

EXPLORATIONS OF COLLECTIVE FORM:
A DESIGN VOCABULARY USING DIRECTIONAL VILLAGE FORMS AS REFERENCES

by

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B.S.A.S., University of Nebraska, 1977

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ABSTRACT

This thesis is an exploration of collective form, or that which is characterized by an unity made up of a diversity. The exploration articulates a vocabulary based on the analysis of a group of references; directional village forms, which are considered to be examples of collective form.

In outlining this vocabulary, a discussion of values, intentions, and ways of analyzing form are seen as necessary task in establishing a basis for the study and comprises the first part of the thesis.

Different perspectives on collective form are then outlined from which basic principles are drawn. These proposed principles reflect a series of form/use properties which establish an organization within which there is a range of options and a diversity of sizes, spaces and associations.

To further understand these principles, a series of traditional directional villages are used as references to illustrate and define the physical form of such intentions. These places have been referred to as collective form by others (Maki, Van Eyck, Alexander, etc.) and are utilized as form and not cultural references.

The last section of the thesis is a series of design studies for a site at World's End at Hingham, Massachusetts. The program is for a small research community and is intended only to facilitate the development of the collective form vocabulary.

Thesis Supervisor: Maurice Smith

Title: Professor of Architecture

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to my teachers with my deepest gratitude,

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to my family

to my friends and fellow students, Tom, Paul, Rachel,

Rafael, James, and Andres

with my special appreciation to Renee, who always encourages

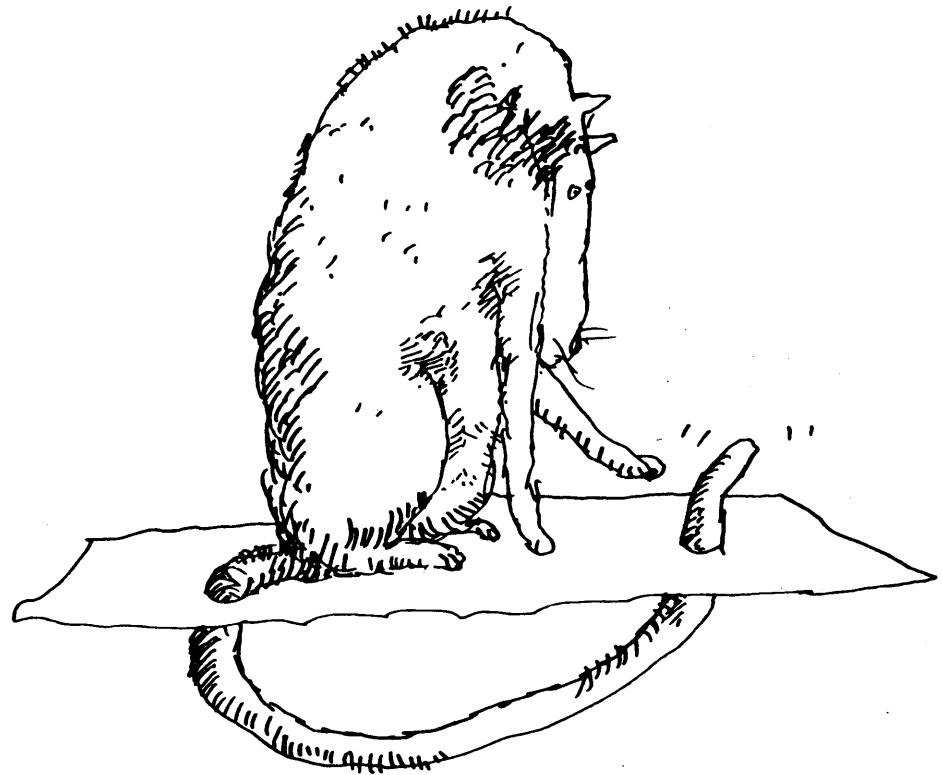
to Patty Seitz for her help in translating

and most of all to Kay, for 2½ years of patience.

this thesis is dedicated to the memory of Rudi Hoffman, and all who knew him so long ago.

PREFACE

Mad Dog Hard Put
TO Understand a
Strange Thing



FROM: SMILE IN A MAD DOG'S I
by RICHARD STINE

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INTRODUCTION

"Architecture is the first manifestation of man creating his own universe, creating it in the image of nature".¹ (Le Corbusier)

It is man's gathering of his experience into a concrete reality and building an understanding of that world. Gathering implies, among other things,² a containing of space into inhabitable territories or domains to allow people to dwell.³

Dwelling in the built environment should associate with the diversity of form and place found in the world. Building this gathering should facilitate this richness and give expression to it.

"Collective form is one of those phrases which seem to be used whenever an architect is unsure of his intentions. Like much of the language architects use, it is ambiguous enough to be safe and esoteric enough to sound meaningful."
- From the Thesis proposal.



1. UNIFORM ORDER

"Order is a necessary condition for anything the human is to understand",⁴ but in the name of "order" often the richness and diversity found in nature has been lost. The building of environments turn from "an universe created by man" - which embodies his "image of nature"⁵ - to a unified "concept" or uniform pattern.

The loss of such diversity in relationships variations, and forms, is more than just a quantitative loss, it is a reduction in the synergistic qualities in the built environment, a loss of potentials, a foreshortening of vision, a limiting of dimensions, a loss of part of our existence. It is a retreat from the delight and possibilities of multiplicity into the security and "understandability" of a singular relationship to life.

The uniform 'circulation' and 'cellular containments' which we live among, carry with them an implication of a bankrupt 'schema', a cheaper version of life as it exists. These singular environments constitute nothing more than a mentality that has no use for the rich-

ness of the world's diversity.

It is a mentality which must see people as separate from a basic aesthetic experience of life; the expression of the individual within the unity of life's patterns.⁶

Christopher Alexander calls it a loss of an organic order "an order made up of complexity and continuity...the harmony of parts".⁸

This is what this thesis is about, understanding this multiplicity; a unity from a diversity; the form of a community; an exploration into the collective nature of the environment.

It is my intention to understand something about this kind of organization; collective form, through a development of a design vocabulary based on the analysis of existing built environments, which I believe exhibit something of the aforementioned qualities.

? is the next
almost identical
'ROOM' up the corridor
good enough.
? what kind of REAL physical choice
how much IS THERE. range
experience

MAURICE SMITH,
HARVARD EDUCATIONAL REVIEW, VOL. 139

Exploring such an intention raises two fundamental questions:

1. How does one categorize and define something like "collective form"?
2. In attempting to build an intentional vocabulary through the use of references, how does one go about analyzing those references.

The implications of these questions will be considered at length later, but for now the answer to the first one centers around values or what shapes ones perceptions. The categorizing of reality is only convenient to us, people who are trying to learn from it. The shared values and similar qualities that are associated with a set of buildings or environments are what allows someone to point and say, "something like that"; it provides for a comparison, a reference.

The second question centers around how one learns from looking at a reference. Often such learning is done intuitively, but for this exploration I am trying to externalize the process to clarify the formal principles

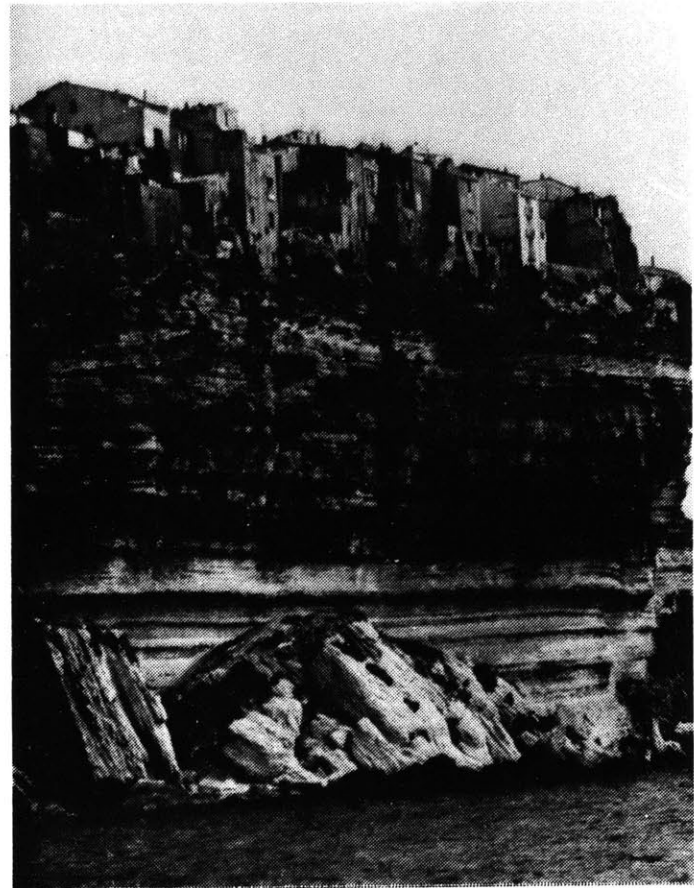
involved with a vocabulary of collective form. This, of course, means that some kind of analytical attitude towards the understanding of form must be articulated.

These tasks of illuminating the values and intentions which define "collective form" and outlining an analytical method of 'looking' at the references present themselves before I may proceed with the development of a vocabulary of form.

These questions then, constitute the first two chapters of this thesis.

Once these issues are examined, the thesis returns to the initial intention and the outline of the formal vocabulary proceeds to an overview of different perspectives on collective form, from which basic "principles" are synthesized.

It is with these basic "principles" that the "collective" references (traditional villages) are examined. The analysis does not explain the total experience or the generative sources of the different villages but it is structured



to facilitate a greater understanding of the physical definition of the "principles".

From values, to principles, and physical form, the thesis moves chapter by chapter, from the most general to the most specific. While this is not the most efficient way to focus a semesters work, I do feel that such a progression is important, if not for the reader, at least for myself. This is not a process of design by an endeavor to understand the physical manifestations of a set of intentions.

The last part of the thesis contains a series of short design explorations on a site at World's End in Hingham, Massachusetts. These exercises are used to further explore the vocabulary of form outlined in the references.

World's End is a private reserve, landscaped by Fredrick Olmstead and is located on a peninsula extending out into Hingham Bay. The site is located on the eastern side of the reserve.

The program used for the exploration is

for a small research community of 20
short term residences and some common
support facilities.

The design is not overly concern with the
program but is used only to help illustrate
and develop further some "principles" of
collective form.

1

VALUES AND INTENTIONS

In any endeavor, whether it be an excursion into an unfamiliar landscape or a journey 'through a looking glass' it is helpful to carry with you a map of the territory under consideration. The wealth of such a map being not in illuminating the path to follow, but in allowing one to wander without getting lost.

The first step in "laying out" such a map for this thesis, is to outline a basis for the values and intentions that form a vocabulary of collective form. If one is resolved to accomplish any part of what could be called 'good work' such a discussion is necessary in that it establishes what 'good' might mean. This understanding implies "intentions" as directions towards a purposeful goal, making the work something useful (instead of useless)

It is with this framework that I approach the idea of 'collective form'. In the attempt to outline, first, some values of 'collectiveness', second, some intentions and implications of 'collective built form', and finally, establish the physical relationships and form qualities (vocabulary) of collective form.

"We may say that it is nonsense to talk about phenomena independently of an attitude"² so has stated Christian Norberg-Schultz and so is my purpose in outlining these values. They provide a vantage point from which to view this thesis.

To begin, the ideas I am concerned with stem from the 'ideal' of a unity from a diversity, i.e. a collective organization which allows for a range of options in an understandable context.

To help understand this ideal, we must examine the concepts of unity, uniformity, and diversity.³

Diversity is something known to us all, it is the stuff that life is made of. We find it in the organization of the natural world, in the faces of people, in the ideas of civilization and within ourselves. It is something usually thought of as good.

Uniformity is unfortunately also familiar to most people, it is often imposed upon us by the modern world; in the work we do, in the buildings we inhabit, and in the culture we consume. It is also a term sometimes mistaken for the last concept, unity and it is the distinction between unity and uniformity that I would like to make.

Unity, as I define it, is associated with the kind of order which one sees in the landscape⁴ or in the organization of nature. It is something which life is about, the ordering of life's multiplicity.

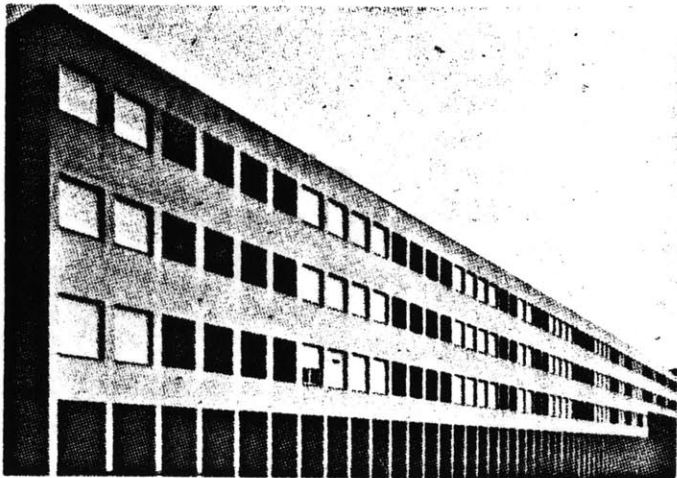
"At any level, life implies the integration of an immense diversity of substances which, functioning as a unit, continuously interplay with their particular environments, often in creative ways."⁵ (Rene Dubos)



1.



2. CLARENCE SCHMIDT, HIS OWN HOUSE, (DIVERSITY)



3. ALDO ROSSI, GALLARATESE NEIGHBOURHOOD, (UNIFORMITY)

A uniformity though, implies a very different kind of world. It is an order which is not part of life but which is imposed upon it. In the natural world an uniformity is disastrous, as in the monocultural farming practice which ruins the soil. In a society it is associated with the loss of identification and expression.

Another view of uniformity is in the amount of information the organization contains.⁶

A uniform arrangement of objects, while presenting an "orderly" pattern, contains few different relationships, hence little information. The same objects organized in a more diverse way contain many different relationships, therefore more information, as in biological growth, the adding of complexity implies more information.

It is then a unity from a diversity not a uniformity which would seem to be the goal for 'gathering' the world.

"From the point of view of human development the diversity of the environment is of greater importance than its comfort,

efficiency or even its aesthetic quality.
... by providing a wide range of options,
environmental diversity helps us to dis-
cover what we like, what we can do and
what we want to become."⁷ (Rene Dubos)

Such notions about unity have not gone
unnoticed before. Christopher Alexander,
in The Oregon Experiment, states:

"Let us begin with the idea of organic
order. Everyone is aware that most of
the built environment today lacks a
natural order, an order which presents
itself very strongly in places that were
built centuries ago. This natural or-
ganic order emerges when there is perfect
balance between the needs of the whole.
In an organic environment, every place
is unique, and the different places
also cooperate, with no parts left over
to create a global whole, a whole which
can be identified by everyone who is
part of it."⁸

*"As far as we are concerned, and
apart from your considerations such
as expense, the more varieties you
have in the garden the better. This
adds more notes to the orchestra, so
to speak, it gives us more scope,
introduces more of our works and
produces a better balance in the
soil. Natural variety is prefer-
able to one crop. This can be
applied to even the smallest unit -
the more balanced the mixture, the
better.*

- The Garden Devas, The Findhorn
Garden, by the Findhorn Commu-
nity, p.86.

"All are part of the whole, but interest lies in the diversity of parts. The philosophy and the plant life of a country are more related than you think. Now that a greater world unity is coming, let us not lose the essence of each unique contribution."

- The Garden Devas, The Findhorn Garden, by the Findhorn Community, p. 87.

An order made of complexity and continuity, the harmony of diverse parts.

In addition to the concepts of a 'unity from a diversity vs. a uniformity' it is necessary to discuss concepts of collective and a collection. I would like to associate the concept of collective with unity and the notion of collection with uniformity.

The form of a collective organization is of a multiplicity of relationships, rich in information and understandable. It is a coming together of elements in an interactive manner, creating something shared by the individuals and the whole.

Fumihiko Maki supports this association in his book "Investigations of Collective Form" stating that his "primary motivation is to make a unity from a diversity."⁹



FIGURE 1

The form of an organization which is a collection is exemplified by uniformity with few relationships and options closed, where "order straight jackets the parts."¹⁰

In a simple way, the concepts of collection and the collective can be illustrated by three different patterns of "seahorses".

The first pattern of seahorses (figure 1) can be seen as a collection. There are few dimensional differences and the adding of another "seahorse is just a repetition of what is there, hence little new information. The ordered pattern rules the organization.

The second pattern (figure 2) is something of a diversity, but it is unclear if there is some common or collective understanding is at work. The pattern has more relationships (dimensional differences for one), but the organization seems random, it exhibits little unity.

The third pattern of "seahorses" also exhibits a multiplicity of relationships, which implies more information in the organization. Additionally, the elements (seahorses) share some common attributes, i.e., the way they are facing, direction, etc, which make the organization and growth understandable. They begin to form a "unity with a diversity".

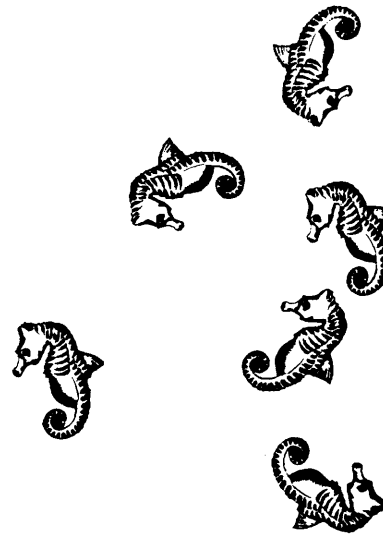


FIGURE 2

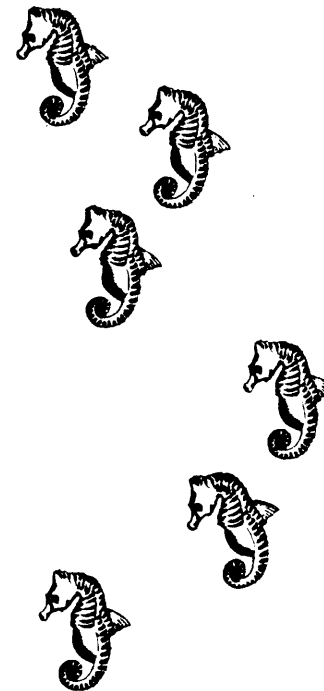


FIGURE 3



4.

"Let each garden be different and unique as is each soil. Man's trend should be to unity not uniformity."

- The Garden Devas, The Findhorn Garden by the Findhorn Community, p. 88.

This thesis though, is concerned with built environments not "seahorses". The attention then is not on the compositional aspects of organization, but on the options and diversity which make a place more inhabitable. I turn then to those places made to be inhabited and that exhibit diversity, as references.

I am concerned with, then, the gathering and building of a world with a collective form, one which allows for a multiplicity within a unity. It is hoped that by looking at the built references through these intentions, I can learn how to accomplish them.

2

ANALYSIS OF FORM

The other tasks, in preparing the map described earlier, is to outline general concepts and formal properties used in the analysis of built form. It is essential, in any attempt at understanding architecture, that a consistent method of looking and describing is articulated. Not only does such an articulation enhance one's ability to communicate something of the environment, it also clarifies the position I am taking with respect to the references. The form of this analysis though, is not to be confused with the totality of the experience.¹

In applying analytical thought to any "experience" something is bound to be lost.² As an example, the breaking down and ordering of elements in the natural world produces categories of knowledge about what exists, but does not begin to explain the synergy of nature as a community.

"Since outer form so often represents inner or functional order, orderly form must not be evaluated by itself, that is, apart from its relation to the organization it signifies, the form may be quite orderly and yet misleading, because its structure does not correspond to the order it stands for."

- Rudolf Arnheim, Entropy and Art, p. 2.

As Gregory Bateson states, "The aggregate is greater than the sum of its parts because the combining of the parts is not a simple adding but is of the nature of a multiplication...a momentary gleam of enlightenment." ³

This is true for the analysis of built environments as well. "The phenomena of the environment do not exist as separate elements but are experienced in relationship to each other."⁴ To bridge this gap between reality and analysis it is helpful to discuss ways in which an individual understands something.

Christian Norberg-Schultz outlines three basic ways of understanding the built environment.⁵ One, through cognitive knowledge or learning about the world by the isolation of objects; two, through satisfaction or a 'cathectic' mode, where the world is understood through the gratification we get from it; and finally, understanding through the development of a normative system for evaluation. The analysis in this thesis will be concerned with the

cognitive form of understanding, of isolating elements and relationships in the environment and will also establish a normative system for relating to that knowledge, which is the vocabulary.

The 'cathectic' form of understanding, through the gratification offered by a place, while important in explaining a place, 6 will not be primarily addressed in this analysis of references. The vocabulary of collective form I am trying to articulate will be more concerned with the structure and morphology of the place, not the image or cultural associations.

To know something in a cognitive way it is necessary to 'slice up' the subject, in this case a built environment into elements and relationships. Within the elements there are qualities which, when articulated, are useful in developing a formal vocabulary. The problem is to arrive at some system of formal analysis which can describe those qualities. This is not a problem of defining absolute truths, but simply of producing a reasonable method for

describing form and its associative properties.

"The division of the perceived universe into parts and wholes is convenient and may be necessary, but no necessity determines how it shall be done... an explanation must always grow out of description, but description from which it grows will always necessarily contain arbitrary characteristics..." 7
(Gregory Bateson)

The first distinction I would like to make within this description is in regards to the difference between form and appearance. I am concerned with this distinction because of the difference between how something "looks" and the way it "behaves", between the associations of image and use.

This distinction can be illustrated with a story paraphrased from Gregory Bateson, in Mind and Nature.⁸ In the story Bateson brings a crab to a group of art students and asks them "if it (the crab) had fallen from the sky, from another world, how would

they be able to tell if it had been alive or merely inorganic matter.

The first observation is that it is symmetrical, then it is realized that one claw is bigger than the other. Then it is observed that although one claw is bigger, both are made of the same parts. Thus, the difference of size is discarded in favor of a deeper pattern in formal relations.

The next level of discovery is that the underlying pattern of parts in the crab's claws and legs is similar to the relations and information flow in the students' own bodies. An observation of the form or pattern, not the appearance. As Bateson asserts: "Never quantities, always shapes, forms and relations." 9

This distinction between form and appearance can be clarified by inquiring into the different 'ways' of knowing. When one experiences something, the immediate vision or image is taken in and understood intuitively.

tively and later as the experience is studied, relationships can be abstracted.

Robert Pirsig uses the terms romantic and classical understanding to signify this difference. A romantic understanding sees the world "primarily in terms of immediate appearance, a classical understanding sees the world primarily as underlying form itself." ¹⁰

This corresponds to a distinction between knowledge gained by perception and knowledge gained by thought, as outlined by Norberg-Schultz.¹¹ Perception is seen as very quick and flexible and "grasps the totalities of such a nature that language offers no words for them." Thought is seen as slow and clumsy but exact and "makes conscious all the mediating objects which are swallowed in perception."

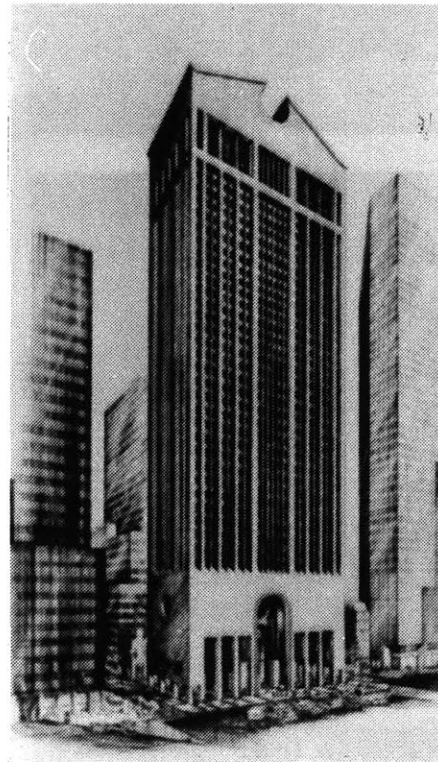
Thus, to use Norberg-Schultz's examples, "a perception of a tree, is not equivalent to a scientific description of the tree, and an analytical 'explanation' of a poem does

not replace the direct experience of the poem. "

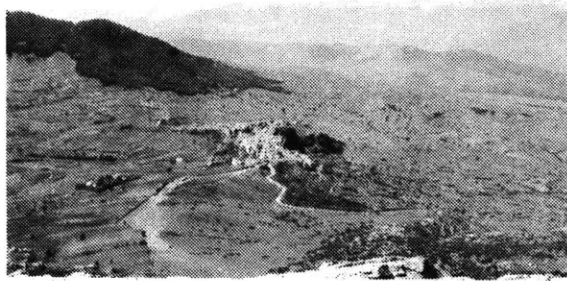
The importance of making the distinction between the romantic and classical attitudes should be apparent. Too often in today's architectural dialogue the discussion centers upon style and image while the "underlying structure" and behavior of the form and its use is lost. In using a variety of references it is especially important not to get "lost" in the image or appearance but search instead for understanding which can be cognitively known and abstracted, i.e. 'the pattern which connects, the underlying form.'

The underlying form can be described through the structure or as that which "denotes the formal properties of a system of relationships" 12. These formal properties can be seen as a range of elements and relations.

While describing an environment this way does not explain its totality, such a description does provide a way of isolating objects "normally



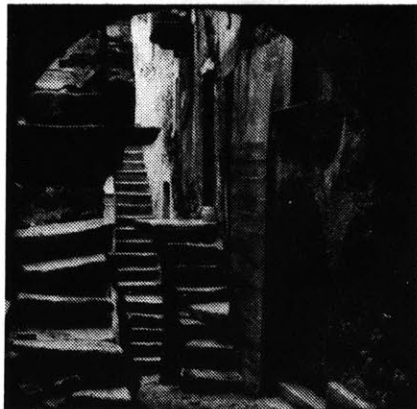
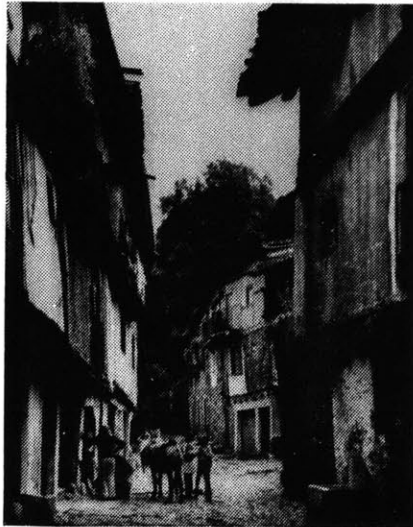
I. P. JOHNSON, AN "APPEARANCE" AS A REFERENCE



2. LANDSCAPE

3. ACCESS

4. DWELLING



swallowed in a perceptual totality",¹³ so that one may learn about them in a cognitive way.

Also important to the description are characteristics of levels and size. The concept of levels refers to the scale of definition or element, such as the level of the city or the level of a house. The distinction of level is somewhat arbitrary,¹⁴ but should be chosen at scales convenient to the description. I will use four levels to discuss built forms. The landscape level, the street level, path, or access, the level of the dwelling or unit of growth, and at body dimensions.

