



DESIGN TECHNIQUES FOR DEVELOPMENT  
OF RURAL CHARACTERISTICS IN SUBURBAN RESIDENTIAL AREAS

by

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May 26, 1958

Professor John T. Howard  
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Dear Professor Howard:

I submit herewith DESIGN TECHNIQUES FOR DEVELOPMENT  
OF RURAL CHARACTERISTICS IN SUBURBAN RESIDENTIAL AREAS  
as my thesis in partial fulfillment of the requirements  
for the degree of Master in City Planning.

Respectfully yours,

  
Peter Lee Abeles

PLA:mam

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## A B S T R A C T

**Title:** DESIGN TECHNIQUES FOR DEVELOPMENT OF RURAL CHARACTERISTICS IN SUBURBAN RESIDENTIAL AREAS

**Author:** Peter Lee Abeles

Submitted to the Department of City and Regional Planning on May 26, 1958, in partial fulfillment of the requirements for the degree of Master in City Planning.

The objective of this thesis is to formulate design techniques which, when applied at a suburban residential density, will result in a rural quality.

The study consists of four parts. Part one describes the basic assumption that the rural quality, its meanings and physical manifestations, are determined by a particular culture. Part two breaks down this rural quality, which is defined in the context of the white, middle class culture of the suburbs of the Boston Metropolitan area, into its component parts: symbols of the rural environment, psychological effects of the rural environment, and the functional land use of the rural environment. The quality of ruralness was found to contain a number of different symbols, psychological effects and functional uses. Part three describes, based on field study, how these characteristics are actually formed by the rural environment. Part four contains some recommended design techniques which, when incorporated in the design of a residential area, will produce the rural characteristics.

The major conclusions of the thesis are as follows. In order to achieve a rural character in a residential environment, it is necessary to preserve and have as the dominating visual feature the land formed by nature. The residential environment must be small in a visual sense and be in intimate contact with undeveloped land. The house of the area should be sited so that they provide both a sense of privacy and appear to be unrelated to the adjacent houses. Suitable natural land should be in close proximity to the residential environment for use as recreational land. Finally, the road and the roadside should be visually similar to the minor roads found in rural areas.

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## I N T R O D U C T I O N

"Woe unto them that join house to house and lay field to field, till there be no place that they may be placed alone in the midst of the earth."

- Isaiah, V, 8.

### Background

Since the end of the Second World War, there has been a great deal of public concern about what is happening to the land at the borders of our cities. From the professionals -- the planners, the architects and the landscape architects -- and from the non-professionals -- the general public -- there has come a cry that the present population exodus to the suburbs is resulting in one of the shames and mistakes of our times. And there seems to be a real basis for believing that, in its drive, this society may well destroy the very thing it seeks.<sup>1</sup>

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1. There have been, of late, a host of books and articles on this problem . . . Keats' The Crack in the Picture Window, Spector'sky's The Exurbanites, Whyte's The Organization Man and his Fortune article, "Urban Sprawl", and Architectural Forum's "By 1976 What City Pattern?" are some of them.

## The Problem

It is almost impossible to escape the conclusion that a good many Americans living in the city today are seeking a new way of life in the country tomorrow. Aside from purely personal observations, one only needs to drive through the countryside and see the blooming of new subdivisions or read the pages of a newspaper to see the new cultural aims implied in the advertisements for outdoor living. Not only is the moving to the country a new goal of the society, it is also a possible goal. While the problems of transportation implicit in this new way of life have not yet been solved, it is reasonable to assume that we have the resources and possibly the technological means to achieve this goal. Whether or not we are ready for this new pattern of life is in part an academic question; this new pattern is both possible and being created.

One of the questions in the array of problems that must be solved prior to our reconciling our means with our goals is how the residential areas of the countryside can be designed without destroying the rural characteristics the resident seeks. This is the problem this thesis will attempt to solve, or at least show some possible method of solution.



## THESIS STATEMENT AND APPROACH

The object of this thesis is to prove that one can manipulate the physical elements in an area of suburban density to produce a cultural effect of ruralness as defined by a particular culture.

Directly implied in the thesis statement is an assumption which is the framework within which the thesis is constructed, and which explains the basic approach taken by the thesis. It was assumed that if there exists such a quality as ruralness, it can only be understood and defined within a cultural context. Things or objects which are neither part of a cultural context, nor understandable, nor given meaning by a cultural context simply can not be understood nor measured. It is the cultural context which will give meaning to an object or human behavior. As in the case before us, it is not the physical objects of the environment, such as trees, brooks or stone walls which create or determine the final character of an area. Rather, it is the meanings attached to such physical objects, meanings learned within a cultural context, which establish the character of an area.

The first part of the thesis describes what were found to be the major characteristics of a rural area in terms of a particular culture. The second part describes the physical objects which contain the rural connotations. The last part contains those design techniques which could be

used to manipulate the environment in such a way that its final character, in a particular culture, would be defined as rural.

The thesis contains a number of limitations, limitations imposed either by the research or by the fact that the design process is a creative process. Undoubtedly, this thesis does not describe all of the meaningful rural characteristics or the way in which they can be created by the physical environment. In order to have achieved a complete coverage of this area, it would have been necessary to do a thorough and deep study of this culture. This is a process taking both years and highly trained experts in the field of anthropology, neither of which were available for this thesis. Another limitation imposed by the research is that the results are applicable to only middle class suburbs of the Boston Metropolitan region. Finally, the conclusions are set in terms of physical design. Since physical design is in part a creative process, there can be little doubt that the final answer of today will be supplemented or displaced by a better answer tomorrow.

## METHODOLOGY AND PROCEDURE

The research for this thesis was conducted by two methods. The first consisted of interviewing selected respondents to obtain their concepts of ruralness; the second involved going out in the field and analyzing the residential areas which were described by the respondents as being rural.

### Data Collection

For the interview stage of the research, the open-ended, unstructured interview technique was used.<sup>1a</sup> This technique was well suited for this type of study. Since the respondent is allowed a great deal of freedom in framing his reply, the interview could focus on whatever meaningful fields of information were opened by the respondent. This feature of the open-ended, unstructured interview technique made it possible for the researcher to discover significant hypotheses which then could be tested in future interviews or by the field observations.

The respondents consisted of either real estate men or members of an official family of a town. These types of respondents were selected for the following reasons.

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1a. The technique and the methods of using this technique are described in Mildred B. Parten, Surveys, Polls and Samples and in Part 2 of Jahoda, Deutsch and Cook, Research Methods in Social Relations.

First, it seemed desirable and logical to interview people who were in daily contact with the problems of residential areas and who, because of their contact with the problem, would have some insight into the problem before this thesis. The second reason why these occupation groups were selected was dictated by the time allowed for the research stage of the thesis. It was necessary to use a group of respondents who could be interviewed without the necessity of too many call-backs. Frequent call-backs in order to obtain an interview on widely geographically distributed respondents would have required too much time.

The above two reasons for using real estate men and town officials explain why the residents of rural areas were not used as respondents. It was assumed that it would be difficult for the residents of such areas to generalize on the factors which make such areas appear rural. Also, it was assumed that using the residents as respondents would require frequent call-backs.

Both the real estate men and the town officials were asked the following types of questions.<sup>1b</sup> What areas of their town did they consider rural? Which areas, though highly developed, still for the most part retained their rural character? Which areas in the town were just on the other side -- that is, look slightly more suburban than rural?

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1b. A copy of the schedule can be found in the appendix.

After each question, the respondents were asked which factors or characteristics of these areas led them to their conclusions. The real estate men were asked the following additional questions. What did they think clients meant when they requested a rural-looking or open-country type of location for their prospective homes? What characteristics was the client seeking in a rural homesite? In this way, an attempt was made to indirectly obtain some insight into what the characteristics of a rural area may be, as defined by the group of people who would live in such an environment.

The questions were asked by a single interviewer who had some experience with this type of technique. Since one aim of the study was to see how people define "rural," an attempt was made to not define for the respondents, in any way, the words "rural" or "open country." As much as possible, the interviewer attempted not to interfere with the respondent's line of reasoning or steer the interview in a particular direction. This was done so that points the respondent felt were significant would be disclosed, not those held by the interviewer.

Suggestions as to possible respondents were made by members of the faculty of the Department of City and Regional Planning, Massachusetts Institute of Technology, or by town officials. Relatively few problems were encountered in interviewing the respondents; of the sixteen interviews scheduled, fourteen were completed. Almost all of the

respondents seemed willing to talk and give the interview some thought. Two of the respondents apparently were not too interested in the subject, with the result that their interviews were brief.

An attempt was made to get a sample which would insure a reasonable geographic distribution. A few towns were selected along both sides of Route 128. Only four towns were actually used: Reading, Lincoln, Lexington and Bedford. It is quite possible, therefore, that the thesis may suffer some distortion from both the small size of the sample and its distribution.

The system of field observation was developed from the insights gained after the first few field trips. The residential areas mentioned in the interviews were visited in the field, observed, and then broken down and described in terms of their three major parts. The first part was all the undeveloped land<sup>1c</sup> that could be seen in and around the residential area. This type of land was described as to its size, type of cover, use, and its physical and visual relationship to the residential area. The second part was the developed residential area. Observations were made on the number of houses in the area, the relationship between the houses, the size, shape and cover of the house lots. When necessary, the distance between houses and the other

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1c. "Undeveloped" is defined in the section on rural symbols, Chapter II.

parts of the developed area were measured by using a range finder. The third element was the roads. Observations were made as to the type of road, the type and volume of traffic, and the visual effect it had on the area. A copy of the field observation check list can be found in the appendix.

The field observations were made between March 4, 1958 and March 16, 1958. The visibility was normally fair to excellent. The fact that the observations were made during the month of March will affect the conclusions of this thesis. One important factor in producing a rural environment is how effective the cover on undeveloped land is in obscuring the symptoms of development. Since the observations were made when the cover was least effective as a visual barrier, the conclusions of this thesis should therefore be valid for the seasons of the year when the vegetation on the land is least effective as a factor in producing a rural environment.

#### Use of the Data

The data served two functions. First, it served as a means for constructing a series of hypotheses as to what the characteristics of ruralness are. Secondly, it was used as a means for substantiating the various hypotheses.

The interviews were examined for characteristics of ruralness as conceived by the respondents. An attempt was made to determine from the interviews how such characteristics

are formed. It was not possible to measure these items quantitatively. The field observations were analyzed in the same manner. After the hypotheses were formed as to what is a rural or a non-rural area, the areas visited were compared to the hypotheses and analyzed to see whether or not they conformed to the hypotheses.



## Chapter I

### BASIC ASSUMPTIONS

In order that the theory developed by this thesis can be accepted as tenable, and that the theory fit into our existing framework of knowledge, it is necessary that the assumptions which underly the thesis be stated.

The main assumptions made by this thesis are as follows. There exists in the real world a quality of land which is defined by the people of a particular culture as ruralness. This quality, the quality of ruralness, is composed of a number of characteristics. This quality is perceivable by people either consciously or subconsciously. The past and present culture of an individual determines these characteristics, which, when in a certain combination and present to a certain degree, form a rural quality. Finally, these characteristics can be identified, and the way they are produced described.

The first assumption is that there actually exists such a thing as a rural quality. (How this quality comes into being will be explained by the third assumption.) From personal experience it has been observed that some people, in describing their physical world, divide their

world into two parts -- the country and the city. Other people use the words "rural" and "urban," but regardless of the labels which people attach to the different parts of their environment, most people, through some personal definition, make at least one major separation of the physical environment. This dividing line, while differing with the individual, usually separates the world which is mainly man-made from the world which is the product of nature. This thesis will assume that this distinction between the two parts of the environment is real and for most people, significant.

The second assumption is that this quality of ruralness is composed of a number of characteristics. This assumption is based on experience and, in part, on the research conducted for this thesis. Because of the weakness of the evidence from the research, this concept must be stated as an assumption and not a fact. One characteristic of a rural environment is that it is the result of a natural process, or at least gives the appearance of having resulted from a natural process.<sup>2</sup> However, the fact that an area is produced by nature, for example, a city park, is not enough to produce a rural environment. An area needs more than to be the result of a natural process. It needs to be a certain size, requires a partic-

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2. "Natural" is defined as a process of creation due to the biological forces as opposed to the forces of man.

ular smell, has a certain visual informality, and so on, until at some point a certain series of rural characteristics are present. Then, and only then, will the area be perceived as being rural.

The third assumption is that these characteristics are perceived by people, consciously or unconsciously. This assumption is important to this thesis, for were it not for the fact that we can perceive ruralness, ruralness would be like the sound of the falling tree in the parable of the tree falling in the forest without anyone hearing the fall. Without our ability to perceive the quality of ruralness, it would be impossible to create this quality or even to define it.

The fourth assumption is that the particular characteristics which make up a rural quality are determined by the culture of the person perceiving the characteristics. This assumption is important to the thesis because those which may be considered rural characteristics by one individual may not be considered rural by another if he comes from a different culture.

Within a given culture, there may be differences as to what rural characteristics are for particular individuals. This can be the result of a number of causes, but it is primarily due to the different training received by individuals owing to their membership in some particular

subculture. For one person a group of trees may be a more important symbol of ruralness than it is for another. Yet, it is assumed that for most people within a culture, there is a core of commonly held characteristics which, when present in the environment, make that environment a rural one.

In order not to violate this last assumption, this thesis is limited to that culture defined as the white, middle class found living in the suburban area around the city of Boston. Also, this thesis will not attempt to describe all the meaningful characteristics which may exist, but only those which are part of the core, those accepted and understood by most people of the culture. For the purposes of organization and exposition, the rural environment will be treated and broken down into its individual characteristics, rather than treated as a group or core of characteristics. To treat ruralness as it really is, as a wide variety of many characteristics, would result in a complexity that would hinder more than it would help.

The cultural orientation taken by this thesis has one problem which at first may not be evident. Cultures are not static things; as the people of a culture and the way they use their environment changes, so does the culture. As long as the culture of this region is changing, it is safe to assume that with the passage of time the cultural concept of what ruralness is may also change. The rural

environment of the present described in this thesis may not be the rural environment of the future.

## Chapter II

### THE RURAL CHARACTERISTICS

This chapter will describe the characteristics which endow a residential area with a rural quality.

The fact that physical things bring about the rural associations within an individual will be a source of difficulty in this thesis. It is difficult to not confuse the physical manifestations which stimulate or produce within a person the idea that an area is rural, with the rural characteristics which are internally held ideas of an individual.

For the sake of brevity, and since the concern of this thesis is not how these cultural associations are formed, in discussing the rural characteristics the cultural associations will not be mentioned, but rather the focus will be on the physical features of the environment which cause these associations.

While no direct evidence was obtained, it seems reasonable to make the following two assumptions about rural characteristics. First, it is assumed that some of the rural characteristics are designated by people as being

rural characteristics because they represent the opposite of typical characteristics found in an urban area. The free-standing, single family house in many ways may be regarded as being opposite to its urban counterpart, the multi-family structure. Secondly, it is assumed that the sense of ruralness is partially achieved by the absence of most of the urban characteristics. For instance, the presence of an apartment house in an agricultural area would make it difficult to classify the area as being rural. Therefore, in describing how a rural environment is formed, the absence or lack of urban characteristics will be assumed to be an important factor.

#### Section I - SENSORY CHARACTERISTICS

The first group of rural characteristics are those which impress themselves on people through their different sense organs. These can be termed the sensory characteristics of the rural environment. Through the sense of smell, because of the cultural training, people associate the smell of fresh air and the world of nature with a rural environment. The sounds people perceive and relate to the rural environment are usually subdued, as those caused by the wind moving through natural cover; they are quite different from the sounds of cars, trucks and crowds, the sounds of the urban environment. The sensory impressions people get through their sense of feel are generally impressions of irregularity and informality; they are in

strong contrast to the more geometric feel of the urban environment.

While these characteristics were not studied in the research,<sup>3</sup> as a group they must be recognized as being important characteristics of the rural environment. Without them it is difficult to imagine how a rural environment can be created. However, for the purpose of this thesis, it is not necessary that these characteristics be described and defined. It will be assumed that these characteristics are part of, and found within other characteristics of ruralness which can be described and are treated herein. One characteristic is a considerable amount of undeveloped land, and it is reasonable to assume that if such land is present, most of the important sensory characteristics will also be present.

## Section II - THE SYMBOLIC CHARACTERISTICS

In the process of the research, it was very quickly evident that one of the most important ways in which an individual forms his impression of an area is by means of symbols that he sees in the physical environment. Symbols of the rural environment are defined as being physical objects which, either individually or in groups, influence

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3. To undertake a study of what these sensory characteristics are, and to find a way of measuring them, is a separate area of research, an area which was outside the capacity of the research of this thesis.



a person in such a way as to suggest to the person a past experience which, through his cultural training, he associates with a rural quality.<sup>4</sup>

### Symbols Created by Nature

One of the first characteristics of a rural area mentioned by the respondents were those objects which are the result of a natural process. The respondents, using different terms but essentially describing undeveloped land, thought of a rural area as having many of the objects of nature present as a single unit. Also, they would pick out such single items as trees or brooks as being symbolic of the rural environment.

The presence of undeveloped land, regardless of the amount, was found to be an important symbol of a rural area. Undeveloped land can be described as having the following characteristics:

1. It consists of a combination of the land and its cover -- a mixture of many elements -- trees, grasses, bushes, stones, bare earth.
2. The formation of both land and cover is the result

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<sup>4</sup>. The following list of symbols is most likely not a complete list of all the possible symbols of the rural environment. The very small and biased sample of people interviewed prevents this list from being complete. Some symbols will not be discussed in this section but will be treated in the chapter which treats the physical characteristics of rural land.

of a biological process operating over a long period of time.

3. The elements of the cover -- the trees, grass, etc. -- are found to be intermixed, with no sharp separation between them.
4. With the exception of land used for agricultural or kindred uses, the land and cover have the appearance of not having been used or disturbed by man.
5. If the land has been disturbed, it has been allowed to return to its natural state as determined by the biological processes.

An exception to the above description is the land which is used for agricultural, forestry, quarrying operations, etc. For symbolic purposes, this type of land is also considered to be undeveloped.

Undeveloped land is in many respects the opposite of developed land. While only a few respondents mentioned it, it can be assumed that the presence of developed land as a symbol of a more urban environment reduces the chances of the environment being thought of as rural.

Developed land was found to have the following characteristics:

1. There is less variety of the particular elements present on the land. In contrast to undeveloped land, developed land will usually have only one or two types of grasses.

2. The cover of developed land is so arranged that the various elements are segregated into groups rather than being intermixed as is the case on undeveloped land.
3. Developed land is the result of a biological process which is controlled by man. It is the result of the forces of man applied to the land and its cover at short intervals of time.
4. Visually, this type of land appears as if it is being used by man; it is more formal, and has a geometric neatness as compared to its counterpart, undeveloped land.

