ONE CONSTRUCT

OF

SPATIAL ASPECTS INVOLVED IN PLACE REALIZATION

by

James Andrew Carr

Bachelor of Architecture
Cornell University
(1970)

SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE

DEGREE OF

MASTER OF ARCHITECTURE IN ADVANCED STUDIES

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

June 1972

Signature of Author . . . . . .
Department of Architecture
May 30, 1972

Certified by . . . . .
Thesis Supervisor

Accepted by . . . . . .
Chairman, Departmental Committee
on Graduate Students

DISCLAIMER NOTICE

The accompanying media item for this thesis is available in the MIT Libraries or Institute Archives.

Thank you.

Dean William L. Porter
School of Architecture and Planning
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

26 May 1972

Dear Dean Porter:

In partial fulfillment of the requirements for the degree of Master of Architecture in Advanced Studies, I hereby submit this thesis entitled: One Construct of Spatial Aspects Involved in Place Realization.

Respectfully,

James Andrew Carr

ABSTRACT

The primary purpose of this thesis was the identification and description of several significant aspects of spatial perception; those qualities or considerations of an environmental context that contribute toward a situation in which the perceiver experiences a special affection or attachment for his surroundings.

This thesis topic is by nature variable and open-ended in that the aspects identifiable in a particular situation might not be applicable in other cases. In addition to a changing list of aspects, there are variable relationships between those of a given situation that are dependent upon the perceptual attitudes or levels by which that situation is experienced.

Because of the indefinite character of the subject, I felt that the best approach was to attempt a development of a basic framework of primary systems involved in spatial description -- given practically any situation.

The identification and description of some of the aspects belonging to those systems is handled through a more specific analysis of them seen from a personal viewpoint.

This analysis is essentially a compilation of as many varying situations, and some of their constituent aspects, as I, personally, was able to identify; and the connections drawn between the aspects are ones that seem to be generally applicable to the way that I perceive space.

In my estimation the thesis' justification was twofold: by developing the subject, I clarified my own position as to how I reacted to various environmental contexts and, in so doing, acquired insight into future directions of examination; and as developed in its present form, it becomes a working tool that not only identifies the basic descriptive systems with several of their inherent aspects plus illustrates a personal viewpoint as one bias to the relationships between those systems and aspects, but also provides the reader with a graphical reference bibliography for his use in altering or amending my description to his own interpretation.

The body of the thesis is comprised of four primary parts.

The first part is titled 'Three Spatial Attitudes and the Cultural Screen'. Its concern is with a description of the various levels or attitudes of spatial perception and the effect on interpretation through the psychological

realm and by cultural prejudice. In effect, it establishes physical and psychological 'routes' toward perceptual realization for the potential aspect characteristics of spatial definition.

The second part is titled 'Spatial Determinant Framework' and concerns itself with the identification and clarification of the basic framework vocabularies that allow space to be described and recognized by the perceiver. The nature or character of the space depends on the particular spatial aspects employed.

The third section titled 'The Formation of an Attitude' describes my own personal viewpoint of a particular way of relating the framework vocabularies and several of their characteristic aspects. As mentioned above, this particular structure is a composite of, and therefore a compromise between, many possible situations.

The forth part titled 'Comparative Examples of Some Place Aspects' is meant to illustrate photographically specific combinations of a few of the aspects listed in the third section. These examples point out that not all the aspects can be found to be in operation in each particular instance; nor are the relationships between those that are identifiable necessarily the same for different perceivers.

The four parts follow a progression from the general to the specific. The Spatial Attitudes and Determinant Framework have a greater potential for common agreement; wheras my aspect relational structure and interpretation of the photographic examples is by nature more personalized. Other perceivers might probably agree with many of the aspect relationships made mention of here, but would have different combinations where necessary to satisfy their own viewpoints.

In the first three sections the diagrams are of main importance and are the most help to someone interested in using this work as a beginning of his own investigation. The written text might almost be thought of as a caption to the diagrams; helping to establish the rationale and identity of each piece. For that reason the footnotes used in the text were chosen only for use in explaining the content of the piece under observation and do not represent all that is to be said on the subject but rather set the tone of the argument. The references in some of the diagrams are meant to direct one to more material on each subject. Even those references do not comprise an exhaustive list but rather represent a thorough search through a limited amount of research sources. The nature of the topic is

such that there appears to be no definitive end to the material available. The points identified in the examined literature concerned themselves either with broad constructs of the Placemaking phenomena or a few particular situations involving a limited set of spatial aspects. Each situation employs only a few combinations of these aspects taken from an almost indeterminant field or vocabulary.

Thesis Advisors:

John Randolph Myer	Professor of Architecture
Julien Beinart	Professor of Architecture (visiting)

ACKNOWLEDGEMENTS

In approaching a topic of such personal character as a possible description of some spatial aspects involved in place realization, the initial conditioning of one's mental attitude is extremely important. One must develop the ability to both identify and evaluate his subordinate feelings and understand how they affect his conscious and more easily described senses.

I wish to thank both John Randolph Myer and Julien Beinart for their efforts in helping me develop such an attitude. Their personal counsel served as a filtering and solidifying device for my developing ideas. Whatever inaccuracies are incorporated in the final result are due solely to my own inability to arrive at a definitive solution.

CONTENTS

* Illustration

C

D

INTRODUCTION

A Realization of the Existence of Attitudes

The relative importance of the various stimulants that define one's environment is a subject that has both consciously fascinated and plagued me over the last several years. In my training as an architect, I was constantly reminded of the intellectual sophistication that could be applied to built form. However, no matter how much I enjoyed dealing with design as an intellectual exercise, I felt some essential pieces were being ignored in the consideration of the final product. Because of other activities demanding my time and thought, I never had the opportunity to devote enough energy to the solving of my discontent.

Although in the past my attention was not specifically directed toward formulating a definition of 'place' -- be it my place or someone else's, it would probably be most correct to say that from a relatively young age I was consciously filtering the various inputs from my environment and experiences into categories. On thinking back about my personal 'revelations' and the time of their occurence, it surprises me to realize that I have not specifically tried to relate them all. On a subconscious level this did

happen and has surfaced in certain instances when the situation was such as to invoke some conscious response to my unconscious ideas.

In trying to remember some image of 'place' in my childhood, the first thoughts that come to mind are of home; a topic that is specifically identified in the organization of this project. In those early years I really understood nothing of formal design concepts, and therefore did not readily identify with a particular locale or situation directly on those terms. Rather, my differentiation process was based on things that caught the attention through familiarity and unfamiliarity, the expected and unexpected. The enjoyment of a particular activity when associated with a given area would impart a certain meaning to that place. In addition, most environmental associations were based on a memory mechanism that would instill a certain elapsed-time element in the definition.

After joining the School of Architecture, Art and Planning at Cornell University, I found myself becoming increasingly aware of physical form. In the early years the design problems treated buildings as 'objects'; with spatial articulation being considered only on the interior. Planar, two-dimensional elements interpreting three-dimentional environments were stressed heavily; using examples such

as the Schroder house and Rietveld house. Le Corbusian works were also well represented -- most examples being of his earlier works. These were also planar in quality but went further into Cubistic interpretation of space, multi-viewpoint and generation of fields of space.

> "The conception of a mobile viewpoint appeared first in early Cubism ... This Cubism intended to express volume. Intrinsically it remained naturalistic."[1]

As the design sequence progressed, one became more highly aware of the plan-section-elevation interrelationships and transparency combinations of interpreting object and volume. Spatial articulation became almost as important a consideration as the object itself; allowing the structure to project itself across openness, making itself felt elsewhere in the environment. However, at no time was consideration given to how the designed environment affected the perciever on any level except one of intellectual sophistication. It was readily admitted that not everyone had the facility to fully understand the intellectual level on which the structure had been conceived. This was justified on the basis that the layman would subconsciously enjoy a well-done building or designed environment even if he was not consciously aware of why he liked it; the higher levels of design content being reserved for the appreciation of those capable.

1. "A New Realism", from Plastic Art and Pure Plastic Art, Wittenborn, Schultz Inc., New York, New York, 1945.

A possible shortcoming of a concentrated education based on some rather forcefully delivered viewpoints is the tendency for one to interpret his perceptions into rather limited categories. Once into this habit, it becomes difficult to broaden one's approach concerning particularly strongly-felt points.

The most time consuming problem faced throughout this entire project was the recycling of my own introspection each time some new information was received regarding the then-current definition of place. Unlike a topic which has a clear structure and linear direction of development, this subject was of a highly complex nature having most identifiable pieces of the 'place' definition interrelating with each other in myriad of combinations. The surfacing of one's own understanding is a slow and difficult task because the right arrangement of new information must present itself before one may break through old ways of perception.

A
THREE SPATIAL ATTITUDES AND THE CULTURAL SCREEN *

In an article dealing with the subject of spatial meaning, Robert Beck identified three basic kinds of space: the first is objective space characterized by physics and mathematics, measured by universal standards along dimensions of distance, size, shape and volume; the second, and next higher level of recognition is ego space characterized by the operations of the ego which make logical objective space to produce a coherent and consistent view of sizes, shapes, and distances; the third and higest level is immanent space, the inner, subjective space of the unconscious, of dreams, of fantasy; it includes the orientations imposed upon us by the anatomy of our bodies.[2] These three spatial breakdowns paralleled what I came to understand as my general relationship framework for the various perceptual levels inherent in the placemaking phenomena. There are (1) quantifiable pieces that relate to objective space defining and are commonly understood; (2) qualifiable pieces that relate to ego definition and are

* See key on diagram for number reference /page 31

2. "Spatial Meaning and the Properties of the Environment"; Robert Beck; article from Environmental Psychology: Man and His Physical Setting, p. 136.

affected by cultural differences; and finally (3) cosmic or universal qualifiable aspects that are integral with immanent space and are not directly affected by cultural differences.

1
Objective Space: Quantifiable

The quantitative parts of spatial definition are essentially the characteristics or tools that provide the potential for creating descriptive space from undifferentiated space. These are essential if either of the other two levels of recognition are to be attained. In Christain Norberg-Schulz's terms -- analysis has become the architect's point of departure.[3]

It appears from my research that there are serious questions as to whether scientific man, especially designers responsible for providing one's concrete environment prefer to recognize anything but the quantifiable aspects of description.

3. "Meaning in Architecture", Christian Norberg-Schulz; Meaning in Architecture, edited by Charles Jencks and George Baird, p. 218.

> "Science has slowly purified its cognitive-analytic attitude, technology has developed as an instrumental activity on this basis, and art and religion no longer can pretend to describe the world ..... The only orientation we are today taught is the cognitive one. We learn that what counts is to understand everything."[4]

On the other hand, there is a strong reaction against the attitude of quantifiable justifications as illustrated by Janet Daley in her article titled 'The Myth of Quantifiability'[5] in which she states that to rely solely on the quantifiable aspects of architectural solutions is not only an incomplete appraisal of the phenomenon -- but may also be highly inaccurate due to the distortion factor of trying to get all the various aspects to fit adopted analytic definitions. Experience is a gestalt process -- in other words, a total entity -- and can only make sense in its quantifiable tangibles when seen in the perspective of its qualifiable characteristics.[6] In essence, the whole is equal to more than the sum of its parts. In the physical sense it could be said that the meaning of behavior is dependent upon the environment in which it takes place.[7]

4. Ibid, p. 220 (refer to p. 216 for a historical description of the events that led up to this 'rationalistic conception').
5. "Psychological Research in architecture: The Myth of Quantifiability"; Janet Daley, The Architect's Journal, 21 August 1968, p. 339-341.
6. For a further discussion of this point see "Meaning in Architecture", Christian Norberg-Schulz; op. cit. p.219.
7. "The Time House", Martin Pawley; Meaning in Architecture, edited by Charles Jencks and George Baird, p. 134.

Daley's argument could perhaps be leveled at the structure of this project and its diagrammatic manifestations. My only defense is to say that the general diagrams and their accompanying text are to be thought of as illustrating the most basic grouping of the phenomena involved in the 'placemaking' experience. Relationship combinations and intensities between the spatial aspects of the groups should be considered as variant and practically limitless as are the aspect possibilities themselves. The Place Aspect Relational Structure diagram is the result of my particular viewpoint applied to the Spatial Determinant Framework diagram and, in a sense, is therefore more concrete; although it, too, is variable in aspect amount and combination depending upon the qualitative content of the situation being described.

Because of the open-end nature of this subject due to its qualitative components, no diagrammatic model can be complete because it must always lag one step behind the process it is supposed to represent.[8] The recycling

8. "Right and Wrong", Anthony Ward: Architectural Design, July, 1969, p. 385.

process mentioned previously has had to be terminated at a point that has hopefully identified the constituent areas of consideration in the problem of 'place' development.

Any consideration of the qualifiable characteristics must be supplemented by an acknowledgement of the psychological forces involved in perception and the personal definition of reality. In other words, a recognition of the basis of the subject of Environmental Psychology.

The first ideas of a larger conception of environmental aspects presented themselves during the reading of books like Chermayeff and Alexander's Community and Privacy and Sommer's Personal Space. These followed books like Bacon's Design of Cities and Zucker's Town and Square, both of which bolstered, but also helped clarify, some of my initial conceptions of what constituted 'place'.