The other characteristic of the description is size. It is my premise that the associative properties of form to be explored operate at all scales. This implies that what is learned at one size can be applied at another. As Pirsig illustrates, "... as a tree is in relation to the little shrub it once was, one can gain great insights into the complex overall structure of a tree by studying the much simpler shape of the

shrub. There's no difference in kind or even difference in identity, only a difference in size."15

To summarize, while the use of romantic (intuitive) understanding is what has led me into the references (and the subject of collective form), the analysis will attempt to illustrate something of the underlying form of the places, so one may learn in a cognitive way through the isolation of elements and relations which describe the formal properties.

3

COLLECTIVE FORM

"No name is the thing named and no map is the territory", a principle stated by Alfred Korzybski, characterizes my own reluctance towards the categorizing of collective form.

"Categories and classifications are usually approached with a certain reluctance, thus we hear that the analysis kills the unity of the whole."

- Christian Norberg-Schultz,
Intentions in Architecture,
p. 132.

The division of built environments into classifications of collective unities and collections of uniformity is somewhat artificial. In the analysis the environments are looked at through a biased 'eye', aimed at selecting those qualities which achieve my intentions. I am not attempting to explain the totality of the architectural experience (there is more to the generation of buildings than collective ideals),¹ but organizing this analysis under the label of collective form provides for a "schema",² which allows for the building of a purposeful environment.

"Collective form is not necessarily singular... the "Spanish step" has a very collective presence but even a few scattered citizens, let alone several varying groups adding up to many people populate the place. It is never empty because it is "built". Nor is Sainte Chapelle or Chambord, or Sperlonga or Banalbufar; nor the abandoned granite quarries in pretty marsh on Mt. Desert... Because these (and all other habitable places, save the 2/3's rule) are built additively."

- Maurice K. Smith, Plan 1980,
p. 43.

The label of collective form implies several intentions of collective ideals, i.e. an environment that is a unity made up of a diversity or as Aldo van Eijck states one that "will furthermore always be both part and whole and embrace both unity and diversity."³ It also is an environment that contains a range of information and possible relationships, where "...with adequate implications for everyone...The building acts as a framework to be filled in by everyone according to his own predilection."⁴ (Herman Hertzberger). It should also be an environment that exhibits an additive quality of growth as opposed to a completed form.

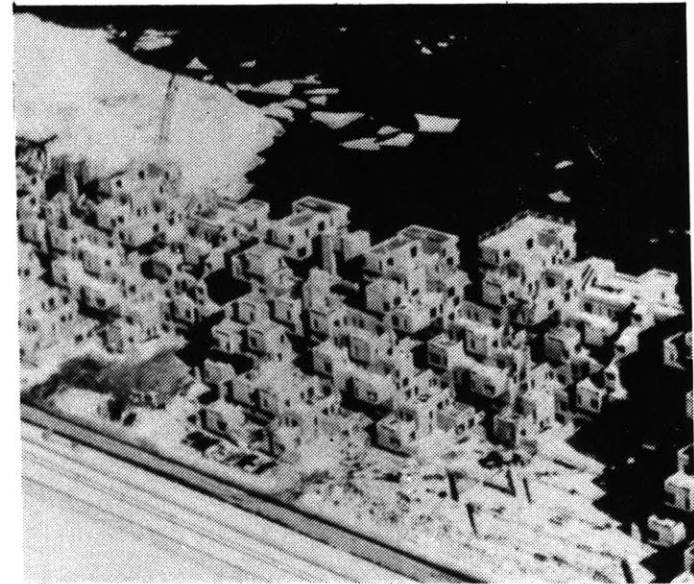
This should not be confused with the form of a collection, illustrated clearly in the work of Moshe Safdie.

Safdie, whom draws upon the traditional and vernacular as references, succeeds only in understanding something of the image of these places. His projects, most notably habitat in Montreal and his proposed habitat Puerto Rico, offer merely repetitions of similar, complete, cellular units. These places provide for no optional inhabitation (diversity), no sharing or exchange between definitions, and provides for very little of the continuities which make a place understandable and accessible.

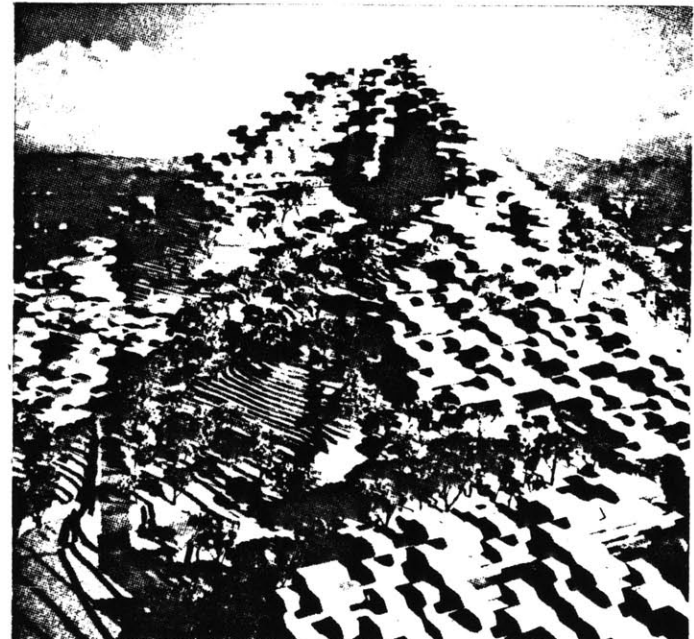
Furthermore, the addition of another unit offers no new relationships or information, growth is merely quantitative, uniform, instead of adding richness and complexity.

As already stated to avoid this problem it is important to extend the references (in the case the village forms) beyond their appearance and attempt to understand something of their underlying form.

This is to quote Christopher Alexander, "a lost art, nowadays, the process of growth



1. M. SAFDIE, HABITAT



2. M. SAFDIE, HABITAT PUERTO RICO



3.

and development almost never seems to manage to create this subtle balance between the importance of the individual parts, and the coherence of the environment as a whole, one or the other always dominates."⁵

The problem is of diversity and number, which, as Aldo van Eyck states, occurs where there is the "capacity to impart order at the same time to a multiplicity of things."⁶

It is the "how" of such forms which concerns me. When trying to project such qualities in design, what is the "underlying form" which achieves such intentions? In beginning to outline this vocabulary, it is helpful to examine other architects' approaches to such intentions.

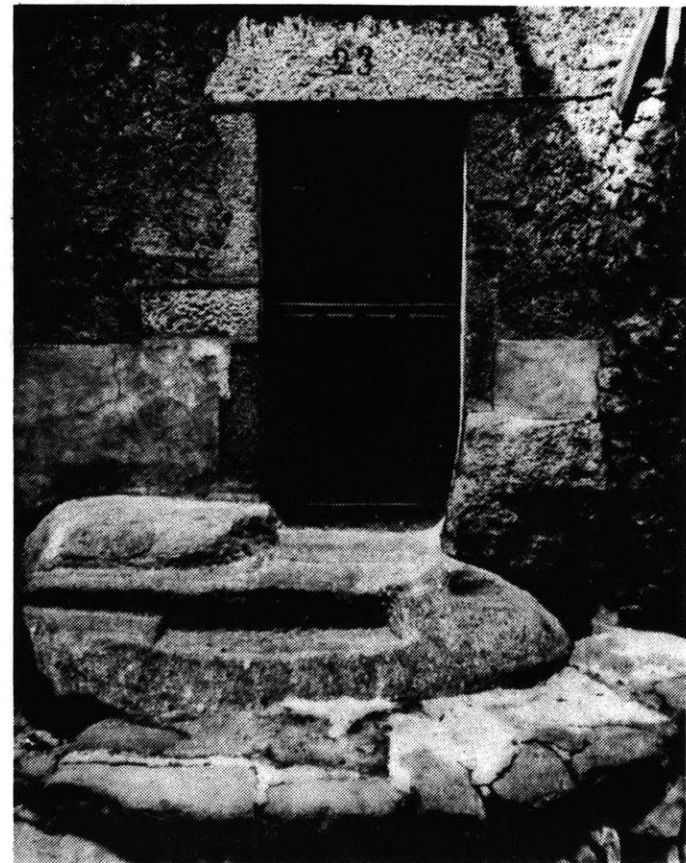
Fumhiko Maki, in his book Investigations in Collective Form outlines the concept of linkage as a way to assure a range of options within a larger continuity. "Linking, or disclosing linkage (articulating the large entity) are invariant activities in making collective form"⁷. This linkage is what

allows for the continuities which are the basis for the collective, the associative sharing.

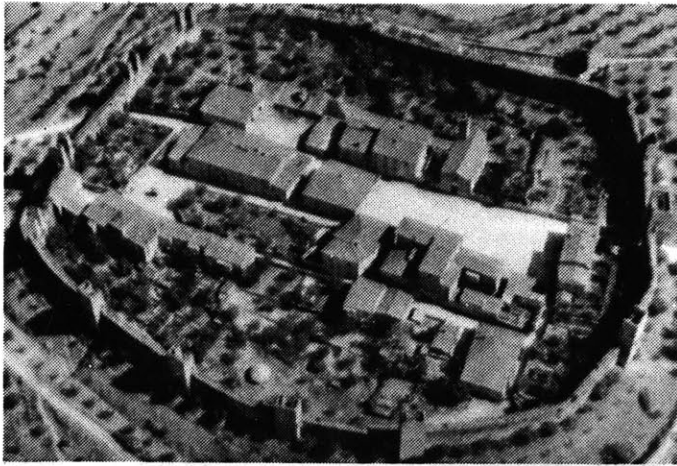
He further classifies this concept of linkage as something inherent in the structure or form of the place which provides for the balance of part and whole. "In short, there is need for something that may be termed 'open linkage', that an idea is inherent in the linkage of group form (village form) links become integral parts or systems and units and suggest that the system can be expanded indefinitely and with variation."⁸

Maki outlines five linkages in the environment; to mediate, to define, to repeat, to make a sequential path, and to select or establish unity in advance of the design process by choice of site.⁹

The linkage to mediate is illustrated by the stoop, i.e. the 'functional transition'. I would further expand the definition of mediated spaces as 'zones of exchange',¹⁰



4. "TO MEDIATE"



5. "TO DEFINE"



6. "TO MAKE A PATH"

where territories are created that are part of both 'worlds'.

To define, is as to surround with wall in the fashion of a monastery or a medieval walled city. This can be thought of as a gathering of territories (places) through containment.

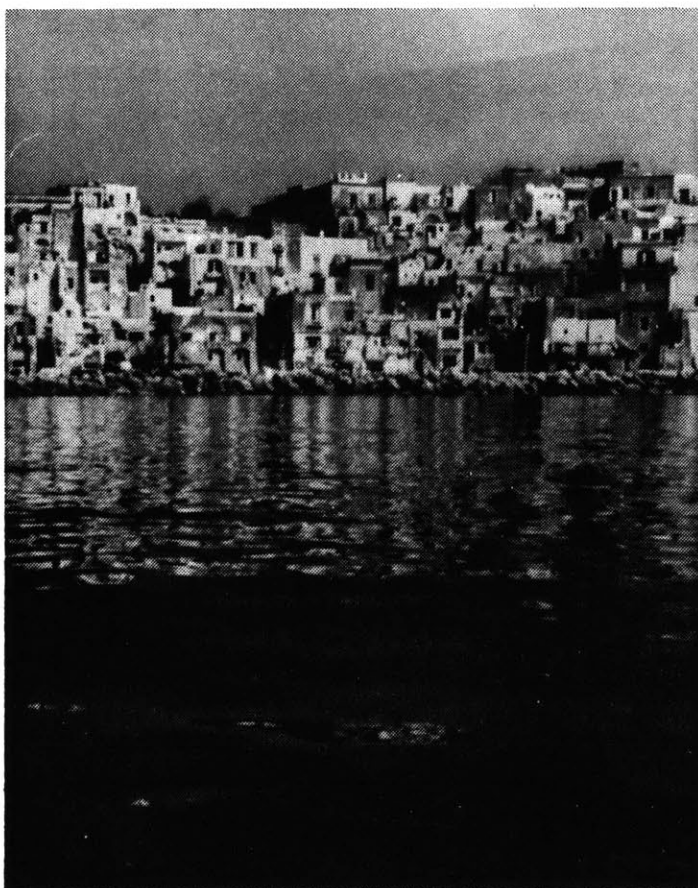
To repeat, means to introduce a common factor; either form, material, or function. This continuity is exemplified in qualities of repetition within building method, or as in a formal property such as direction. The use of similarity is one of the basic ways people learn to associate things.¹¹

'To make a sequential path' implies a continuity of events, movement and orientation.

The linkage of 'to select or establish unity in advance of the design process by choice' is illustrated by Maki with the Greek Peninsula's towns of Miletus and Priene. He



7. "TO REPEAT"



8. "TO REPEAT"

states "the designer can make use of a prominent piece of land...that will both affect his design and be a unifying visual force."

Aldo van Eyck in the Team Ten Primer approaches the problem of diversity and unity through a framework which allows for the definition and identification of the individual, as well as the collective.

"This points towards the necessity of reconciling the idea of unity with the idea of diversity in architectural terms or more precisely, to achieve one by means of the other. It is an old forgotten truth that diversity is only attainable through diversity"¹²
(Van Eyck)

To achieve this unity through diversity, van Eyck is concerned with creating "the architectural reciprocity, unity-diversity and part-whole, (closely linked twin phenomena) that must cover the human reciprocity individual-collective."¹³

These twin phenomena, as van Eyck defines them, refer to the problem of seeing the



9. "TO SELECT"



10. "TO SELECT"

environment as a set of singular events and definitions as 'false polarities'. The reciprocity of the twin phenomena sees the environment as a pairing of definitions where one is achieved in relationship to the other. This is shown in the 'twin phenomenon' of the individual collective, where the community is defined by a group of individuals who in turn find definition within it.

Some of these "inseparably linked" twin phenomena van Eyck lists are part-whole, unity-diversity, large-small, many-few, open-closed, mass-space, motion-rest, etc.

So, here is the linkage or 'continuity' in the form of relationships resulting from a pairing of apparent opposites but in reality which are part of the same range of definition. Van Eyck seems to be concerned with providing the 'whole world' of options and informations all within the continuity of reciprocity.

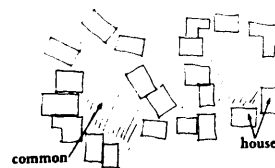
By looking at these principles, in Christopher Alexander's work from Pattern Language, a better operational sense can be gained.

Pattern '32' is 'house clusters' and states that people need to feel associated with their neighbors. Clustering provides this association by partially enclosing a piece of common land that acts as a source of collective identity.

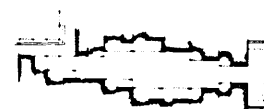
This could be thought of as the linkage 'to define' in Maki's terms, or as illustrating the twin phenomenon of van Eijck's collective-individual, large-small.

Pattern '112': "Path shape" states that streets should be for staying in and not just for moving through. The answer, as diagramed, is to make a 'bulge' in the path which is partially enclosed. Again in Maki's terms, this could be thought of as linkage, i.e., 'to mediate', or 'to define' because it is a containment of a collective space, and it illustrates the 'twin phenomenon' of motion-rest, open-closed.

Arrange houses to form very rough, but identifiable clusters of 8 to 12 households around some common land and paths. Arrange the clusters so that anyone can walk through them, without feeling like a trespasser.



"HOUSE CLUSTER"



The path shape formed by fourteen houses.

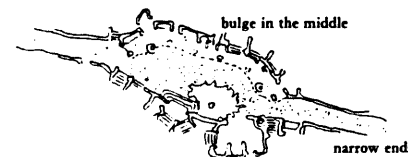
The second example is a very small path, cutting through a neighborhood in the hills of Berkeley. Again, the shape swells out subtly, just in those places where it is good to pause and sit.



A spot along a path in the hills of Berkeley.

Therefore:

Make a bulge in the middle of a public path, and make the ends narrower, so that the path forms an enclosure which is a place to stay, not just a place to pass through.



"PATH SHAPE"

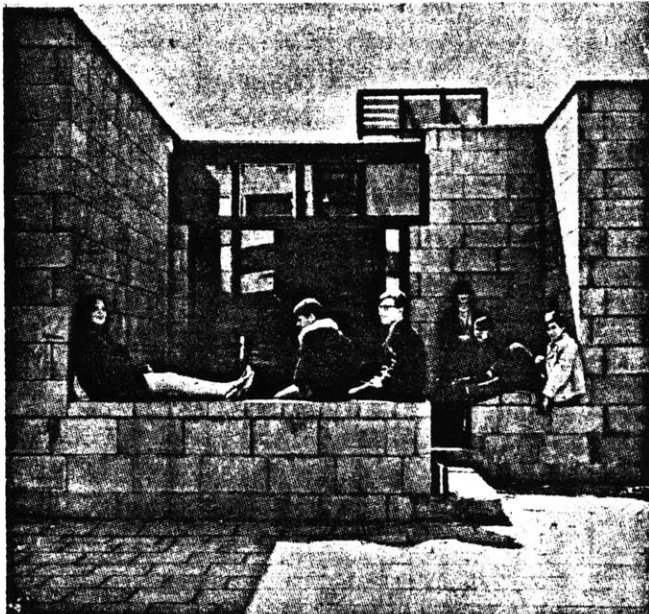
These patterns then, illustrate a few ways that the concepts of 'linkage' and 'twin phenomenon' outline qualities of collective form.

In articulating a collective vocabulary then I am looking for the formal properties and organization which produce definitions of linkage, reciprocity, and allow for a range of sizes and relationships.

A quick survey of built places which exhibit collective form might help to clarify these qualities. The built places range from the traditional or vernacular, which have evolved over time, to places built as a single act.

As a contemporary example one could turn towards Herman Hertzberger's Montessori school in Delft, Holland.

Hertzberger's Montessori school shows very clearly Maki's concept of linkage by mediation. The entrance area to each classroom is zone of exchange, made by the reciprocal form of the classroom and the 'public' space



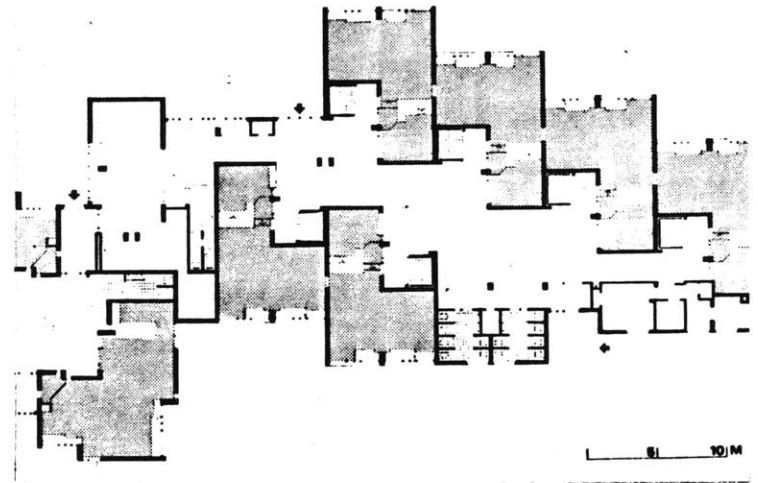
11. H. HERTZBERGER, MONTESSORI SCHOOL

of the school. The school begins to be organized in as a 'field' with the 'direction of the public' space and access being built by the privacies which build in the opposite direction.

The idea of the twin-phenomenon is also allowed for. At every place of transition there is also a contained space that allows one to stop; a chance for optional association. There is a range of sizes within the same spatial continuity, achieved through partial completion which allows for some of the definition to come from the other size, the reciprocity of large-small and individual-collective.

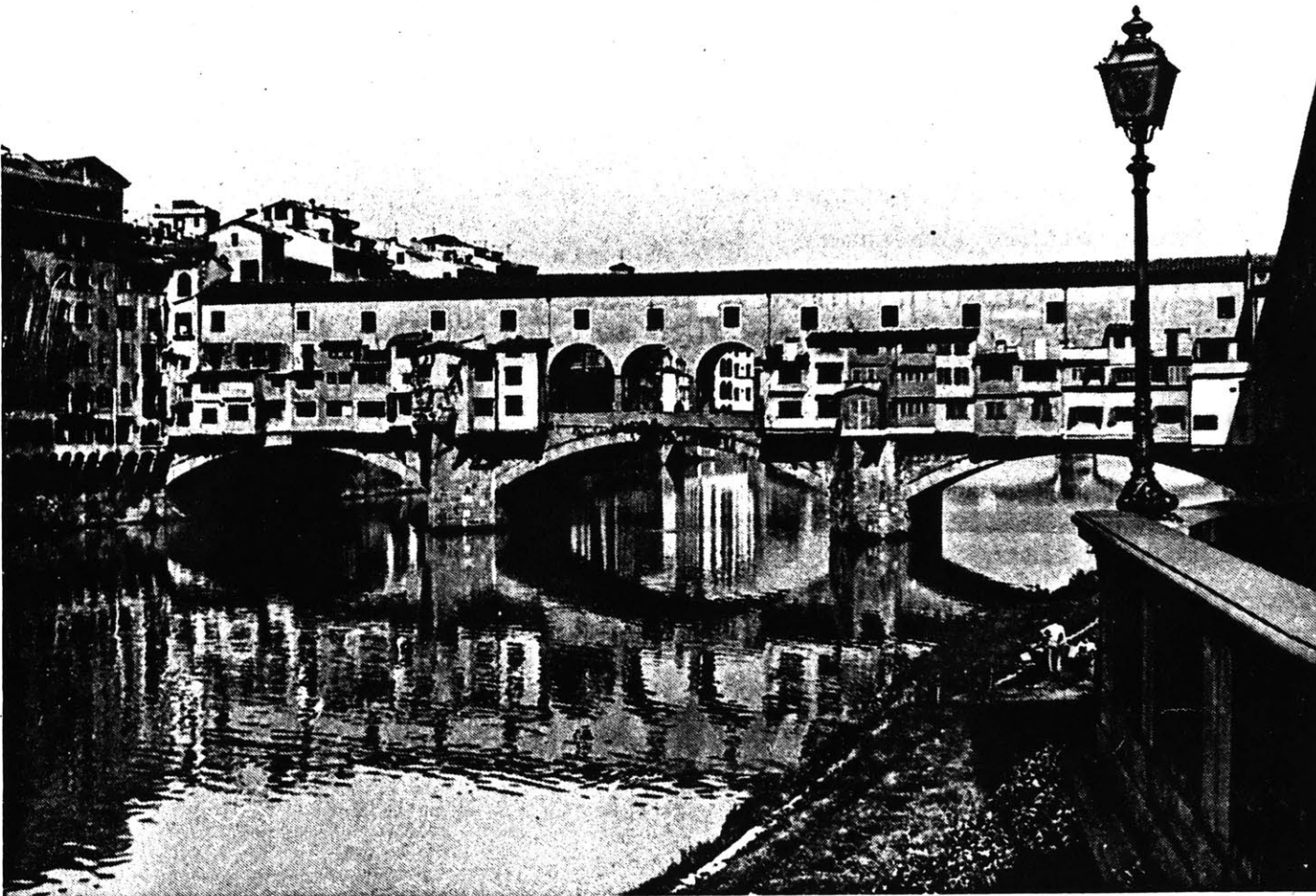
Traditional examples of 'collective form' could include the Ponte Vecchio in Florence and Fatepur Sikki city and citadel in India.

The Ponte Vecchio is an example of collective form in that at the city level it provides for mediation and an intensification of a landscape continuity. This continuity then provides for framework both physically



12. H. HERTZBERGER, MONTESSORI SCHOOL

and spatially from which other definitions can 'grow'. This inhabitation of the bridge shows a range of options within a set of material and methods.

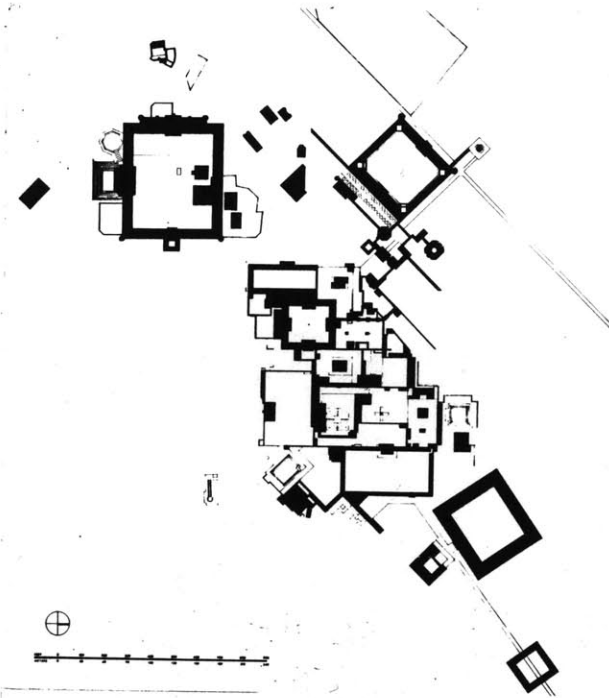


13. PONTE VECCHIO

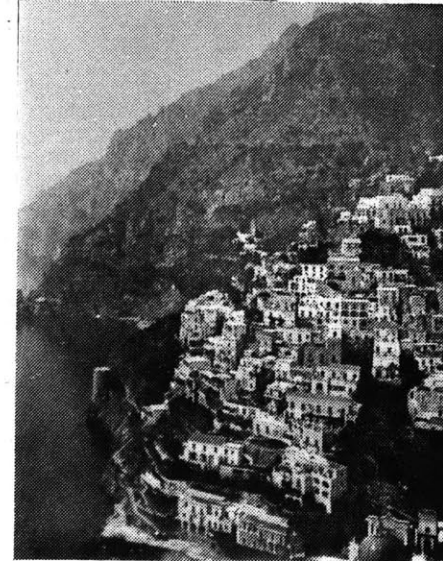
The Fatepur Sikki city and citadel is an example of collective form based on the building of a directional landscape through the aggregation of rarely completed but similar spatial forms (courtyards); thus, this building of "domain" allows for the establishment of larger continuities that contain the object-like courtyards. Here we see the building or a unity of form, i.e. field, with a range of similar spatial forms.

