RESIDENTIAL YARD ENVIRONMENT

SOME FUNCTIONS OF

YARD ENCLOSURES

By

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PREFACE

An oriental visitor is surprised by the lack of fences or garden walls in the residential yard environment of American suburbs. This is probably also true for an American who travels in the Orient. He would be impressed by the popularity of the yard enclosure in the residential area.

This study is to find out whether the housing with no yard enclosure has some deficiencies with respect to environmental quality.

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CHAPTER I

INTRODUCTION

This study attempts to explore advantages of enclosed yards or gardens. It is expected that besides protection and climate control, there are some more subtle functions such as privacy, territorial need, beauty, design and decoration which yard enclosures can provide. Although these functions are harder to perceive or evaluate, they are psychologically important aspects of housing. These functions of the non-physical aspect of design are apt to be neglected particularly in residential areas in the United States.

Because man and his environment are in constant interaction, and each has influence on the other, there may be some differences of character between "open-yard" people and "close-yard" people. This is the initial assumption of this study. Families with yard enclosures may have a better quality of residential design than those without yard enclosures.

Yard enclosures have been used for thousands of years and by many countries. Therefore, the popularity of houses with no yard enclosure in the United States seems to be a unique phenomenon.

Americans, with their advanced technology, have modi-

fied their living environment. The need for protection from wild animals no longer exists. Well-constructed houses provide comfort in all seasons. Weather is no longer an environmental problem. Outdoor living areas often are neglected so long as an efficient shelter is provided, yet the impulse to dominate nature has not ceased. The pioneer spirit seems to be still at work, expressed in a preference for open spaces and unlimited views or vistas becoming symbols of the American culture.[1] And this culture may influence the development of a bold, outgoing character, which is reflected in a preference for yards without enclosures as stated by Donaldson in Suburban Myth.[2]

> It is psychologically important to display the houses and articles in it, and this remains true of both high income suburbs and the new imitative suburbia of the last two decades.

These words imply that people tend to like these kinds of dwelling patterns. However, when Simonds discussed philosophy interacting with man's physical environment among different cultures he said:[3]

> If we seem to others to have much energy and action but little direction, it is perhaps that, as yet we have no cohesive, directional philosophy of our own to serve us as a guide.

The consequence of not having a directional guide in a man-made environment is exemplified by chaotic building forms, voids, and left-over open spaces. In this case the phenomenon of the open outdoor spaces is an accidental result but not a functional goal. Thus the open yard concept needs to be reexamined especially in today's complex, over-

populated society.

Purpose of the Study

The purposes of this study are: (1) to identify the functions of yard enclosure, both physical and non-physical; (2) to determine the validity of the enclosed yard concept; (3) to find out whether or not the open yard residents are dissatisfied with their housing environment; and (4) to encourage the acceptance of the enclosed yard as an addition to the living pattern in the United States.

Limitations of Study

To design a man-made environment is a complex problem. The decisive factors of an ideal environment are not only of structures, but also of man. Even the planner and people using the environment may disagree on what a high quality environment should be.

Planners usually assume that they are well-trained and have the ability to identify good or bad living environment. In respect to the residential outdoor space, planners tend to believe that an enclosed outdoor yard space can convey a sense of well being and satisfaction to the residents.[4] Yet this sense of spatial enclosure may not be desirable for all people. It is obvious that the overwhelming majority of residences possess little yard privacy.

Owing to the different points of view held by the planner and people, it would be worthwhile to study enclosures

with equal attention both to the planner's viewpoint and the people's viewpoint. In addition, there are two other reasons why empirical findings have deficiencies:

1. Yard enclosure is a relatively new concept (at least in this country). There are very few discussions in the literature related to this subject, thus presenting a hardship in the measurement and method of the empirical study.
2. The environment usually affects man beyond his awareness.[5] This is especially true in testing his reaction to beauty, privacy, or human instinctive needs.

Definition of Terms

Yard enclosure -- Any physical barrier erected around a house. They are mostly man-made walls, fences, or hedges which may give a certain degree of privacy.

Privacy-enclosure family (PE Family) -- Family with yard enclosure which is solid or high enough to provide privacy to members of the family.

Non-privacy enclosure family (NPE Family) -- Family with yard enclosure which provides no privacy for the family but only functions as protection, such as wire fences.

No enclosure family (NE Family) -- Family without any enclosure element around its house. The four sides of the dwelling are exposed to neighbors and public.

Organization of the Report of the Study

Chapter I has presented an introduction to the problem in this study along with purposes, limitations, and terms involved. Chapter II will review literature which is considered relevant to this study, since many theories support the validity of enclosures. Chapter III will discuss method of this study regarding procedure of survey and character of the samples. Chapter IV will present the empirical findings which involved the following:

1. What factors could influence people holding different attitudes towards enclosures?
2. What are the important functions provided by enclosures as expressed by people?
3. How do the enclosure families and non-enclosure families rate their neighboring qualities?

In the final chapter, Chapter V, summary and implications will be presented.

FOOTNOTES

[1]John Ormsbee Simonds, Landscape Architecture (New York, 1961), p. 215.

[2]Scott Donaldson, The Suburban Myth (New York), p. 76.

[3]Simonds, p. 215.

[4]John B. Lansing and Robert W. Marans, "Evaluation of Neighborhood Quality", American Institute of Planners Journal, Vol. 35 (1969), pp. 195-196.

[5]Robert Sommer, "Man's Proximate Environment", Journal of Social Issues, Vol. XXII, No. 4 (1966), p. 67.

CHAPTER II

FUNCTIONS OF ENCLOSURE

Protection and Environmental Control

In olden times, a yard enclosure was an effective barrier which gave protection from enemies and wild animals. In recent days, this kind of protection is no longer a prime one. However, an enclosure still can play the physical role of keeping out the casual trespasser, children, and pets. Therefore, lawn and flowers can be protected. In another sense, enclosures also confine residents' children and pets to their own yard. This is especially important where the yard is near a busy street.

Heat and glare from the sun can be controlled by yard enclosures. This is a special concern in the areas where climate is hot and dry and when yard orientation is to the south or west. By using adequate yard enclosure, sunlight may be reduced, blocked, or filtered. By using dark colored and rough textured materials, the surface of the enclosure absorbs the light to some extent. Yet by using light colored and smooth textured materials, the surface of the enclosure reflects the light. This allows yard enclosures to have the possibility of adjusting natural light.

Yard enclosures also help control wind. In comparison

with the behavior of sunlight, wind is harder to predict. However, by wisely planning the yard enclosure, the effect of wind control is rather satisfactory.[2] The purpose of controlling wind as well as sunlight is to keep the wind chill factor as comfortable as possible. This may be accomplished by a well-planned yard enclosure.

Apart from the temperature effect, there are two other functions which derive from wind control: dust and humidity inside the enclosure are also controlled simultaneously.

Noise control is another aspect of yard enclosure. Noise is unwanted sound. In general, to a family, noise spreads out from the streets and neighbors. It is conducted by air and spreads out to a wider range. Except in an absolute air tight space, it is difficult to avoid noise invasion. However, houses with enclosures still have distinct advantages in noise reduction over open-yard houses.

When noise is produced within the enclosed yard, most frequently, it will be heard in the house, and it tends to be more intensive than in an open-yard house. This is because the enclosure contains the in-yard noise and keeps it from spreading out. Yet, people do not object so much to noises which are produced in their own yards since these are made by the members of their own families, which are more within their control. Besides, these noises sometimes are desirable if they are made by small children as in this case, noise is just like an alarm to their constantly alert mother.

With the thought that the in-yard noise is acceptable,

it is possible to create in-yard noise to counteract the outside noise. In doing so, it produces an illusion of quietness or relative noiselessness. This quietness can be maintained only in noise. This theory of "unwanted noise" being taken over by "wanted noise" has been proven in its effectiveness by acousticians.[3] In this case, the wanted noise to the unwanted noise is like a deodorant to the unpleasant air.

Yard enclosures apparently accentuate the power of in-yard noise against outside noise. People in their daily life, with the help of yard enclosure would not feel that they were under pressure of having to be quiet in order not to disturb neighbors. In fact, they would not worry much about their daily talk which may be heard by their neighbors. To avoid such embarrassment of neighbors is also an initial aspect of privacy.

In addition to the actual absorption of noise by a planted enclosure, there is a psychological result of noise control. This is the visual blocking of the source of noise. This is especially true when the yard is facing a busy street. The constant moving traffic which is seen by the eye usually gives the hint of noise. Yard enclosure will eliminate this possibility.

