

LIBRARY
Montana State University
BOZEMAN

A CRITICISM

OF

TRACT HOUSING

1-7



to

D. WESSEL

ARCH. 490

by

TED EDISON

MAY 29, 1961

LIBRARY
Montana State University
BOZEMAN

ARCHITECTURAL LIBRARY.

~~AA2510~~ ~~720.6~~
~~A76~~
E248

P378
E248

1098-17

SUMMARY

The scope of this thesis is to bring to the attention of the reader some of the basic problems in our tract housing today. I have given only some of the answers to these basic problems that were suggested by the leading experts on the subject such as Kosta, York, Emmons, and many others.

It is not the purpose of this thesis to provide a complete coverage of the problems of tract housing. I only wish to provoke a challenge with the young architects today by presenting some of the basic problems in tract housing in which the architect, with his technical, artistic, and business "know how", will be able to solve.

TABLE OF CONTENTS

PREFACE.....	page iii
LIST OF ILLUSTRATIONS.....	vii
INTRODUCTION.....	1

PART I. SITE SURVEY

Chapter

I. SELECTION OF A TRACT SITE.....	4
Problems of selecting a site	
Criticism of past selecting methods	
Errors in planning	
II. THE NEIGHBORHOOD INFLUENCE.....	6
Little rethinking about planning	
Improvements in intersection design	
In-lying residential districts deteriorating	
III. STREET LAYOUT AND PARKING.....	9
Grid most common street design	
Results of width standardization	
Streets should form a functional system	
Culs-de-sac and loops	
IV.. ZONING.....	16
Concern of zoning	
Rigidity in zoning	
Flexibility in zoning	

PART II. ARCHITECTURAL ASPECT

chapter	page
I. THE INDIVIDUAL HOUSE.....	21
The house as a display case	
The house a complex problem of planning	
The house's influence on neighborhood	
The design of a house	
II. THE HOUSE ON THE LOT.....	27
Practice in the past	
Strict zoning laws	
The integrated lot	
III. THE GROUP OF HOUSES.....	31
The appearance of the group	
Extreme variation in house plans-undesirable	
Aimless meanderings of streets	
IV. GENERIC GROUPINGS OF HOUSES.....	35
Heavy traffic discouraged	
Evidence of poor design	
A green space necessary	

PART III. PROFESSIONAL SERVICES

I. A COMMUNITY PLANNER.....	40
Prepare a comprehensive plan	
Prepare an estimate	
Prepare a final plan	

II. A CIVIL ENGINEER.....	page 41
Prepare a tentative plan	
Prepare specifications	
III. AN ARCHITECT.....	43
Architect and homebuilder's responsibility	
Architect's influence	
Architect's services	
CONCLUSION.....	46
BIBLIOGRAPHY.....	48
APPENDIX.....	51

LIST OF ILLUSTRATIONS

Figure		Page
2.	A typical cul-de-sac.....	13
3.	A ridge cul-de-sac.....	14
4.	A valley cul-de-sac.....	14
5.	A typical loop.....	15
6.	A tract house.....	25
7.	An integrated lot.....	29
8.	A poor "T" junction.....	35
9.	A poor subdivision of blocks.....	36
10.	A poor use of curved street design.....	37

LIST OF TABLES

Table		Page
1.	Traffic Safety Manual design standards.....	12

Table

2. Traffic

INTRODUCTION

In the beginning of tract housing a set of "blueprints" could have been made up by the high school boy next door. Even today there are still too many who think that anybody can design a house for mass acceptance.

In the late 1940's and early 1950's housing sales were booming and a "desperation" housing shortage existed. The tract housing builder was engaging architects to design homes which readily lent themselves to mass production and economic construction. Little time was devoted to creative or constructive planning. The builders outlined what they wanted in terms of design and the architect translated these ideas into finished working drawings.

Because of this "design for profit and damn the esthetics" idea by the builders during this period, the term, tract house, has turned into a definition for an undesirable condition. Poor planning has been responsible for the economic drain on our communities to provide utilities to these "leap-frogging" tracts. Most of the communities of houses that were "tract built" take on a monotony of exteriors that lack the imagination of a good designer.

Today, however, the home building industry is engaged in a monumental contest for economic stability. Tight-money policy, periodic increases in the cost of labor and materials, the spiraling rise of land values, the growing scarcity of prime building sites within a reasonable proximity to industrial areas and centers of commerce have all acted to disturb the expanding housing industry.

The architect has a responsibility to the home owner and community as a whole to influence the builders of tract houses, not simply by scolding them for what they are doing, but also by showing them that the kind of houses the architect would design will sell.

This new role that is being created for the architect should prove to be both interesting and challenging. It offers a freedom of creative expression which was somewhat stifled during the post-war housing boom. It requires a more intimate knowledge of the many merchandising and sales promotion techniques employed in developing housing. It demands a comprehensive understanding of home-buyers' preferences and interests.

PART I. SITE SURVEY

SELECTION OF A TRACT SITE

Some of the problems the architect and builder must consider in selecting a particular site are soil conditions, the shape of the site, its location and accessibility, and its relative position to an established or a proposed neighboring development. In addition, the builder and architect must make a careful investigation of factors which render a site desirable from the point of view of its development. Some of the key factors which must be considered are convenient access to the schools, the shopping center, the place of work, and the places of entertainment. A consistently good value of its real property is an additional advantage. Most home buyers are attracted to the convenience of living conditions and sound and stable real estate values in a neighborhood.

Even with the wealth of knowledge, materials, and money, much of the tract housing being built today is badly planned, particularly with respect to site planning, and is trite and ugly in appearance. Most developers and builders seem to be concerned primarily with the technical problems of the construction and marketing of houses at a profit. There are some, but not enough, who take a more professional attitude toward land development and house construction, and accept a responsibility to the community as a whole for the quality and ultimate value in their work. It is true, of course, that a successful builder must be successful financially, or he will quickly become a bankrupt builder; high principles and standards in themselves are not enough to insure a continuing operation that will reflect credit upon himself and his community. It is possible, nevertheless, to do a creditable job at a profit. The kind of building program that would be profitable both for the builder and community as well would likely be carried out by a responsible builder who works with

an architect who is equally concerned with the final results of the planning and construction.

Many builders make their most serious errors in planning before they even consider retaining an architect. Site planning is an integral part with the designing of houses, and detailed programs of space and functional requirements are only a few of the things that should be carefully thought out in advance of site and unit design. It is only after a preliminary study of the site that the architect can effectively decide what types of houses are required to best fit the land, and it is only after the preliminary designs have been made for these house types and their variations that the site plan can be worked out in detail to best suit the houses. The design and costs of streets and utilities must, of course, be borne in mind at every stage of the design, but their ultimate function is to serve the houses, which in turn are designed for the people who will live in them, and not the other way around.

In an article written for the JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, Francis D. Lethbridge said:

"We feel that a satisfactory approach to the problem of better tract housing may be a four-part contract between the builder and architect which covers site planning, house design, repeat use of plans, and continued supervisory services, and other additional supplemental architectural work that may arise as the project progresses, such as modification of plans to a particular purchaser's needs."¹

1. "Zoning and What We Can Do To Improve It", Mr. F.D. Lethbridge, JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pgs. 126-131, January 1960.

THE NEIGHBORHOOD INFLUENCE

The naturalistic subdivision, with its curvilinear streets and large, free-form blocks, has become the almost universal suburban pattern. This naturalistic pattern is a product of rethinking a conventional idea. However, there has been little rethinking about the basic ideas on suburban subdivision planning for almost a century. And the basic ideas about suburban subdivision planning have become so conventional as to be virtually codified.

In 1869, Olmsted, Vaus & Company, the landscape architects who designed New York's Central Park, applied their planning ideas to the subdivision of Riverside outside Chicago. The conventional subdivision was laid out along the very practical, but terribly dull, lines of the gridiron. Seldom has an innovation come so full-blown as it did at Riverside with its gracefully curved streets. In looking at this 90-year-old plan it is hard to see how, as an idea for subdivision planning, it has been much improved upon since.

