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A STUDY OF ENVIRONMENTAL SEMIOTICS IN THE PRODUCTION OF A MIXED-INCOME HOUSING COMPLEX

by

KELVIN BRIAN HALL

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF ARCHITECTURE

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ABSTRACT

A STUDY OF ENVIRONMENTAL SEMIOTICS IN THE PRODUCTION OF A MIXED-INCOME HOUSING COMPLEX

by

Kelvin Brian Hall

Our present society does not actively promote ideas of segregation. We all confront one another at some point in time, regardless of race, sex, or financial status. However, the majority of designs for today's housing complexes does not reflect the balance of the societal structure. Residential segregation is plentiful. By disregarding present-day norms, and by analyzing different housing typologies with various densities and income statuses, a synthesis of ideas will produce a more financially-diverse housing complex. The concepts of private and public space, territory, boundary, extension, and interaction suggest spatial situations that will enhance the entire site in terms of design to maximize security, identity, and neighborly friendliness.
ACKNOWLEDGMENTS

Getting straight to the point, I especially thank Richard Ingersoll for his assistance as my thesis advisor. During every meeting, formal and informal, he made sure that I continuously asked myself “why” and “how” this project would stand against other critics. Even though Michael Bell was not able to assist me until the latter end of the semester, he was a critical element in how I presented the final product. Albert Pope remained the stern-faced critic with valuable insight that led me in a positive direction after every review. Diania and Kathleen continued to be sweet people since my first day at Rice.

I would also like to thank my wife, Nicole, who had to endure a long semester, especially since we had recently been married. Some nights she did not want to hear about me working on the project, but she persevered anyway. PEACE!
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Chapter 1

OPPRESSION
As oppression operates in different ways, the perception of oppression varies. Similarly, the non-oppressive environment can be conceived in many forms. The non-oppressive environment may be expected to be the means to overcome psychological tensions stemming from the unknown, the unexplained, the unstructured. People living within it might also anticipate freedom from physical hardship such as lack of food, the threat of animals and micro-organisms or hostile climates. Essentially, however, the man-made environment might sometimes be expected to be the realm within which people are not oppressed by other people.

The organization of power in society is the primary source of human oppression.

Discord arose in all major crises of design. However, such crises do not appear in terms of conflict in design objectives, but rather, through contradictions in methodology.

The oppressive environment is an environment within which man oppresses man.

The segregation of urban activities into zones, and the application of the "open plan," the functional use of every space, lead to, respectively, the uniformity and monotony of the cities, to the violation of privacy in the residential settlements and to the sterile rigidity of the built fabric.
We can not be preoccupied only with surface aspects of the functioning of design and pay no attention to the impact design has on the social relations of people or how design affects the organization of power in a society.

Design decisions in terms of relationships of clustering define objects (i.e. discrete entities of matter) and territories, which are delineated areas of space. Design decisions in this case also specify the ways in which objects are distributed and grouped together (clustered) within the delineated territories. Territories can be regions, fields, villages, edifices, rooms or any distinct and recognizable portions of space, any place, equipment or even part of the human body which, in general, contains something else. Objects, on the other hand, are distinct entities of matter contained within territories. They can be inanimate matter such as utensils, stones, dust or water. Thus, territories and objects are interchangeable depending on whether they contain or are contained. Some objects may belong to more than one class; they are permitted to circulate from one class to another. Design through clustering in this way is a process used for assembling objects in territories, each territory corresponding to a certain class of objects. When an object is found in a territory which does not correspond to the class in which the object belongs, it is considered to be “out of place,” it is characterized as “dirt,” it is impure. Conversely, an object is “pure” when it is found in the territory which corresponds to the object’s class.
Spatial Flexibility/Equality/Quality

Design products are not always, or forever, used for the purposes for which they have been initially designed. Therefore, design products should be flexible and able to accommodate many different situations.

Situations which exploit a deprivation of power are not only tolerated by the society it corresponds to, but it becomes the dominant characteristic of the new society.

Alberti states that the most important characteristic of architectural design is that it “is consisting of so many various parts” which have to relate to each other “in congruity” but without reference to an outside model. The “Discovery,” in design, lies in the “Manner” through which architects ... join and unite a certain Number of heterogeneous Parts into one Body or Whole.” The “Business and Office of Congruity is to put together Members differing ... in a Manner, that they may conspire to form a ... Whole” ... “as the Members of the Body are correspondent to each other, so it is fit that one Part should answer to another in a Building ... To every Member therefore ought to be allotted its fit Place and proper Situation.”

Alberti also states in another point of analysis that architectural design in its most elementary generic form is an activity of “mixing” or “composing” already existing elements, “mingling uneven Numbers with even, strait Lines with Curves, Light with Shade, hoping that as it happens from the
Conjunction of Male and Female, ... by the Mixture of the Opposites hit upon some third Thing that should answer the Purpose.”
Chapter 2

SPATIAL COMPONENTS OF SOCIETY
Four components of the determinant "cultural convention" will be covered here, as they relate to domestic spaces: personal space, territoriality, privacy regulation, and boundary controls. Each is reflected in the organizational features of the built environment and its associated artifacts. The component categories overlap; they have fuzzy edges, and the determination of cultural conventions must systematically integrate all four.

**PERSONAL SPACE**

Theories on personal space and other distancing mechanisms in human behavior have largely been advanced by or in reaction to the observations and hypotheses of American anthropologist and behavioral scientist Edward Hall's innovative research on proxemics - Hall's term for the study of people's use of space. Hall has defined behavioral characteristics and distances for eight personal space zones each of which has two subzones. He concludes that proxemic behavior, or human interaction within these clearly defined zones, is a cultural universal, but within these zones specific behavioral responses are defined according to culturally specific conventions.