Traditional village forms could also be considered to be a type of collective form. Paul Mitarachi, in writing about villages in the Aegean islands, states, "we have become aware of the achievements of the popular builders. In these we look for clues in our search for the proper balance between the individual parts and the harmonious whole."¹⁴

Those villages exhibit a strong settlement form, usually from the association and intensification of a landscape. These village forms include such diverse examples as the Italian hill towns; like Revello, Fontito, or Arcidosso, the Aegean island villages, like

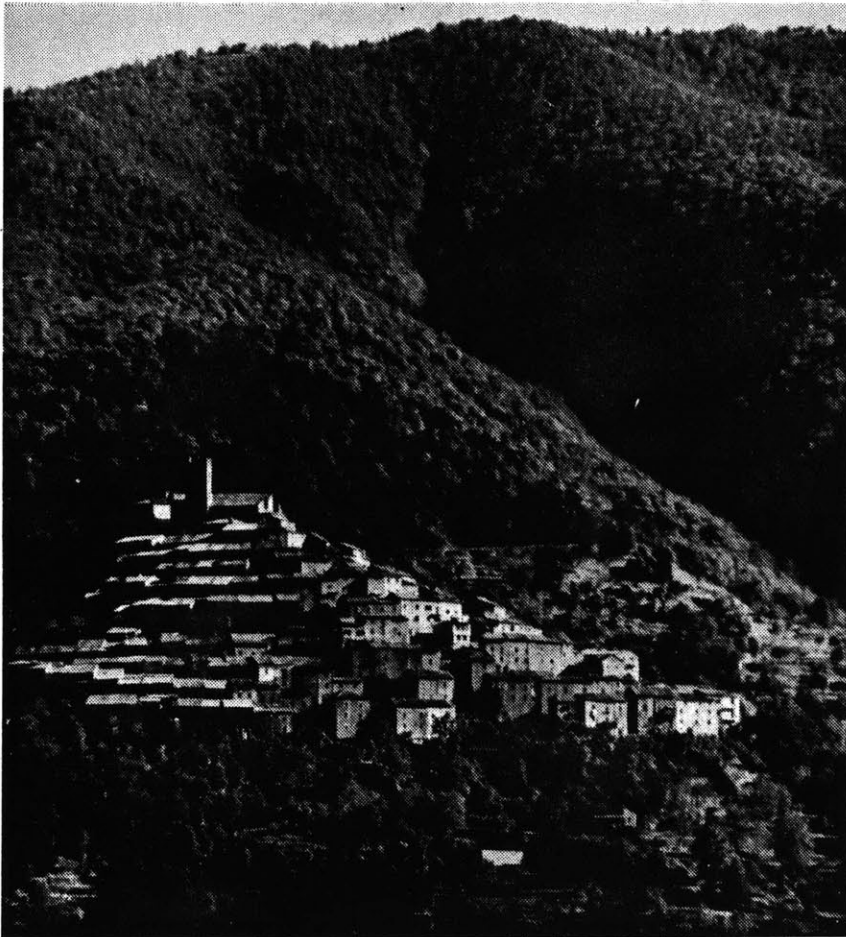


14. FATEPUR SIKKI



15. AEGEAN ISLAND

Mykonos, and Japanese village types such as Ine Kame-Yama. Norman Carver, in discussing Italian village forms, describes them as "the extension of collective behavior into built forms"¹⁵



16. REVELLO



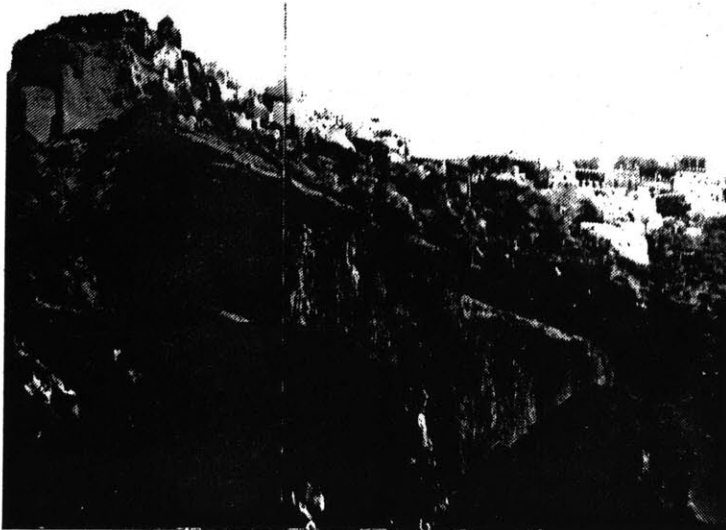
17. INE KAMA YAMA



18. PONTITO



19. ARCIDOSSO



20. MYKONOS

All of these villages have a range of understandable sizes and a sense of sharing or an exchange between definitions. They establish larger continuities which provide for spatial and physical organization of growth, exhibit a range of assemblage within a set of building materials and methods, and grow additively in a way where there is increased complexity and information. They are literally the form of a community.

Specifically, then, it is the vernacular village form around which my analysis will center.

Village forms serve as a valuable reference for such an analysis because of the implied systems, linkage and continuities they contain.¹⁶ "The elements of group (village) form is often the essences of collectivity, a unifying force, functionally, socially and spatially."¹⁷

Van Eyck has been interested in the vernacular village as a source and reference for understanding the architecture of multiplicity. "Always and everywhere, whether in Fiji, Greenland, Africa, or Italy, people dealt

with a limited number both accurately and gracefully, extending collective behaviour into adequate and often beautiful built form"¹⁸

The vernacular was able to work with multiplicity in that people were able to participate in making their own immediate domain, within a conceived overall framework.¹⁹ This framework comes from shared principles and understandings of the materials and forms of the place in which they live, as well as how they relate to that place.²⁰ It is man's world, (which is hopefully a diverse experience).²¹

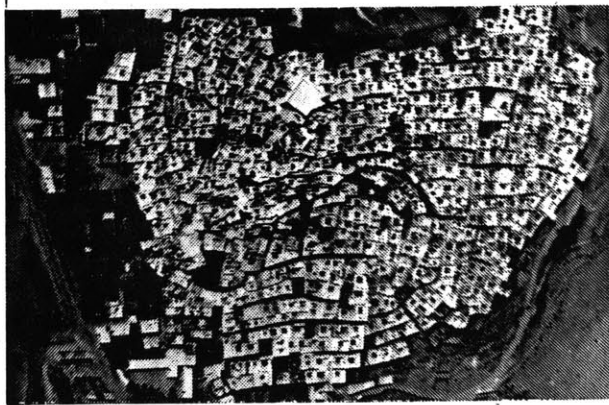
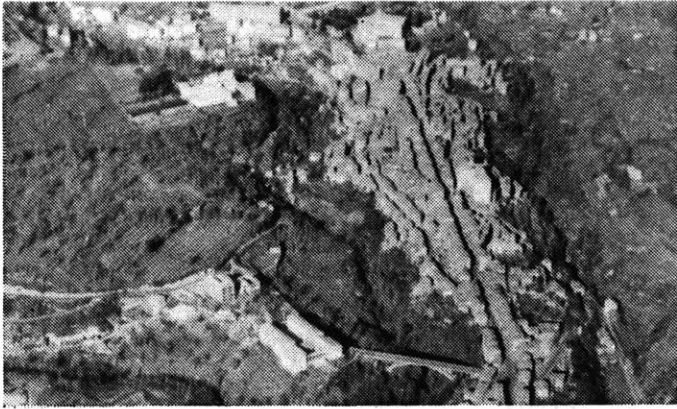
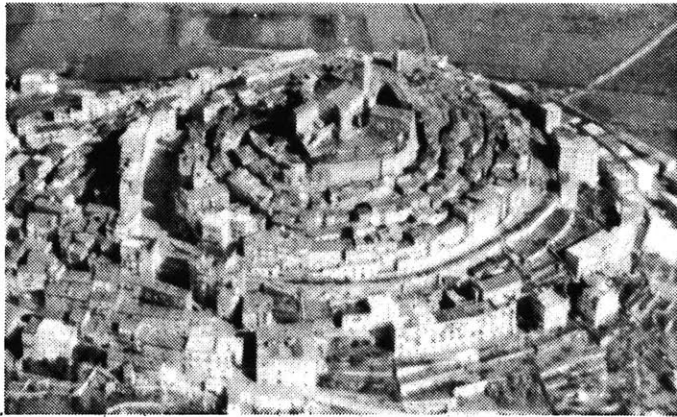
The village forms also serve as examples of the reciprocal nature of form; i.e. the twin-phenomenon. Norman Carver, in Italian Hilltowns, discusses how man's changing and contradictory needs implies an environment "requiring alternates between: clarity and ambiguity, privacy and infinity, simplicity and complexity, unity and variety... it is one of folk architecture's virtues that it readily accommodates, even nurtures, these diverse needs."²²

Paul Mitarachi in talking about Patmos, a Greek village: "As in Mykonos, individualism is expressed within the measure of an almost intangible harmony, which, however, never becomes uniformity."

- Perspecta 6: p. 79.

"Firstly one admires primitive architecture because we ourselves have lost the ability spontaneously to find the adequate expression for a building task."

- Christian Norberg-Schultz, Intentions in Architecture, p.129.



21., 22., 23.

"What is achieved is a place for human experience, rich variety of forms and spaces, in which to live; a structural framework which permits the expression of the individual and the participation of many."²³

The village organization, then, becomes a source for understanding principles of formal properties of collective form.

Village forms can be distributed into certain archetypal organizations, either belonging to the centralized, the longitudinal, or the cluster type.²⁴

I am specifically concerned with the directional or lineal village form in my analysis. The form of these villages is usually generated by a path or access; like a river or by an edge as in a strong landscape definition like the ocean. The strong directional qualities of such places, (the way of relating to the earth and sky in the same manner), expresses "a common form of life, a common way of being on the earth"²⁵, a collective form.

4

COLLECTIVE VOCABULARY

"The most delightful and fruitful of all the intellectual energies is the perception of similarity and agreement, by which rise, from the individual to the general, trace sameness in diversity, and master instead of being mastered by the multiplicity of nature."

-Friedrich Froebel ¹

The vocabulary of collective form this thesis outlines in just that; "the perception of similarity and agreement" in the form of 'principles' which describe formal qualities. These principles are perceived as generic to the structure of references categorized as "collective". The 'rules' discovered hopefully can be useful in the design of similar intentions elsewhere.

There is a danger in translating generalities into 'rules'. Much of what makes architecture

"Their (village form characteristics) universality may explain the vernacular's remarkable adaptability to varying cultures and times, and may also be the basis of a universal language of form by which we can discover our continuity with the past and enrich our future."

- Norman Carver, Italian Hilltowns, p. 28.

human are the differences or surprises it has to offer. Such things are lost when an understanding of an environment becomes dogmatic. However as stated earlier, this analysis of form is an attempt to understand only the collective nature of the environment and in no way addresses the totality of design.

The other problem in outlining principles based on a set of references is that much of the cultural based information is discarded. As an example, it would be inappropriate to base dimensional decisions of street size on the measurement of a Japanese fishing village. This is because of obvious cultural and technological differences, yet these places are enjoyed, traveled to, and are described as valuable sources for design. Clearly then, the content goes beyond cultural barriers and transcends into the associative quality of form. These places reveal some gathering of formal knowledge that people understand.

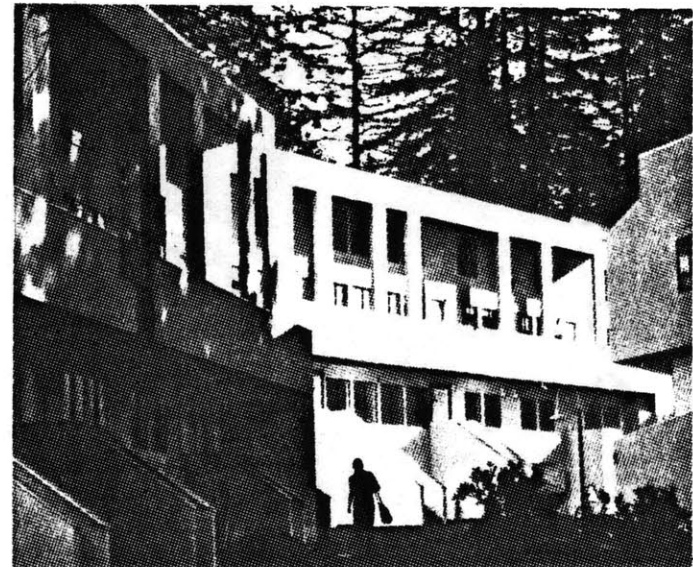
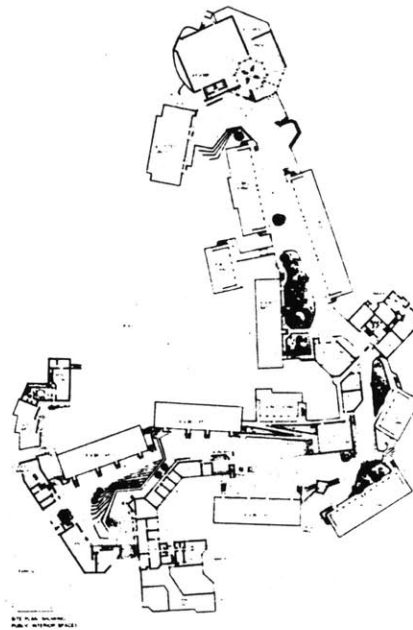
As I earlier discussed, one must distinguish between appearance and the underlying form.

Many environments built today rely on peoples association with the collective but depend more on the imagery connected with the associations. Such places are Disneyland and Kresge College at the University of California at Santa Cruz.

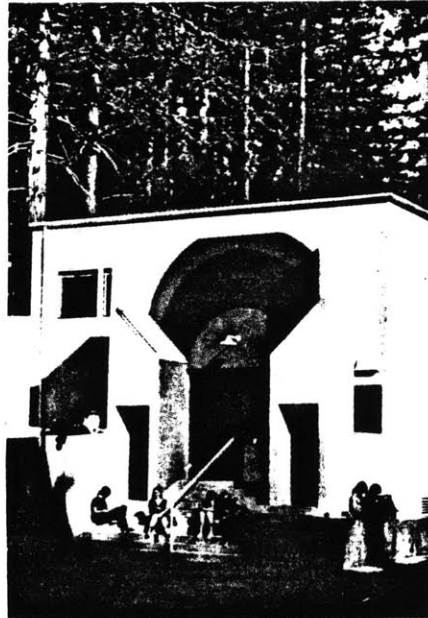
The college design by M.T.L.W./Moore-Turnbull, is clearly a small mediterranean village set in the woods. From the 'white-washed' walls to the 'symbolic' arches, the imagery is used to establish an association of the collective. At the same time there are formal properties and relationships in the design which establish a collective form.

It is not that the use of the imagery is necessarily wrong. It is only that by concentrating instead upon form/use associations, one can transcend the appearance of style. This then provides a vocabulary of form useful in the design of places more removed from the references.

Kresge College will always be a mediterranean village in the California woods. It will



1, 2. KRESGE COLLEGE



3. KRESGE COLLEGE



4.

always be a 'stage set' for the lives of the inhabitants but will never offer a chance to take on new associations, to become a different kind of place. Here the 'order' of appearance strait jackets the options.

The question remains then...What are the principles of form/use which achieve the perceived and actual generic qualities found in village forms?

The writings of Maki and van Eyck give answers which are vague, when translated into building tools and methods. This is in part a problem of the description both men use in defining collective form.

Maki's rhetoric is directed towards establishing "a unity from a diversity" and he uses references similar to the ones this thesis is based on, except that he describes the environment in terms of "links" which are not form relationships but are essentially only intentions. The linkage "to mediate" in itself has few physical qualities. It tells the designer to mediate between places. This kind of 'principle'

would allow such a varied interpretation as to render it almost useless. The linkage "to select" presents the problem of addressing more the appearance and less the underlying form. Maki sees this linkage as selecting a "naturally" prominent piece of landscape to build on and then using its "image" to order the design.

Van Eyck's statements are a little more obscure and therefore possibly more useful. Throughout his discussion of the collective/individual he emphasizes the principle of reciprocity. It is unclear, though, whether he believes in actual physical reciprocity or is just referring to a range of existence. Again, his lists of "twin phenomenon" are only intentions and are difficult to translate into working methods and tools.

What does pervade the discussions of collective form by Maki, van Eyck, and others² is their emphasis on establishing continuities i.e., continuities which provide for a larger unity and organization, while still offering a range of options. These continuities imply

an extension of certain attributes of material, methods, form, or uses which make a place understandable.

In Maki's terms the act of linking is the making of a continuity. The link "to mediate" implies a virtual continuity of territory between places. The link "to repeat" is a continuity of similar elements or methods. At the landscape size this repetition of similar elements establishes the domain of the larger form, it builds the field. At the dwelling size it could imply a continuity of building methods and materials. Maki's linkage of "path" is a continuity of access and movement, and his linkage "to select" implies a continuity with the landscape.

Van Eyck's discussion of reciprocity implies that places and definitions are not isolated, self-defined objects but share, by the nature of understanding³, a continuity in form or existence i.e., large-small, open-close. When expressed this way the translation of intentions into methods and tools becomes more concrete. These continuities

are more than intentions or lists of "twin phenomenon" but are part of a physical structure with form/use qualities.

I have outlined four topics, or principles, in the analysis which are critical in acheiving such continuities.

- One, the generation of a domain or directional field through the intensification of a landscape.
- Two, the establishment and building of associative and formal reciprocities.
- Three, the building of the territory, or zone of exchange, between definitions and sizes.
- Four, the establishment of continuities through variation and theme, or the assemblage within a set of building materials and methods.

Each principle is part of an interrelated experience. The generation of a directional field says something about the order of additive assemblage. The building of reciprocal definitions is in part creating the territory of exchange between definitions. However, isolating them will illustrate the building of continuities as form/use principles.

Examples for each principle are outlined from the point of landscape size, and/or access, and/or the dwelling size. The result is not an inclusive analysis of each reference, but an analysis of each generalized principles.

COLLECTIVE VOCABULARY

four principles of continuity

- 4.1 INTENSIFICATION OF THE LANDSCAPE:
the generation of a directional field
- 4.2 RECIPROCAL DEFINITION
- 4.3 ZONE OF EXCHANGE
- 4.4 THEME AND VARIATION

Intensification of the landscape; the generation of a directional field

4.1



Maki's linkage "to select" refers to relationships that many villages have with the landscape. The form of the building intensifies the landscape through inhabiting it. In these cases, the landscape "functions as extended ground to the man-made places".¹ Within the landscape there are particular characteristics and spatial properties which give form to that extension.

By inhabiting the landscape a structural correspondence is built between the natural conditions and the settlement morphology.³ The form of the landscape becomes a generative source of the village form.

"...how to gather the surrounding landscape? In a defined valley this would mean forming a row parallel to the direction of the land, that is along the natural path (direction) of communication."⁴

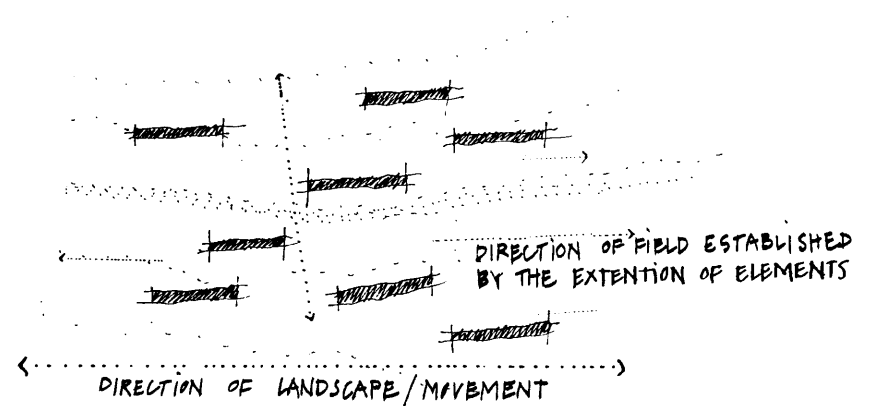
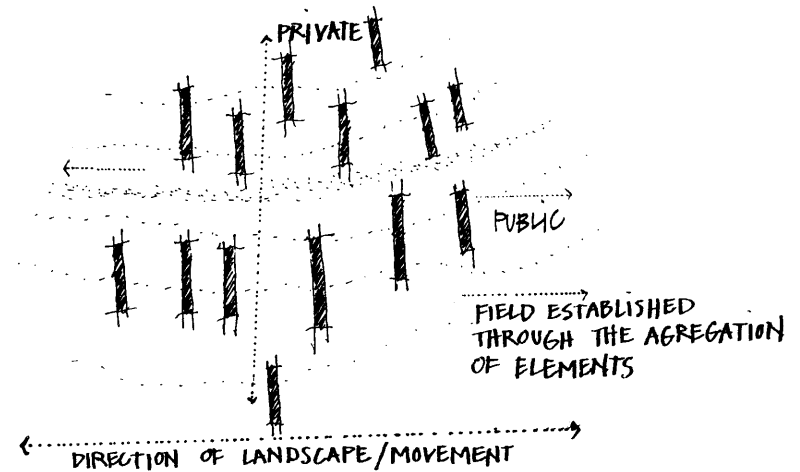
There are many qualities in the landscape that one could gather, including sizes, containments, extensions, but it is direction that provides the primary structural property of a field or domain.

By gathering the landscape's structural properties, such as direction, a larger domain or field is established. This field is an extension of movement, form, and use. Dwellings retain a sense of identity, but through their aggregation build this field, reinforcing the primary direction and understanding of the public continuity.

Growth occurs within the "unity" or directional structure of the field, thus providing for a collective association through orientation within the field.

A field then, is a distribution of similar elements in space, which through their aggregation form a direction and provide an understandable domain within a boundary.⁵ A directional field then, allows options for the organization of movement, space, growth, and privacy.

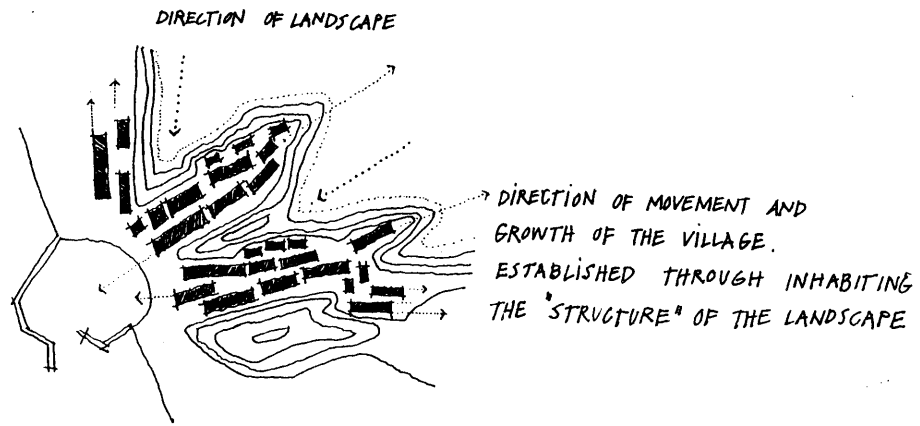
In the references the continuity of street is established by directional elements such as dwellings, walls, or steps which reinforce the direction of movement.



Basic enclosure, structural systems, and/or spatial organization of the dwellings often associate with the direction perpendicular to the street. This reinforces the discontinuity of the dwelling, thus creating a privacy.

The referenced village forms illustrate this establishment of a field through an intensification of the landscape. While such a landscape is not always available, the lesson is in seeing the initial design task as one of setting up a larger "domain" or directional field within which to work.

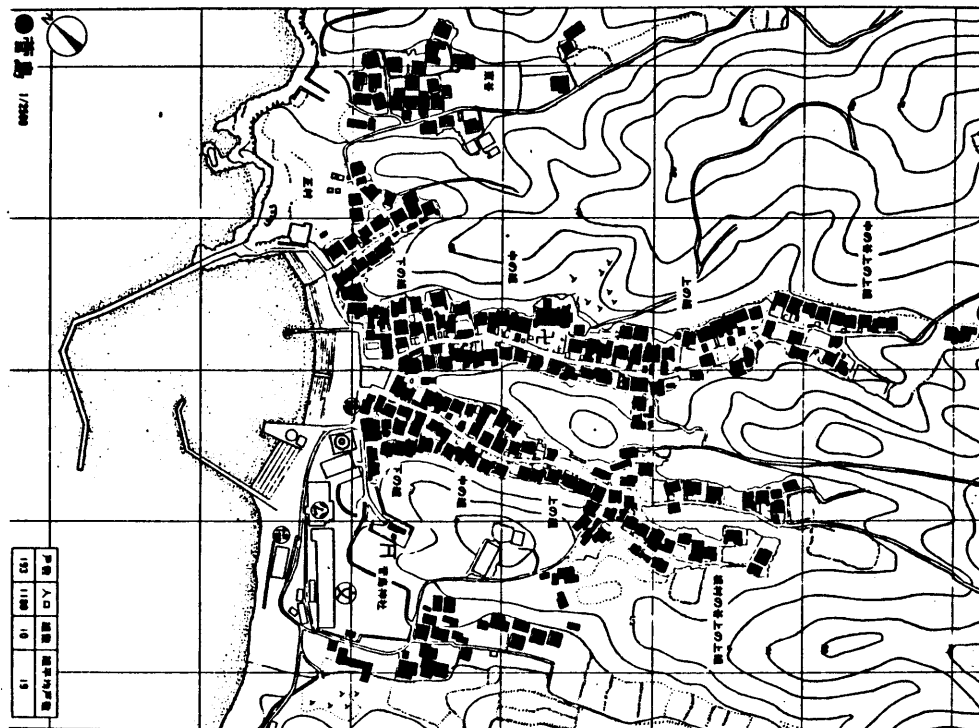
collective form references
directional field



directional field: Okino Shima, Japan

The Japanese village of Okino Shima is a fishing community nestled between a group of hills and the ocean.

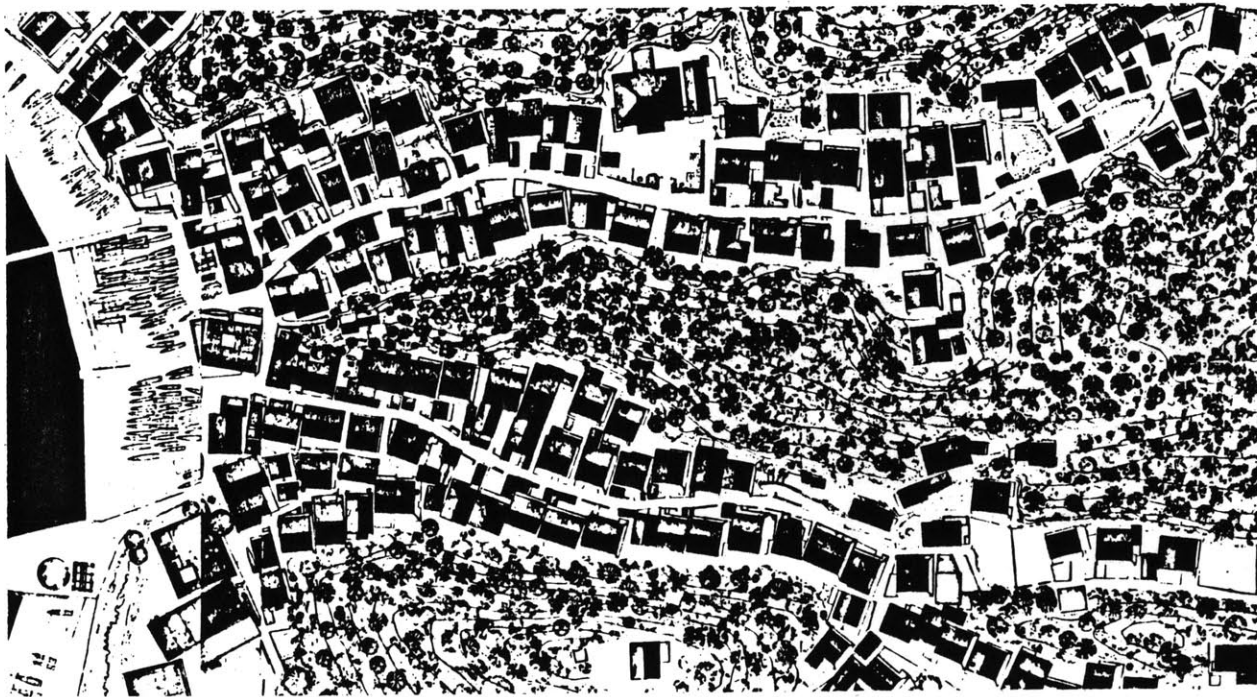
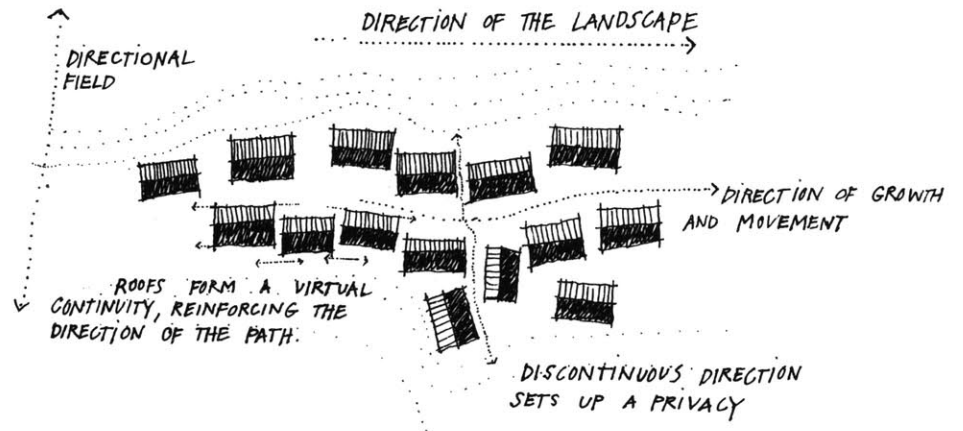
The structure of the landscape is defined by the "fingering" of these hills toward the sea. The village follows these fingers up into the hills creating 3 separate spines which 'meet' at the harbor.