With the advance of stereotype planning, there has, sadly, come a decline in subtlety, contrast, and imaginative design. In the Riverside plan, for example, parks weave a texture through the entire suburb. Wide parkways lead into narrower streets and small neighborhood parks stand at the ends of streets or at their intersections. Even Riverside's "old-fashioned" alleys provide a place to plant telephone and utility poles, leaving the street boundaries for natural trees which give the entire district a soft unity. Although we hear much talk as to the principle of laying out streets to natural contours, today's streets curve indiscriminately on flat land as well as hilly land.

Some of the present-day tracts show improvements in intersection design of automobile traffic safety. And, because most garages now face the street, the long alleyways have disappeared in most new developments. Cul-de-sac and loop street patterns have been added to the curved street system and a segregation of the streets themselves into arterial, collector, and minor categories is more evident in the good, new plans.

I have mentioned before that one of the prime values a buyer is interested in is a sound and stable real value of the area or neighborhood in which his property will be located. As a rule, when the overall value of a residential area is consistently sound, the value of an individual property in that area is to a degree protected and upheld. Conversely, when deterioration or blight overtakes a residential area, individual residences suffer from a wholesale decrease in real values. These relationships are well known to realtors, builders, and to home-buyers.

It is a fact that in our cities the in-lying residential districts have shown signs of deterioration. It is no wonder, therefore, that the promoters of real estate have been unwilling to integrate new developments within these districts. The tract developer must realize that the home owner is in effect buying a share in the neighborhood, since the owner and his family will spend most of their time in and around their homes. The values of the neighborhood are therefore very important.

The highest-priced homes have been typically located away from older parts of town, often on rolling topography. As a result of this out-growing, the in-lying districts are decaying and suffering extreme financial hardships. While the in-lying districts lose their capacity to produce tax revenue and

suffer a reduction in land use, infant districts in suburbia demand from the central city; fire and police protection, new schools, roads, sewers, and other utility services, thus increasing sharply the needs to be met by civic dollars.

This double financial problem might be circumvented by stabilizing neighborhoods over a long period of years. A prerequisite to such stabilization is a removal of those factors which drive families away from a community. And continued casual and thoughtless planning of tracts is likely to encourage impermanence of residence real estate values.

A planned neighborhood is visualized as a geographic unit of between five and ten thousand people which supports its own educational, shopping, amusement and recreational facilities, and social institutions.. The design of a neighborhood should feature a local community center and, possibly, sub-centers to which all buildings and streets within the unit are conveniently related. The planning of neighborhoods and the physical integration of all tract developments with existing or proposed neighborhood units should be the responsibility of a local planning commission.

STREET LAYOUT AND PARKING

The street layout most often encountered in this country is the grid, a series of generally rectangular blocks separated by streets of equal traffic importance. Persons in favor of the grid layout acclaim its simplicity of application and orderliness, its convenient arranging and numbering of houses, and the easy identification of streets and avenues. However, its application in certain instances can be criticised. If the topography varies by more than a slight undulation it creates difficulties in orientation, gradients, sewerage, and traffic control.

Advocates of the system claim that standardization conserves labor and simplifies planning and execution. What they fail to realize is the negotiability of grades and cost of cuts and fills. Not only is expense involved, but scarred hillsides, destruction of trees, and the isolation of lots all have detrimental effects on property values. In other instances the need is for expensive fills or costly viaducts which often slash the value of property which abut the street.

The result of width standardization, which has been the practice in the past, involving the choice of an arbitrary average, is the building of streets either too broad or too narrow to fulfill their proper function. The municipality which still insists on excessive widths of local streets and roadways is overlooking three very important economic aspects:

1. The additional cost of initial construction either to the city or developer (in either case it is the home owner that pays).

2. The continuing cost of maintaining, resurfacing and repairing from 38% to 54% more roadway surface than is needed.

J. Kosta wrote: "The grid as a practice, however hallowed by long standing popular misconception, can no longer be supported, since its real costs exceed its true value."¹

Streets in a residential development should form a functional system. The street layouts should be made to measure for a particular tract of houses on a specific piece of land. In other words, the street layout ought to be designed for a site, and not superimposed upon it in the form of a preconceived pattern. The planner should always be concerned with the fact that the streets are a means to accomplish a certain end; they are not ends in themselves.

A functional street system should derive its inspiration from the lay-of-the-land and its use. Thus, natural features of the landscape, instead of being removed because they interfere with a rigid sequence of streets and blocks, as in the grid system, are more readily incorporated into the layout. This would afford an opportunity for the preservation and exploitation of existing natural advantages.

The design of streets should be synchronized with the major tract developments. Streets and dwellings, from the point of view of planning, are inseparable. If they are treated as separate entities, as has been done so much of the time, their respective values diminish. Again it must be said that more than the achievement of utilitarian objects must be

1. Kosta, Joseph V. Planning Residential Subdivisions. Winnipeg, Man.: Hignell Printing Limited, 1954.

accomplished and a conscious striving for appearance should also be evident.

A functional street system should appear "free flowing" and informal. This, of course, does not mean a pretty arrangement of interesting patterns on paper is the answer. Thorough investigations of local conditions must precede the design of streets.

The manual, "Building Traffic Safety into Residential Developments", prepared under the auspices of the National Committee for Traffic Safety, makes these recommendations with regard to local residential streets:

"Interior subdivision streets need not be straight, wide, nor continuous for long distances. A right-of-way width of 50 feet with a 26-foot roadway is all that is necessary or desirable for local streets in single-family residential areas. Not being designed for fast traffic, close adherence of such streets to topographical conditions is possible and desirable. Loops, U-shaped streets, culs-de-sac, moderate curves, and hills all discourage speed and through traffic. For example, grades up to 8 per cent, and 200-foot sight distances, are acceptable."

In all cases mentioned, a street width of 50 feet with a 26-foot-paved roadway is advocated for local residential streets. The following table of design standards are those recommended by the Traffic Safety Manual. (See Figure 1.) Recommendations are in close conformity with those advocated by both the Community Builder's Council and the NAHB Land Planning Committee.

DESIGN OF LOCAL RESIDENTIAL STREETS

Speed: Based on maximum of 25 m.p.h. in accord with Uniform Vehicle Code recommendation. Recommendations will be reasonably satisfactory if some speeds exceed 25 m.p.h. a little.

	Single-family Units	Multi-family Units
Street Width:	50 feet	60 feet
Pavement Width:	26 feet	32 feet
Curbs:	Straight curb recommended	Same
<u>Sidewalks</u>		
Width:	4 feet minimum	Same
Set-Back:	3 feet minimum if no trees, 7 feet minimum with trees	Same
Horizontal Assignment:	200 feet minimum sight distance	Same
Vertical Alignment:	6-8 per cent max. grade desirable 3-4 per cent per 100 ft. max. rate of change	Same
Cul-de-sac	400-500 ft. max. length	Same
Turn-arounds	40 ft. min. curb radius without parking	Same
	50 ft. min. curb radius with parking	Same
Pavement Surface:	Non-skid with strength to carry traffic load	Same

FIGURE 1. Traffic Safety Manual design standards.

A way, which has been mentioned, of providing access to a residential area is with a cul-de-sac. This, essentially, is a dead-end street with sufficient space at the closed end for the turning of vehicles. (See Figure 2.) Homes located on culs-de-sac have numerous advantages. They are safer for children; they are quieter, and when properly designed, they provide for a more picturesque variation in the grouping of houses than do long, straight streets. For this reason, their use has been very popular with many planners and with theorists striving to design the ideal residential community.

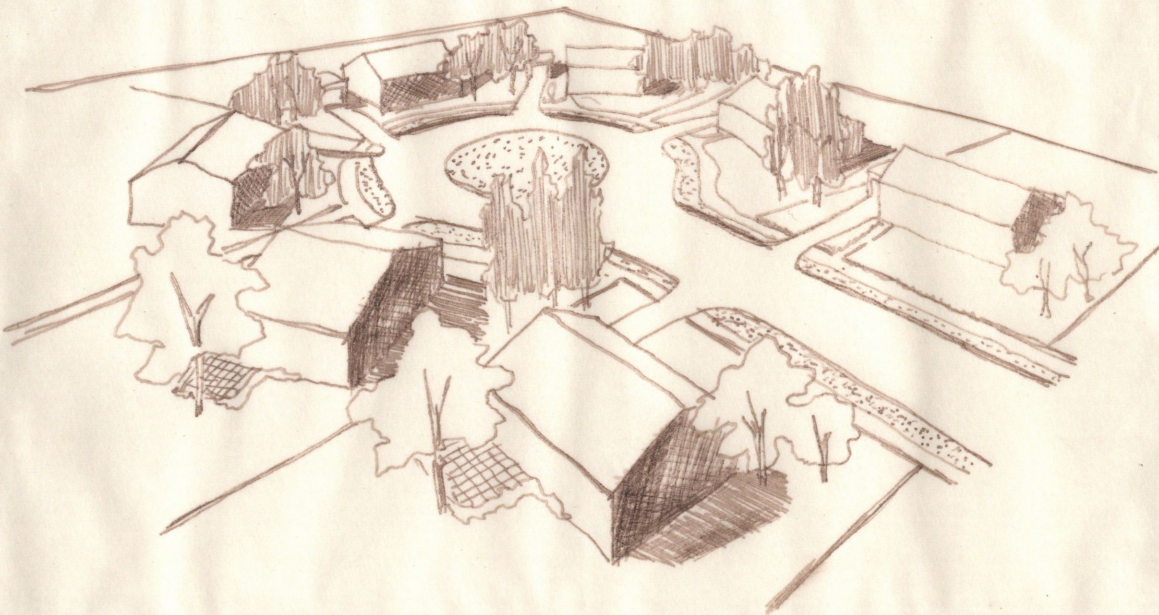


FIGURE 2. A typical cul-de-sac.

Culs-de-sac have practical disadvantages too, which have been often overlooked by the theoretical planner. Although homes on a well designed cul-de-sac can provide pleasant living, their use presents numerous problems to the highway and utility engineer and to those providing services such as fire protection, garbage and trash collection, mail, and other daily deliveries. But, in spite of the objections, the cul-de-sac is an excellent device for solving special topographic conditions and the platting of odd shaped parcels of property. A skillful planner can often secure many additional valuable building sites through its proper use. Figures 3 and 4 illustrate good planning techniques in the use of culs-de-sac in ridge and valley sites respectively.

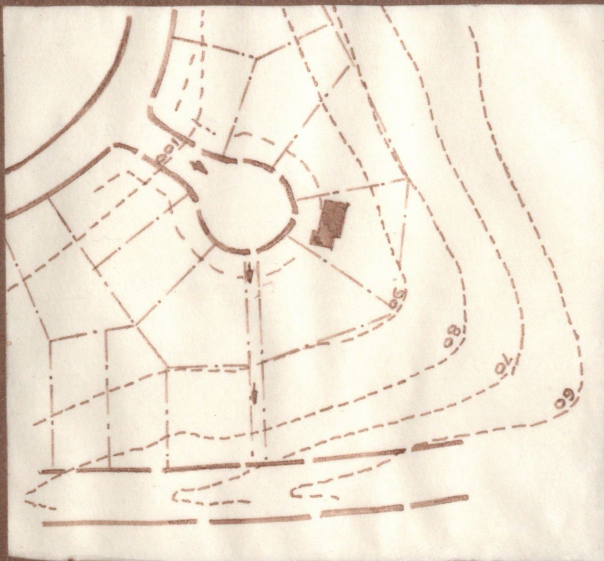


FIGURE 3. A ridge designed cul-de-sac.

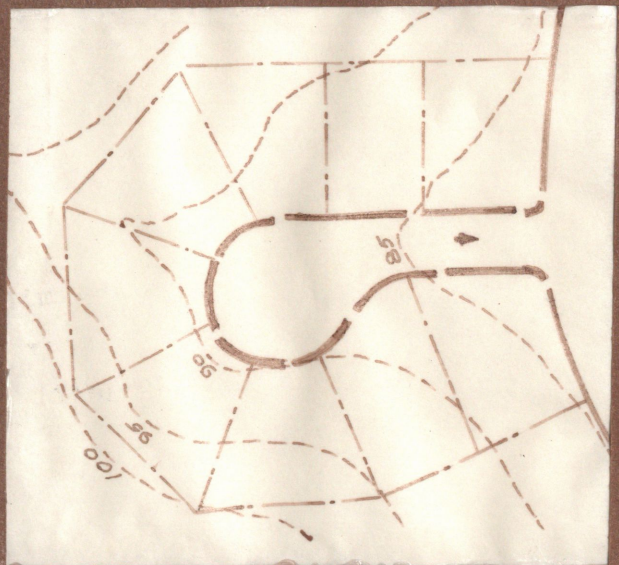


FIGURE 4. A valley designed cul-de-sac.

Land planners and highway engineers have devoted a great amount of study and experimentation to the dimensions of culs-de-sac. It is generally agreed that they should be kept less than 500 feet in length, and that the outer curb at the turn

should have a minimum radius of 45 feet. A 20-foot paving width permits a full turning radius at the inner curb of 25 feet which is necessary with the average car or truck.

Also, loop designed streets have been effective in providing a quiet and comfortable atmosphere for the residential owners.

(See Figure 5.)

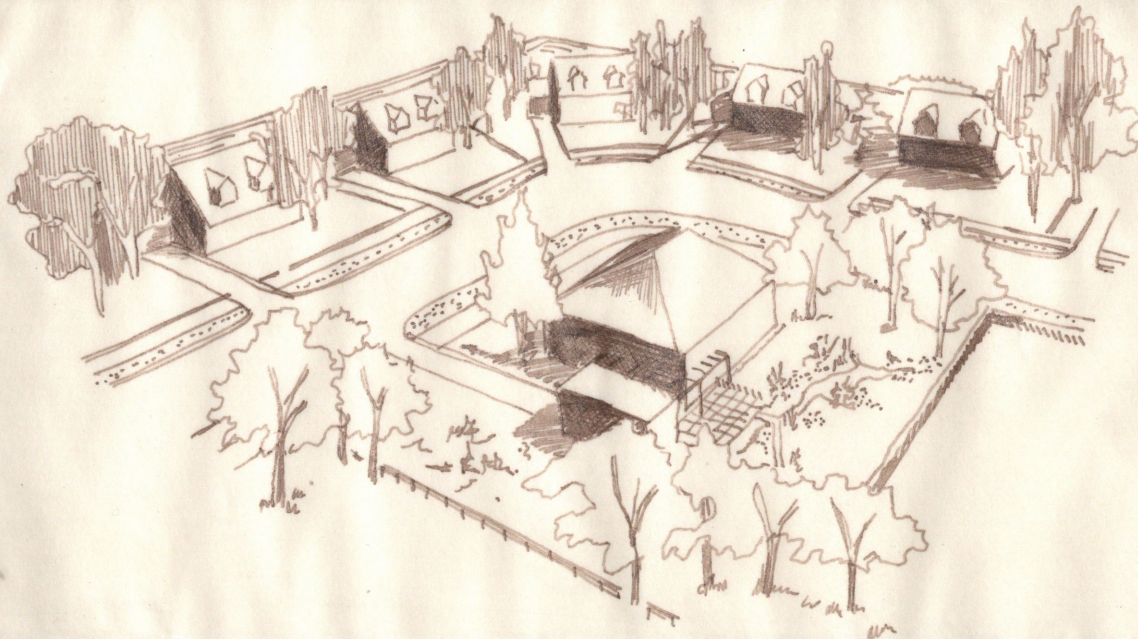


FIGURE 5. A typical loop.

ZONING

Urban disorder and overcrowding in the nineteenth and early twentieth centuries stimulated communities to initiate zoning in an attempt to protect the public health, safety, and welfare. Today all forms of civic development are governed by zoning regulations, industrial and commercial as well as residential. But my concern with housing problems centers primarily around the question of residential areas. Zoning is concerned primarily with the assurance of adequate space, light, air , and the protection of property values against undesirable or substandard developments. Most of the zoning legislation at best has been a negative thing. Consequently it has seldom been able to exert a positive or constructive influence to promote a well-designed community.

Rigidity in zoning legislation has restrained design invention. Overly strict zoning laws have been one of the factors responsible for the monotonous communities in which the fronts of all the houses are lined up exactly, block after block in the community. There has been an exaggerated attempt to alleviate this condition by introducing curved streets to replace the gridiron street pattern, and there is a good deal of merit in this approach to the problem. However, as in many other things, we have gone overboard in the introduction of curved streets to the point where it is almost impossible for one to find his way through the curved maze of a typical suburban subdivision. It is clear that excessive curvature in subdivision street plans is wasteful of space because fewer houses can be included in a parcel of land than could have been accommodated in a gridiron plan.

Recently, however, we have begun to observe tendencies toward

flexibility, on a limited scale, replacing some of the rigidity in zoning legislation. Insofar as residential areas are concerned, this flexibility has taken the form of the admission of some other activities or classifications of land use into residential zones, such things as parks, schools, shopping facilities, and the offices of professional practitioners: Doctors, dentists, lawyers, architects, engineers, accountants, and so on.

A second tendency toward the admission of a little more flexibility in residential zoning has made us somewhat more prone to mix residential types. There have been communities that allowed duplexes, for example, on corner lots in otherwise single-family areas, or in certain restricted parts of single-family areas.

Richard D. Cramer, assistant professor of housing, Department of Home Economics, College of Agriculture, University of California, proposed that the law should provide for compensatory setbacks, allowing a certain portion of a house to protrude into the front yard if in exchange a second portion stays well behind the setback line. Mr. Cramer says that by doing this at least the original total area of front yard, and perhaps more will be left. He stated further that if this same treatment could be extended to the back yard and to the side yards it would produce a more varied frontal effect in the street and, in terms of livability, would give the owner a better chance to develop the property to suit his needs and likes. Actually in many cases more light and space is achieved by allowing a slight infringement on the setback line at one point or another because the form that the house then can take provides for extra open space. Our laws do not take into consideration the fact that in one instance a very small or restricted element, even a point

of a building, protruding across a setback line with compensating setbacks, may well produce a greater sensation of light and space than the case in which the building in its whole length rests on the setback line entirely within the law.

In order to achieve a more flexible arrangement in tract development an upgrading in the education and experience of building inspectors or city engineer must be attained. These responsible persons should interpret the intent of the law rather than the dimensions of setbacks to the nearest inch.

It is quite likely that a well-designed subdivision, one designed by an experienced architect, can produce more light and air and spaciousness in an unrestricted or confined area than could be produced in a larger area abiding by the letter of the law. A whole subdivision plan should be developed, that is, the law should make it possible for such a plan to be developed by a planner, and then considered on its merits rather than on the basis of whether or not it complies with a restrictive law which probably is irrelevant to the particular situation at hand.

PART II. ARCHITECTURAL ASPECT

THE INDIVIDUAL HOUSE

During the Medieval period the house was built for the living needs of the people. But later the house of the rich became nothing more than a conglomeration of rooms. This was never more true than during the nineteenth century. Because of the industrial revolution some people became prosperous rapidly. They used their quickly gained wealth to purchase houses, not for their good architectural qualities, but rather on the basis of the number of rooms they had. The house became nothing more than a display case for the pompous, socially conscious owner.

The architect was concerned only with the esthetics and did not concern himself with any other problems. Unfortunately he could conceive no other beauty than that of the architecture of the past.

"The quality of simplicity, upon which comfort and convenience in the home are dependent, was lost for a century, whilst the plan was corseted into a shape dictated by a display exterior, without regard for equipment that had to be fitted in as an afterthought. The house was evolved from the outside inwards, and comprised an incoherent jumble of a large number of rooms, was wasteful of space and necessitated a large domestic staff to work it."¹

The house poses a complex problem of planning in that it requires the architect to co-ordinate a number of rooms of different size and with different functions into an inter-related whole. In order that a house may be successfully planned it must be planned for man as an individual.

1. Pickering, Ernest. Shelter for Living. New York: McGraw-Hill, 1945.

"Certain needs are common to all of us, and must form the basis for the preparation of any plan, Man may be regarded as a specific type of animal, and his dwelling and its parts arranged to suit his habits."¹

As was mentioned before, the choice of site is the key factor in determining the type of house to be built on the site. A good relationship should exist between the site and the design of the house. Three general rules have been set up:¹

1. A city street for formality.
2. A rolling area for informality.
3. A steep hillside for forceful massing.

Although these rules do not need to be rigidly adhered to they should at least be kept in mind when planning the location and design of the building on the site.

The house should be in harmony with its neighbors in that the design shouldn't be completely out of keeping with its neighbors. We must remember that all of us have certain responsibilities to our neighbors. Changing the contours on a site to the extent of placing the neighbor's lot under or above us can result in the destruction of the design elements of not only the house in question but the neighbors as well. The style of the house should be kept in mind also. For example; a cottage forced in between a group of Georgian mansions would destroy the design element of both the builder's and the neighbors' houses.

Unfortunately, real-estate persons have fixed a standard price setting method of charging for building sites by the linear street-frontage-foot. This has resulted in most of the inexpensive lots to be between forty and fifty feet across the front.

1. Ibid., p. 32.

This financial restriction has limited the style of tract houses to a few stereotyped designs. Even on the larger lots of a hundred feet, builders usually build with their longest side to the front of the lot. The usual procedure is for the builder to check the local building codes to find the minimum distance he can build from the edge of the property line, then place his foundation on the minimum lines. This resulted in crowded unimaginative neighborhoods.

The rectangular shape is the most universal lot shape. This is perhaps the most easy to plan for but often produces the most uninteresting results. A regular shaped lot usually requires a regular shaped building. An irregular shaped lot usually allows an informal house plan. Regular house plans often looked forced or completely unnatural when placed on an informal site.

The design of the house and the orientation of the house on the site depends on whether it is an inside or corner lot. In orienting a house the geographical location, climate, and the habits of the family should be considered. However, a number of arbitrary rules have been formulated over the past few years by the designers of tract houses. The preferable locations of the major rooms of a house are as follows:¹

Rooms	On the
Living room	South or East
Porch or terrace	South or East
Dining room	East or Southeast
Kitchen	East, Northeast, or North
Study	West
Major bedrooms	South
Minor bedrooms	West or East

1. Ibid., p.52.

As can be noted, western exposures are left to the least important rooms, or at least the rooms that may be used after the sun has gone down. However, it should be noted too that a dogmatic approach to these rules is a dangerous way of dealing with the problems. Each site and each occupant requires special considerations which may cause a deviation in the rules.

Probably the most popular lot is the level one. This is because the complications of planning a tract for a level site are not as great as for a sloping one. We shouldn't sell a sloping lot short, however, since very interesting designs can result from the use of the contours to aid in the building layout. Architects and builders should refrain from too much excavation and changing of the face of a site. Nature can be very flattering to a design if a compromise is met.

The builder may say, "All of this architectural talk is fine, but how much will it cost me?"

The original cost usually stands out to the prospective builder more than anything else. It is up to the architect and builder to go beyond the investigation of the original cost and into the other various financial considerations such as cost of maintenance and resale value. A balance should be made between the securities of the builder and the cost of the tract. The builder should seek advice from some financial expert before attempting to build a housing tract. However, this is almost inevitable today, as everyone that builds has to secure a loan from some financial agency. After a reasonable estimate of what the builder can afford he should consult an architect. Usually the builder expects more for less money as do all of us. However, the builder must be

educated to the fact that in order to have a well designed, pleasing tract he must be prepared to pay a little more for which he will be able to get more in return.

