Street. Here the density is much greater than in the upper regions of the Hill, coincident with the zoning laws. The street is very wide, with a lively public atmosphere. The commercial activity combines happily with the offices and residential uses. The average heights of buildings ranges from four to even eight stories, with a growing number of modern high rises, ranging from ten to sixteen stories.

Traveling further down Beacon Street past Harvard Street and the Coolidge Corner commercial center, we find a dense "urban residential" zone with formal entries, often raised and passing through courtyards, both large and small. The street begins to rise gradually until it is nearly 25 feet (?) above the "T" (trolley car) and opposite side of Beacon when it reaches Lancaster Terrace. At this point, two modern high rises (10-15) stories high block the natural silhouette of the Hill. As may be seen in these Context photographs, there exist distinct types of housing as one travels vertically up the Hill, and many good as well as lesser patterns.
VIEW DOWN RAISED PORTION OF BEACON ST.,
GETTING CLOSER TO THE LANCASTER INTERSECTION.
NOTE THE TALL TREES & PLANTING.

GRAND ENTRY STEPS OF THE STONE-
HOLM APARTMENT BUILDING, BUILT
AS A FRENCH CHATEAU LOOKALIKE.
(This marks the east boundary
of the general site)
A TYPICAL BRICK BLOCK BUILDING OFF SHORT ST.

TYPICAL INTERFACE: VIEW OF BACK OF FIVE STOREY APARTMENT BLOCK RISING STRAIGHT UP.

TYPICAL "U"-SHAPED, FRONT COURTYARD BLDG. OFF SHORT ST.
These two pages identify the types of 3-5 storey, masonry block buildings occupying the area near the base of Corey Hill, just above the Beacon Street edge and somewhat adjacent to it. Two primary forms appear: the rectangular "block" with some variations of protruding bays or recesses, and the "U"-shaped form creating an entry courtyard with varying degrees of privacy, or potential for traveling through.

They are much like other older apartment buildings in the Boston area found on flat lots, with typical materials, patterns, and details. Unfortunately, there is little advantage taken of the potential for view in stepping up the hill.
TYPICAL OLDER COREY HILL TRIPLE DECKER. NOTE GABLE, LARGE SPLAYED BAY, FRONT ENTRY PORCH WITH DECK ABOVE.

ANOTHER TYPICAL HOUSE: NOTE: HIPPED ROOFS, CASCADING DOWN, DORMER WINDOW, AND DOMINANT CHIMNEY.
This double layout of photographs displays the typical suburban, single family residential patterns on the upper portion of the hill. As may be seen in the earlier context map, the hillside is divided up into individual lots, leaving steep side and backyards as narrow, largely unusable space. The patterns of "base," "middle," and "top," and the relation to human use of the forms: bays, dormers attics, porches, entries etc., seem typical and appropriate; however, there is a peculiar lack of use of outdoor spaces on the natural ground, except of course, where it has been terraced (which is less often than one might think), or is naturally flat. This may suggest a different, higher density pattern with less "left-over" private space.

TYPICAL SIDE ENTRY PORCH WITH HALF-HIDDEN GARDEN. BELOW PICKET FENCE

COLLAGE OF MATERIALS AT THE BASE OF ENTRY STEPS ON MASON TERRACE: BOULDERS, RUBBLE STONE, BRICK, WOODRAIL AND LATTICE, CONCRETE STEPS, & PLANTS
OUTLOOK PARK: AT THE SUMMIT

Finally, we reach the top of Corey Hill, where we find Outlook Park. It's a welcome public open space, but probably a little underused (see access photo below), due to its hidden nature and indirect, semi-private nature of the paths.

ENTRY TO OUTLOOK PARK (SOUTH) FROM YORK TERRACE
The long views of the Boston area and back over the Charles River towards Allston and Cambridge have the potential for being quite spectacular with a little bit of tree trimming, and carefully planted framed views.
VIEW OF THE FIRST LANDING AND STEPS OF THE UNNAMED PATH FROM BEACON ST.

A CLOSER LOOK AT THE RICH COMBINATION OF STONE WALL, BALUSTRADE, CONCRETE STEPS AND PLANTS.
THE UNNAMED PATH

This "unnamed path" is a bit of a mystery as it is never marked on Brookline maps, but is used everyday by residents, primarily traveling between 2 streets: Mason Terrace and Beacon Street. The "quiet back" located off of the unnamed path seems little utilized, except perhaps by neighborhood children who play along the trees here and have even set up a tent/treehouse behind the first landing.