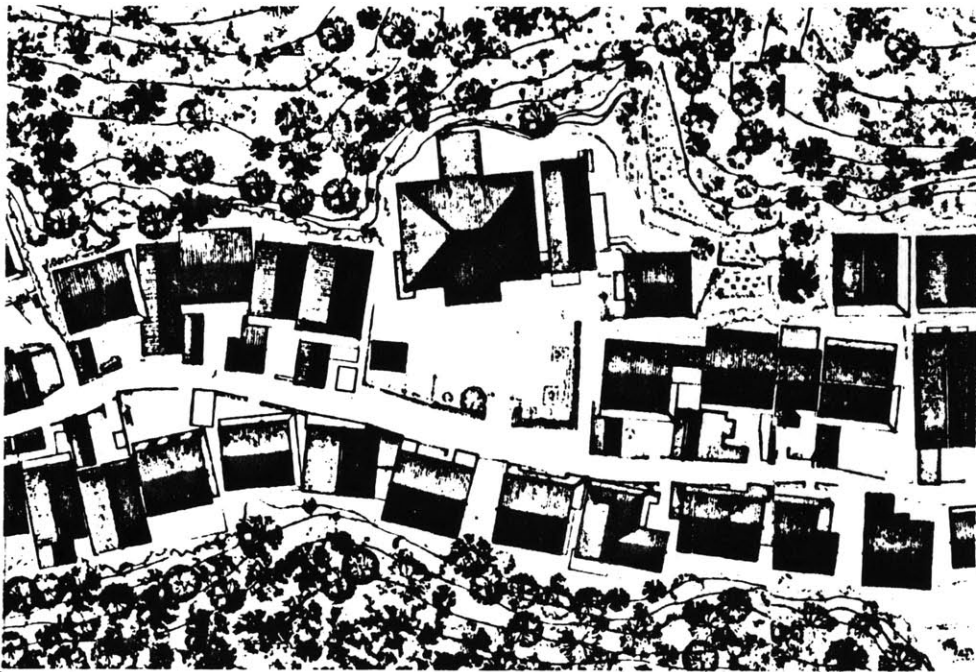
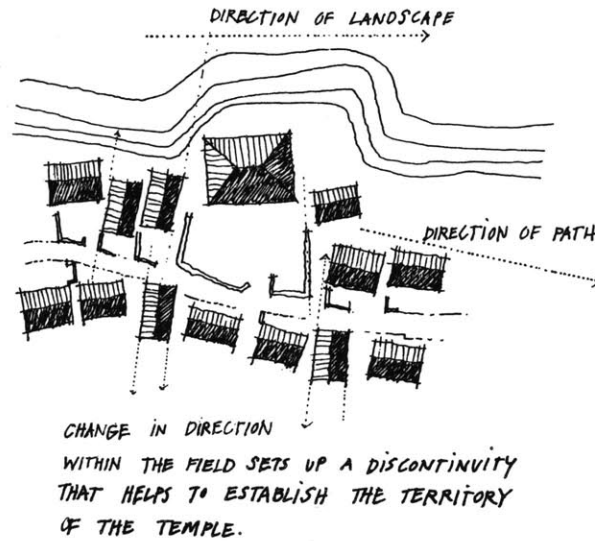


This inhabitation of the landscape form transforms the directional qualities of the hills to the sea, into the access pattern of the village.

This continuity is further built by the individual houses through their aggregation and the virtual continuity of elements such as roofs.

This establishment of a directional growth and organization allows for the understanding of both public and





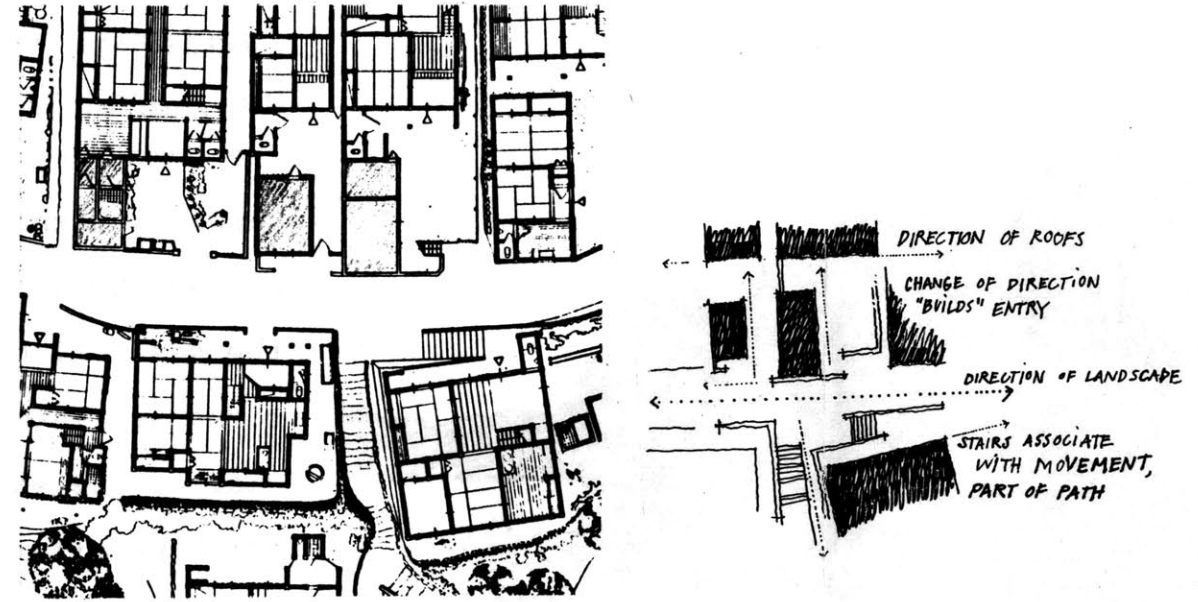
private space.

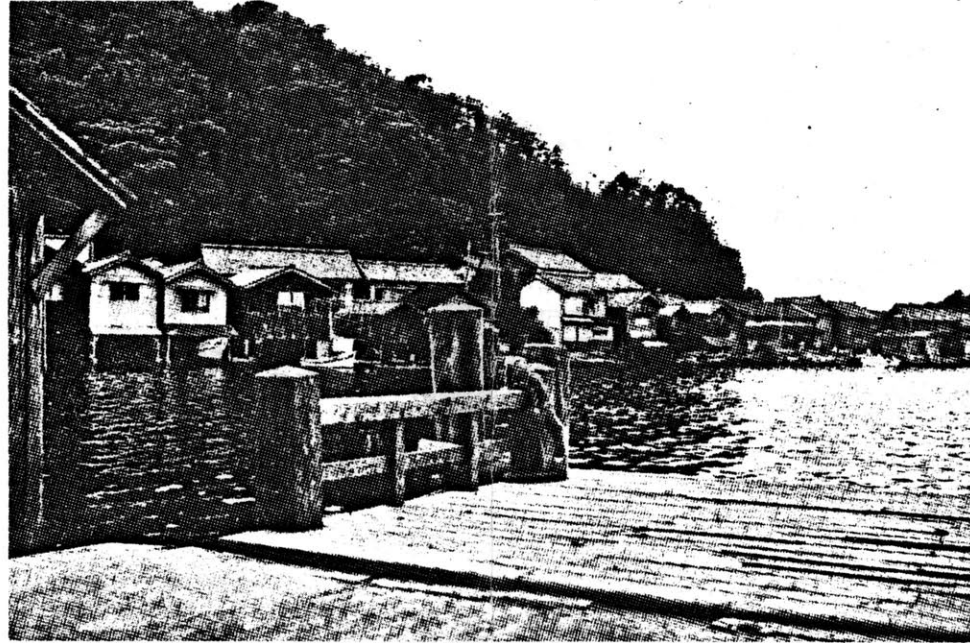
Towards the middle of the paths is a buddist temple, it occupies a territory in the landscape which offers it more definition. In addition the specialness of its activity is defined by a change in direction of some of the houses around it.

This sets up a discontinuity which achieves a degree of privacy that the temple can inhabit.

At the path level, the small structures between the dwelling and the path, are located 90° to the path. This discontinuous direction creates the more private access and space.

From the intensification of the landscape to the generating of privacies along the path, the continuity of direction allows for understanding of a meaningful set of options.





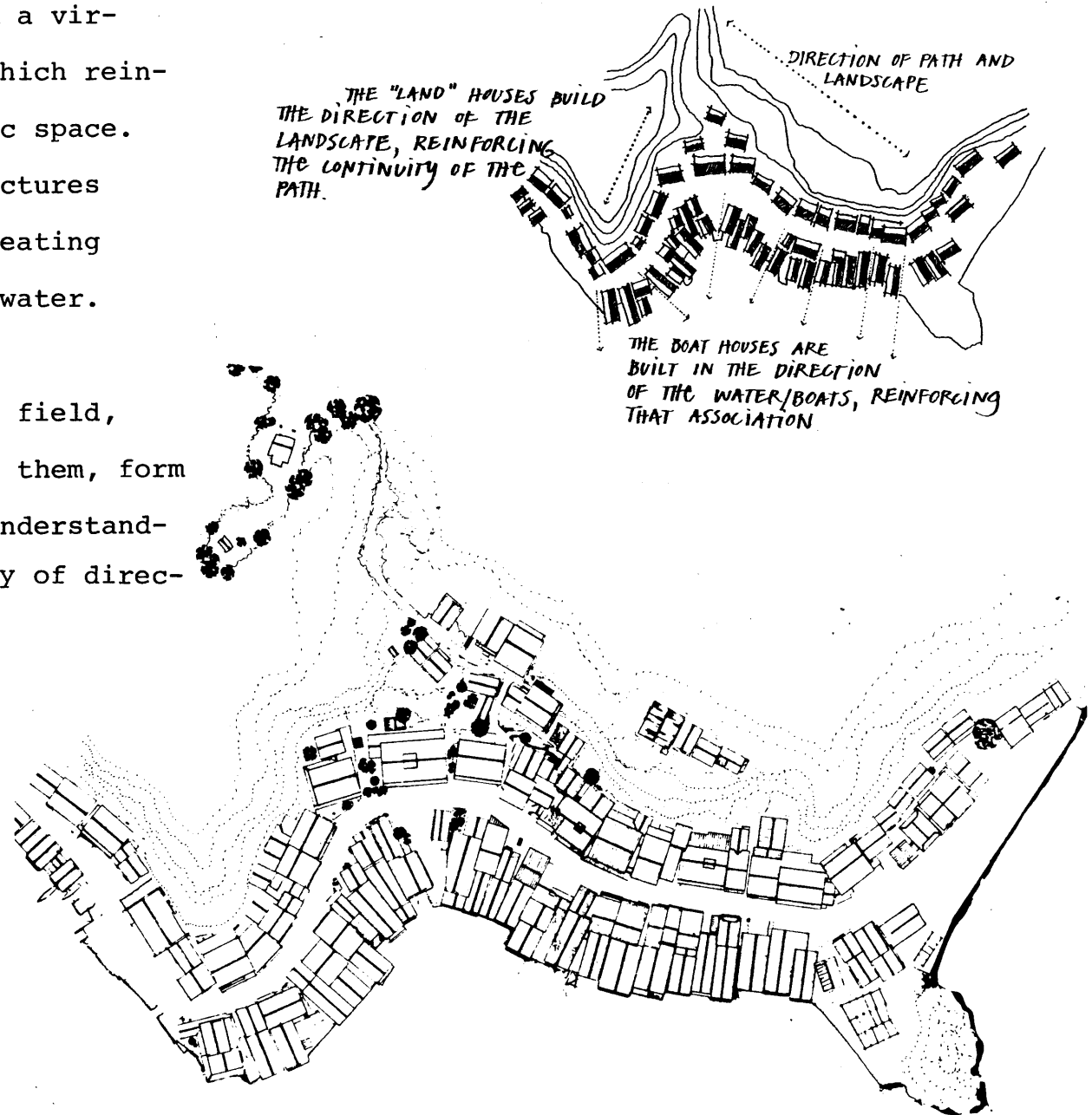
directional field:

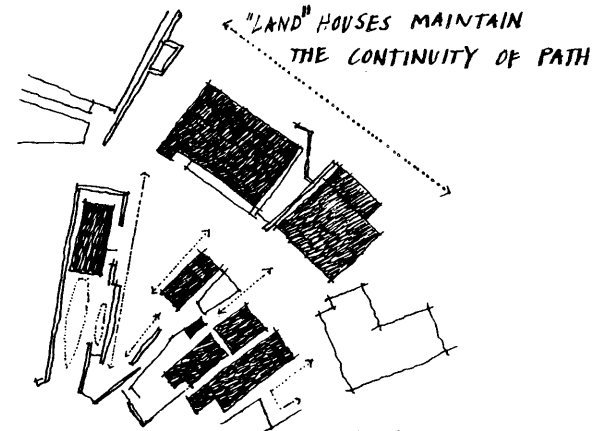
Ine Kama Yama, Japan

Ine Kama Yama is also a small Japanese fishing village inhabiting a place between some mountains and the sea. Although here, two directions are intensified. On the "land" side of the path, the houses are built parallel to the line of the path, intensifying the direction of the land. The direction of the "sea" side houses associates with the water or more specifically, the boats, which are stored under the structure.

The land side houses form a virtually continuous edge, which reinforces movement and public space. On the sea side, the structures occasionally step back creating places and access to the water.

The two directions of the field, and the associations with them, form a diverse organization, understandable within the continuity of direction.





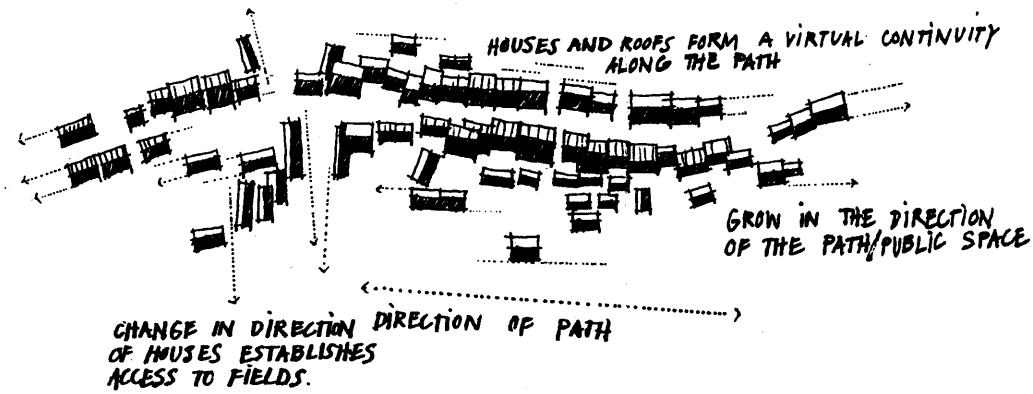
THE BOATHOUSES ESTABLISH AN ASSOCIATION WITH THE WATER BY BUILDING ACCESS AND VIEWS WHICH ARE DISCONTINUOUS WITH THE DIRECTION OF THE PATH



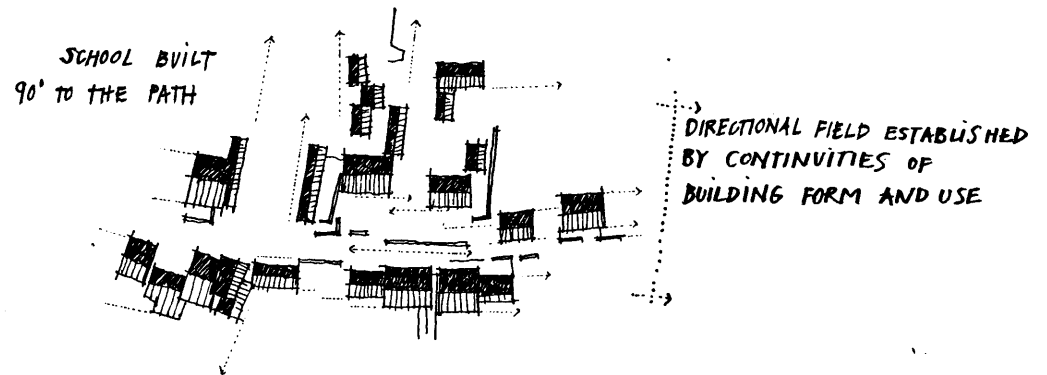
directional field:
Ta Migo Ido, Japan

Ta Migo Ido, is a village built in a steep mountain pass in Nagano prefecture of Japan.

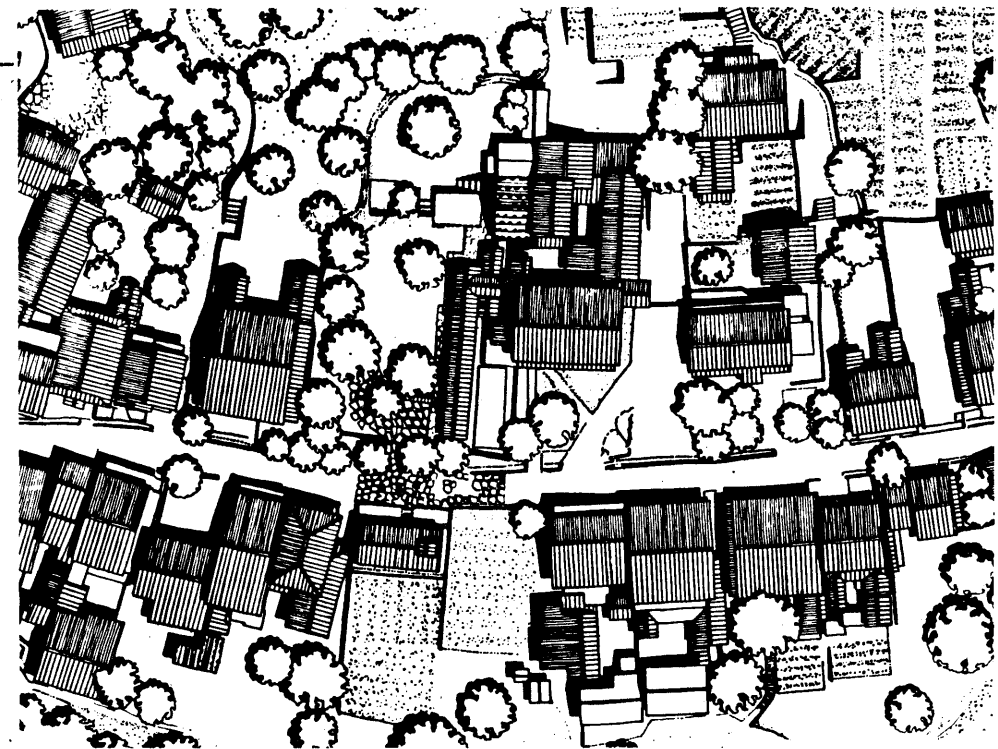
In this case the directional continuity of the village is generated through an intensification of a path which moves through the mountain pass.



Here again the aggregation of the individual dwellings builds the direction of movement, with elements like roofs and low walls providing a virtual continuity of form along the path.



At the location of a school in the village, there is a displacement of space along the path. Another direction (90° to the path) is introduced which defines the discontinuous use of the school in the larger form of the village.

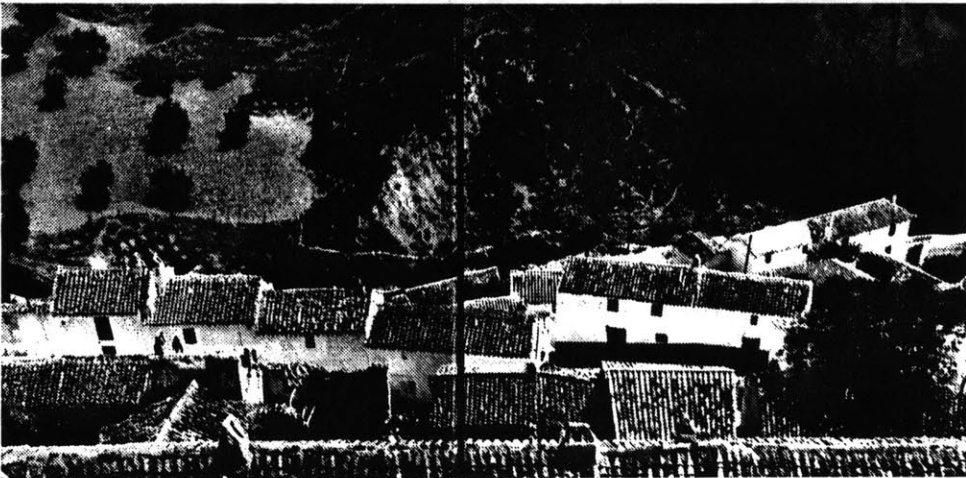




directional field:
Montefrio, Spain

Montefrio is a Spanish village inhabiting a hill which has been terraced to provide ground for orchards.

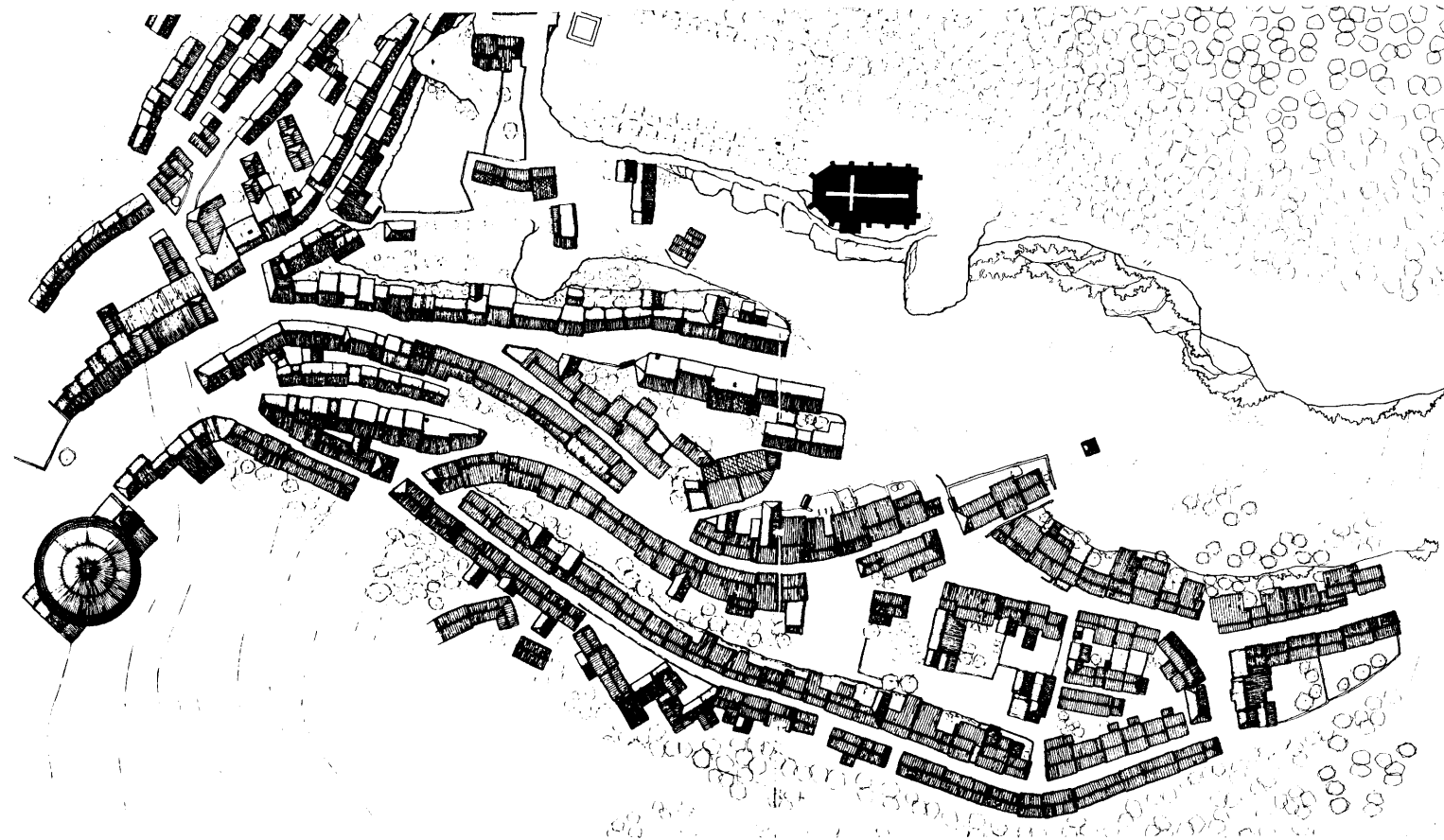
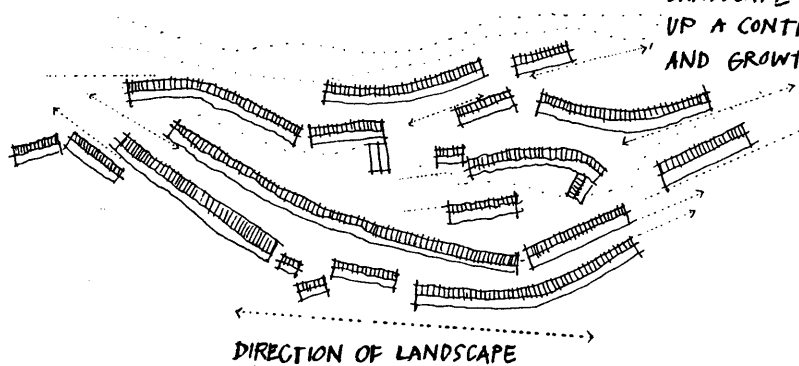
It is a clear example of a large domain established through an intensification of the landscape. Here the major direction of movement and growth is generated laterally with the hill.



The houses and roofs aggregate to build this continuity of direction yet there is room for different sizes, shapes, and orientations, a

diversity which is collective. The landscape size is understandable and the dwelling is allowed identification.

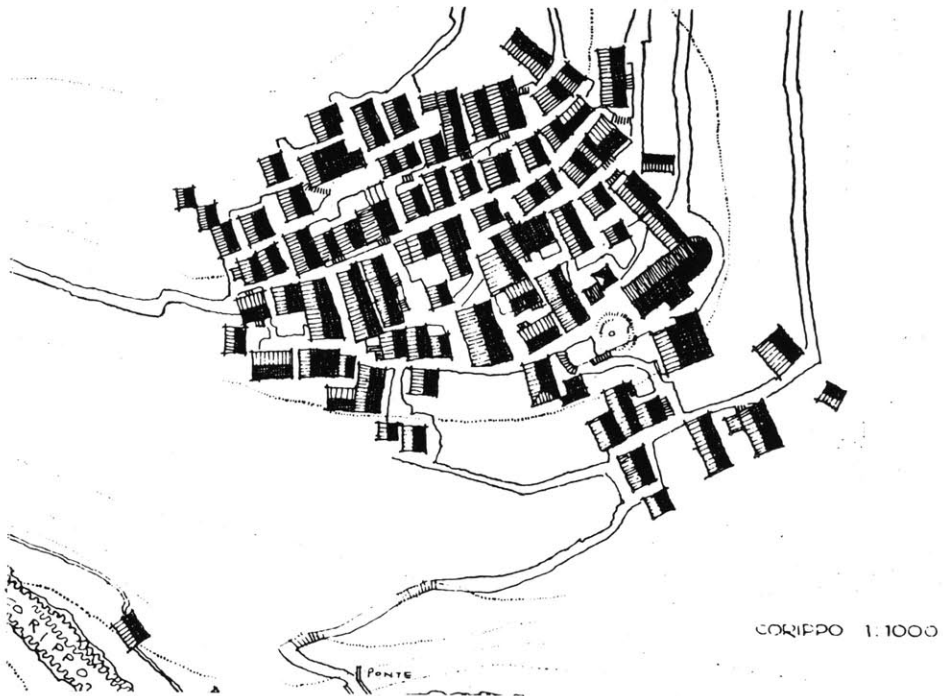
THE INHABITING OF THE LANDSCAPE "STRUCTURE" SETS UP A CONTINUITY OF ACCESS AND GROWTH





directional field:Corippo

The stone village of Corippo in Italy is situated on a south-facing slope. The landscape is not as steep as the preceding village of Montefrio, so it offer possibilities for access 90° to the direction of public movement, which runs laterally with the hill.



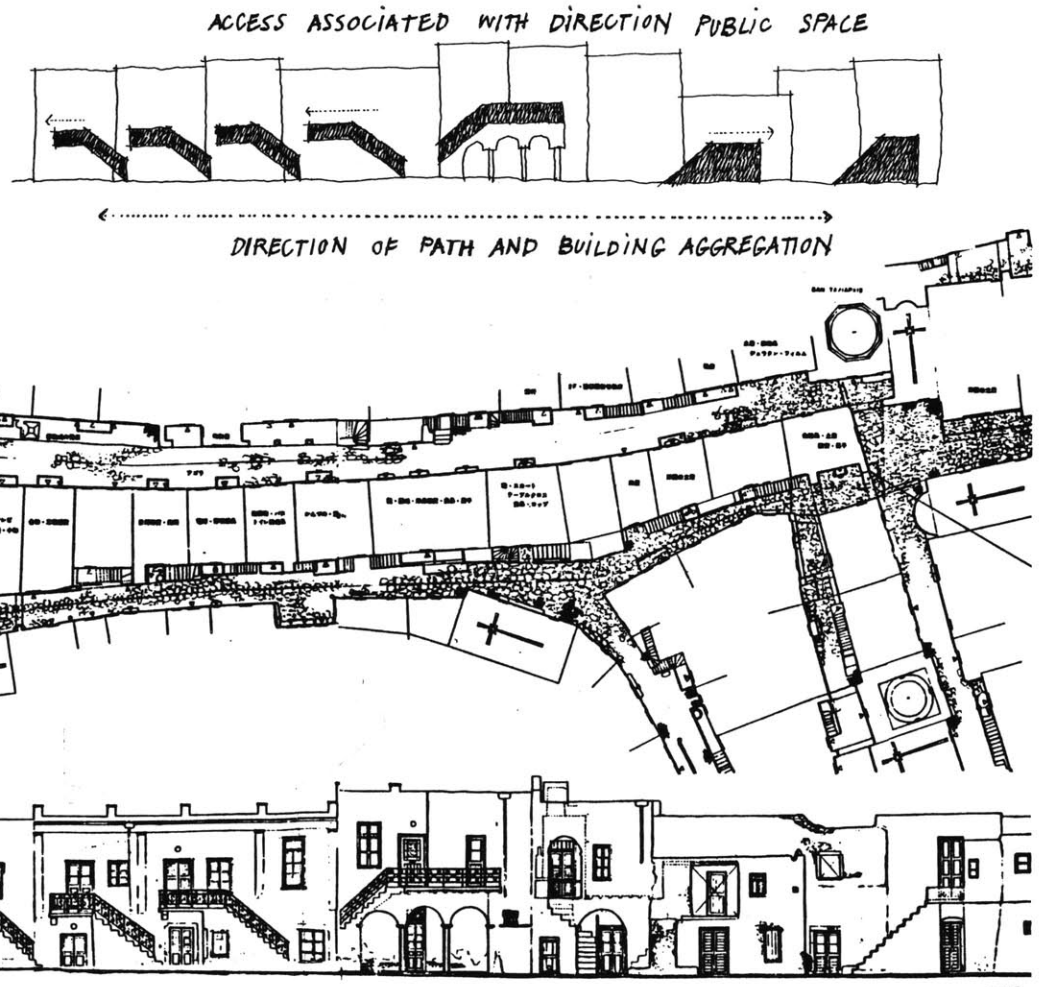
The access up and down the hill is built by the direction of the individual dwellings. It is further reinforced by the virtual continuity of the roofs, while the direction of more public movement and use is established through the aggregation of the houses and the intensification of the "natural path" in the landscape.

directional field: Mykonos, Greece

This street in a village on Mykonos Greece is an example of a continuity of direction at the access level.

tion, reinforcing a continuity of form and use.

Here the dwellings are packed together to establish the direction of movement. The other elements of the path (the arcades, steps, and porches) associate with that direc-



Reciprocal Definition

4.2

The continuity provided by reciprocal definition can be seen in two ways. One, as actual physical reciprocity, where the form, use, or space of a place is defined by another form.

The other continuity is an associative reciprocity, where a range of definition is provided through adjacency. Finding both "large and small" with one another makes both more understandable.

"We define (the natural order) as the order which is achieved when there is a perfect balance between the needs of the parts and the needs of the whole."

- Christopher Alexander, The Oregon Experiment, p. 14.

In both physical and associative reciprocity there is a relationship of mutual definition, a sharing or continuity. In trying to build a "unity of diversity" such continuities are important to establish in that they provide the relationships which allow a diversity of places to exist while still being part of a larger whole.

Reciprocity produces an order in which elements are seen not in isolation but as part of other definitions. Christian Norberg Schultz states, "...where the hills and mountains are seen as spatial (reciprocal) components to valleys".¹

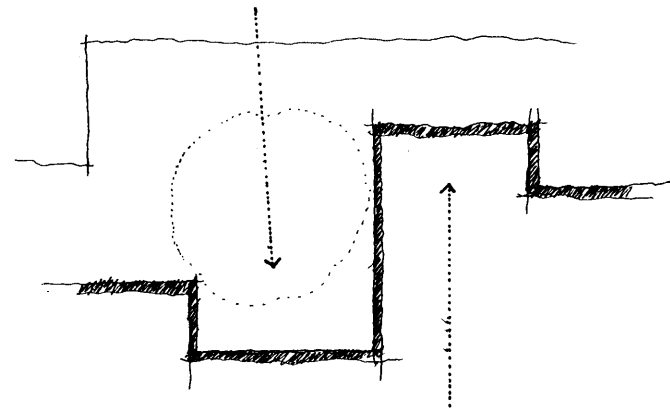
The key to creating reciprocal definitions is the degree of completion. Once an object is complete it is no longer able to generate a reciprocal relationship with anything around it. One only has to think of this principle as it applies to human relationships to understand its importance. When such completion does occur the object becomes disassociative with the environment.

So by allowing for some incompleteness in formal definitions a sharing and continuity with other elements can be generated. In the references this is clearly illustrated in the total form of the villages. The addition or loss of a few dwellings will not "distort" or make unrecognizable the total form. As Maki states, "the element and growth pattern are reciprocal".²

At the access size, there is again a reciprocal relationship in the path and elements. The path and places along it are defined by the displacement of space. The dwellings, instead of building the line of the path (as happens in most building corridors), act reciprocally with it and create space which is shared by both.

"... A thing, exclusively made for our purpose suppresses the individual because it tells him exactly how it is to be used."

- Herman Hertzberger, Harvard Educational Review: Architecture and Education, p. 68.



Building of a physical reciprocity achieves this mutual definition of places, which then also reinforces the spatial continuity of an environment. The containment and definition of "place" in the village is a result of the reciprocity with the landscape, and the village form is a result of the reciprocity of the dwellings and the growth pattern; creating a series of collective continuities.

In summary, the task in building reciprocal continuities is to achieve definition of places through the use of other elements and attempt to find the balance of completion and sharing.

but
 IF (POSITIVE)
 the intention is to help GENERATE
 variable environments ^{for} responsive ^{towards}
 REAL GROWTH and CHANGE, —
 through participation — (those same)
 architects will 'discover' the
 designers (could) makers
 exciting coherence of INCLUSIVE ORDER —
 rational PLURALISTIC
 (maximal range of definitions
 clarifying choices polarities
 and offering fresh possibilities
 through RECIPROCAL CONTINUITY.)
 in which
 NO PLACE is wholly self-defined,
 USE exclusively
 but is mutually dependent for its existence on many others.
 form

collective form references
reciprocal definition

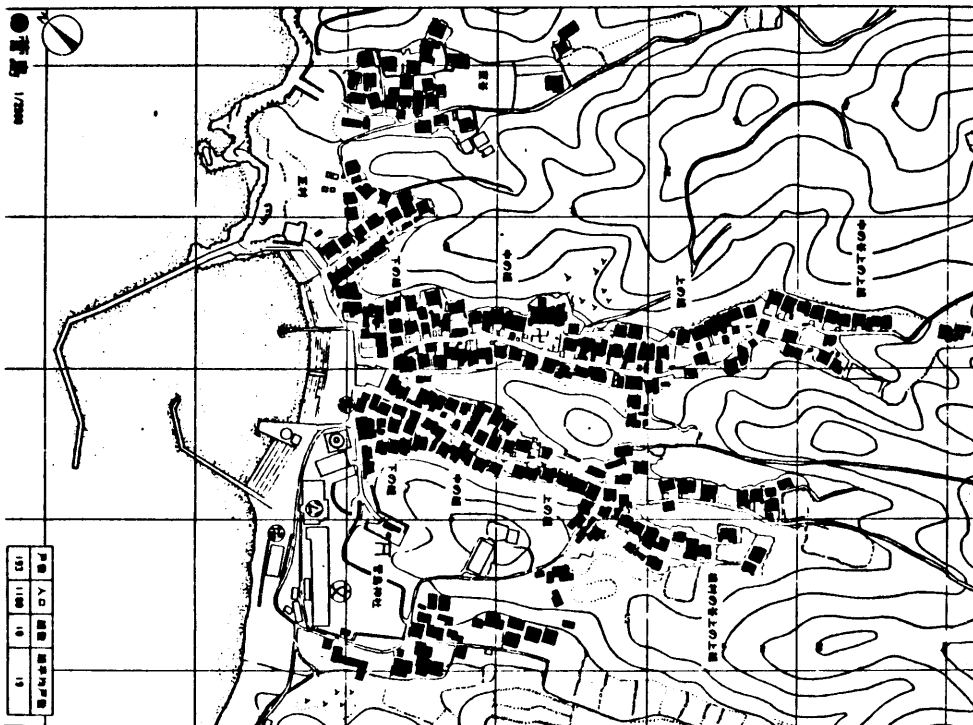
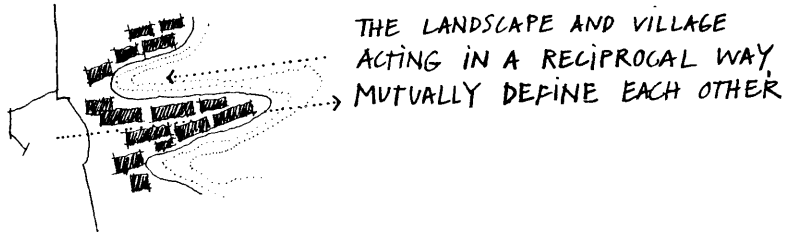
reciprocal definition:

Okino Shima, Japan

The principle of reciprocal definition at the landscape level, is illustrated in the village of Okino Shima.

Here the hills "move" towards the sea and define a territory which is inhabited by the village. The village in turn reinforces the definition of the hills by "moving" from the sea towards land.

There is a mutual definition. The village forms a spatial and dimensional correspondence with the hills without which the structure of the village would be less understandable. The place is "incomplete" without the landscape.



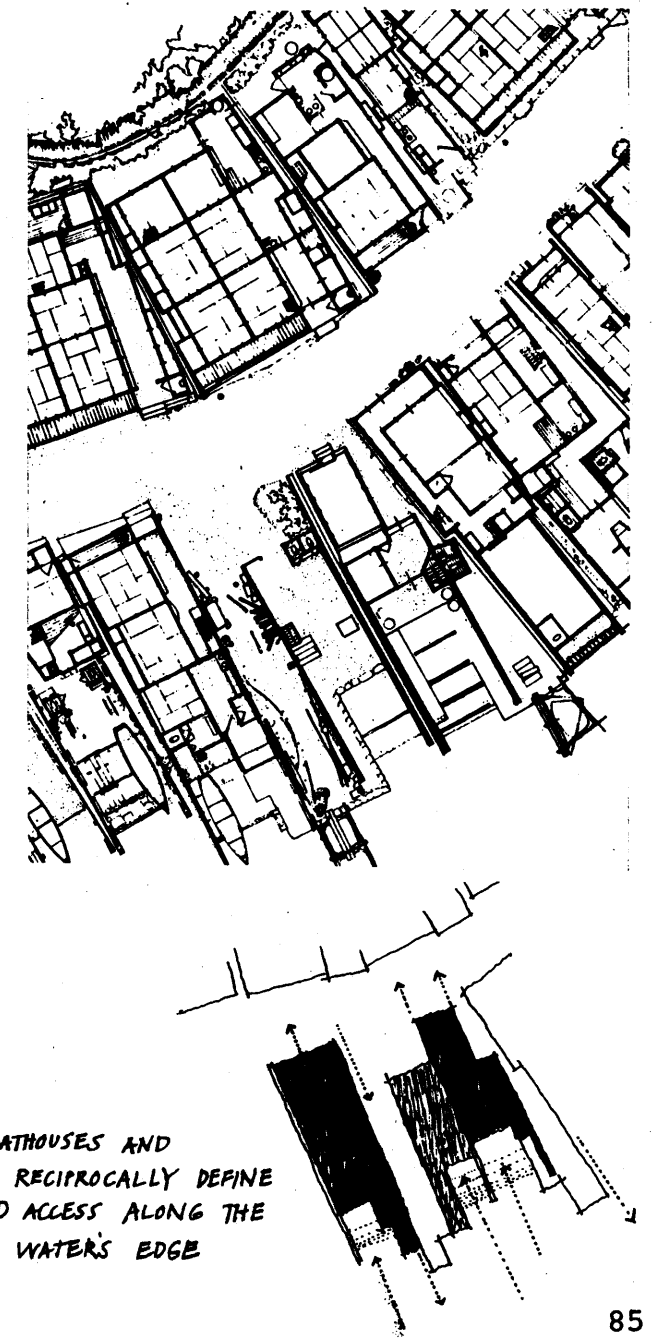
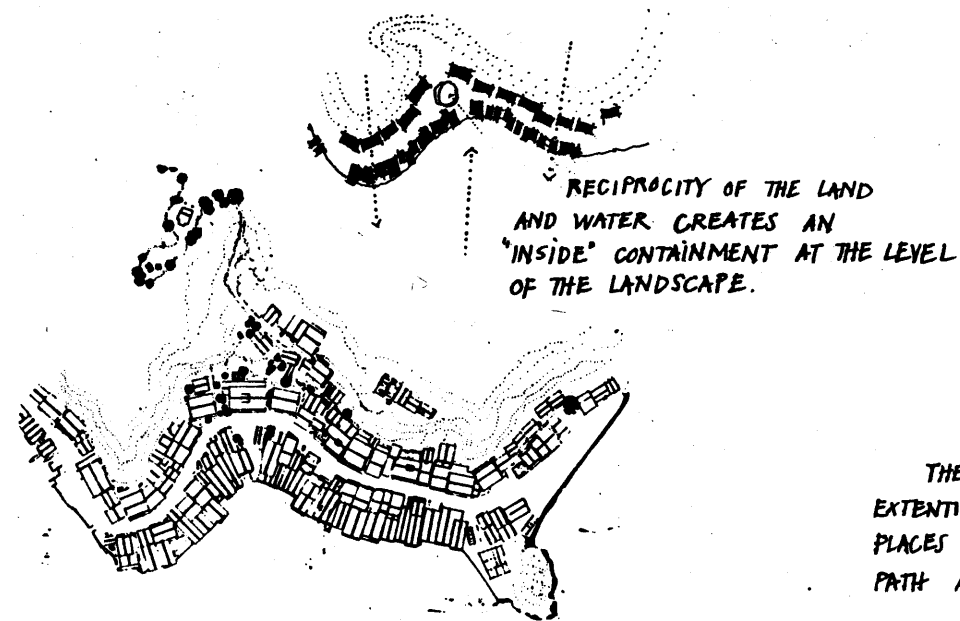
reciprocal definition: Ine Kama Yama, Japan

At the landscape level, the village of Ine Kama Yama shows how the reciprocity between the sea and the land establishes the territory of the village.

The landscape projects out in two places creating a small bay or containment, which when inhabited becomes the "inside" or containment of the village. Thus the "incomplete" lineal form of the village is transformed by the mutual definition of the land and water, without which there would be no "center" to the place.

At the access level the dwellings act reciprocally with path forming a variety of places and containments along the edge. At the water edge, the same process of definition occurs. Boat ramps contain small

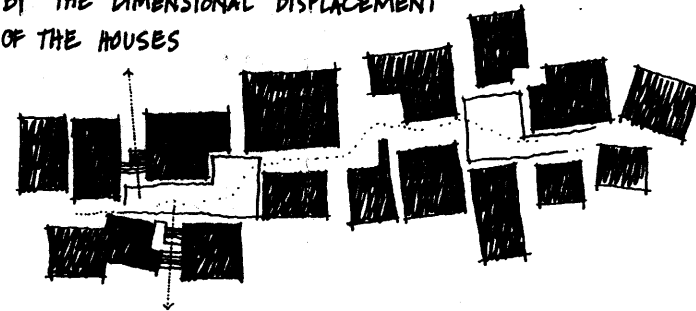
places of water within the houses while docks and platforms extend out into the sea, both acting reciprocally. The land defines the smaller places of water and the water defining the extensions of land. The principle of reciprocity establishing a greater sharing or continuity with a diversity of places.



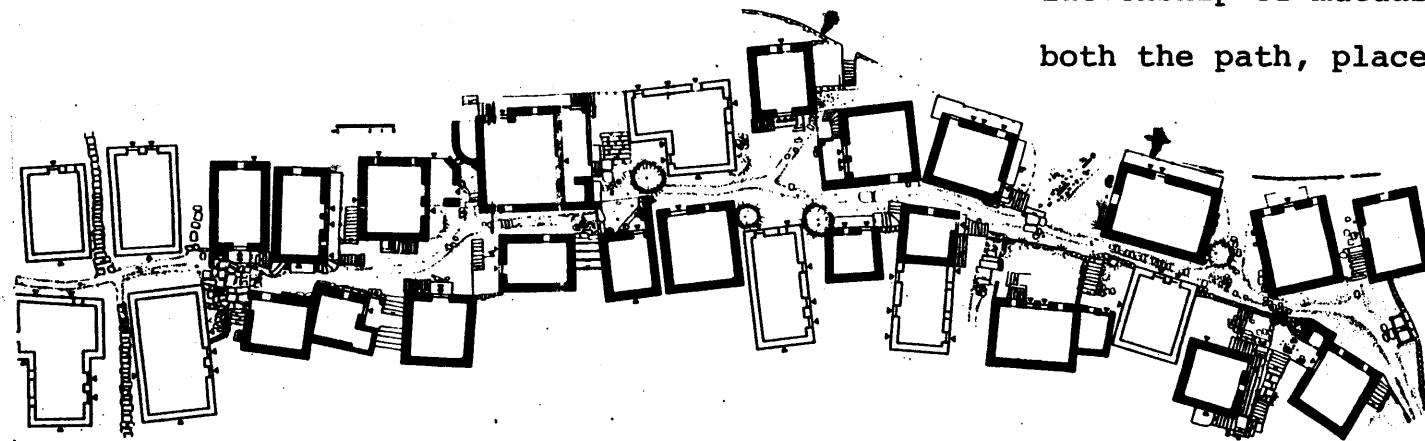
reciprocal definition:
 Sonogno, Switzerland

In the drawing of a street in the mountain village of Sonogno, Switzerland show a series of small gathering places along the path which organizes a set of entrances and secondary access.

A PLACE IN THE PATH IS RECIPROCALLY DEFINED
 BY THE DIMENSIONAL DISPLACEMENT
 OF THE HOUSES



These places are defined reciprocally through the extension and displacement of the houses. There is a relationship of mutual definition of both the path, place and dwelling.



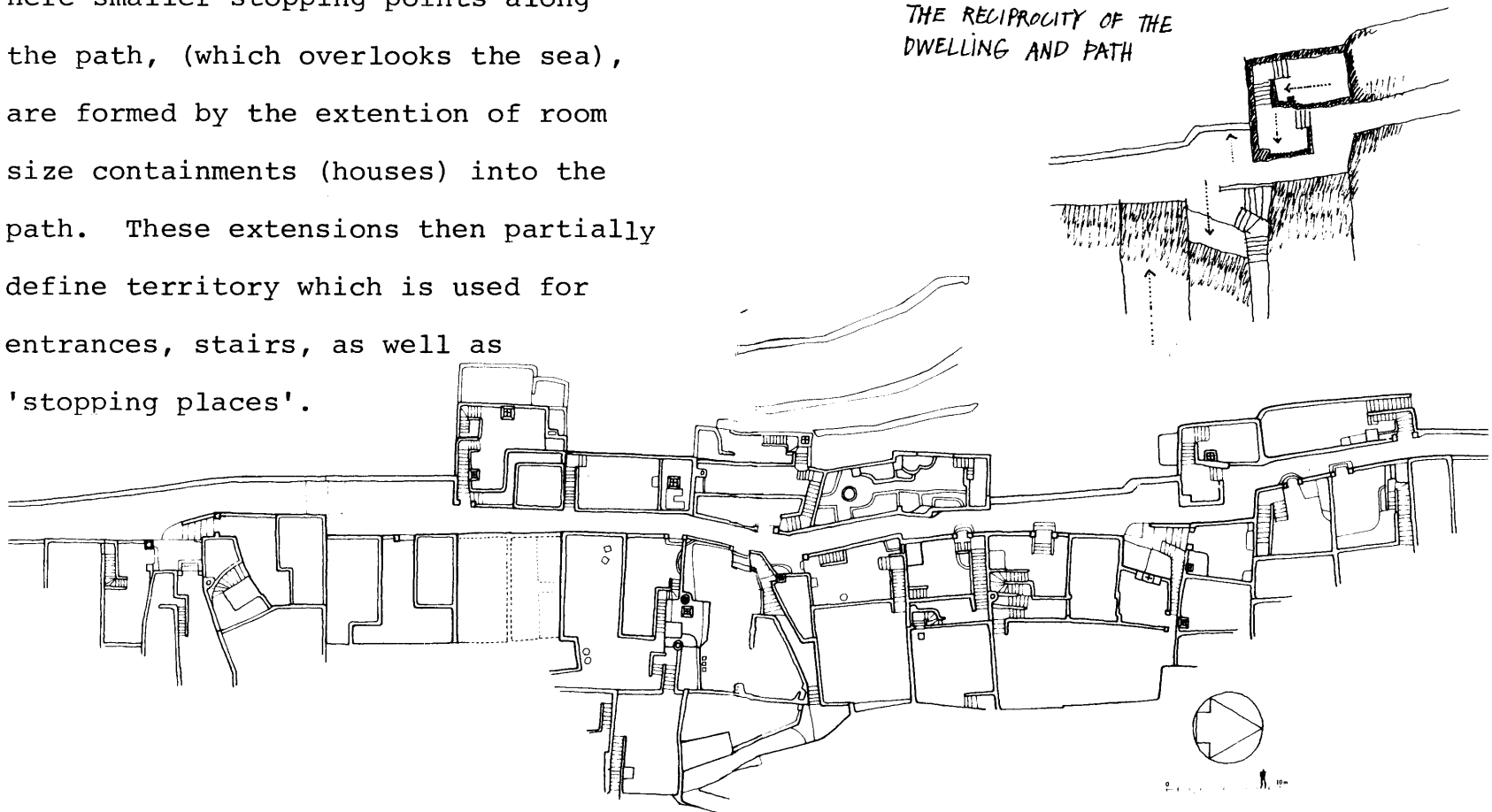
reciprocal definition: Santorini, Greece

A street in the Greek village of Santorini is an example of the same principle of reciprocity at the access level.

Here smaller stopping points along the path, (which overlooks the sea), are formed by the extension of room size containments (houses) into the path. These extensions then partially define territory which is used for entrances, stairs, as well as 'stopping places'.

Again, there is a mutual definition of places which establishes a continuity of form, and use.

THE RECIPROCALITY OF THE DWELLING AND PATH



Zone of Exchange

4.3

The linkage "to mediate" describes a link as a "functional transition" between places, as between a street and house.¹

Van Eyck refers to such a continuity in one of his stated "twin phenomenon" of "motion-rest". Both these intentions point towards the need to establish a continuity between places.

Maki states that "forms (in collective form) have their own built-in link".²

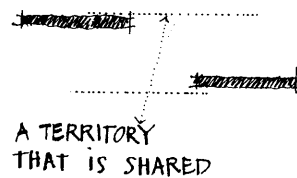
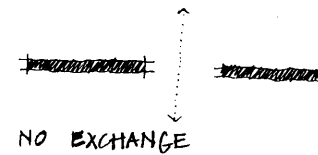
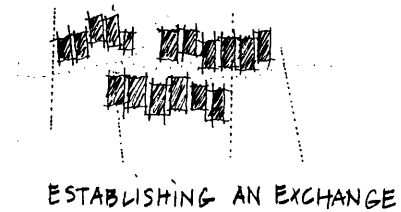
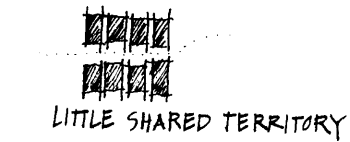
The implication is that there is at least a virtual continuity of place, definition, and use, in collective form. This is more usefully seen not as a separate element or "link" which "connects" the forms, but as a territory which provides a sharing between definitions i.e., a zone of exchange.