Hall's conclusions imply two important refinements of points relevant to the study of the interaction between people and domestic spaces: (1) at the level of proxemic analysis, the organization of architectural spaces will reflect the cultural attitudes of the builders, no matter who they are; and (2) the users need not be actually observed in order for the researcher to
obtain behavioral information regarding the people-architecture interrelationship.

The position that there is more to proxemic behavior than strict distancing zones has been elaborated on by American social psychologist Irwin Altman. Altman emphasizes the importance of physical barriers, sensory angles, intrusions, distractions, status and leadership prerogatives, group dynamics, social relationships of the participants, and other non-verbal communication systems. Altman concludes that if these other modifying factors are considered, the data on personal space zones are inconclusive regarding cultural universals.

**TERRITORIALITY**

Human beings are territorial animals. We define spaces, mark them for specific uses, create visible and invisible boundaries, and will defend the territory against unwanted intrusions. Except for privacy, territoriality seems to be the most prevalent topic of behavior-environment studies research and certainly is the topic with the most lengthy history.

There are specific types of territories, each with specific behavioral regulators and sign systems. The distinctions among the various categories are based on the degree of control and use, duration of the spatial claims, and the amount of non-verbal sign systems necessary to maintain expected behavior.
Primary territories are the most applicable to the domestic subject of this volume. They are owned and used by individuals or groups and are clearly defined and controlled. Primary territories tend to be nearly permanent and central to the everyday lives of the occupants, where privacy is the regulatory mechanism. Control of access is important to maintenance of the territory; signs tend to be personal, not general. Interiors and exteriors tend to reflect the taste of the occupants. Homes exemplify primary territories. Home territories can be further subdivided or extended beyond the "house" proper depending on the amount of control exerted over the territory by a family member.

PRIVACY

Privacy has been treated as a cultural universal. Though manifested differently in different cultures, the common element is the control of unwanted interpersonal interaction and communication. The rules and symbols of privacy controls influence the flow of information and communication at individual, group, and social levels. In that sense, privacy can be related to ideas of free will and freedom to control or not to control the flow of information.

Four aspects of privacy have been identified from ethnographic data. These are useful for understanding the rationale for controls and markers found in archaeological contexts. Firstly, privacy controls provide norms of behavior for individuals and groups. For example, rules are established to govern
access to home territories, both visually and spatially. Secondly, privacy creates a choice between isolation and interaction, and can create the perception of being alone. Thirdly, individuals, groups, and societies tend to invade the privacy of others; curiosity is an example of this tendency which affects the daily routines of individuals and groups. As a result, cultures establish methods to guard against such “anti-social” behavior, such as surveillance, followed by the establishment of norms and social rituals to enforce these surveillance opportunities. Fourthly, as a society moves from “primitive” to “modern,” the physical and psychological opportunities for privacy increase. Privacy in more primitive societies is limited by gender, roles, family responsibility, and ancestor demands.

The four characteristics of privacy, when combined with specifics of personal space and territoriality, begin to form a theoretical foundation with specific techniques for the analysis of the ancient built environment.

Although many privacy controls may have been conceptual or esoteric, archaeological can discover specific devices in the built environment that indicate cultural responses to shades of distinction between public and private spaces. The structuring of privacy can be evaluated, for example, through study of the relation between interior and exterior space or by comparing barriers and boundaries. In such comparisons, if transitions are an important part of the architectural organization, boundary demarcation will tend to be clear and territoriality becomes an important aspect of
privacy control. The extent of differentiation among like functional units is a further indication of domain demarcation.

**BOUNDARY**

A common thread in all personal space, territoriality and privacy theories and observations is the notion of “boundaries.” In the definitions of personal space and territoriality, humans establish visible and invisible boundaries and zones of interaction: the boundaries are marked, and privacy mechanisms can be viewed as a form of boundary control. The important concept of boundary control can be used to organize much of the theoretical and observational data on people-environment relations.

Behavioral scientist Marjorie Lavin has defined four types of boundaries: psychological (related to the psyche or the individual body), personal space (interpersonal boundaries, including territoriality), social (membership criteria to a group), and sociophysical (the spatial environment and cultural conventions). Boundaries, Lavin contends, have special features such as permeability (to the senses or to movement), sharpness (the amount of discontinuity between entities on either side of the boundary), and symbolic markers (used to define the limits of the boundary). Research on boundaries enhances the empirical (personal space, territoriality, and privacy) evidence that may be used to evaluate archaeological remains in terms of specific behaviors and specific architectural conditions.
Chapter 3

SPATIAL SEGREGATION
Various indices have been developed to measure residential segregation. Among these indices is one that take a multidimensional approach and "subsumes five distinct dimensions of spatial variation." These dimensions are: (1) evenness, the degree to which the percentage of minority members within residential areas equals the citywide minority percentage; (2) exposure, the degree of potential contact between minority and majority members; (3) clustering, the extent to which minority area adjoin one another in space; (4) centralization, the degree to which minority members are settled in and around the center of an urban area; and (5) concentration, the relative amount of physical space occupied by a minority group. These dimensions are measured using the dissimilarity, the isolation index, the index of spatial clustering (an index that reflects the extent to which a group is spatially distributed in distance from the central business district), and a relative concentration index, respectively.
Chapter 4

IS SPACE FIXED?
FIXED-FEATURE SPACE

Fixed-feature space is one of the basic ways of organizing the activities of individuals and groups. It includes material manifestations as well as the hidden, internalized designs that govern behavior as man moves about on this earth. Buildings are one expression of fixed-feature patterns, but buildings are also grouped together in characteristic ways as well as being divided internally according to culturally determined designs. The layout of villages, towns, cities, and the intervening countryside is not haphazard but follows a plan which changes with time and culture.