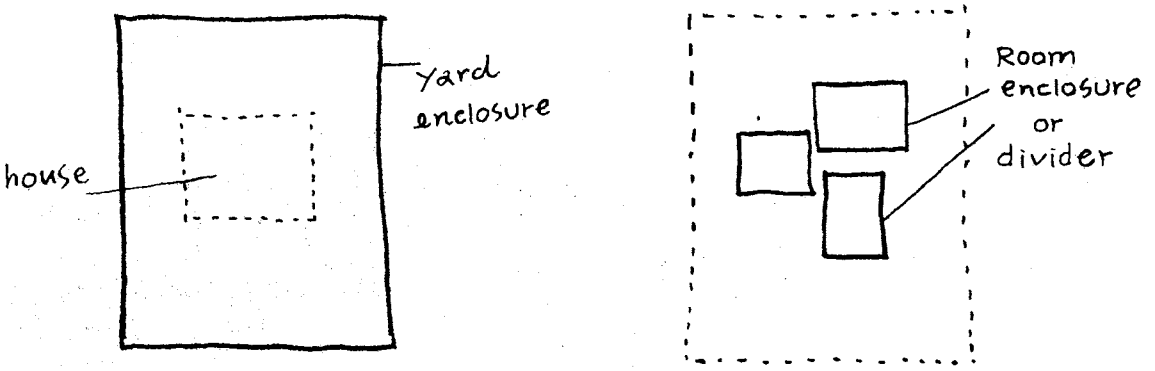
Privacy Control

It is generally agreed that a yard enclosure makes looking into a dwelling impossible. Family privacy is thus provided by a yard enclosure. But the initial role of having

privacy is to maintain freedom of an individual's life without unwanted interferences, embarrasment or intrusion from those living nearby.[4]

Privacy is very important to man as are some other environmental qualities, but the degree of privacy needed varies with the individual. Also, attitudes towards privacy have been found to be different according to different cultures.

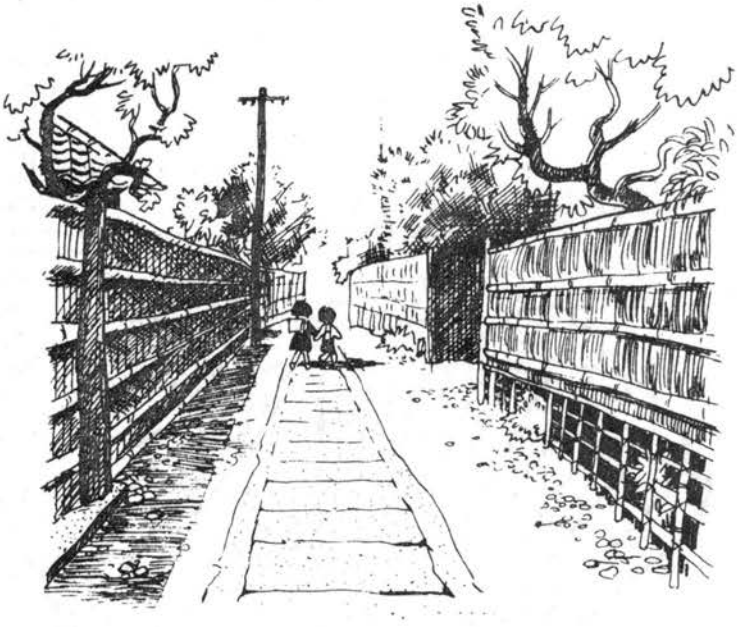
In Japan, for example, houses are enclosed in their gardens by high walls or fences. Their privacy from outside is extensively preserved but they have little internal privacy (due to lack of interior walls). The average American house, on the other hand, yard enclosures have not been emphasized. American houses have less external privacy, yet have extreme internal privacy in comparison with those of Japanese houses (Figure 1).[5]



Japanese house: family privacy is emphasized

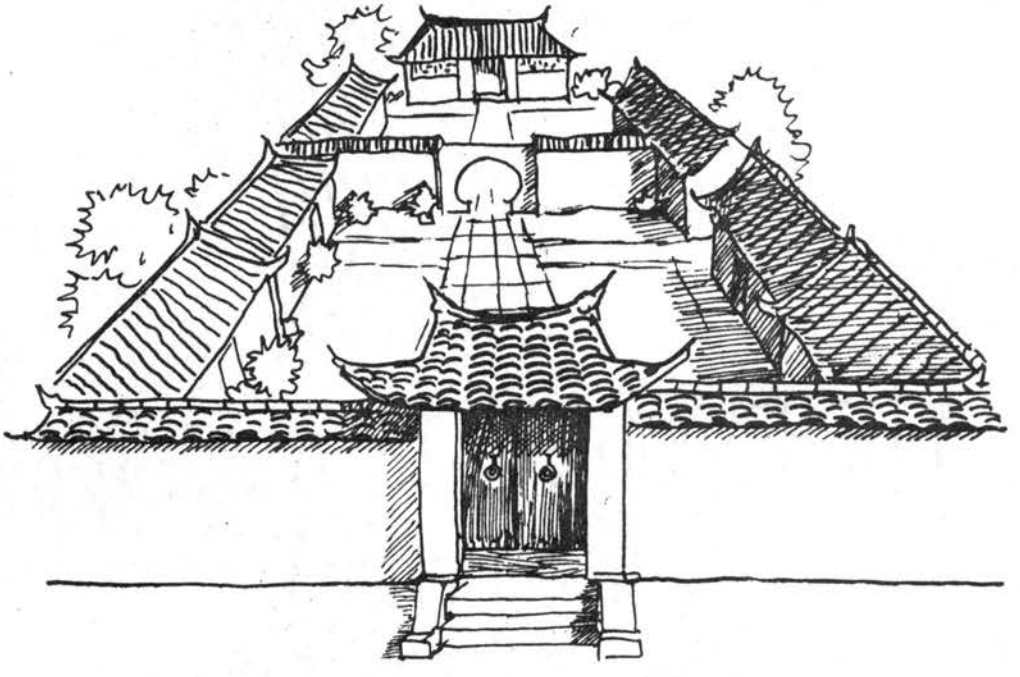
American house: individual privacy is emphasized

Figure 1. Japanese and American House Plan



A Japanese residential street. Private domain and public domain are clearly separate.

Figure 2. Japanese Residential Street



The Chinese court yard house. Both individual privacy and family privacy are provided.

Figure 3. Chinese Court Yard House

This can be explained by the fact that Japanese culture evolved from a family-centered concept while American culture is from an individualized tradition. This individualism is even practiced within the same family. Consequently, the intimacy of family relationship appears to be a significant difference between these two cultures. However, it is not to say that privacy is unnecessary or invaluable to those people who are in certain culture because non-physical environmental qualities affect man subconsciously.

The value one places on privacy may not remain constant. Edinburgh University's research has pointed out:[6]

> There is little fundamental difference in attitude towards privacy between various social and economical groups, only difference in the degree of opportunity people have for it as a result.

In the Edinburgh study, a group of newly built courtyard houses have been surveyed twice. The occupants had moved from houses with less privacy. In their first survey, most occupants liked the single story plan (together with ease of housekeeping) the best. The preference of privacy as second. But one year later, when the second survey was made, privacy had replaced the others as the most popular feature.

This change of value over time implies that occupants' housing experiences are important in their evaluation of privacy, since their experiences offered them more opportunities in comparing conditions with or without privacy. In other words, the enjoyment of privacy can be learned by the

stimulation of a change of living environment, however, this enjoyment needs a period of time to be experienced.

Another example is in Iraq, in the 1930's. Western architects along with Iraqi civil engineers, who had been trained abroad developed a new type of housing. This is an open-yard-detached house instead of traditional house which had an enclosed yard. Unfortunately, this type of new house, regardless of its better construction materials, was disappointing to the Iraqi occupants because this type of house failed to meet the occupants' need of privacy to which they were accustomed in their former enclosed-yard houses. They had not treasured the value of this privacy until the day they lost it.[7]

From the preceding, it may be assumed that Americans have not discovered the value of yard privacy since most Americans do not have the experience to compare these two types of living patterns. For the most part, they are accustomed only to the open yard house form, yet, there is a hope that the hidden value of yard privacy can be discovered by comparing these two different types of housing.

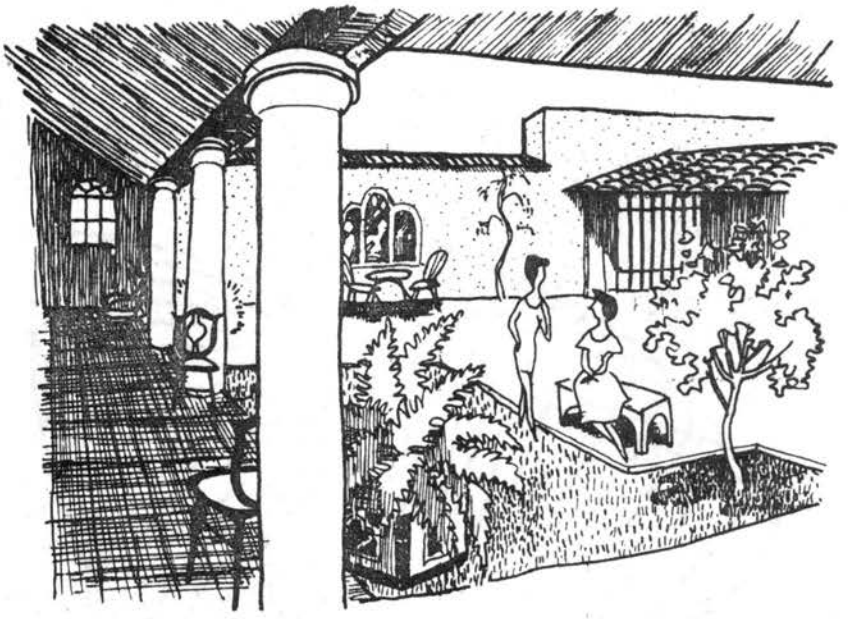
The yard enclosure is used as a buffer to separate the public and provide privacy to the family. This privacy assures freedom of each family to live their own way of life. So, each family may choose whether or not they want to be acquainted with, or in contact with, other residents. However, in an open-yard neighborhood, to achieve this freedom is difficult. In order to protect the family's privacy, to fight

against the penetration or intrusion of personal life, occupants tend to keep the relationship with other residents on a fairly superficial level as an invisible buffer. Although this embarrassment happens so often, they seldom are aware that this may be improved merely by the use of a visible, functional buffer -- a yard enclosure.