This zone of exchange allows for more diversity of definition and optional association in that the "place" between things i.e., the landscape and the village, or the path and the dwelling, can associate with qualities of both worlds. This provides one with more choices and experiences while making a larger unity more understandable.

The key here is again the level of completion found in the definition. As illustrated in the references, if the total form of a village were of complete containment, the sharing of a continuity with the landscape through some kind of territorial exchange would be virtually impossible.

The partial definition of places at the zone of exchange is what allows for this continuity. The territory between the path and the dwelling defined by a porch, level change, or displacement of a movement, creates a sharing between the two. The form and use of the zone is provided by both the dwelling and the path.

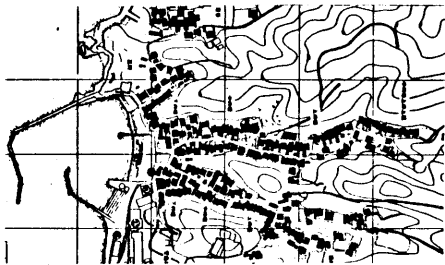
The task then is always to build a continuity of exchange between places, by providing territory which is part of both.



collective form references
exchange between definitions

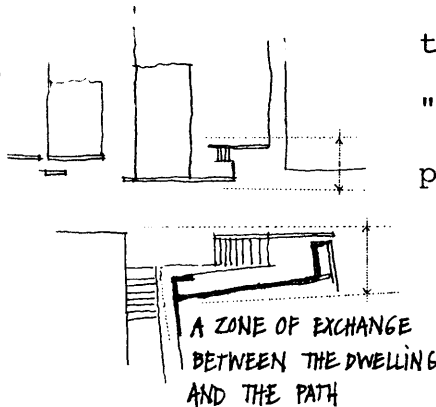
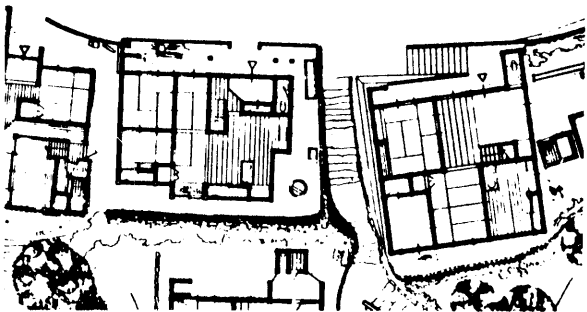
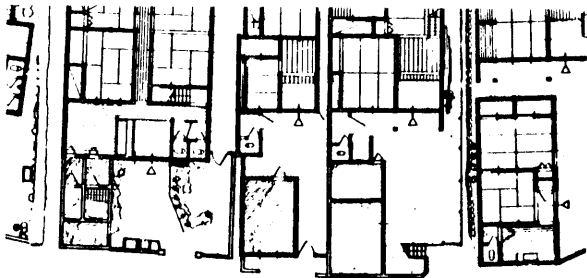
exchange between definitions: Okino Shima, Japan

The village of Oki No Shima inhabits the zone of exchange between the water and hills. Within the village one can experience openness of the



sea and the closure and containment of hills. There is an exchange between the landscape and the village form which allows for the hills and the flow of water to become part of the "place".

At the path level, whenever there is a change in direction or access a partially defined territory is introduced. In the example, where the steps to the dwelling and the secondary path are located, there is a territory defined by a low wall. This "place", by being part of all three, provides a continuity between them.

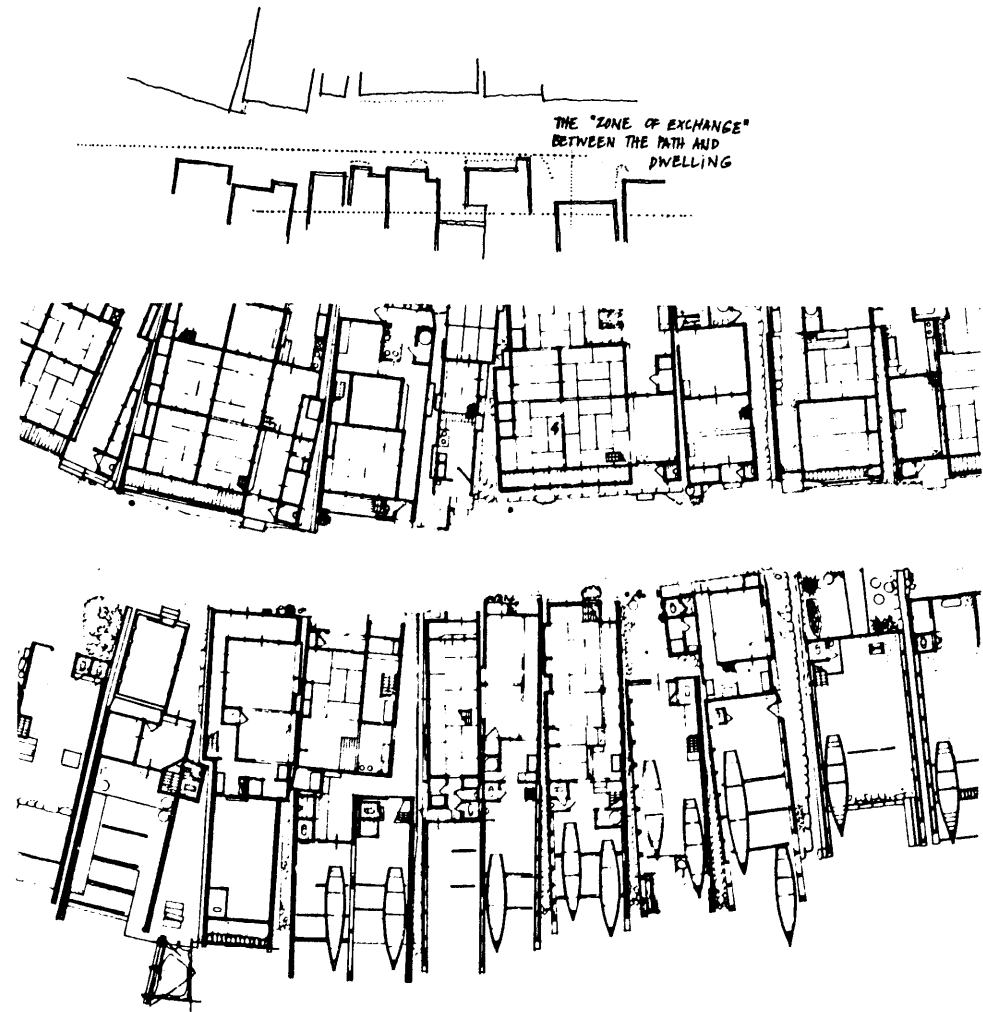


exchange between definitions:

Ine Kama Yama, Japan

This portion of the path from Ine Kama Yama, illustrates a "zone of exchange established by the displacement of dwellings. The boathouses step back from the path and partially define territories in front, along the entrances. This "zone of exchange is further defined by low walls and storage in front of the houses. This provides a place to stop, while still being part of the path, a place that "mediates" between "worlds".

The houses on the opposite side of path form a more continuous edge. Raised porches facing the street provide a place between the path and dwelling.





exchange between definitions: Pentadatiello, Italy

The Italian hilltown of Pentadatiello inhabits the territory between the rocks which establishes a "sharing" between the definition of landscape and the village form. A continuity is then formed between the world made by man, the houses, and the structure qualities of the landscape, the rocks.

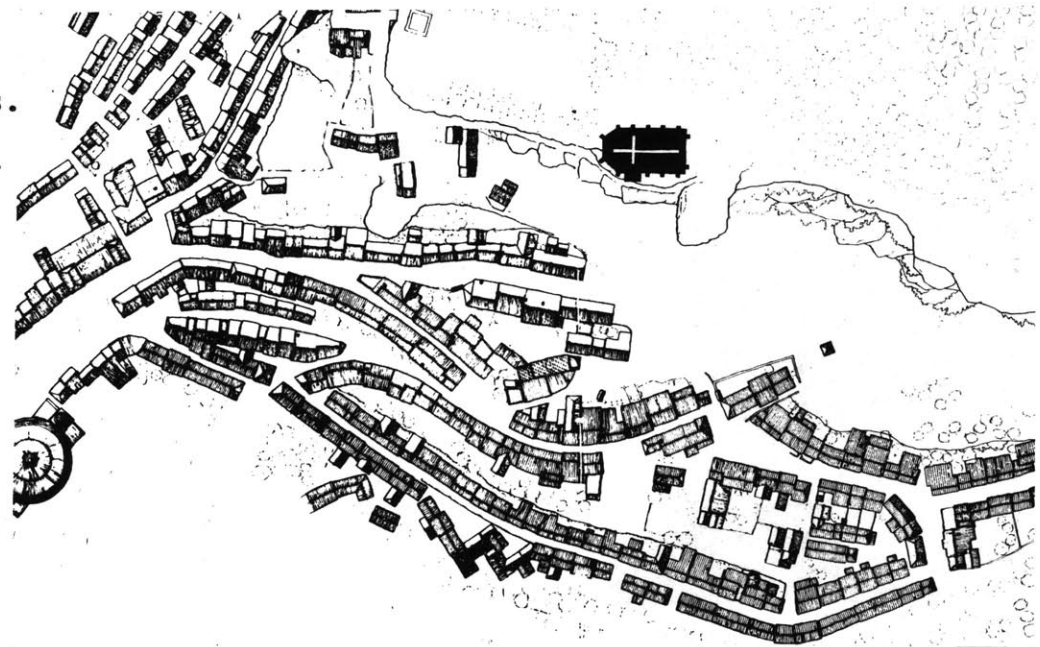
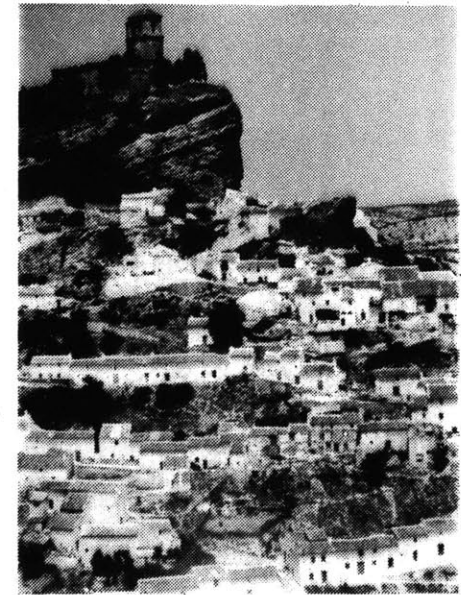
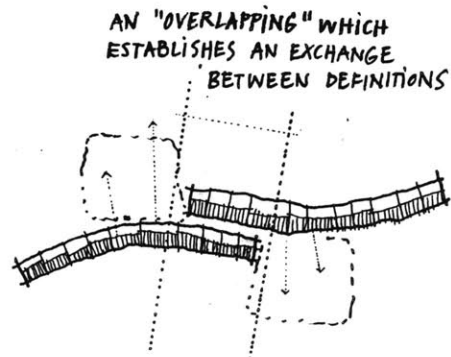


AN EXCHANGE BETWEEN :
THE LANDSCAPE AND THE VILLAGE

exchange between definitions: Montefrio, Spain

The Iberian village of Montefrio by terracing up the hill establishes an exchange with the landscape, one can still "read" the hill through the fabric of the village, this "sharing" of definition creates territories with dimensions that intervene between the rock and the size of the houses.

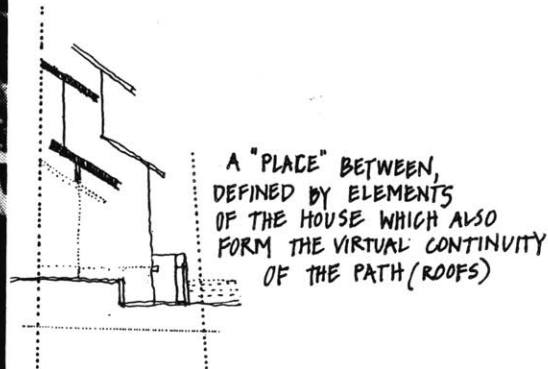
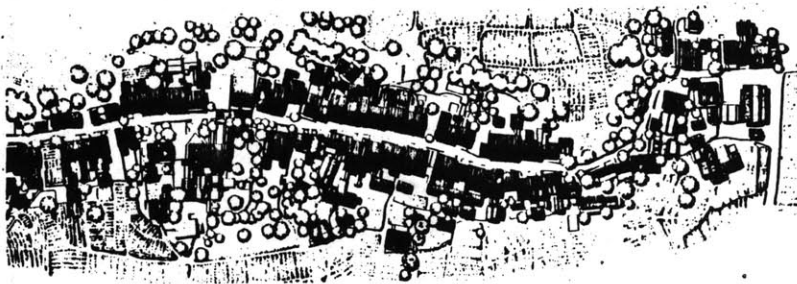
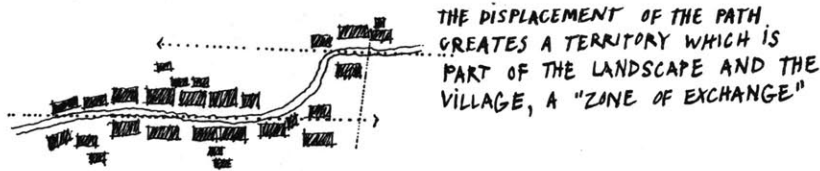
The aggregations of houses form a spatial exchange between themselves. This "overlapping" creates a continuity of definition along the path while providing a range of spaces in the village.



exchange between definitions: Ta Migo Ido, Japan

The village of Ta Migo Ido establishes an exchange with the landscape through the displacement of the path. If the lineal form of the place were to become more literal there would be none of this sharing. But the path shifts or "bends" allowing some of the landscape to become part of the village domain. In essence, the village is inhabiting the zone of exchange set up by the path displacement.

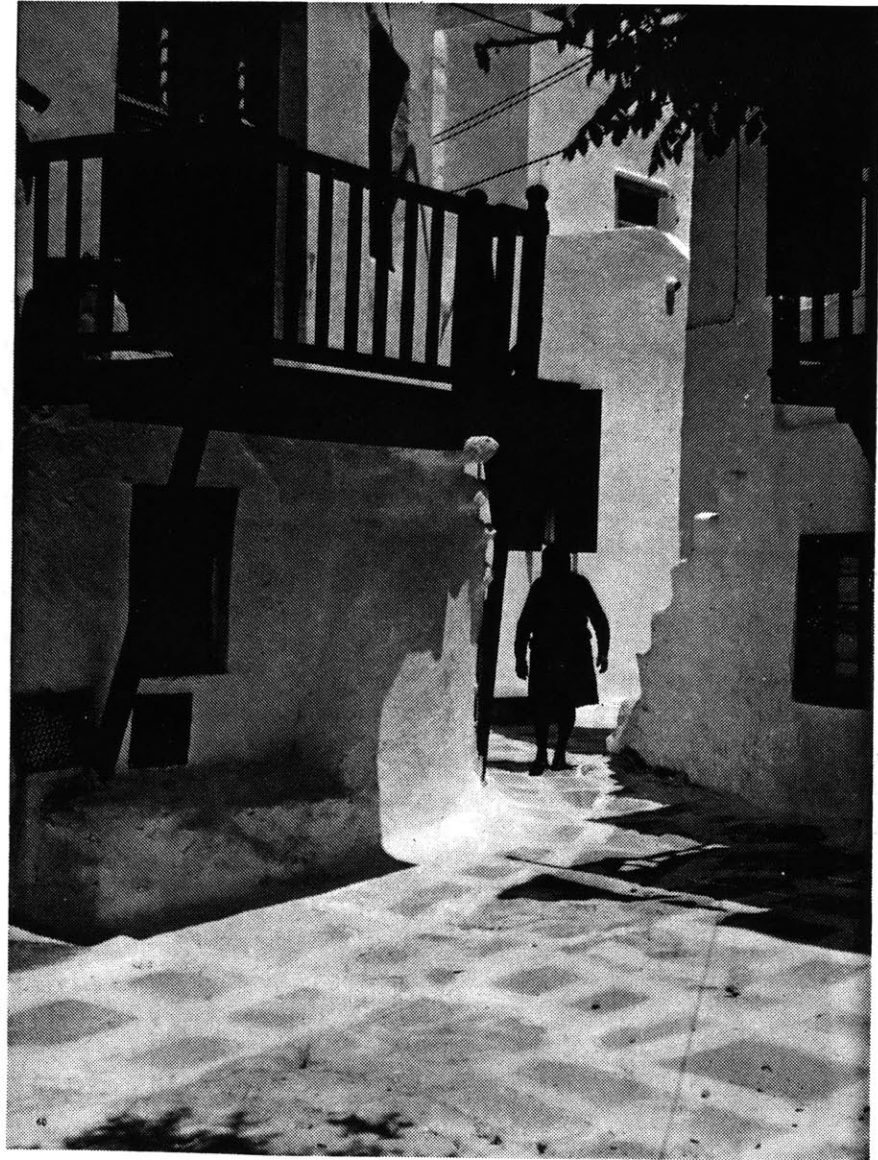
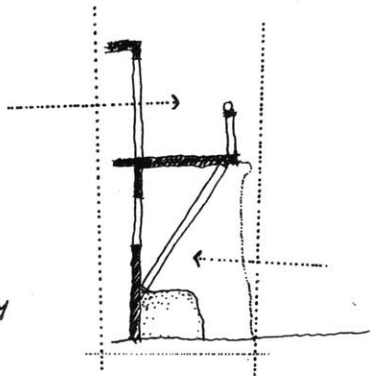
At the path level again a zone of exchange is established by simple elements of low rock walls, raised porches, small roof awnings and slight displacement of the houses along the path.



exchange between definitions: Mykonos, Greece

These examples are from Mykonos Greece and illustrate the establishment of a zone of exchange through the addition of balconies and steps. Here the territory between the houses and the path is defined by a level change and framework of the balconies, which additionally provides a shaded spot to sit. This territory extends the use of dwelling to the outside and provides a place to sit along the path; an exchange or a virtual continuity of territory.

A "ZONE OF EXCHANGE",
A PLACE DEFINED BY BOTH
"WORLDS", A VIRTUAL CONTINUITY
OF TERRITORY



Variation and Theme

4.4

"Inclusive generality is tested by the range of interpretation that is possible through optional variation. Look at some Italian village! While the organizational and building principles are very, very clear, the end results are not totally or repetitively predictable. If they were, we probably wouldn't bother to stay and explore..."

- Maurice K. Smith, Plan 1980: Perspectives on Two Decades, p. 37.



1. NANTUCKET

A collective unity, as opposed to a uniformity, must exhibit qualities of growth which allow for options and diversity. The assemblage of such environments should increase the amount of information contained in the organization, or that is, add "differences which make a difference."¹

At the same time there is the need to provide a coherence to the whole. This need to find in the form, an expression of both the larger organization and the individual identity is in part provided by a system of theme and variation. Norberg Schultz states "In general 'theme and variation' allows for the expression of individual identity within a system of manifest common meanings."²

The continuity of a theme is referred to by Maki in the linkage "to repeat". "Give each element a feature common to all in the group so each is identified as part of the same order."³ What is unclear is how the assemblage of those "common" elements produce variations with meaningful differences. The "theme" must transcend the appearance of

"order" achieved by simple repetition and approach the underlying form which truly allows for collective multiplicity.

As Norman Carver states, "In spite of the endless variety and individuality of the spaces, the houses, and neighborhoods (of the Italian hilltowns) ...the underlying unity of form provided a sense of order."⁴

This continuity of "theme and variation" can be manifested in many forms, it can be seen as a system of spatial organization.⁵ For example, in Japanese villages the use of tatami mats gives a dimensional and use reference for the layout of dwellings, yet allows for a varied pattern to be generated. Theme and variation can be seen as an element of identification, as in gateways or doors, and are varied according to the individual user. It can also be seen as a continuity of materials and construction methods.

The framework structure and screen infill of Japanese villages has an intrinsic form making quality which produces similar but not identical definitions. The screens provide for a common



2.



3

way of infill, yet show variation in response to circumstance and identification.

Rock villages of the Alps exhibit a common use of material which intensifies the collective unity of the place yet there is no repetition of the total or complete form.

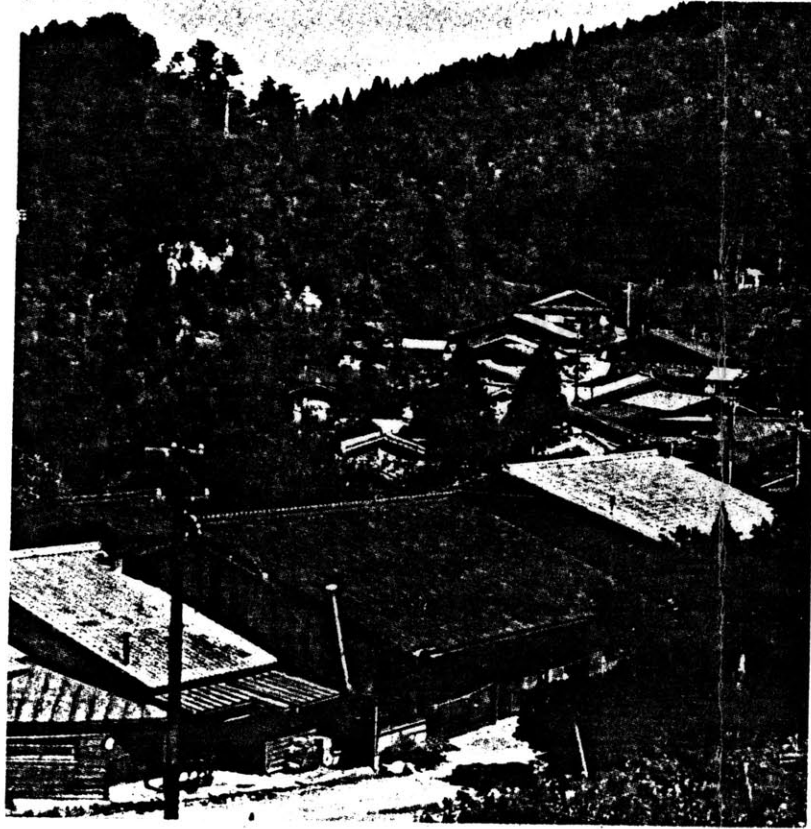
This kind of "theme and variation" is established by using a material in which its form making qualities are understood and used additively. The element which is repeated should occur at a scale where its assemblage or completion produces the variations, so that the total form is not repeated. This additive assemblage produces differences which are territorial and not merely appearance.

It is this finding of common elements, dimensions, and uses, which make an environment understandable as a whole. Additionally, it is the way in which elements are transformed and accept meaningful differences that make the possibilities and multiplicity of life known and useful.

"Given the context of most projects there's a major need for an additive growth form a way of working, because most often the size-zone is already over-restrictive and negatively over-formalized."

- Maurice K. Smith, Plan 1980: Perspective on Two Decades, p. 37.

collective form references
theme and variations



theme and variation: Ta Migo Ido, Japan

Ta Migo Ido can be used as an illustration of "theme and variation" established through a building system. The traditional Japanese wood construction consists of a simple pole framing system which is infilled with a variety of panels and screens, which are moved to open up the house.

Within this building tradition is a set of "rules" or "guiding principles" which direct the design and assemblage of these places.¹ This tradition of craft establishes the continuity of theme, an expression of collective knowledge, from which there is a range of variation, the identification of the individual.

The elevation drawings of Ta Migo Ido clearly show this. Here, all the houses are constructed within the same systems and yet there is complete variation, producing a "unity with a diversity".



theme and variation: Ine Kama Yama, Japan

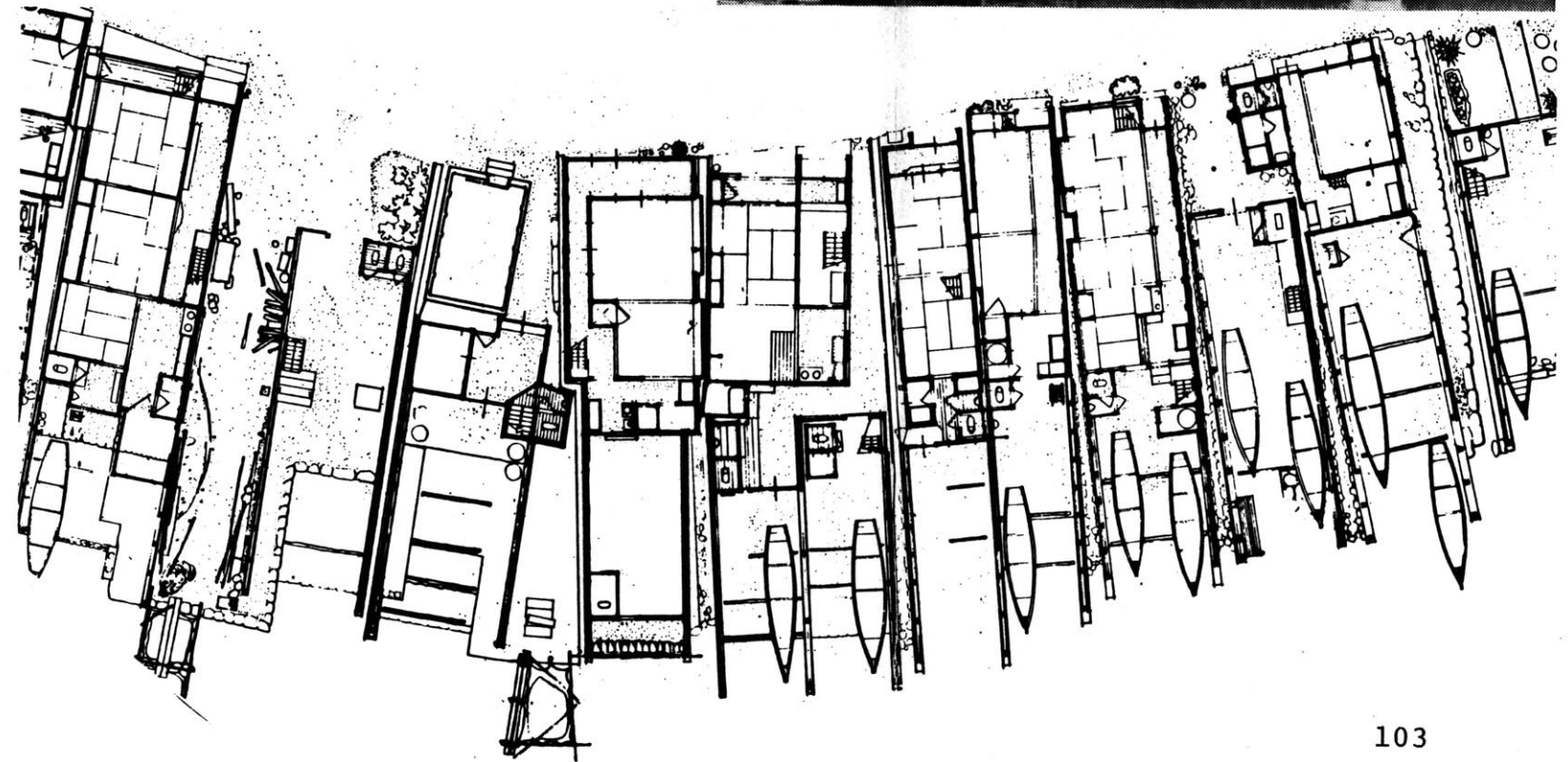
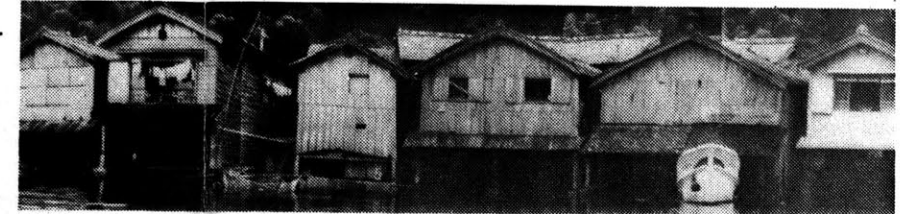
Using the village of Ine Kama Yama, another continuity of theme within the Japanese tradition can be illustrated. The use of the tatami mat in the Japanese house is a traditional way of organizing use, size, and layout. The mats are of a modular dimension and define room size, in fact, rooms are referred to as being "six tatami or four tatami, etc."