Even the inside of the Western house is organized spatially. Not only are there special rooms for special functions - food preparation, eating, entertaining and socializing, rest, recuperation, and procreation - but for sanitation as well. If, as sometimes happens, either the artifacts or the activities associated with one space are transferred to another space, this fact is immediately apparent. People who "live in a mess" or a "constant state of confusion" are those who fail to classify activities and artifacts according to a uniform, consistent, or predictable spatial plan. At the opposite end of the scale is the assembly line, a precise organization of objects in time and space.

Some aspects of fixed-feature space are not visible until one observes human behavior. For example, although the separate dining room is fast vanishing from American houses, the line separating the dining area from
the rest of the living room is quite real. The invisible boundary which separates one yard from another in suburbia is also a fixed-feature of American culture or at least some of its subcultures.

**SEMIFIXED-FEATURE SPACE**

A few years ago, a physician named Humphry Osmond was asked to direct a large health and research center in Saskatchewan. The hospital was one of the first in which the relationship between semifixed-feature space and behavior was clearly demonstrated. Osmond had noticed that some spaces, like Greyhound bus stations, tend to keep people apart. He called them sociofugal spaces. Other spaces, like booths in old-fashioned drugstores tend to bring people together. These spaces are called sociopetal spaces. The hospital had an abundance of sociofugal spaces and had very few sociopetal spaces. Looking for a natural setting to hold the experiments, tables in the cafeteria were selected. Results revealed that more people talked as they were close to each other. What is really desirable is flexibility and congruence between design and function so that there is a variety of spaces, and people can be involved or not, as the occasion and mood demand.

**INFORMAL SPACE**

This is a category of spatial experience, which is perhaps most significant for the individual because it includes the distances maintained in confrontations with others. Informed spatial patterns have somewhat
distinct bounds, and such deep, if unvoiced, significance that they form an essential part of our culture. Not to understand this significance may invite disaster.

The general failure to grasp the significance of the many elements that contribute to man's sense of space may be due to two mistaken notions: (1) that for every effect there is a single and identifiable cause; and (2) that man's boundary begins and ends with his skin. If we rid ourselves of the need for a single explanation, and if we can think of man as surrounded by a series of expanding and contracting fields which provide information of many kinds, we shall begin to see him in an entirely different light. We can then begin to learn about human behavior, including personality types. Not only are there introverts and extroverts, authoritarian and egalitarian types and all other shades and grades of personality, but each one of us has a number of learned situational personalities. The simplest form of the situational personality is that associated with responses to intimate, personal, social, and public transactions. Some individuals never develop the public phase of their personalities and, therefore, cannot fill public spaces; they make very poor speakers or moderators. As many psychiatrists know, other people have trouble with the intimate and personal zones and cannot endure closeness to others.
Chapter 5

ENVIRONMENTAL MEANING
There are different dimensions or meanings related to home: relationships with others, social networks, statement of self identity, a place of privacy and refuge, a place of stability and continuity, a personalized place, a locus of everyday behavior and base of activity, a childhood home and place of upbringing, and shelter and physical structure. The fact of how these relate to each other have to do with meanings and associations. One may suggest that an important component of associational realm is precisely the meaning the environment has for people, how these meanings are distributed and what these meanings communicate to others.

However, the neglect of meaning in environmental design research is beginning to change. The growing concern about perceived crowding, density, crime, or environmental quality implies, even if it does not make explicit, the central role of subjective factors, many of which are based on the associations and meaning that particular aspects of environments have for people, which are partly due to repeated and consistent use and enculturation interacting with any pan-cultural and biological, species-specific constancies that may exist.

The variability of standards, even the subjectivity of pain and the subjective effects of stress, leads to the inescapable conclusion that all stimuli are mediated via symbolic interpretation; that is, they depend on their meaning, so that meaning becomes a most important variable in our understanding of the environment, preferences for various environments and choices
among them, the effects they have on people, and so on. It should be noted that perceptual and associational aspects are linked: The former is a necessary condition for the latter. Before any meaning can be derived, cues must be noticed, that is, noticeable differences are a necessary precondition for the derivation of meaning. These differences are needed and are useful for associations to develop.

One may suggest that position, distance, and decoration in offices communicate social information about the occupant and about how he or she would like others to behave when in his or her room. It seems significant that a whole set of cues can easily be described for this one type of setting. These cues provide information that constrains and guides behavior, influence communication, and generally have meaning; they provide settings for behavior seen as appropriate to the situation. This point requires elaboration. The conclusion of the argument about indirect effects is that in many cases the environment acts on behavior by providing cues whereby people judge or interpret the social context or situation and act accordingly. In other words, it is the social situation that influences people's behavior, but it is the physical environment that provides the cues. People typically act in accordance with their reading of environmental cues. This follows from the observation that the same people act quite differently in different settings. This suggests that these settings somehow communicate expected behavior if the cues can be understood. It follows that the language used in these environmental cues must be understood;
the code needs to be read. If the design of the environment is seen partly as a process of encoding information, then the users can be seen as decoding it. If the code is not shared or understood, the environment does not communicate. This situation corresponds to the experience of being in an unfamiliar cultural context, culture shock. However, when the environmental code is known, behavior can easily be made appropriate to the setting and the social situation to which it corresponds. Of course, before cues can be understood they must be noticed, and after one has both noticed and understood the cues, one must be prepared to obey them. This latter consideration did not exist in traditional situations and is a recent problem. Moreover, it is one over which designers have no control, although they can understand it. Designers can, however, make cues noticeable and comprehensible. People need to be seen as behaving in places that have meaning for them, that define occasions or situations. In terms of behavior in environments, situations include social occasions and their settings - who does what, where, when, how, and including or excluding whom. Once the code is learned, the environment and its meaning play a significant role in helping us judge people and situations by means of the cues provided and interpreted in terms of one's culture or particular subculture.