Theoretically, there is another important way which may also provide yard privacy. This is by providing plenty of space between houses. In Stewart's thesis, "plenty of space" is the most important housing aspect which associates the value of privacy rather than "a fence around the yard."[8] In another Lansing study, most single detached families said they have no privacy problem until a housing density of 12.5 dwellings per acre is reached.[9]

Thus people seem to value their yard privacy. Only they prefer a different method to achieve it -- plenty of space between houses. Lansing also found that a high degree of satisfaction of privacy exists either in single detached houses or attached townhouses.[10] Although the density of townhouses is over 12.5 dwellings per acre, people who live there still feel easy and seem to have no problem regarding privacy. Apparently, this is because townhouses provided well-designed private yards with visual and acoustical insulation.

As long as the value of yard privacy is recognized, the important thing is to achieve this value. Any type of house may provide privacy if it is planned with this goal in mind.



The Latin American "patio". This creates usable space for outdoor living because it is private.

Figure 4. Latin American "Patio"

Symbol of Territoriality

Territoriality sometimes is hard to distinquish from privacy, because each one is an example of a life style that resists invasion of other life styles by outsiders. The difference may be that territoriality performs its behavior within a given area, while according to the behavioral scitist's research, territoriality is a matter of natural instinct. Privacy, as discussed in the preceding section is culturally shaped rather than instinctively formed.

The research of territoriality started only a few years ago. Konrad Lorenz in his book, On Aggression (1966), showed among other things, that aggressive behavior is instinctive

in both animal and man. Niko Tinbergen complemented this later by saying that aggression is not innate, it is the by-product which is derived from other innate behavior. Aggression is an outworking of other innate behavior. This behavior, he concluded, is closely related to territoriality.[11]

Based on these pioneering viewpoints, Robert Adrey published a book, Territorial Imperative. In this book he attempted to show that man as many other animals, is a territorial species. Man aggressively defends a space. This means territorial nature is inherent and of evolutionary origin. Because man needs this biological satisfaction in his environment, the establishment of various kinds of boundaries is not surprising.

Among these boundaries, particularly in regard to territory of the individual family, the home is of great psychological importance. However, in the ever increasing complexity and impersonality of modern society, man's personal and family identity is seriously threatened. Under this condition, each family needs a more clearly defined enclosure to identify its members.[12]

Furthermore, it should be noted that territoriality does not mean ownership of private property. Occupancy of a given land would satisfy this need. A landlord who lives away from his own land cannot be considered to have territoriality. On the other hand, a tennant without the ownership of the land has this aspect of territoriality.

Territoriality is more apt to be expressed intensively

if the occupants live on their own land, clearly defined boundaries are more apt to appear. But this is not to say that non-property owning people are people without a feeling of territoriality. In fact, they often exhibit the behavior of defining their sphere of influence -- their territoriality.

An English fence manufacturer has said:[13]

> . . . It is man putting his stake into the ground, staking out his own little share of the land, no matter how small, he likes his own frontier to be distinct. In it he is safe and he's happy. That's what the fence is . . .

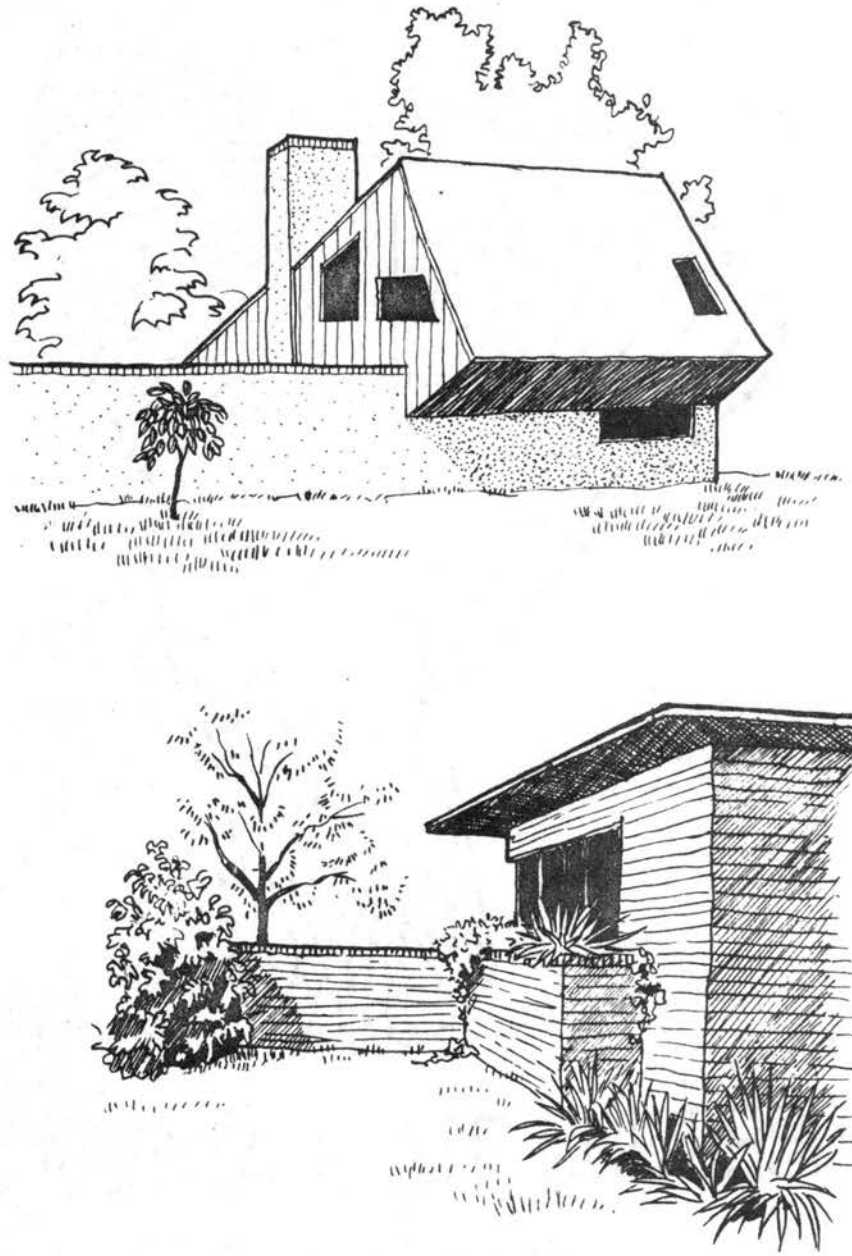
This obviously indicates that the yard enclosure plays an important part in symbolism. The enclosure symbolizes more than a territory — it symbolizes a home.

However, when a yard enclosure becomes totally symbolic it tends to be treated as a thing apart from the house, and spaces within the symbol seldom produce their significant functions. The value of the natural, innate materials in the yard is still undiscovered. As Rapoport warned:[14]

> . . . The symbol is not necessarily good or reasonable in terms of utility . . . the whole concept of private house and fence may be an expression of territory which seems to be a crucial concept, although it can take on different forms . . .

The whole symbolic concept of yard enclosures should not be overly encouraged. As the housing space gets smaller, and man begins to make more use of outdoor living space, yard enclosures should be considered as a functional part of the structure and an extension of the house.

As for territoriality, from the public standpoint, city



Garden walls can act as an extension of the building.

Figure 5. Garden Wall

planners and control authorities should be aware that territoriality is a human instinct; it should be considered as a basic human right and the importance of it recognized.

Territorial right has been recognized by law for a long time. Some of these laws were made during the pioneer period. At that time, lands were abundant, life was lived in an unprotected manner. The exposure was not only to the vast open sapce but to the wilderness and danger. Social order at that time was unstable and security was a problem. In such a society, one of the territorial laws was recognized by protecting the home from intrusion, even permitting killing in preserving this right.[15] Strangely enough, this right of killing seems to be accepted by some even in the modern civilized society.