This provides for spatial organization, yet the tatami mat is small enough that its assemblage into a use size can generate many patterns.

Additional within the houses there is a certain amount of "slack" space which is not defined by the tatami.

This slack is used for access, cooking, and toilets.

All of this provides for a wide variation in terms of sizes and organizations within a common dimensional unity.





theme and variation: Italian Hilltowns

The Italian hilltowns of Pietra Secca and Indemini are illustrations of theme and variation within a building method.

Here the materials and technology are limited. The construction method is stone masonry with a few light timbers. This limited "palette" of materials and methods establishes a range of structural dimension and form qualities of the definition, a continuity of form making. Within this "theme" though, there is a variety of sizes and assemblage. There is an order provided by the qualities of the material but not their final assemblage.

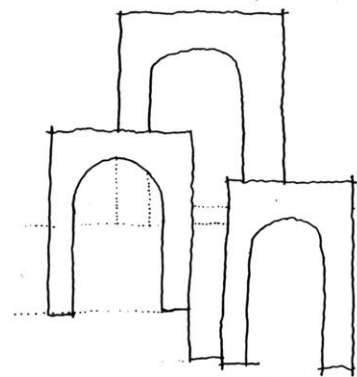
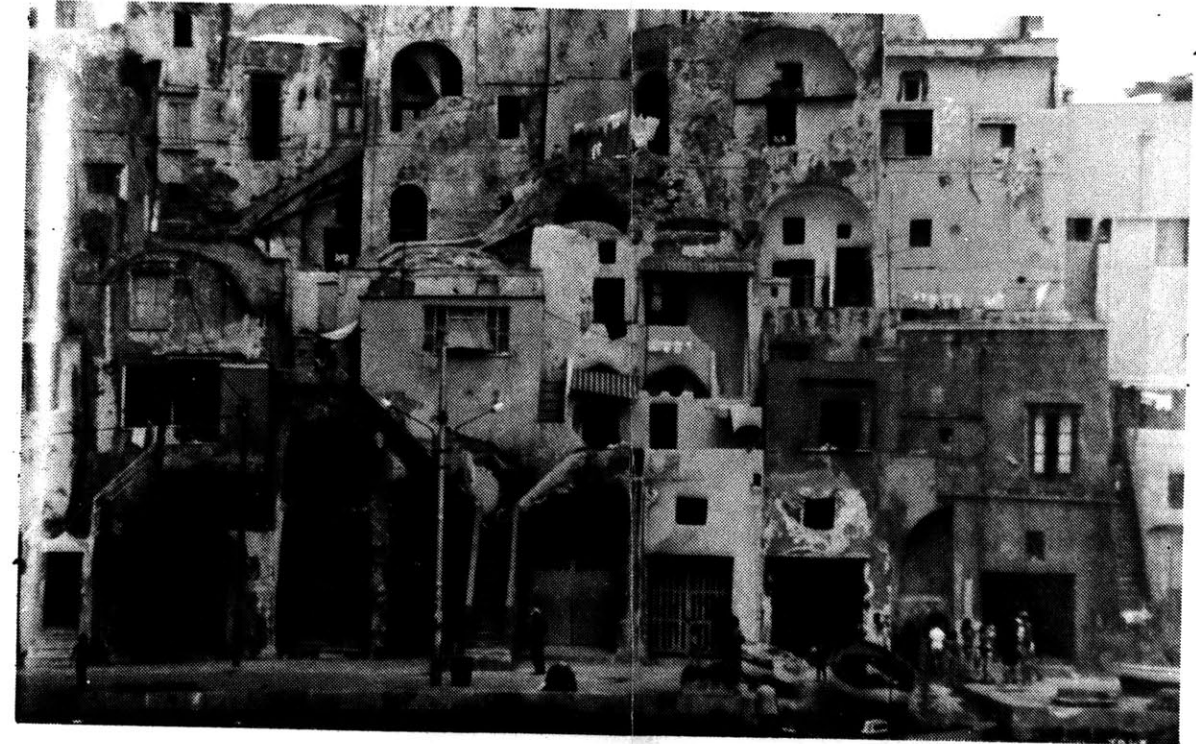
theme and variation:

Procida, Italy

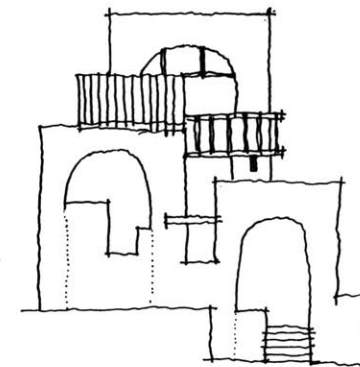
Procida is a fishing village on the Italian coast. Here the "theme" takes the form of a series of containments (arches) which establishes a "landscape" to be inhabited.

These arches when inhabited form houses, balconies, stairs, entrances. They provide a partial definition which can be optional completed and used. Thus, the "theme" of the containment produces a continuity of form, use, and association while exhibiting a wide diversity in the final assemblage.

A collective landscape with individual identification.



THE ELEMENT OF PARTIAL COMPLETION, "THEME"



THE ASSEMBLAGE AND INHABITATION, "VARIATION"



5

DESIGN STUDIES

The intentions of the design explorations are not in anyway to complete a "project", but only to illustrate the projection of the previously outlined "principles". Consequently the exercises are aimed at examining a design at different scales (landscape, access, etc.), and not in solving the entire problem.

The site for the design explorations is located at Worlds End in Hingham, Massachusetts. World's End is a private park reserve landscaped by Fredrick Olmstead. The reserve is located on a peninsula extending out into Hingham Bay with an attached "island" connected only by a narrow strip of land.

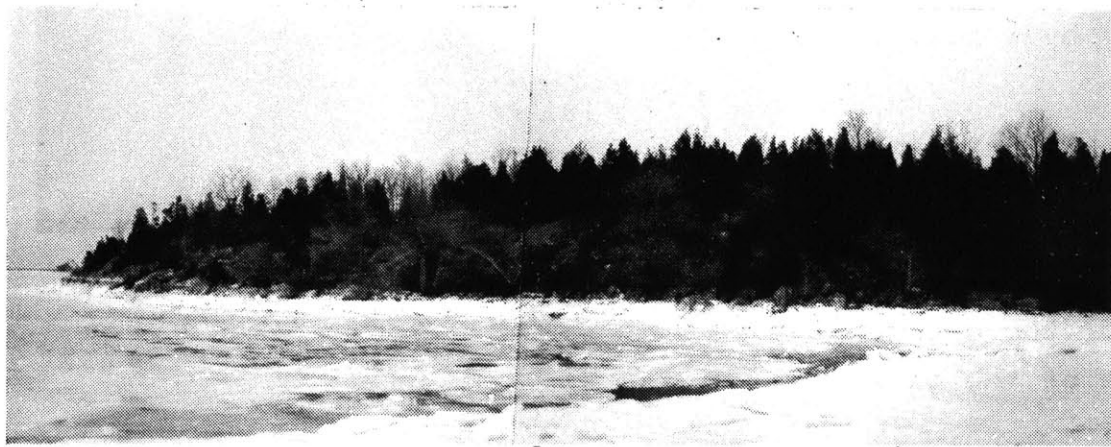
The landscape is dominated by large hills. Planter's Hill, on the main peninsula is 120' in elevation, making it one of the highest points in the area. The actual site for the design studies is on the northeast side of the park and



Oak, maple, and other deciduous trees are planted along the road and grouped closely next to shore on the west side of the site. The other side is covered almost exclusively with small fir and cedar trees. The road which passes through the site rings the entire park reserve.

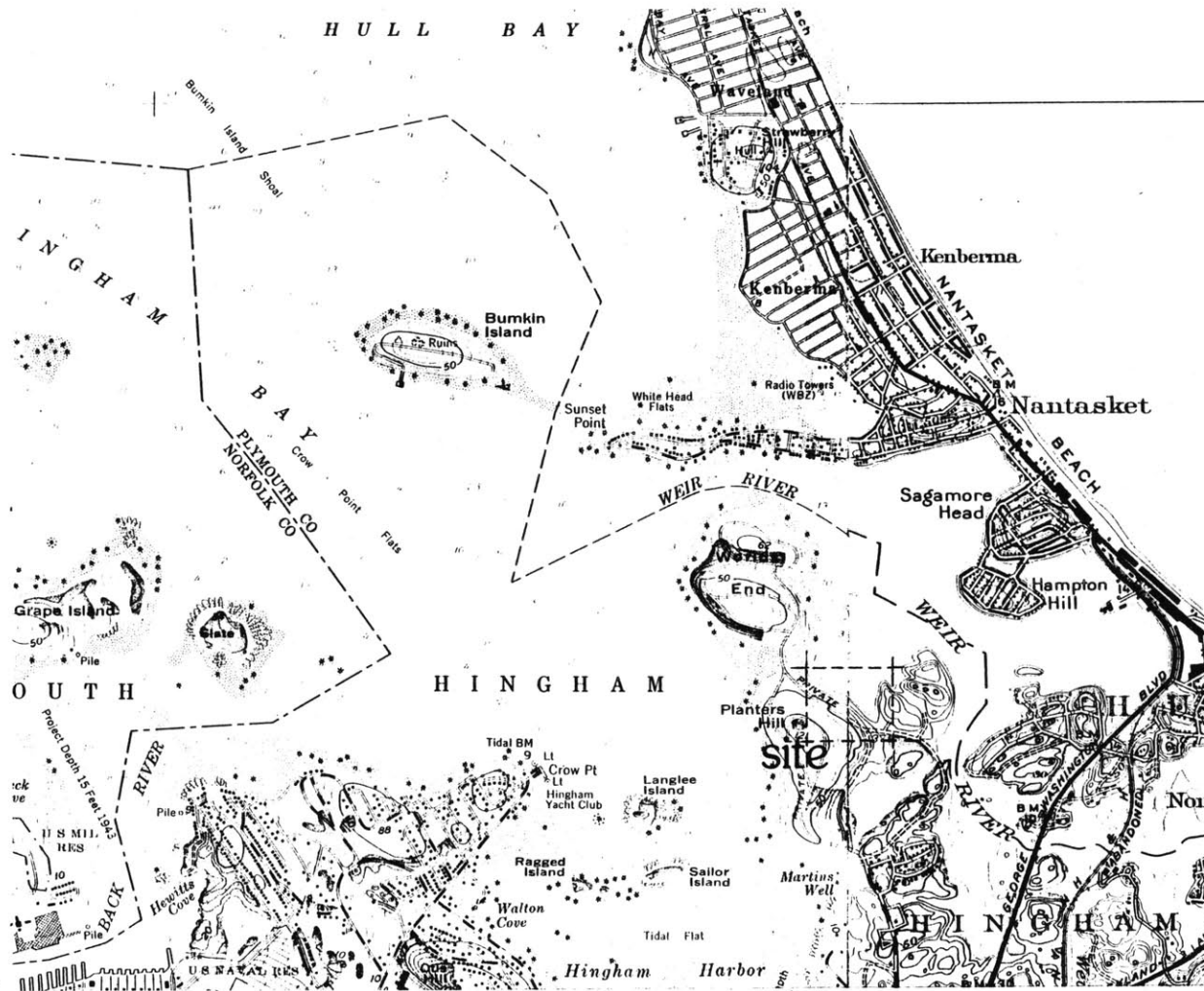
The materials used for the explorations are standard wood framing elements; beams, 2"x10" joists, frame walls, etc, and concrete masonry.

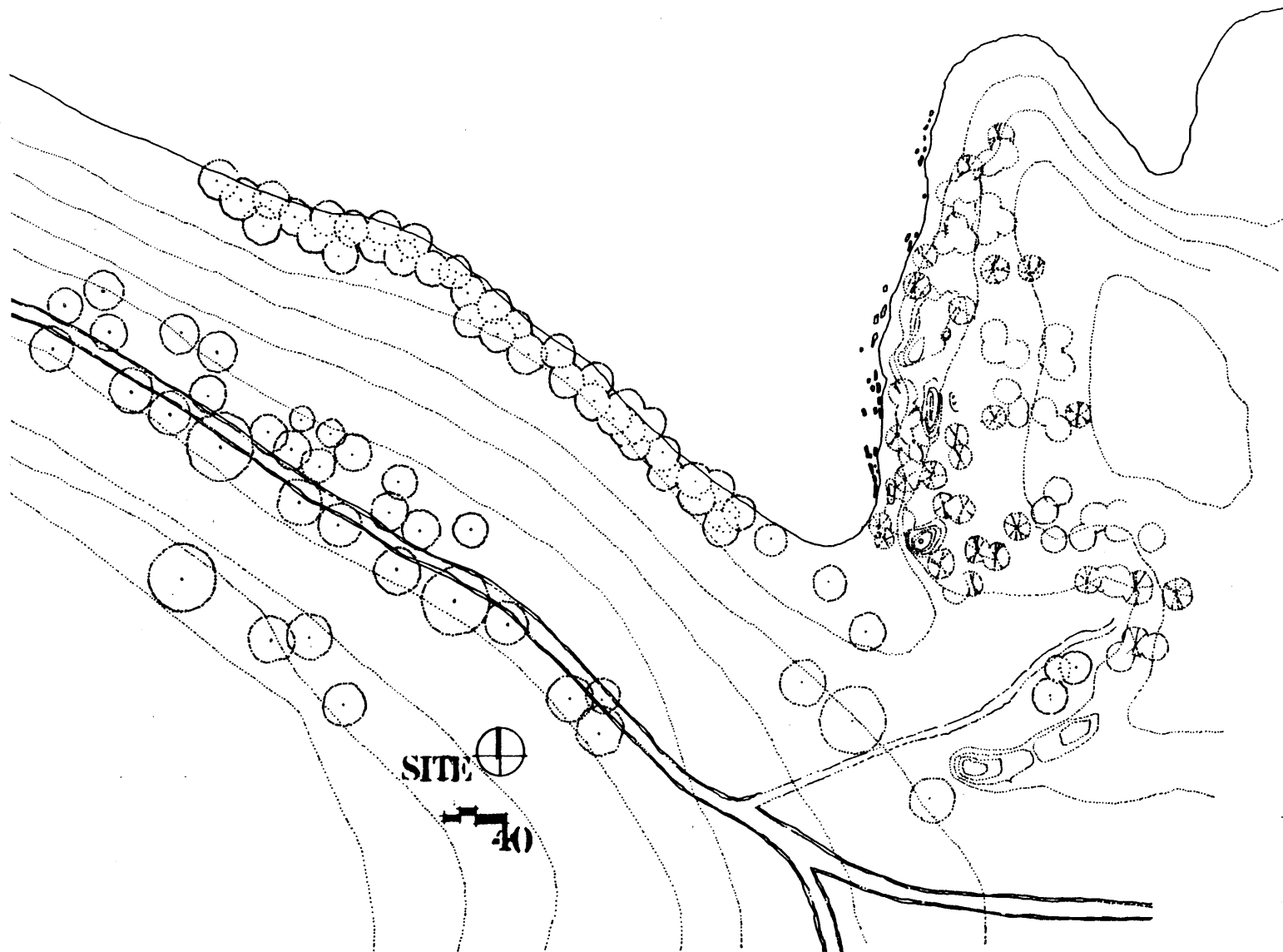
The program outlined for the design studies is for a small (20 housing units) research community. This would be a short term residency institute and includes some support facilities (library, workshop, and lab)


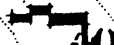




includes a small bay facing across to Hull. The site is characterized by a gently sloped, wide opened area on the west side of the harbour and a rocky densely covered area on the east side.

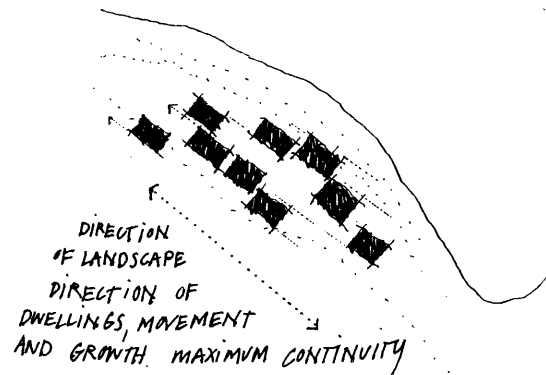




SITE 
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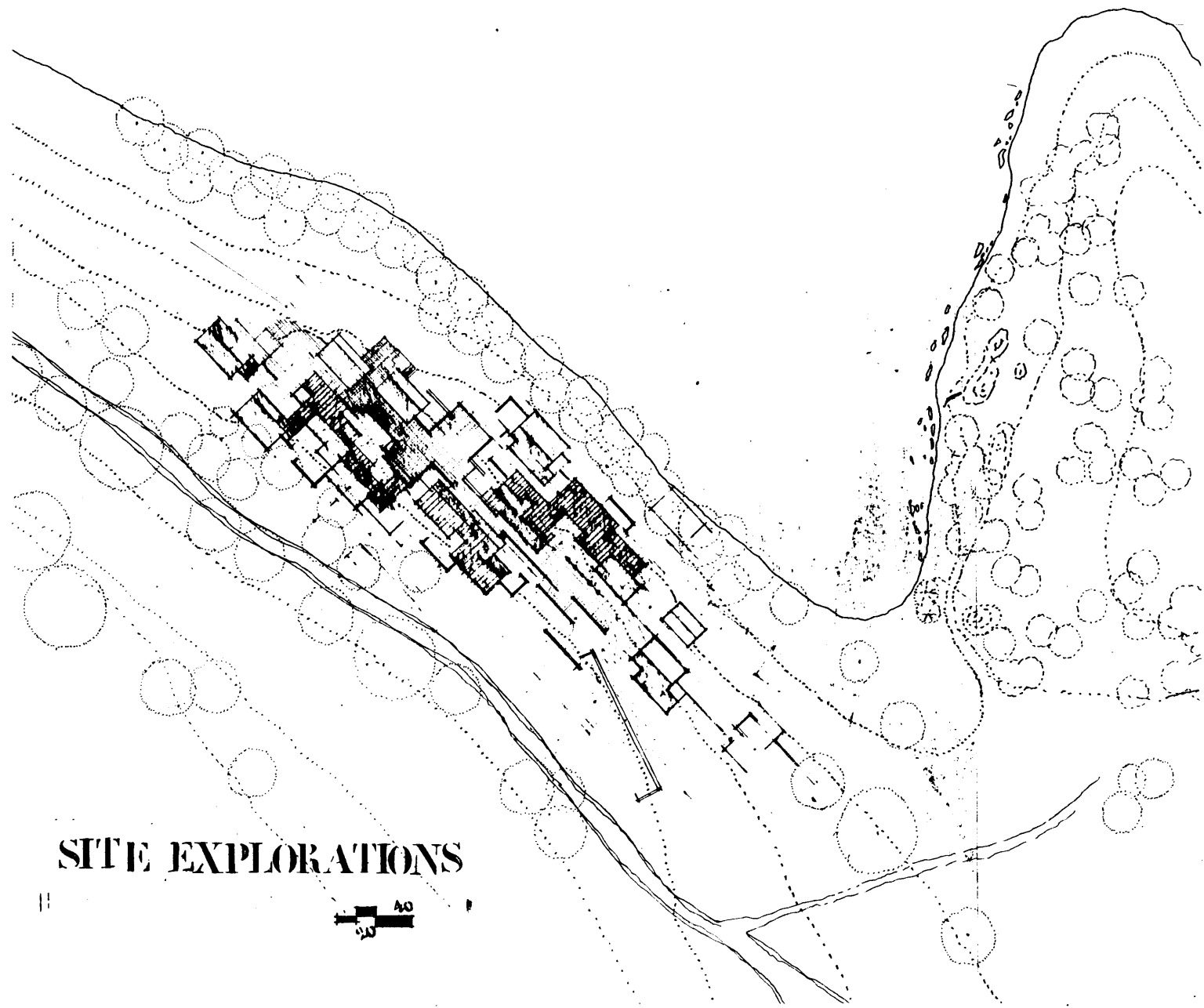
The location of the community of the west side of the bay, between the two groups of trees was explored first.

The direction of the hill and trees is intensified and transformed into the access and overall direction of the organization. Additionally the direction of the individual dwellings associate with the hill and extend to reinforce this continuity of landscape and movement.

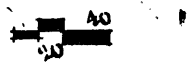


An exchange at the landscape level is accomplished by the displacement of the house within the field.

There is the beginning of a reciprocal relationship between the path and the dwellings which defines a series of "public" places.



SITE EXPLORATIONS

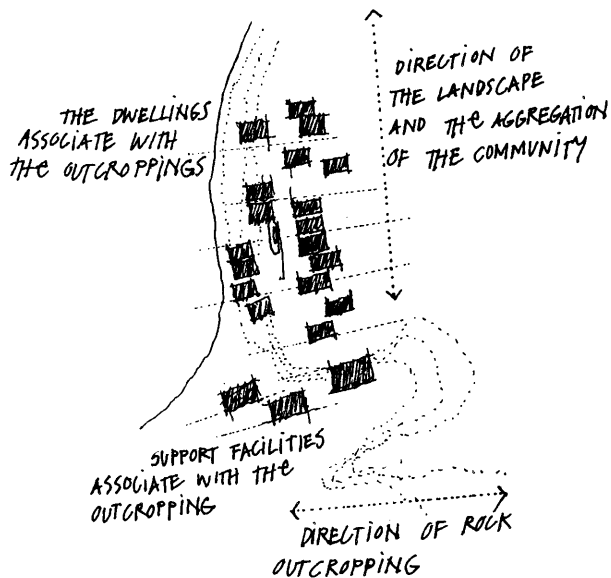


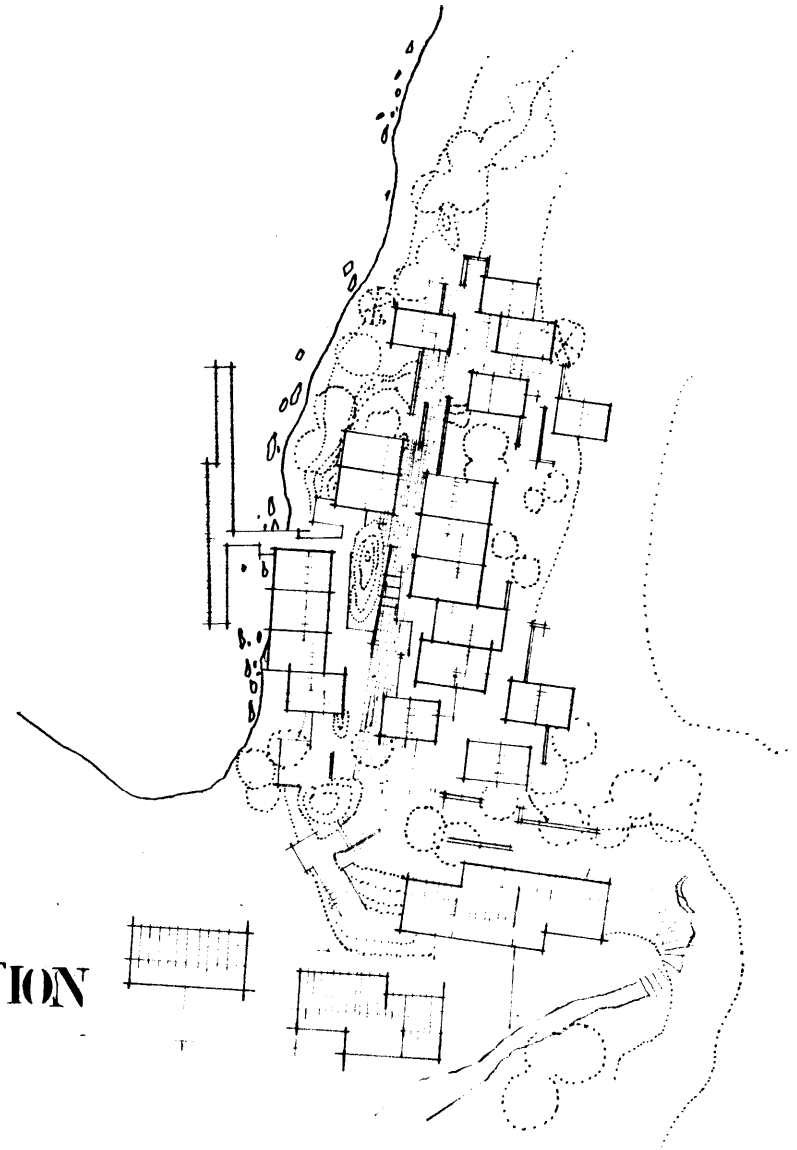
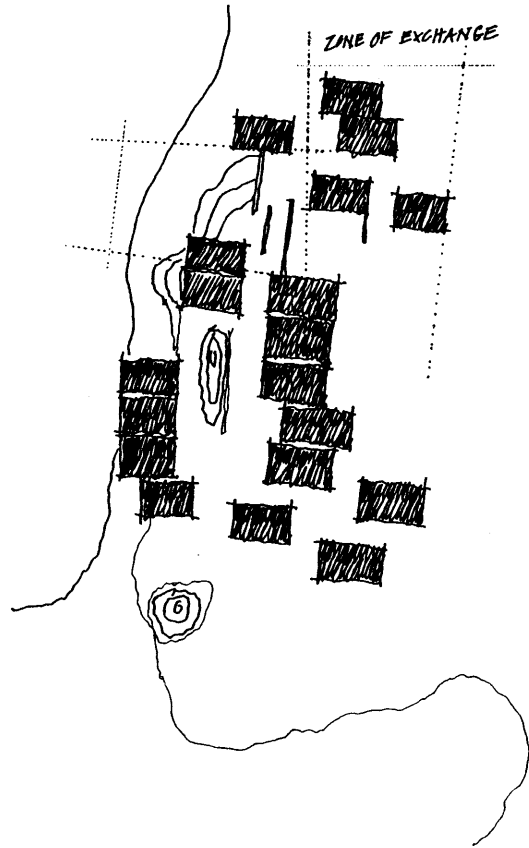
The eastern side of the bay is much more enclosed and exhibits a range of smaller dimensional qualities.

In general the land is directional in its dimension "along" the water, but the landscape is characterized by small outcroppings and rock ledges, which "build" the direction towards the water.

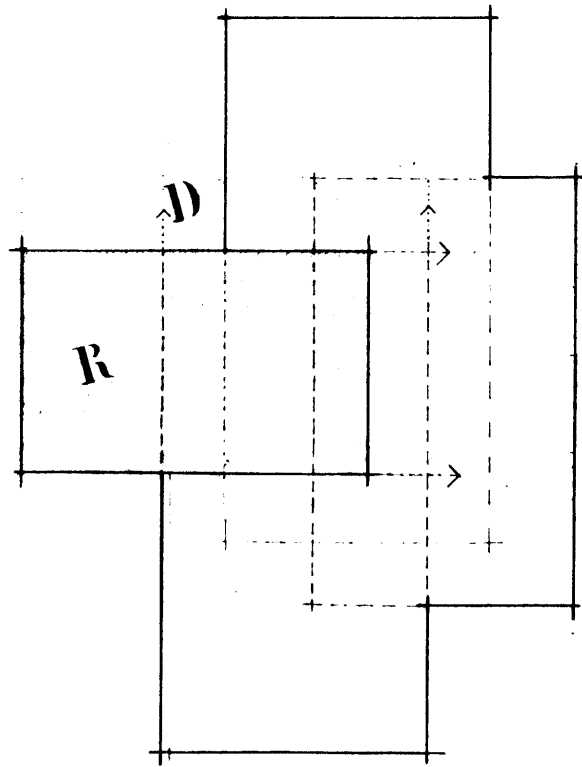
To establish a directional continuity then, the dwellings are aggregated to "build" the primary direction of growth and movement, but individually associate with the "rocks" and establish the direction towards the water.

This allows for a greater reciprocity of definition with the outcroppings and ledges and provides an exchange at the landscape level.





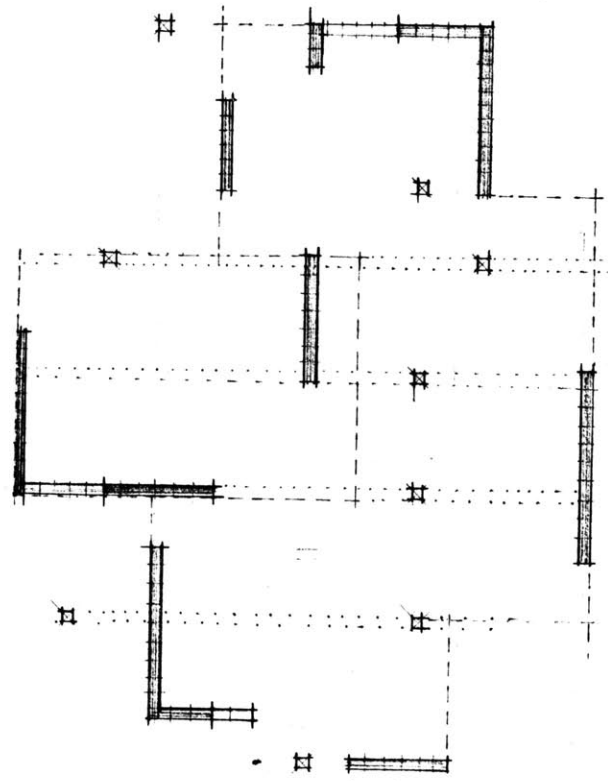
**SITE
EXPLORATION**



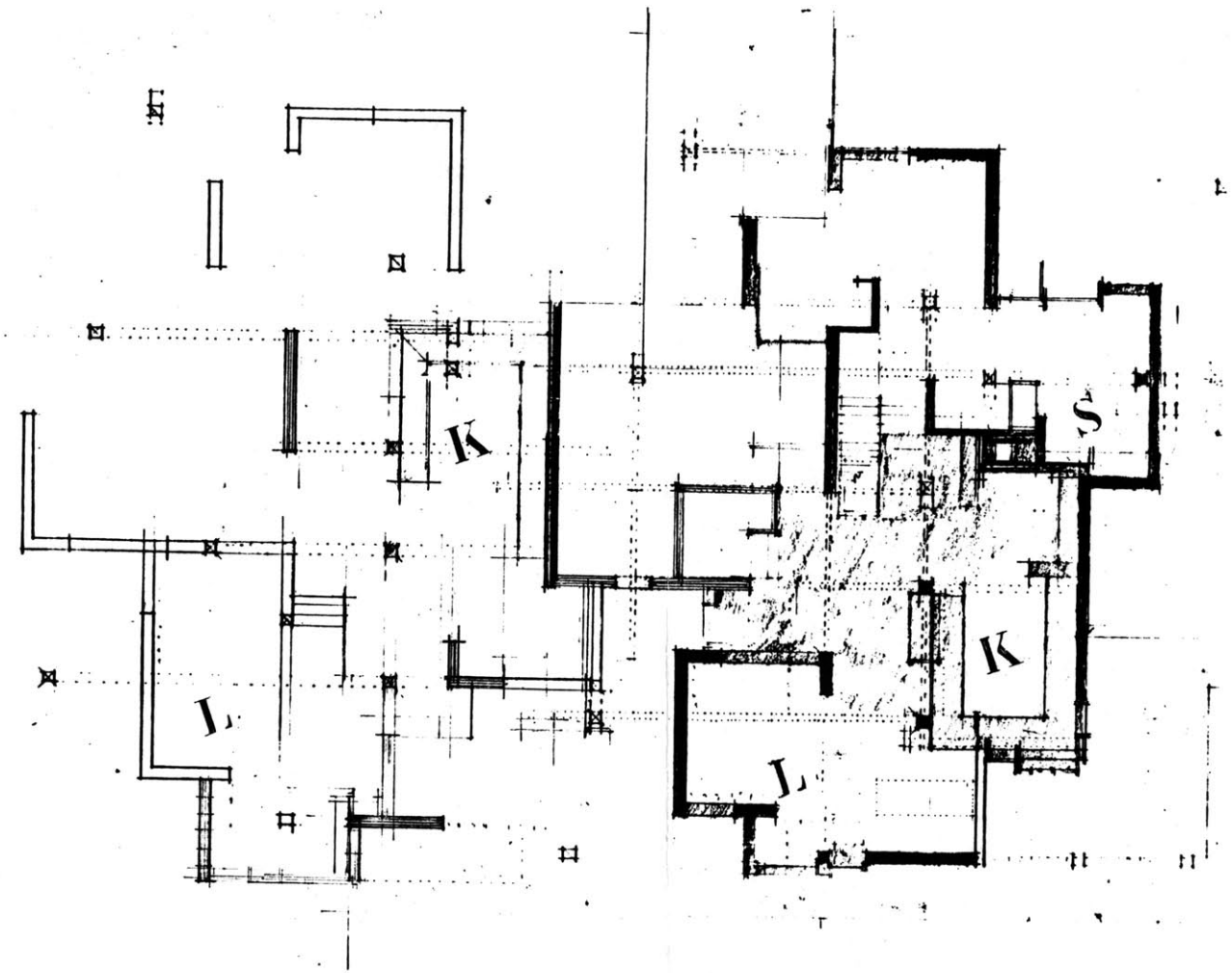
Using the east part of the site to continue the design explorations, the design for the units becomes the next level of study. Here a concept of providing a "footprint" to be completed in varying ways is explored.

The organization of the "footprint" is generated by the reciprocity of a "rock in the directional field of the unit. This "rock" is discontinuous with the organization of the dwelling, which defines it as a privacy and sets up territories of varying privacy around it.

Even though the "footprint" is incomplete, it establishes an understanding of growth and use while allowing for varying forms of completion. This "theme" is established in part through the form of the "footprint" and by the organization of the assemblage into different levels of definition, with the masonry and beam system seen as more primary with the infill walls, screens, and enclosures as having a range of optional definitions.



FOOTPRINT



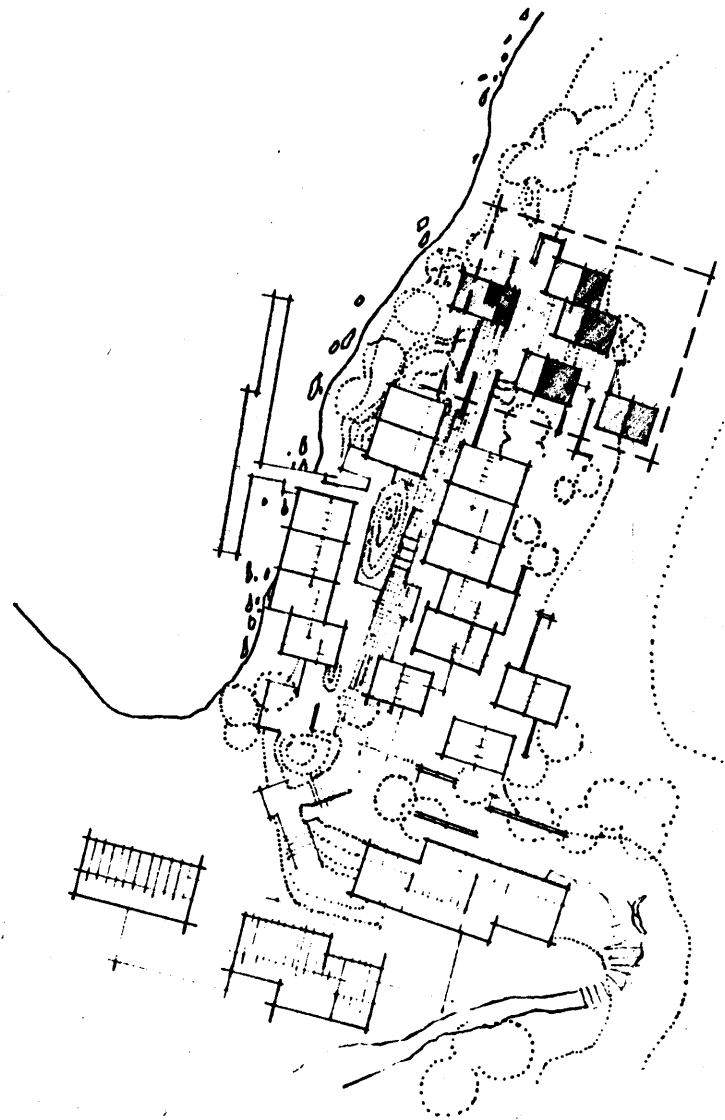
VARIATIONS STUDY

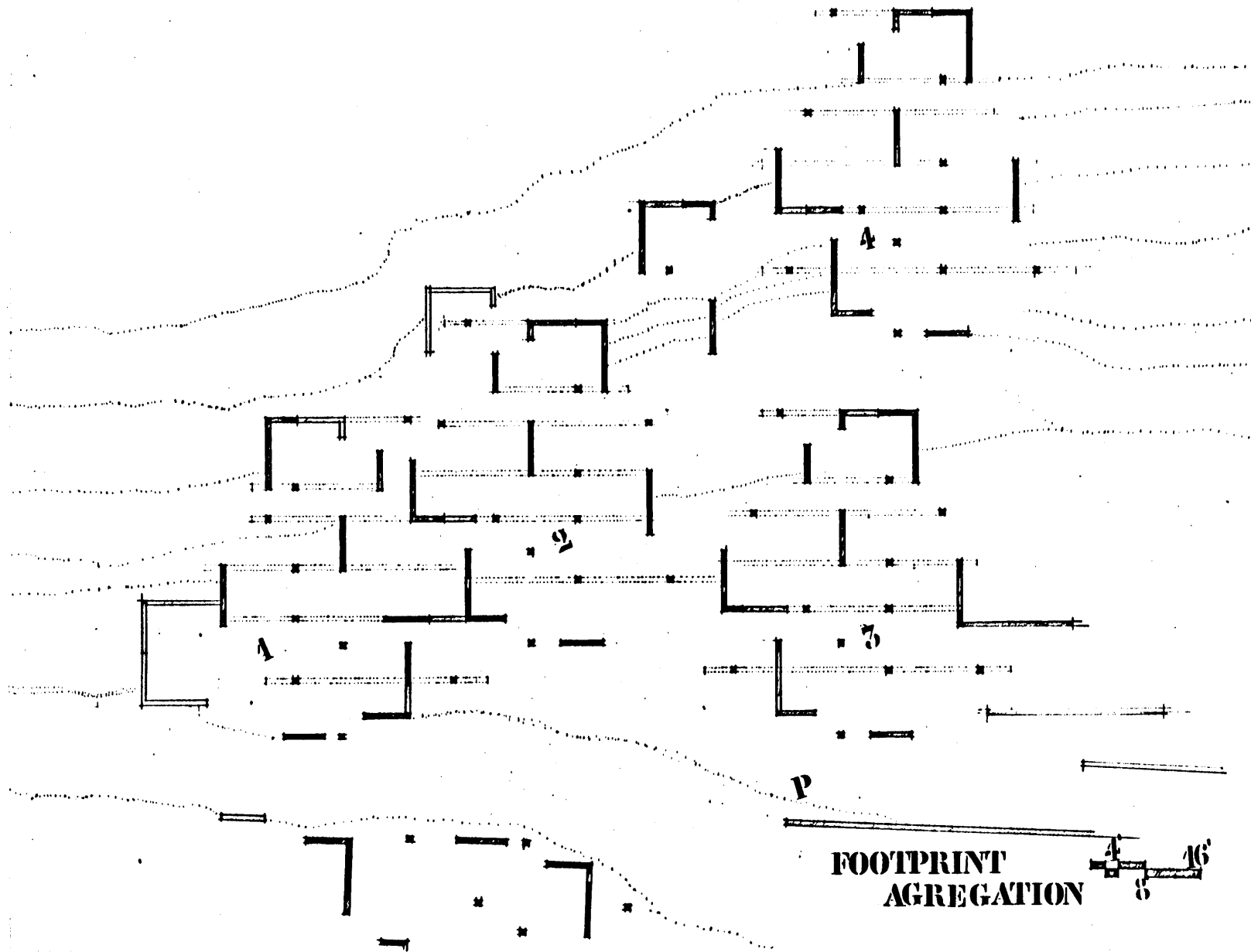
A piece of the larger organization is studied to explore the aggregation of the footprints.

This aggregation establishes a "field" which can be inhabited and completed in optional ways. The continuity of direction provides for and understanding of growth and use.

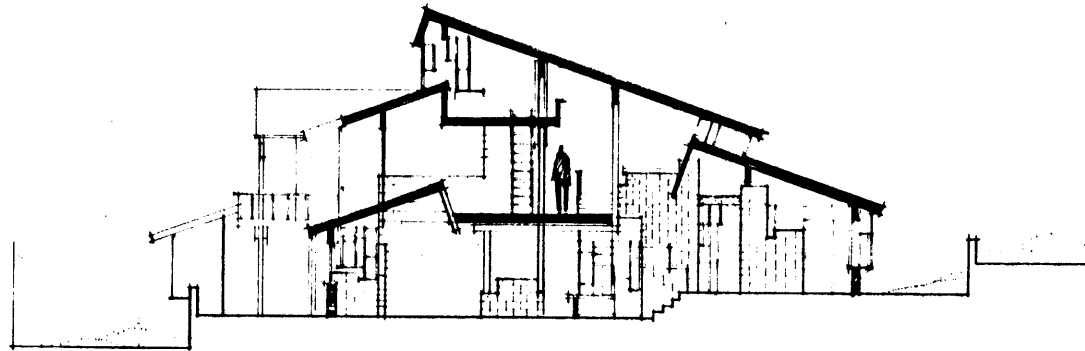
The degree of incompleteness in the "footprints" allows for the aggregation to define new territories and options; the growth is additivity in a way that allows for optional associations and uses not only on a room size but also on the territory shared between the "footprints".

These optional uses is in part the result of definitions which establish an exchange between territories. The aggregation also defines places reciprocally with the landscape, path, and between the dwellings.

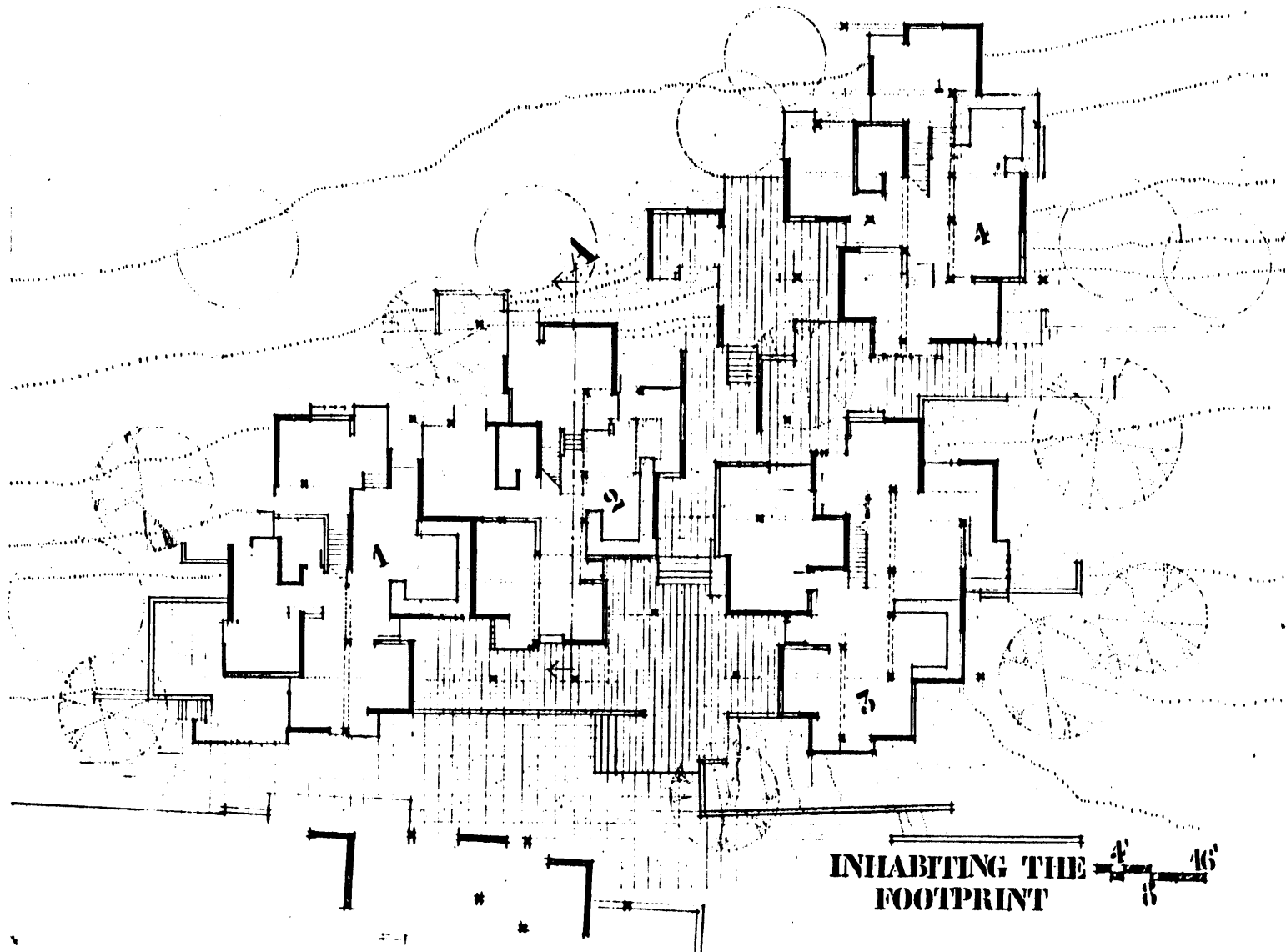




Inhabiting and completing the "footprints" begin to show the possibilities of the variation. Within a set of building materials, methods, and forms, there is a range of final assemblage which achieves a diversity within a unity.



SECTION A



INHABITING THE FOOTPRINT 4' 16'

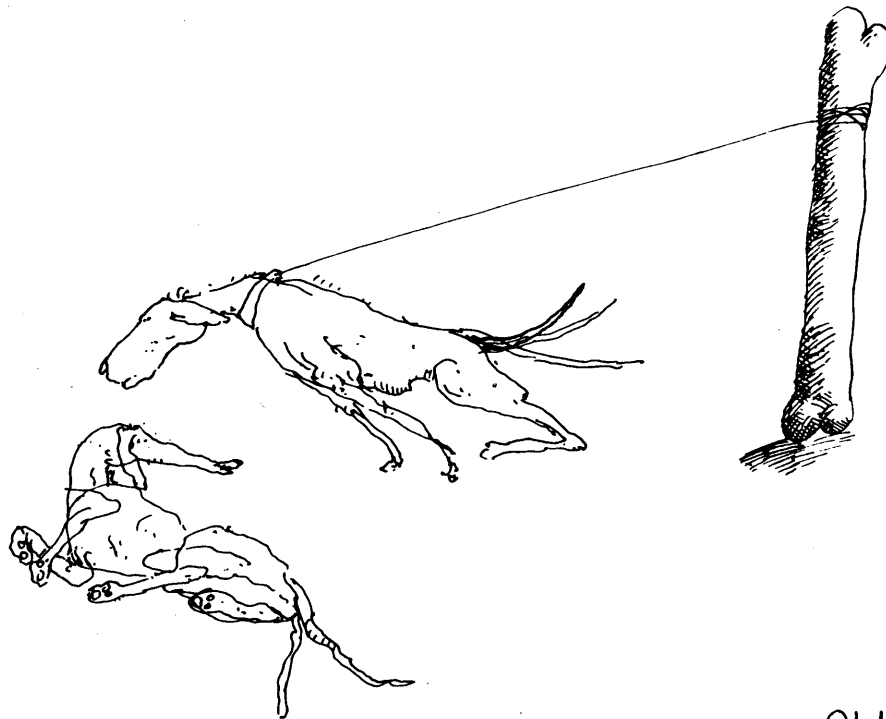
It is late, the papers at my feet
tell me that its time to make an
end.

Of course such endeavors are never
done, like any good place, there is
always one more addition which will
transform it, make it more inhabitable,
make it more like ourselves.

I only hope something has been shared,
although at this point, I must confess
even I'm unsure about exactly what has
transpired. But if you've followed me
this far, then something has been
exchanged. This is after all the
basis of the collective, individuals
exchanging views about this common world
from their absolutely unique vantage
points.

It is late, Ada Louise Huxtable recently
wrote that reading the theoretical writings
of architects today "is a new form of
cruel and unusal punishment" I must agree,
in the end it is always better to build.

EPILOGUE



FROM: SMILE IN A MAD DOG'S I
by RICHARD STINE

Old Prize Becoming the
New ~~New~~ Master by a Quick
Change in Subtle Desires

ILLUSTRATION SOURCES

Introduction:

1. Jencks, C. Post-Modern Architecture

Chapter 1:

1. Author

2. Lipke, W. Clarence Schmidt

3. Jencks, C. Post-Modern Architecture

4. Goldfinger, M. Arts and Architecture,
Feb. 1966

Chapter 2:

1. Jencks, C. Post-Modern Architecture

2. Norberg-Schulz, C. Genius Loci

3. Stamov, S. The Architectural Heritage of
Bulgaria

4. Carver, N. Italian Hilltowns

Chapter 3:

1. Safdie, M.

1.,2. Safdie, M. Beyond Habitat

3. Futagawa; F. Village and Towns; Italy I

4. Carver, N. Italian Hilltowns

5. Norberg-Schulz, C. Genius Loci

6. Carver, N. Italian Hilltowns

7. Norberg-Schulz, C. Genius Loci

8.,9. Goldfinger, M. Arts and Architecture
Feb. 1966

10. Costa, P. Arabia Felix

11. Harvard Educational Review, vol. 39

12. A+U Feb. 1978

13. Norberg-Schulz, C. Genius Loci

14. Herdeg, K. Structure in Indian
Architecture

15. Goldfinger, M. Arts and Architecture
Feb. 1966

16. Carver, N. Italian Hilltowns

17. Kenchitu Bunka, No. 272

18.,19. Carver, N. Italian Hilltowns

20. Village and Towns; Italy I

21. Norberg-Schulz, C.

21.,22. Norberg-Schulz, C. Genius Loci

23. S.D. no. 4

Chapter 4:

1.,2.,3., Hubbard, W. Complicity and Conviction

4. Carver, N. Italian Hilltowns

4.1

1. Blaser, W. The Rock is My Home

4.4

1. Author

2. Costa, P. Arabia Felix

3. Blaser, W. The Rock is My Home

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Japanese villages;

Kenchiku Bunka, no. 262, August 1968.

Kenchiku Bunka, no. 272, June, 1969

Chosa Nichiji, September, 1971

Italian hilltowns;

Carver, N. Italian Hilltowns,

Blaser, W. The Rock is My Home

Mykonos, Santorini, Montefrio;

Futagawa, Y. Village and Towns Series.

Sonogno, Switzerland;

Blaser, W. Architecture 70/80 in Switzerland.

Procida, Italy;

Everyday research. No.1 vol. 11
(Japanese journal)

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4. Arnheim, Rudolf, Entropy and Art. p.1.
5. Langer, S., Feeling..., p. 98.
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"It seems clear that we are all part of a larger unity yet we are amazingly different,...as every person always has been."
7. Alexander, Christopher, Oregon Experiment. New York, 1979, p. 12.
2. Norberg-Schultz, Christian, Intentions in Architecture. Cambridge, 1966, p. 13.
3. Schumacher, E.G., Earth's Answer. San Francisco, 1978, p. 96.
A discussion of the metaphysical basis for decentralization, I have borrowed it here for a "metaphysical prop" for the establishment of collective form.
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5. Dubos, Rene, Celebrations of Life. New York, 1980, p. 38.
6. Arnheim, Rudolf, Entropy and Art. p. 20.
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8. Maki, Fumihiko, Investigations of Collective Form. p. 32.
9. Alexander, C., op.cit., p. 13.

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8. Op.cit., p. 9.
9. Bateson, G., Mind & Nature, p. 9.
10. Pirsig, R., op.cit., p. 66.
11. Norberg-Schultz, C., op.cit., p. 62.
12. Norberg-Schultz, Christian, Genius Loci. New York, 1980, p. 166.
13. Norberg-Schultz, C., Intentions..., p.62.
14. Norberg-Schultz, C., Intentions... p. 150-151.

15. Pirsig, R., op.cit., p. 343.
A village might help someone in designing a collective school.

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"schema"... a set of knowledge which form the vision of a person.
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4. Hertzberger, H., Harvard Educational Review, p. 67.
5. Alexander, Christopher, Oregon Experiment. New York, 1980, p. 12.
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7. Maki, Fumihiko, Investigations in Collective Form. p. 19.
8. Op.cit., p. 35.
9. Op.cit., p. 36.
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11. Norberg-Schultz, C., op.cit., p. 142.
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12. Norberg-Schultz, Christian, Genius Loci. New York, 1980, p. 48.
13. Smithson, P., ed. Op.cit., p. 100.
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15. Maitkach, P., in Perspecta 6, "Mykonos and Pathos". New Haven, 1968.
16. Carver, Norman, Italian Hilltowns, p. 7.
17. Maki, F., op.cit., p. 19.
18. Op.cit., p. 19.
19. Harvard Educational Review, op.cit., p. 181.
20. Smithson, P. ed., op.cit., p. 27.
21. Alexander, C., op.cit., p. 12.
22. Norberg-Schultz, Genius..., p. 18.
23. Carver, N., op.cit., p. 28.
24. Goldfinger, M., in Art and Architecture.
25. Norberg-Schultz, C., op.cit., p. 61.
26. Op.cit., p. 65.

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1. Riggs, K. and N. Smith, The Gifts of Froebel, as quote from M.I.T. M. Arch. Thesis by S. Imrich.
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3. Op.cit., p. 171.
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Section 4.3

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2. Op.cit., p. 19.

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