The environment thus communicates, through a whole set of cues, the most appropriate choices to be made: The cues are meant to elicit appropriate emotions, interpretations, behaviors, and transactions by setting
up the appropriate situations and contexts. The environment can thus be said to act as a mnemonic, reminding people of the behavior expected of them, the linkages and separations in space and time - who does what, where, when, and with whom. It takes the remembering from the person and places the reminding in the environment. If this process works, and this depends on the cues being culturally comprehensible, being learned through enculturation, it reduces the need for information processing, it makes behavior easier, since one does not have to think everything out from scratch. In effect, one can routinize many behaviors and make them habitual - which is one of the functions of culture generally. By suggesting similar, and limited, ranges of behavior, this process also helps prevent purely idiosyncratic interpretations, responses, and behaviors that would make social communication and interaction impossible - or at least very difficult.

The following is a list of hypothesized cues compiled by Amos Rapoport with the suggestion that not all need be present for environments to be judged as one or the other. The list of cues, the number needed to infer densities and hence the meaning of areas, and how these cues reinforce or cancel each other out are areas for research.
<table>
<thead>
<tr>
<th><strong>DENSE</strong></th>
<th><strong>NOT DENSE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceptual</strong></td>
<td></td>
</tr>
<tr>
<td>tight spaces</td>
<td>open spaces</td>
</tr>
<tr>
<td>intricate spaces</td>
<td>simple spaces</td>
</tr>
<tr>
<td>large building height to space (i.e. a large amount of subtended building in the field of vision)</td>
<td>low height to space ratio (i.e. little subtended building in the field of vision)</td>
</tr>
<tr>
<td>many signs</td>
<td>few signs</td>
</tr>
<tr>
<td>many lights and high artificial light levels</td>
<td>few lights and low artificial light levels</td>
</tr>
<tr>
<td>many people (or their traces) visible</td>
<td>few people (or their traces) visible</td>
</tr>
<tr>
<td>mostly human-made (little greenery)</td>
<td>mostly natural (greenery)</td>
</tr>
<tr>
<td>high noise levels</td>
<td>low noise levels</td>
</tr>
<tr>
<td>many human-made smells</td>
<td>few human-made smells</td>
</tr>
<tr>
<td>many cars - high traffic density and much parking</td>
<td>few cars - low traffic density, little parking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Associational/Symbolic</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>tall buildings, apartments, or offices may indicate high density even when spaces and other perceptual cues indicate low density</td>
<td>low buildings may indicate low densities even if other cues indicate the opposite</td>
</tr>
<tr>
<td>in residential areas the absence of private gardens and entrances</td>
<td>in residential areas the presence of gardens and entrances</td>
</tr>
<tr>
<td><strong>DENSE</strong></td>
<td><strong>NOT DENSE</strong></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Temporal</strong></td>
<td></td>
</tr>
<tr>
<td>fast tempos and rhythms of activity</td>
<td>slow tempos and rhythms of activity</td>
</tr>
<tr>
<td>activities extending over 24 hours per day</td>
<td>activities reducing or ceasing at certain times</td>
</tr>
<tr>
<td><strong>Physical/Sociocultural</strong></td>
<td></td>
</tr>
<tr>
<td>the absence of defenses allowing the control of interaction</td>
<td>the presence of defenses allowing the control of interaction</td>
</tr>
<tr>
<td>high levels of “attractive stimuli”</td>
<td>low levels of “attractive stimuli”</td>
</tr>
<tr>
<td>the absence of other adjacent places for use - streets, meeting places, etc.</td>
<td>the presence of other adjacent places for use - streets, meeting places…</td>
</tr>
<tr>
<td>the presence of nonresidential land uses in a residential area and mixed land uses generally</td>
<td>the absence of nonresidential land uses in a residential area and absence of mixed land uses generally</td>
</tr>
<tr>
<td><strong>Sociocultural</strong></td>
<td></td>
</tr>
<tr>
<td>high levels of social interaction leading to social overload</td>
<td>low levels of social interaction and absence of social overload</td>
</tr>
<tr>
<td>feeling of lack of control, choice, or freedom, leading to judgments of less effective space being available and hence of higher densities; control by environment</td>
<td>feeling of presence of control, freedom, leading to judgments of more effective space being there and lower densities; control of environment</td>
</tr>
</tbody>
</table>
**DENSE**

social heterogeneity along some subjectively defined dimensions—hence increased unpredictability, reduced redundancy, and higher effective density in terms of information-processing needs, the inability to read symbols and cues, not sharing rules, and hence acting inappropriately

absence of culturally shared and accepted nonphysical defenses and control mechanisms for regulating social interaction

previous experience, socialization, etc. at low densities (i.e., adaptation level at low densities)

**NOT DENSE**

social homogeneity along some subjectively defined dimensions—hence increased predictability and redundancy & lower effective density in terms of information-processing needs, ability to read cues & symbols, sharing of rules, and hence acting appropriately

presence of culturally shared and accepted nonphysical defenses & control mechanisms of regulating social interaction

previous experience, socialization, etc. at high densities (i.e., adaptation level at high densities)
Chapter 6

HUMANS, FORM, and SOCIETY
The built environment is a setting for human activities. Such settings may be inhibiting or facilitating and a particular setting may be facilitating to the extent of acting as a catalyst or releasing latent behavior. However, it cannot determine or generate activities.

People act and behave differently in different settings. This means that people act appropriately in different settings because they make their behavior congruent with the norms for the appropriate behavior to the setting as defined by a particular culture. This also implies that the built environment provides cues for behavior and that the environment can be seen as a form of non-verbal communication.

