THE ESSENTIALS IN THE DEVELOPMENT OF A GUIDE FOR
FINANCING, PLANNING AND CONSTRUCTING A
HOME

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FINANCING, PLANNING AND CONSTRUCTING A
HOME

THESIS

Presented to the Graduate Council of the
North Texas State College in Partial
Fulfillment of the Requirements

For the Degree of

Master of Science

by

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August, 1954
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CHAPTER I

INTRODUCTION

An individual will be able to buy or build a home more intelligently if he knows certain facts about site selection, home design and construction. Many people have not been able to get the information they need. The majority of books are too technical, too long, and many of them deal only with limited aspects of the problem.

One of the most important and expensive decisions an ordinary individual makes in a lifetime is to buy or build a home; therefore, it is important for one who builds or has a home built to know the proper procedure in buying or building. Sometimes a small home can cost above ten thousand dollars and generally the payments are spread over a period of fifteen to twenty-five years, that is, if financed by an insurance company under the F.H.A.; however, State Banks in Texas usually make loans on an eight to ten-year basis. It is important for the home owner to do his best to make every one hundred cents get a dollar's worth of value. It is a pleasure to plan a home, one should always keep in mind that the home will be one of the major
investments not only in money, but also in future living, satisfaction and happiness.

For most people the home stands for happiness, for it is the center in which the family spends most of its time. The home should be where individual enjoyment begins. To have a home and enjoy it, there should be a number of decisions that have to be made and these decisions may confuse the inexperienced builder because of the fact perhaps, that there are so many aspects which should be known by the individual about building. An unscrupulous builder may easily take advantage of lack of experience.

Some of the factors which may confront an inexperienced home builder are, for example: are the neighbors neighborly? If not, a lifetime is a long time to live by someone who is uncongenial. Another factor to remember when one is building is to know how to select an architect. Remember he is a trusted counselor, a designer, a businessman, he makes the home safe, prepares legal documents, is the inspector during building and protects the builder's interests. He should be registered, and his background should be studied, because his skill often saves more than his fee in eliminating "extras" in construction cost.

Towns with city ordinances have the authority to tell the builder the direction in which the house will face, the elevation of the curb, etc. As the cities grow larger, these
ordinances are enforced more rigidly; however, the cities which have a sensible building code are the ones protected more adequately from illegal building.

Construction and material are very important while building a home; however, if the individual selects a reliable architect he will be orientated on both the material and the construction of the home. In spite of this, the builder should be acquainted ahead of time with foundations, rafters, roofing, siding and other basic building structures.

When employing an architect one should have some idea of the kind of home desired. Many people have made the mistake of being unprepared and have gone to an architect and asked this or a similar question, "How much will it cost to build a two-story house with eight rooms"? The answer is simple; it may cost $8,000 or it may cost $80,000, depending on the financial condition of the individual. Many factors are involved in building a home and they should be taken into consideration before approaching the architect or builder. Be prepared; have some questions and plans on paper for your advisor.

In the United States every minute and a half of each day a home burns, and for the average individual home owner, it will be necessary to have insurance even while building. There are many things which may be done to prevent a fire in the future home from becoming a financial tragedy. It
will be necessary to have insurance with a reliable firm which has been in existence a number of years and built a reputation. Study the policy carefully and be sure to check the protection against hazards; know exactly what the policy covers and take special care to maintain the policy properly, and above all, check all the fine print carefully.

In introducing a guide on constructing, designing and financing a home, it would be undesirable to leave the builder without a reliable check-list. One of the best guides available to the home builder is that which was introduced by the Southwest Research Institution which reads as follows:

Quiz For Home Buyers.—Forty questions help prospective purchaser appraise a house, scoring everything from kitchen planning to outdoor planting.

For seven years the U. S. was so urgently in need of shelter that home buyers were willing to slap a payment on almost any structure that would keep out the rain. Now things are changed. During the last four years more houses have become available and house hunters are more wary, able now to look around and compare values.

Few buyers, however, have technical knowledge of building or know what to look for. The questionnaire below is devised to help buyers assess a house on the basis of things they can see and recognize. If a builder has made a conscientious effort to provide comfort at a fair price, he has probably not skimped on materials or construction that cannot be seen or judged by amateurs. Each question should be rated according to the points allotted it. Top score on this quiz would be 350. The questionnaire is a short version of the Home Buyer's Check List, prepared by the Southwest Research Institute which has spent five years working with architects and builders all over the country in an
effort to improve housing. The complete test with 171 questions sells in pamphlet form for 25c.

1. Are there big trees in the immediate neighborhood? Is there a park, brook, pond or other natural interesting feature? Top score: (17)

2. Do several of the streets curve? Are there short dead-end streets to minimize through traffic? (14)

3. On a street running east and west, has builder put the same window arrangement on houses on opposite sides of the street, ignoring difference in sunlight and breezes? If so score zero. (10)

4. Is the front of the house "dressed up" with fancier window styles than on the sides? Does it have scalloped valances, shutters that do not close, fences that do not fence? If so score zero. You'll get tired of these and wish the builder had spent the money more soundly. (13)

5. Are all large glass areas and doors protected by roof overhangs? They should be. (10)

6. Is there enough space for outdoor living and eating and is it reasonably private? (17)

7. How big is the lot? (Good: 75 ft. frontage or over. Poor: under 60 ft. or 6000 sq. ft.) (15)

8. Has the builder planted any trees other than "foundation planting" along front wall of house, and has he provided fences or trellises or hedges for privacy from the street and neighbors? (11)