The size and shape of the land and the character of the cover are all important factors in determining the importance of the undeveloped land as a symbol of ruralness. For example, a large golf course is less likely to be a rural symbol than a small orchard or a plowed field. A mountain, untouched by man's forces, seen from the city, is less likely to be as effective a symbol as a small piece of undeveloped land in the middle of a residential area. These various factors will be treated in Chapter III.

Some of the individual elements of the cover were mentioned by respondents as being symbols of ruralness: the trees, bushes, the rough grass, the flowers and the rocks on the land. Also, some of the features of unde-

veloped land that are perceived by the senses were found to be symbols of ruralness: the changing color of nature, the sounds produced by running streams and the wind through the trees.

Frequently mentioned as being symbols of a rural environment were man-made objects which are found and associated with undeveloped land. In this group are stone walls, farm houses, farm yards, rail fences, and orchards.

#### Symbols Created by Man

It was found that a residential area and its contents can be symbolic of the rural environment.<sup>5</sup> The size of the residential area that is normally visible can be a symbol of ruralness. Symbolic of the rural environment is the residential area which is either physically small, that has a few houses, or is laid out in such a way that only a few houses are visible at one time. If the project or residential area is large, containing more than twenty units, and is so designed that most of the houses are visible from any of the normal observation points, then it is not a symbol of the rural environment.

Closely related to the residential area as a symbol is the house as a symbol. The house when it appears to

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5. Symbols of this type were not always explicitly stated, as the previous symbols. Some of the symbols listed in this group were determined by observation in the field as opposed to those disclosed through interviews with the respondents.

be unrelated to adjacent houses was found to be a symbol of the rural environment. As one respondent stated: a house which looks rural to me is the independent house, one that looks like it belongs to its own piece of ground more than to the house next door.

If the house site, especially the front yard, resembled the character of the undeveloped land around it, the house site was symbolic of a rural area. If the house site was developed land, and it dominated any undeveloped land in the vicinity, then the house site was not a rural symbol. If, on the other hand, the house site was developed land but appeared visually subordinate in size to the undeveloped land, the house site was found to have a symbolic connotation of the rural area.<sup>6</sup> In addition, a rural house site was one which was not separated by a fence<sup>7</sup> from the road or land around it.

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6. This observation was reinforced by comments made by respondents about estate or upper class residential areas. In many respects, estate areas were physically similar to areas designated as rural by the respondents. One distinctive feature which set such an area apart from the rural areas and often noted by respondents was that the ground around the house is always a large amount of developed land. The visual effect of such areas was their domination over the little undeveloped and untreated land left in the vicinity.

7. Picket fences and dry stone walls are rural symbols themselves, and even if they hide the house site, do not destroy the rural character. On the other hand, high brick walls or cyclone fences seemed symbolic of the urban environment and had, in addition to its effect of separating the house site, a non-rural effect.

The final type of symbols mentioned by respondents are those created as a result of the road system of the area. The symbol of the country lane, a narrow, tree-lined and winding road, was mentioned by respondents. One respondent said that if the roadside were undeveloped, it looked rural to him. The lack of sidewalks along the road was found to be a symbol of a rural environment, and a road which is infrequently traveled was found to be another symbol.

### Section III - PSYCHOLOGICAL CHARACTERISTICS

The second group of characteristics revealed by the interviews are called psychological characteristics.<sup>8</sup> The psychological characteristics are defined as internal, emotional reactions of an individual producing in his mind an association with some past emotional experience and reinforced through and substantiated by the individual's present experiences. The past emotional

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8. From the data, only a few psychological characteristics were found. One reason may be that in order to treat them, all of the psychological characteristics were placed into general groups. By this process, characteristics which were believed to be similar enough to be treated as the same characteristic actually have been distinctly separate characteristics. An example is the sense of privacy and freedom mentioned by respondents. From the way these feelings were described, it seemed that they were close enough to be treated as a single characteristic. This does not preclude that there are really two different characteristics. It is also very possible that there are other psychological characteristics, but that they were not stated by the respondents.

experience of an individual is defined by him in terms of the meaning given the experience by his particular culture. The stimulation which produces the association may come from either the physical world or from other people.

The difference between the psychological effect and the effect of the symbol is that the symbol is primarily associated with a physical object like a stone wall or a group of trees. The psychological effect is associated with an emotional or a mental quality, a sense of privacy or safety. In a way, both characteristics, the symbol and the psychological quality, are interrelated. A symbol can help to produce a psychological sensation. The country road with a low volume of traffic, a symbol, can help to give the people of the area a feeling that the area is a safe place in which to live.

### The Feeling of Privacy

A sense of privacy was the psychological characteristic found most frequently in the interviews and substantiated by the field observation. Some respondents described the same emotional quality but used the words, "a sense of freedom" in describing it.<sup>9</sup> From the data, this character-

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9. By "the sense of freedom," the respondents may have been combining two cultural associations of the rural environment: the ability to do what they like -- a sense of privacy -- with the idea of greater freedom in the physical environment. It seems reasonable to assume that people associate the rural environment with a feeling that a person has a greater choice in movement, and with the idea the physical environment can be manipulated and used as they see fit.

istic can be defined as the ability of the individual to carry out his personal activity in a manner he personally chooses without expecting interference from others. Or, as one respondent put it, "to live the way I like without worrying about the neighbors." In the field checks made of areas that were described as rural by the respondents, a number of indicators were seen which would lead to the conclusion that such areas give the residents a sense of privacy. Houses were found to be sited in such a way that the resident would have privacy. Another indication which was observed was the amount and type of outdoor activity which, without privacy, would not be socially accepted in a residential area. Children building tree houses could not be as easily tolerated without some isolation between the houses and the juvenile construction area. The respondents who mentioned this characteristic frequently stated that this sense of privacy was one of the most important characteristics of ruralness. Two of the respondents thought that one reason why people wanted to live in rural areas was because they would have more privacy than in the urban areas.

### The Sense of Community

A second psychological characteristic which was mentioned by the respondents was a sense of community -- the feeling that they belong to a particular community. This is the result of a certain pattern of behavior associated



with a rural area. Apparently, people believe that living in a rural area calls for a different set of social habits, just as the addition of more land to their physical environment calls for new physical habits. One behavioral change is an increase in social intercourse between neighbors. Two respondents, one a real estate man, and one a town official, mentioned that one reason people move out to the suburban area is that there they can get to know their neighbors. Another change in a person's behavior on moving out into the countryside, indicated by the town officials, is that people take a much more active part and interest in the affairs of their community. The pattern of land tenure found in the suburban areas could be expected to reinforce the interest in local affairs. The homeowner is also a land owner and, as such, he can be expected to take a more active interest in the affairs of his community than his counterpart, the tenant in the urban areas. The fact that residential areas in the countryside are more likely to be separated from each other, because of the physical pattern of residential areas common to the rural environment, makes it quite easy for the resident to identify himself with a particular community. All these various factors, either operating together or individually, can be expected to produce a strong feeling of belonging to a particular community. While the sense of community is not the result of the rural pattern, the fact that people expect to have a stronger feeling of community in

the rural areas, as compared to the urban areas, places the feeling of community into the group of psychological characteristics whose presences are important for the formation of a rural environment.

### The Sense of Safety

A psychological sense of safety was found to be a third characteristic of a rural environment. As a place to live, the respondents thought that the rural area was a safer environment than the city. This was especially true in terms of the children of the area. The roads within the residential area itself are often infrequently traveled, and the traffic which is present imposes less of a hazard to the children.

Two other comments made by respondents hint at the existence of two more psychological characteristics.<sup>10</sup> One respondent felt that a rural area produces a feeling of an absence of human development. In effect he said: a rural area gives me a feeling of nature, a feeling that there are no people as far as I can see. Another respondent stated that the feeling that he can control the environment was a characteristic of ruralness. He felt that the rural environment, because of private ownership and the nature of its physical elements, is an environment which

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10. Because the data does not give much insight into these characteristics, they can not be given a fuller treatment.

can be changed. The urban environment, with physically less changeable nature and with its division into many spheres of interest, was less amenable to change.

#### Section IV - THE FUNCTIONAL CHARACTERISTICS

The last group of rural characteristics disclosed by the interviews and supported by the field observations are termed functional land use characteristics. This characteristic of ruralness is defined as the culturally determined concept held by an individual as to the way in which the physical environment is used or can be used by himself or by others. By its nature, this characteristic is similar to the psychological effect previously described. The reason for making a distinction between the two types of characteristics is that the respondents (as a sample of people) described some rural characteristics in terms of the way land can be used, and other characteristics in terms of the emotional responses they produce.<sup>11</sup>

##### A Place for Free-Standing House and Nature

The first functional land use characteristic of rural land mentioned by some of the respondents, either explicitly

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11. Because the presence of this type of characteristic was not known or assumed until after the data had been collected, the interviews were not directed to pick up information relative to this type of characteristic. This may be the reason why so few functional land use characteristics were found.

or implicitly, is that the rural area is a place (a physical location) where a free-standing house can be built and that "nature" can be seen as part of the land. This is different from the symbolic idea of a free-standing house in that this concept expresses the point of view of the way in which the land can be used, rather than the symbolic meaning conveyed by a free-standing house. Some respondents expressed the idea that a characteristic of rural land is that it is used in such a way that the individual can perceive nature by the senses.

#### Recreational Use

A second characteristic was that the land could be used for certain recreational activities normally not found in an urban environment. Two types of uses of equal importance often mentioned together are the use of the land for gardening and related activity, and the use of undeveloped land as a play space for children.<sup>12</sup> To be able to grow more than just a lawn was thought of by the real estate men as being an important reason for people to move out to the countryside. One respondent in talking about this made a distinction between "rural" and "suburban." According to his definition, in a rural atmosphere children can chop things down, tear the ground up, have the room to

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12. In a culture which is frequently noted for its preoccupation with children, the role of recreation space as an important part of the family's environment is not surprising.

explore and do some experimenting without adults "breathing down their necks." "Suburban," on the other hand, implies a place where the children have to be told to be careful of the lawn and to leave the trees alone. Another type of use that could be considered as family recreation is the keeping of animals or the potential for keeping them. Chicken and rabbit coops were seen in a number of rural residential areas.

### Commercial Land Use

A third functional characteristic is the types of commercial uses to which a rural area may be put and the distinction between them and the uses which make the area non-rural. The use of land for agricultural uses, such as farming, horticulture and forestry, was thought of as being entirely consistent with a rural area. In some of the areas designated as being rural, dog kennels and commercial stables were found. Since these types of uses were not mentioned by respondents as being in contradiction with a rural area, it is assumed that this use of the land is in keeping with the concept of rural land. Some of the respondents felt that certain types and sizes of commercial land use were not consistent with the rural environment. They felt that a number of stores, especially when in a strip type development, was atypical of rural land use.

### Personal Use of the Land

The last functional land use characteristic mentioned by respondents can be characterized as the way the individual personally uses the land in a physical sense -- how the land affects his physical behavior. Respondents indicated that in a rural area one acts differently. Life is less formal, and people can walk around in a more casual attire. It was observed that in rural areas people walk on the roads since there are no sidewalks. One respondent felt that a rural area is a place where you can walk for miles without seeing a house and rarely have to cross a road.

### Summary

It is hypothesized that ruralness is chiefly a state of mind. It comprises a series of characteristics which the individual has learned to associate with a quality called rural. These characteristics may be symbolic, and have certain emotional or psychological effects on a person's conception of how the land should be used, or how he uses it. In order to create a rural environment, it is necessary to structure an environment in such a way that it contains a certain number of the characteristics which the culture of the area defines as being rural.

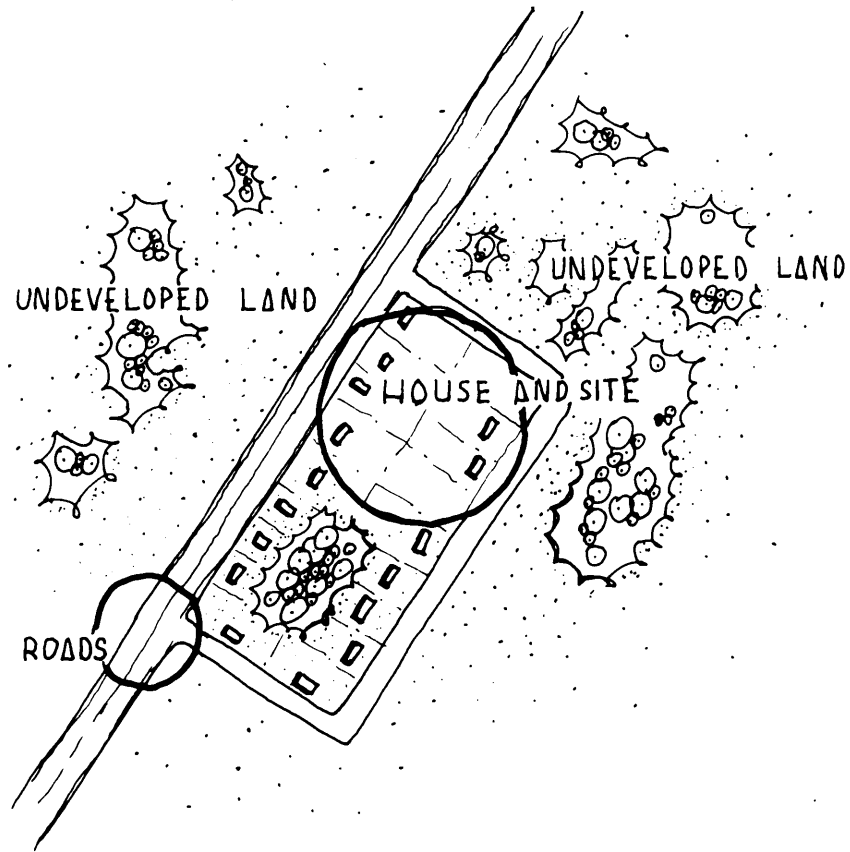
### Chapter III

## FACTORS RESPONSIBLE FOR THE RURAL CHARACTERISTICS

### Introduction

In accordance with the thesis, a physical environment can be manipulated in such a way as to contain rural characteristics if, within a particular culture, these characteristics are defined as rural. This chapter will describe the physical factors of the environment which produce the rural characteristics described in the previous section.

In the interviews, when the respondent mentioned a rural characteristic, he related that characteristic, either explicitly or implicitly, to a physical object. A symbol of ruralness was always defined in terms of some physical object, and the same was true, with some exceptions, for the psychological and functional characteristics. The physical elements which were the basis for the individual's enumeration of the symbolic, psychological and functional characteristics were observed and analyzed by the field observations as described in "Methodology."



THE THREE PARTS OF THE RESIDENTIAL ENVIRONMENT

FIG. 1



The interviews suggested a method of procedure in describing these physical elements, and the way in which they are effective in producing rural characteristics. The respondents often broke the physical environment into three parts: the house and site, the undeveloped area in the vicinity of the house, and the roads of the area. Figure 1 is an illustration of this classification. Included in the house and site group are the individual houses and sites, and those houses which as a group comprise, in a rough way, one identifiable residential area. Undeveloped land, sometimes referred to as open space, includes the land between the houses and around the residential area and land which is separated from the residential area. Under the classification of roads are included all public and private ways which are thought of as means of communication between various parts of the residential area and the greater region.<sup>13</sup> The area which comprises the roadside, the sidewalks, shoulders and drainage areas are all included under the grouping of roads.

One advantage of observing this dichotomy of the physical environment is that it divides an area into groups which are similar to the areas of legal control used to control the environment. One disadvantage of this classification is that it necessarily produces some repetition

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13. Private ways or drives for one or two families are not included under this classification. They are part of the house and site group.

in the discussion. A few of the rural characteristics are brought about by objects within the different groups. Such characteristics will necessarily appear more than once in the discussion.

## Section I - UNDEVELOPED LAND

### Introduction

The quality and quantity of undeveloped land<sup>14</sup> and its relationship to the developed parts of a residential area is considered by this thesis as an important factor in the development of rural characteristics. In a broad and in an abstract sense, the rural environment can be thought of as being undeveloped land, an environment created almost entirely by nature. Such an environment would contain in a significant number all the cultural concepts of rural land.

As soon as the residential area is introduced into an undeveloped environment, factors other than just the quantity of undeveloped land present become important. Some of the respondents had as a general concept of rural land a physical environment which was undeveloped. When asked to include in that environment a residential area, they started to think in terms of particular quantities and qualities of undeveloped land and their relationship

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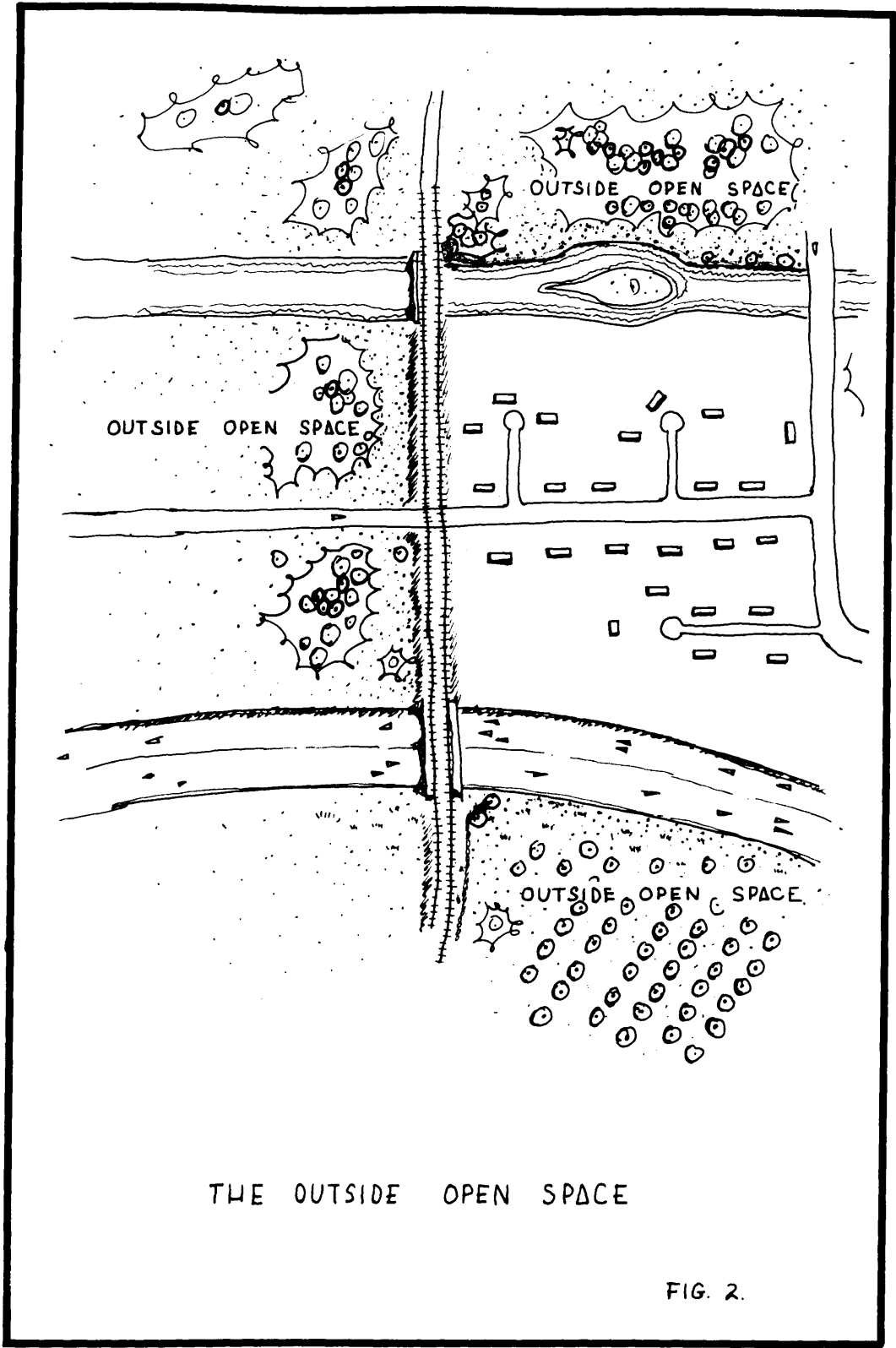
14. See pages 19-20 for a definition of undeveloped land.

to the developed parts of the environment.