From these readings I began to feel that some of the assets for 'place-defining' were of a psychological character that existed in conjunction with the quantifiable determinants of mathematical nature.

> "It seems to me that in our culture, a conscious ignoring of the psychological importance of the non-human environment exists simultaneously with a (largely unconscious) overdependence upon that environment. I believe that the actual importance of that environment to the individual is so great that he dare not recognize it. Unconsciously it is felt, I believe, to be not only an intensely important conglomeration of things outside the self, but also a large and integral part of the self."[9]

Martin Pawley, in his article titled "The Time House" identifies the condition of human consciousness[10] -- essentially the psychological aspects of perception in which the qualitative attributes of both ego and immanent spatial values reside. The ego values are dependent upon the cultural training that has influenced them; however, the immanent values approach more universal feelings not subject to normal cultural conditioning. This cultural conditioning mechanism has been labled the cultural screen, and will be discussed later.

9. "Housing and Its Affects", Alvin L. Schorr; Environmental Psychology: Man and His Physical Setting; Holt, Rinehart and Winston, p. 321.
10. "The Time House", Martin Pawley; op. cit. p. 121,123.

2
Ego Space: Qualifiable

Ego spatial values may be characterized by a quote from Rudolf Schwarz: "People put the earth within them in the land they find, place the landscape within them on the landscape without, and both become one."[11] Reality, within the realm of ego space is qualified by a spatial schemata that is constructed within each individual through social and cultural training as well as some personal idiosyncrasies. Susanne Langer identifies this reality as an illusion of the actual; using analogies from music and art to illustrate her point. It is as if one's recognition is like a mirror that provides a 'virtual' image of the actual object.[12] This reality forms the basic framework of perceptual understanding within a given cultural vocabulary. Norberg-Schulz differentiates between this mode of spatial recognition as'existential' in contrast to his term of 'perceptual' recognition that varies according to one's immediate attitude;[13] another point to be discussed later.

11. Existence, Space and Architecture; Christian Norberg-Schulz; Praeger, p. 39.
12. Feeling and Form; Susanne Langer; Charles Scribner's Sons, p. 73.
13. Ibid. p. 11; also see "The Time House" by Martin Pawley; op. cit. p. 138.

ce
Cause and Effect

One further point illustrated by the above quote by Rudolf Schwarz deals with the question of whether the physical environment conditions the psychological image or vice versa. The message of his quote is not so much concerned with how the process starts but that, in fact, each part conditions the other. The principle operating is essentially the same as that of the diagrammatic model that cannot be complete because it must always lag one step behind the process it is supposed to represent (refer back to footnote 8). Alan Colquhoun has termed the belief in arriving at the essence of which comes first as the'reductionist theory' and has attempted to prove it untenable.[14] Martin Pawley also touches on the subject by labeling the 'Architectural Belief System' (the environment controls behavior) as simplistic.[15] More accurately it is a belief in only half the story with no consideration given the return, 'feedback' route.

14. "Typology and Design Method", Alan Colquhoun; Arena, Journal of the Architectural Association, August 1967, p. 7,8.
15. Architecture Versus Housing; Martin Pawley; Praeger Publishers, p. 87.

3
Immanent Space: Phenomenal

Perhaps the best references to the qualities for immanent space are by Gaston Bachelard in his book The Poetics of Space. His discussions revolve around aspects of phenomenology -- or consideration of the onset of the image[16] -- an image inherent in a form separate from cultural interpretation. The image is dependent only on the innermost psychological and biological make-up of man and derives from his sense of fear of the unknown, his directional and symmetrical orientations, his desire for shelter, his quest for identity through territoriality, and his inclinations toward vicarious experience.[17] He illustrates all of these characteristics through the vehicle of the house and its constituent imageable parts. The most significant aspects one becomes aware of while reading his work is how the 'house' becomes 'home' -- a 'place' one can relate to directly; transcending any quantitative analysis and any direct cultural conditioning necessary for its understanding. Alan Colquhoun recognized that our "senses of place" are not dependent upon objective

16. The Poetics of Space; Gaston Bachelard; Beacon Press, Boston, p. XV.
17. Ibid. Gaston Bachelard, p. 25; also see "Meaning in Architecture"; Christian Norberg Schulz, op. cit. p. 228 for further discussion of common basis for different symbol-systems.

measurable facts, but are essentially phenomenal.[18] This act of transcending the literal to the phenomenal is essential to the determinization of a 'place'. As described in the beginning of this section, both the objective and ego spatial determinants can be described by mentally tangible parallels while the immanent spatial considerations take on a phenomenal quality that really lies outside the descriptive ability of direct analogy. Susanne Langer has referred to the immanent realm with her term of 'significant form': that form having import without conventional reference and which cannot be logically discriminated, but felt as a quality rather than recognized as a function.[19]

Of considerable importance is Bachelard's choice of the house as his descriptive vehicle. As mentioned in the preface, my own searching for an initial recognition of place began in the home. It becomes apparent that the home is essentially a physical representation of one's personal image as well as his territorial position and relationship in the environment. This territoriality is

18. "Typology and Design Method", Alan Colquhoun; Arena, Journal of the Architectural Association, August 1967, p. 2.
19. Feeling and Form; Susanne Langer, op. cit., p. 32.

directly pertinent to the reinforcement of one's identity. The extent of this reinforcement is directly related to one's ability to perceive the spatial context as 'place'.[20] The house is man's sanctum of dreams as well as an instrument of declaration of existence in the social context. Because of these two characteristics of the home in helping to define the place of the individual, two special categorical groupings of the house have been identified in the Place Aspect Relational Structure and Reference Index diagram as a means of helping to illustrate the identity of the individual in both a personal and social sense.

4
The Cultural Screen

In the above identification and discussion of objective, ego and immanent spatial characteristics, there was a distinction drawn between the second attitude of ego space which was conditioned by what I termed a 'cultural screen' and the first and last attitudes of descriptive

20. House Form and Culture; Amos Rapoport; see section on "Constancy and Change" for further discussion, p. 78-82; also see p. 46 for social unit of space.

and immanent space that were more universal and beyond the effects of cultural differences. The screen is essentially a mechanism for "existential", or ego recognition identified by Norberg-Schulz that has a common symbol-system vocabulary that is understood within a social context.[21] Another analogy of culture would be the likeness to a membrane that catches the symbolic expressions lost through the holes in the mesh or net of scientific description.[22]

Symbols appear to be basic in man's descriptive vocabulary. Mumford has pointed out that man was a symbol-making animal before he was a tool-making one;[23] while Rapoport expresses the same importance when describing the Eskimo woman who's existence had been reduced to the barest significance.[24] Symbolism has been used to give significance to form in ways ranging form its use as a microcosmic image of a macrocosmic conception[25] in both Eastern and Western type cultures to its use in the imageability

21. "Meaning in Architecture", Christian Norberg-Schulz p. 220 for discussion of 'unity of attitude' see 'Ma, The Japanese Sense of Place'; Gunter Nitschke; Architectural Design; March 1966, p. 131.
22. Ibid. p. 220 and 226; also refer to Intentions in Architecture; Christian Norberg-Schulz: Allen & Unwin Ltd. p. 122 for Cultural Symbolization; and p. 95 for discussion of symbolic character as independent of spatial form.
23. Art and Technics; Lewis Mumford; Columbia University Press, p. 2.
24. House Form and Culture; Amos Rapoport; op. cit. p. 45.
25. 'Ma; The Japanese Sense of Place'; Gunter Nitschke; op. cit. p. 125.

of the iconic super-levels fo functionalism.[26] Susanne Langer makes reference to Bachelard and the immanent spatial attitude by labeling architecture as an 'ethnic domain'; the built context is not in a place -- but, culturally, becomes a place. It becomes an image of life; a symbol.[27] Perhaps the most universal 'ethnic domain' is the house; the physical habitat. Its form is the physical result of a myriad of socio-cultural factors -- and its purpose is the personal territorial definement of a social unit of space;[28] a space that possesses the potential qualities for reinforcing the perceiver's personal image as well as those qualities that establish a sense of understanding or conceptualization leading to a feeling of personal competency -- essentially, a feeling of having recognized the true nature of the space.

26. 'Typology and Design Method'; Alan Colquhoun; op. cit. p. 3.
27. Feeling and Form; Susanne Langer; op. cit. p. 95, 99.
28. Refer to House Form and Culture; Amos Rapoport; op. cit. p. 46, 47 for further discussion.

The basic task of the cultural screen is to provide some quality of logic to the multi-interpretable symbols of ego or virtual spatial perception.

> "Reality only gets an articulated structure when defined objects and relations replace the diffuseness of magic. The objects have their counterparts in differentiated symbol-systems."[29]

The above quotation recognizes the importance of structure to understanding in the descriptive spatial attitude while also recognizing the importance of a logic in the symbol world of the ego spatial attitude; otherwise a situation for the correlation of 'counterparts' would not be possible. To construct this logic in the symbol vocabulary of the ego spatial or virtual attitude has been the function of art, and in doing so it has helped the layman order his cultural universe.[30]

The result of the development of a symbol logic is for man to be able to mentally comprehend and construct, virtually, his spatial world. Different cultural upbringing

29. Intentions in Architecture; Christian Norberg-Schulz; op. cit. p. 81.
30. The Hidden Dimension; Edward T. Hall; Doubleday and Co. p. 74.

will cause variations of interpretation on the actual descriptive spatial stimulus. Acoustic negation in various cultures such as the Japanese with their thin partitions, is in contrast to the thick-wall, closed-door attitude of the Germans and Dutch.[31] These two examples show the correlation between cultural attitude and the corresponding physical frame that reflects that attitude.[32]

An important factor in a society's cultural attitude of ego space is the rate of change that its symbol vocabulary must endure. If the rate is too rapid to retain a 'common' basis of understanding, the nature of the culture itself may be jeopardized resulting in chaos and anarchy.[33] This is perhaps the largest questionable factor in ideas put forth by Archigram with their electric environments and Reyner Banham in his "Home is not a House"[34] article where the conventional representations of not only ego spatial relations are drastically altered but so are many of the immanent manifestations.

31. Ibid. p. 43.
32. For further discussion of the corresponding physical structure see Team 10 primer; edited by Alison Smithson; The MIT Press, p. 24, and Intentions in Architecture; Christian Norberg-Schulz; op. cit. p. 16.
33. Refer to both "Meaning in Architecture"; Christian Norberg-Schulz: op.cit. p. 223; and "If they give you ruled paper, write the other way": Juan Ramon Jimenez; from 'The Last Word' in Thursday 13, April, 1972.
34. Refer to both "The Time House"; Martin Pawley; op.cit. p. 127; and "A Home is not a House"; Reyner Banham; Art in America, April 1965, p. 70-79. (His ideas will be discussed in greater detail later in the project.)

Another measurement on the rate of change can be seen in a society's agreement on taste. Past cultures generally had a more limited vocabulary of alternatives from which to choose, thus simplifying and reinforcing a common basis of agreement. With technology providing more alternatives with increasing rapidity, a problem arises in trying to assign a symbolic value to each new possibility.[35] An interesting result of changing symbolic importance and its determinization of taste is how various societal cliques are formed around common symbol interpretations. A sense of comraderie is usually only possible when people are of almost identical culture. The feeling of 'community' is usually superficial in the modern social structure where a mixing of cultural interpretations is stressed.[36] And this superficiality tends to negate a positive attitude toward the interpretation of ego, or virtual, space that is so dependent on cultural reinforcement.