As it is the closest of the stair paths to Coolidge Corner, it seems to suggest its completion to the top of the hill, as well as Mason Path does. It is so short, one is perhaps a little disappointed at the end, in that it has so much potential for further richness and continuity, and lands in a particularly blunt way (at either end).
The "U"-shaped buildings typical of this area of the hill create courtyards which have great potential for many shared and semi-private uses. Current uses for this one (see photo to right) include rear entrances, laundry/work court and children's sporadic play. But perhaps these uses could be expanded, were the basic form to orient to light and the path differently, and more transition zones occurred between the communal courtyard and private zones.

TURNING TO THE RIGHT FROM THE "QUIET BACK," AND LOOKING UPHILL IN THE MAIN DIRECTION OF THE PATH
LOOKING BACK DOWN FROM NEAR THE TOP (MASON TERRACE) TO A SHARED COURTYARD

LOOKING UP TO MASON TERRACE, AND END OF PATH. NOTE 45° BAY TO RIGHT AND FORM OF STEPS/RETAINING WALL
Nearing the next landing. Note: private entry accesses are to the left and right of the tree.

Bench of summit path at the junction of Mason and Lancaster Terraces.

Details of first landing with wall/seats made of old railroad station stones and concrete planks.
Summit Path is the one stair system that is continuous from Beacon Street to Outlook Park. As shown here, it is characterized by tall trees, stone and concrete walls, and vertical, straight runs of steps upward. Here and there along this quiet path are access paths or steps up, roughly perpendicular to the path direction, leading to private houses, or communal environments such as the Mason Terrace Rest Home.

Looking back down to "Tree Landing," note private entry path to the right.

The house at Summit Path, accessed off first landing.
CONTINUING UP SUMMIT PATH, NOTE THE
FEELING OF BEING IN THE WOODS

LOOKING DOWN THE PATH, FROM NEAR THE
TOP, TO A SMALL OPEN LOT (MASON
TERRACE REST HOME IS TO THE LEFT OF
THIS LOT.)
DIRECT, FRONTAL VIEW AT THE TOP OF SUMMIT PATH WHERE IT HITS YORK TERRACE. OUTLOOK PARK ACCESS IS TO THE LEFT, YET THERE IS NO IMMEDIATE INDICATION OF SUCH.
APPROACH TO BASE OF MASON PATH FROM INTERSECTION OF LANCASTER TERRACE AND BEACON STREET

BASE OF MASON PATH
Although Mason Path exists as a separate entity from "The Site," above Mason Terrace to be defined in the next section, it may be thought of as the link between the context and the specific design site. Thus, The Site is thought to be a continuation of Mason Path, and is even generated by it. Taking a photo tour of it may put the reader in a frame of mind to understand the development of the site selection, why it had great potential as well as positive and negative aspects.

Mason Path is perhaps the least used of the three main paths on the south side of Corey Hill. This may be due to many reasons, among which are: (1) its poor access visibility (trees or hedges visually block entrance); (2) its smallish dimensions (5' width), both spatially and psychologically -- it is darker, more tightly closed; (3) it doesn't lead to or from anywhere in particular, (except for immediate residents as access); and (4) the path allows for little stopping or choice in other directions or intermediate points of interest. For some reason, it seems almost too private, and thus, uninviting to the public movement at large. As part of the Brookline Path System, it seems rather discontinuous.

Originally, there had been an easement planned for the continuation of the path up to York Terrace; however, this was never completed. For the moment, Mason Path and site immediately above it seem in most need of "repair," in Alexander's sense of the word.
TURNING AWAY FROM FIRST LANDING/SWITCHBACK, AND LOOKING AHEAD, NOTE ACCESS DOOR TO APARTMENT BUILDING WITH LITTLE TRANSITION ZONE.
SWITCHING BACK AGAIN TO ARRIVE AT THE LANDING WITH ACCESS PATH TO PRIVATE ENTRY OF FIRST HOUSE. NOTE TREE AND DETAILS OF HOUSE AND WALL.