Today, the living environment is often crowded, houses are so close together compared with the pioneer times. Yet life still maintains an open manner with poorly maintained yard boundaries. It is very hard to define who is an intruder in today's civilized society. Yet the territory "right" of killing still exists. This right may serve as an invisible boundary to preclude intruders. Actually, this invisible boundary, in a way, is a potential murderer as long as the right of killing is recognized in an "inviting" open yard. However, the killing tragedies (mostly claimed as accidents) could be eliminated by establishing a strong, visible yard enclosure. Infact, a strongly defined territory can also discourage occasional crime and vandalism, since within

strong territorial boundaries, any intruder would be expected to justify his presence. An intruder as a non-professional criminal will be greatly discouraged by such a challenge.

Improvement of residential security through environmental design has just been recognized by the Law Enforcement Assistance Administration by funding a research project to be conducted in order to put this idea into reality.[16]

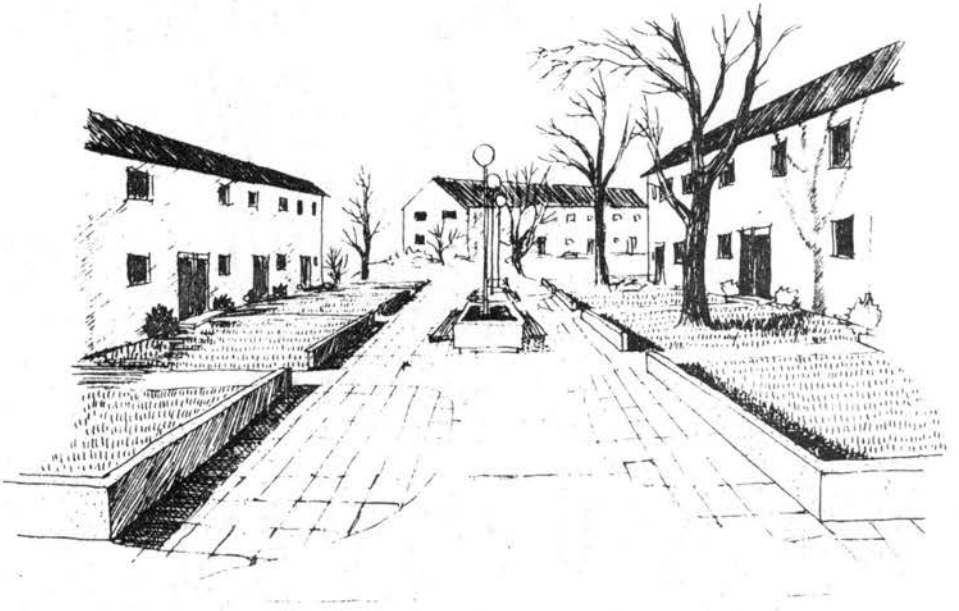
Design and Decoration

An ancient Chinese philosopher, Lao Tse, said, "Though clay may be molded into a vase, the essence of the vase is the emptiness within it."[17] These words imply that an effective and useful space is framed, contained or enclosed.

An enclosed outdoor space, like the emptiness within the vase, determines to a great extent the quality of the space, and makes it more meaningful. The use of a framed outdoor space can be compared to the use of a cup. The value of a framed outdoor space is preserved like the water in a cup. On the other hand, the unframed open outdoor space, can be compared to water spilling on the ground. In this case, the value of the space, like the water, is spread out and gone.

Thus, the landscape architect considers the outdoor space as "architecture without a roof."[18] The importance of outdoor space has been obviously considered in connection with yard enclosures. The landscape architect considers the

Housing environment with no evidence of residents territoriality concern. Free access is encouraged. The potential of crime and vandalism is high.



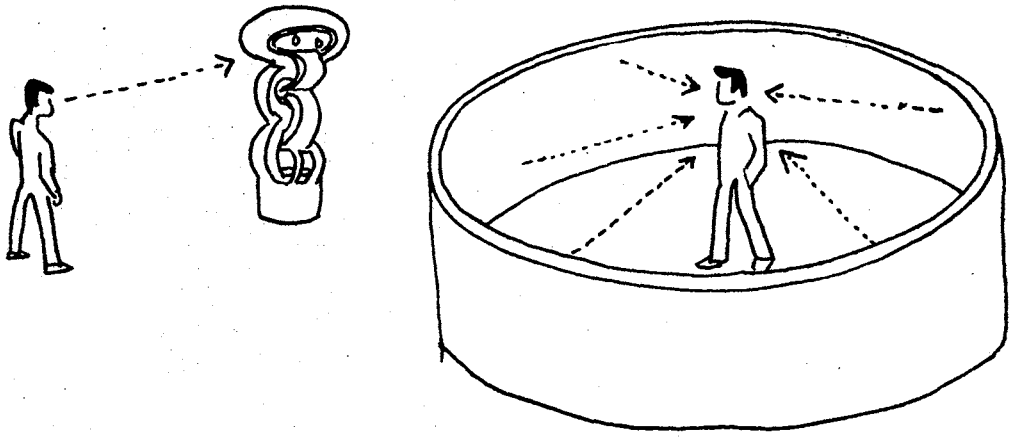
After modification, walks are given emphasis: ambiguously used grounds are clarified. Public and private zones are clearly separated - a defensible space.

Figure 6. Defensible Space

framed outdoor space as a planned space, and the unframed, open outdoor space as an unplanned space.[19]

Japanese gardens are enclosed by fences. The outdoor space in the yard is a planned space, and its value is preserved. Besides, with open planned interiors, gardens are governed by the order inside the house. Man, who lives in the house, may enjoy his garden. However, popular American suburban houses do not have yard enclosures. The yards are frequently unplanned outdoor space, the value of the yard space is not preserved, and gardens are ruled by exterior order. The family who lives in the house may not enjoy their garden, because garden, as well as the exterior of the house become showpieces for display and public appreciation.

American dwellings can thus be considered as belonging to a pictorial order. The effect of such visual perception must be created by conscious contemplation.[20] Japanese dwellings can be considered as belonging to a spatial order rather than pictorial. The effect of such a visual perception is subconscious by the "automatic registration of successive images and by the effect of memorized analogies."[21] In other words, pictorial orders take place from without the object by conscious visual contemplation; spatial order occur by being within the object of subconscious integration of visual and other experiences. Erno Goldfinger claimed that spatial order determines the sensation of space, and this should be the basis of aesthetic theory in environmental design.[22]



Pictorial order: apprehended consciously from without.

Spatial order: apprehended sub-consciously from within.

Figure 7. Pictorial Order and Spatial Order

Enclosures create flexibility in housing design. When designing a family house, there should be a complete freedom to choose the ideal orientation; however, such freedom has been ignored in most houses. These houses are located with the front parallel to the street and they all face the same direction. If the families on one side of the street have, fortunately, enjoyed the favorable orientation, what about the families on the other side of the street? Furthermore, it has been said that the quality of the orientation should be defined with respect not only to climate, but also to the vegetation, vistas, topography, house structure, or some other individual reason.[23]

As a matter of fact, houses can be arranged in different directions so that each will have its own particular advantages. However, the difficulty is, though one finds one's

house in an ideal orientation, he may still feel that if he aligns his house to that direction, it will be against neighborhood propriety. The great power of conformity in the popular suburban neighborhood is seldom forgotten.

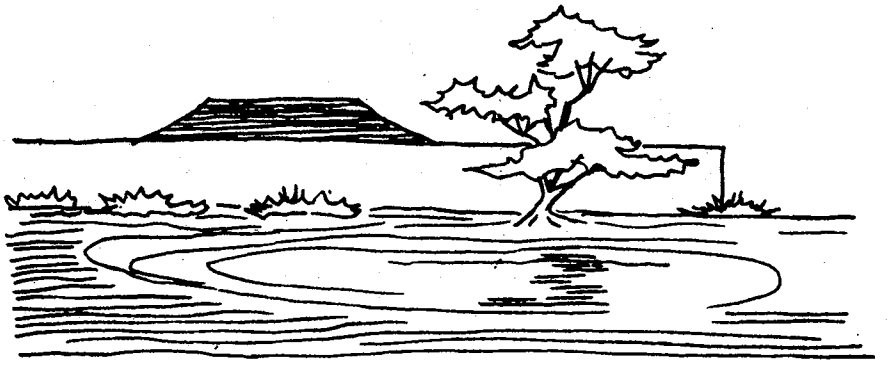
When a yard enclosure surrounds a house, it makes no difference which is the front or which is the back of the house. As long as the enclosure covers the unattractive side of the house, a person will no longer be concerned with his neighbors' opinions. He may set his house according to his own desired direction.

Through the use of enclosures, it is obvious that chaotic design, which may result from a variety of orientations, can be reduced. A house entrance may be obscure because of orientation. Through proper design, an enclosure may still serve as a guide to orient people in finding the entrance.

As a result of increasing dwelling flexibility and making the smaller interior seem larger, it has become more desirable to have an "open plan." Frank Lloyd Wright suggested the idea of open planning in such a way that interiors would have close contact with gardens. It is wise to let the outside come in and inside go out and make no defined border between interior and exterior spaces.[24]

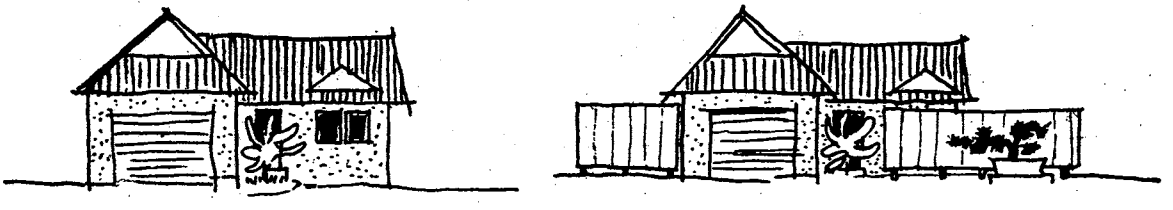
This kind of open plan will be unsuccessful without a planned yard enclosure. Just as an outdoor space without a frame will lose its own value, the interior space will also lose value. Besides, more privacy problems arise in the open plan wherever the housing density is high if there are no

yard enclosures. The yard enclosure has fewer structural limitation than does the house. It can be freely designed with a vareity of lines, forms and sizes. Because an enclosure has such potential, it may be the best architectural element with which to enhance the house. For example, an enclosure may serve as a visual transition between house and ground as seen from the street. This could make the house seem lower and create a horizontal form of the dwelling. The horizontal form is peaceful, calm and at rest for it lies comfortably on the ground at harmony with gravity.[26]



The horizontal form is peaceful, calm and restful.

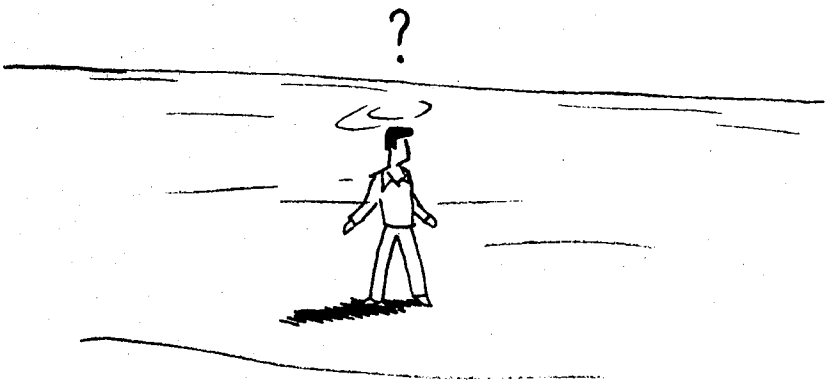
Figure 8. Horizontal Form



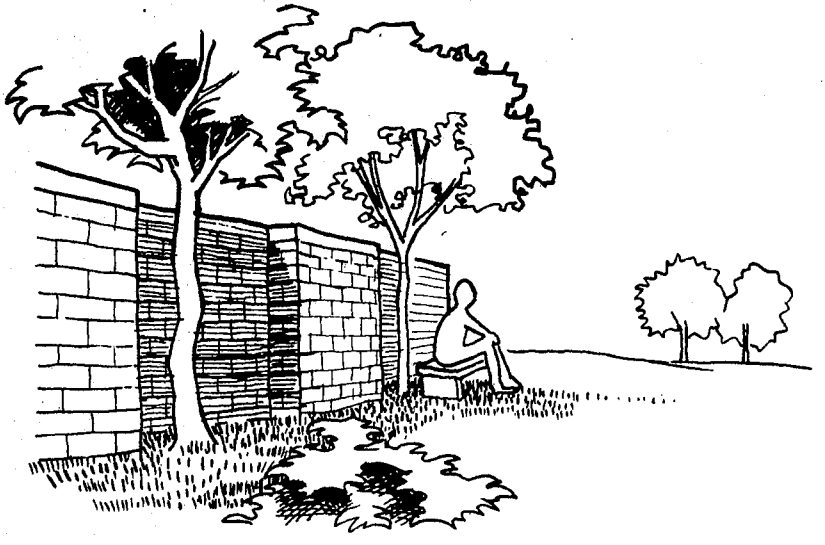
Enclosure may serve as transition between building and ground. This transition helps to create horizontal form.

Figure 9. Horizontal Enclosure Forms

An enclosure can provide human scale in a wide open space.



Man is not at ease when the vertical human scale is missing.



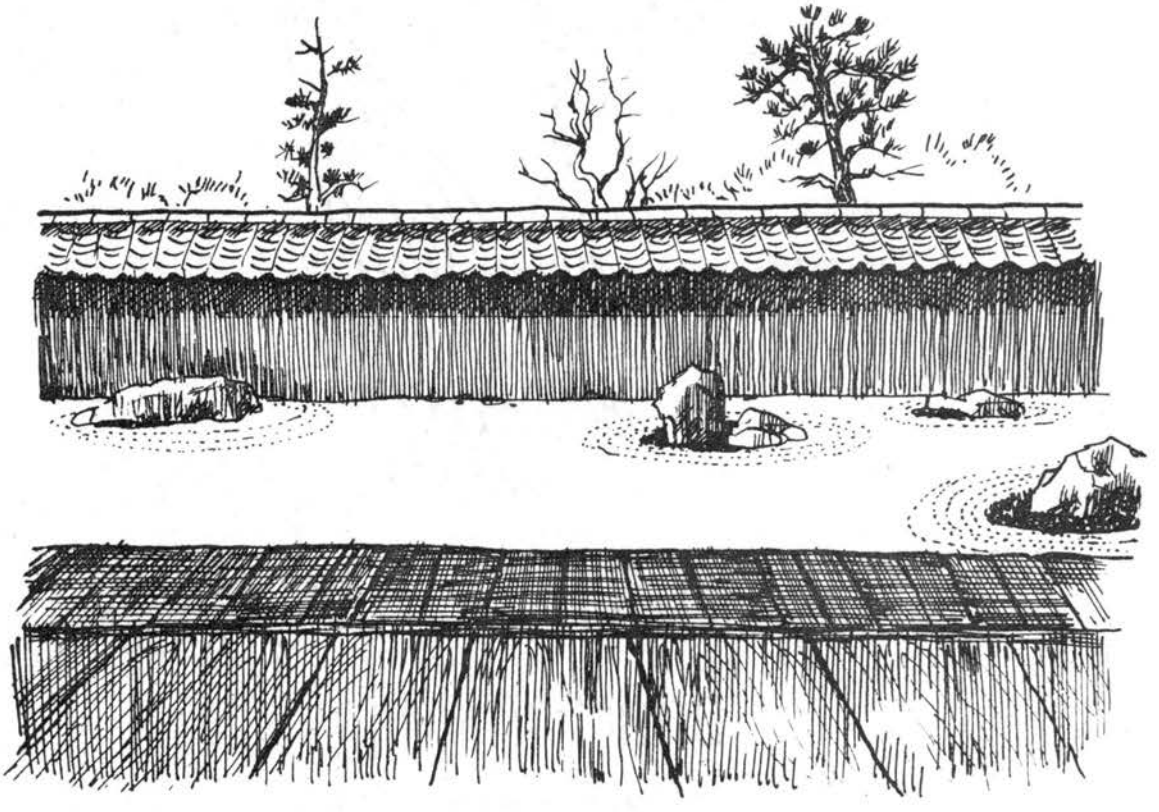
Man is at ease when the vertical human scale is provided.

Figure 10. Vertical Human Scale

Trees in an enclosed yard tend to look bigger than in an open space because even small trees are in scale with their intimate sorrounding. This is important when the house is on

a newly developed site and where natural plants are scarce.[26]

A yard enclosure, as a vertical element in the spatial design, has great visual impact.[27] Since one is conscious of the vertical elements rather than horizontal ones, yard enclosures present many possibilities in landscape design and may be an extension of interior design. As a decorative object, it may enhance the visual appearance of the living space.

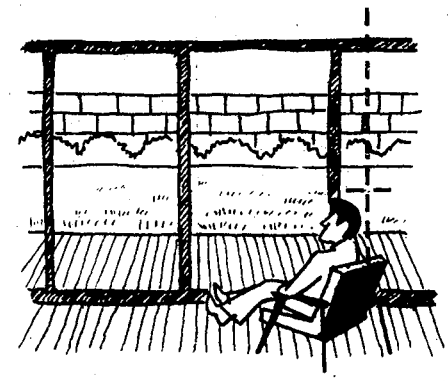


A view is a backdrop which can enhance interior as well as exterior spaces.

Figure 11. A View is a Backdrop

Normally outdoor space is larger than indoor space and man's movements in outdoors are more varied than indoors. In other words, yard enclosures are usually seen at a variety of distances rather than from a fixed position as are interiors. With this in mind, the ornamental effects of enclosures, which result from different viewing distances, should be taken into account. In fact, enclosures may produce different ornamental interests by viewing from different distances. When one is close to an enclosure, one may experience the fine wood grain or the bits of granite. It can be said that these textures are in primary order. When one moves farther away from the enclosure, one may enjoy the larger scale of the texture of the enclosure -- the joints or overall shapes of the boards or granite. These become the secondary order in texture. Thus the primary and secondary order in texture may be designed in such a way that the enclosure surfaces change in their aesthetic composition in relation to the distance from which they are viewed.[28]

The distance to the enclosure where the texture of primary order can be seen.