35. Refer to House Form and Culture, Amos Rapoport; op. cit. p. 128 for discussion of the lack of taste in the technological society.
36. "What Kind of Community?" Edmund Leach; New Society, 8 May 1969, p. 709.

quantifiable

chicken/egg: values
(Colquhoun) p. 7
reduction theory ab
cannot be proven
(Colquhoun) p. 8
preedom between qualities
(MA Norberg) p. 221
qualitative components
(MA Norberg) p. 219
architectural belief system
(Pawley) p. 87

qualifiable

design: arrang. to fit
human consciousness
(Pawley, Time) p. 123
psychology, physiology, anthropometrics
human consciounsess
(Pawley, Time) p. 121
cannot separate physical/psycho.
(IA Norberg) p. 96
perception-cognition
(Pawley) p. 88
perception: define
(Rapoport, Complex-) p. 217
dependence on environment
(Schorr) p. 321
action is dependent upon environment
(Pawley, Time) p. 134

cause and effect

objective, immanent, ego space
(Beck) p. 136

PHYSICAL

PSYCHOLOGICAL

objective

subjective v. objective
value judgements
(AD Ward) p. 384
modeling lags behind
(AD Ward) p. 385
quantifiability
(Daley) p. 340
understand: quantify
(MA Norberg) p. 220
mind order: middle ages - today
architectural development
(MA Norberg) p. 216+
analysis as base
(MA Norberg) p. 218

ego

attitude of individual to environ based on ego
(Pawly, Time) p. 138
existential v. perceptual
(ESA Norberg) p. 11
perception-cognition: quote
(ESA Norberg) p. 39
experience is gestalt: totality
(Daley) p. 341
virtual space: perception illusion
(Langer) p. 73

immanent

phenomenology: image
(Bachelard) xv
phenomenology: cosmic
(Colquhoun) p. 2
intuition
(Colquhoun) p. 4
socio-spatial schema
(Colquhoun) p. 2
art transcends itself
(MA Norberg) p. 221
common basis - Bachelard
(MA Norberg) p. 228
human inborn thythms
(Rapoport) p. 79
significant form: quality
(Langer) p. 32
artistic symbol: universal
(Langer) p. 22

cultural

SYMBOLS

physical v. symbol
(MA Norberg(p. 226
place character independent of form
(IA Norberg) p. 95
imageability
(Lynch) p. 11
cultural dimension
(Hall) p. 4
external reality: culture
(Hall) p. 2
virtual space: architectural
(Langer) p. 92
arch. virtual space: ethnic domain
(Langer) p. 95
ethnic domain: symbol of humanity
(Langer) p. 99
house building: cultural
(Rapoport) p. 46
ritual: symbol
(Rapoport) p. 45
eskimo: survival/symbol
(Rapoport) p. 45
standard symbol systems
(MA Norberg) p. 220
culture: art/values science/facts
(IA Norberg) p. 122
relationship: culture
(Hall) p. 73
image/form: culture
(Colquhoun) p. 1
iconic-super levels: functionalism
(Colquhoun) p. 2
micro/macro image
(Nitschke) p. 125

STRUCTURE

understanding spatial relations
(ESA Norberg) p. 9
mental construct of space
varies by cultspace
(Hall) p. 43
art: ordering of universe
(Hall) p. 74
culture: relationship, activity, emotion
(Hall) p. 171
culture: ethnic, urban, education
(Hall) p. 178
essence of reality: define
(IA Norberg) p. 81
spatial expression: culture
(Team 10) p. 24
society & structure w corresponding physical frame
(IA Norberg) p. 16

UNITY: HOMOGENEITY OF THOUGHT

culture: unity of attitude
(Nitschke) p. 131
popular taste in art
(Jackson) p. 61
common-order: culture
(MA Norberg) p. 220
culture
(Alexander, Ekistics)
homogeneous culture
(Leach) p. 708+1
kinship: freedom
(Leach) p. 708+2

CHANGE

american a-cultural
(Hall) p. 173
constancy/change: culture
criticality level
(Rapoport) p. 79
culture destroyed
(MA Norberg) p. 223
culture break: Banham,Habraken
(Pawley, Time H) p. 127
culture in change
(Brolin, Mass Housing) p. 4
intuition on past solution
(Colquhoun) p. 5
taste: lack of it
(Rapoport) p. 128

PHYSICAL CONTEXT

1 Quantitaitve Category: contains objective spatial perception attitude

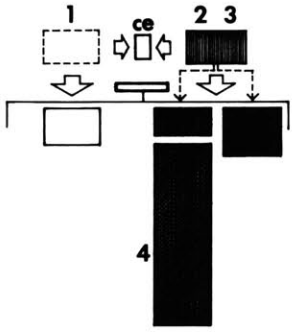
PSYCHOLOGICAL REALM

2 Qualitative Category: contains ego spatial perception attitude

3 Qualitative Category: contains immanent spatial perception attitude

ce Cause and Effect: perceptual influence argument between the Physical Context and Psychological Realm

4 Cultural Screen: affects the nature of ego spatial perception



THREE SPATIAL ATTITUDES AND THE CULTURAL SCREEN

B
SPATIAL DETERMINANT FRAMEWORK *

There are three primary systems to the framework; two of which influence the potential nature of space while the third represents the domain of the perceiver that both imparts information to and receives information from space. This perception mechanism is conditioned by the spatial attitudes and clutural screen discussed in the previous section.

1
Fixed Feature System:

This system is perhaps the most fundamental of the two that influence the potential nature of space. Within it lies the Physical Vocabulary that can quantifiably describe and delineate the boundaries of space. This physical description imparts to the space certain potential intellectual/ emotional feelings hereafter to be labeled emotional states. If the perceiver has the proper sensitivity via the spatial attitudes to be able to recognize and receive the nature of some of these emotional states, then the quantitative description of the space assumes a qualitative character, thus making the spatial context more significant perceptually.

* See Key on diagram for number reference / page 37

The Fixed Feature System alone is static in nature in the sense that it only has the ability to describe a given physical situation, and once that has been accomplished, it cannot either hint at or directly impart further information. The dynamic potential of a spatial situation is the responsibility of the Non-Fixed Feature System, the Perceptual Mechanism and indirectly, the enveloping mechanism of Hierarchy.

2
Non-Fixed Feature System:

The Non-Fixed System vocabulary contains spatial aspects labled Potential Mutability Agents that are characterized by their dynamic quality of possible change. This dynamism may be felt as a sense of movement either physically or durationally as in the passage of time. It may be further characterized by its potential energy as found in the quality of tension. The possibility of change introduces potential ambiguity and instills a level of complexity not available in the Fixed System. At any specified instant things could change or are changing thus terminating that situation and causing the perceiver to investigate the new aspect information. The Non-Fixed Feature System works as a mechanism for sustaining interest in the act of perception. As does the Fixed Feature System, it operates on the basis of providing the spatial context with potential emotional states that must be recognized through the Perceptual Mechanism.

The labeling of the Fixed Feature System as being fundamental does not in any way mean to imply that the Non-Fixed Feature System is less important. A more correct distinction is that the Fixed System may be operational alone; if space is to be described in any manner conceptualizable by an individual, it requires the attributes of the physical vocabulary. Undescribed space is amorphous and a non-entity which does not allow for the establishment of a situation into which potential emotional states may be supplied. In comparison, the Non-Fixed System may be operational either in conjunction with or additionally, through the Fixed System. Tension can be felt in the air before an impending storm -- a non-physical situation; it can also be sensed as a form quality applicable to certain shapes and compositions dependent upon the physical vocabulary.

3
Perceptual Mechanism:

This system has as its mechanism the Three Spatial Attitudes and the Cultural Screen. Through this system the perceiver makes contact with the spatial environment. The potential emotional states established in the spatial environment by the Fixed Feature System and the Non-Fixed Feature System must be found and brought back through this mechanism in order to be perceived. Those emotional states that do become realized depend upon what outside factors, such

as preoccupation, worry, sensory acuteness, etc. are conditioning the receptive sensitivity of the various attitudes.

This mechanism may also be run the other way where the perceiver lays onto the spatial environment projected emotions like elation, depression, etc. stemming from outside situations, thus coloring the image he perceives.

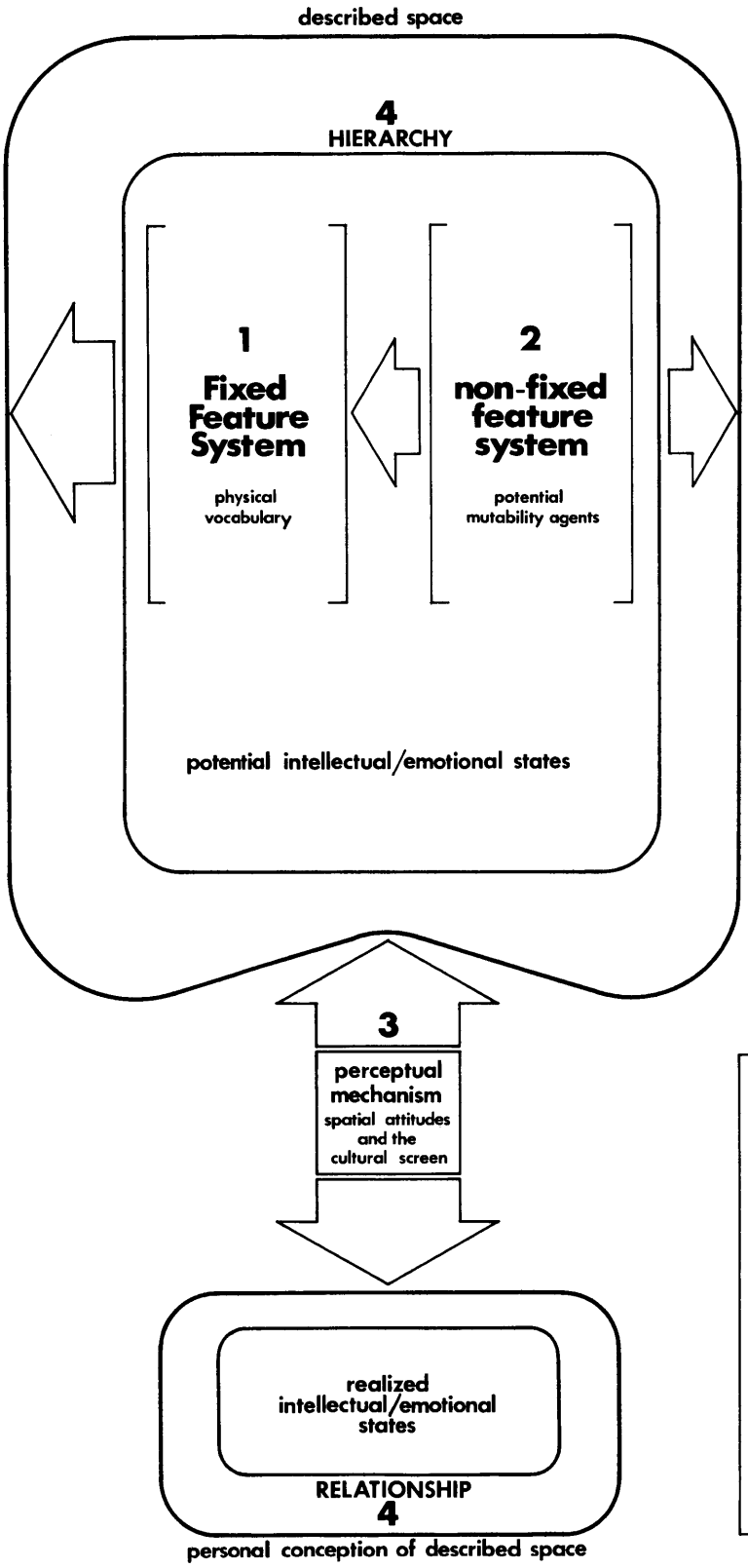
The fluctuations in the Perceptual Mechanism may be thought of as providing an enveloping dynamism to the phenomenon of spatial description. This dynamism is somewhat different than that attributed to the Non-Fixed System in that it is dependent upon the perceiver's attitude rather than on qualities inherent in the environmental context.

4
Hierarchy/Relationship:

In addition to the three primary systems of the Spatial Determinant Framework there is one more mechanism to consider; that of Hierarchy and its resultant state of Relationship. Hierarchy applied to both the Fixed System and Non-Fixed System and their corresponding potential emotional states instills a quality of distinction between the aspects that is exhibited as different degrees of

importance. These degree differences impart a tension to the aspect combinations appropriate to a particular situation; a tension that further reinforces the dynamic feeling supplied by the Non-Fixed System and the Perceptual Mechanism.

Relationship is the perceiver's counterpart to Hierarchy in the environmental context. It is the transformation and rationale of Hierarchy in the perceiver's emotions having been passed through the Perceptual Mechanism. Without a sense of the relationship, the perceiver cannot really understand the connections between his perceived emotional states; and therefore, cannot be convinced of his real knowledge and competency of the environmental situation.



1 Fixed Feature System: contains Physical Vocabulary that quantifiably describes boundaries of space in statically determinant manner; supplies space with potential emotional or operational states

2 Non-Fixed Feature System: contains transient descriptive vocabulary that instills a dynamic potential of change to Fixed Feature description; supplies potential emotional or operational states

3 Perceptual Mechanism: interface between actual particular spatial situation and perceiver; filtering device for realization of certain potential emotional or operational states

4 Hierarchy/Relationship: distinction of relative importance applied to Feature Systems and potential states that is recognized as Relationship perceptually

SPATIAL DETERMINANT FRAMEWORK

C
THE FORMATION OF AN ATTITUDE

The term 'aspect' refers to a discernable piece, step, consideration or resultant state in the process of spatial description leading towards 'place' establishment. As clarified in the Abstract, the identification and organization of some of the aspects inherent in the Spatial Determinant Framework represent a personal attitude towards the subject. If this attitude was extant at the beginning of my research, it was not readily discernable. More likely, it has evolved and been conditioned through the discovery and recycling process described in the Introduction. The Spatial Aspects described below comprise only a partial list that were readily grasped through my manner of perceptual sensitivity. The total number of aspects possible, plus their potential combinations, are probably not even remotely discernable by any one individual.

The essence of my personal attitude is the initial establishment and continued reinforcement of identities. From the perceiver's viewpoint, his own personal identity depends on many qualifications like self-confidence, moral integrity, recognition of limitations, etc. its reinforcement can come by various means, one of which

is supplied by the perceptible organization of the physical/ sensory environment. If one's position in the physical context can be identified and clarified by various spatial clues, his understanding of the concept of orientation may be strengthened, thus producing a realized intellectual state of operational competency.