9. What ventilation is provided between ceiling and roof? (If you see a continuous slot under the eaves, or louvers that fill most of the gable ends, score full value. If you see no slots or only a small louver, score zero.) (10)

10. Does the main entrance open directly into the living room? If so score zero; score top value if it opens into a full entrance hall. (6)

11. Is there a coat closet (it should be a minimum of 3½ x 2 ft.) near the entrance? (6)
12. Can you get to the bedrooms and bath from the entrance and also from the kitchen without going through living room or dining room? (9)

13. How many exposures has the living room? If only one, score zero. (At least two exposures are needed for good light and ventilation.) (4)

14. Is there storage space in the living area for books, records, card tables, fireplace wood? (5)

15. What is the total length of the kitchen base cabinets (include length of the under-sink cabinet and storage part of range in total)? (Over 11 ft. is good, under 8 ft. 6 in. is poor.) (8)

16. How long is the kitchen "work triangle," which goes from the center of sink to refrigerator to range and back again to sink? (A total length of under 12 ft. or over 20 ft. is poor.) (6)

17. Is there a counter at least 1½ ft. long on each side of the sink, and on at least one side of the range? There should also be one by the opening side of the refrigerator. (6)

18. Is there space for storing an ironing board? And is there enough room to set it up? (5)

19. Is the bathroom big enough? Are the fixtures in compartments so that more than one person can use it at a time? If there are more than the three standard fixtures, is the fourth an extra basin? Is there room for storage and hamper? (11)

20. Are the bedrooms large enough? (Remember that children have to study in theirs, parents may have to use theirs as a sitting room when older children take over the living room.) (8)

21. Are windows in children's room so high that they cannot see outdoors? If so score zero. (4)

22. Do bedroom clothes closets open full width? They should. How wide are they (minimum 36" per person, not per bedroom) and how deep (22-24" good, under 20" or over 26" is poor)? (15)
23. Are there conveniently located closets for linen and cleaning equipment and materials? (8)

24. Is there a convenient place to store trunks, boxes, furniture, skis, sleds, camping equipment, screens, storm sash, etc.? (These are often heavy and bulky, not easy to take up and down stairs. Basement storage is likely to be damp.) (6)

25. Is there a place accessible to the outdoors to store the lawnmower, other garden tools and garden furniture that is not waterproof? (6)

26. Can you go from garage or carport to house under cover when the weather is bad? (6)

27. Is there a place for making minor home repairs? (You need some place to work and a place to store the tools, paints, ladders, etc.) (5)

28. Is there a suitable place for children to play indoors? An outdoor play area where small children can be watched from the kitchen? (9)

29. Is there a place in the house where you can read or study without being disturbed? (6)

30. Do doors and windows open easily and close tightly? Is there metal weather stripping for protection on all outside doors? (4)

31. What size is the water heater? (Minimum 30 gal.; for a 3-bedroom, 1½ bath house, 40 gal.) (5)

32. Can you enter the house from any entrance and go through to any room without having to go back and turn off lights? For example is there a switch at each end of the bedroom hall? (3)

33. Is there good light on the kitchen counters so that you do not work in your own shadow? (4)

34. Who was the architect of the house? (Rate him by other work he has done. Has it been published? Has it won any prizes or awards?) (4)

35. What is the square-foot price of the house (sale price divided by floor area—not counting garage, porch, basement, etc.)? (10)
36. Does the builder give a warranty and if so, for how long a period? (If one year or more, score full value; if no warranty score zero.) (10)

37. Does the builder make good on defects? (Ask people who lived in his houses.) (12)

38. Has the heating been adequate in this builder's houses? (Ask people who have lived in one of his recently built houses for a year or more.) (6)

39. If there are basements in this builder's houses, are they dry? (Ask people who have lived in one of his recent houses for a year or more.) (6)

40. PENALTY: If there are only two wires bringing electricity from the power line to the house, deduct 15 points. There should be three. 1

Statement of the Problem

The purpose of this study is to develop a guide to inform individuals concerned with the building of a home, suggesting the proper procedures to follow in financing, planning and constructing. The study is also designed to help the potential home builder in the selection of various artisans and the purchasing of building materials, along with the basic structure of a home.

Limitations

This study is meant to be helpful to the individuals who have little knowledge of the construction business. The study is concerned with the average individuals who make an average salary of about three to five thousand dollars

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annually and want to build a home of average size in the price range of about six to eleven thousand dollars; however, the study can be used to some extent with some satisfaction by any individual, regardless of the annual salary and to any price range of home.

Source of Data

The data used in this study were obtained from recent studies in this field, periodicals, books, text-books, pamphlets, government documents, interviews, related studies and illustrated material sent out by companies advertising their products.

Definition of Terms

"Mortgage" refers to the transfer of property, upon condition, as security for payment of a debt, and becoming void on payment.

"Mechanics' lien" means a claim upon real estate to secure payment for work on labor performed.

"Principal" is a term used in connection with interest. Principal is the sum of money actually borrowed, and for use of this money, the borrower must pay the lender additional money as interest.

"Builder" in this study refers to the individual who builds or has a house built.

"Deed" is a legal document that gives the buyer and heirs possession of property.
"Amortizing" means to provide for the gradual extension of (a future obligation) in advance of maturity.