Amos Rapaport has compiled a list of mechanisms that link people and environments:

- Non-verbal communication
- The environment as a symbol system
- Perception through the various senses
- Cognition (giving meaning to the environment by naming, classification, and ordering)

There are human characteristics that are congruent with certain physical characteristics of the designed environment. People perceive the city in certain ways. How is it structured mentally? What effects do built forms have on people? How important are cities for human behavior or satisfaction? How do people actually experience the city to urban design?
The built environment is the organization of meaning and in this connection materials, forms, and details become important. Space organization does express meaning and has communicative and symbolic properties, but meaning is frequently expressed through signs, materials, colors, forms, landscaping, etc. Therefore, meaning may coincide with space organization or may represent a separate, non-coinciding, and symbolic system through which different settings become indicators of social status. This, in turn, means that physical elements in the environment take on various meanings, and this effects behavior changes accordingly.

The environment can also be seen as the organization of time. There are two ways to explain this idea. The first refers to the structuring of time, such as linear flow vs. cyclic time, or future orientation vs. past orientation. The second refers to any tempos or rhythms that may be present in human activities and their congruence or incongruence with each other. Thus people may be separated by time or space, so that groups with different rhythms occupying the same space never meet.

The organization of communication also greatly influences and reflects the spatial characteristics of the built environment. Who communicates with whom, under what conditions and in which context is one important way in which the built environment and social organization are linked and related.
Consider the preferences of upper, middle and lower class Americans for environments and also the differences in how environmental cues are read in terms of status, i.e., relative environmental quality. For example, upper class individuals rank natural vegetation very highly, whereas the middle class rank it low and prefer clipped, highly manicured vegetation. Similarly new suburban settings are ranked as the first choice by the lower class, as the second choice by the middle - but are disliked by the upper class. At the same time lowered density in this form of development is of very high importance to upper class people, increasing their liking for the area greatly, of moderate importance to the middle group - but of no importance to the lower status group; there are also major differences in relation to style, materials, fences and the evaluation of older areas.

Much recent urban and housing project design has been characterized by free-standing buildings which reflects aesthetic preferences. This makes it very difficult to differentiate between front and back. There is much evidence that people very clearly differentiate between front and back areas since very different symbolic values are attached to them, they are treated very differently and given very different physical expression. The front is where display occurs, where status is communicated through good maintenance, planting, fences, bird baths and various equivalents. The back is where one works, dries laundry, strips bicycles, stores things and grows vegetables. It could also be a place for a swimming pool or barbecue pit in middle class areas but it is private, not public, and different to the front.
Chapter 7

SOCIAL ARCHITECTURE
The segregation of functions and the spatial separation of social classes have also been pointed to as causes of deepening environmental opacity. Given this opacity, the complexity of modern life, and the narrowness of each individual's view from within it, architecture becomes crucial as a source of information. Abstract entities like the state, the system of justice, and the labor market control the pattern of our lives. They are important elements in a vast social structure of which we are a part. Yet this underlying reality is as intangible as it is pervasive. We cannot know it directly. In an important sense, it is mediated for us by architecture. In this context, architecture is the concrete manifestation of the institutions that make up society. Much of what we know of these institutions and their meanings we know from the large array of building types and styles we encounter. Architecture is also the reification of social roles and a set of three-dimensional statements about power relationships. To break the code of architecture at the scale of the city is to grasp the structure of society. Conversely, to comprehend our real situation, we require an architecture which bears its content - an architecture of rational transparency.

Movement through the new city should be designed to reveal the rich and complex collective effort of which we are a part and on which we depend.

Together, participation, rational transparency, and the city as education are the contribution architecture can make to overcoming the alienation that
marks us and the society in which we live. Social architecture is consciously an architecture “in between”; it avoids idealistic utopias but continually addresses the need to challenge received ideas and propose alternatives. Social architecture insists that the process of conceiving and producing the manmade world involves moral choices. The power of architecture can continue in the service of the status quo, or it can be harnessed to a program of social change. As social architecture in its practice and theory not only proposed the world transformed, but also suggests the means of its transformation, stern choice is again put to us as architects. At the beginning of the rapid transformation of the traditional city, Henri de Saint-Simon wrote:

The Golden Age of the human race is not behind us at all, it is ahead, it lies in the perfection of the social order; our forefathers have never seen it; our children will reach there some day. It is up to us to trace the path for them.

MEANING OF FORM

It is not the outward form wrapped around the object that matters to us, but form in the sense of unbuilt capacity and potential as a vehicle of significance. Form can be filled with significance, but can also be deprived of it again, depending on the use that is made of it, through the values we attach or add to it, or even deprive it of. All this is dependent on the way in which users and forms react to and play on each other. The fact that we put “form” in a central position with respect to such notions as “space” or “architecture” means in itself no more than a shifting of emphasis. What
we are talking about here is in fact a notion of form different from that
which presumes a formal and unchanging relationship between object and
viewer. The case we want to put forth is that it is the capacity to absorb,
carry, and convey significance that defines what form can bring about in
the users, and conversely, what the users can bring about in the form.
What matters is the interaction of form and users, what they convey to each
other, and how they mutually take possession of each other.

In order to make any real contribution, architects have to use everything
they influence or create to support the people in the struggle against
alienation from their surroundings, from each other, and from themselves.
They must combat the continually self-extending inhospitableness of the
no-man's-land by providing the people with an appropriate environment
which has scope for everyone: an arena in which each can play as many
parts as he has within him, so that everyone can become more truly
themselves.

Architects must not just show what is possible. They must also, and
especially, show what should be possible for everyone.

Designing ought to mean a better disciplining of the material. Everything
that is given a deliberate form should function better, should do its work,
be appropriate for the job expected of it by different people in different
situations at different moments, and this in endless retake. Making
something new each time would be not only useless, but impossible. What
is possible is to present the same things in such a way that something new can be read into them. What matters with forms, just as with words and sentences, is how they are read, what images they evoke in the “reader.” Seen through a different eye and in different situations, a form will evoke other images and acquire new significance. And it is this experimental phenomenon that provides the key to a new notion of form which we can use to make thing adjustable to more situations.