LOOKING UP, MID-PATH. NOTE MANY SWITCHBACKS.
LOOKING BACK DOWN PATH TO LANCASTER TERRACE. NOTE THE LUSH PLANTING FROM EVEN SMALL PATCHES

TURNING TO LOOK UP AGAIN (2/3 OF THE WAY)
FRONTAL VIEW AT TOP OF THE PATH OF THE OTHER SIDE OF MASON TERRACE. NOTE: LITTLE USED SIDE YARDS.

LOOKING BACK DOWN MASON PATH FROM THE TOP: CATS ARE FREQUENT USERS OF THE PATHS

VIEW OF TOP OF MASON PATH (from across Mason Terrace) SHOWING OLD VICTORIAN AND BRICK APARTMENT BLOCK
"The Site" of the project is defined between Mason Terrace to the south, and just past York Terrace above, to the north. The eastern boundary is somewhat loose, as a continuous pattern of growth is to be projected. The western boundary is handled in the same manner, although, for relational purposes, the Mason Terrace Rest Home and existing Summit Path serve as western boundaries. The site plan to the left shows the extremely steep contours of the site, which averages at a 30-degree slope, but at sections rises to almost a 45-degree slope.

As the site is presently built on by approximately eight or so families, it was very difficult to gain access onto the site itself, therefore, "site visits" were largely confined to what one could see from the downhill side of Mason Terrace. The assumptions about the site are as follows: (1) The site is only sparsely treed in this upper region (most trees were planted), but the few trees shown suggest something of what may have existed at the early 1900s. (2) All other environmental aspects of the physical site are from available data on the original hill, prior to its being built upon. (3) I am assuming the substrata of the site is buildable, and that since it is a drumlin formation, rocky material from cutting may be utilized in retaining walls, stairs, etc.
VIEW OF MASON TERRACE FROM LANCASTER APPROACH, NOTE TALL TREES

TYPICAL RESIDENTIAL ELEMENTS IN A HOUSE ON MASON TERRACE ACROSS FROM MASON PATH: THE RAISED ENTRY LEVEL, ENTRY PORCH OR BAY, GARAGE DIRECTLY OFF SIDEWALK
EXISTING "MASON TERRACE CONDOMINIUMS," FARHER EAST FROM THE SITE BOUNDARY. IT IS WELL-RESTORED AND SERVES ITS HIGHER DENSITY WELL, WITHOUT MAJOR REPERCUSSIONS.

These photographs are taken from various angles along Mason Terrace towards the area of the site shown in the previous site plan.

A MARVELOUS VIEW OF PRIVATE ENTRY ACCESS OFF MASON PATH, RISING STEEPLY UPHILL.
*** NOTE: The following program has been divided into four zones to accommodate the "programming" work which occurred in the first week of design exploration. Below, the following section called ZONE THREE: The Site, refers to the original "Site" as defined in the previous section. The other three Zones have merely been added to enlarge the scope of the urban living environments interest. Thus, this "zoning" may be considered as part of the ongoing work.

The following definitions for the zones are as follows:

ZONE ONE: Beacon Street
is between Beacon Street to the south and the start of Mason Path to the north. The Zion Temple forms the western boundary and the Stoneholm apartment building forms the eastern boundary.

ZONE TWO: Mason Path
is merely the existing Mason Path (as shown in the context photo tours).

ZONE THREE: The Site
the original site defined as above Mason Terrace to just above York Terrace, with variable east-west boundaries.

ZONE FOUR: The Summit
is the southern slope of the land left between Zone Three and Summit Ave. This adjoins Outlook Park to the west.
PROGRAM AND OBJECTIVES

GENERAL PROGRAM
for Mason Path Site/Mason Terrace Housing

ZONE ONE: Beacon St. to Mason Path

. Mixed-Use zone, emphasizing multi-use buildings with housing on upper floors.

. "Corey Hill Inn" - a medium-small (3-6 storey) Inn for local neighborhood use. Approximately 30 rooms plus associated commercial/public uses such as shops, restaurant/cafe, public plaza.

. A gateway to the Corey Hill Neighborhood.

ZONE TWO: Existing Mason Path

. No specific program, as it is left purposefully intact as a focus for comparison to existing fabric.

. Suggestions for re-use, change or re-design may be made in this zone to accommodate projections for zone one or zone three.
ZONE THREE: The site (between Mason Terrace to just beyond York Terrace)

- Continuation of Mason Path, as a public stairway to the top of the hill. (This serves also as one means of accessing the housing clusters.)