The distance to the enclosure where the texture of secondary order can be seen.

Figure 12. Proximity of Enclosure

The same principle may be applied to color. Such a color principle has been demonstrated successfully by Piontist's art works.

In Chinese architecture, the colors used for decoration are primary, and they are vivid and fragmental at close distance. But if viewed from a distance away from the building, all the primary colors seem blended together. The colors lose their vivid character but create a new composite color tone.

Chapter II has reviewed some of the functions of yard enclosures and some means by which these functions can be achieved.

A good view is not necessarily an open view. A framed view may induce a sense of depth, anticipation, and mysteriousness.

Figure 13. A Framed View

FOOTNOTES

[1]Norbert Schoenauer and Stanley Seeman, The Court-Garden House (Montreal, 1962), p. 123.

[2]Fences and Gates (Menlo Park, 1971), pp. 8-9.

[3]Kevin Lynch, Site Planning (Cambridge, Mass., 1962), p. 101.

[4]Edinburgh University, Privacy and Courtyard Housing (Edinburgh, England, 1965), p. 41.

[5]Amos Rapoport, House Form and Culture (Englewood Cliffs, N.J., 1969), p. 68.

[6]Edinburgh University, p. 51.

[7]Paul Oliver, Shelter and Society (New York, 1969), p. 38.

[8]Karen Kay Stewart, Relationships Between Aspects of Housing and Five Housing-Related Values as Determined by Opinions of Mothers and Expanding Families, OSU, Unpublished Masters Thesis, 1965, p. 47.

[9]J. B. Lansing, R.W. Marans, and R.B. Zehner, Planned Residential Environments (Ann Arbor, Michigan, 1970), pp. 107-109.

[10]Ibid., p. 121.

[11]Barrie B. Greebie, "What Can We Learn from other Animals", American Institute of Planners Journal, Vol 37(1971), p. 163.

[12]Ibid., p. 166

[13]Rapoport, pp. 133-134.

[14]Ibid., p. 133.

[15]Ibid., pp. 80-81.

[16]"Architectural Designs Eyed in Crime Control", Tulsa Daily World, March 12, 1973. p. 10.

[17]Yoshinobo Ashihara, Exterior Design in Architecture (New York, 1970), p. 11.

[18]Ibid., p. 14.

[19]Ibid., p. 21.

[20]Erno Goldfinger, "The Sensation of Space", Architecture Review (1941), p. 129.

[21]Ibid., p. 131.

[22]Ibid

[23]Lynch, pp. 139-140

[24]Frank Lloyd Wright, The Future of Architecture (New York, 1953), p. 240.

[25]Albert J. Rutledge, Anatomy of a Park (New York, 1971), p. 38.

[26]Schoenauer and Seeman, p. 129.

[27]John Ormsbee Simonds, Landscape Architecture (New York, 1961), p. 215.

[28]Ashihara, p. 62.

CHAPTER III

METHODOLOGY

The advantages of enclosed yard designs have been discussed in the last chapter. Planners seem to agree with the idea of housing augmented by yard enclosures. However, it is also important to know people's attitudes toward yard enclosures. Thus a field survey was made in order to obtain factual information from residents regarding yard enclosures.

Procedure of Survey

1. A questionnaire was developed for use with three types of families; privacy enclosure families (PE), non-privacy enclosure families (NPE), and no enclosure families (NE).
2. In order to control the standard physical sorrounding of the samples, a personal survey was made instead of simply mailing the questionnaire and a questionnaire was also presented to the respondent while the interview was in progress.
3. With the help of a Stillwater city map the sample families were selected representing all the suburban areas of Stillwater. Finally, 18 privacy enclosure families, 11 non-privacy enclosure families, and 36 no enclosure families were selected as testing samples.

4. Data were organized, analyzed and the results were discussed.

Character of the Samples

1. The house of each family was a well-constructed, single detached structure located in the center of a rectangular lot. They were similar in size and shape.
2. All the sample houses were selected from a through street with neighboring houses in front, at right, left and in the back. And all houses had front yard, right yard, left yard and back yard. The reason for selecting such a standard site was to simplify the test and avoid any bias of the result which may be caused by the variation of the house environment.
3. The ratio of the three types of families is not a result of random sampling, but rather from a desired amount of samples. Therefore, one should not interpret the ratio of the sample to be true for the total population.

CHAPTER IV

FINDINGS

The first section of this chapter is to present the general background of the three types of sample families.

TABLE I

GENERAL BACKGROUND OF THE THREE TYPES OF FAMILIES

	PE	NPE	NE	Total
Educational Level				
College	18	11	35	64
Non-College	0	0	1	1
Total	18	11	36	65
Family Life Cycle				
Single (young)	0	0	1	1
Married (no child)	0	0	3	3
Married (pre-school child)	5	3	6	14
Married (school year child)	7	7	23	37
Married (old, retired)	6	1	3	10
Total	18	11	36	65

TABLE I. (Continued)

	PE	NPE	NE	Total
Length of Residence				
< 1 year	0	4	13	17
1-5 years	11	3	9	23
> 5 years	7	4	14	25
Total	18	11	36	65
Ownership of House				
Owned	18	8	34	60
Not-Owned	0	3	2	5
Total	18	11	36	65

For the items on educational level, family life cycle, length of residence, and ownership of house, there is not much difference among the three types of families.

Overall Finding

The second section of this chapter is to present how the three types of families rate the importance of a yard enclosure.

Although the no-enclosure families have no yard enclosure, the questions were still asked by way of "in case you have a yard enclosure" or "whatever you think an enclosure is for." The reason is clear that many no-enclosure families may have positive opinions because of their former experience, and many no-enclosure families may even wish to

have an enclosure. This fact is considered to be an important part and is discussed in the next section.

TABLE II

PERCENT RATING OF THE IMPORTANT FUNCTIONS OF YARD ENCLOSURE BY THREE TYPES OF FAMILIES

	Protection	Privacy	Climate Control	Design	Lotline Definition	Noise Control
PE Family	33	78	22	73	17	11
NPE Family	63	54	9	36	54	18
NE Family	39	72	14	50	19	11

Table II shows the results as follow:

1. Protection was rated important as a function of enclosure only by the majority of the NPE families (63%).
2. Privacy was rated important by the majority of the three types of families (PE family - 78%, NE family - 72%, and NPE family - 54%).
3. Climate control was rated important only by the minority of all the three types of families.
4. Design and decoration was rated important by the majority of PE families (73%) and NE families (50%).
5. Lot line definition was rated important only by the ma-

jority of NPE families (54%).

6. Noise control was rated important only by the minority of all the three types of families.

Privacy

The result indicates that PE families have the highest percentage in rating privacy as an important function among the three types of families.

However, it is noticeable that many NE families also rated privacy important. A testing factor of "wish or not wish an enclosure" was introduced to test whether their rating is to indicate their real need.

TABLE III

NUMBER OF NO ENCLOSURE FAMILIES WISHING ENCLOSURE ON BASIS OF PRIVACY RATING

Privacy Rating of NE Families	Wish Enclosure	Wish No Enclosure	Total
Privacy as important for enclosure	14	12	26
Privacy as not important for enclosure	2	8	10
Total	16	20	36

From Table III the relation between privacy rating and wish or not wish enclosure was represented by the Yule's coefficient Q which is 0.65.[1] (See Appendix for formula of

figuring Q). This is to say that there is a substantial positive association between privacy rating and willingness for enclosure. In other words, privacy could be an important reason for wishing an enclosure by the no-enclosure families.

For those people who rate privacy as an important function of enclosure but do not wish enclosure, the reasons may be that their rating is a general attitude toward "what an enclosure is used for" but this does not apply to their own families' needs. Or their privacy can be achieved by another method such as plenty of spaces between dwellings.

People's attitude toward yard privacy being associated with their environmental experience has been discussed on page 12. The following table is to test whether enclosure experience has a relation to wishing to have an enclosure among NE families.

TABLE IV

NUMBER OF NO ENCLOSURE FAMILIES WISHING ENCLOSURE ON BASIS OF EXPERIENCE WITH ENCLOSURE

Housing Experience	Wish Enclosure	Wish No Enclosure	Total
Had enclosure experience	12	6	18
Had no enclosure experience	4	14	18
Total	16	20	36

The coefficient Q for Table IV is 0.74. Therefore, a very strong positive association between the enclosure experience and wishing to have an enclosure is revealed. This also indicate that those families that had enclosure experience may not be satisfied with their present open-yard environment.

Territoriality

As shown in Table II only 17 percent of PE families and only 19 percent of NE families rated lot line defining as an important function for enclosure. If the lot line defining can be used as an indicator of territoriality, these families did not select the territorial behavior, considered as a human instinct.

The following table (Table V) shows whether the frequency of outdoor activity has any effect on the territoriality. In this test, the outdoor activity is divided into front yard and back yard.

TABLE V

IMPORTANCE OF LOT LINE DEFINING ON BASIS OF ACTIVITIES BY NO ENCLOSURE FAMILIES

A. Back yard

	Frequent		Not Frequent	
	No.	%	No.	%
Lot line important	6	19	1	25
Lot line not important	26	81	3	75
Total	32	100	4	100

TABLE V. (Continued)

B. Front yard

	Frequent		Not Frequent	
	No.	%	No.	%
Lot line important	3	30	4	17
Lot line not important	7	70	22	83
Total	10	100	26	100

The data in Table V, indicate that whether or not people had frequent or infrequent activity in the front yard or back yard the majority rated lot line defining not important. This means that frequency of activity has nothing to do with lot line defining. This reinforces the finding that NE families do not consider the physical defining of their home ground important.

Neighboring

The main purpose for studying this topic is to find out whether enclosures affect the quality of neighboring, since good neighboring is considered an important factor in environmental satisfaction.[2]

In this test, two variables determine the neighboring quality. The first one is the frequency of casual interaction, and the second is the degree of friendliness. Because proximity may affect test results, each of the two variables were divided by two sub-variables: next door neighbors and other neighbors,

Table VI shows the neighboring quality of the three enclosure types of families.

TABLE VI

PERCENT OF THREE TYPES OF FAMILIES IN RELATION TO QUALITY OF NEIGHBORING

	Interaction				Friendliness			
	Next Door		Other Neighbor		Next Door		Other Neighbor	
	Frequent	Not Frequent	Frequent	Not Frequent	Yes*	No**	Yes*	No**
PE	33	67	44	56	94	6	94	6
NPE	27	73	36	64	100	0	91	9
NE	31	69	34	66	89	11	89	11

*Neighbor is friendly
**Neighbor is not friendly

The four levels regarding "interaction" used on the questionnaire have been converted to two; the very often and often were combined into one, "frequent". The occasionally and seldom were combined into one, and shown on the table as "Not Frequent". A similar combination was used in "friendliness".

The data in Table VI show the PE families hold the highest percentage of neighborliness among the three types of families. This is true regardless of location of neighbors.

In addition, the coefficient Q of neighboring quality

was tabulated according to the three combinations of the three types of families. They are: PE families related to NPE families, PE families related to NE families and NPE families related to NE families. These are shown in Table VII.

TABLE VII

COEFFICIENTS OF NEIGHBORING QUALITY OF THREE TYPES OF FAMILIES

	PE/NPE	PE/NE	NPE/NE
Interaction			
Next Door	0.14	0.06	0.08
Other Neighbors	0.17	0.23	0.07
Friendliness			
Next Door	0.00	0.36	0.04
Other Neighbors	0.26	0.36	0.25
Mean	0.14	0.25	0.11

The means in Table VII show clearly that there is a low positive association regarding neighboring quality between PE families, NPE families, and NE families.

According to these data, yard enclosures do not tend to reduce the neighboring quality. Based on the samples in this study, they increased this quality to some extent.

It could be argued that either interaction or friendliness is adequate for indicating the neighboring quality.

Festinger and Gans emphasized that interaction was important to determine the neighborhood satisfaction.[3] However, Lansing and Hendricks claimed that interaction is not important and it is the friendliness which determines the neighborhood satisfaction.[4]

Owing to the diversity of opinion in indicating neighboring quality, it would be better to modify the data and calculate a mean for each separate indicator.

TABLE VIII

COEFFICIENTS OF NEIGHBORING QUALITY OF THREE TYPES OF FAMILIES AS SEPARATE INDICATOR

	PE/NPE	PE/NE	NPE/NE
A. Interaction as indicator			
Next Door Neighbors	0.14	0.06	0.08
Other Neighbors	0.17	0.23	0.07
Mean	0.16	0.15	0.08
B. Friendliness as indicator			
Next Door Neighbors	0.00	0.36	0.04
Other Neighbors	0.26	0.36	0.25
Mean	0.13	0.36	0.15

From the above findings, regardless of the indicator, PE families present the highest neighboring quality: more than NPE families and NE families.

On the basis of the respondent's feeling, the majority

think that a yard enclosure has no negative influence on neighboring. This finding is presented in Table IX.

TABLE IX

FEELING OF THREE TYPES OF FAMILIES TOWARD YARD ENCLOSURE AND NEIGHBORING

	PE		NPE		NE	
	No.	%	No.	%	No.	%
Enclosure Affects Neighboring	1	6	1	10	12	36
Enclosure Does Not Affect Neighboring	15	94	9	90	21	63
Total	16	100	10	100	33	100

Even for NE families, 63% do not think enclosures affect neighboring. Therefore, the theory that open-yard environments lead to good neighboring is only an unsubstantiated illusion.

Reasons for No Enclosure

The no-enclosure families have different reasons for not having a yard enclosure. Table X presents seven reasons given by the two kinds of no-enclosure families.

TABLE X

REASONS FOR NO YARD ENCLOSURE BY NO ENCLOSURE FAMILIES

Reasons for No Enclosure	Wish Enclosure Family*		Do Not Wish Enclosure Family**	
	No.	%	No.	%
A. Cost	9	56	5	25
B. Open view preference	1	6	8	40
C. Open yard custom	5	31	18	90
D. Neighboring	4	25	8	40
E. Like to see people	2	13	5	25
F. Have enough natural plants	2	13	7	35
G. Code	1	6	1	5

*16 Families responding
**20 Families responding

The data in Table X show that 56% of the families wishing to have an enclsosure mentioned cost as the reason for no enclosure, 31% mentioned being accustomed to open yards and 25% mentioned neighboring as the reason.

Of those not wishing an enclosure, 90% mentioned being accustomed to an open yard as the reason for no enclosure; 40% mentioned neighboring or open view as the reason. And only 25% mentioned cost as the reason for no enclosure.

This table seems to indicate a tendency for the fami-

lies not wishing for an enclosure to mention more than one reason, while most of those wishing to have an enclosure tend to mention only one reason for having no enclosure.

FOOTNOTES

[1] James A. Davis, Elementary Survey Analysis, Prentice Hall, (Englewood Cliff, N.J., 1971), p. 40.

[2] John B. Lansing, Rober W. Marrans and Robert B. Zehner, Planned Residential Environments, Survey Research Center, The University of Michigan (Ann Arbor, Michigan, 1970), pp. 128-134.

[3] Leon Festinger, Stanley Schachter and Kurt Back, Social Pressures in Informal Groups, Harper and Brothers (New York, 1950). They found that the proximity of dwelling unit entrances was directly related to frequency of casual interaction and subsequent growth of friendships.

Herbert J. Gans, "Urbanism and Suburbanism as a Way of Life: A Re-evaluation of Definitions," Chapter 4 in People and Plans, Basic Books (New York, 1968). Gans also suggests that interaction is important for satisfaction in the neighborhood, only the homogeneity is more important than propinquity in fostering interaction.

[4] John B. Lansing and Gary Hendricks, "Living Patterns and Attitudes in the Detroit Region," Detroit Regional Transportation and Land Use Study (Detroit, Michigan, 1967). The study was based on the result of a survey that "friendly" is a better predictor of neighborhood satisfaction than is the frequency of neighborhood reaction.

CHAPTER V

SUMMARY AND IMPLICATIONS

It was assumed that families with yard enclosures have a better quality of life than those without yard enclosures. This is based on the fact that the yard enclosure provides various advantages to the residents. These advantages reveal their effectiveness especially in an overpopulated modern society.

Review of the literature revealed that planners and environmental designers agree that yard enclosure can effectively provide the following functions: protection and environmental control, privacy control, territoriality satisfaction, design and decoration in the outdoor space.

For the empirical findings, a field survey was made to complete the study. Sixty-five families were interviewed including 18 privacy enclosure families, 11 non-privacy enclosure families and 36 no enclosure families.

Privacy and design and decoration were rated as important functions of yard enclosure by the majority of the three types of families. Protection and lot line definition were rated as important functions only by the majority of NP families. Climate control and noise control were rated important by the minority of all the three types of families.

For no-enclosure families: A testing factor of "wish or not wish an enclosure" was used to support the idea that people who rated privacy as important for enclosures may indicate their need and would not be satisfied with open-yard environment. To analyze what factor made people "wish" or "not wish" an enclosure, it was found that former enclosure experience has a very strong positive association.

For no enclosure families: Despite the different frequencies in using the yard, lot line definition did not appear important.

Families with yard enclosure tend to have higher quality of neighboring than families without yard enclosure.

For no enclosure families: Of the wish-enclosure families, the most important reason for no enclosure is cost. The second reason is because open yard is the custom. The third reason is for neighboring. Of the not wish enclosure families, the most important reason for no enclosure is the open yard custom. The second reason is for neighboring or open view preference.