One's position in the physical/sensory environment assumes a quality of ownership when there are 'cohabitors' of that environment. This situation establishes territorial relationships that further clarify one's identity by qualifying the level of appropriateness of that position. Robert Sommer's Personal Space and Edward T. Hall's The Hidden Dimension are two sources in particular that refer specifically to the territorial aspects of identity.[37]

The state of Competency acts as proof to the individual that he has some knowledge of the constructs of the spatial context. If this context encourages the feeling of competency to rise above the utilitarian level, the

37. For further discussion of the privacy factor of territoriality see Community and Privacy; Serge Chermayeff, Christopher Alexander; Doubleday and Co., and Neighbors; Subdivision Life in England and the United States: H.E. Bracey; Louisiana State University Press; p. 79-86.

perceiver may acquire a sense of intimate knowledge of a character and identity belonging to the space. This recognition of a spatial identity is dependent upon the sensitivity of the individual's Perceptual Mechanism. Since this sensitivity is a quality of his personal identity, the spatial context must assume an identity analogous to the individual's if it is to be perceptually recognized.

Bachelard's example of the house mentioned in the section titled Three Spatial Attitudes and the Cultural Screen deals with the extreme case of such an identity assumption. The process is essentially that described for the establishment of the ego spatial attitude illustrated by the quote from Rudolf Schwarz. It produces a 'virtual' image constructed from various characteristics of the perceiver's identity. This assumption of a partial mirror identity by a piece of the physical environment is the essential act in differentiating between logical 'space' and phenomenal 'place'. The individual's dwelling is the physical system that probably best allows this process to occur. For this reason the dwelling will be refered to repeatedly in the aspect identification and description section immediately following. In addition, it will be given two categorical distinctions in the Reference Index diagram -- that of the dwelling in a personal, intimate context and that of the dwelling in a public/social context.

ASPECT IDENTIFICATION AND DESCRIPTION *

FIXED FEATURE SYSTEM

As mentioned in the Spatial Determinant Framework, the Fixed Feature System is the fundamental mechanism producing described space. Amos Rapoport describes its product as a pattern that insures against chaos.[38] This search for a constant pattern to which seemingly unrelated things might attach themselves logically is a basic characteristic of spatial design. Fixed formal organization has been the universal attitude of most new town, utopian or urban design schemes since the conception of the Roman grid, and exhibits itself up through history in the Renaissance planning of 'ideal' cities like Sforzinda and the utopian schemes of both European and American derivation. The twentieth century has seen designers like Hilberseimer carry the fixed organizational theme to an extreme with his mat-texture efficiency patterns

* Refer to Place Aspect Relational Structure: One Construct page 86

38. Refer to "Complexity and Ambiguity in Environmental Design"; Amos Rapoport; Robert E. Kantor, American Institute of Planners Journal, July 1967, p. 218.

while others with a more rich vocabulary like Le Corbusier still rely on a physical organizational backbone to which the other elements relate.[39]

J.B. Jackson distinguishes between the public landscape and the private landscape as the difference between a fixed, constant megastructure that has priority over the changeable private installations.[40] Another way of describing this is on a scale of 'criticality'. Those aspects of organization that are of a definitive nature have a greater potential for affecting the character of the organization if altered. They therefore possess a higher criticality content than aspects not able to change the basis of logic or rationale so drastically.[41]

Physical Vocabulary

The physical vocabulary containing surface, mass/volume, edge and line exists within space which is essentially amorphous and undescribed except by suggestion from the

39. Reference to 'Rational Architecture' made in Team 10 Primer; edited by Alison Smithson; op. cit. p. 84. Also see p. 85 for reference to Hilberseimer and Le Corbusier.
40. Landscapes; Selected Writings of J.B. Jackson; edited by Ervin H. Zube; The University of Massachusetts Press; 1970 p. 153,154,160.
41. Refer to House Form and Culture; Amos Rapoport, op. cit. p. 78,79 for discussion of criticality levels and cultural implications.

physical pieces constructed with this vocabulary. Sussane Langer suggests that this space has "logical form" although it exists as purely abstract in scientific thought.[42] This viewpoint illustrates the nature of space as residing within the psychological realm and not being directly describable by objective spatial attitudes.

Reyner Banham holds the view that the American monumental space is the outdoors and that because of its importance, no monumental architecture is built by those accustomed only to the vernacular.[43] This can be seen in the road-side architecture made famous by Robert Venturi and others in which spatial definition of a piece of the outdoors is never really considered.[44] If any exterior spaces are to be described well enough for man to be able to under-stand his position and relationship in them to a level at which he may feel a sense of place, more attention must be given to the space lying between quantitatively describable

42. Feeling and Form; Sussane Langer; op. cit. p. 71
43. "A Home is not a House"; Reyner Banham; op. cit. p. 73.
44. Refer to Complexity and Contradiction in Architecture; Robert Venturi, Doubleday, N.Y.; Museum of Modern Art 1966; and 'The Highway'; exhibit by the Institute of Contemporary Art and the University of Pennsylvania, June 1970. Robert Venturi and Denise Scott Brown.

entities. The first step toward this consideration is to understand what 'fields of influence' the various pieces of the physical vocabulary exert on their adjacent space.

surface:

The essential characteristic of surface is area. Since area is measured two-dimensionally, neither it nor a surface can be a physical object in itself;[45] because an object is three-dimentional. However, surface is a 'piece' of the physical vocabulary because it has descriptive potential both for the mass/volume it is a surface of as well as for the adjacent space to that mass/volume. Frank Lloyd Wright articulated the surfaces used in his work to give importance to the masses they described.[46] But more than that, his work as well as that of others like Corbusier used surfaces that were of such a strength as to create fields of influence. If the surface is planar, the field is uni-directional and of an intensity at any given distance from the surface that is dependent

45. For clarification of surface-element thickness refer to Intensions in Architecture; Christian Norberg-Schulz; op. cit. p. 137.
46. The Hidden Dimension; Edward T. Hall; op. cit. p. 49; for further reference see Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 88.

upon the recognizable size of the plane. The surface depicts a virtual volume coincidental with it and of a directionality perpendicular to the plane. Abstractly one can judge his position within this influence volume by the control over his attention that the surface commands as well as his angle of perception to the frontal directionality.

mass/volume:

If the surface is warped it conceptually depicts a mass or a volume within its confines. When one is external to the confines of the surface and not able to perceptually penetrate it, he experiences only the 'exocentric' influence of the surface. This field can be characterized much as that of the planar surface, only here the perpendicular directionality varies according to the warping of that surface and may create reinforced foci and negated regions. If one is within the confines of the volume either physically or mentally, he may then experience the 'egocentric' influence field that has the characterization of concentration and closure.[47] Norberg-Schulz

47. For further discussion of ego/exocentric influence see Intentions in Architecture; Christian Norberg-Schulz; op. cit. p. 134,135,136; and The Hidden Dimension; Edward T. Hall; op. cit. p. 128,137,138.

illustrates the exo and egocentric differences by stating that in things everything is focused while in nature everything is contained.[48] It could be inferred that the things which create focus are contained in nature -- the great outdoors referred to by Reyner Banham.

A phenomenalogical or immanent attitude toward the experiencing of mass/volume is the coincidal realization of both exo and egocentric influences. This factor was discussed by Bachelard in his reference to a state of 'roundness'.[49] Roundness becomes the image of the quality of concentration, closure and continuity. It is both exterior and interior -- but most importantly, it is complete. This completeness establishes a state of conceptualization that isolates the image. The process of isolation is one very powerful and basic mechanism for imparting identity to an entity or context.[50]

As discussed previously, one's personal identity is mirrored and reinforced in the entity of the home. The

48. Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 32, also refer to p. 46 and 83; and Team 10 Primer; edited by Alison Smithson, op. cit. p.86; and The Image of The City; Kevin Lynch; The MIT Press p. 79.
49. The Poetics of Space; Gaston Bachelard; Beacon Press, Boston, 1970, p. 234, 239.
50. For discussion of community identity through isolation see Team 10 Primer; edited by Alison Smithson; op. cit. p. 74.

home adopts many of the attributes of roundness -- concentration, centrality, and closure -- in its image of one's personality.[51] Its major function is as a refuge where the concentration of intimacy may occur. It represents a center from which one may venture forth and to which one may return with expectancy and familiarity.[52] Visual isolation reinforces the psychological recognition of the roundness quality. Because of this, one of the iconographic attributes of the detached dwelling is its ability to clarify the center of concentration. Besides the functional drawbacks associated with attached dwellings, their primary fault is the lack of isolation and conceptualization potential. This is illustrated to an extreme in the housing-project image made famous in Germany and surrounding countries both before and after World War II.[53]

The denial of conceptual isolation aggravates the fear of a lack of privacy and intimacy in the social context whether or not this fear is founded, functionally.

51. See The Poetics of Space; Gaston Bachelard; op. cit. p. 37,234,239, and Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 21.
52. Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 19.
53. For illustrations see Architecture v. Housing; Martin Pawley; Praeger, p. 30,71, also refer to The Poetics of Space; Gaston Bachelard; op. cit. p. 27 for discussion of the incomplete skyscraper.

In Christopher Alexander's book The City as a Mechanism for Sustaining Human Contact, a concept termed the 'autonomy-withdrawal syndrome' is presented on the basis of an elimination of the intimate factor in people's lives.[54] His argument is that if people are denied intimacy, they will tend to withdraw not only to themselves but also away from physical proximity to anyone else. As a result they move to less dense areas that allow them to gather as much property, or space, around their 'home' as economically feasible.[55]

The phenomenological desire of man to be able to conceptually comprehend his private dwelling environment in his own image has caused him to approach the task of building with an attitude of detachment from the surroundings when those surroundings do not allow for intimacy to exist to the desired level. This attitude carries with it the common image of 'moat privacy' and the building of one's own 'castle' no matter how modest the actual project.[56] This attitude has also affected the

54. The City as a Mechanism for Sustaining Human Contact; Christopher Alexander; Berkely Center for Planning and Development Research, University of California, 1966.
55. For additional reference to the 'autonomy-withdrawal syndrome' see "The Time House"; Martin Pawley; op. cit. p. 138.
56 Refer to "Popular Housing"; William Cowburn; op.cit. p. 77 for discussion of 'moat separation' in today's house; and "In the Townscape;" J.R.Nicholls; Architectural Review, Volume 142#849 November 1967, p.336 for discussion of the 'castle'.

public sector in which the edifice may be jointly or communally owned but represents a concept, cause or ideal that is commonly felt by that group (witness the physical differences between privately owned shops; and the similarities between anonymously controlled leased facilities).

Reyner Banham extrapolates the results of the isolation mechanism to an extreme by elaborating on man's obsession with the automobile and its mobility potential.[57] The very fact that it is mobile intensifies its isolation from the immediate environment. It is essentially divorced from the road when moving and becomes a whole different entity when stopped. Banham transposes this attribute of the 'temporary' dwelling supplied by the automobile during the time one is within it to the more permanent dwelling by suggesting that the conventional house might possibly become a living 'pod' that is essentially a mechanical core providing shelter, comfort, amusement and mobility. One's 'place on earth' would lose its traditional significance under these conditions, thus requiring a new basis of personal attitudes for resolving objective space.[58]

57. "A Home is not a House"; Reyner Banham; Art and America; April 1965; 70-79.
58. For insight about affected aspects, refer to sections on Territoriality and Mobility as well as Future Shock; Alvin Toffler; Bantam Books, New York, 1971.

edge:

Except for spherical forms and their derivatives, all of which are seldom found in the environmental context, surfaces representing mass or volume are definitive; they have a measurable extent and arrive at some point of termination. This limitation may be described as an edge of the surface and be characterized as a boundary separating within from without; but also acting as a connection between the two.

The brain 'sees' best in terms of edges, as has been verified by visual experimentation; therefore imparting considerable importance to the edge as an information supplier in the descriptive vocabulary of physical form.[59] Continuity in its visual definition adds much to its clarity and informational impact.[60]

J.B. Jackson characterizes the aspect of boundary as being the most interesting of all those related to the public landscape because it arouses the most emotion and produces

59. The Hidden Dimension; Edward T. Hall; op. cit. p. 82.
60. Refer to The Image of the City; Kevin Lynch; op. cit. p. 62-66.

the most action and reaction.[61] In one sense it represents a constraint on man's attainment of freedom -- a state arrived at only after the physical vocabulary has successfully described the positional characteristics of the environmental 'pieces'. As mentioned above, its other function is one of connection. It becomes a 'backbone' or reference to which other things defined by surfaces attach and are related.

Fences are 'object' edges that may carry the significance of being both boundaries of a constraining nature as well as delineators and informational suppliers as to one's position and its appropriateness.[62]

line:

Of an abstract dynamic difference to the clear-cut boundary or edge is the line, the fourth basic part of the descriptive physical vocabulary. The line may be mentally and/or physically 'traversed' along its lateral direction, thus

61. Landscapes: J.B. Jackson; op. cit. 154.
62. For specific examples and discussion of mechanism see House Form and Culture; Amos Rapoport; op. cit. p. 133, 134.

becoming a path that is a descriptive entity in itself in contrast to an edge that is inherently dependent upon the surface of which it is an extremity.

Kurt Lewin introduced the term 'hodological space' as that space of possible movement. A path may be qualified by its preference level or satisfaction potential within that space.[63] Continuity is an inherent quality of the path; even more so than the edge, because a path is something along which one moves. An axis is a conceptual path of high satisfaction because it concretizes the centrodial factors of the composition.