- Two to three housing clusters, each varying between 8-16 units of mixed sizes. (Rough density of 20-30 units per acre?)

- Units will range from 400 sq. ft. studios to 4 bedroom units up to 3500 sq. ft., concentrating on one to three bedroom units.

- Parking to be provided for at an average of 1 car/unit

- Some thread of communal open spaces, both green and paved will run through this zone; most with ownership defined by housing clusters.

ZONE FOUR: The Summit (between zone three and Summit Ave.)

- Continuation of the upper portion of Mason Path leading to a community health and recreation center associated with the adjacent (existing) Corey Hill, Outlook Park. This would serve all residents from elderly to children.

- A communal garden and greenhouse may also be projected as a transition to the summit.
GENERAL OBJECTIVES
To provide for a rich urban living environment, which encourages mixed-use and multi-use buildings.
To continue the general pedestrian movement systems suggested by the hill, and perhaps introduce some alternatives.
To explore regaining the connection to the earth through stepped form and groundform
To explore "Process" as a means of including the above.

HOUSING OBJECTIVES
To provide for clear access and orientation in a medium-dense multi-family housing project
To provide for degrees of privacy
To allow for opportunities for identification, personalization
To provide outdoor spaces as well as ground contact on an individual unit basis.
To provide flexible communal spaces shared by clusters
To take advantage of view and sunlight
To take advantage of natural daylighting
To allow for manipulation and control, further security if desired
To allow for communal identity as well as individual identity
PART FOUR: The Work

Not the work that is, but the work in process.  
The building up of multiplicities into a unity.  
The development of the whole  
Repetition.

Paul Klee
The work presented in a diary format on the following pages includes thoughts from a notebook kept during the duration of the thesis, but focused upon design process during the period of the design exploration (Sept. 10-Oct.12). Appearing with key drawings is a running analytic log of parallels utilized during the process, as drawn from PART ONE: The Process of this thesis, in the form of a chart. These are intended as a means of recording the work as well as the form-making processes or other operations as they occurred in order to "test out" some of these theoretical processes.

Completeness without completion is useful.
Fulfillment without being fulfilled is desirable.

from the Tao Te Ching,
Laotzu
diary notes:
- first relational sketch
drawn after a site visit

Jun 1 1 1962

public

semi-public

seat

privacies

public

semi-public

seat

privacies
Diary Excerpt:
- Moving program along... up...
- notion of 4 "zones" changing from set of stairs to another...
- thinking about the site and what a "good" urban living environment would be (forms)...
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Other Operations Going On?

Programming:

Thinking of references:

Places I know that are represented in patterns in context:

"Other references"

Diary Entry: SEP 11 1982

- Rose Garden in Berkeley
  as reference
- Pattern language as a start
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Other Operations Going On?

- More programming — on the level of urban design...
- Concept diagramming of clusters
- Site analysis/solar orientation

* Diary Entry: SEP 1 & 2 1982
  - Actual working on design:
  - Housing first — had to take care of edges and corners.
  - Started by roughing out bottom and top of notes (the Inn & the rec. center)
  - Next — roughly define path shape & clusters

* Diary Entry: SEP 3 & 5 1982
  - An exciting path up to the communal recreation center at the summit.
  - A "vision" of the site.
  - Zoning of site vertically
ONE FOUR: THE SUMMIT

Associated with the park:
- recreation center/observation tower?
- community gardens (sm. orchard?)
- greenhouse

Summit

Zone four

possible pedestrian
path

possible continuous
cluster

Reference: Berkeley Rose Garden
- zones in question?

SEP 17 1982
one of the first sketches of public path & linear cluster -
the "way up" around tree, at the start of a linear cluster
making places
centering

SEP 19 1982

+123
Highs below
2 guest flg.
+120

Parking

+105

9 flrs

+100

zund
heat
as ture

4 flrs

12

15

21

180

200

215

220

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Other Operations Going On?

- construction of garages: concrete structure
  - 20' retaining wall dug deep - assume can cut into hill - use rocks to build visible walls of stairs & terraces.
  - pragmatic car/unit count - this cluster now has 715 units w/ 2-3 studios (no car provided) + 4-6 guest parking

Diary Entry:  SEP 20 1982

- to skew or not skew garages?
- continuous or contours?
- major path levels up ...
- reference level for linear cluster & 150?
- start cluster plans: decline elevations...
  - tower/lighthouse image e top of street below garage?
FIRST HARDLINE DRAWING OF LEVEL ONE W/SHARED GARAGES & COMMUNAL WORKSHOP

SEP 20 1982
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Other Operations Going On?