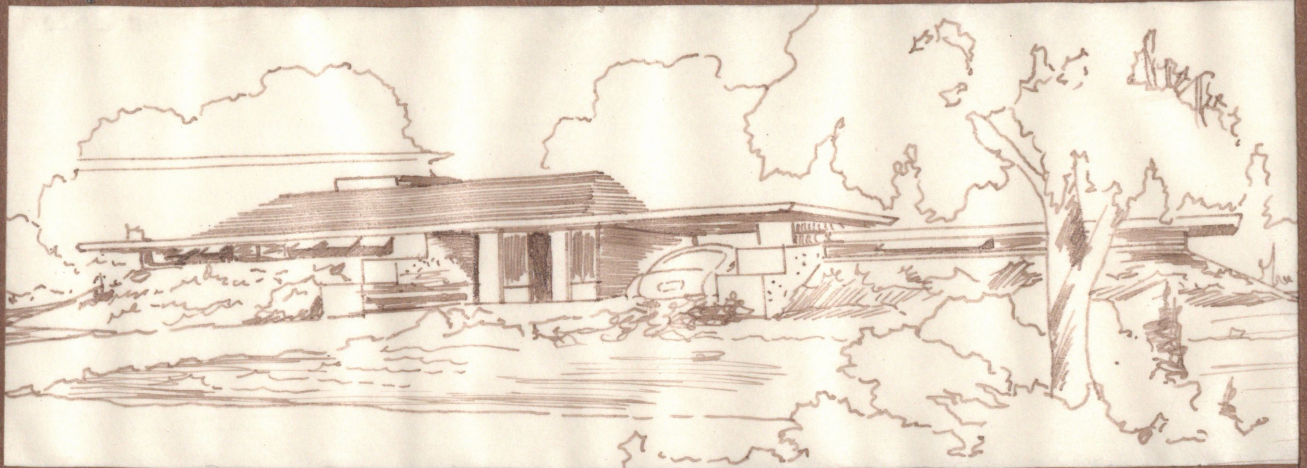


FIGURE 6. A tract house

The materials to be employed in the construction and finishing of houses must be determined by the test of suitability for the purpose, and the structural requirements of the dwellings in question. Every material has particular qualities limiting or defining its usefulness. Choice motivated by affectation or false ornamentation is not an intelligent approach to selection. Harmony of appearance throughout a group demands consistency in building materials selected for the individual units. Continuity in the treatment of walls and roofs contributes to the architectural unity of the whole, but the uncorrelated variation of building materials

produces pattern violations which mar a composition. Materials for use in one unit should therefore be considered in relation to those used in all members of the group.

Intelligent employment of color will add immeasurably to the architectural composition and general effect of a housing group. As carelessness in its use can cause color to destroy the strength and harmony of a group, the color of individuals houses should be determined by a comprehensive color scheme for the whole group. A color scheme should spring from the employment of refreshing contrasts between "cold" and "warm" colors, and should shun the restless confusion of garish hues, the result of competition of bright primary colors. In the past it has not been an uncommon practice to beat a strong color with a still stronger color which leads to an irregular and restless jumble of colors.

THE HOUSE ON THE LOT

The normal practice in the past, repeated in thousands of suburbs across the country is to divide the land area into uniform, more or less rectangular parcels of the smallest size and maximum number consistent with local zoning requirements and proposed selling price of the houses.

The arguments in favor of continuing to use this method have been reinforced by the steadily rising requirements for improvements such as storm drains, sewers, roads, street lighting, and sidewalks which are placed on the builder's shoulders by the local authorities. But, it becomes increasingly necessary to justify the higher cost to the owner by placing the house on the lot in a manner that will provide the maximum possible living amenities.

On the typical lot the usual zoning ordinances provide for set backs at front, rear, and sides which, on the small lot, reduces the buildable area by nearly fifty per cent, leaving a front yard which is useful for little but separation from the street, and side yards which are intended chiefly to provide light and air. Within the confines of this prescribed zone, thousands upon thousands of inward-oriented houses have been built, all too often surrounded by areas of weedy grass and spotty shrubs.

The aim of the designer should be to expand the areas of use within the house to the useful or at least, the unrestricted limits of the property. There is no reason why all the living areas of the house cannot extend to their outdoor counterparts in the site plan and this applies to areas where climatic conditions are not always considered suitable for outdoor living. Almost any climate can be alleviated and

controlled through proper design.

After years of placing houses squarely centered on their lots, where the living room picture window opens to a busy street, this accepted practice evolved to that of opening the main living areas to a rear yard. This provides a relatively large open area which served as the sole private land-use of the occupants. However, here the yard became a general area for all sorts of use: Children's play, outdoor entertainment, laundry, etc. - a place which the owner soon discovers to be too large for proper landscaping and maintenance, not only for his pocketbook but for the hours he can afford to spend on spare-time gardening.

Frederick E. Emmons proposed a simple fundamental design change which will greatly reduce the problem.¹ He suggested that the outdoor space should be divided into two areas, each intimate enough for logical development. One area, which may take the form of a patio, court, or atrium, can be provided as an extension of the living-dining rooms. This area can be landscaped and embellished by a variety of methods using paving and planting patterns, trees, pools, walls, etc., to form a pleasant environment on hot days or summer evenings. In the second area Emmons proposed a yard to be separated visually and insulated for sound by a wing of the house, which would become a play area where all the miscellaneous objects of games and hobbies may be strewn about with impunity.

The designer realizes, of course, that even with the use of

1. "The Relation of Outdoor Areas to the Tract House," F.E. Emmons, JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pages 117-119, January 1960.

considerable ingenuity the average tract lot allows a somewhat limited variety to the solution suggested, since outdoor areas in neighborhoods of high density are relatively useless unless visually screened.

The tract map shown on figure 7, shows a parcel of land, originally laid out in 70-footx100-foot lots, which was divided into an equal number of parcels under the "integrated lot" method suggested by Emmons. Here the outdoor areas around the house become useful in at least three, and in many cases four directions rather than two, while the square shapes of the lots themselves permits a more open and imaginative house design.

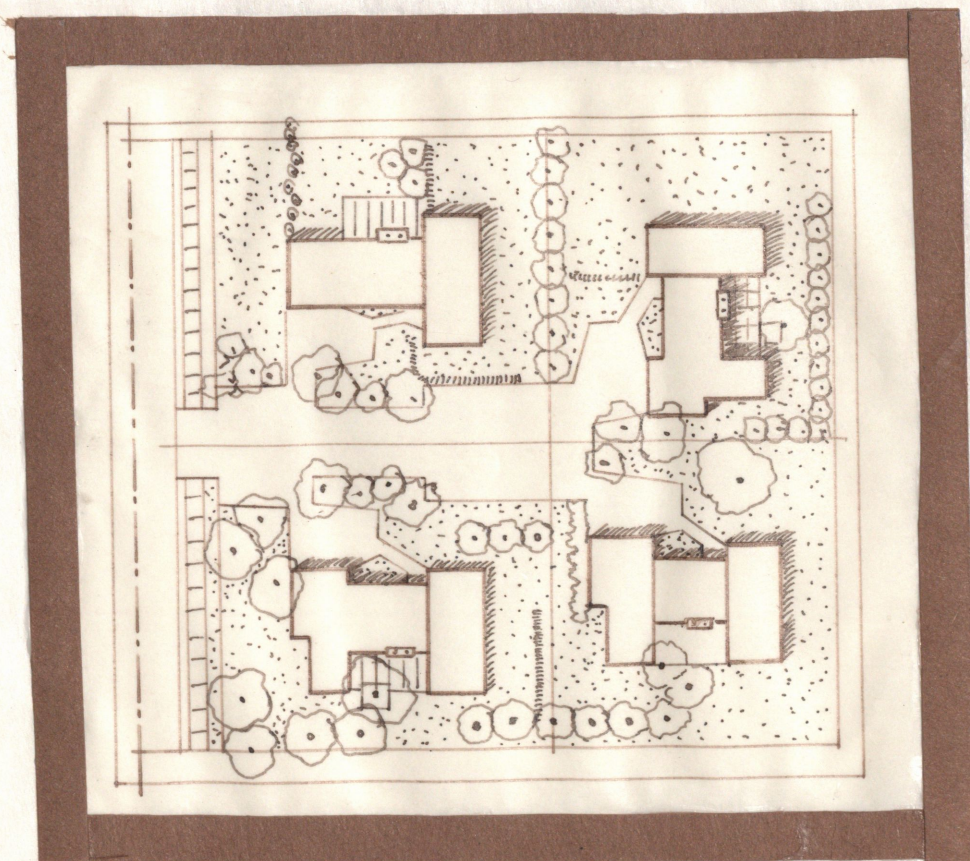


FIGURE 7. An integrated lot.