Apparently when the complete undevelopment of an area is no longer a possibility, other features of the land become increasingly important. This raises the problem of trying to measure or describe the importance and impact these complicated interrelationships have in producing a rural environment. The particular difficulty is one which the thesis is unable to solve. The research method, especially the field observation by a single observer, was not sensitive enough to discover any laws or rules which would describe these interrelationships. Still, it should be kept in mind that the physical relationship between the undeveloped and developed parts of the environment and the character of the environment all play a part in the creation of a rural environment.

#### Classification of Undeveloped Land

Undeveloped land can be divided into three groups. The definition of these three groups can not be highly definitive because strict definitions can not be applied to undeveloped land. The undeveloped land is plastic in nature, and it is rare to find a piece of undeveloped land which meets all the requirements of a definition of a particular type of land. To set up and adhere to a strict definition for the sake of clarity would result in ignoring an important attribute of undeveloped land. Depending upon the location of the observer, one piece of



THE OUTSIDE OPEN SPACE

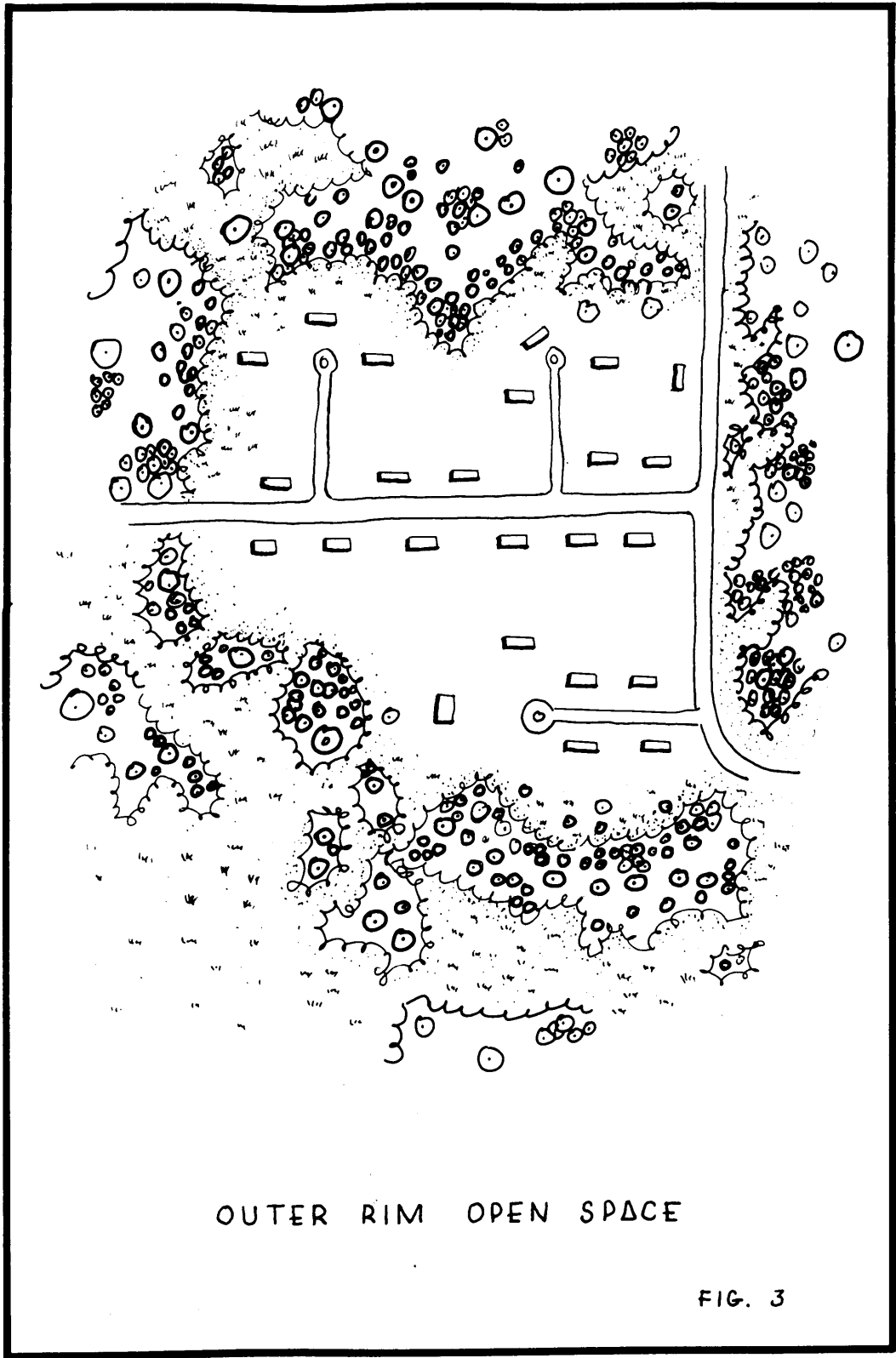
FIG. 2.

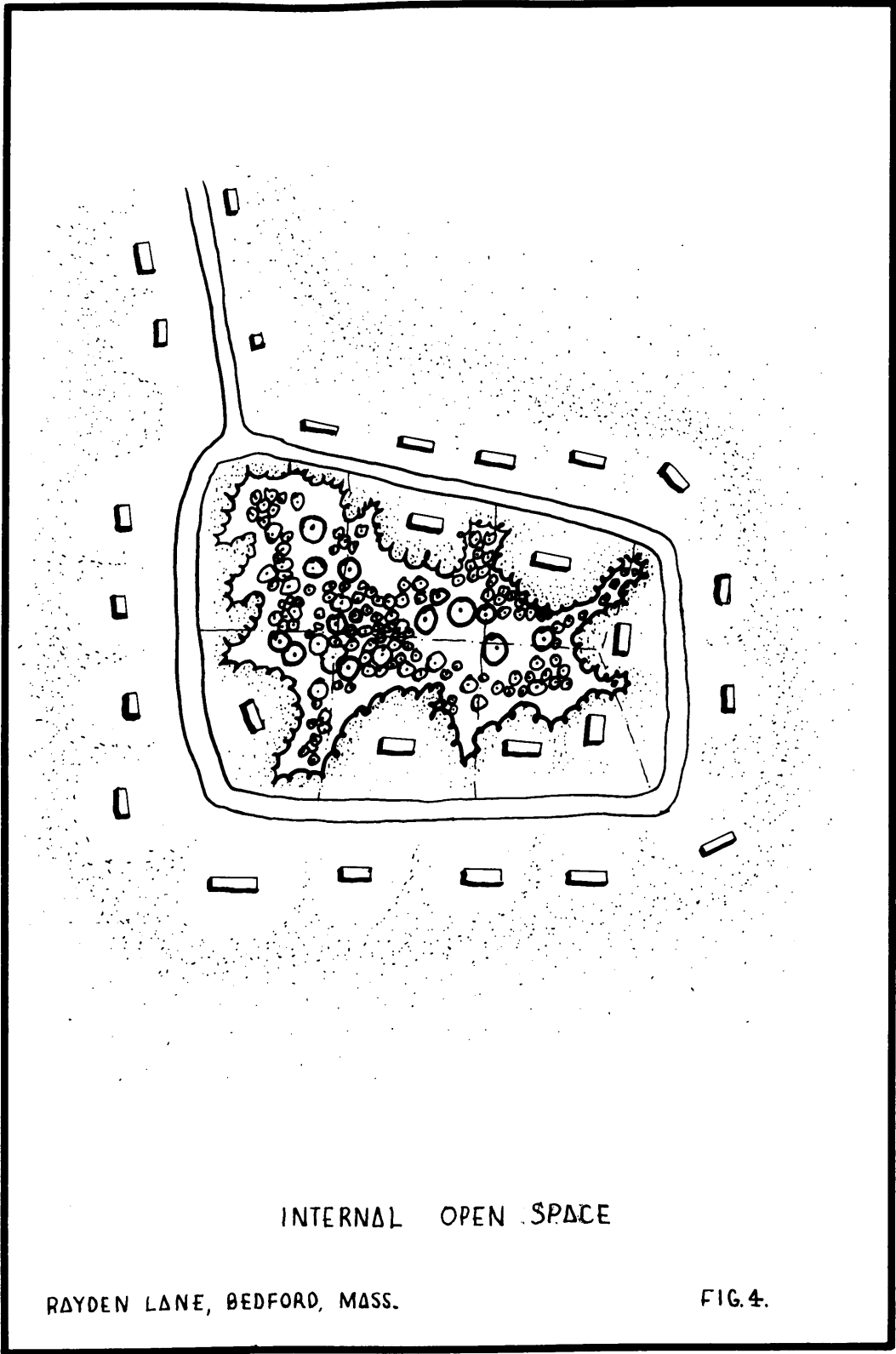
undeveloped land can produce a number of different rural characteristics.

The first type of undeveloped land, called hereafter the "outside open space," is that which is near a residential area -- the houses and developed lots -- in terms of physical and visual proximity but separated from the residential area by some physical or emotional barrier, as the hypothetical situation shown in Figure 2. An example of such a space would be a large open field separated from a group of homes by a heavily traversed road.

The second type, termed the "outer-rim open space," is the undeveloped land which is physically and visually close to the residential area, commonly thought of by the residents as being part of their area, but with little or no effect on the relationships between the various house sites of the residential area (see Figure 3). The most frequently observed example of this type was the undeveloped land left on the outside border of a developed residential area.

The third type, called "internal open space," and in some ways more important than the other two types, is the undeveloped land which is visually, physically and often emotionally related to the interior of a residential area. This type of space, shown in Figure 4, is used by the people of the area and thought of as belonging to the area. It affects the relationship between one house and its site





and another house and its site. An example of this type of space would be an empty building lot left between developed lots.

### Outside Open Space

Four factors distinguish this type of undeveloped land from the two other types. First, it does not effectively change the interrelationships between the house lots of a developed area. Secondly, it is very often functionally separated from the residential area. Thirdly, from observation, this type of space is usually under a different ownership than that of the residential area. Lastly, this area is often very large in physical size as compared to the other two types of undeveloped land. (See Figure 2.)

Because this type of land is not under the control of the residents or owned by the residents (with the rare exception of public ownership), its ability to produce rural characteristics can be radically changed over time. If such land is used in the future for new residential development, its rural characteristics may be supplanted by urban characteristics.

### Symbolic Content

This type of land is often endowed with the symbols of ruralness. The fact that such lands are often used for agricultural or similar purposes establishes a strong symbol.



Another symbol of ruralness, which the outside open space is capable of producing and which the other types rarely convey, is a symbol of vast space. This type of undeveloped land was frequently found as a large tract of land (like pasture or meadow land) with a type of cover which does not obscure the size or the dimensions of the land. If the outside open space has this type of cover, it can impress the observer with its vastness. The same type of land, but with a cover which visually obscures its size, can also produce rural symbols. It conveys such symbols of ruralness as forests, trees, and natural ground. Some of man's products, such as stone walls, found on the land have a symbolic connotation of a rural environment.

#### Psychological Effects

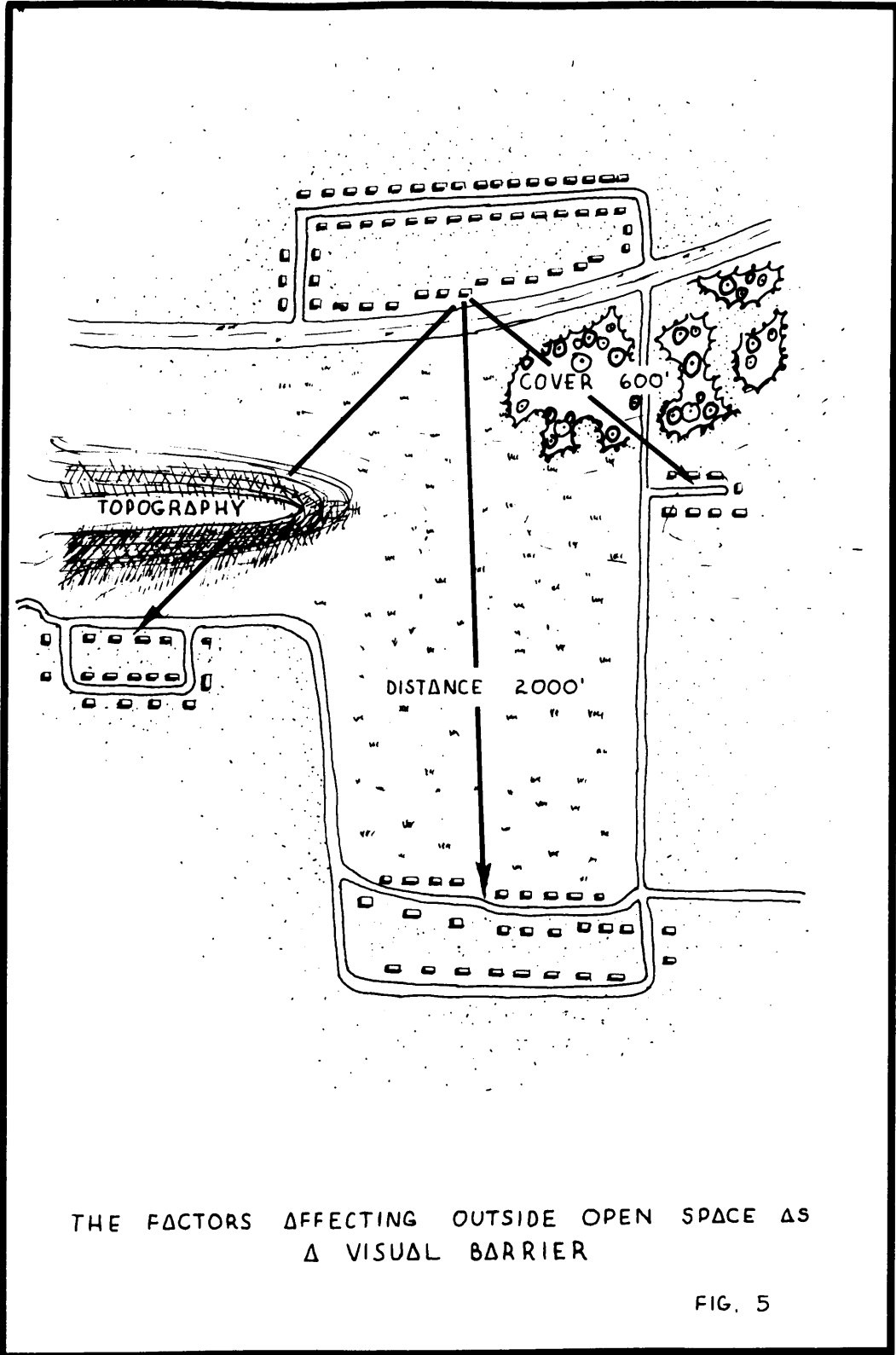
The fact that outside open space does not effectively change the interrelation between the houses of a residential area was found to reduce this type of land's potential for producing the psychological characteristics of ruralness. This type of land does not, in a direct way, make any contribution in producing a sense of privacy since, by definition, it does not affect the space between the houses. However, indirectly, it may help a sense of privacy by the fact that its existence will necessarily lower the over-all density of an area and thereby reduce the number of people who could invade an individual's privacy. It can, when large enough, or because of its topography,

effectively break the visual relation between two residential areas. This can help to heighten the psychological sense of community.

The field observations did not disclose whether this type of space can produce a sense of safety. In one respect, this type of space reduces the hazards of the city by reducing the density of people and the dangers they create. Still, a large undeveloped space may hold dangers of a different sort than found in an urban environment, and they are dangers, nevertheless. The outside open space may contain deep holes, barbed wire fences and unguarded bodies of water which, especially to the children of the area, may present a hazard. Because of the type of barriers between the outside open space and the residential area, there may be some danger in getting to the open space.

#### Functional Use

This type of land is of limited importance in producing functional land use characteristics because the land is physically separated from the residential area, and it is normally under non-resident ownership which may prohibit the use of the land by the people of the area. However, it may be used by the older children of the area as part of their recreational area, but this will depend in part on how well the "no trespassing" sign is enforced. If this land is being used, its functional use, primarily agriculture, is usually consistent with those uses thought



THE FACTORS AFFECTING OUTSIDE OPEN SPACE AS  
A VISUAL BARRIER

FIG. 5

of as being part of the rural environment.

It was found by field observations that in order to produce most of the rural characteristics that this type of space is capable of producing, the space must be of such size and character as to separate two residential areas. In order to terminate visually the characteristics of development, the space either must be so big that these symptoms really recede into the background, or the natural cover or the topography of the land must create a visual barrier between the residential areas. It was found that when neither cover nor topography interfered between two residential areas, the space had to be more than two thousand feet or better in order to be an effective visual barrier. However, if the residential areas are small in scale, less distance is required. If cover is the barrier instead of distance, then a mixture of trees and bushes, common to this area, three hundred feet or more will make an effective barrier.<sup>15</sup> (See Figure 5.)

#### Outer-Rim Open Space

The second type of undeveloped land found in connection with residential areas is the land which forms a belt around the outer edges of the residential community. This type of land is termed "outer-rim open space," and it is

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15. This judgement is made on only a few field observations and therefore should be taken only as an indication of the general range of distance required to break two residential areas, and not as a standard.

defined as undeveloped land which is physically related to the border of the residential area and thought of, by the residents, as being part of their community. The undeveloped land of the outer rim and the developed land of the residential area are not intermixed, i.e., the outer-rim open space does not affect the visual or physical relationships between the houses. For the purposes of definition, the length of the border between the developed land of the residential area and the undeveloped land of the outer rim can vary from a border which completely encloses the residential area to a border which only touches a small section of the residential area.