Intuition
Drawing as Process ... like "automatic
writing?"

• Diary Entry
  SEP 21 1982
  LEFT PATTERN LANGUAGE TO
  GO INTO QUICK GENERAL
  GRASPING ... INTUITIVELY.
  MAJOR PATH & ACCESS LEVELS
  DECIDED AT ISO? = REFERENCE
  LEVEL FOR LINEAR CLUSTER.
  TO SKID GARAGE OR NOT?
  PAVING PATTERN IS OK?
  LIKE LIGHTHOUSE . . .
  NEW ENGLAND IMAGE . . .

• THE TALL WALLS...
  WITH FLOWERING PLANKS
  HANGING DOWN.

• THIS SKETCH CAME VERY
  QUICKLY ... LAYED OVER AS
  PLAN, NOT SECTION, BUT TO
  SCALE.
SEP 2 1 1982  FIRST PASS & ELEVATION ... EARLY ON
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Other Operations Going On?
- Problem solving - maintaining privacies
- Handling level changes - pragmatic
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Other Operations Going On?

Verifying level changes — figuring cut and fill relationship of heights

**Diary Entry  SEP 2 2 1982**
- think of volumes—roofs to let light in
- tower/image
- bridge over from front bldg. at 165?
- is this too much for walk realistically?
- elevator???
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Other Operations Going On?

CENTERING + ?

subconscious - "fields"...

*conscious - "continuity"

* this was the same as "centering"

or paying attention to opposites

- figure ground studies

Diary Entry: SEP 25 1992

This occurred very quickly and "hit" me as a clear idea: the notion of a larger pattern set up for the hill... that of linear clusters with vertical clusters occurring where + paths moved up hill where dimensions suggested it.
LARGER PATTERNS SET UP BY CLUSTER HILL HOUSING

LINEAR CLUSTERS ALONG STREETS, VERTICAL CLUSTERS RUN ALONG PATHS

EXISTING GRAIN

SEP 25 1982
Diary Entries: SEP 26 1982 - OCT 1 1982

"designing" unit plans ... useless.
reference level for linear cluster moves from 140-155 - flacks -
opposites - figure ground
steps need to be more territorial - inclusive -
continuity.

"CENTERING", "PLACE-DEFINING"

[Diagram with labeled sections such as communal open space, garden, linear cluster, path stuff, etc.]
Examples of many iterations of plan & section studies & communal/collective size down to personnel.

The loft level in section

The small level change in plan

Unit plan...

Building section....
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Other Operations Going On?

Pragmatic problem-solving - note addition of lift to side of semi-public steps between shared garages.

Handicaps? - lift

Diary Entry - Oct 3, 1982

- Keeping garage forms gives the advantages of possible extra guest parking, play space, and communal use space (workshop & deck) between them...

Centering/continuity?
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**Diary Entries:**

- "Parallels discovered..."
  - Mostly concerning..."
  - "Getting through the hill..."
  - "Start thinking..."
  - "Choice of site..."
  - "First thought..."
  - "Reference..."
  - "Preliminary..."
  - "To select..."
  - "Defining..."
  - "Working..."

*Note:* The diary entries are handwritten and appear to be linked with the table above.
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Other Operations Going On?

EXCEPT FROM OVERALL PLAN (opposite pp.)

- Public path is continued up to York St.
- Projected over by pedestrian bridges & p.t. cross funnel-like structure to access elderly & handicapped to Rec. Ctr./ Communal garden levels above.
- "Continuity" up - linking acts centering on making smaller definitions of path.
- "Feeling each small level, place is enriched.
- Groundform - connection to the earth.
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Other Operations Going On?
(The above applies to all 3 following sections)
OPEN GREEN BEYOND

SCHEMATIC (PARTIAL) SECTION
THROUGH UNITS, YORK & PUBLIC PATH/COLLECTIVE SPACE

MASON TERRACE
KEY PLAN
- unit type development
- trying to work w/ use "u" & "l" deployable bits....
- "places"
- centering
- pattern language used....
- memory of contextual patterns, etc. in "boulder" house

"Vertical type"

"boulder" house.

Roof projection for "boulder house" reminiscent of old vica. strip lofts.
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Other Operations Going On:

- units falling into 4 "types"
  - type "A" - stacked, like normal flatland models, over garages
  - type "B" - long linear, south edge - following contours, shallow (inner decks)
  - type "C" - vertically oriented units, w/backs of steep hillocks & narrower montages
  - type "D" - freestanding house-like triple decker (all other w/ sheared walls)
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Other Operations Going On?

- loudly continuity - fields
- long growth patterns
- "repeat" to link
- continuing path & places up hill
- centering at different levels of scale (at all times)?
- this happens very quickly - synthesized subconsciously in the mind.

The way to learn is to assimilate.
The way to know is to forget.

Laotzu

*Diary Entry: OCT 18 1982

- Still ongoing progress.
- Having done some smaller scale units.
- Larger scale clusters to whole urban pattern.
- A sequence occurs.
- Development of all centers at all levels of scale is cyclical.
- The whole, then smaller "whole" (units, units), then back...
The work is not law, it is above the law.
As projection, as phenomenon
it is forever starting.

Paul Klee
The intense search for meaningful connections in architectural design processes, hopefully represented in the previous pages, has served to enrich my process of design.

In terms of the immediate relation to the work, the notion of "parallels" appeared strengthened by the test; not so much in that any one process was used most, but that certain acts embodied in the sketches appeared to be following two or more principles of operation at once. Although the sequence of parallels used may reveal some insights, it is felt that the order had relatively little applicability to more general cases, since the time span of the work phase was so short.

First, it appeared that the design, or more appropriately, any one piece of the work, had more quality, or was relatively more successful, or "felt right," when it adhered to many of the parallels either consciously or subconsciously, at the same time. Again we find multiplicity a useful analogy.

Second, it seemed that these few pieces were largely generated or rather inspired, from an intuitive analysis of the site and context itself. (This is of course, in combination with one's own memories, associations, known patterns.) The essence of this process occurs when all analogues, references, images, are absorbed by
the designer and integrated into a combined version of parallel processes. In speculation, this probably occurs at a subconscious level.

On a long term level, this research sets up the beginnings of an assemblage of design process information which serves as a means of evaluation, for assimilating what one might see, hear, find, learn, do. It creates an outline for organizing past, present, and future thoughts on design, the purpose of which is twofold: first, as a means to clarifying my own process of design, and second, as a means of articulating such in the interests of architectural education.

Thus, this may serve as a sourcebook for others—a stimulus to search for other mutual ideas, contributing to an ever-growing collective body of thought, in an effort towards enduring architecture/places of quality.
The following notes are from a rough draft of a manuscript for "The Centering Process," as developed by Christopher Alexander.* They were discussed and utilized as the core of a process for piece-meal urban growth in a series of graduate studio/seminar courses led by Alexander in the 1978-79 school year at U.C. Berkeley.

In this context, the process was first introduced through studies in ornament, and related to additional studies on fundamental (geometric) properties of centers. (Some of these appear capitalized within parentheses below in Part III.)

CENTERING

PART I: OVERVIEW

1. The fundamental concept, is that of a center. A center is not a point: it is a whole, a shape, an area, which is well enough defined to possess or define a center, at its heart. In many cases the middle itself will be void, but the whole, by virtue of its overall organization, creates a virtual center. A center must always have at least one axis of symmetry (maybe there are exceptions). In addition a center must have certain other features, which we shall define below.

* Some form of this material may be published in the near future; but for the interested reader, The Timeless Way of Building and The Linz Cafe may serve as an introduction to notions made explicit by this "Centering Process."
2. The structure which we are trying to create is essentially a structure of centers. We shall see, later, how all the properties we have analyzed, can be expressed in terms of centers.

3. The process by which we shall create this structure, consists of one operation, which will be performed over and over again. This operation consists of making, elaborating, strengthening, completing, some centers which exists, or begins to exist.

4. Recognize that at any moment, the thing which is being created, has in it a large variety of centers, defined at many different levels. These centers will have different degrees of definition. Some will be well developed. Some will be partially developed. Some will be only vaguely visible, like a whisper, barely discernible, but suggested by the structure which exists.