**MORE THAN JUST “HOUSING”**

The real meaning of beauty - the idea of houses as places which expresses one’s life directly and simply, the connection between the vitality of people and the shape of their houses, the connection between the force of social movements and the beauty and vigor of the places where people live - this is all forgotten, vaguely remembered as the elements of some imaginary golden age. Yet strangely, little of the literature on the so-called “housing” and few of the efforts being made today are trying to bring these things into the world again. There is a widespread concern with industry and technology and the ways in which these can help to solve the housing problem. There is concern with political control of people over their neighborhoods. But all this is strangely abstract, without feeling. It deals with the issues, but it glides over them. It does not concern itself with feeling; it creates a mental framework in which solutions are as mechanical and as unfeeling as the problems they set out to solve.
We recognize the value of many of the efforts people are making to solve the housing problem, but we are concerned, here, with the feeling at the root of it. We have tried to construct a housing process in which human feeling and human dignity come first, in which the housing process is reestablished as the fundamental human process in which people integrate their values and themselves, in which they form social bonds, in which they become anchored in the earth, in which the houses that are made have, above all, human worth, in the simple, old-fashioned sense that people feel proud and happy to be living in them and would not give them up for anything because they are their houses, because they are the product of their lives, because the house is everything to them - the concrete expression of their place in the world, the concrete expression of themselves.

HOUSING AND SOCIETY

If we consider the systems of housing production which exist in the world today, we find that almost all of them lack two necessities fundamental to any human society. First, recognition of the fact that every family, and every person, is unique; and must be able to express that uniqueness. Second, recognition of the fact that every family, and every person, is part of society and requires bonds of association with other people. These two complementary necessities are almost entirely missing from today's houses. On the one hand, the houses are identical, machine-like, stamped out of a mold, and almost entirely, unable to express the individuality of different
families. They suppress whatever is wonderful and special about any one family. On the other hand, the houses also fail, entirely, to give people a basis for small, local congregation. The houses, placed and built anonymously, express isolation and lack of relationship. They fail altogether to help create human bonds in which people feel themselves part of the fabric which connects them to their fellow men.
Chapter 8

PROCESS
Upon completion of the necessary research, the design stage began by analyzing two housing typologies in the Houston area: lower-income single-family “shotgun” rowhouses and upper-income single-family detached homes. The purpose of the analysis was to provide examples where architects’ perceptions of particular built environments were either successes or failures. Furthermore, by choosing similar sites and making comparisons using similar scales, realities would be discovered. Documentation was recorded by measuring and photographing both entities. Then, site plans, floor plans, elevations, and figure grounds were drawn in order to compare spatial equalities or inequalities. In addition, since the proposed design was to be a mixed-income housing complex, many photographs were also taken in the neighborhoods of both income extremes, the Third and Fourth Wards. The photos focused on apparent private space, approach to homes, space between homes, variety of designs, landscaping, condition of infrastructure, etc. There were obvious differences between the two neighborhoods. The Third Ward area studied had the luxury of more space for front and back yards, more variety of designs in the homes and landscaping, and the space between the houses were much greater. On the other hand, in the Fourth Ward, there was a far greater presence of community. People were always either on their porches or in the streets conversating with one another. Also, despite having minimal resources, people in the Fourth Ward illustrated high creativity in
using scrap products for other uses (e.g., pipes for porch railings, scraps of wood for house repairs, etc.).

On the topic of security in both extremes, formal and informal securities were present. In the Third Ward, security was mainly in the form of and alarm system and sometimes a watchdog. On the other hand, because of the closeness of the houses in the Fourth Ward, informal security was a high commodity. One could actually talk to his or her next door neighbor from one window through the next window. Therefore, visual and auditory senses were prevalent in this form of security.

The next step was to locate a site which could best serve my purpose of mixing people of different incomes in one area, on one site. The site that was selected is 2.6 acres on the outskirts of downtown Houston bounded by San Jacinto, Cleburne, and Fannin Streets. The reasons for choosing this particular site were many: the presence of an upper-income apartment complex (Isabella Courts) one block away, the site’s proximity to a Fiesta grocery store and Sears department store, only a five to ten minute drive to downtown, one block from Houston Community College, and a ten minute drive to Texas Southern University and the University of Houston. Also, the site gave me the opportunity to design while considering important security issues.
All of the above-mentioned documentation was presented in the first formal review on February 15, 1995. Some of the questions during the review were on the basis of proposing to do a housing complex of this sort.

Albert Pope - Are you saying that you are going to provide better housing for poor people or are you speaking of more of an urban agenda by cities having more housing complexes with mixed incomes?

Albert Pope - You are not going to be able to put a small house here and a large house there.....

Albert Pope - Maybe your argument should be against zoning thru residential segregation and not by mixing according to race or income.

Albert Pope - I feel that when dealing with low-income housing there are economical, social, and political issues present rather than architectural. Problems will not be solved by architecture, but by economical, social, and political issues, unless you prove to me otherwise.

R. Ingersoll - Look at Lovett Square and other housing typologies with more denser populations which may be useful.

Mike Bell - You need to develop a system to illustrate different social issues. Come up with a method for telling stories.

After being “roasted” in the first review, it was back to the drawing board. Now it was time to expand my documentation to more social issues as was recommended in the first review.

Two more housing typologies of more denser populations were introduced: a high-density subsidized housing complex and an upper-income luxury apartment complex. The same documentation techniques were employed (photographs, drawings, models, etc.). Furthermore, three very important
social issues were investigated in each of the four housing typologies: 1) PERSONAL SPACE, 2) SECURITY, and 3) INTERACTION.

In terms of personal space, ownership of objects and of space(s) were documented through drawings and models. Personal space implies perceived boundaries, territorial markers (cues), privacy with architectural barriers, and even high or low density. I chose to illustrate each typology using minimal lines and planes in order to explore abstract and formal representation through their configurations/constructions. In the “shotgun” homes, personal space was defined by the unit itself and the front and rear porches that related with that unit. In the subsidized housing complex, even though there is an abundance of space within the complex, the only things personal to each resident is the unit and maybe a front or rear porch attached. In the luxury apartment complex there is also an abundance of space, but the only personal spaces are the unit and a balcony (and maybe a mailbox in one area). And finally, in the single-family home, everything is personal: the home, the front and back yards, driveway, a rear storage facility, etc.

Security is probably the most important issue to consider and investigate before designing such a complex. In the “shotgun” house complex, regardless of the limitation of space, there is a richness of security. The relationship between the units themselves is the solution. As mentioned earlier, there is security through the closeness of the units and by that
closeness the views that are maintained from unit to unit: porch to unit, porch to porch, porch to window, and porch or window to common space. In the subsidized housing complex, views across the landscape are the most prevalent means of security because it allows one to inspect all that is involved in that space. In the luxury apartment complex, security is more formal. With the presence of a guardhouse at the entrance and a fence surrounding the site, security should be prominent, correct? Incorrect! While I was documenting this complex, I penetrated the site twice without being stopped by the guard. This in itself informed me as to the need, or the lack thereof, in providing these forms of security. Regardless, minimal forms of security still exist by visual access between the residents. Lastly, in the single-family home and its neighborhood, security exists through home alarm systems, neighborhood crime watch signs, and from the residents themselves. Again, I am not sure as to how much security from the signs and the residents.

The third and final social issue studied was interaction and how it is present in each housing typology. Just as security is rich in the “shotgun” house complex, so is interaction. Conversations take place from window to window, window to porch, porch to porch, porch to clothesline, and porch to sidewalk. In the subsidized housing complex, interaction occurs from porch to clothesline, porch to open space, clothesline to clothesline, etc. The design of the luxury apartment complex, however, does not promote high interaction but more seclusion. But there still are places for possible
interaction: a common space with a pool, mailbox areas, and the corridors. Finally, the single-family home and its neighborhood provides for somewhat high interaction. It occurs from front yard to front yard, front yard to street, back yard to back yard, etc.

In conclusion, all of the analysis was considered when designing the site. The overall process was of analyzing each of the four environments (typologies) and then attempting to overlap them one over the other. Where the overlap becomes a spatial idea, that idea is then translated into architectural design on the site. The design becomes an act of making a balance between the two extremes, upper and lower incomes.

The next major meeting with Richard Ingress on February 28, 1995, posed new questions and comments about the second stage of analysis drawings and models:

- Why the use of planes to describe space?
- You are combining personal space and social space.....
- You could study a garden as a social space or claim of identity
- Privacy vs. comingling in the models
- Is there an hierarchy of social space?
- There are degrees of sociality in the models
- Stories of social issues need to be coherent
- You must continually ask why two classes would ever want to mix?
- Do not underestimate the roles of the car and parking in society
- Security and interaction are different topics but they can be the same
- How do projects that exist like this now work?

The following are topics and issues discussed during the second formal review on March 15, 1995:
Albert Pope - How is personal space depicted in the drawings and models?

Albert Pope - How do the specifics of the analysis relate to the design intention?

Albert Pope - Are the major thoughts on the design going to be spatial or diagrammatic?

R. Ingersoll - Do you plan to start by designing the units or the site?

R. Ingersoll - The design raises a question of mixed-income populations that don’t normally intersect.....

Albert Pope - Use scenarios in context of the project, check the scenarios with the forms in front of you, and let the forms suggest other scenarios that are not as common.

Albert Pope - Will you design one community or a group of smaller communities?

R. Ingersoll - What makes Isabella Courts attractive?

After all of the analysis, making the step towards designing the site was next. The intriguing thing about the site was the location of Isabella Courts (an upper-income apartment complex one block from the site) and the presence of two lower-income apartment complexes across the street from the site. Isabella Courts is designed as an enclosed complex with a center atrium. It separates itself from the public and the rest of society but does not have any fence to enclose the cars for protection against possible danger. On the other hand, the other apartment complexes are open courtyard complexes with a constant interaction of kids and adults always present. This gave me enlightenment to attempt to design the site as a combination of the two spatial ideas, private spaces and public spaces. An
initial move was to create the parking through the central axis of the site (as opposed to the luxury apartment complex which has parking on the exterior boundary). The idea was to use the automobile (parking) to create an atmosphere of familiarity between the residents, which in turn, would advance the issue of security. I also extended Isabella Street through the site to invite society to experience it, rather than exclude itself from society. So, access to the site is both north/south and east/west. This “cruciform” of parking produced four smaller sections of complexes within the overall complex. This move enhances the idea of giving the site a feeling of lesser density. Furthermore, the glamorous oak trees on the site were preserved and are the markers for semi-public and public social spaces.

The breakdown of the units on the site introduced another major task with the design. The decision was to create eight different unit plans ranging from 640 sf to 2200 sf to accommodate for the variety of persons to reside in the complex. The first solution produced 84 units on the site. As in the early analysis using minimal planes, architectural elements such as walls, windows, and roofs were viewed abstractly as horizontal and vertical planes and openings. The attempt was to place the planes on the site where they would all form senses of spatial change (e.g. enclosure, extension, and domain). Within each smaller complex, variety was also critical to the design in order to encourage feelings of individuality and to promote the opportunity for change. In the end, each mini-complex contained three
different types of spaces ranging from public to private. Each unit also had
direct access to a private space.