### Symbolic Content

In general, the outer-rim open space is more effective in producing rural characteristics than the outside open space. The major similarity between the outer rim and the two other types is that the outer rim, as undeveloped land, produces many of the same symbolic characteristics as internal open space and outside open space. However, there are some important exceptions.

Usually, the outer rim was found to lack one major rural symbol, agriculture. This can be explained by the fact that part of the outer rim belongs to the residents, and thus excludes agriculture from being in close proximity to the residential area. In addition, the outer rim was found to be a strong visual barrier because of the heavy

and dense growth of trees typical to that type of undeveloped land.<sup>16</sup> Therefore, even if agriculture is being practiced in the vicinity of the residential community, it will normally not be visible from the residential area and thus not be an effective symbol of the rural environment.

The symbolic significance of the residential area as a whole can be affected by the outer-rim open space. As previously discussed, the size or the scale of a developed residential area will affect the way in which the area is symbolically perceived. The small, developed area composed of a few houses and set in an undeveloped setting is a rural symbol, whereas the large and developed residential area which dominates its undeveloped surroundings is associated with the urban environment. When the outer-rim open space comes between two residential areas, which, without the presence of the outer rim would usually appear as one large residential area, the outer rim, by separating the two residential areas, produces a rural symbol.

#### Psychological Effects

While no direct evidence was found, it seems reasonable to assume that by reducing the scale of the residential area, the outer rim also contributes towards the pri-

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16. In the building operation, it is normally not necessary to disturb the land which comprises the outer rim. This results in an outer rim which has a thick and mature cover.

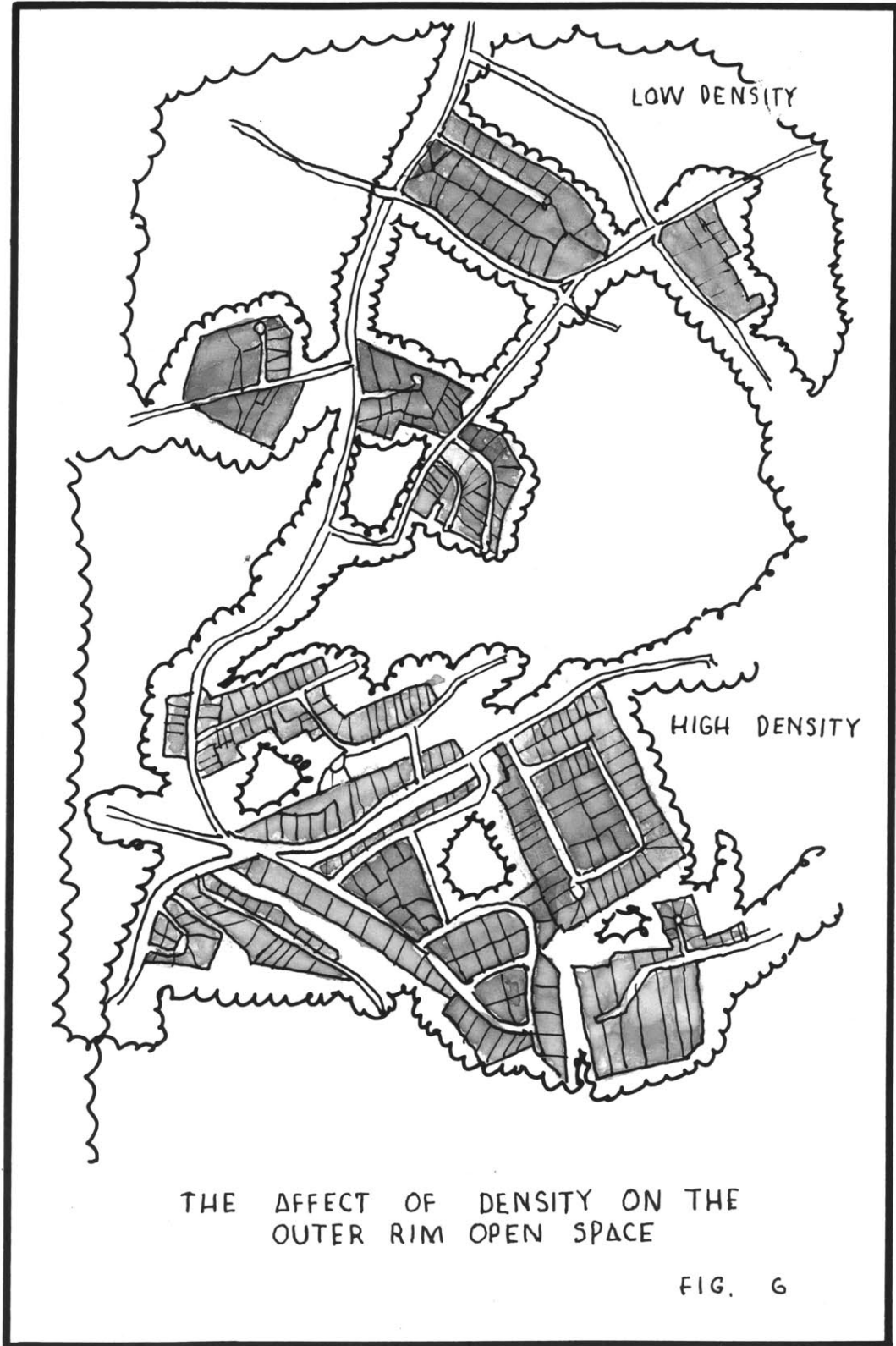
vacy that the individual can find in his home community. By the fact of its presence, the outer-rim open space will reduce the gross density of a region, thereby increasing the chances for privacy for the individual. Also, the introduction of an outer rim as a visual barrier between two adjacent developed areas -- the rear areas of house lots -- increases the chances for privacy in such areas.

### Functional Uses

Since much of the land forming the outer rim belongs to members of the community, it is likely to be an area thought of by the community as a place for recreation, especially for the children. This may not be true for the outside open space, which is usually under non-resident ownership. In addition, since the outer rim is physically close to the houses of the community, it is therefore more amenable to parental supervision and thus can serve as a recreation area for the younger children.

### Factors Affecting the Effectiveness of the Outer Rim in Producing Rural Characteristics

The type of rural characteristics which are associated with the outer rim and their effectiveness is related to the over-all level of development of the region, the size and shape of the residential area which the outer rim surrounds, and the physical characteristics of the outer-rim open space itself.



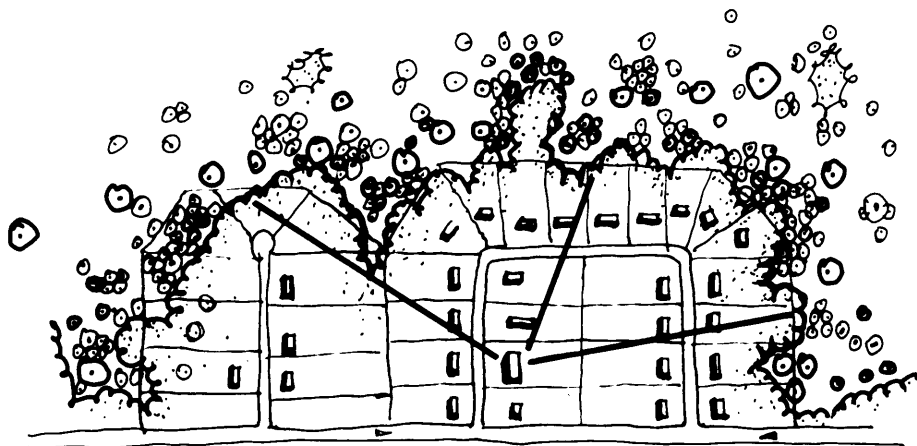
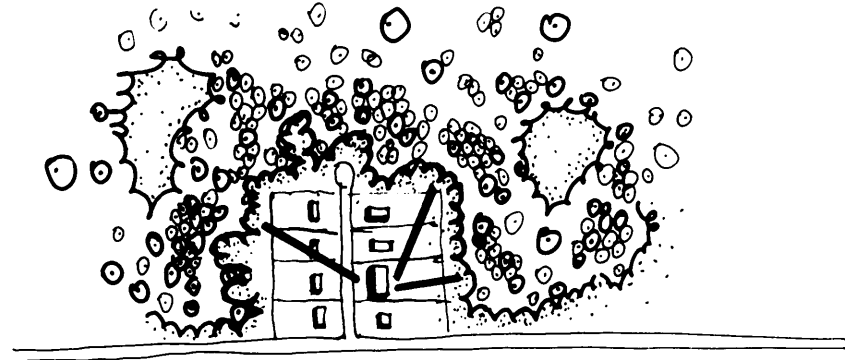


The over-all density of residential development will have a considerable bearing on how much of an outer rim is present and how effective it is in creating rural characteristics. Some of the subdivisions designated as rural were found in regions which, up to the present, have seen little residential development. Therefore, the subdivisions which do exist in such areas are usually widely separated, allowing the outer rim to be wide enough to be completely effective. In regions where the percentage of the total land used for development is high, it was observed that the outer rim is not as effective as in the lower density areas. In areas of intense development, where one subdivision is adjacent to the next, the outer rim is usually thin and broken in those places where the developed land of adjoining subdivisions meet. If an outer rim exists in such areas, it is normally composed of the small amount of undeveloped land formed by the adjacent rear parts of individual house lots. (See Figure 6.)

The weakening of the outer rim in a region of high residential density<sup>17</sup> and intensive development means the possible and usually the probable loss of the outer rim as a contributor of rural characteristics. This is a great loss, since in those regions which have a high over-all

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17. "High density" for this particular discussion denotes an area, exclusive of the town or village, which has a gross density of more than four or five families per acre and a population distributed evenly over the region.



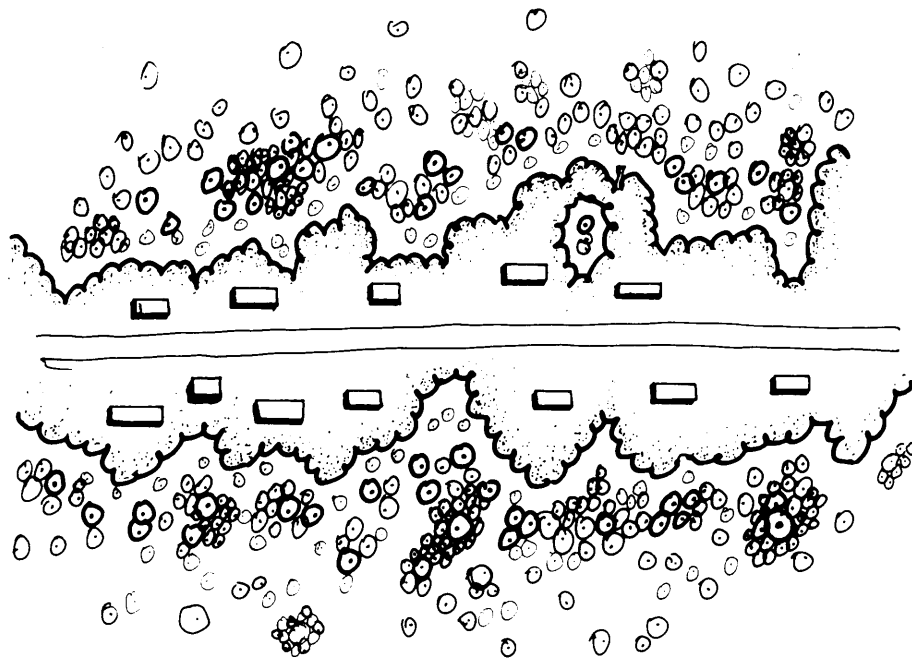
THE RESULT OF ENLARGING THE SUBDIVISION

FIG. 7

density, it is important that the size of the individual residential area be kept down to a scale of a rural area if a rural environment is to exist.

The size and shape of the individual subdivision will influence the effectiveness of the outer rim as a factor determining the final character of the residential area. In order for some of the rural characteristics that the outer rim can produce to be fully effective, the house site must be near the open space. For example, the physical objects on the land which form symbols of ruralness must be both visible to the resident and thought of by others as being related to the individual house site. If the distance between the house site and the outer rim is increased, such symbols will become less effective.

If an outer rim is present, the linear type of subdivision design was found to be the type of residential area which was the most affected by the outer rim. This type of design and the relationship to the outer rim is illustrated in Figure 8. Because of the design, each house is placed in such a position -- if there is an outer rim -- that each house will be physically and visually close to the undeveloped land. If the project is large, or can be expected to be increased, the outer-rim is normally far removed from the average house, as illustrated in Figure 7. Generally, the larger and the more nearly square in shape the subdivision, the fewer houses will be affected by the



LINEAR PATTERN SUBDIVISION AND  
OUTSIDE OPEN SPACE

FIG. 8

undeveloped land of the outer rim. When the large subdivision has more than two parallel streets, those houses which are on streets which are one street or more removed from the outer rim are visually and physically too far away from the outer rim to gain the maximum number of rural characteristics from it.

Insofar as the outer rim itself can influence the effectiveness of this type of space in producing rural characteristics, the important factors of the outer rim are the width of the space, the cover on the undeveloped land, and the degree to which the outer rim encloses the residential area.

It was found that if the outer rim could act as a visual barrier between two residential areas, it also produced most of the other rural characteristics typical of this type of undeveloped land. While the undeveloped land of the outer rim can still produce many rural characteristics without visually separating two residential areas, in order to be of maximum effectiveness, it should be of such dimensions that it can separate adjoining residential areas.

If the topography between two residential areas is such that land rises above the height of the two residential areas, the outer rim can be quite narrow. On the other hand, when the land is flat, the type and thickness of the natural cover will be the controlling factor. For

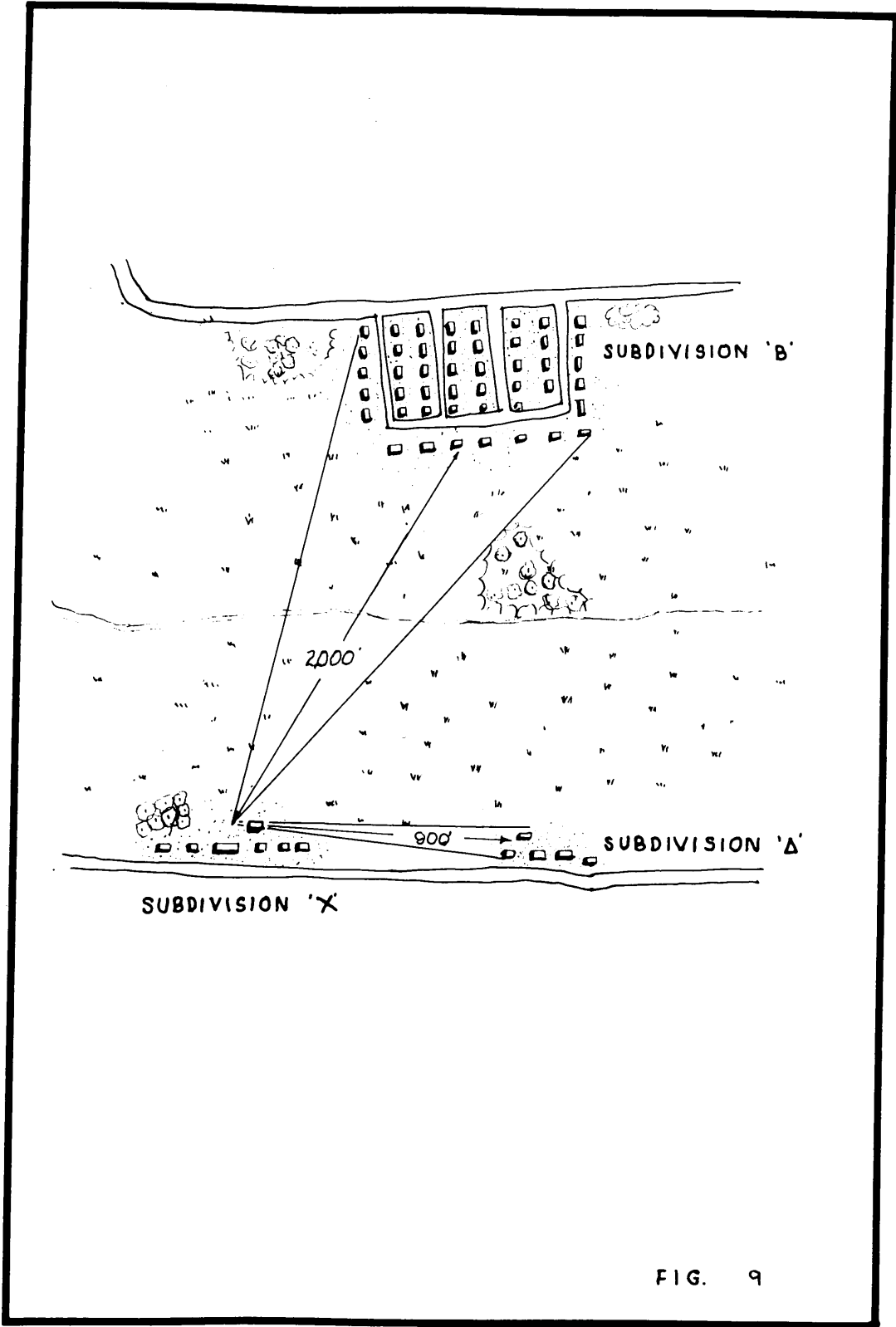


FIG. 9

the region under study, it was found that a belt of about three hundred feet of natural cover (comprised of trees and bushes of average thickness) was normally sufficient to obscure the adjacent developed land, even at a time of the year when the cover is least effective as a visual barrier. If the outer rim is a piece of undeveloped land containing a type of cover which does not stop a line of sight, like a meadow, pasture or open field, then a minimum distance of nine hundred to two thousand feet between residential areas is required to make the symptoms of development fade into the background.<sup>18</sup> This is illustrated by Figure 9.

No quantitative statement can be made as to the degree to which the outer rim must enclose the residential area in order to be of maximum effectiveness. The only conclusion that can be drawn from the field observations is that the more the residential area is surrounded by the outer rim, the more effective the outer rim will be in producing rural characteristics.

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18. The smaller distance, nine hundred feet, is the distance required when the adjacent subdivision (subdivision "A" in Figure 9) is small and so sited that only a few buildings become part of the observer's view. It was found that the fewer the symbols of development present, the less was the distance required to obscure them. The maximum distance, two thousand feet, is required when the subdivision is both large and takes up a considerable part of the landscape.

### Internal Open Space

Internal open space is defined as having the following features. It is an area of undeveloped land located within a developed residential subdivision. It can occur between any sides of the houses of the residential area. Developed house lots or streets can define the space and form most of its outside border. It is usually owned by the people whose property surrounds it, and it is thought of by the residents of the subdivision as being part of their residential environment, a part which they may use. Figure 4 illustrates this type of open space. Note that in part it is formed by undeveloped house lots and by the undeveloped land of built-up lots.

The key difference between the internal open space and the outer-rim open space is essentially that the internal open space is within the residential area, while the other is on the outside periphery of the developed residential area. Because of its location within the residential area, internal open space will be close to the individual houses and their sites, and will affect the relationship between the various houses of a residential area.

### Symbolic Content

Because of its intimate relationship with the developed parts of the residential environment, the internal



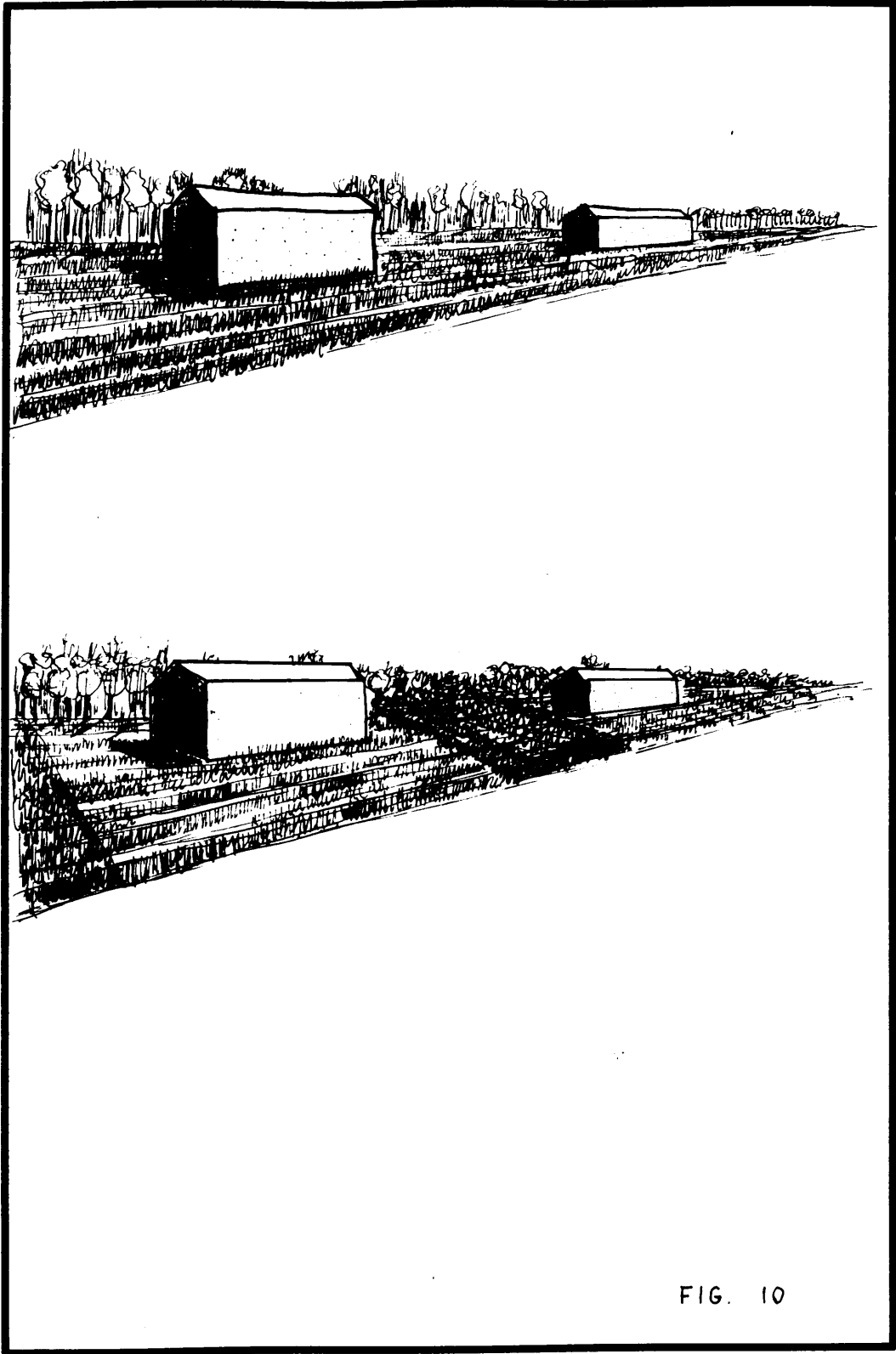


FIG. 10

open space plays a key role in producing the rural symbol of the free-standing house. Unless the distance between adjacent houses is equal to two or more times the combined length of the two adjacent houses<sup>19</sup> (which was not the situation usually found in the subdivisions inspected), the houses appear related, the opposite of the symbol of the free-standing house. The exception to this situation occurs when a small piece of undeveloped land (internal open space) comes between the houses from the rear and terminates on or near the road. By producing a light visual screen, the internal open space makes the houses on either side of the undeveloped land appear unrelated and free-standing. Even if the undeveloped land does not have a natural cover acting as a visual barrier, the internal open space will still, though not as effectively, visually separate two adjacent houses. If the internal open space has a natural cover different from the cover of the developed house lot, the house lots appear somewhat unrelated. (See Figure 10)

While no proof can be offered as to why, it seemed that the interjection of many small pieces of internal open space within the residential area is symbolically more important than the presence of only one large piece of land on the outer rim. Perhaps the interjection of

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19. This will be treated in more detail in Section 2.

many small pieces helps to break down the visual scale of one large developed area. A very small piece of undeveloped land can contain a host of physical symbols of ruralness, but the spreading out of these symbols within the developed area is more effective than the concentration of such symbols at one particular location outside the developed area.

### Psychological Characteristics

The internal open space plays an important role in producing the conditions for the psychological rural characteristic of privacy. If the internal open space comes between the houses, and if it has a sufficient density of cover, then the internal open space will reduce the chances of the individual's privacy being violated. In essence, the internal open space, when wide enough and with sufficient thickness of natural cover, acts like a screen around the house.

From a number of observations made, it was found that from fifty to a hundred feet of average natural cover is sufficient to obscure many of the details of a house seen through such a cover.<sup>20</sup> At this distance it was

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20. A minimum distance of seventy feet is required for privacy as suggested by the Ministry of Housing and Local Government in its publication, The Density of Residential Areas, Ministry of Housing and Local Government, H.M. Stationary Office, (1952), p. 7. Seventy feet is the same distance given as the maximum distance at which the details of the human face can still be clearly distinguished in Maertens, The Optical Scale in the Plastic Arts, Wasmuth, Berlin, (1884).

difficult to see what activity was occurring around a house and almost impossible to see what is taking place inside a house.<sup>21</sup> Assuming that privacy can be achieved on the individual house lot when much of the activity that takes place on the lot is obscured, it is safe to assume that even a small amount of internal open space can make a considerable contribution towards the rural character of an area.

### Functional Land Use

The internal open space is important in producing an environment which can be functionally used as rural land. Since this type of land is owned by the people of the residential area, it can be used for the kinds of recreational uses associated with the rural environment. What makes it especially important is the fact that the younger children can play in the internal open space and still be within the confines of the community, and therefore, to a degree, be under the control of parents or other adults.

### Factors Affecting the Effectiveness of Internal Open Space in Producing Rural Characteristics

Most of the symbols, psychological effects and functional land uses found to be associated with this type of

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21. The fifty to a hundred feet is an estimate made for level land. If a hill intervenes between the houses, this distance could be considerably reduced.

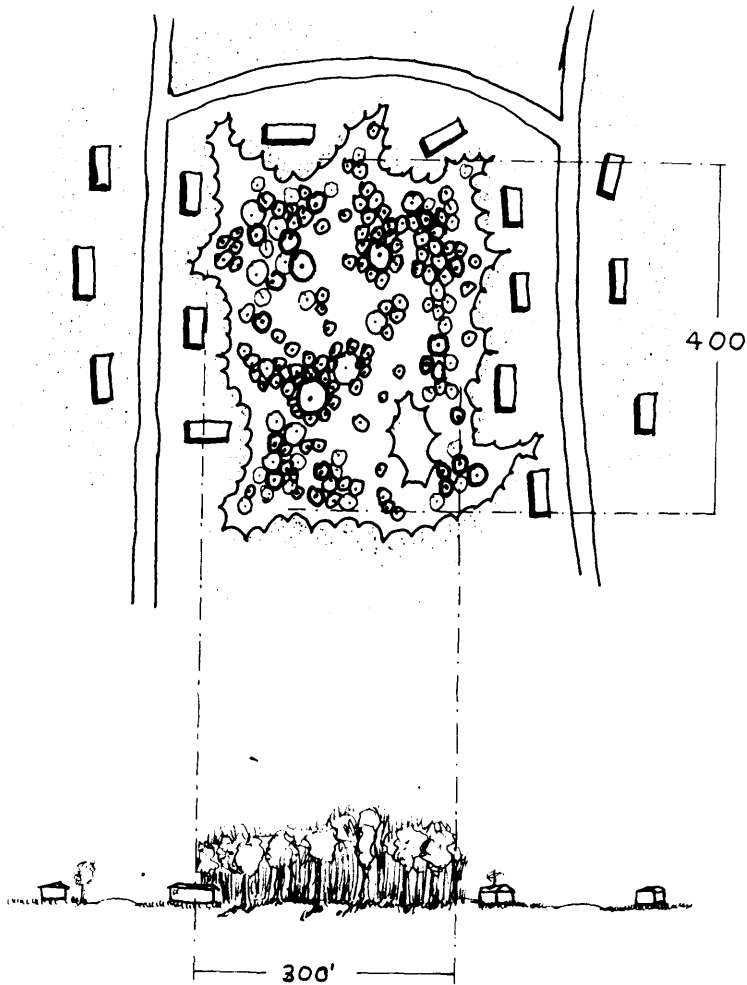
space are present if the internal open space is large enough to visually separate two groups of houses<sup>22</sup> and if the undeveloped land of the internal open space is large enough to visually dominate the developed residential area. This is not to imply that if a piece of undeveloped land is not large enough to create a visual barrier between two groups of houses, the land is not important in the formation of rural characteristics. A piece of internal open space of a thousand square feet can contain many rural symbols; under the right conditions, a piece of internal open space of only five thousand square feet can significantly contribute towards a sense of privacy.

The critical factor which determines whether an internal open space will visually separate two groups of houses is the thickness of the cover and the linear distance between the groups of houses. The more natural cover between groups of houses, the more effective will be the space. Assuming that the natural cover on the internal open space is typical of the natural cover of the study region, and if the land is flat, then a distance of between three and four hundred feet is required to visually separate groups of houses.

The amount of undeveloped land required to visually dominate the residential area will vary in relationship to

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22. "A group of houses" is defined as three or more houses which, because of their physical proximity to each other, form what visually appears to be a single residential area.



MIN. SPACE REQUIRED TO SEPARATE  
RESIDENTIAL AREAS

FIG. 11

the amount of developed land present. Taking the smaller residential areas,<sup>23</sup> those which are in keeping with the scale of rural residential areas, it was found that if the internal open space is between three and four acres, it would visually dominate the developed land of the residential area. Therefore, if the width of the internal open space is between three and four hundred feet, then its length should be about four hundred feet. These dimensions are illustrated in Figure 11. If the internal open space is smaller than three acres, it was found that the developed area was the dominant feature, and the undeveloped land was the subordinate feature of the entire area.

The three to four acre requirement is, in addition, in keeping with the amount of land required for recreational land use. From observation and according to one respondent, if the land used by children is less than three acres, the activity of the children is likely to affect the nearby houses.

### Summary

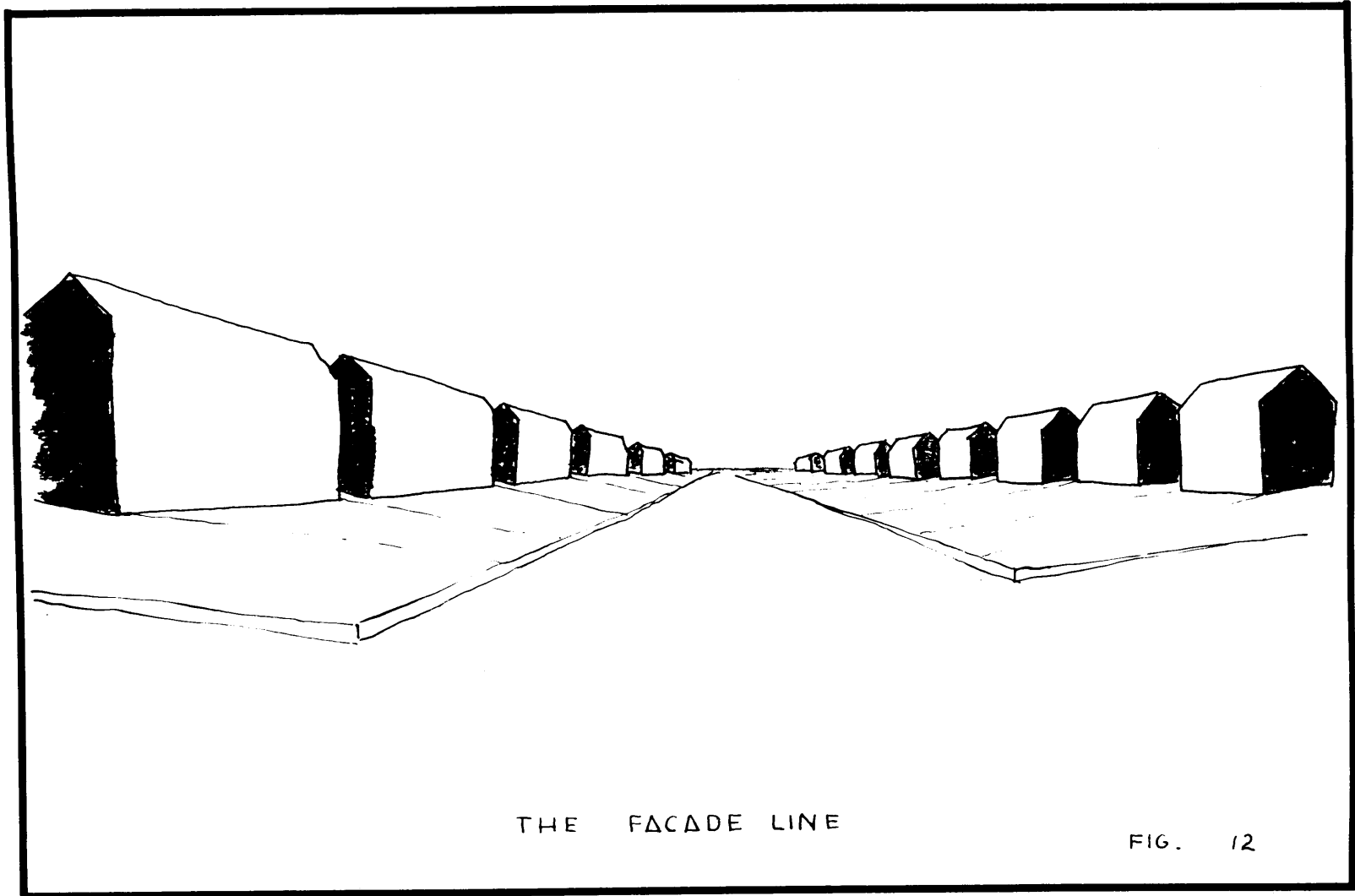
The presence of undeveloped land in the residential area or in the vicinity of the residential area was found to be an important factor in the creation of a rural environment. Undeveloped land in general was found to produce

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23. The smaller residential area, the type which was found to be in keeping with the rural scale, was normally between 10 to 25 houses with between 10,000 to 20,000 square feet of developed land per house.

many of the important symbolic, psychological and functional characteristics of a rural environment. Undeveloped land was found to have differing effects on the environment depending on its relationship to the residential environment. The outside open space is important because it both reduces the overall density of an area and because it contains the types of uses symbolic of the rural environment. Outer-rim open space was found to be a factor in reducing the scale of the residential area and could be useful for the type of recreation associated with the rural environment. In many respects, the undeveloped land within the residential community -- the internal open space -- is the most important type of undeveloped land in terms of amount of undeveloped land present, compared to other types of undeveloped land. It has the capacity, in situations of high residential density, to create the symbol of the free-standing house. It also introduces into the heart of the developed character of the community the host of symbols found on undeveloped land. In addition, because of its close relationship to the houses, it helps to produce a sense of privacy and provides the type of recreational land associated with the rural environment.





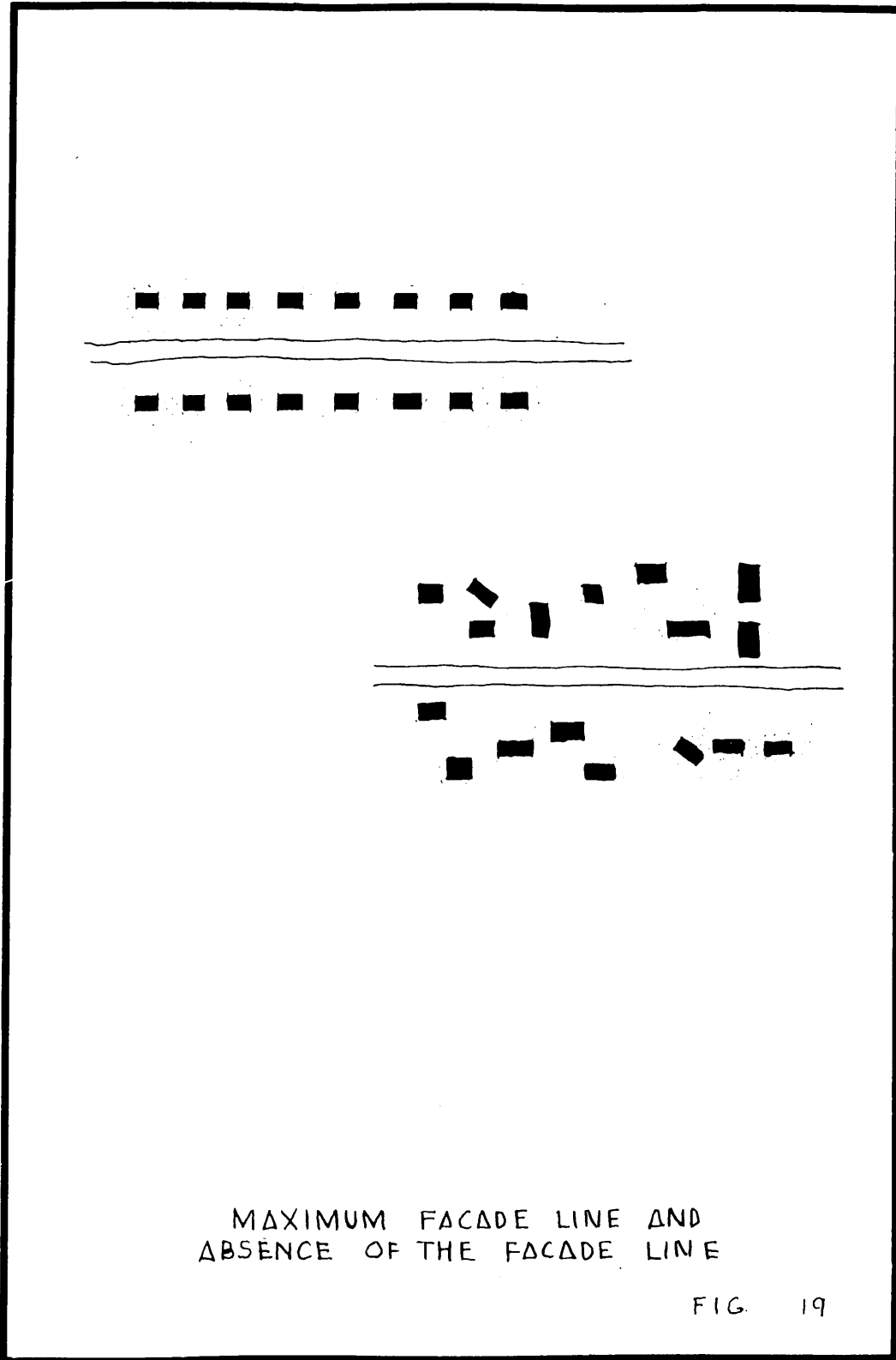
THE FACADE LINE

FIG. 12

## Section II - THE FACADE LINE

The second major element of a residential area important in the production of rural characteristics is the facade line. The term "facade line" is used to describe a physical arrangement of a group of houses resulting in the appearance of the houses being visually related to each other as one continuous physical structure, rather than as a number of individual and independent structures. This visual effect is illustrated by Figure 12. This arrangement also results in certain physical relationships between the buildings comprising the facade line which affect the lives of the residents.

The type and effectiveness of some of the rural characteristics which may be present in the residential environment are related to the strength of the facade line. A maximum facade line is a series of houses, each one visually connected to its neighbor, with the houses as a group forming the visual equivalent of a row house. With this type of design, little or no internal open space can be expected to exist between the buildings. A facade line is essentially non-existent when the structures of an area are perceived as individual and free-standing units with little or no visual relationship between them. (See Figure 19.) The maximum conditions for the formation of rural characteristics are the absence of the facade line; the minimum, when the facade line exists.



MAXIMUM FACADE LINE AND  
ABSENCE OF THE FACADE LINE

FIG. 19

## Symbolic Content

The presence of the facade line produces an urban symbol. The symbol is basically that of a series of residential structures closely related to each other along the same street.<sup>24</sup> The personification of this would be a multi-family house in the city, connected by both its side walls to the adjacent houses. If the row-like houses are close to the road, without a visual barrier separating them, this reinforces the facade line as an urban symbol.

When the arrangement of a group of buildings is such that a facade line with its wall-like appearance is not produced, the houses are visually closer to the symbol of ruralness, the free-standing house. Even if the houses are physically the same, the absence of the facade line gives them an individual appearance.

Normally associated with the facade line is the absence of internal open space between and in front of the buildings. This prevents the symbols of ruralness found on the undeveloped land to be excluded from the vicinity of the individual house, thus reducing the symbolic rural content of the house and site.

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24. This symbol was never mentioned by any respondents, but it is assumed. The assumption seems reasonable in the light of how the symbol of the rural house is derived. Since the closely related houses along the urban street have been part of the urban environment for a considerable period of time, it seems safe to make this assumption.

### Psychological Effects

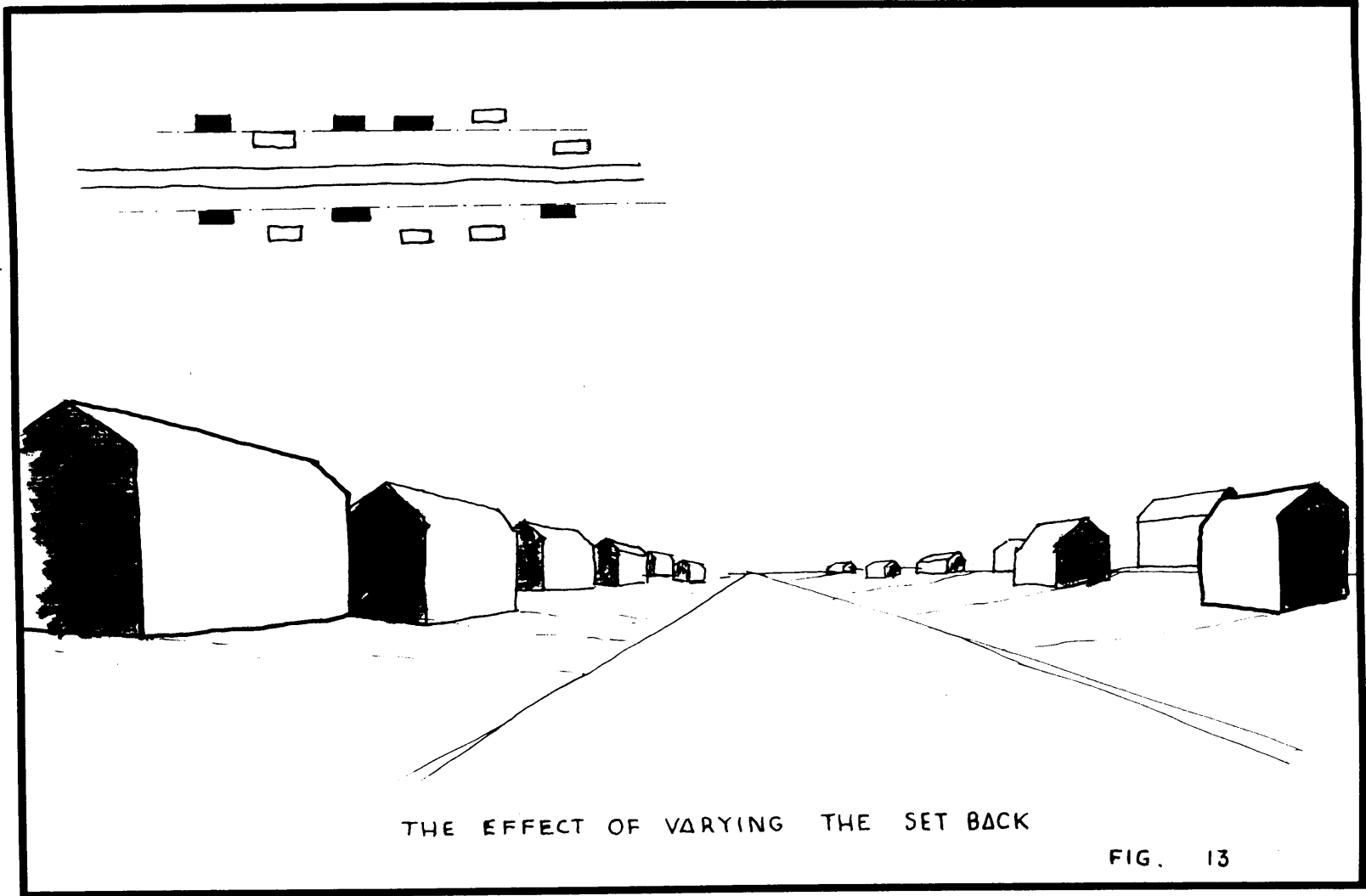
The strong facade line means that the houses are close together and no natural visual barriers are present between them. By excluding the internal open space from between the houses and because of the tight relationship between the houses, it is difficult for the residents to achieve a sense of privacy. Under the conditions of a strong facade line, the houses are usually sited so that side window faces side window and the area around each house is exposed to the neighbors' view.

### Functional Land Use

The type of siting of buildings that accompanies a maximum facade line usually entails a reduction of the developed land of the house lot as an effective recreational area. The lack of privacy resulting from the strong facade line places certain limitations, which might otherwise not exist, on the utilization of the property. For instance, without a sense of privacy the land can not be used for sun-bathing.

### Factors Affecting the Effectiveness of the Facade Line in Producing Rural Characteristics

The facade line is produced by the way the buildings of a residential area are sited in relation to each other. While a number of different variables are responsible for the way buildings are sited, from the field observations



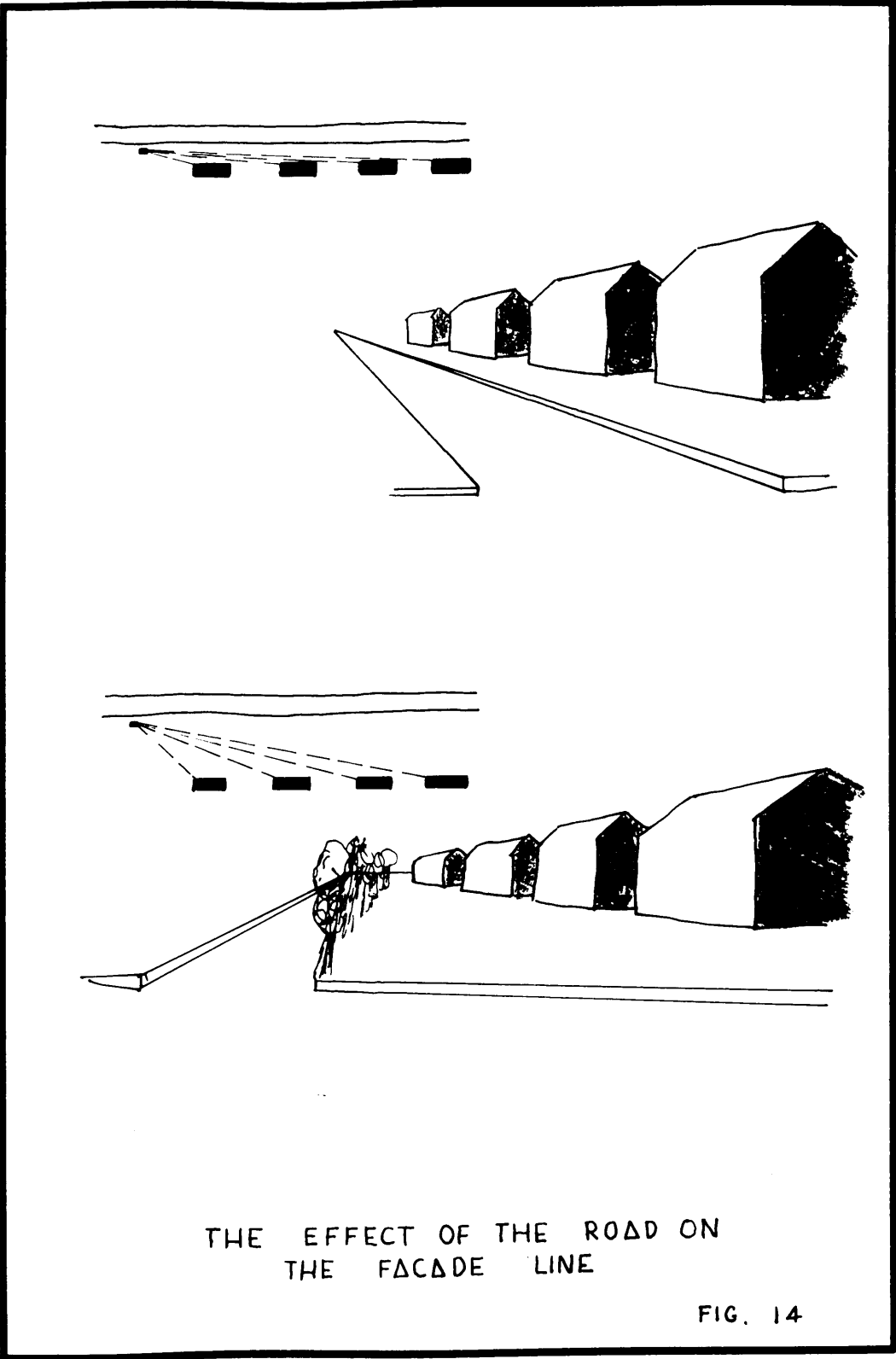
THE EFFECT OF VARYING THE SET BACK

FIG. 13

none of these variables was found to be the most important in the creation of the facade line. All of the variables found and listed below can by themselves affect the facade line to a considerable degree.

The variable which at first is the most noticeable is the relationship of all the buildings to a common building line or set-back. If the observer stands close to the common building line, and if the houses are all close together without visual barriers interceding, the buildings appear to merge and look like one continuous structure. But when a building is offset from the building line, the wall effect is weakened. The more buildings that are offset, the weaker becomes the facade line. It was observed that an offset as small as five feet created a noticeable reduction in the wall effect. When a building was set back from the common building line by a distance equal to or greater than its own width, as in Figure 13, the house which is offset leaves a blank hole in the facade line and thereby seriously weakens it. These figures and estimates should not be taken as standards, since they were the subjective judgement of one observer. However, they seem to be indicative of what may be an objective pattern.

A road, parallel and in front of a group of buildings and which is physically close to the building line, becomes a variable affecting the facade line. It was found that a road reinforces the visual effect created by the common



THE EFFECT OF THE ROAD ON  
THE FACADE LINE

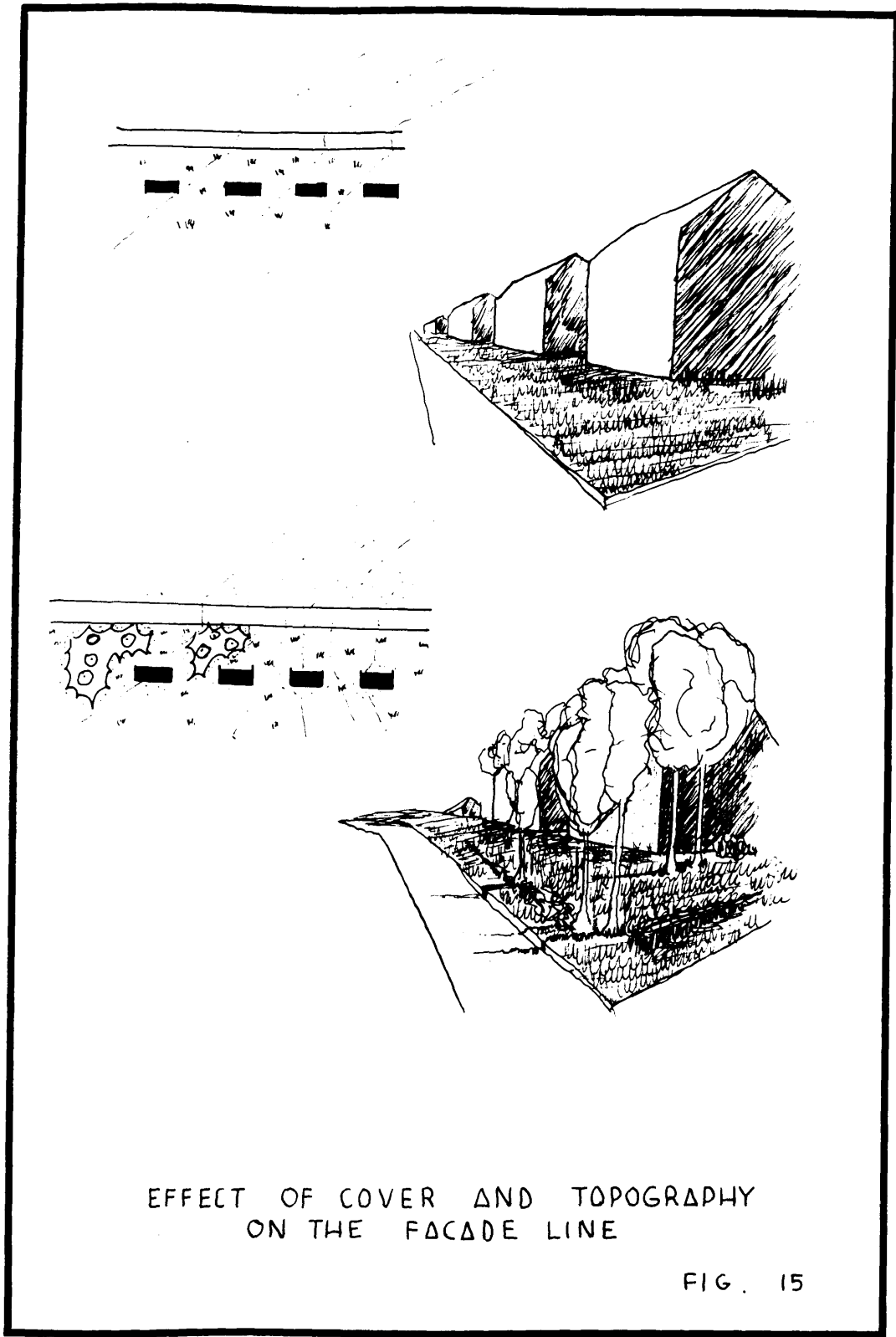
FIG. 14



building line. (See Figure 14) First, a road as a visual element seems to make the common building line appear stronger if the two are parallel. Secondly, and perhaps the more important function of the road, is its role as the place from which the facade line is very frequently seen by both residents and non-residents. The greater the distance between the road and the common building line, the more difficult it is to discern the visual relation formed between the buildings on a common building line; it becomes more difficult to judge whether or not all the buildings are actually on a common line.

If the distance between the road and the facade line is less than seventy feet, the road will be a variable affecting the facade line, but when the distance is greater than one hundred and twenty feet, the road is not very important as to its effect on the facade line. Between seventy and one hundred and twenty feet, the effectiveness of the facade line will be determined largely by other factors such as the spacing between buildings, and the type of cover between the road and buildings, rather than by the road as a reinforcing agent or by the position of the observer.

The third variable is the amount and the type of visual barrier that may be present between the facade line and the normal position of an observer. Either the topography or the natural cover on the land may make it difficult to perceive the facade line. If the entire facade line is hidden



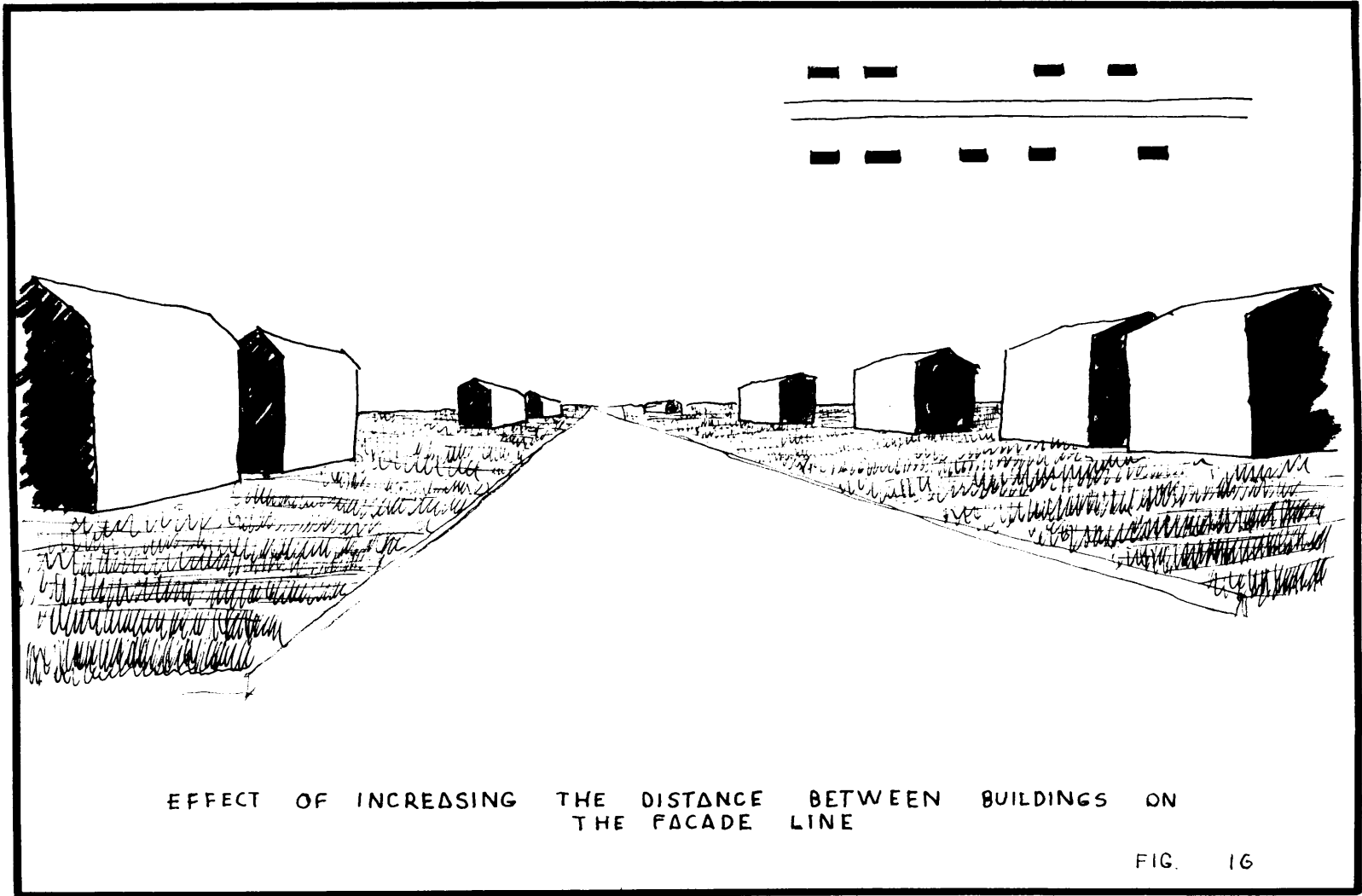
EFFECT OF COVER AND TOPOGRAPHY  
ON THE FACADE LINE

FIG. 15

by the visual barrier, or if a few houses are left visible, the effect is either the absence of the facade line or a strong visual break in the facade line which will weaken its effectiveness. If the topography of the land is rolling or hilly, the effect is the same as if a screen of natural cover were placed in front of the facade line. (See Figure 15.) If the topography is irregular, it is possible to have a facade line exist in physical terms but, since the topography hides some of the buildings, in visual terms the facade line is either non-existent or less effective. In addition, if the houses are on the same building line, but are at different elevations, it becomes more difficult to visually discern the type of relationship that may exist between the various houses.

The effectiveness of the natural cover as a factor in breaking down the facade line depends on the degree to which it obscures the outlines of the houses. If the natural cover is thick enough so that the roof lines or the sides of the house are indistinct, then it becomes more difficult to tell whether or not all the buildings are on a single building line.

The distance between adjacent buildings affects the facade line. As the distances between the buildings increase, the visual connection between them diminishes. It was found that when the distance between buildings is equal to, or greater than their combined lengths, the buildings



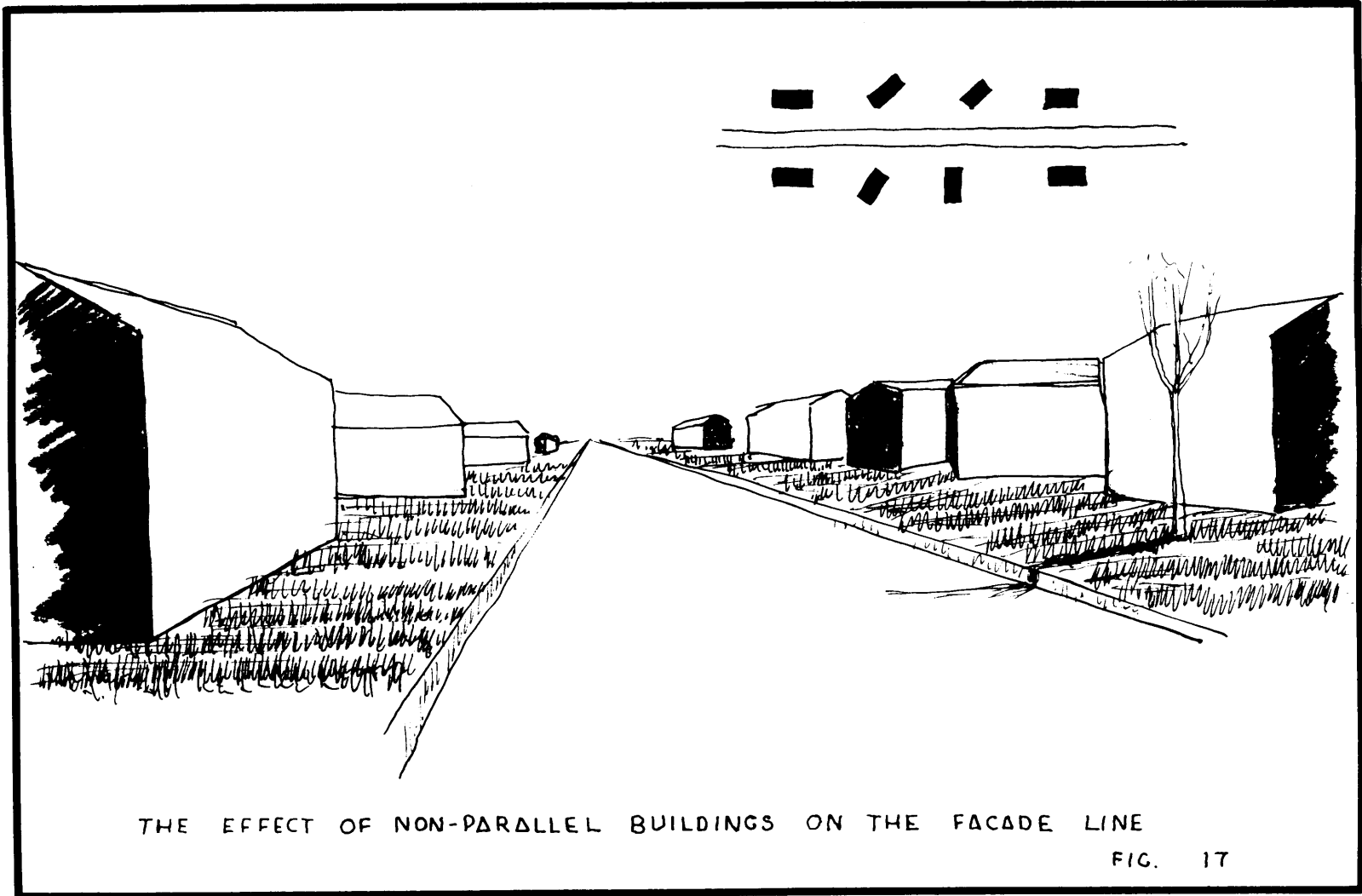
EFFECT OF INCREASING THE DISTANCE BETWEEN BUILDINGS ON THE FACADE LINE

FIG. 16

start to lose their visual connection. This is illustrated in Figure 16. When the distance between buildings is in the range of three hundred feet, it was found to be difficult to perceive a visual relationship between buildings. The interjection of a piece of undeveloped land between buildings was found to reduce the distance between the buildings which was required if no undeveloped land was present. With a thick natural cover, a cover which is growing up to the edge of the road, a space of only on the order of fifty feet is required to break the visual connection between buildings.

Another factor influencing the facade line is the degree to which all the front walls of the buildings are parallel. When a building is sited so that it is not on the same axis as the rest of the buildings, it causes a visual break in the facade line. This situation primarily breaks the wall effect by visually taking one house out, and by introducing a small open space where the wall would have been. A similar effect is produced when a building is sited so that it is facing side-ways to the facade line, as in Figure 17, the other buildings having their front sides on the building line.

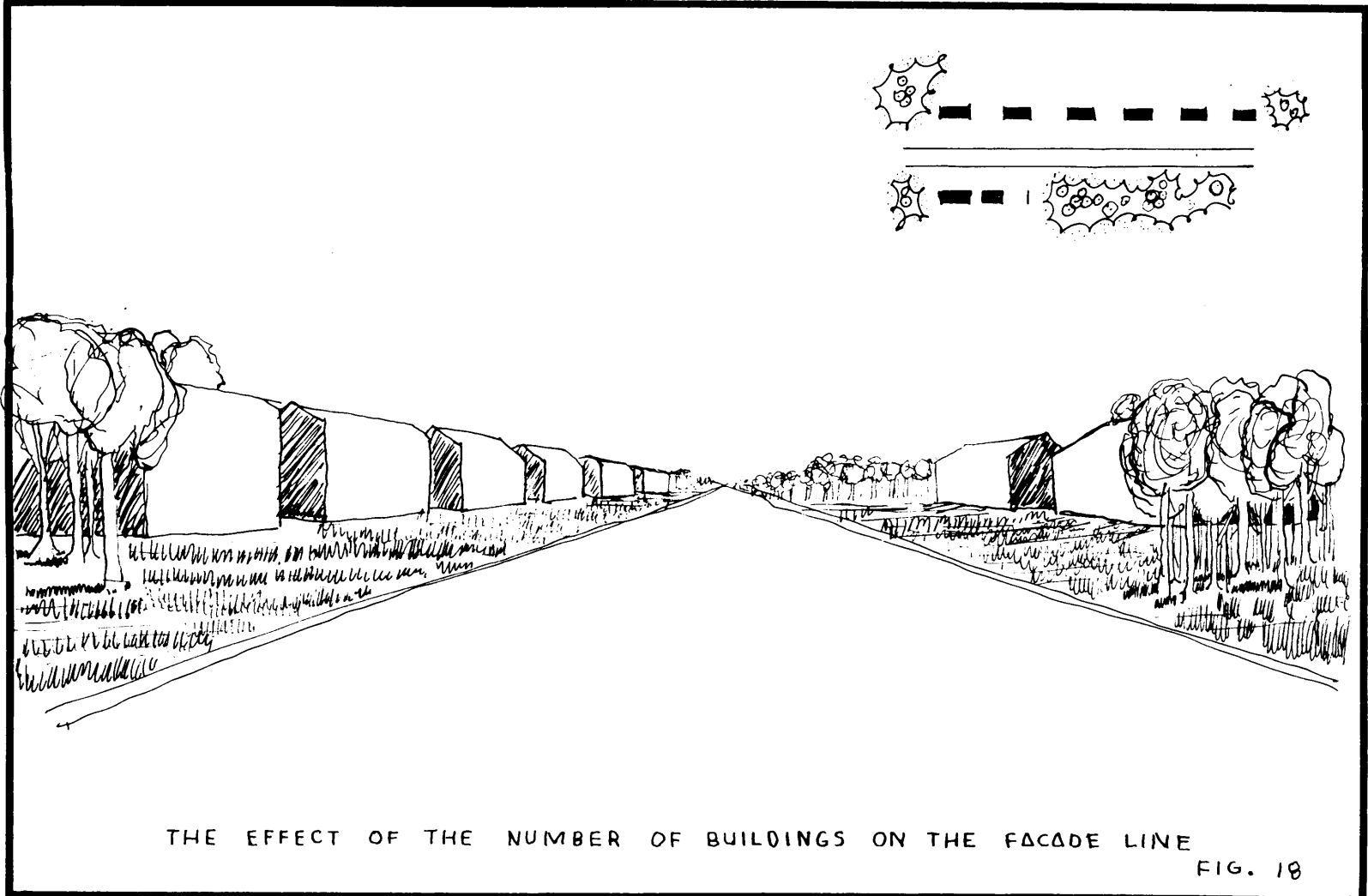
The number of houses comprising the facade line in a row will affect the strength or weakness of the facade line. From the field observations it appears that at least four houses are required before a facade line is formed.



If there are only two or three houses, the open space at each end of the facade line visually dominates the facade line, as in Figure 18. It was observed that as the number of houses comprising the facade line increases, the facade line increases in visual strength. However, after twenty houses in a row, no increase in the visual appearance of the facade line was noticed.

### Summary

The degree to which the facade line exists in a residential area will be one of the important factors contributing to the final character of the area. Most of the characteristics of a strong facade line are either urban or counteract the rural characteristics. The most important characteristics of the facade line are that it produces the urban symbols of related buildings and the visual presence of many buildings, decreases the opportunities for privacy on the house site and the full use of the land as a recreational area, and negates the symbol of the free-standing house.



THE EFFECT OF THE NUMBER OF BUILDINGS ON THE FACADE LINE

FIG. 18



### Section III - ROADS

The third part of the environment which contributes to the creation of a rural environment is the road or road system of the area. Roads, in terms of this study, are defined as the public and private ways which either provide access to a number of houses or serve to connect a group of houses with the region.<sup>25</sup>

The roads of a residential area were found to affect the area in two separate and important ways. First, the physical characteristics of the road, the roadside, the type of traffic on the road, and the road pattern formed by the roads as a group were all found to affect the final character of the area.<sup>26</sup> Secondly, the road is important as the frequent unobstructed plane along which the residential environment is seen.

#### Symbolic Content

The physical characteristics of the road can produce a rural symbol. While two of the respondents mentioned that a certain type of road reminded them of a rural area,

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25. The short driveway which provides access to one or more houses is not considered a road for the purposes of this particular study.

26. Some of the rural characteristics produced by the road were stated by the respondents. Others were derived by the objective and subjective judgements of the observer, based on the field observations.

based on the field observations and on the concepts of how such symbols are created, it seems reasonable to assume that a certain kind of road is symbolic of the rural environment. The personification of this symbol is the narrow, winding country road. The physical characteristics which create such a road are the width of the road, its vertical and horizontal alignment, and the character of the roadside.

The widths of the roads found to be symbolic of the rural environment were rarely over thirty feet. Most of the roads in the older residential areas designated as rural had widths varying between fifteen and twenty-four feet.

The horizontal and vertical alignment of the road were found to be important factors in determining the symbolic significance of the road. In general, the road symbolic of the rural area was found to lack the exact geometric neatness of the urban street or arterial highway. The rural road was found to be more informal than its urban counterpart in both its vertical and horizontal alignment, and was found to conform, rather than to cut through, the natural contours of the land. In addition to having more curves than the urban street, the rural road was found to have a number of different radii along a single curve. The tangents between curves were often shorter on the rural road. The vertical alignment of the rural road was found to have more minor variations than the level streets of city and town. The result is that the rural road often has a number

of minor dips and bumps.

The manner in which the roadside is treated will affect the final character of the rural road. In addition, the roadside may have a symbolic significance of its own. Pavement and the undeveloped ground adjacent to the pavement are directly joined along the rural road without an intervening obstruction. There is no sidewalk, curbing or drainage ditch except that type which is nothing more than a cut in the earth alongside the road. The absence of a sidewalk is very noticeable, and the grass or bushes come into direct contact with the road. It is difficult to determine where the road ends and the undeveloped land of the roadside begins. The line between the two is irregular and has the appearance of not having been maintained. The ground along the road will constantly vary in its topography and cover; at one point the roadside is a high bank, at the next, it slopes steeply away from the road. The plant life of the roadside can be almost anything except the well-tended lawns and hedges typical of developed land. Very often, a dry stone wall<sup>27</sup> or a line of trees parallel to the road was found. The combination of a road in a deep cut with a dry stone wall was found to be a strong symbol of the rural environment. When fences front directly on the road, certain kinds were found to be compatible with the rural road,

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27. A dry stone wall is a stone wall which is made by fitting stones together without the use of a cementing agent. This is the way in which the stone walls so typical of New England are normally made.

while others gave the road an urban appearance. Picket fences, wooden rail fences give a rural appearance, while cyclone and most iron fences seem to be more symbolic of the town and city.

Another effect of the road in determining the final character of an area is produced by its role as the location and as the unobstructed plane along which the residential area is frequently seen. This feature of the road will determine whether the residential area is thought of by an observer as the small scale community, symbolic of the rural environment, or as the large developed area more typical of the urban environment. If the road is straight -- with little change in the vertical and horizontal alignment -- and the roadside does not impose a visual barrier, the developed residential area, if present, can be visible for more than two thousand feet. If, on the other hand, the road is curving or irregular because of a number of changes in either the vertical or horizontal alignment, even with a developed roadside the amount of development that can be seen is considerably reduced. In a number of residential areas which were observed as having a good deal of development, the amount that was actually visible at any one moment was considerably reduced by a winding or curving road. The important factors in the way a road can reduce the scale of visible development are the number of curves and their radii as compared to the amount of road which is in straight alignment.

In areas designated as rural, the road pattern was found to differ in the following respects from the road pattern of areas which can be classified as being urban. The rural road pattern had fewer intersections, and the intersections present occurred with no apparent regularity along the road. The system, as a whole, had the same irregularity and informality in alignment and direction as was typical of the individual road. The observer found it difficult to visualize the entire road pattern of a rural area; it was hard to predict when and where the intersections would occur.

#### Psychological Effects

It may be concluded that the minor roads within residential areas contribute toward a psychological sense of safety. From the field observations it was found that traffic along the roads which serve only the residential community -- such as loop streets and cul-de-sacs -- had light traffic which was usually slow.<sup>28</sup> It was not unusual to find children, even of a pre-school age, playing on the road. From the above, it seems reasonable to assume that the residents of areas having such roads feel that the

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28. The reader should not acquire the idea that a residential area which fronts on a heavily trafficked street can not be rural in character. Two respondents picked the area just north of Route 128 and along Route 129 (Haverhill Road, Reading, Mass.) as being rural in character. The field observations supported their estimates. Still, the road was found to be a heavily traveled one during the two visits made to this area.

road is a safe place, even for the children. In this way, the roads of the residential area may contribute to the impression that the total environment is a safe place.

### Summary

The roads in and around a residential area can have an effect on the final character of the area. Depending on alignment and type of treatment of the road and the roadside, the road can appear to be symbolic of either the rural or the urban environment. If the road is similar to the winding country lane, it will add another symbol of ruralness to the total environment, thus strengthening its rural character. In addition, the roads within the residential community may, by the fact of light and slow traffic, add a sense of safety to the environment. Finally, the alignment of the road and the richness of cover on the roadside can affect the amount of residential development which is visible, and thereby affect the final character of the area.

## Chapter IV

### C O N C L U S I O N S

This chapter presents the design steps which, if executed, would help to achieve a rural quality in a suburban residential area. The design conclusions are derived from the conclusions of Chapter III. It is entirely conceivable that there are other design techniques, either already in existence but not discovered by the research, or techniques not yet created, which can create a rural environment.

#### Regional Design Conclusions

One general conclusion is that in order to achieve a maximization of the rural quality in a residential area, it is necessary to design for that quality at not only the level of the residential area, but at the level of the larger environment, the region, as well. In order to have a rural residential area, it is first necessary to have a region which contains the basic requirements of a rural community. Excluding the rare instance where topography might completely hide a large urban concentration, it is not consistent with the data of the thesis that a rural subdivision can exist in an urban or suburban region.

Although this thesis has dealt primarily with ruralness as it applies to the individual subdivision, the region is so important as a backdrop that it requires a few brief comments. In order to set the stage for a rural residential area, the following broad design features of a regional pattern are required.

1. The urban concentrations which may be present in a rural region must be (a) kept in scale with the size of the town or city normally associated with a rural area, and (b) so sited that they do not dominate the undeveloped character of the region. (The latter requirement could perhaps be satisfied by visually hiding the urban area by the use of topography.)

2. It is necessary that, for the entire region, the pattern of residential development vary from areas of fairly intense development to areas of little or no development. Or, to put it in terms of densities, the population density must be uneven over the entire region. This requirement is necessary in order to allow for the presence of either outside open space or outer-rim open space.

3. The region should have a road network which allows the residential areas to be designed so that an inter-regional road does not pass through the residential areas. The residential areas should have their own internal road systems which serve only the individual residential community.



Most of the points in this outline are, of course, outside the scope of this thesis. However, some design techniques, derived from the insights gained during the field observations, can be offered for the second requirement, so that a regional pattern can be created which contains a pattern of density and development in keeping with the basic conditions for the design of rural residential areas.

There are certain types of public land uses which, by their establishment in a rural region, can help to create a regional pattern suitable for rural communities. Such uses as large recreational areas, wildlife preserves, flood plain reservations and certain types of institutions result in the establishment of large tracts of undeveloped land. The same effect can be had by using large rights-of-way for super highways and by leaving part of the right-of-way in undeveloped land. The fusion and fission power plants and production centers of the future may require large tracts of undeveloped land to serve as a buffer between the potential radiation hazard and the living areas. All of these various kinds of uses will result in areas of undeveloped land, areas sufficiently large to keep the region dominated by undeveloped land and to provide the outside and outer-rim open space for the residential areas.

Such uses will be of maximum effectiveness in achieving a rural pattern when their locational requirements can be

reconciled with the design requirements necessary to achieve a rural region. The ideal location for such uses would be in places where the undeveloped land most effectively visually dominates the region. One such location would be the high topographic areas of the region.

In addition to the public land uses, there are some types of private land uses which can be used to achieve the same end results. In recent years, certain types of commercial land uses such as experimental laboratories, office buildings, and storage facilities have become part of the land use pattern of the suburbs. Frequently, as illustrated by the trend in Westchester County, New York, such operations obtain very large sites, from ten to more than one hundred acres. Only a small part of the site is normally developed for use, leaving the major part as undeveloped land. In planning for a rural residential area, such types of commercial land uses should be included and located (when it is compatible with the user's own locational requirements) in areas which would maximize their effectiveness as undeveloped land. Besides topographic considerations previously expressed, such uses should be scattered throughout the entire region, rather than being clustered together in one particular area. This will provide the maximum amount of border area of outside or outer-rim open space, against which residential areas can be placed.

Finally, there is the land which, though privately owned, can be controlled under some circumstances by public action. Foremost in this category is land which has been set aside by zoning for agricultural use. If scattered agricultural zones were to be set up in a region, not only would the residential areas have an adjacent undeveloped environment but, in addition, the important symbol, agriculture, will be present in the vicinity of the residential area.

#### Design Techniques for the Residential Area

Within a regional pattern that is compatible with the requirements of a rural area, it is possible, through certain design techniques, to create a residential area which may be described as rural. One tentative conclusion indicated by the research is that a significant number of design features are necessary.<sup>29</sup> This conclusion and its converse, that it is not possible to create a rural environment by only one or two design features, was derived from the following observations.

1. For each individual there exist a fairly wide range of rural characteristics. A number of such characteristics must be present before he perceives the environment as being rural.

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29. The exact number that is necessary was not specifically indicated by the research.

2. Since each individual has his own set of rural characteristics, if the environment is to be thought rural by a wide variety of people, it is necessary that the environment contain a large enough range of rural characteristics so that each individual can find in it those characteristics which are most meaningful to him.

### Rural Characteristics

In summary, these are the important characteristics of ruralness:

1. The developed residential area is visually dominated by the undeveloped land around it.
2. The environment produces the sound, smell and feel of nature (bird calls, sound of wind, etc.).
3. The land contains the individual physical symbols of nature (trees, brooks, open fields, etc.).
4. The land contains physical symbols of ruralness created by man (stone walls, barns, etc.).
5. Residential environments are small in scale.
6. Houses are free-standing.
7. Roads are narrow, winding, etc. with undeveloped roadside.
8. A sense of privacy.
9. A sense of safety.
10. A sense of community.
11. The land is adapted to unrestricted play and other special recreational uses (gardening, keeping of animals, etc.).

12. There is a lack of urban symbols, psychological sensations and land uses.

In Chapter III were described some of the land, siting and road conditions which seemed to create the above rural characteristics. The thesis maintains that if such conditions are reproduced as design techniques, a residential area can be made to look rural. The conditions discovered are therefore translated into the following design techniques.

### Density

The first design technique which will set the basic framework for the establishment of a rural residential area is the density of the population. The exact density required can not be precisely defined. However, the important factor that should be taken into consideration in determining the density is the amount of developed land required for each individual homesite. Once such an amount is established from observation of local customs and conditions, the area should then have an over-all density which would result in the developed land of the house site being subordinate to the undeveloped land of the total residential environment. From the field observations, it can be concluded that, depending on natural cover and topography in the area, such a density is approximately between one and three families per gross acre.

## Land

### Conservation of Undeveloped Land

Some of the characteristics of undeveloped land can only be produced by time. If mature trees are an important part of the symbolic content of the undeveloped land, for example, they should be preserved. The residential area should be so designed as to cause as little damage to the undeveloped land as possible.

### Physical Symbols of Ruralness Created by Man

When such symbols exist, the most important design technique is that of conservation. When possible, incorporate within the residential area the existing stone walls. If an old barn or farm house exists within the boundaries of a proposed residential area, it should be saved for its symbolic value.

### Use of Outside or Outer-Rim Open Space

When the opportunity presents itself, a residential area should be laid out in such a way as to be as closely related as possible on its entire circumference to a belt of undeveloped land. This undeveloped land should be wide enough so that either by distance or by the effect of natural cover the surrounding symptoms of development are obscured. When no internal open space is present, there should be a large enough outer-rim space to provide recreational land.

### Size and Position of Internal Open Spaces

When the residential area is either large or wide, in order to break up the visual effect of the developed land, internal open space should be placed in or near the center of the developed land. When possible, the internal open space should separate the heaviest concentration of buildings and be large enough for recreational use. The internal open space should be of at least three or four acres and have a depth of at least three hundred feet between building groups.

### Most Effective Placement of Undeveloped Land in Residential Environment

A design technique that can be utilized to make a given amount of land most effective is to place such land in positions where it is most frequently seen. Such positions are:

1. directly in front of a dead-end street or in the middle and around a cul-de-sac.
2. along the outside curves of roads in the residential area.
3. on the sides of hills in the residential area.

### Use of Natural Cover or Topography for Privacy

The houses should be so sited that, through the use of natural cover as a visual barrier or the use of topography, it is difficult to see what is occurring on other

developed land adjacent to the back and side of the house. A natural barrier of between fifty and one hundred feet is required to provide the necessary visual obstruction.

#### Maintenance of Recreational Land

In order that undeveloped land which is used for recreation maintain its rural symbolic content, it must be large enough so that the wear imposed by human use will constantly be covered by the forces of nature. In the areas observed, it was found that a piece of undeveloped land of fairly regular shape and of more than three acres satisfied such conditions.

#### Position of Undeveloped Land in Relation to Road

When undeveloped land exists in the vicinity of a residential area, ideally, the road should be so designed so as not to come between the undeveloped land and the developed land of the residential area.

#### Houses

##### Shape of the Residential Area

In designing residential areas, care should be taken not to concentrate the amount of developed land, but rather to distribute it over as great a distance as possible. For example, it would be preferable to have a linear-shaped residential area instead of a rectangular or square pattern.



If the residential area is large, then the over-all shape of the residential area should be irregular so as to produce the maximum number of short lines-of-sight.

### Number of Houses

The residential area should be designed so that only between ten and twenty-five houses are visible from any position an observer can normally be assumed to take. This can be achieved by the following techniques:

1. separating residential areas by strong visual barriers such as topography or undeveloped land.

2. if the residential area must be large, fragmenting the residential area by the use of a strong internal open space or topographic features.

### Clustering of the Buildings

Although areas of development should be loosely distributed over the region, within the residential area the way in which buildings and their developed grounds are distributed should be manipulated to maximize the surrounding undeveloped land. This may be achieved by clustering the buildings together rather than by spacing them evenly throughout the entire area. However, the increased effect of the undeveloped land should not be achieved at the expense of the psychological sense of privacy.

### The Siting of Adjacent Houses

In order to maximize the amount of privacy a family can obtain from its house and site, the following design techniques should be observed. The areas within the house where maximum privacy is required, such as bedrooms, should not be situated so as to allow for observation from either the windows or grounds of the adjacent house. The developed areas of the house lot where a maximum amount of privacy is required, should be sited so as not to be easily visible from the adjacent house.

### Free-Standing Houses

This symbol of ruralness is essentially achieved by the absence of the facade line. Any one of the following design steps, if carried to an extreme, will achieve an absence of the facade line. However, it is believed that a combination of the factors outlined below will be more effective in achieve the symbol of the free-standing house than the use of a single factor. The absence of the facade line is achieved by the following design steps.

1. The distance between houses on a common building line should be at least twice the length of the average house on the line.

2. The houses should be so sited that each house will be at a different distance from the front lot line.

3. Each house should be individually sited. There should be some variation in the position of front walls.

4. Enough plant material should be present, either in front of the houses or alongside them, so that the major outlines of the individual houses are lost.

5. When possible, topography should be used to visually hide, or hide a part of, the facade line.

6. The fewer houses in one particular area, the weaker will be the facade line. If only three or four houses are present in a facade line, the undeveloped land, if present, at each end of the facade line, will dominate.

## Roads

### Alignment to Produce the Country Road

This can be achieved by the following design steps:

1. the road should follow the natural contours of the land, rather than cut through the natural configuration of the land.

2. the horizontal alignment of the road should be irregular, with a number of curves, and such curves should lack the precision of the curves typical of the modern expressway.

3. the vertical alignment of the road should include some of the minor up-and-down variation found in an undeveloped environment.

### Type of Roadside

In order to maximize the symbolic effect of the road and the surrounding area, the roadside should have the

following features:

1. it should consist of undeveloped land which comes into direct contact with the roadway.
2. the road should not have the urban look created by such man-made structures as sidewalks, curbs, walls, urban fences, or concrete storm drains. (An earth ditch for the removal of storm water can be present without reducing the symbolic content of the road.)
3. When possible, existing rural stone walls and rail fences, etc., along the road's right-of-way should be preserved and incorporated in the design of the roadside.

#### Alignment to Reduce the Size of Residential Areas

When either a part of a residential area or an entire residential area is larger than the scale symbolic of the rural environment, and such areas are along a single road, the road can be used to bring such areas into the scale typical of a rural area. This can be achieved by visually terminating a residential area at distances which are in keeping with the rural scale. This visual termination can be produced by the use of curves in the road. By the use of heavy cover on both sides of a curve, the amount of development that will be visually present will be equal to the sight-distance between the two curves.

#### Design for Safety

The roads of the area should be so designed as to decrease their potential danger to the people and especially

to the children of the residential area. Three design techniques are offered:

1. where children can be expected in the road, the road should have good sight-distances so that the driver can see the children.

2. vertical obstructions such as bumps should be placed in the road to prevent speeding.

3. to reduce the hazards of inter-regional traffic, residential areas should be located away from major routes, and should have individual road systems which serve only the residential area.

### Conclusion

The design techniques described here are representative of the steps that can be taken to preserve the fast-disappearing rural quality of our suburban regions and to create in future subdivisions the characteristics of ruralness which seem to be an important goal of society today -- and tomorrow.

A P P E N D I X A

Questionnaire Form for Town Officials and Real Estate Agents

1. In your opinion, which residential areas of this town would you classify as being rural in character? Or, which subdivisions would you consider having a open country look about them?
2. Would you show me on this map where these areas are?
3. Now, I'd like to find out why you picked out these particular areas. What are the specific factors which made you come to this conclusion? Are there any more factors or reasons?
4. Now, I'm going to ask you to draw a line between residential areas which are rural in character and areas which lack the rural or open country look. What areas of this town just miss being rural in character?
5. Why do you feel that these areas just miss being rural in character?

(for Real Estate Agents)

6. When a client comes to you and says he wants a home in a residential area which is rural, what do you think he is looking for?
7. What does he say he wants? Could you tell me some of the features he is looking for?

A P P E N D I X B

FIELD OBSERVATION CHECK LIST

Town of \_\_\_\_\_ Name of area \_\_\_\_\_

Date \_\_\_\_\_ Near \_\_\_\_\_

Part I - Circulation System of the Study Area

I. Type of Road

A. Road Design

1. If single road:

- a. straight road (with minor variations) \_\_\_\_\_
- b. moderately curving road (min. 300' straight) \_\_\_\_\_
- c. curving road \_\_\_\_\_

2. If more than one road to study area:

- a. parallel roads with one or two cross streets \_\_\_\_\_
- b. rectangular road system \_\_\_\_\_
- c. loop street \_\_\_\_\_
- d. cul-de-sac \_\_\_\_\_
- e. if more, number \_\_\_\_\_
- f. other types of system, describe:

B. Function of roads in study area  
(if different functions, indicate by % below)

- 1. major through street \_\_\_\_\_%
- 2. minor residential street \_\_\_\_\_%
- 3. in study area street only \_\_\_\_\_%

4. major road nearby, describe:

II. Characteristics of the Circulation Pattern  
(draw map indicating:

- A. Physical length of roads
- B. Types of roads
- C. Visual sight distances along sections of road where important

D. Road Width

- 1. constant width \_\_\_\_\_, distance \_\_\_\_\_ ft.
- 2. varying width, from \_\_\_\_\_ to \_\_\_\_\_ ft.

E. Road surface

- 1. Dirt
- 2. Semi-permanent
- 3. Poor all-weather
- 4. Sound all-weather

- F. Can the total road system be easily perceived by the resident \_\_\_\_\_, occasional traveler \_\_\_\_\_?

Describe in detail, mention if the road system helps hold entire area together:

Part II - Relationship Between Study Area and Adjacent Area

- I. Isolated from other developments (residential, commercial, etc.)?

- A. Physical distances to nearby developments \_\_\_\_\_ ft.

- II. Study area is visually isolated from other development

- A. Completely \_\_\_\_\_

- B. Not completely isolated \_\_\_\_\_

- 1. Describe what is visible \_\_\_\_\_
- 2. How far away \_\_\_\_\_
- 3. Is it visually related \_\_\_\_\_

- III. Characteristics of area adjacent to residential area if undeveloped

- A. In woodland (better than 80%) \_\_\_\_\_

- 1. broken or solid \_\_\_\_\_
- 2. sight distance into woodland \_\_\_\_\_ ft.

- B. Open land (pasture, meadow, swamp, less than 20% wooded)

- 1. character of the area \_\_\_\_\_
- 2. topography: flat \_\_\_\_\_ rolling \_\_\_\_\_ steep \_\_\_\_\_
- 3. sight distance, max. \_\_\_\_\_, min. \_\_\_\_\_



C. Mixture of the two above

1. describe \_\_\_\_\_, \_\_\_\_\_%
2. sight distance, max. \_\_\_\_\_ min. \_\_\_\_\_

D. Other important characteristics of open space

1. streams \_\_\_\_\_ 2. ponds \_\_\_\_\_ 3. ridges \_\_\_\_\_
4. valleys \_\_\_\_\_ 5. walls, fences \_\_\_\_\_

IV. Characteristics of adjacent land if developed

A. Proportion of land undeveloped \_\_\_\_\_%

1. location \_\_\_\_\_
2. character of such land, describe:

B. Proportion of land developed \_\_\_\_\_%

1. location \_\_\_\_\_
2. describe:
3. sight distance to developed land \_\_\_\_\_ft.
4. physical distance to developed land \_\_\_\_\_ft.
5. character of developed land, describe:

Part III - The Site

I. General Characteristics

A. Topography, describe:

B. Vegetation

1. type, trees \_\_\_\_\_, bushes \_\_\_\_\_, other \_\_\_\_\_
2. location and density of visual barriers:

II. Housing

A. Number of houses in study area \_\_\_\_\_

B. Cost of houses

1. 10,000 to 15,000 \_\_\_\_\_
2. 15,000 to 20,000 \_\_\_\_\_
3. 25,000 to 35,000 \_\_\_\_\_
4. 35,000 and up \_\_\_\_\_

C. Average dimension of housing

1. Size: height \_\_\_\_\_, width \_\_\_\_\_, length \_\_\_\_\_.

### III. House lots

- A. Standard size \_\_\_\_\_. length \_\_\_\_\_, frontage \_\_\_\_\_.
- B. Different types, describe:

- C. Character of the lots
  - 1. Describe type of cover, amount of coverage, etc.:

#### D. Use of lots

- 1. front \_\_\_\_\_
- 2. side areas \_\_\_\_\_
- 3. back areas \_\_\_\_\_

- E. Describe any strong variation in lot layout, use, etc.:

#### F. Single visual space formed by:

- 1. back lots (yes) \_\_\_\_\_ (no) \_\_\_\_\_
- 2. front lots (yes) \_\_\_\_\_ (no) \_\_\_\_\_

### Part IV - Open Spaces Other than Formed by Lots and Outside Areas

#### I. Open Spaces in the Area

- A. Amount of such open space in comparison to the remainder of the study area \_\_\_\_\_
- B. Number and location of such spaces:

### Part V - Symbols

#### I. Does the study area have any of the following:

- A. stone walls
- B. farms (operational)
- C. good sized streams
- D. farmed land (agricultural)
- E. dairy herds
- F. other symbols

### Part VI

#### I. Sketch map of area showing important features.

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