"Home" is the most essential, relatively stable central institution of face-to-face human relations, generally in an accustomed place, with dwelling house, equipment and surroundings presumably adapted to the needs of the family living in it. It is naturally and usually the place with the refreshing and encouraging social atmosphere, cooperative management and daily cultivation of the more intimate human interests and values, those of conjugal love, sex relations, birth and rearing of children, mutual human recognition and appreciation, economic sustenance, refuge from social perplexities and dangers, sleep, rest, health care, recreation, morale building, and general training in the social courtesies and amenities approved by the community.²

"House" refers to a permanent type of dependable construction, beyond a mere primitive shelter such as a hut or tent.

When an attorney inspects the title to see if there are any errors, this procedure is called "title search".

"Title guarantee" is an insurance with a guarantee company to protect the title.

Related Studies

The only closely related study that could be used for this study is the one written by Fritz D. Roberson in 1950. He wrote a Master's Thesis on the subject, "A Study of Building Materials and Processes and Their Influence on the Design and Construction of Contemporary Small Homes".

² Henry Pratt Fairchild, Dictionary of Sociology, p. 142.
Two other studies, closely related but not used in this study, are: Kenneth Whitten Mays, "The Evolution of the Window As a Functional Part of the Home with Special Reference to Architectural Design," and Neeley R. Vaughts, "The Evolution of the Cornice." These theses can be found in the North Texas Library, Denton, Texas.

Procedure

Many citizens who are interested in buying or building a home find it difficult to follow a procedure in selecting a method in preparation for buying or building a home. To acquire the above information the writer has made a study to select information from many authorities and has formed an opinion from these authorities which are given below.

The following guide will suggest the proper procedure. After introducing this study, the writer has given a check-list prepared by the Southwest Research Institution. The check-list is devised to help buyers assess a house on the basis of things that can be seen and recognized. To ascertain a method of obtaining sites, a chapter has been written on sites and ordinances. Another chapter was devoted to giving some reliable advice on the selection of the architect and contractor. After the buyer has some knowledge of sites and employees, he should elaborate on the financial aspects of buying or building a home. A chapter is used to
explain the different types of mortgages and methods of securing financial backing. The chapter following the financial aspects deals with plans, designs, selection of materials and types of structures. The final chapter includes the summary and conclusions.
CHAPTER II

SITES AND CITY ORDINANCES

If the land has not been purchased by the prospective home builder, there are a number of things which he should consider carefully in connection with the buying of a lot.

First of all one should consider the site. The builder, if possible, should buy the lot according to the size and shape of the house he plans to build, affording as much livable space as possible. A harmony between house and land is usually sought. An easy access to the outdoors and enjoyment of the scenery from indoors as much as possible is a very important consideration. When the weather permits, the average family likes eating, sleeping, sunning, and playing outdoors, so the traditional idea of a single "living room" is giving away to a desirable amount of living space indoors and out.

Large windows and the increasing orientation of important rooms toward the garden side of the plot are becoming more interesting to the builder. With large windows admitting sun, window boxes are brought in and made part of the room. Thus the living room becomes a solarium and the garden becomes part of the living room.
The builder is becoming aware of the advantages of generous lot sizes. The old idea of having a lot with a twenty-five foot frontage is becoming obsolete. In recent years the FHA recognizes that the plot for a detached house should have about a fifty foot frontage and as nearly as possible a hundred foot depth. In buying a lot one should not compromise on a pinched lot. Every effort should be made to obtain a spacious area for comfortable living. When building a home it may not be advisable to concentrate on a small lot. It may be wise to buy two lots, should the builder find the lots small but suitable. The cost of the extra lot will be well worth the expense.

Some good uses of the land site involve: well planned living areas to the sun and winds, and a compact grouping of the house, walls and driveway. The old traditional custom of placing the house in the center of the lot with living area and dining room facing the street is a wasteful use of land, and also leaves to chance whether the living room faces north, east, south, or west. If the builder wants to make the most of the lot, less attention is directed towards how imposing the house looks from the street, and more attention is placed on the suitability of the house, driveway and garage, and how well the main living areas take advantage of the free lot space.¹

¹Simons Breines and John P. Dean, The Book of Houses, pp. 59-60.
When buying property for a home site, it would be a great loss to the individual to have the property suddenly drop in value. The best insurance against such a decrease in value is adequate zoning regulation and good local government. (Zoning and city ordinances will be presented later in this chapter.) Living in a desirable neighborhood is also a good insurance against sudden decline of property value. One does not like to think of living in the midst of uncongenial people, whose dwellings are entirely out of keeping with one's own house and grounds.

Before buying the lot, check the style and condition of the houses, to see if all are in the same general style and price range, and if they are freshly painted. Well kept lawns add beauty and furnish evidence that the owners are interested in making and keeping their homes attractive. It will be of great advantage to talk to some of the people living in that area. In doing so the buyer will learn something of the type and class of neighbors he will have. In the course of conversation try to learn if the neighborhood is desirable; inquire about the places of interest, and if there is a congenial community spirit. Another very important consideration is are there serious nuisances, such as heavy traffic on the street at night, and if smoke and dust from factories are present. Do not forget the value of checking the local tax assessment valuation and tax
rate. It is very important to check into the convenience of a good local school, and the means of conveying the children to and from school. A lot situated at one end of town and the school at the other end may not be as desirable as one located nearer a school. It is important to investigate the type of shopping center and distance it is from the home. The church of the builder's denomination should also be near one's property. It is a great help to the owner to have parks and play grounds near the home, as this convenience will prevent the children from having to play in the streets and vacant lots. Protection for the home and property in the form of the police and fire department should not be overlooked. Street lights, trash removal and a fire hydrant will make the lot more pleasant and safer.

There may be some factors to consider concerning public utilities. Before buying, find out if the site is on a public or private street. If it is on a private street the city will not do the maintenance work. However, towns will usually assume responsibility when a certain number of homes have been built. If the city supplies the water, ask potential neighbors about the pressure, also determine how far from the house the main line is. The builder may have to pay for the pipe.
Since electricity is considered essential, it is necessary to check the power line as to its availability to the lot. The builder should determine whether or not there will be charges for pole and service wires to bring power to the lot.

Some sewer lines are large enough to handle the waste from plumbing fixtures and also the discharge from the roof. These sewer lines are called storm sewers. When installing the sewer the house should be higher than the sewer line and when the sewer line is on the same level with the house it may be wise to install a special valve to prevent filth from backing into the system. The builder should know where the sewer is, because it may cost more to run a line to the builder's property. The proper place to get information concerning the sewer system around the proposed property would be at the town's city hall. If there is no sewer line around the buyer's property he will have to install some private means of sewage disposal, such as a septic tank. If the buyer plans to live in a small town near the outskirts and plans to use a cesspool system, it would be well to check the city's ordinances, because some communities prohibit the use of cesspools. Even though cesspools are allowed they are not as satisfactory as the septic tank or a well-organized sewer system.
The builder will be interested in the topography of the ground, the condition of the soil, and drainage. Most individuals know that the least expensive plot on which to build is the flat type because it requires minimum grading and excavation. One would benefit by buying a site that is located on a slight rise in the ground because it would have an adequate view, good drainage, and good connections between the house and the main sewer line.

When the buyer checks the plot for the soil condition, he should find the best soil covered with about a foot of top soil and under it a base of gravel or clay. The land with less than six inches of top soil is not suitable for lawns and gardens. The builder should be careful in the selection of a plot of ground which has been filled in. Sometimes a real estate company buys land reasonably cheap. This plot may have been the old city dump at one time and the company filled in with gravel and soil. Sites of this nature should be checked carefully, because after the house has been built on this type of ground it may settle and cause the windows and doors to operate unsatisfactorily, also cracks are likely to appear in the walls.

There are several ways to check the soil. Many large trees indicate that the soil is natural. In contrast to this, there may becroppings of rock and this is a warning that perhaps most of the site is rocky. The surest way to
find out about the soil is to dig into it. Another factor worth considering is drainage. If a hard rain comes it would be to the advantage of the builder to go back after the rain and see how well the water drained.

The size of the plot can be taken out of the individual's hands by a zoning regulation that insists that each plot be of minimum size. The basic house with a breeze-way and garage can be built on a plot 50' x 75' but this will not leave room for lawns and gardens. Most individuals will want a home that has a certain degree of privacy. When homes are built too close together there will be little privacy for all concerned.

After a plot of ground has been chosen as satisfactory for the building of a home, it is time to start making arrangements for purchasing it. Some of the important steps to be taken are:

1. A contract or an agreement is drawn up and signed with the seller. The contract should cover the purchase price, the method of payment and the description of the property. Even though a payment may be required when this agreement is signed, it does not become binding until time has been allotted for a survey of the land and the title searched. The buyer will be satisfied that the seller does have the title to the land and the description of the property is correct.
2. It is to the buyer's advantage to have the title searched and the land surveyed, because often, flaws in the title present possibilities of later difficulties. It is important that the buyer have an attorney search the title; usually this is money well spent. While the title search is being made, the buyer should have the land surveyed and the corners of the plot should be marked with a permanent marker. Another good reason for a title search and survey is, the average bank or lending company will be inclined to refuse to lend money unless the title to the land is free and clear.

3. Many home owners go a step further than a title search and have the title guaranteed by a guaranty insurance concern. This guaranty is important, because sometime the deeds may leave the buyer at a loss if he is not careful about details.

4. The signing of the deed for the land is next. The deed is a legal document that gives the buyer and his heirs possession of the land. There are two types of deeds; one is a warranty and the other is a quitclaim deed. The warranty deed is the better of the two. This type of deed gives a description of the land and the price to be paid; it warrants enjoyment of the property by the buyer and the seller and his heirs will defend the title against any legal claims. A quitclaim deed does not promise anything, and the
seller passes on to the buyer a piece of land for better or for worse. If any claims come up against the property, the buyer will have to make them good. After all transactions have been made and signed, the deed will have to be recorded before it is complete. Getting legal possession of a piece of land is not as easy as it may seem. The buyer should not try to accomplish the whole process without help. He should consult with the bank, real estate agent, lawyer and get all the advice possible before he finally takes legal possession.²

City Ordinances.—Many cities and towns have from time to time passed laws called ordinances, which regulate building and prevent an owner from erecting on a lot any kind of structure which may suit the builder without regard to surrounding property. The purpose of a city ordinance is to guard against the possibility of an owner building an inferior or unsafe building in the center of others which are of higher standard.

While such laws are good, they may have the effect of preventing an owner from building on the property the type of building he must have. This may make the property valueless as far as he is concerned. For this reason it is important to know the city ordinances before a lot is purchased. Some ordinances state that only a certain percentage of the

²Hubbard Cobb, Your Dream House, pp. 11-21.
area of the lot can be covered by the building. The purpose of this law is to prevent the appearance of overcrowding. If the lot is small and the house is large, the law will interfere with the owner's plans.

Sometimes the law states that a certain number of foot space be left between the building and the boundary line on the lot. If the lot is a narrow one, there may not be enough space available for the building. Sometimes the ordinance may require that only fire-proof buildings be erected in a certain district, and this may add so much cost to the home the builder may not want to build in that particular area.

For one to gather information on city ordinances throughout the country would not only require a great deal of time, but also much unnecessary reading for the information sought. Even though city ordinances vary from one city to another, most of them have similar ideas. After an interview with the building and fire inspector of Denton, Texas and a visit to the city hall to read the city's ordinances, it may be necessary to quote some important city codes from Denton, Texas, that may help the builder before he buys land or starts to build. The codes are as follows:

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3 Eugene Cook, Interviewed in Denton, Texas, June 23, 1954 concerning experience as a Building Inspector.
CHAPTER 9, ARTICLE I
Section 614: Permit Required:  A. Before any person, firm, or corporation shall begin the construction, alteration, or major repair of any building, structure, wall, sign, platform, or any part thereof within the city of Denton, such person, firm, or corporation, shall obtain from the City Secretary a permit to do so.

B. Application for such permit shall be filed with the Fire Marshall and Building Inspector, and shall contain the name of the person, firm or corporation having such work done, together with the name of the contractor and architect, and shall further contain a complete set of plans and specifications for the proposed building, alteration, or repair.

C. Upon sufficient investigation, the Fire Marshall and Building Inspector shall either approve or reject the application, and if he approves same, the City Secretary shall issue such permit to carry on such construction.

D. Provided, however, that the City Secretary shall issue no permit without the approval of the Fire Marshal and Building Inspector, and that no permit to build, alter, or repair any building in violation of any ordinances of the city of Denton shall ever be issued.

E. Provided further, that no permit shall be issued to build, alter or repair in a district where such construction is restricted by deed, unless the work to be done shall comply with the restrictions set out in said deed.

Building permits may be more important than they actually seem to the average individual. A prospective builder may think it a great deal of trouble to get in a car and ride to the city hall and have a short conversation about a permit with the building inspector; he may think if the property belongs to one he can do as he pleases. That is a misapprehension and many individuals get into serious trouble over this misunderstanding. The most
appropriate and only logical procedure to take in this matter is to obey the laws of the town in which one resides. It would take only a short time to accomplish the task; on the other hand, it may save much time, money and worry.

CHAPTER 10, ARTICLE II. Zoning. Section 835.

Purpose. 1. The Zoning Regulations and Districts as herein established have in accordance with a comprehensive plan for the purpose of promoting the health, safety, morals, and general welfare of the City of Denton.

2. They have been designed to lessen the congestion in the streets; secure safety from fire, panic, and other danger; provide adequate light and air; prevent the overcrowding of land; avoid undue concentration of population; and to facilitate the adequate provisions of transportation, water, sewerage, schools, parks, and other public requirements.

3. They have been made with reasonable consideration, among other things, for the character of the district and for its peculiar suitability for particular uses, and with a view to conserving the value of building and encouraging the most appropriate use of land throughout the City of Denton, Texas.

Section 836. General:

1. Zoning Regulations and districts as herein set forth are approved and established.

2. The City of Denton is hereby divided into three classes of Use Districts, termed respectively: Dwelling Districts, Business Districts, and Manufacturing Districts. 5

There will be towns without building and zoning codes. Naturally, in towns without these codes the individual will have to be careful about the selection of a site. One must use good judgment or he may find the surroundings in which he lives, so undesirable he may be forced to move to

5Ibid., p. 281.
a different section of the town and possibly a great loss on the property which took a large proportion of a life's savings. On the contrary, a town that acknowledges a city code should benefit by it, as far as the citizens are concerned. If one builds in a section that is zoned for residential development only, there is hardly a chance that a factory, store, or gasoline filling station will be erected on a lot adjoining one's own property.

Section 827: Dwelling District: In a Dwelling District no building or premises shall be used, and no building shall be erected or structurally altered, which is arranged or designed to be used for other than one or more of the following uses:
1. One-family dwelling, two-family dwelling.
2. Church, school or college, library.
3. Private Club, excepting a Club as the chief activity of which is a service customarily carried on as a business.
4. Public park or play ground, golf course, public recreation building, public museum, community building, little theatre (operated as an educational institution and not for profit).
5. Telephone exchange providing no public business office and no repair or storage facilities are maintained, fire station.
6. Water supply reservoir, filter bed, tower, or artesian well.
7. Railroad right-of-way, not including railroad yards.
8. Farm, truck garden or nursery, providing no sales office is maintained.
9. Apartment house, hotel, boarding or lodging house.
10. Institution of an educational or philanthropic nature, other than a penal or correctional institution.
11. Accessory Building: Accessory buildings, including one private garage, when located no less than 60 feet back from the front line, not less than 20 feet back from any other street line, and 10 feet back from the rear lot line except that where the rear lot line is an alley, the garage may be not less than 10 feet from center line of said alley or when located in a compartment as an integral part of the main building.
12. (a) Uses Customarily Incident: Uses customarily incident to any of the above uses when located upon the same lot and not involving the conduct of a business, including customary home occupation engaged in by the occupants of the dwelling on the premises and including also the office of a professional person when situated in the same dwelling used by such professional person as his or her private dwelling. (b) Signs: No commercial or advertising signs shall be permitted as an accessory use except a name plate not exceeding one square foot in area containing the name and occupation of the resident, and except a sign not exceeding eight square feet in an area pertaining to the lease, hire, or sale of a building or premises.6

If a town does not have a city ordinance, a builder may find that in building an expensive house in a certain section of the town the value may depreciate from one year to the next. To give an exaggerated example: a beautiful house was built on the south side of a town. This particular town became prosperous the following year and buildings were erected in almost every direction. On the north side of this beautiful house a tavern was built, on the south side a church, on the east side a huge sign board, and on the west side a small factory with unpleasant odors. From the above exaggerated experience one may see the advantages of towns with a city code whose purpose is to protect the citizens. The average individual does not realize how important it is to have city codes until he or his friends have had an unpleasant experience with the house or property they own. Another advantage in having a city code is that the insurance rate is usually cheaper where

6Ibid., p. 282.
city codes are in existence. This advantage is not to be disregarded.

Section 841. Dwelling District: In a Dwelling district the following regulations for one and two family residences and Apartment Buildings hereafter erected, shall apply:

(1) Front Yard. (A) There shall be a front yard along each street line of the lot. The minimum depth of a front yard, except along the side line of a corner lot, shall be 25 feet. Provided that if 25 per cent of a block frontage is improved with buildings, the front yard shall extend to a line connecting the nearest corners of the front main wall of adjacent existing buildings unless such line is more than 40 feet back from the street line, but in no case shall the depth of such front yard be less than 10 feet.

(2) Rear Yard. There shall be a rear yard along the rear line of the lot. The minimum depth of such rear yard shall be 25 feet.

(3) Side Yard. (A) There shall be a side yard along each line of the lot other than a street line or a rear line. (B) The total amount of side yard space required shall be 15 feet provided that the minimum side yard required on any one side shall never be less than six feet.

(4) Lot width. The minimum average width of the lot be 50 feet for a one-family dwelling and 60 feet for a two-family dwelling or apartment.

(5) Lot area. The minimum area of the lot shall be 5000 square feet for a one family dwelling, and 7500 feet for a two-family dwelling or apartment.

(6) Height. The height limit shall be two and one-half stories for a dwelling and 35 feet for any other building, except that any such building or portion of a building may be erected higher than 35 feet provided that above such 35 foot limit such building or portion of a building is set back from all required yard lines one foot for each foot of its height above such limit.

(7) Fronting. (A) All building hereafter erected in a Dwelling District shall be built to face the front of the lot as shown on plat of record in the office of the County Clerk of Denton County, Texas, and none shall be built to face the rear or side line of the lot. (B) The purpose of this provision is to have a conformity in the frontage of all buildings and thereby to permit of uniform and easy service in
the rear by public utilities. (c). However, the Board of Adjustment may make special exceptions here-to where the public would be benefited by such exceptions.

8. Open space. For an apartment house not over four stories in height the required open space shall not be less than 50% of the lot area; for an apartment house over four stories in height there shall be at least one square foot of open space for each two square feet of the gross floor area of the building.

It is suggested that the builder talk to the building inspector before he starts looking for a lot. The inspector can be located at the City Hall. The builder will learn that in most medium-size cities the location of the house will depend on the city's ordinance. On new streets the house will have to be built twenty-five to forty feet from the property line, however, on an old street it may be found that the builder will have to conform with the houses already built. The builder will also learn that in the average-size city, the codes state that a builder shall have the wiring and plumbing inspected by a licensed inspector, also the house shall be inspected by the fire inspector and the building inspector. The Federal ordinances are checked by their own investigators, since the Federal Housing Administration has its own inspectors. 8


8 *Cook, op. cit.*, Interview.
CHAPTER III

SELECTION OF ARCHITECT AND CONTRACTOR

When an individual becomes a resident of a city and wishes to select a family doctor, one of the first procedures the individual performs is to inquire about the background and qualifications of several doctors, then selects the one who seems to be most desirable.

The selection of an architect should be on the same principle. The builder should inquire about several architects and check the qualifications and background of each, including his qualifications as well as his registration. Having a registered architect is important for it means that he has been to an architectural college and has graduated or has spent many years working as a draftsman in a licensed architect's office.¹

Also in the selection of a competent architect, one should review some of the past work and talk to some of the people with whom he has served. If these people speak favorably of the architect's ability, that is a good recommendation. The architect who is chosen should have the following minimum qualifications: he should be reliable;

¹H. Jones, Interviewed in Denton, Texas, June 29, 1954, concerning experience as an architect.
he should combine good sound design and a reasonable amount of beauty to the house, furnish working drawings and specifications for the houses he designs and should advise the use of good material and workmanship, use good judgment in the selection of contractors to bid on the jobs he undertakes and should supervise jobs in a fair and competent manner. The architect's suggestions should be made for the interest of the builder. The architect and the builder's requirements should be understood thoroughly and the architect should know what is beneficial to the builder and demand and protect it. The architect must be interested in the life of the present and future as it may be lived by his fellow men. The architect is not only a practical individual, but also a practical dreamer; he should learn to see much before it happens and should be able to think at least thirty to fifty years in the future.

An architect's salary is similar to that of a doctor or lawyer; he is paid according to his qualifications, he has nothing to sell except his services. He receives no fees, discounts, or commissions aside from the fee paid by the client. His business is similar to any other business. If he has an office in a large city and the overhead is high, the fee will be higher. The size of the fee will

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depend also on how large the job is. An architect who is nationally known may ask more pay for the work he performs than a younger one who has only a few years of experience. In building most houses the cost may range from 6 per cent of the total cost of the house to 12 per cent. For example, if a home costs $10,000 and the architect's fee is 12 per cent the fee for the architect is $1200.4

Under some conditions it is not well to contract for the complete services of an architect. It may be that the home-seeker wants to be his own contractor and build the house. It is still advisable to get a competent architect's advice concerning the house to be built. It is also advisable to let the architect check the plans and specifications for soundness of design, suitability of material and construction methods.5

Blueprints.--The plans for building a house may have several names, such as working drawings, blueprints, or simply plans. When an individual builds a house or has one built he has an architect draw a set of plans. These plans show everything that needs to be known about the construction of the house. They will show the location and size of windows and doors, height of walls, position of fireplace, location of interior partitions and other important facts.

4Catharine and Harold R. Sleeper, The House for You, p. 82.
5Morris, op. cit., p. 15.
needed in the construction of a house. The blueprints may be used for several purposes. For example, in financing the house, the loan agency may wish to see the plans. If the town has a city ordinance, the building inspector should want to see them; the contractor will use a set; the architect will keep a set; and, of course, in the construction of the house the plans may be used to such a large extent that new plans may be required to replace the old ones. In most communities a builder may have extra copies made by taking a set to a firm which specializes in that type of work.

Blueprints can be divided into four groups: the floor plans which show the room arrangement by showing the arrangement of the partitions. It is also used to show the location of the fireplace, windows, closets, doors, and other similar details. Another section of the blueprint shows the elevation, revealing the four sides of the finished house. They may be called south, east, north, and west elevations, or front, right, back, and left elevations. There is also a part of the blueprint named the section or sections which shows a certain part of the house or a cutaway revealing necessary construction detail for studs, joists, sills, rafters, plates, floor construction, etc. The last section of the working drawing is the detail. It is used when a
part of the construction is not clear in the floor plan, elevation, or the section.  

Bids.—After the builder has some knowledge in the selection of an architect and one has been selected, the next step is for the architect to confer with the builder and get ideas. He then helps choose a site which suits the future home builder if one has not been chosen. He makes sketches and gets the approval from the builder. The architect then draws the working drawings and specifications. He makes blueprints, which are copies of the working drawings and sends them with specifications to various contractors. When the contractors bid for the job, the lowest bidder, or the most suitable contractor gets the job.  

Specification.—The American Institute of Architects classes specifications as "one of the Contract Documents— one of the necessary constituent elements of the Contract." Since specifications comprise a legal document, they should be accurately and clearly written, free from errors and ambiguity. The Specification is a contract document whose primary function is to give consideration to the contractor and safeguard the interests of the owner.  

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6 Cobb, op. cit., pp. 61-3.
7 George Terrell, Interviewed in Denton, Texas, June 16, 1954, concerning experience as a contractor.
8 Goldwin Goldsmith, Architect’s Specifications, How to Read Them, p. 4.
Specifications must be mandatory, reasonable, simple, and complete because the instructions are for the builder, and are directions to make the information clear since they cannot be made on the drawings.

The specifications should contain all the information that is shown on the drawing and should meet the following fundamental requirements:

(a) To enable the estimator to calculate the cost of all material and labor required, and to do this quickly and accurately. The term "estimator" includes the general contractor, sub-contractors, manufacturers and material dealers, all of whom may need to "take off" the items of their work for estimate.

(b) To guide the builder's superintendent in directing the construction of the building avoiding errors and conflicts of opinion.

(c) To enable the architect, his supervisor, or superintendent to check the character and quality of materials and workmanship during erection and give him the authority of the written work in place of personal opinion.

(d) To furnish instructions for the fabrication of shop and mill work, including information as to samples, tests, and guarantees or warranties. 9

The specifications are written by the architect. He does not write for the owner's perusal, because they are too technical; however, the main purpose of the specifications are for the superintendent or supervisor, because most of the written material is delegated to the supervisor. 10

Contractor.—When the future home builder selects a qualified architect, he should have very little trouble

9 Ibid., p. 5. 10 Ibid.
getting a contractor, because it is one of the many duties accepted by the architect. On the other hand, the home builder may not intend to use an architect. In this case, the builder should be careful about the selection of any contractor. Even though the very best plans and specifications have been obtained, without a good reliable contractor the builder may have many difficulties. The surest procedure is to obtain a highly recommended contractor who has done exceptionally good work in the community in which the builder wishes to build. The quality, beauty, and workmanship of a house depend on the contractor who constructed it. It is recommended that the builder send out at least three sets of plans to highly recommended and qualified contractors who use only good material and workmanship and who are financially reliable and responsible. When the bids are returned, it is advisable to select the most suitable of the three. Names of qualified contractors may be obtained from banks, friends and acquaintances who have built good homes, and lumber mills because they are in constant contact with the better class contractors.

Usually the well qualified contractor will employ a sub-contractor. Most likely, the contractor will sub-let work only to responsible sub-contractors, nevertheless, it is advisable before accepting the bid submitted by the
contractor to ascertain the names of the sub-contractors and check the background of each.  

Most individuals do not realize that the contracting business has many hazards, but in spite of this, the contractors approach their work with much enthusiasm. A great majority of contractors who are concerned with home building are skilled craftsmen and derive sincere pleasure from doing work of good quality. Many contractors guard their reputation for good work at the expense of making additional profit, and many have suffered from criticism of dissatisfied home owners. An understanding of the contractor's problems will contribute to the appreciation of the duties he performs.

Most contractors have a small or large crew of specialized men to form the nucleus of the organization. With these specialized men, in order to construct homes, the contractor will have to invest a considerable sum of money in equipment which must be replaced from time to time. In addition to the overhead cost, he has the expense of bidding on many jobs that he does not get. It is also important that the contractor establish a good credit rating.

During the initial period of construction, the contractor should pay for the labor and materials either from his

11 Morris, op. cit., p. 15.
own bank account or from borrowed money. It should also be recognized that the contractor is using his own money to build the house until the home owner is able to pay. Of course this is a business transaction, but it should encourage the owner to be considerate.

If the contractor and the future home owner have signed an agreement to build a house for a fixed sum, the contractor runs a risk of increases in the cost of materials and labor during the life of the contract. Sometimes the weather may delay the work and cause extra expense. Other expenses may be involved, such as being unable to secure a sufficient number of workmen, workmen may leave for higher wages, delay in the delivery of materials, the sub-contractor may get a late start, or the power company may not be prompt in furnishing electricity for the power saw and the expense of cutting the material may be doubled. The contractor may have made an error in estimating the bid, but he still has to complete the contract. In addition to these costs, the owner may cause a legal expense of court action to settle a dispute.

For the best interest of the contractor and the builder, there should be a clear understanding and cooperation with each other, and they should hold scrupulously to the bargain. The future home owner has a better chance of success if he remembers that the contractor's agreement was
to furnish what was shown on the drawings and described in the specifications.

Owner-Builder.--Twenty-five years ago building a home without employing a qualified contractor was almost unheard of. It was so unusual for a man who was not a contractor to build a home, the town editor would publish an article about that particular builder and his family in the feature section of the Sunday newspaper. It is different today. Ninety thousand families since the end of World War II have moved into homes which were completed without employing a full-time contractor. The homes were built partly or entirely by the owner's own personnel. Today more young and elderly couples are getting weary from waiting for high costs to decline, and the outlook for building materials or building labor to drop in the immediate future is not likely. If there is no way to reduce the cost of building material without using inferior products, the solution may be obvious: the builder may cut down on the labor cost by doing the work himself.

In the construction of a house the owner may meditate on this thought: how much of the house can he build without the use of a contractor? Naturally, it will depend on how much skill he has with his hands and how well he can follow

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12 Kenneth B. Johnstone, Building or Buying a House, pp. 124-125.
directions. Some individuals may be able to build the whole house, including the foundation, plumbing, wiring, etc. On the other hand, he may need help with the foundation, the plumbing, or the wiring. Some builders will need a skilled man or at least help with the rafters. To go a step further, the builder may want a sub-contractor to lay the foundation. This would give the owner-builder a good start, for in some cases when the foundation is not laid correctly the whole house may be off center and cause trouble during the construction.

In most cities where a city ordinance is in effect, regardless of how much work can be done without help, an individual will have to comply with the city ordinances. The codes may insist that the electrical system be installed by a licensed electrician. In many cities the plumbing and heating is done on the same principle, so it may be wise to check the codes to see how much work can be done by an owner-builder.

The most appropriate time to start construction is in the spring, when the frost is out of the ground and the earth is sufficiently dry for the excavation work. By getting an early start and with luck, one may be able to move into the house by fall and do the interior finish at convenient times.

CHAPTER IV

FINANCIAL ASPECTS

The money problem is quite general with young married couples. Usually they live in an apartment or a small rented house, and when children come, they find it more difficult to live in an apartment house since most apartment owners do not like children to worry other tenants. Then too, the little house is too small and the idea of owning a home is born. Then the ways and means of financing the new home begins. Following are several ways of financing the home:

Mortgage.--Mortgages have been used from time immemorial to help facilitate borrowing money by landowners. A mortgage is a lien upon property through a voluntary act of the borrower to pay back the lender with or without interest the amount borrowed. Only a few years ago the mortgage was a dead pledge. The borrower conveyed a title of the property to the lender, and was given an agreement to the effect that if the debt were paid as contracted the conveyance would become void. On the contrary, if the debt were not paid on the date due, the pledge became dead and the

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lender kept the property regardless of its value in relationship to the debt.¹

Lenders may not be so crude today; however, the builder must know how much he can afford to spend on a home. At the present time this is one of the most perplexing problems in home building. Generally speaking, it is better sometimes to build a home that is too small than to build one too large. Most home owners want the new home to prove a source of happiness and contentment and there is no surer way of causing the dream-home to turn into a nightmare than to pay more for a home than the buyer can afford.

The question arises: How much should a family pay for a home? As a general rule a family should not pay more than two or two and one-half times the annual salary.²

For most individuals, twenty years is a long time to gamble, yet the majority of people who buy a home gamble on not getting sick, losing a job, or taking a cut in salary. The average person who buys a home signs a note promising to pay in twenty years, without missing a payment. However, after fifteen years of faithfully paying on the mortgage, the note is as vulnerable to foreclosure as the day the home was bought. To give the reader an example, in the depression decade before 1936, one million home

¹ Henry E. Hoagland, Real Estate Principles, p. 118.
owners in the United States lost homes. In contrast to this fact, most lending companies are sympathetic in cases where an owner has to postpone a payment. However, there are no sympathetic clauses in most contracts.

Some of the leading loan institutions believe if a person has paid regularly until the home is half paid for, the owner has earned the privilege to stop payment on the principal up to a year, that is, in case of an emergency. When the home is two-thirds paid for the home owner has earned another year. When the home is half paid for the lender can hardly lose; however, when the payments stop for these two years the owner shall not have to pay on the principal, but should pay the interest and the charge on an amortizing loan.

Federal Housing Administration Loans.--Federal Housing Administration came into existence as a result of the worldwide depression of the 1930's. