INHABITING THE HILLSIDE: projections

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B.S.A.D., Massachusetts Institute of Technology, 1979

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INHABITING THE HILLSIDE: projections

by Keith F. Giamportone

Submitted to the Department of Architecture on May 11, 1984 in partial fulfillment of the requirements for the Degree of Master of Architecture

Abstract

This thesis is an exploration of form in three projections for inhabiting the hillside. Each projection encompasses a different approach or focus. The first, in Chelsea, Massachusetts, is within an urban context; the second and third, in Highland, New York, are in a rural setting and study cluster housing and mixed-used high density, respectively. In addition, the third projection explores a variation on a structural mat transfer system.

The second part of this thesis is a collection of concepts relating to process, particularly architectural design, which implies a more inclusive attitude towards plurality in the mind set of designers.

Thesis Supervisor: Maurice K. Smith
Title: Professor of Architecture
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MY PARENTS (and family) - my deepest gratitude - for continued love, support and understanding.
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Introduction

This is a study of several approaches to designing for sloped sites. The first in Chelsea Massachusetts examines the extension of a dense urban fabric with dimensions similar to the existing city. It is designed with the concept of a bit(s), a piece smaller than a building, which lends variety when assembled additively to generate buildings. The second projection, in Highland, New York, focuses on an organization based on the social grouping of a neighborhood in a cluster. It then studies how these neighborhood clusters might additively aggregate on a sloped rural site. The last projection explores a structural approach to building on slopes which I term 'built promontory' within a larger field approach to dense building on a rural site. This approach is concerned with preserving the natural landscape while building a high density community. All three projections reflect a concern for the process and working method and are therefore not product oriented. It is a search to better understand paradigms appropriate for design. There is no intention of stating or defining the paradigm. The focus is based largely on an approach sympathetic to the work of Maurice Smith, Jack Myer and others at M.I.T. There is an appreciation of nature and the organic methods of Aalto, Scharoun, Wright, and the traditional Japanese. It is also a world of metaphors and analogies. Jim Batchelor in Landscape as a Reference for Design described an approach to design an an amalgam of several peoples methods. He derives his principles from the perspectives of:

Maurice Smih- Landscapes as a source for Habitable Forms
C. Norberg Schulz- Landscapes in Cultural and Architectural Anthropology.
Jack Myer- Associations between Landscapes and Life Processes.
Kevin Lynch- Perceptual Landscapes

Alice Sung, in On the Edge, draws 'parallels' between a number of approaches:

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

This implies that there are connections in these different approaches which are similar in attitude and that they collectively form a paradigm for designing. It also allows the designer to shift from one perspective to another when designing. Both theses address a 'multiplicity of concerns' as a model for design. I refer readers to these two documents for a more in depth explanation of an approach similar to my own.

There is an interest in process at a more general level - that of problem-solving. Several thoughts, notes and quotes are gathered about process. Ultimately, there is a link between the way one works and thinks and their attitude. I hope this will spark the reader to investigate this area for themselves rather than 'draw conclusions from this.'

The second section is a collection of quotes and pictures that are meant to convey a more holistic attitude towards design. It begins to suggest that there is a richness and naturalness when thinking and form can comfortably embrace a variety of perspectives.
Projections & Process
We contended earlier that environments that please us are those which heighten our capacity to associate and evoke our earliest unconscious memories and thoughts, those unadapted to reality which do not seek to solve problems but to satisfy desires, yet are structured and organized by rational thought which is adapted to our society.

What we regard as highly satisfying works of art, even many natural things of beauty, contain broken symmetries. The symmetry is made manifest in some form yet it is not carried out to perfection. The contrast, making visible both sides of the act of becoming, demands appreciation. A soap bubble is beautiful. Somehow everyone would agree that it has a kind of simplicity, a coldness, which bars it from the category of great beauty. In fact, the very reflections and color changes which make it something other than a perfect sphere enhance its beauty. A cube of glass, too, is a beautiful object but no work of high art. If you see the work of a lapidary, a rough crystal, the crystallinity plain on some faces, but hidden in the matrix of others, it is a more satisfying object. I suspect we react to the fundamental thermodynamic quality: an expression of symmetry, yet one not allowed to dominate exclusively, just as it cannot in the real world, for some feature always breaks every macroscopic symmetry in the end.

Philip Morrison
One might say that imensity is a philosophical category of daydream. Daydream undoubtedly feeds on all kinds of sights, but through a sort of natural inclination, it contemplates grandeur. And this contemplation produces an attitude that is so special, an inner state that is so unlike any other, that the daydream transports the dreamer outside the immediate world to a world that bears the mark of infinity.

As in ourselves, the environment will never be devoid of unconscious associations or rational satisfaction, rather it will be the degree of dominance of one set of associations over the other.
Good environments activate the playful and fearful childhood yearning by conscious logical articulation. They acknowledge the real world, the existant order, but refer back to the sources of pleasure that have been rendered inaccessible by simple capitulation to the reality principle in order to gain the lost laughter of infancy.

A study on the aspect of process in architecture, Design: A Case History, by Jack Myer & Richard Krauss, points out that designers' "...principal activity was that of making space, forms." Of "...relating analytically gained information to its form consequences, of having form insights in accordance with their understanding of the problem." Secondly, "they exercised judgment by selecting what criteria to heed & neglect momentarily, then recasting the problem." Both of these occur in context, design being an iterative and dynamic process.
The anthropologist Castaneda complains to his teacher, Don Juan:

"For years I have truly tried to live in accordance with your teachings," I said. "Obviously I have not done well. How can I do better now?"

"You think and talk too much. You must stop talking to yourself."

"What do you mean?"

"You talk to yourself too much. You're not unique at that. Everyone of us does that. We carry on an internal talk. Think about it. Whenever you are alone, what do you do?"

"I talk to myself."

"What do you talk to yourself about?"

"I don't know; anything, I suppose."

"I'll tell you what we talk to ourselves about. We talk about our world. In fact we maintain our world with our internal talk."

"How do we do that?"

"Whenever we finish talking to ourselves the world is always as it should be. We renew it; we kindle it with life, we uphold it with our paths as we talk to ourselves. Thus we repeat the same choices over and over until the day we die, because we keep on repeating the same internal talk over and over until the day we die."

"A warrior is aware of this and strives to stop his talking. This is the last point you have to know if you want to live like a warrior."

"How can I stop talking to myself?"

"First of all you must use your ears to take some of the burden from your eyes. We have been using our eyes to judge the world since the time we were born. We talk to others and to ourselves mainly about what we see. A warrior is aware of that and listens to the world; he listens to the sounds of the world."

The practice of nonattachment can be considered an additional way to remove the normal restrictions on awareness. If there are no desires there is less bias at any one moment toward specific "tuning" of perception. Our awareness of the external environment becomes less restricted, less of an interaction, less a function of desire of the moment, and more like a mirror.
TRANSFORMATIONS
continuities:

FROM:

1. FIELD ORGANISATION
   a. directional
   b. multi-directional
   c. uniform

+ through:

2. TERRITORIAL "CONTROL"
   a. centres, "points"
   b. edges : l'registration 3:
   c. open field : containment development

+ with to:

3. SELF-STABILITY
   a. dimensional, directional, "normal"
   b. reciprocity: directional, edge(s) displaced
   c. light-dark, reversals
   d. proportion, "golden mean"
   e. balance, "composition"

ALL DIAGRAMS OF SELF-STABILITIES following:

A: "packed" DIRECTIONAL FIELD (stability); minimal number is 4 or 5
   (4 demarcations = 5 territories)
B: LATERAL displacement exchange, reciprocity
   (in directional field = registered)
C: directional, territorial, reciprocal, self-stable form,
   (the first)
D: "packed", directional, self-stable, additive field,
   multivalued (optional reversals)
E: dimensionally-stable (*rocks-in-the-sand*)

APR. 20 1984
The quality that can be defined is not the Absolute Quality. That was what he had said. The names that can be given it are not Absolute names. It is the origin of heaven and earth. When named it is the mother of all things. . . . Exactly. Quality [romantic Quality] and its manifestations [classic Quality] are in their nature the same. It is given different names [subjects and objects] when it becomes classically manifest. Romantic quality and classic quality together may be called the "mystic." Reaching from mystery into deeper mystery, it is the gate to the secret of all life. Quality is all-pervading. And its use is inexhaustible! Fathomless! Like the fountainhead of all things . . . Yet crystal clear like water it seems to remain. I do not know whose Son it is. An image of what existed before God. . . . Continuously, continuously it seems to remain. Draw upon it and it serves you with ease . . . Looked at but cannot be seen . . . listened to but cannot be heard . . . grasped at but cannot be touched . . . these three elude all our inquiries and hence blend and become one. Not by its rising is there light, Not by its sinking is there darkness Unceasing, continuous It cannot be defined And reverts again into the realm of nothingness That is why it is called the form of the formless The image of nothingness That is why it is called elusive Meet it and you do not see its face Follow it and you do not see its back He who holds fast to the quality of old Is able to know the primeval beginnings Which are the continuity of quality.

Are not good environments those which gratify our instinctual needs and fears and the wishes aroused by them, the reinforcing of our various defense needs, and the gratification of the need for mastery of external and internal stimuli?
There is a word in Japanese — mu, for which there is no direct English translation. It means "no thing." To a question which has neither a yes nor no answer, one would respond mu. It says that the context of the question is not large enough for nature's answer, that one should unask the question.
site
A medium sloped hill on the old Navy hospital site. Access for vehicles is circumferential; access for pedestrians ran perpendicular to the contour since that is navigable by foot.

The tissue is 3-6 stories of approximately 50 ground coverage as is Chelsea & Beacon Hill, with many similar dimensions.

The program: Theater, Housing, School, Parking & small amount of commercial, and MBTA water taxi port.

The design: To accommodate the hill through terracing. The buildings shall be built in the zone of the terrace such that the bearing wall is part of the unit. This prevents duplication of the cost for bearing walls when used as core for the building.

The access and the density create streets that are urban (generally a virtual channel) in nature. The areas within the bounds of the site contained a mix with old, families w/kids, and young professionals, distributed into areas of appropriate concentration with some overlap. Placement of some of the public activities is at the top of the hill, similar to the role churches played in Italian & Spanish hilltowns. The water taxi port is necessarily at water's edge and a covered public accessway connects it to the plaza and public functions at the top of the hill.
### Distribution and Approximate Size of Dwelling Units

<table>
<thead>
<tr>
<th>Area of D.U. incl. walls, structure, balcony, no corridor, stairs, etc.</th>
<th>% of total</th>
<th># of units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Studio</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Studio: single bachelors (3b, 5, 7a, 7b)</td>
<td>5.6%</td>
<td>500</td>
</tr>
<tr>
<td>b. Studio: single elderly (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>1.4%</td>
<td>400</td>
</tr>
<tr>
<td><strong>II. 1-Bedroom</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 1-BR: single bachelor (3b, 5, 7a)</td>
<td>5.6%</td>
<td>500</td>
</tr>
<tr>
<td>b. 1-BR: single elderly (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>1.4%</td>
<td>400</td>
</tr>
<tr>
<td>c. 1-BR: young couple (3a, 5, 7a)</td>
<td>7.0%</td>
<td>700</td>
</tr>
<tr>
<td>d. 1-BR: middle-aged couple, both work (3a, 5, 7a)</td>
<td>2.3%</td>
<td>230 +1</td>
</tr>
<tr>
<td>e. 1-BR: middle-aged couple (3a, 5, 7a)</td>
<td>2.3%</td>
<td>230 +1</td>
</tr>
<tr>
<td>f. 1-BR: retired and elderly (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>9.3%</td>
<td>930 +1</td>
</tr>
<tr>
<td><strong>III. 2-Bedroom</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 2-BR: two bachelors (5, 3b, 2c)</td>
<td>8.2%</td>
<td>820 +1</td>
</tr>
<tr>
<td>b. 2-BR: two elderly bachelors (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>1.4%</td>
<td>140</td>
</tr>
<tr>
<td>c. 2-BR: young couple without children (6b, 7, 8)</td>
<td>2.3%</td>
<td>230 +1</td>
</tr>
<tr>
<td>d. 2-BR: middle-aged couple, no children, one does not work (3a, 5, 7a)</td>
<td>2.3%</td>
<td>230 +1</td>
</tr>
<tr>
<td>e. 2-BR: middle-aged couple, no children, both work (3a, 5, 7a)</td>
<td>2.3%</td>
<td>230 +1</td>
</tr>
<tr>
<td>f. 2-BR: middle-aged couple with children left (3a, 5, 7a)</td>
<td>24.0%</td>
<td>2400 +1</td>
</tr>
<tr>
<td><strong>IV. 3-Bedroom</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 3-BR: with three bachelors (5, 3b, 2c)</td>
<td>8.2%</td>
<td>820</td>
</tr>
<tr>
<td>b. 3-BR: with three elderly bachelors (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>1.4%</td>
<td>140</td>
</tr>
<tr>
<td>c. 3-BR: middle-aged couple with children left (3a, 5, 7a)</td>
<td>7.2%</td>
<td>720</td>
</tr>
<tr>
<td>d. 3-BR: family with small children, family room required (1a, 2a, 4)</td>
<td>6.2%</td>
<td>620</td>
</tr>
<tr>
<td>e. 3-BR: family with teenage children, family or additional room required (4)</td>
<td>6.2%</td>
<td>620</td>
</tr>
<tr>
<td><strong>V. 4-Bedroom</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 4-BR: bachelor living group (3b, 5)</td>
<td>1.7%</td>
<td>170</td>
</tr>
<tr>
<td>b. 4-BR: elderly bachelor living group (2b, 3a, 4, 6a or 6b, 7, 8)</td>
<td>1.2%</td>
<td>120</td>
</tr>
<tr>
<td>c. 4-BR: family with small children, family or additional room required (1a, 2a, 4)</td>
<td>6.8%</td>
<td>680</td>
</tr>
<tr>
<td>d. 4-BR: family with teenage children, family or additional room required (4)</td>
<td>6.1%</td>
<td>610</td>
</tr>
</tbody>
</table>

**Footnotes:**

1. ground contact:
   a. re: childrearing
   b. re: gardening

2. dwellings grouped:
   a. childrearing
   b. elderly
   c. communal living groups
   d. anonymity
   e. others

3. special access requirements:
   a. on level access via ramps, elevators, etc.; permitting wheelchair or other
   b. stairs can be accepted

4. dwelling has important amounts of daytime use and for this reason will be considered when amounts of sun, isolation from daytime noise, etc.

5. nighttime and weekend use predominates, comparatively smaller # of hours of use than other dwellings

6. interest in view:
   a. passing harbor traffic
   b. public space

7. interest in rent:
   a. lower rents
   b. rent not an issue

8. secure night access

Chelsea - housing program - unit mix

Approx % of all units recyclable scores

21
Bit Study for Chelsea - 2-3 bits added together. To achieve variety in building form and size.

Sections - parking associated w/bits as garages for high density. They provide a new ground.
Italian hilltown - view of pedestrian access perpendicular to slope
Japanese hilltown – drainage accommodated as part of street
site section through Swiss village of Corippo - Werner Blaser, Perspecta 17
site
The site chosen for two of the projections is on the west bank of the Hudson River approximately 70 miles north of New York City. It is situated on a hillside with river views and a southeastern exposure. It is protected from winter winds and most storms, which come from the northwest. Microclimatically, it is in an extremely desirable location. The nature of the larger landscape is a very directional world. Steep banks border the Hudson River along nearly its entire length, the site in Highland being no exception. Occasionally there are promontories which jut out from these directional banks and with them corresponding ravines which pull back from the edge adjacent to the promontories. The promontories pro-
vide a place of natural vantage for view and previously for protection. The ravines, conveniently, are places of access to the river and therefore become strategic locations. Particular conditions of the site include an access road to the river, dense tree coverage on the steeply sloped portion (17-45°), existing grape vineyards with terraced stone walls on the mildly sloped area at the top of the site, and a small strip of flat, marshy land at river's edge. There runs on both sides of the river trains between New York City and upstate.
middle of the slope
at water's edge
house overlooking the site
The Hudson River Valley, close to a major metropolitan area (north of N.Y.C.), rich in history and agriculture, yet it is rather sparsely settled. It is an area where the largest city has a population of roughly 40,000 (Poughkeepsie), the oldest buildings were built in the 1600's, the land supports both apple orchards and grape vineyards, IBM has major facilities, people vacation in resorts at the edge of the Catskills, West Point and Vassar are nestled, rock-climbers from throughout the U.S. come to scale the Shawangunks, and where, not surprisingly, there is a large potential for growth. It is also an area of natural beauty through which the majestic Hudson River flows.
French Huguenot Houses, 1690's,
New Paltz, N.Y.
Local houses, New Paltz, N.Y.

Stone & wood are the predominant natural materials in this area.

Sloped roofs, bay windows, fireplaces, balconies, and screened porches are all part of the local vocabulary.
renovated train station (housing) on the Hudson River, Highland, N.Y.
THE PEOPLE WHO run Mohonk Mountain House like to emphasize that it is a "House"—not a "Hotel". Mohonk is still the home of the Smiley family, whose ancestors founded the resort back in 1870, and the feeling you get is that you are visiting with very good friends in their country home—a country home that just happens to be one of the grandest in the nation, a rambling Victorian pile one eighth of a mile long furnished with exquisite period antiques and set amidst a 2,000-acre mountain wonderland overlooking a crystal, Alpine lake (the name "Mohonk" is Indian, meaning "lake in the sky"). You could be in Switzerland, you could be in Kashmir. But no matter; you're at Mohonk, and the feeling is magical.
Mohonk Mountain House, New Paltz, N.Y.
The men, the money behind giant project

It is an area that has had virtually no large building projects to date. However, plans for development of this scenic area are beginning to emerge which are frightfully inconsiderate of the environment and local context.
The first exploration for the site in Highland is based on a model for clustering units (Saks Housing-R. M. Schindler) such that they constitute a neighborhood with an outdoor collective space. Each neighborhood is organized such that there is a common access that runs through the cluster which is semi-public in nature. On the hill side this access runs down the slope (across the contours) and connects to the main public access which generally is along the contour.

The approach for this scheme is to generate prediction to high density on the medium sloped (15°-25°) portion of the approximately 10 acre site. Neighborhood clusters are comprised of 8-12 units. There are 5-7 clusters which are sited to build a common access and to be reciprocal with the landscape.

Neighborhood Cluster - structure - combination of bearing walls (perpendicular to slope) and columns w/sonnet tube foundations. Beams run the same direction as bearing walls (supported by columns). Spans of 12 and 14 feet standard wood frame construction, 1-4 floors high.
Along the semi-private access entrances are grouped together in twos and threes whenever possible. The entrance is a threshold between the unit and the 'street,' a place to say goodbye. It is generally raised slightly from the access level and partially buffered from it in an effort to create a transition. Entrances are marked by large masonry walls which become bearing walls for the units running perpendicular to the slope. They often serve as fireplaces as well. The organization of the unit is linear—approximately 26' x 50', being directional across the contours. Living spaces are to the downhill side. Kitchen, bedroom and bath towards the uphill side. Access is usually on the long side just behind the living area.
Sketch - section through unit of neighborhood cluster
perspective sketch of court and adjacent units for neighborhood cluster
Detail study of edge between access (semi-public) through neighborhood cluster and bearing wall/fireplace of a unit
At the site size, several constraints were imposed beyond considering view, and a predominantly level public access.

A) that clusters when aggregated generate a range of containments to the public access

B) that there should be at least one place where the access claims a territory of collective size for all the units which affords a partial view and partial containment (a location where public workspace, laundry, etc. might be adjacent). From here public stairs could lead to the water's edge and possible marina.

C) that the clusters could be added later along the spine (this would reinforce the direction of the larger landscape)

D) that the overall form be reciprocal to the downhill side so the largest exchange is with the wooded side and the preferred microclimate
Program
Housing—approximately 60 units.
5-7 neighborhood clusters with common public access.
Each cluster organized on access (semi-private) to form a small neighborhood of 8-12 units.
This exploration attempts to study a structural system for building on steep hillsides. The nature of this approach is such that it is built from a base up the hill and loads from the hill portion are transferred by a mat back to the base. Since the base must resist this load, the mass over the base must be relatively equal to the mass on the hillside, the exact proportion determined by soil conditions of the site. The resultant generic form is one which allows the upper levels of the building to move at one end from the ground to the other high above the base. This generates a virtual 'built promontory.'
The attempt in investigating this 'built promontory' is to 1) make the given system more spatial in order to let light and the landscape through, and 2) live in a world where the field runs perpendicular to it.

perspective sketch - inhabiting infill system
The presented approach provides for a building to be located on a narrow strip of the slope in the direction of its maximum gradient. The bulk of the building is composed of two volumes: the major portion positioned on the slope with the other volume positioned on the level section of the ground which prevents the major volume on the slope from sliding.