5. This applies, also to the very first moment - the moment at which we begin our work. Whether we begin with a blank sheet of paper, a wall of a room, a column of a building... it even in its undecorated state, it is already a structure of centers, some strongly defined, others more weakly defined, others vaguely suggested or hinted at.
6. The fundamental operation, whether it is applied thus, to the blank, unformed paper, site, or building - or whether it is applied in mid-process, to the emerging ornament, or emerging structure, consists of taking one of its emerging centers, and developing it. If the center is already well formed, this may mean elaborating it. If the center if half formed, it may mean strengthening it. If the center is only vaguely indicated, it may mean bringing it out into the open, creating it.

PART II: THE OPERATION

7. Although the operation of forming, developing, elaborating a center, will usually begin with attention to some one center, which is emerging, in order for the operation to function properly, it must have a very complex structure, which we may imagine, conceptually, in the form of a cross.
   a. As we develop, form, elaborate the emerging center, we must also develop, form, elaborate some larger center in which the first center is embedded.
   b. At the same time, we must consciously develop, create, elaborate some smaller center or centers, within the first center.
c. At the same time, we must also develop, create, other centers, of the same size, which lie next to the given center. Of these the most important is the larger center, a. The process works best when we actually pay attention to the larger center a, allow the development of the medium center, the other medium centers in parallel, and the smallest centers to follow, almost automatically.

8. This cross structure can be represented, diagrammatically, like this:

   a. Larger centers

   Same size centers - First center - c. Same sized centers

   b. Smaller centers

9. It is in the nature of this process, that your attention will move. After working at this for a little while, this will happen for a variety of reasons. Partly, your attention will move, as the centers you are working on reach a different state. Partly, it will happen simply because the actual operation you are doing, gets completed, and your mind looks for something else. Partly it will happen, because in the course of making this elaborating the centers you are working on, you put, color,
line, dark marks on the paper, building, whatever - and the debris of this activity creates the possibility, or suggestion or new centers which did not exist before and your mind shifts to them.

10. At this stage, complete the operation, and redirect your attention to a new center, and begin again. Sometimes it is valuable to direct your attention to a center which is already there, and needs strengthening.

More often, though, it makes sense to apply your energy to look at the overall structure, search for some underlying new center which seems to be peeping through, or which seems incompletely, or incoherently present. You may then direct your activity to the strengthening, elaboration, of this incomplete, emerging center.

11. This is especially important, to apply this glance to those areas where there is no center at all hardly. You must work hard, to see some emerging center there, so that finally there are no areas left at all, which do not belong to at least one center.

12. There is one other rule which should govern your choice of the
next center. In general, you need to keep moving up and down, sometimes focusing on large centers, sometimes on small ones. In particular, at least every three or four times that you do this operation, pay attention to the very largest center of all. There should be one center, at least, whose diameter is the whole thing you are working on.

PART III: DEFINITION OF A CENTER

13. In order to keep performing the operation over and over again, it is necessary to have a very precise, and full idea of what exactly a center is. In particular, your understanding of a center must be rich enough, so that the various properties that are necessary to the one, emerge naturally, from your piecemeal attempts to make each center more centered.

14. In general, a center needs to have more material towards its edge, than in the middle. (VOID) The overall shape of a center, needs to have at least one axis of symmetry, (SYMMETRY). The outside boundary of a center will often be imbricated, so that there is interlock with its exterior (INTERLOCK). In the same way, the center will often be most powerful when it is
formed, at its edge, that there is some ambiguity with the so next door center, or with an overlapping center (AMBIGUITY). The boundary of the center needs to be drawn, in such a way that its shape creates additional, smaller, centers, and differentiates the center from its surroundings (GOOD SHAPE). The actual boundary of the center needs to be made up of smaller centers itself, which both unite, and distinguish the center from what lies next to it (BOUNDARY, LEVELS). Each center needs to have a color, which is complementary, or contrasting in value, with the next door color (CONTRAST). Each center needs to be made by lines, and colors, which come from the same family as the other centers near it. (ECHOES, FAMILY OF COLORS).

At the same time, the boundaries which form the smaller centers between any two given centers, must be of colors which both unite, and distinguish the neighborhood of colors (HAIRLINES).

15. Most important, each center must be drawn in such a way that it creates other centers next to it, contrasting in color, but equally strong in shape (NEGATIVE POSITIVE). This can only happen if you are always paying attention to the cross of centers, during the operation of elaborating centers.

16. FINALLY, whenever in doubt, create an alternating sequence of centers, to make some larger center (ALTERNATING REPETITION).
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