As a result of this study the following implications were reached:

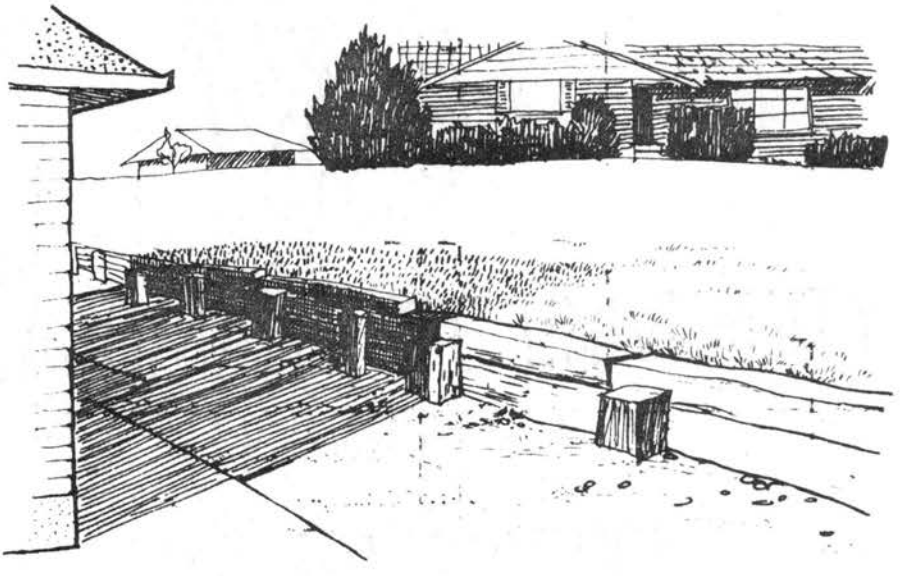
1. The reason why enclosure families have better neighboring quality may be attributed to the fact that they have yard privacy. Because yard privacy implies the value of the absence of unwanted interference, embarrassment or intrusion from neighbors. There are therefore, no tensions between the enclosure families and their neighbors.

2. Theoretically, a clearly-defined resident's lot may fulfill the human territorial need and thus help control aggressive behavior. This may also contribute to good neighboring quality. But from the survey, people do not think that defining the lot line is an important function of an enclosure. This inconsistency may be due to the following:

a. lot size and lot shape of the testing sample are too uniform enabling residents to sense the borders of their yard.

b. housing density may not be at a point where aggressive territorial behavior emerges.

c. various symbolic "lot lines" appear between the yards in the sample such as lot level and lot pavement change which may have some effect on territory definition.



Territorial need may be satisfied with a change in yard elevation

Figure 14. Change in Yard Elevations

d. People are unaware of the importance of defining the lot line; this may be because the environment affects man mostly beyond his awareness.

3. Even in a homogeneous neighborhood enclosure families have better neighboring quality than the no-enclosure families. In a heterogeneous neighborhood enclosure families have comparatively much better neighboring quality. In other words, enclosed-yard housing has the potential of diminishing the segregation tendency.

4. In order to develop effective enclosed yard housing, the planning should be done on a neighborhood basis. By doing this, the construction cost may be less than planning it individually. This will favor a large number of "wish-enclosure families".

If the planning is done at one time and by one group, it will be easier: to study the relationship between the enclosures and buildings; to study the scale of the neighborhood, which in turn will promote a harmonious streetscape.

If one lives in a planned, enclosed yard neighborhood, despite the majority of dwelling pattern, one's fear of not following the custom is decreased. This may favor a number of no-enclosure families who are merely followers of custom.

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APPENDIX A

QUESTIONNAIRE: YARD ENCLOSURES

1. What is your family composition?

Age(s)

A. Husband
B. Wife
C. Children
   boys
   girls
D. Others

2. Does anyone of your family have College Education?

A. Husband's _____
B. Wife's _____

3. How long have you been living here? _____ years

4. Do you _____own or _____ rent this house?

5. Did your former house have yard enclosures? ___Yes___No

6. How often do you and your neighbors visit with each other? _____ next door _____ other

A. Seldom
B. Occasionally
C. Often
D. Very often

7. Describe the relationships between you and your neighbors. _____ next door _____ other

A. Strained
B. Polite
C. Friendly
D. Very Friendly

8. Do you think yard enclosure would affect good neighboring?

9. How often do family activities occur in your yard?

_____ front yard _____ back yard

A. Frequently
B. Infrequently
C. Seldom
D. Never

10. How woud you rate the importance of a yard enclosure for:

	1	2	3	4
A. Protection, security				
B. Privacy				
C. Climate control				
D. Design and decoration				
E. Define the lot line				
F. Other _____				

NOTE: 1. Very important
2. Important
3. Not Important
4. Not at all important

11. Why have you no yard enclosure?

A. Too costly
B. Do not like view being obstructed
C. Open space as a custom
D. Enjoy neighboring
E. Like to see people
F. Have adequate natural enclosures
G. Code restrictions
H. Other

12. Do you wish a yard enclosure?

APPENDIX B

THE YULE'S COEFFICIENT Q

The Yule's coefficient Q is derived from the following procedure:

	variable not Y	variable Y	
variable x	A	B	A+B
Variable not x	C	D	C+D
	A+C	B+D	N

A, B, C, D, are the frequencies which appear in the four interior cell of the fourfold table. A+C, B+D, A+B, C+D are the sum down the columns or across the rows. This is the total frequency for this category. N is the total frequency of test samples. N is also the sum of two columns and two rows. The Q is:

$$\frac{BxC - AxD}{BxC + AxD}$$

The degree of association is then obtained: If Q is 0.00, then the X and Y are independent, that means no relationship. If Q is +1.00, then X and Y have the strongest positive association. If Q is -1.00, then the X and Y have the strongest negative association. The +1.00 and -1.00 are the limits of Q. It should be called a "perfect positive" or "perfect negative" relationship.

The explanation for degree of Q values are:

Value of Q	Appropriate Phrase
+.70 or higher	A very strong positive association
+.50 to +.69	A substantial positive association
+.30 to +.49	A moderate positive association
+.10 to +.29	A low positive association
+.01 to +.09	A negligible positive association
.00	No association
-.01 to -.09	A negligible negative association
-.10 to -.29	A low negative association
-.30 to -.49	A moderate negative association
-.50 to -.69	A substantial negative association
-.70 or lower	A very strong negative association

APPENDIX C

APPROPRIATE PLANT MATERIALS FOR USE AS YARD ENCLOSURE IN OKLAHOMA

A. Broad-leaf Evergreen Trees

Botanic names	Common names
*Ilex foster*i	Foster Holly
Ilex opaca	American Holly
Prunus laurocerasus	Cherry Laural

B. Broad-leaf Evergreen Shrubs

Abelia grandiflora	Glossy Abelia
Berberis juliana	Juliana Berberry or Wintergreen Berberry
Elaeagnus pungens	Thorny Elaeagnus or Silverberry
Euonymus japonicus	Evergreen Euonymus
Euonymus kiautschovicus	Spreading Euonymus
Ilex aquifolium	English Holly
Ilex cornuta	Chinese Holly
Ilex cornuta '*Burfordi*'	Burford Holly
Ilex vomitoria	Yaupon Holly
Ligustrum japonicum	Japanese Privet
Ligustrum lucidum	Glossy Privet or Waxleaf Privet
Ligustrum obtusifolium '*Regelianum*'	Regel Privet
Ligustrum ovalifolium	California Privet

B. Broad-leaf Evergreen Shrubs (Continued)

Botanic names	Common names
Nandina domestica	Heavenly Bamboo or Nandina
Pittosporum tobira	Japanese Pittosporum
Pyrancantha atalantioides	Gibbs Firethron
Pyrancantha coccinea	Scarlet Firethron
Pyrancantha crenulata rogerisiana	Rogers Firethron

C. Narrow-leaf Evergreen (Upright)

Cupressus arizonica	Arizona Cypress
Juniperus scopulorum	Rocky Mountain Juniper
Juniperus virginiana	Eastern Red Cedar
Pinus nigra	Austrian Pine
Pinus strobus	Eastern White Pine
Taxus baccata	English Yew
Taxus cuspidata	Japanese Yew
Thuja orientalis	Oriental Arborvitae

D. Narrow-leaf Evergreens (Spreading)

Juniperus chinensis 'Hetzi'	Hetzi Juniper
Pinus mugo mughus	Mugo Pine

E. Large Deciduous Trees

Ailanthus altissima	Tree of Heaven
Populus alba 'italica'	Lombardy Poplar

F. Small Deciduous Trees

Crataegus crus-galli	Cockspur Hawthorn
Elaeagnus angustifolia	Russian Olive
Poncirus trifoliata	Trifoliate orange

G. Large Deciduous Shrubs

Botanic names	Common names
Ligustrum amurense	Amur Privet

H. Medium Deciduous Shrubs

Chaenomeles lagenaria	Flowering Quince
Euonymus alata	Winged Euonymus or Burning Bush
Forsythia x intermedia spectabilis	Showy Border Forsythia
Hibiscus syriacus	Shrubalthea or Rose of Sharon
Lonicera fragrantissima	Winter Honeysuckle
Lonicera tatarica	Tartarian Honeysuckle
Spirea vanhouttei	Vanhoutte Spirea

VITA

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