The model produced was then used as the spark for criticism and
comments in the review on April 12, 1995. The following is a list of some of
the inquiries:

Albert Pope - Your concentration seems to be on the units and how
they create spaces.....

Albert Pope - You have three gestures of courtyards

Bell, Pope - The spaces are too tight, unpleasant. Maybe you have
too many units on the site.

R. Ingersoll - Different courtyards should be understood more in plan.

Albert Pope - Alphabet designs suggest more denser urban vocabu-
lar-y.

Mike Bell - Return to vocabulary of planes that read as volumes

Mike Bell - You have created a sort of porous field, spongelike....
where space can be penetrated, extended

Albert Pope - Maintain the labyrinthine, more intricate process of
design on the site.

Mike Bell - Look at the model as a completed, inhabited field
instead of a discreet series of solids and voids.

Mike Bell - You have been looking at all of the pieces in the built
environment as nonheirarchical and evenly grounded
(e.g., the city, streets, the units, people, and buildings
in general all exist in a nonheirarchical field).

The final step in the design process included making the suggested
revisions during the last review. Twelve units were removed from the
scheme which allowed provisions for more open space and comfort for the
residents. The final model illustrates a clearer understanding of the units and their related spaces. Drawings were also produced to depict different formal and social ideas in the project: parking " uninspires" the site both architecturally and socially, security vistas throughout the site, different levels of interaction spaces on the site, personal space, the connectedness between the smaller complexes, the meaning of form, and the enclosure of units.
Figure 8.1 Documentation of "Shotgun" homes and site
Figure 8.2  Figure-ground diagrams
Figure 8.3 Conditions in lower-income neighborhoods
Figure 8.4  Documentation of upper-income single-family home and neighborhood strip
Figure 8.5  Floor plans
Figure 8.6  Figure-ground diagrams
Figure 8.7 Conditions in upper-income neighborhoods
Lower-income single-family "shotgun" homes

Lower-income subsidized housing units

Upper-income luxury apartments

Upper-income single-family homes

Figure 8.8 Four housing typologies in Houston
Interior courtyard between rowhouses

Vast greenspace between housing units

Communal space for complex

Variety of design and private space in each single-family home

Figure 8.9 Modeling investigations
Unit enclosure, front and rear porches

Single unit, entry, complex extension

Sectional through units, semi-private balconies, vistas beyond

Realms of the residence, entry, extension of the property

Figure 8.10 Planar analysis diagrams describing space
Figure 8.11  Modeling investigations of planar analysis
Figure 8.12  Rendered diagrams
Figure 8.13  Axonometrics of spatial enclosure/extension
Interaction occurs from window to window, porch to porch, clothesline to porch, etc.

Interaction occurs from porch to clothesline, porch to greenspace, greenspace to clothesline, etc.

Security present by guardhouse, surrounding fence, residents' visual access

Security present by homeowners' visual access, fences, etc.

Figure 8.14  Diagrams of security/interaction investigations
Figure 8.15  Examples of "security" in the rowhouse complex
Figure 8.16  Examples of "security" in the subsidized housing complex
Figure 8.17  Examples of "security" in the luxury apartment complex
Figure 8.18  Examples of "security" in upper-income neighborhoods
Figure 8.19 Examples of "interaction" in the rowhouse complex
Figure 8.20  Examples of "interaction" in the subsidized housing complex
Figure 8.21  Examples of "interaction" in the luxury apartment complex
Chapter 9

THE MIXED-INCOME HOUSING COMPLEX
To Downtown

Figure 9.1  Site map
Figure 9.2 Site photographs
Figure 9.3  Site influences (open and enclosed courtyard spaces, visual but not physical access from upper-income to lower-income apartment complex)
Figure 9.4  Site model of spatial domains throughout the site
Figure 9.5  Site model (continued)
Figure 9.6 Final model
Figure 9.7 Final model
Figure 9.8  Final model
Figure 9.9 Final model
Parking "inspires" the site both architecturally and socially.

Site plan showing ground floor units and entries.

Figure 9.10  Diagrams
Formal representation of the site

Unit spaces at ground level

Figure 9.11  Diagrams
The four individual complexes and their linkages

Security panoramas throughout the site

Figure 9.12 Diagrams
Interaction spaces ranging from highly public to highly private

Personal space zones throughout the site

Figure 9.13 Diagrams
Chapter 10

POSTSCRIPT
The design illustrates the importance of experimenting with non-popular ideas. There are not many examples of mixed-income housing complexes in the United States today. Therefore, the author attempts to provide IDEAS that could be investigated and further developed.

The acts of going to Houston's surrounding area proved to be very rewarding. New social and architectural insights were being revealed daily during investigation. More importantly, the semiotic differences between upper and lower-income neighborhoods became the "fuel" for the design approach. An attempt was made to provide a balance between the pro's and con's of both income extremes. The design is the result of developing a system to represent each housing typology - the technique of using minimal planes to describe space in each of the four typologies was then extended into designing the site. Planes were used to illustrate either an extension or an enclosure of space. This allows for different levels of interaction (if any) and privacy by the residents.

In the end, even though the site contains different types of spaces for different moments in time, the overall purpose of the design is to justify how people of various income levels could reside in the same location. It focuses more on exterior space rather than interior space because once one is in his or her domain, he or she becomes privatized anyway. Therefore, one may conclude that the appropriate manipulation of space may provide the opportunity for equal living. When the original idea is to either develop
a luxury apartment complex or to refurbish a subsidized housing complex, 
the result remains toward segregation. The author did not want to create 
"the" solution, he only wants to prop open the eyes of the closed and 
narrow-minded, and unleash the vision within them.
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**ENVIRONMENTAL MEANING**


HUMANS, FORM, and SOCIETY


**SOCIAL ARCHITECTURE**


**OTHER READINGS**