There are, of course, other approaches to the problem of obtaining the maximum value from increasingly expensive land. The indispensable ingredient in any truly satisfactory solution, however, is the capable and sensitive designer.

THE GROUP OF HOUSES

The overall impression created by a group of dwellings is more dependent upon the general massing and roof lines than upon details of individual buildings. Each dwelling should have architectural individuality, but at the same time should function as an integral part of the group. Emphasis ought to be on the appearance of the group rather on the unit.

L. Brett said, "The member dwelling is like the soldier in the platoon. His face is his own, but he wears the uniform and stands at attention, dressed by the right, facing front. So the house has its own face, but accepts the discipline of the larger group. This tension between community and individuality may fortify a strong character and ruin a weak one."¹

An atmosphere of beauty and neighborliness, which no doubt forms one of the main attractions of residential developments, can be achieved through the skilful design of dwellings as a single architectural composition. "A wellplanned group of houses derives its favorable effect from the interaction of all its constituents, including not only the dwellings, but also the spaces between them, and the landscape elements such as trees, lawns, and hedges."²

Internal consistency in the architecture of each group of houses is necessary because within a total tract development there can be many broad and obvious differentiations in the character of the various groups. The extent to which the

1. Kosta, Joseph V. Planning Residential Subdivisions.

Winnipeg, Man.: Hignell Printing Limited, 1954.

2. Brett, L. Houses. Penguin Books, (the things we see-No.2).
1947.

desired consistency of any group is achieved is largely predetermined by the plans for the houses comprising the group.

"Some repetition of type will produce the feeling of kinship in the individuals making up a community. The expression of individuality can be overdone...if the greatest care is taken in the design of a house or part of a house that is to be repeated, and if the arrangement of a number of similar houses is interesting and set up in a way that enhances, harmonizes, or contrasts well with natural surroundings, the result will call for a very high appreciation of esthetic values."¹

Some undersirable aspects of extreme variation in house plans have been explained as follows:

"The least unfortunate is a mere waste of effort and expense in producing a needless number of different plans all of an excellent sort, when two or three, with a few interchangeable variations, would accomplish the purpose. The second is the admission of confessedly inferior designs, of otherwise harmonious and acceptable sort, under the mistaken impression that the number of type designs must be increased. The third is the mingling of designs so different as to appear clashing and inharmonious. The introduction of such striking differences between the houses of any group, especially if the same striking difference is repeated several times, does not overcome the most serious aspect of monotony, namely, the suggestion of institutionalism. It rather emphasizes the repetitive character of the work by appearing to loudly

1. Kosta, Joseph V. Planning Residential Subdivisions.

Winnipeg, Man.: Hignell Printing Limited, 1954.

to deny it; whereas if the differences are not very striking, if there is no noticeable effort at differentiation, the fact that the modest and pleasant variations often repeat is not conspicuous."¹

Architecturally, house locations within the groups may be divided into key positions and subsidiary positions. The position which commands the most architectural consideration occurs at street intersections and corners, at any place which is a logical focal point for an area. Whereas, the houses of decreased architectural treatment are, of course, those whose locations are not exposed or emphasized in the general design.

In most tracts, houses within a group are normally built on fairly small lots. The outlook from almost any house is generally restricted by the other dwellings around it.

"But it may be possible, by grouping buildings, for them all to command a wider outlook and have a more general sense of space than could be obtained by scattering them; and it may easily be possible to reconcile those whose first idea would be to secure a detached house in its own plot of ground, to taking a house forming one of a group, if the grouping is so arranged that there is obviously a considerable gain in the matter of outlook."²

-
1. United States Department of Labor, Bureau of Industrial Housing and Transportation, "Report of the United States Housing Corporation" Volume II, Washington, D.C., 1919.
 2. Banfield, Edward C., Grodzins, Morton. Government and Housing in Metropolitan Areas. New York: McGraw-Hill Book Co., 1958.

The designer is, therefore, faced with a challenge to extend the outlook from as many houses as possible. His answer to this challenge may involve the use of one specific or a combination of several alternative schemes.

Order and harmony spring as naturally from curves as from straight lines, and within the restrictions imposed by the necessities of convenient access and communication may be developed an infinite number of combinations in which two street forms make joint contributions to the esthetic values of a project. In almost every instance the native qualities of the site whether featuring woods, rivers, or varying levels, will encourage a diversity of street lines designed to take advantage of existing characteristics, and to create refreshing changes in the many vistas comprised within the group.

To often we find, in tract planning, aimless meanderings of streets whose curves are arbitrarily plotted, irrespective of terrain conditions. In order to obtain both interest and enchantment in the natural curves and irregularities that arise out of the idiosyncracies of a site the street planning must be attuned to the area involved.

To overcome monotony and enhance the esthetic response which an appropriate vista may deserve some buildings could be set back to vary the dominant lines in the picture, creating forecourts, the attractiveness of which may be increased by the introduction of flowers and foliage. A uniform building line can be supplanted by a variety and appeal, particularly where there is no interesting terminal features to hold the view.

GENERIC GROUPINGS OF HOUSES

The common arrangement of a straight street in many residential districts, is to provide a seemingly endless street bordered on either side by nondescript dwellings situated on cramped, narrow lots. There is also a tendency to make the streets too wide for the traffic load. As a result, heavy traffic which is thereby encouraged to flood the residential area may flow through any straight street, using it as a short-cut. In such a situation the values of residential properties are adversely affected.

One of the unfortunate situations that has arisen through a lack of good design in tract development is depicted in figure 8. Two streets, both ordinarily carrying considerable traffic, meet forming a "T" junction. Back lanes running parallel to the leg of the "T" carry additional traffic so that each block is completely engulfed by traffic routes.

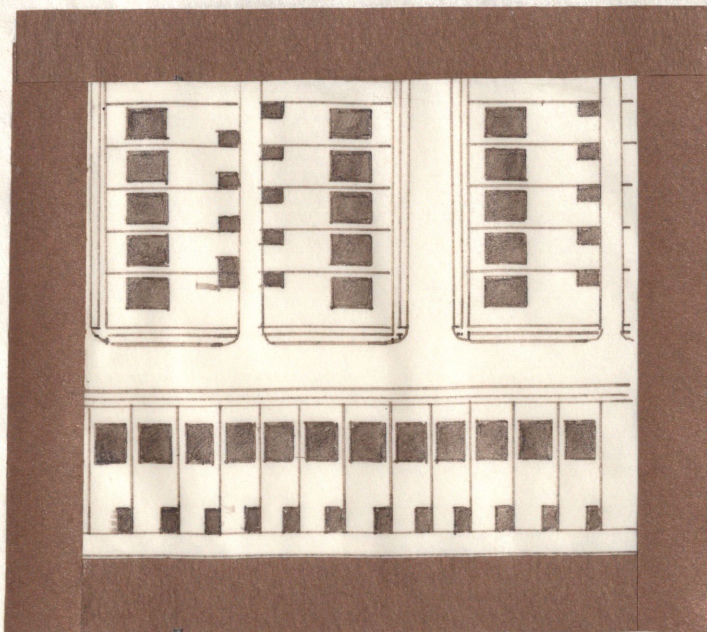


FIGURE 8. A poor "T" junction

The alignment of houses along the two streets shows no evidence of design. This condition exists with too many tract developments. The lots are too narrowly fronted, not allowing for adequate sideyards, although both lot dimensions and the distance between houses comply with the minimum requirements of authorized housing regulations. In tract developments of this kind, orientation of houses receives little, if any, attraction. The bleak appearance of the whole group is further burdened by the conspicuous absence of landscape elements which might camouflage, at least in part, some of its more obvious defects.

Probably the main curse in our bad street planning is the cross junctions in residential developments.