The directionality characteristic of a line or path carries with it immanent spatial aspect implications. Man is biologically a directional being. He is most conscious of the distinction between up and down; the direction of the vertical. He is also sensitive to the differences between right and left and their approximation of identicality or symmetry. Before or behind are different

63. Refer to Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 22.

in that the 'before' represents progress or a moving forward in contrast to 'behind' as indicative of a withdrawing.[64]

The particular direction of the vertical is probably most universally described in the house where its very essence is the meaning of 'to build', to stake out and define a specialized environmental space in which one may impart his image in order that the space may acquire personality thus becoming a place. This verticality of the house is manifested in the inhabitant's mind in the form of emotional fears and elations characteristic of the different levels of the dwelling. Gaston Bachelard discusses these emotions by identifying the cellar and the attic as particularly meaningful places that are thought of somewhat consistently and universally in relation to the vertical.[65]

64. For further elaboration on this subject see "Meaning in Architecture"; Christian Norberg-Schulz; op. cit. p. 224, and "Spatial Meaning and the Properties of the Environment"; Robert Beck; Environmental Psychology: Man and His Physical Setting p. 137.
65. Refer to The Poetics of Space; Gaston Bachelard; op. cit. Chapter 1.

NON-FIXED FEATURE SYSTEM

The Non-Fixed Feature System comprised of potential mutability agents working through or in conjunction with the Fixed Feature System provides one means by which the interest of the perceiver may sustain itself through freedom of interpretation. The unstableness of a given interpretation at a specific moment causes an unending search in attempting to clearly describe the event. This instability overrides and renders untenable the ultimate static nature of the Fixed System.

Potential Mutability Agents

An open-ended list of Potential Mutability Agents constitutes the working vocabulary of the Non-Fixed Feature System. As discussed in the description of the Spatial Determinant Framework, they have the common characteristic of dynamism that is associated with the quality of potential change. The parts of this vocabulary may be chosen and combined in a myriad of possibilities influencing the potentials of the intellectual/emotional states.

contrast:

The strongest quality of the edge is contrast. Vision is dependent upon illumination,and changes in its intensity alter the informational content. Objective sensation is dependent upon vibrational or physical texture and changes in these aspects also affect the information transmitted to the perceiver. The recognition of a change triggers an interest in investigating that field being entered with respect to the one left.

Contrast is on a higher level than delineation in that it operates as a comparison thus illustrating potential relationships rather than only specifying position. A relational force, manifested as tension, becomes noticeable, pulling one's attention from one entity to another and back again through varying combinations of investigatory sequences.

texture:

Texture, both sensory and physical, is a correlary mechanism of contrast and is one of the primary aspects of interest maintainment. As applied to the surfaces of the descriptive physical vocabulary, it creates

differentiation between areas. It may vary in its sensory information in a myriad of combinations while still allowing the surface to retain its integrity.

A change in texture describes a durational progression; thereby suggesting a dynamic situation in which even if the parts are static and complete in their revelation, the whole is changeable and open to further discovery.[66] The importance of texture in maintaining interest is illustrated by the negative reaction of individuals to much contemporary design that calls for clarity, lucidity and simplicity. This design too readily gives up its information, and once it does, it has no alternatives or variations on the theme to offer.[67] Lack of texture variation is an important consideration in the excessive speeds built up unknowingly while driving across undifferentiated landscapes.[68] No visual textural change coupled with the negation of sensory texture recognition by both sophisticated highway construction techniques and automobile design mitigate against one having any continuing interest in what is happening about him.[69]

66. For varying sensory states see The Hidden Dimension; Edward T. Hall; op. cit. p. 59.
67. Refer to "Complexity and Ambiguity in Environmental Design"; Amos Rapoport; op. cit. p. 210.
68. For extensive description of this phenomenon see "Space-Time on Prairie Highways"; Robert Sommer, op. cit. p.274.
69. Refer to The Hidden Dimension; Edward T. Hall; op. cit. p. 165; and Architecture versus Housing; Martin Pawley; op. cit. p. 96.

scale:

The texture's ability to retain interest relies heavily on its relative scale. Above and below certain limits of size, it becomes difficult for the perceiver's imagination to inhabit and comprehend the nature of the surface. Although one's imagination may inflate or deflate itself somewhat, as in inhabiting a miniaturization, it reacts best to things that are of human scale; as in understanding an opening as a passage best if it has door-sized qualities, and a skin-like surface best if its textural dimensions are of that magnitude.

The home is scaled to correspond to its inhabitant's image. If it does not correlate to a certain level of satisfaction then one feels cramped or lost and overpowered.

tension:

The aspect of tension is most closely related to the line or path in that it implies direction and movement in comparison to centrality and habitation.[70] A place functions as a goal and as a point of departure establishing

70. Refer to "MA: The Japanese Sense of Place"; Gunter Nitschke; op. cit. p. 143.

both centripetal and centrifugal forces.[71] When the tension between these forces is stabilized only then can centrality occur thus letting space become place.

Tension is important in maintaining one's interest by pulling his attention from one informational context to another. This holds true only if the perceiver is sufficiently motivated to want to investigate his relationship with the environment. This motivation is also caused by tension manifested as stress within the individual to attain success and avoid failure.[72]

Time may be thought of as measured by tensions and their fluctuations.[73] The very act of moving one's attention from one thing to another requires time; the deciphering of the new information with its corresponding relaxation of tension requires time; and the new increase in relationship and interest with another piece of the environment requires time.

71. Refer to Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 46,50.
72. Refer to "Right and Wrong"; Anthony Ward; op. cit. p. 387.
73. Refer to Feeling and Form; Sussane Langer; op. cit. p. 112,113.

ambiguity/complexity/transparency:

One common quality of all the aspects of the Non-Fixed Feature System is their variable and multi-interpretational potential. In considering more than one interpretation occuring in a time overlap situation, one identifies the aspect of ambiguity that results in complexity.

Ambiguity and complexity have been recognized as desirable qualities of the environmental context in many respects. The Japanese deal with the harmony of the odd number in conjunction with the diagonal plan as a composition that has both multiple combinations as well as one that is not closed, but rather, expandable.[74] Much of the environment and life style in countries like Italy are polychronic with more than one thing happening concurrently in comparison to the more monochronic linear structure of the British and American context.[75] The question of whether everyone could comfortably live in this style does not invalidate the fact that almost everyone is fascinated by

74. Refer to "MA: The Japanese Sense of Place"; Gunter Nitschke; op. cit. p. 133,151; for harmony of odd number see Team 10 Primer; Alison Smithson; op. cit. p. 83.
75. For monochronic/polychronic discussion refer to The Hidden Dimension; Edward T. Hall; op. cit. p. 162.

it. Most monochronic societies do in fact have polychronic occasions; however, they tend to segregate them and treat them as diversions such as festivals or circuses.

In architecture ambiguity and complexity have been sophisticatedly dealt with by architects like Le Corbusier in his convent of La Tourette and his Visual Arts Center where the planar glass wall assumes a potential ambiguity due to the irregular mullion spacing.[76] Further, his house for the painter Ozenfant incorporates, as do many of his other works, iconographic objects such as metal stairs and railings that appear to belong on the exterior but are interior. Their very positioning on the inside of the dwelling establishes a potential ambiguity in the mind of the perceiver because his usual expectations have been altered.[77] All this concern between fact and implication was carried one step further in a distinction between literal and phenomenal transparency as identified by Colin Rowe and Robert Slutzky.[78] Literal transparency

76. See Le Corbusier; Oeuvre Complete 1957-1965; Volume 7; Le Convent Sainte-Marie-de-la-Tourett a Eveux p. 32-45; and Visual Arts Center in Cambridge, Mass. USA p. 54-67.
77. See Le Corbusier; Oeuvre Complete 1910-1929; Volume 1; La Maison du Peintre Ozenfant a Paris, p. 55-57.
78. Refer to Transparenz; Colin Rowe, Robert Slutzky; op. cit.

can be implied and have several readings across space via readily perceivable constructs. Phenomenal transparency resides in the realm of memory and requires a mental conceptualization of all the component parts of the spatial composition whether immediately perceivable or not. An example of the exploitation of phenomenal transparency is Le Corbusier's Palace of Congress with the medium and upper levels describing volumes of the same spatial nature but not visually perceivable one to the next. To be aware of the relationship one must remember what the other one looked like.[79]

79. See Le Corbusier; Oeuvre Complete 1957-1965; op. cit. Palais des Congres a Strasbourg p. 140.

Potential Intellectual/Emotional States

The concretization of amorphous space by the physical vocabulary of surface, mass/volume, edge and line results in the identifiacation and description of entities and their positions for both the elements comprising the environmental context as well as for the perceiver. This concretization is essentially one of an organization of the physical environment that is representational of an organization of activity or energy. The energy available to an individual in an industrial society today is much greater than that available in the past and is increasing at an accelerating rate. This energy is manifested in activity which is, in turn, exhibited as movement. The potential movement of three-dimensional physical entities through space requires spatial volume of an expanding and contracting nature; the volume to be assumed next, the immediate volume and the volume just left. Additionally there is the hodological volume of potential assumption. As energy available to individuals increases so do their hodological volume requirements, thus increasing the dynamic spatial complexity of the environment.[80]

80. For further discussion on this point refer to "The Scale of Settlements and the Quality of Life"; discussion at Delos; Ekistics, Volume 28#167 October 1969, p. 227-281, and "Energy and the Structure of Human Settlements", C.A. Doxiadis; Ekistics, Volume 28#167 October 1969 p. 271-276.

Of all the environmental 'pieces' that aid in the organization and structuring of energy, perhaps the most personal mechanism is, again, that of the house. Bachelard describes it as an integrator of one's daydreams, while Martin Pawley links daydreams to memories, thus introducing a time factor to the mental movement of ideas.[81] The house is a particular composition of various environmental pieces that allow man to go farther in his understanding of the context within which he operates than do each of the pieces considered separately. Individually they impart physical position and provide organizational clues for tangible energy, while collectively they allow for immanent aspect organization of mental energy.

The result of spatial description is a setting in which several different potential intellectual/emotional states may exist. These have the common characteristic of only being able to operate in a clarified environment; one that is understood well enough by the perceiver for him to feel competent to operate within it. The state of competency, if provided only by the Fixed Feature System, may rely

81. Refer to The Poetics of Space; Gaston Bachelard; op. cit. p.6,7; and "The Time House"; Martin Pawley; op. cit. p. 142.

on feelings of familiarity stemming from certainty of expectation fulfillment. Although there are several derivations from the state of certainty, in this case, one probable result would be potential passivity as a product of homogeneity of interest and static security. Without the potential of change provided by the Non-Fixed Feature System vocabulary, the interest factor of discovery would be terminable once the environmental constructs were understood in their unchanging arrangement.

The potential intellectual/emotional states described below are only a few of those possible. Their relative importances and combinations as regulated by the individual's Perceptual Mechanism are also infinitely variable in describing one's personal conception of space.

continuity/conceptualization/competency:

The common characteristic goal of the Fixed Feature System is continuity. Once this has been established through the description and position of the pieces of the physical environmental vocabulary, conceptualization may occur leading to a feeling of competency in understanding by the perceiver.

Continuity may be spoken of in the abstract immediate sense but is usually made reference to in relation to time. Fixed Feature space, that public landscape described by Jackson, is the physical result or manifestation of history.[82] It contains the items that suggest explanations for the form of things in the present; items that have lasted longer than the general context. And although they might not be of a high criticality to the present operational structure and understanding of the environment, their removal or alteration would be of high criticality to the historical process which in turn would adversely affect the perceiver's expectational outlook on the future and his confidence in the certainty of the situation; thereby diminishing the state of security.

Home in the plural or social sense has historically had a physical continuity to it;[83] a certain level of sameness that reflects a cultural grouping of individuals that satisfied each others expectations to some acceptable level of performance. If the individual home represents the refuge and bastion to which its occupier may retreat and

82. Landscapes; J.B. Jackson, op. cit. p. 153.
83. "The Form of Housing"; Neave Brown; Architectural Design, March 1966 p. 433.

reassemble his forces, then certainly the habitational context into which it is set should portray some resemblance thus strengthening his feeling of being in familiar or secure territory.

familiarity:

Familiarity may be achieved by two methods. One requires the element of time and comes via knowledge and understanding derived from use or observation. One example of this principle is the Moslem sense of blessedness known as Baraka, that attaches itself to things.[84] The mechanism of personification or vicarious projection is established over a time limit in which one builds a 'common bond' between himself and the place or thing because of shared experiences; this mechanism in turn creates a certain quality of affection.[85]

The other means of creating familiarity is through analogy. Stereotyped objects or situations imply a sameness in expectation between one and the next even though one may

84. "The Secret War Between Science and Poetry"; Robert Graves; Intellectual Digest; Volume II No. 8, April 1972.
85. Refer to the Image of the City; Kevin Lynch; op. cit p. 6 for discussion of building the image.

never have been experienced before. This method requires a durational factor only initially during which time one's opinion is formed via the first method. After analogy takes over, the time element becomes non-existent. Corporate graphics, chain stores and the like exploit this mechanism of familiarity and therefore one's expectation of performance of the entity or place.

proximity:

The aspect of familiarity requires a mental or physical proximity between the perceiver and the context. Kurt Lewin identified one's 'life space' as a volume within which one existed (except by vicarious removal -- [my comment]).[86] This space is somewhat analogous to the hodological energy space described previously, except that it is bounded more by mental constraint than by actual limit. This life space is proximitous to the inhabitant and of more familiar import than the space external to it.

The time element inherent in the definition of proximity could be termed immediacy of contact. The principles governing this element are well documented in the United

86. Handbook of Social Psychology; Kurt Lewin.

States by the roadside architecture of the neon strip made famous by Robert Venturi in which each entity is in strict competition for the perceiver's attention and therefore at variance with its neighbors.[87] One's attention is supposed to be totally captured by the entity or environment to which he is most proximitous. A more broad view of immediacy of contact is the Japanese conception of urban design.[88] Each building or project is considered a totality within itself and is understandable only unto itself. Movement about the urban environment is thought of by means of districts or places that define the 'ends' of where one is and where one wants to be, but not the 'means' or progression by which one gets there. This point is illustrated by the naming of the districts but not the streets that connect them. Further, the buildings within a district have no progressive cataloging system, but rather, are numbered in order of their construction. This practice may add a historical continuity to the area but does not establish any kind of conceptual image of the context. One cannot foster expectations about anything larger than what is immediately available.

87. Refer to Complexity and Contradiction in Architecture; Robert Venturi; op. cit. and "The Highway"; exhibit by the Institute of Contemporary Art; o. cit.
88. For complete description see "Lessons from the Japanese Jungle"; J.M. Richards; Ekistics, Volume 28#165, August 1969.

Proximity is also a factor in determining territoriality. Beyond a certain psychologically desireable limit crowding occurs. At that time the boundaries of personal space are violated perhaps not intentionally but by necessity. In certain atmospheres this triggers an immediate autonomy-withdrawal reaction.[89] An example of this is one's personal conduct on a crowded bus or subway car. The desireable limit of proximity is variable and relative to aspects of intimacy and energy dissipation.[90] An example of the latter is the increased sense of crowding felt in a warm situation over that of a less active one.

expectancy:

During the description of Ego Space, a distinction was drawn between 'existential' space as culturally conditioned, but of a relatively constant nature, and 'perceptual' space as that impression directed inward and dependent upon one's immediate mood or attitude.[91] The same things, spaces or situations may take on a different meaning depending on the reflectional image that is developed from the perceiver's imparted image. One's attitude can be

89. Refer to Personal Space; The Behavioral Basis of Design; Robert Sommer; op. cit. p. 22.
90. Refer to The Hidden Dimension; Edward T. Hall; op. cit. p. 55.
91. Refer to Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p. 11.

significantly conditioned by his level of security and familiarity with the surroundings. He develops expectations about the performance ability of both himself and the environment as evidenced by the satisfaction correlation between an available path and one's desire line. If they do not coincide, a mentally traumatic situation may develop.[92] The time element may again be introduced with respect to one's ability to perform within a prescribed, preconceived durational limit. If the limit is exceeded, the expectation is thwarted and satisfaction is jeopardized.[93]

Expectancy viewed in the social context is descriptive of status. A prescribed level of performance and imagery is required within each stratification of status. The dwelling may reflect one's personal image best in one particular form, but it may require substantial alteration to maintain the individual's social image.[94] Additionally, status carries with it increased spatial freedom and mobility.[95] Those of higher recognition tend to be more

92. "Some Notes on Place and Movement"; Log: John R. Myer's Trip: Japan; Massachusetts Institute of Technology; Department of Architecture; p. 21.
93. Ibid. p. 22.
94. Refer to "Sociological Evidence on Housing, 2; The Home Environment"; John Raven; Architectural Review; September 1967; p. 236; and "Housing and Its Effects;" Environmental Psychology; Man and His Physical Setting; Alvin L. Schorr; op. cit. p. 320.
95. Refer to Personal Space; Robert Sommer; op. cit. p. 16.

'worldly' in their experience and connections and are generally granted more personal space through deference to their position.

certainty/security:

Considering only the influence of the Fixed Feature System, the blanket result of the intellectual/emotional states described above is a state of certainty in the description of entities and their positions leading to a sense of security in the perceiver's mind. This state of security is the foundation for several further potential states; four of which may be thought of in terms of internally reinforcing pairs comprised of homogeneity/passivity and freedom/mobility.

homogeneity:

Extensive identification of entity and position via the Fixed Feature System only may lead to such a difinitive level of familiarity and security that interest in one's environment will subside. Once everything basic has been established there will be no more purpose behind the retention of one's interest unless some continuing discovery mechanism is incorporated.[96]

96. For reference to monotony refer to "Complexity and Ambiguity in Environmental Design"; Amos Rapoport; Robert E. Kantor; op.cit. p. 211, 217.

The principle of supplying obvious answers for the rationale of the perceiver's environment was the primary nature of functionalism. Its shortcoming was the ultimate product of homogeneous space; a space containing no secrets or complexity.[97] Functionalism, either symbolic or actual, directed itself almost wholly toward the descriptive spatial attitude and did not allow very much interaction to occur in the ego or immanent attitudes beyond the formation of basic aspect analogies.

Homogeneity manifests itself in the social dwelling context precisely because of the level of security and familiarity of expectation that it represents. Most people that buy a home, especially in the mobile society of today, are at the same time thinking of selling it. If it does not somewhat conform to the accepted level of 'propriety' and status within its immediate surroundings, it has less of a chance of attracting a buyer who is not only seeking shelter but also wants reassurance as to his ideals.[98] As a rule, in finding his identity, he does not want to isolate himself from society.

97. Refer to "Meaning in Architedture"; Christian Norberg-Schulz; op. cit. p. 215,216.
98. Refer to "Planning and Social Life, Friendship and Neighbor Relations in Suburban Communities"; Herbert J. Gans; Environmental Psychology: Man and His Physical Setting; op. cit. p. 507; and "Popular Housing"; William Cowburn; op. cit. p. 80.

passivity:

One result of security that leads to homogeneity is a passivity manifested in the perceiver. If all the answers are spelled out for him, man becomes complacent. This situation can be desirous for short duration, but changes to disappointment if extended beyond a limit. He then must turn to artificial or applied means of interest arousal.[99]

> "Contemporary man is certainly passive most of his free time. He is the eternal consumer. He takes in drinks, food, cigarettes, lectures, sights, books, films: everything is devoured and swallowed...Man has become the eternally expectant and disappointed suckling.[100]

freedom:

Freedom is directly related to one's understanding of, and mastery over, his situation.[101] One of man's immanent desires is a comprehension of the reasons lying behind the form of his environment. Whether the reasons are necessarily correct has not precluded their necessity. As an example consider man's insistence in religion of one form or another as an explanation for the unexplainable.

99. For A description of "Googie architecture" refer to "Complexity and Ambiguity in Environmental Design"; Amos Rapoport; op. cit. p. 217.
100. Eric Fromm as quoted in "Meaning in Architecture" Christian Norberg-Schulz; op. cit. p. 218,219.
101. Refer to "The Time House; Martin Pawley; op.cit. p. 140.

mobility:

"Way-finding is the original function of the environmental image."[102]

Once an attitude of freedom is established, man may strike out to discover new stimulants or exert his influence over a broader field.[103] The arrival of the automobile has done more to increase personal mobility than any other factor. Its magic is in its ability to become an extension of the body; an additional power given to the arms and legs. The trend toward the insulated'parlor' car of the 50's and 60's has been somewhat encroached upon by the sports car -- alluding to the desire for mobility and its re-inforcement through the sensory channels.[104]

As previously described under the consideration of mass/ volume and isolation, mobility taken as an end in itself would invalidate the traditional, stationary concept of 'place on earth' from which one goes and to which one returns. Present dwelling statistics, especially in the

102. The Image of the City; Kevin Lynch; op. cit. p. 125.
103. Refer to "Energy and the Structure of Human Settlements"; C.A. Doxiadis; op. cit. p. 271.
104. Refer to The Hidden Dimension; Edward T. Hall; op. cit. p. 165.

United States, show that more families move more often within a given time span than in the past.[105] This frequency of movement diminishes the durational impact of each dwelling place resulting in a loss of contact with each piece of territory, thus thwarting much potential familiarity and security.[106]

The static viewpoint of spatial perception, like that of Renaissance perspective, existed during a time when man was much less mobile than at present. Compositionally things were to be seen most advantageously from one particular viewpoint.[107] Mobile, multi-viewpoint possibilities first appeared with conviction in Cubistic interpretations both in two dimensional painting as well as three dimensional design.[108]. This development was approximately coincidal with the distribution of the automobile and the greatly increased potential for travel. The mobile aspect of spatial perception became both a method and a tool for several twentieth century architects -- among them Le Corbusier and Alvar Aalto. Both of these

106. Refer to Future Shock; Alvin Toffler; op. cit.
107. For discussion on the static viewpoint see The Hidden Dimension; Edward T. Hall; op. cit. p. 80,81.
108. Refer to footnote#1 and "A Spatial Point of View"; John Hejduk; College of Architecture, Art and Planning; Cornell University; 1969, p. 2.

men dealt with complex asymmetrical balance in their designs that incorporated numerous ideal or advantageous viewpoints. As an example one might compare the dynamic centroidal interrelationships in the form of the Societe des Nations project by Le Corbusier with the relatively static axiality of the plan of Versailles.[109]

habitability:

One's particular ability to comprehend the constructs of an environmental context thus engendering the intellectual/emotional states of competency and familiarity, plus the intensity of the mass/volume form characteristics of concentration, isolation and completeness may develop through the state of security into a mental state of habitability.[110] Certain compositions of entities and/or shapes of the entities themselves may be inhabited psychologically, if not physically, more easily than others due to their conceptualization potential. An individual's house is probably the most psychologically inhabitable

109. For plan of Societe des Nations refer to Transparenz; Le Corbusier, Studien#1; Colin Rowe, Robert Slutzky; Birkhauser Verlag; 1968, p. 36-41.
110. For reference to the home as a place of security see Existence, Space and Architecture; Christian Norberg-Schulz op. cit. p.20; and House Form and Culture; Amos Rapoport; op. cit. p.134.

physical composition because of his familiarity with it. However, other spatial pieces and forms may also suggest habitation because they possess qualities analogous to the dwelling performance characteristics of shelter, protection, envelopability,etc.

territoriality:

The act of inhabiting -- making one's presence fill a particular entity or location -- may be considered as a process involving only the perceiver and the environmental context. If the perceiver is the only personified entity within the identifiable environment, he then occupies that environment totally. If other personified objects or 'cohabitors' are extant (people, automobiles that take on a personality, etc.), a situation develops in which a sense of ownership is associated with the various areas or 'patches' identifiable.[111] This aspect of territoriality imparts a further meaning to the positional definition in that it qualifies one's relationship with a particular segment of the environment. A misreading of territorial boundaries causes confusion and insecurity which is the anti-thesis of the objective of physical description.[112]

111. For a thermal consideration of this observation refer to The Hidden Dimension; Edward T. Hall; op.cit. p. 52.
112. Ibid. p. 174.

The intensity of appropriateness to a particular position has been described by several people in terms of territorial spacing and distance zones of personal space.[113] These have been rated on scales ranging between intimate and public. These spacings are highly subject to cultural conditioning and therefore not of immanent nature except in the most intimate of circumstances.[114]

In the social context, the house represents the individual's staking out of his territory; his 'piece' of the environmental action.[115] Its image of roundness, centrality, completeness and concentration solidifies and defends this representation.

In the personal context, the house becomes the essence of a place on earth, defining a territory in which man's image may feel secure in residing and therefore may most easily personify.[116]

113. See Ibid. p. 112; and Personal Space; Robert Sommer; op.cit. p. 27, 42.
114. For examples of cultural differences see The Hidden Dimension; Edward T. Hall; op. cit. p. 134-144.
115. Refer to House Form and Culture; Amos Rapoport; op. cit. p. 79,133; "The Time House"; Martin Pawley; op. cit. p. 135.
116. Refer to "The Failure of Housing"; Nicholas Taylor; Architectural Review, Vol.142#849, November 1967,p.342; and House Form and Culture; Amos Rapoport; op. cit. p. 79; and Feeling and Form; Sussane Langer; op. cit.p.101.

uncertainty/fascination:

As described above, the sum of the Fixed Feature System's intellectual/emotional states results in a state of certainty that allows for a feeling of security. This security is the basis for several different following states.

The potential mutability agents belonging to the Non-Fixed Feature System result in a state of uncertainty as a foundation for further potential feelings. One of these further states is fascination -- a heightened interest in discovery of new environmental information maintained, in a sense, by the tantalizingly incomplete.[117] This quality juxtaposed next to passivity eliminates the dead end created through knowing all the answers to the constructs of one's environment.

117. Refer to "Complexity and Ambiguity in Environmental Design:; Amos Rapoport; op. cit. p. 218.

HIERARCHY/RELATIONSHIP

The assigning of levels of importance to each of the aspects of the Fixed Feature System and the Non-Fixed Feature System plus their combined intellectual/emotional states is one more descriptive step in the informational mechanism. The ability of hierarchy is to rate the aspects according to their deservance of attention. The result of this rating is to add an abstract directionality to one's otherwise unidirectional investigatory process. This directional process is felt in Norberg-Schulz's characterization of a progression from the domain-dominated landscape over the path-dominated city to the place-dominated house.[118]

An example of hierarchic manifestation in the physical environment is the existence of courtyard houses in cultures that are both crowded and hierarchial.[119] The courtyard allows for a further public-private differentiation within the house and family structure beyond that of the public/social domain and the private/personal one.

118. Existence, Space and Architecture; Christian Norberg-Schulz; op. cit. p.31; also see Landscapes; J.B. Jackson; op. cit. p. 154 for hierarchial reference to landscape.
119. Refer to House Form and Culture; Amos Rapoport; op. cit. p. 80.

Perceptual recognition of hierarchy results in the identification of relationships. Without the hierarchial factor, relational description would be impossible because its very definition relies on the validity of nuances.

The concept of relationship exists in all cultures at least to the extent of the factors necessary for survival assuming a certain sense of urgency. The same concept varies between cultures, however, when considered spatially. Conventional Western training teaches the importance of mass and entity while disregarding the in-between space as amorphous and non-existent. Japanese attitudes attribute a sense of being or existence to the intervening interval between the entitities regarded as so important in Western culture. This interval both characterizes and is characterized by the relationships between the entities that define its boundaries.[120]

The Eastern attitude does not seem to hold for large-scale contemporary Urban Design. There, the reverberations transmitted and received by each signigicant piece of

120. Refer to "MA, The Japanese Sense of Place", Gunter Nitschke; op.cit. p. 126,144; and The Hidden Dimension; Edward T. Hall; op. cit. p. 142,143.

the context meet in collision rather than collage.[121] This situation was also characterized by ancient Rome as compared to the organization of Hadrian's Villa at Tivoli.[122]

One further example of the importance of relationships is illustrated by the Aivilik Eskimos that determine their location on an object-free terrain of snow and wind not by position but by relation. They operate on a direct level with the relationships supplied by the environment thereby becoming a part of the relational structure.[123]

121. Refer to "Lessons From the Japanese Jungle"; J.M. Richards; op. cit. p. 76.
122. Examples used in a lecture by Colin Rowe; "Utopia or the Collage City"; Harvard Graduate School of Design; April 20, 1972.
132. Refer to The Hidden Dimension; Edward T. Hall; op. cit. p. 73.

PERCEPTUAL MECHANISM

projection/personification/analogy:

The establishment of relationships through the mechanism of hierarchy allows the individual to better understand the environmental constructs because he can then judge not only connection among things but also importance. The more sensitive his percpetual mechanism is to the potential intellectual/emotional states inherent in the spatial context, the more closely the realized image fits his own identity desires. In a reverse explanation, if his perceptual mechanism is sensitive enough, the individual may personify the spatial context with his own identifying features to then be able to receive them back as the context's personality. This process works best with the house which, as a physical object,becomes inhabited, even from without, by one's direct image.[124] Martin Pawley equates the act of dwelling with acceptance of an object's status.[125] This is a necessary part of the operation, but the important point he fails to mention

124. Refer to The Poetics of Space; Gaston Bachelard; op. cit. p. 47, and "Housing and It's Effect"; Alvin L. Schorr; op. cit. p. 320.
125. Refer to "The Time House"; Martin Pawley; op. cit. p. 129.

is that this status owes its very existence to man's image personified in the dwelling. In popular housing today this personification may assume an attitude of embracement more than habitation mainly because of one's conditioning in a consumer society.[126] The important principle, however, is the transfer and assumption of the personal image; this act in itself being proof of one's attainment of personal identity.

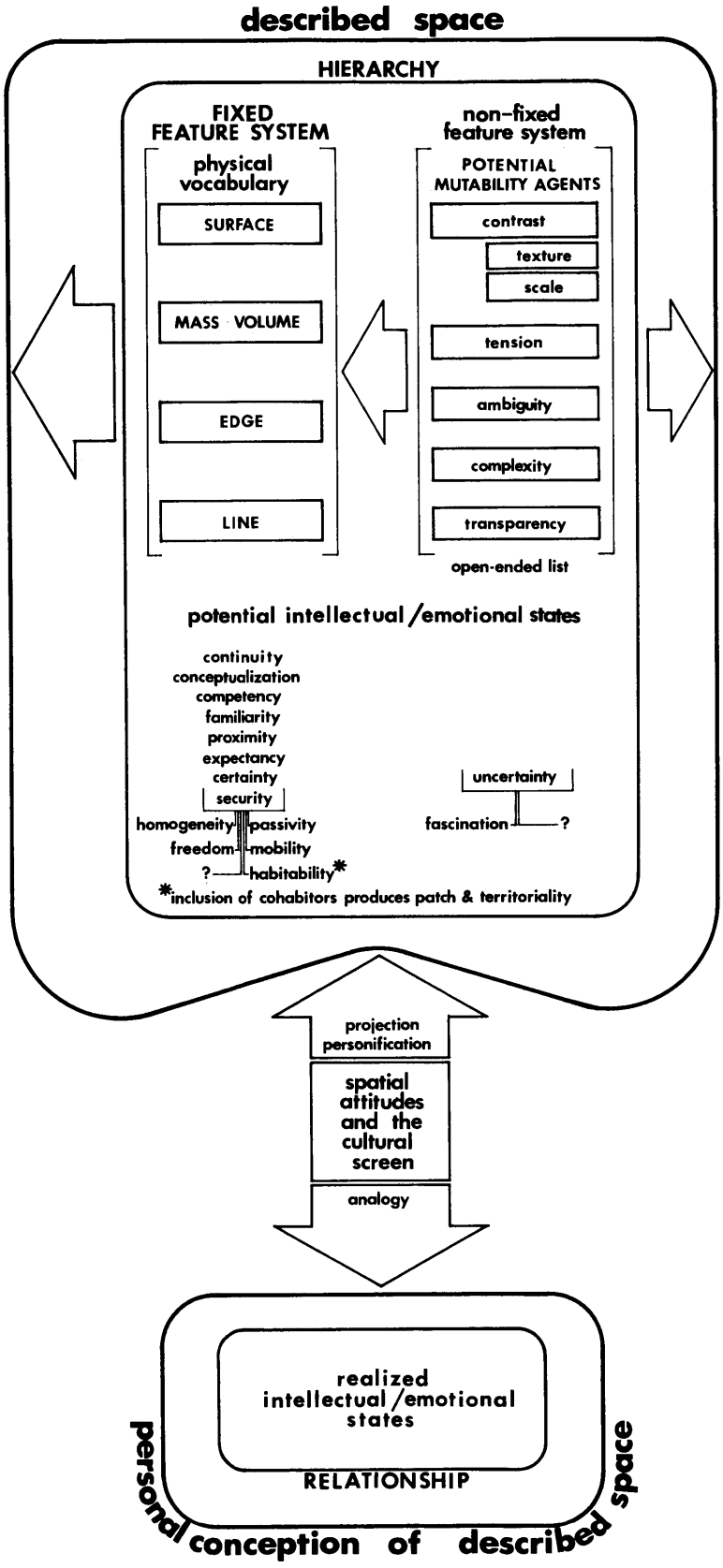
In reference to L'Antiquaire, Bachelard describes one's vicarious projection of his own image to a remote location, a tower; thus making it a place.[127] In painting,the particular locations of human figures take on increased significance to the perceiver because they are of highest familiarity and invite his image to inhabit them. In a sense, they become places of intimate association.

This same mechanism is involved when people personify objects such as automobiles. In this case there are two stratifications discernable. The individual first

126. "Popular Housing"; William Cowburn; op. cit. p. 81.
127. Refer to The Poetics of Space; Gaston Bachelard; op. cit. p. 25.

accredits the automobile in general with anatomical and biological features analogous to man's. He then realizes a familiarity of Baraka. In developing this familiarity, the perceiver recognizes a personality in the automobile. This recognition is dependent upon the individual's particular perceptual mechanism therefore producing a perceived personality that is analogous to one's own.[128]

128. Refer to "Place"; James Andrew Carr; Department of Architecture; Massachusetts Institute of Technology. p. 13.



PLACE ASPECT RELATIONAL STRUCTURE: ONE CONSTRUCT

REFERENCE INDEX *

In addition to the footnoted references in the previous sections, the Reference Index lists further material on the spatial aspects. This diagram is meant as a working 'tool' to help the reader begin investigations into developing his own personal construct of spatial aspects leading toward the goal of 'placemaking'.

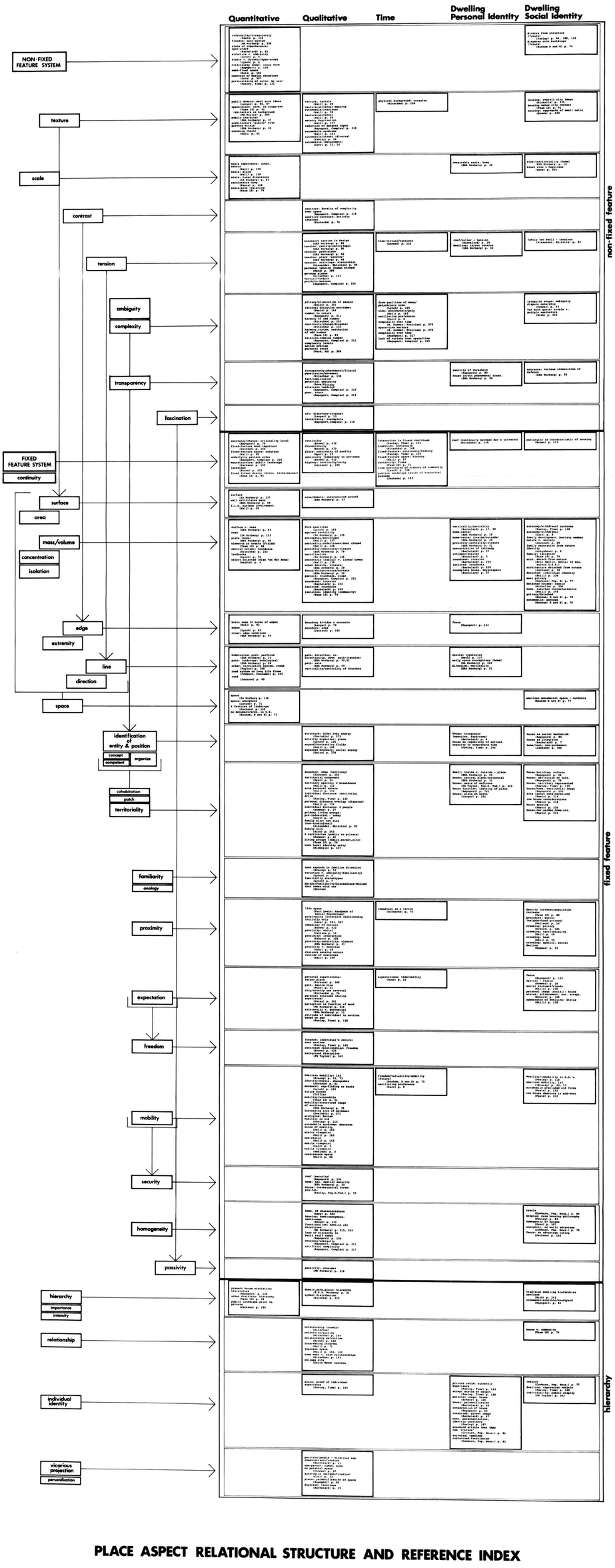
The Reference Index separates the literary references into characteristic categories and relates them directly to the aspects. Diagrammatically this is portrayed through a cartesian coordinate system with those references belonging to a particular aspect lying within the same band laid across all the categories.

There are five separate categorical distincitons. The first two categories are labeled 'Quantitative' and 'Qualitative' and divide the general references into basic groupings of measurable factors and into psychological values, depending upon the nature of the aspect to which the references relate. Any references dependent upon a durational factor are listed in the third category of 'Time'; and the last two distinctions are titled 'Personal Identity: Dwelling' and 'Social Identity: Dwelling' and

* Refer to Place Aspect Relational Structure and Reference Index / page 89

are characterized by their deference to man's habitat, that physical entity that perhaps best represents one's identity both personally and socially.

Aspects of immanent spatial nature are not distinctly separate in their own category because references to them are usually through analogies (see Gaston Bachelard's The Poetics of Space). These analogies generally have characteristics common to both the ego attitude and immanent attitude -- much as a set within a set in contrast to a set distinct from a set -- and therefore cannot be separated and still have meaning (refer to discussion of the whole being equal to more than the sum of its parts under the heading of Descriptive Space: Quantitative). Most immanent aspect considerations are made reference to in the 'Personal Identity: Dwelling' category, primarily, and the 'Social Identity: Dwelling' category, secondarily.


Quantitative
Qualitative
Time
Dwelling Personal Identity
Dwelling Social Identity
non-fixed feature
fixed feature
hierarchy
NON-FIXED FEATURE SYSTEM
texture
scale
contrast
tension
ambiguity
complexity
transparency
fascination
FIXED FEATURE SYSTEM
continuity
surface
area
mass/volume
concentration
isolation
edge
extremity
line
direction
space
identification of entity & position
concept
organize
competent
cohabitation
patch
territoriality
familiarity
analogy
proximity
expectation
freedom
mobility
security
homogeneity
passivity
hierarchy
importance
intensity
relationship
individual identity
vicarious projection
personalization
PLACE ASPECT RELATIONAL STRUCTURE AND REFERENCE INDEX

D
COMPARATIVE EXAMPLES OF SOME PLACE ASPECTS

As mentioned in the main body of the thesis, man's dwelling is perhaps the ultimate personal physical illustration of a place. It is there that his personal identity may find the most reinforcement from appropriate emotional states thus creating an intense feeling of competency with, and understanding of, that part of the environmental context.

In most instances, the detached dwelling is the house form that best accommodates the identity image because of its isolation and concentration characteristics that reinforce one's territorial expectations.

However, the detached dwelling's universal ability to exhibit the qualities of place operates most effectively on the private level where the perceptual interaction is between the particular inhabitants and their own dwelling. Other perceivers not intimately associated with the dwelling do not necessarily find it a place. The castle-like characteristics of removal and shelter from the general world have importance to those who know what it contains but mitigate against any feeling of competency and familiarity by strangers. The most the detached dwelling does is make a strong statement to strangers about the inhabitants' place.

In attached housing complexes there is the potential for less of a black or white situation. A more varied and rich scale of personal to social knowledge of pieces of the context may present itself due to an extension of a sense of 'community' onto the 'private only' character of detached housing. These two distinctions were identified as the last two categories of the Reference Index in the previous section.

For comparative examples lying within the realm of potential places recognizable communally as well as personally, two attached dwelling environments were chosen. A comparison is made between their respective abilities to establish potential emotional states. The higher the level of success in providing these potential states, that may be then perceived by the individual, the closer they come to being a 'place'.

Only a few aspects are dealt with due to the fact that no example necessarily embodies all situations. Futher, the illustrative medium of photography has its sensory limitations and cannot transmit the essence of all the emotional states actually incorporated in the example being described.

I chose to illustrate only those aspects and their interpretable emotional states that presented themselves to me as distinctive. In a sense this approach is a further step in my personal viewpoint of the general Spatial Determinant Framework as applied to particular situations.

The two attached dwelling environments chosen for comparison were Peabody Terrace, Harvard University's married student housing and the Charlesview project -- a low rent complex lying almost directly across the Charles River from Peabody Terrace.

The photographic slides are arranged in sequences or paired comparisons each illustrating a limited number of descriptive aspects. These aspects are identified and outlined along with their corresponding, recognizable Intellectual/Emotional States in the following key. It should be pointed out, again, that these aspects and states are relevant to my personal Perceptual Mechanism. Some or all of them may be relevant to other individuals' mechanisms thus forming a common symbol system, but this must not necessarily be the case.

These comparisons are not black and white situations but rather illustrate different spatial environments' varying degrees of success in providing potential states able to be realized by one individual perceiver.

SLIDES

	project	aspect ability	aspects	perceived states
A				
1	Charlesview	-	physically re-	certainty in
2	Peabody	+	inforced des-	patch description; territoriality: competency, freedom, mobility, relationship.
3	Charlesview	-	cription of entity and position; public to private transition; hierarchy.	
4	Peabody	+	hierarchy in public sector	individual's relationship to pieces and areas of built context; continuity, conceptualization
B				
1	Peabody	+	contrast between surface materials in different courts; hierarchial change	mutable states: time/movement tension, contrast, complexity, fascination, relational change
2	Peabody	+		
3	Charlesview	-		
4	Charlesview	-		
C				
1	Charlesview	-	applied physical texture, scale:permanent, static, hierarchy	certainty; momentary interest; relationship
2	Peabody	+		
D				
1	Charlesview	-	applied physical texture; transient, dynamic, mutability	mutable: uncertainty, fascination
2	Charlesview	+		
3	Peabody	-		
4	Peabody	+		
5	Peabody	-		
6	Peabody	+		
7	Peabody	-		
8	Peabody	+		
E				
1	Chimney	-	atmospheric transparency; ambiguity, complexity, mutability	uncertainty, fascination
2	Chimney	+		

	project	aspect ability	aspects	perceived states
F				
1	Charlesview	-	physical	tension,
2	Charlesview	-	transparency;	uncertainty,
3	Peabody	+	ambiguity,	fascination
4	Peabody	+	complexity, mutability, time/movement shown through varying viewpoints of perceiver as well as within descriptive context itself; hierarchy	relationship
G				
1	Charlesview	-	implied,phenomenal transparency: total obscuring of parts of context while still allowing conceptualization of whole; hierarchy	continuity, conceptualization, expectancy, mental freedom, mobility, uncertainty, fascination, relationship
2	Charlesview	-		
3	Peabody	+		
4	Peabody	+		
H				
1	Charlesview	-	scale;	mental projection; habitability, security
2	Charlesview	-	mass/volume;	
3	Peabody	+	concentration,	
4	Peabody	+	egocentricity,	

BIBLIOGRAPHY

Books

Alexander, Christopher and Hirshen, Sanford, et. al.; Houses Generated by Patterns; Center for Enviromental Structure, Berkeley, California, 1969.

Bachelard, Gaston; The Poetics of Space; Beacon Press, Boston, Massachusetts, 1970.

Boesiger, W., and Stonorov, O.; Le Corbusier et Pierre Jeanneret; Oeuvre Complete 1910-1929; Les Editions d'Architecture, Zurich, 1967.

Boesiger, W.; Le Corbusier et Pierre Jeanneret; Oeuvre Complete 1929-1934; Les Editions d'Architecture,Zurich, 1967.

Boesiger, W.; Le Corbusier et Son Atelier rue de Sevres 35; Oeuvre Complete 1957-1965; Les Editions d'Architecture, Zurich, 1965.

Bracey, H. E.; Neighbors, Subdivision Life in England and the United States; Louisiana State University Press, Baton Rouge, Louisiana, 1964.

Chermayeff, Serge and Alexander, Christopher; Community and Privacy; Doubleday-Anchor; New York, 1965.

Doggett, William T., et. al.; Housing Environmental Research; 5th Year Architectural Thesis; North Carolina State University, 1966.

Erickson, Donald K.; An Analysis of Human Needs in Apartment Architecture; Design Research Laboratory; College of Environmental Design; University of California, Berkeley, 1965.

Fleig, Karl; Alvar Aalto; Verlag fur Architektur (Artemis), Zurich, 1963.

Gans, Herbert J.; The Levittowners: Ways of Life and Politics in a New Suburban Community; Vantage Books; Random House, 1968.

Habraken, N. J.; Supports: An Alternative to Mass Housing; Praeger Publishers; New York, 1972.

Hall, Edward T.; The Hidden Dimension; Doubleday & Company Inc., Garden City, New York, 1966.

Jackson, J. B.; Landscapes; The University of Massachusetts Press, 1970.

Jencks, Charles and Baird, George, editors; Meaning in Architecture; Barrie & Rockliff: The Cresset Press; London, 1969.

Langer, Susanne K.; Feeling and Form, A Theory of Art; Charles Scribner's Sons, New York, 1953.

Lynch, Kevin; The Image of the City; The MIT Press; Cambridge, Massachusetts, 1968.

Ministry of Housing and Local Government; House Planning: A Guide to User Needs with a Checklist; Her Majesty's Stationery Office; London, 1968.

Mumford, Lewis; Art and Technics; Columbia University Press, New York, 1952.

Norberg-Schulz, Christian; Existence, Space & Architecture; Praeger, New York, 1971.

Norberg-Schulz, Christian; Intentions in Architecture; Allen & Unwin, Ltd.; London, 1963.

Pawley, Martin; Architecture versus Housing; Praeger, New York, 1971.

Proshansky; Ittelson; Rivlin; Environmental Psychology; Man and His Physical Setting; Holt, Rinehart, Winston; New York, 1970.

Rapoport, Amos; House Form and Culture; Prentice-Hall, Inc.; Englewood Cliffs, New Jersey, 1969.

Rowe, Colin; Slutzky, Robert; Transparenz: Le Corbusier, Studien 1; Birkhauser Verlag, Basel und Stuttgart, 1968.

Sherwood, Roger; Urban Housing: A Comparative Guide; Cornell University, 1970.

Smithson, Alison, editor; Team 10 Primer; The MIT Press; Cambridge, Massachusetts, 1968.

Sommer, Robert; Personal Space; The Behavioral Basis of Design; Prentice-Hall, Inc.; Englewood Cliffs, New Jersey, 1969.

Spreiregen, Paul D., editor; On the Art of Designing Cities; Selected Essays of Elbert Peets; The MIT Press; Cambridge, Massachusetts, 1968.

Toffler, Alvin; Future Shock; Bantam Books, New York, 1970.

Weidert, Werner; Private Houses: An International Survey; Prederick A. Praeger; New York, 1967.

Zevi, Bruno; Architecture as Space; Horizon Press; New York, 1957.

Articles

Alexander, Christopher; "Major Changes in Environmental Form Required by Social and Psychological Demands"; Ekistics; Volume 28 #165, August, 1969, p. 78.

Banham, Reyner; "A Home is Not a House"; Art in America; April, 1965, p. 70.

Banham, Reyner; "The Architecture of Wampanoag"; Meaning in Architecture; p. 101.

Beck, Robert; "Spatial Meaning and the Properties of the Environment"; Environmental Psychology: Man and His Physical Setting; 1970, p. 134.

Brolin, Brent C. and Zeisel, John; "Mass Housing: Social Research and Design"

Brown, Neave; "The Form of Housing"; Architectural Design;

Carr, James A.; "Place"; Department of Architecture, Massachusetts Insititute of Technology, 1971.

Colquhoun, Alan; "Typology and Design Method"; Arena, Journal of the Architectural Association, August, 1967.

Cowburn, William; "Popular Housing"; Arena, Journal of the Architectural Association; October, 1966, p. 76.

Cowburn, William; "Housing in a Consumer Society"; Architectural Review, Volume 142 #849, November, 1967, p. 398.

Daley, Janet; "The Myth of Quantifiability"; The Architect's Journal; Information Library, August, 1968, p. 339.

Delos, Discussion at; "The Scale of Settlements and the Quality of Life"; Ekistics, Volume 28 #167, October, 1969, p. 277.

Doxiadis, C. A.; "Energy and the Structure of Human Settlements"; Ekistics, Volume 28 # 167, October 1969, p. 271.

Forrest, A. Robin; "Coons Surfaces and Multivariable Functional Interpolation"; Paper submitted to the Journal of the A.C.M.; February, 1969; University of Cambridge, England.

Gans, Herbert J.; "Planning and Social Life: Friendship and Neighbor Relations in Suburban Communities"; Environmental Psychology: Man and His Physical Setting; p. 501.

Graves, Robert; "The Secret War Between Science and Poetry"; Intellectual Digest; April, 1972, Volume II no. 8.

Handlin, David; "The System of the Home"; Connection: Harvard Graduate School of Design, Spring, 1969.

Hejduk, John; "A Spatial Point of View"; College of Architecture Cornell University, 1968.

Leach, Edmund; "What Kind of Community?"; New Society, 8 May, 1967, p. 708.

Myer, John R.; "A Survey of Some of the Qualities of the Site of the Brandegee Estate"; Ashley, Myer & Associates, Inc. Architects, Cambridge, Massachusetts.

Myer, John R.; "J. Myer's Trip: Japan; Some Notes on Place and Movement"; Department of Architecture, Massachusetts Institute of Technology, 1970.

Nicholls, J. R. "In the Townscape"; Architectural Review, Volume 142 #849, November 1967, p. 335.

Nitschke, Gunter; "MA, The Japanese Sense of Place in Old and New Architecture and Planning"; Architectural Design; March, 1966, p. 116.

Norberg-Schulz, Christian; "Meaning in Architecture"; Meaning in Architecture; p. 214.

Pawley, Martin; "The Time House"; Meaning in Architecture; p. 121.

Popplestone, G.; "Beyond the Greenbelt"; Architectural Review, Volume 142 #849, November, 1967, p. 389.

Rapoport, Amos and Dantor, Robert E.; "Complexity and Ambiguity in Environmental Design"; Journal of the American Institute of Planners; July, 1967, p. 210.

Raven, John; "Sociological Evidence on Housing, 2: The Home Environment"; Architectural Review; September, 1967, p. 236.

Rich, Peter; "Notes on Low Rise, High Density Housing";

Richards, J. M.; "Lessons From the Japanese Jungle"; Ekistics, Volume 28 #165, August, 1969, p. 75.

Schorr, Alvin L.; "Housing and Its Effects"; Environmental Psychology: Man and His Physical Setting; p. 319.

Segal, Walter; "Changing Trends in Site Layout"; Architectural Design,

Sommer, Robert; "Space-Time on Prairie Highways"; Journal of the American Institute of Planners; July, 1967, p. 274.

Strauss, Anslem; "Life Styles and Urban Space:; Environmental Psychology: Man and His Physical Setting; 1970, p. 303.

Taylor, Nicholas; "The Failure of Housing"; Architectural Review, Volume 142 #849, November, 1967, p. 341.

Wallace, Anthony F. C.; "Planned Privacy: What's Its Importance for the Neighborhood?"; The Journal of Housing, January, 1956, p. 13.

Ward, Anthony; "Right and Wrong"; Architectural Design; July, 1969, p. 384.

There are color slides to accompany this thesis. They are on file with the fiche in the M. I. T. Institute Archives.