There are three inherent and inter-related aspects of the presented concept: structure, circulation and construction. Circulation requirements allow the use of standard mechanical equipment without the reliance on exotic, and consequently expensive, systems. The structure system takes advantage of the interaction between sloped and horizontal parts of subsoil supporting capacities, and allows the maximum bearing potential of the subsoil to be utilized. Many current methods of construction are easily adapted for use on slope sites. Only small modifications are necessary for most systems; the use of prefabricated concrete elements, lightweight steel systems, and even unusual structural composites are all available to the designer. Heavy equipment is not needed on the slope areas during construction. The slope is not despoiled by construction procedures. Implications of the inter-related aspects include minimum disturbances to the ecological balance.

As can be seen from the various problems facing construction on slopes, a definite need is exhibited for new techniques of construction and circulation. The traditional approach of terracing is an attempt to duplicate level terrain; the problem of the slope is completely negated. Along with this traditional method a complete upset of the ecological system occurs. The sensitive slopes are disturbed, the natural protective cover is lost.

Much of the urban functions do not need to exhaust the scarce available land. Many land uses may be delegated to slope structures if a suitable method for slope construction is found.

Existing methods of dealing with construction on steep slope areas are firmly based on traditional approaches. Uses of the land on the slopes have also been limited by tradition; this too may be reassessed in light of new approaches to construction on slope areas. If faced with development on slopes, a means of construction must be developed which does not affect the surrounding natural conditions. The method used should not necessitate extensive landscaping in order to preserve the inherent instability of slope sites. As man extends himself farther and farther, more emphasis must be placed on maintaining the natural environment.
- Allows high loading conditions
- Force distribution relative to soil capacity
- High slope utilization

- Standard mechanical systems
- Centralized access
- No vertical duplication

- No despoliation of slope
- Standard construction methods and equipment
- No heavy equipment on slope
The dominant direction of the landscape is linear, running parallel to the contours. This direction is very strong, reinforced by cliffs and sloping chunks which build the banks of the Hudson River. The larger landscape of this area occasionally runs perpendicular to the river for short distances and forms a shoulder or promontory. This is a naturally desirable vantage point affording large vistas.

Similarly, the 'built promontory's territorial position juts out from the slope. Inherently its size and density is large and high, so the site can accommodate only a few 'built promontories' relative to the building in the other direction. This will tend to accentuate the association to the natural promontory.
...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. A directional field then, allows options for the organization of movement, space, growth, and privacy.

Because of its strategic position, the public should be able to access the built promontory in at least one higher edge condition (closer to river), regardless of the building's use(s).

A) To make the 'built promontory' part of a larger built field that is sited with the contours. The built promontory then is sited between built zones running parallel to the contours of the site. This territory is certainly a place where pedestrian movement up the hill is expected. It could also be a collective place of the larger community.
Early site sketches
B) To develop an access system that maximizes the height of the directional field zone. Since the 'built promontory' approach necessarily yields a large vertical dimension, the directional field built zone's height is increased to make them substantial enough to not be overwhelmed by the size of the 'built promontory.' However, the access system is not to depend on elevators nor be more than 1 1/2 to two floors above the street. They may be accessed from both the uphill and downhill side.
Street massing/elevation sketch for building along the contour - generating a large vertical dimension from section study without extruding the section. A range of height then accommodates access across the contours, zones where gallery access connect to the street, outdoor terraces at upper levels and an exchange with sky at the building size.
Program

- Housing—approximately 1000 units
- Marina/Inn/Restaurant—one complex
  including boating facilities
- Winery
- Greenhouses
- Outdoor Theater
- Train Station
- Community Center
- Workplaces
- Parking—individual & multi-level garage
Sketch – intensifying the edge of the water so buildings can be at the edge and allow train access

reciprocity of water and land
Elevation/Access Study - downhill side of units (parallel to contour)
perspective and section sketches/diagrams prior to model studies
Two of the four Vierendeel girders are manufactured in one piece and erected first. The two Vierendeels in the other direction are manufactured and erected in three pieces and prestressed into unity by post-tensioning. The connection and seating arrangement are illustrated by details 1 to 4. The Vierendeel girder is not a true truss; in the true sense, because the characteristic triangular geometry of a true truss is missing. The carrying capacity of a Vierendeel is accomplished by chords and verticals only. Thus, it is more a frame than a truss.
level 1
level 2
level 3
level 4
level  5
level 6
level 7
bird's-eye view
from the access road
from across the river
from the neighboring promontory
from the water
perspective sketch of view towards Hudson River from one of the upper levels in 'built promontory'
roof study for inn - basis for inhabiting upper levels of trays in 'built promontory'
Chambord – a virtual new ground above original castle where one can move between the rooms and towers outside. The access is continually changing dimension and views. This is generated by inherent differences between two geometries – orthographic and curvilinear.
roof plan - terrace level of Chambord

building on upper level of trays - similar approach as Chambord. Infilling with a secondary system of different geometry - either shifted orthographic or curvilinear or combination
A Collection of Concepts

Towards a Plurality of Polemics
The eye is repulsed by complexity if no order is detected, but it can be delighted by repetition, translation, rotation, reflection, magnification, and other simple variations of the parts. As more levels of hierarchy can be constructed from the simple initial components the richer becomes the experience.

Cyril Stanley Smith
A fragmentary shape has the potential to grow, to become a finished entity in our mind (a complete shape appears static...it allows no room for the growing mind).

...it has the possibility of becoming something, not the opportunity of remaining as something confronting deterioration.

Hence, meaningful incompletion is taken as the most desirable state of tangible being.

A.I.T. Chang
Actually there are not many basic units of composition and as large things merge into smaller ones, and vice versa, both nature and the eye favor much the same principles of assembly. Landscapes, whether real or imaginary and whatever their scale or origin, have recognizable "style" based upon repetition, relationship, selection, and adjustment. Matter, whether living or dead, when left to itself adjusts its resonances on all scales, and the resulting structures seem to be based upon much the same relationships as those which give, or perhaps which actually constitute, aesthetic satisfaction in the mind of the human observer.

Cyril Stanley Smith
maelstrom of activity within the frame of the understandable

There is a datum or normative aesthetic value system; primary pleasure is associated with moderate novelty, secondary pleasure is derived from finding order within complexity.

The order within complexity manifests itself as:
- rhythm - perception of field, grain
- harmony - consistent behavior (such as Fibonacci Series [Golden Mean], Nature-branching [Fractals])
- balance - non-symmetrical balance, forces acting within a system that have a "center"

understandable rhythm allows for irregularities

Peter Smith
Forces generate form. In the case of certain simple natural systems this is literally true; in the case of man-made systems a metaphor. The forces which are not provided for do not disappear. They always find an outlet in an unexpected way. The deeper psychological and social forces, if not provided for, can easily have repercussions which lead to drastic kinds of instability. They do not of their own accord create a stable state.

Christopher Alexander
Our mortal desire for the near, the precise, the closely seen can be assuaged only by a reminder of the greater reality of the far, the vague, the dimly seen, the transient...

Norman F. Carver, Jr.
"Open up that window and let the foul air out," Jelly Roll Morton.

Architecture—planning in general—breathes with great difficulty today. The breathing image epitomizes my conception of twinphenomena—we cannot breathe in one way—either in or out. I am concerned with twinphenomena, with unity and diversity, part and whole, small and large, many and few, simplicity and complexity, change and constancy, order and chaos, individual and collective; with why they too are ignobly halved and the halves hollowed out; why they are withheld from opening the windows of the mind! As soon as they materialize into house or city their emptiness materializes into cruelty, for in such places everything is always too large and too small, too few and too many, too far and too near, too much and too little the same, too much and too little different. There is no question of right-size (by right-size I mean the right effect of size) and hence no question of human scale.

What has right-size is at the same time both large and small, few and many, near and far, simple and complex, open and closed; will furthermore always be both part and whole and embrace both unity and diversity. No, as conflicting polarities or false alternatives these abstract antonyms all carry the same evil: loss of identity and its attribute, monotony.

Right-size will flower as soon as the mild gears of reciprocity start working—in the climate of relativity; in the landscape of all twinphenomena.

Van Eyck, 1962
Illustrations
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