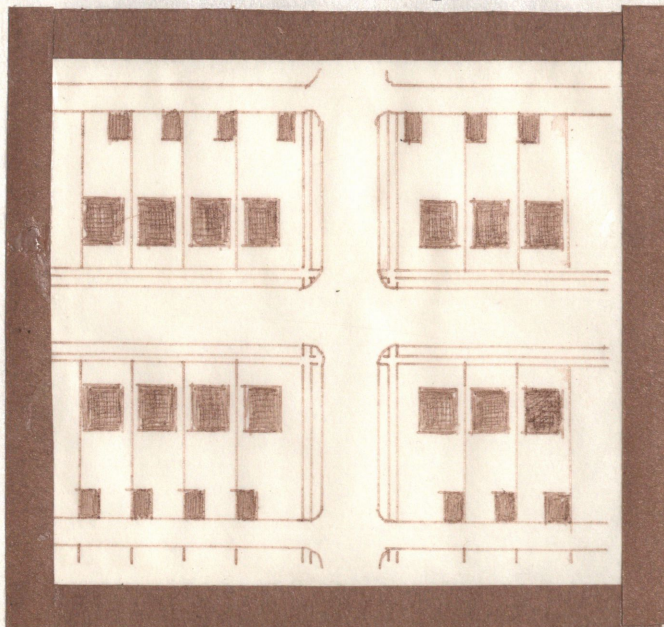


FIGURE 9. A poor subdivision of blocks.

The arrangement shown in figure 9 is, first of all, an example of poor subdivision of blocks. The same rigidly uniform subdivision pattern is imposed on each block. This practice leads to one unfortunate result, namely, open block ends with large gaps in the middle of the shorter

side of the blocks. One cannot expect to find either surprise or delight when moving along a street on which such gaps occur, for the impression is one of a still picture repeated endlessly. From one back lane to another, with the interiors of blocks exposed to public view, all is stifled in a mass of houses crowding each other oppressively. No relief is offered by intersecting streets, each being identifiable by sign posts only.

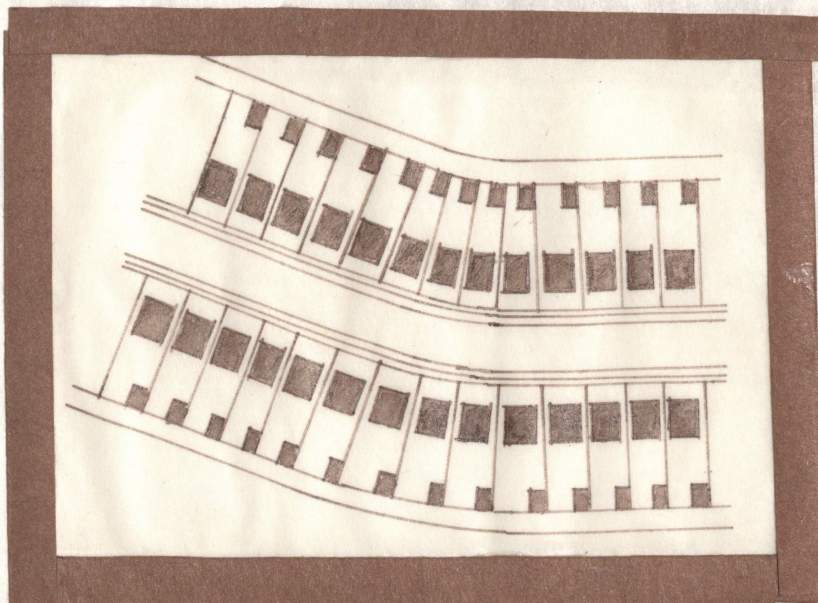


FIGURE 10. A poor use of curved street design.

Figure 10 illustrates a poor use of a curved street design: two straight sections of a street are connected by a short curved section. This arrangement, incorrectly called a curved street, obviously lacks the gracefulness of a long sweep which is one of the finest features of a properly planned curved street. The majority of houses are sited on the straight street, with only a limited number of houses being on the curve, the radius of which, unfortunately, is too small to permit satisfactory siting of houses. Furthermore, the building line forms an awkward reentrant angle at the bend of the street.

In tract development, one should find at least a few intimate groups of homes featuring a green space with houses arranged around it. An admirable cluster of mature trees, worthy of preservation, will suggest itself as an attractive focal point for a group of informal dwellings. Where trees are scarce, corners of a site may be so shaped as to lend themselves to the esthetic location of houses, the chief attraction being seclusion and privacy.

On prairie sites, incorporation of irregular house formations into tract developments compensates for the lack of unusual natural formations.

A view across a green provides an excellent outlook from the houses. This and other advantages to be gained from such designing are definite marketable assets, and are likely to offset increases prices of the houses.

PART III. PROFESSIONAL SERVICES

A COMMUNITY PLANNER

A community planner should prepare a comprehensive plan showing various land uses proposed, such as land for residences, for public buildings and for public and private open spaces including playgrounds; drainage areas including outfalls; the layout of major and minor streets including their widths and figures of elevation for salient points. He should also prepare a proposal for the general disposition of residential blocks and lots, including the location of houses. For certain parts of the layout it may be useful to work out alternate proposals in sketch form.

The community planner should prepare an estimate of the total amount of land suitable for residential development, land unsuitable for residential development, land for open spaces, and land for streets, including their total length. This estimate should be supplemented by a summary of the probable number, and composition, of families which could be accommodated in the project.

He should also prepare a final plan proposing the whole scheme including the layout of streets, the arrangement of blocks and lots, the position of houses and public buildings, and the layout of open spaces. He should make a plan showing cross sections of streets, including their widths, and the treatment of streets showing location and arrangement of planting strips, sidewalks, and street lights.

A CIVIL ENGINEER

A civil engineer should be responsible for a tentative plan showing the main distribution lines of water supply including the location of pumping stations, the main lines of the sewer system and storm drainage, the location of gas mains and the lines of electricity and telephone systems. In addition he should prepare an estimate of cost covering the following items: Clearing the ground and grading of streets lots and public spaces; roadways, sidewalks, curbs and gutters; planting of streets, lots and public open spaces including the preparation of soil; storm drains and inlets; sewage disposal and sewers, including house connections; water, gas and electric light supply including house connections; telephone cables. This estimate should provide a basis on which to calculate the cost of all aforementioned items per house in the project.

A civil engineer should also prepare a plan showing the existing grade, the proposed finished grades at all corners of any and all houses, and the proposed first floor grade of any and all houses in the project. Along with this plan should be a utility plan showing the sewers, water and drains, showing in detail the existing and proposed sewer lines, the water supply lines, the existing and proposed hydrants, gates and manholes, and the proposed drains and catch basins. The utilities plan of gas, electricity and telephone systems, showing the existing and proposed gas mains, the poles, the lights and the electric wires should also be included. He should be responsible for the survey of the afore mentioned items.

The civil engineer should also be responsible for submitting to the builder a set of specifications for sewage disposal, sewers, storm drains and inlets; water supply; gas supply; street and house lighting; roadways, walks, sidewalks, curbs and gutters; fire protection.

AN ARCHITECT AND HOMEBUILDER

The architect and homebuilder's responsibility toward their professions and the building industry is one of an ever-widening scope. The architect contributes a technical "know how" which, if used by the builder, will produce a better product for less money. He endeavors to incorporate in his designs a character reflecting his professional skill, worthy to be designated "architect-designed."

The architect brings to the project a combination of talents, for he has been schooled to be artist, engineer, and business man. He is capable of producing sound planning aimed at reduced costs with prime emphasis on good design.

Experience has shown that his influence is readily apparent in projects where the builder displays a cooperative attitude toward the architect's aims. The architect's success in this field is directly related to his knowledge of the science of home-building, for he must not only understand the project but be able to design with practical as well as esthetic considerations.

Frequent contacts with many builders enable the architect to observe homebuilding operations on a broad scale. He compares one with another, passing along to his clients, without betraying confidences, the best thinking of the industry. Builders value this kind of help because during their periods of production they have little time to devote to the study of the latest in techniques and materials.

The architect must keep in touch with the industry by attending meetings, by his work on the committees of technical societies, by his close association with all segments of

the homebuilding business. Such contacts benefit not only the builder, but they influence greatly the design of the houses, for it is in such meetings that the architect requires renewed stimulation.

During the architect's first formal conference an inspection of the site is made to analyze the problems peculiar to the area. This is important not only to ascertain the general character of the area, but also to ascertain the type and style of house design that would best conform to that particular locale.

The following are the services the architect agrees to perform as outlined by Herman H. York:¹

1. Conduct conferences with client in our office.
2. Prepare preliminary sketches.
3. Prepare working drawings. These include details required by government agencies, village building departments, etc.
4. Prepare short form FHA-type specifications which are used primarily for commitment application and mortgage purposes.
5. Obtain the building permits with fee paid by the client.
6. Furnish blueprints for construction purposes.

1. "The Young Architect's Role in Mass Housing," H.York, JOURNAL OF AMERICAN INSTITUTE OF ARCHITECTS, pages 16-17, January 1958.

Probably just as important as the foregoing services are those that the architect does not do:¹

1. We do not obtain the certificate of occupancy from the village building department. Should the builder not perform in accordance with village requirements the certificate may be difficult to obtain.

2. We do not make the actual submissions to the FHA and VA, although we are in close touch with these agencies.

The architect's fee structure is scaled as follows:²

1. We do not accept commissions for projects of less than 50 houses except where a former client is involved.

2. Assuming a medium size development to be 75 to 100 houses and that before completion four model houses will be required, the overall fee for 100 houses will approximate \$6,000.00 or about \$60.00 per house.

3. This based upon a fee of \$300.00 for working drawings and \$45.00 per unit for "repeat" use of the basic design.

1. Ibid., p. 17.

2. Ibid., p. 17.

CONCLUSION

For the architect, civil engineer, and community planner, the design of tract houses may have its frustrating moments because of the influences which stifle creative thinking; there is, nevertheless, a challenging aspect to this kind of work. Where building cost is a vital ingredient the restrictions upon design are magnified. In tract building such restrictions are multiplied not only by the cost of building but by many other factors, including out-dated building codes, unimaginative zoning ordinances, and an inborn reluctance on the part of the industry to accept change. But it must be remembered that with patience and leadership the architects, civil engineers, and community planners of this country can become the dominant force toward better-designed housing tracts.

It must also be remembered that each should contribute his fair share of professional service in a spirit of team work. Co-operation amongst members of the team will greatly facilitate integration of all essential phases and aspects of tract housing design.

BIBLIOGRAPHY

BIBLIOGRAPHY

PERIODICALS

1. "Architects Influence on Tract Houses", H. York,
JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pages
82-84, January 1960.
2. "New Towns for America," Carl Friss,
JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pages
85-89, January 1960.
3. "The Relation of Outdoor Areas to the Tract House," F.E.
Emmons, JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS,
pages 117-119, January 1960.
4. "Land Development, Survey, Land Speculation, Land Tax,"
HOUSE AND HOME, pages 97-143, August 1960.
5. "Knollcrest," HOUSE AND HOME, pages 135-143, September 1960.
6. "Subdivision Planning," R.A. Miller,
ARCHITECTURAL FORUM, pages 98-101, February 1959.
7. "Comparative Costs and Factors," Small Homes Council,
HOUSE AND HOME, pages 105-111, March 1958.
8. "Houston - Where 65 Competing Land Developers Make it
Much Easier for Builders,"
HOUSE AND HOME, pages 91-101, February 1958.
9. "New FHA Requirements,"
HOUSE AND HOME, pages 57-59, November 1958.

Bibliography (Cont'd)

10. "Prefabrication Trends,"
HOUSE AND HOME, pages 86-95, December 1958.
11. "The Young Architect's Role in Mass Housing," H. York,
JOURNAL OF AMERICAN INSTITUTE OF ARCHITECTS, pages 16-17,
January 1958.

BOOKS

1. Banfield, Edward C., Grodzins, Morton. Government and Housing in Metropolitan Areas. New York: McGraw-Hill Book Co., 1958.
2. Hallenbeck, Wilbur C. A merican Urban Communities. New York: Harper and Brothers Publishers, 1951.
3. Kosta, Joseph V. Planning Residential Subdivisions. Winnipeg, Man.: Hignell Printing Limited, 1954.
4. Martin, Preston. Real Estate Principles and Practices. New York: The Macmillan Co., 1959.
5. The National Association of Home Builders. Home Builders Manual For Land Development. Washington D.C., 1958.

APPENDIX

APPENDIX

The following are outlines of reference material for my theses on a criticism of tract housing:

- I. "Architect's Influence on Tract Houses", H. York,
JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pages
82-84, January 1960.

This article points out that since the end of World War II homebuilding has become one of this country's largest industries. Homebuilding has emerged from a craft to a complex business in these few short years. In the last few years the increased activity in housing research, by major manufacturers of materials usable in house building, is providing the architect with a vast amount of up-to-date information, enabling him to perform a more complete service to the builder.

2. "The Relation of Outdoor Areas to the Tract House, "F. E. Emmons
JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS, pages
117-119, January 1960.

Mr. Emmons outlines the problem of poor land use in tract development. He suggests a possible solution to better land use in a tract by providing a common drive for perhaps four to eight houses. This method of planning, Mr. Emmons says, will provide a number of advantages that add to the desirability of the houses in the tract. Briefly, these advantages are:

- I. No garage doors or carports face directly to the street.
2. Less public road, and more driveway is required per lot, and since the cost of driveway paving is far less, the scheme is economical in this respect.

3. The combined driveways become a paved court suitable for children's play.

4. At least half the houses are removed from the noises of street traffic.

3. "Land Development, Survey, Land Speculation, Land Tax,"
HOUSE AND HOME, pages 97-143, August 1960.

This article does an excellent job of studying the major problem in homebuilding - land costs. The article claims that since 1950 building material prices have climbed 24%; building trades wages have risen 60%; but land prices for homebuilding have soared anywhere from 100% to 3,760%. The article says that suburban land will sell for much less before it sells for much more.

Also, this article shows that there is not a shortage of land, but rather a tragic waste of land. It lists five reasons why there is a seeming shortage of land.

1. Speculation
2. Overzoning
3. Fragmentation
4. Misinformation

4. "Houston - Where 65 Competing Land Developers Make it Much Easier for Builders," HOUSE AND HOME, pages 91-101, February 1958.

This is a detailed article on how the land developers make it easier for the builders. Competition among land developers is the reason that the developers provide good planning at

relatively low land costs.

Four other ways that builders are helped out in Houston are:

1. The builders can buy just the amount of land they need for immediate operations.
 2. Builders can get mortgage money easily because both local and out-of-town mortgage men know that property values in the good subdivisions are not only protected, but tend to increase rapidly.
 3. The builders have good public relations because most Houston builders are doing a good job.
 4. A builder has real flexibility because he can buy a developed lot and begin construction immediately without having to buy land several months in advance and develop it himself before he can begin construction.
5. The National Association of Home Builders. Home Builders Manual For Land Development. Washington D. C., 1958.

This is a manual that presents general principles and criteria for good planning practice based upon practical experience and demonstration. Some of the subjects covered are: 1. Site considerations; 2. Development factors; 3. Utilities for subdivisions; 4. Streets and roads in subdivisions; 5. Lot planning for subdivisions; 6. Special site considerations; 7. Conservation practices in subdivision planning.

6. Hallenbeck, Wilbut C. American Urban Communities. New York: Harper and Brothers Publishers, 1951.

The chapter, "Problems in Housing", covers quite thoroughly the problems of obsolescence, speculative land values, and instability of residential areas. The chapter stated that the primary factor influencing personality is human environment, and the home is the major factor in human environment. Some of the problems of producing houses are outlined in this chapter. These problems are: High cost of distributing materials; union make-work rules; and obsolete building and zoning codes.

MONTANA STATE UNIVERSITY LIBRARIES
stks 720.6.M76Ed48 CA
A criticism of tract housing /



3 1762 00155102 5

~~NA 2540~~
~~720.6~~
~~M76~~
Ed48

~~LIB. USE ONLY~~

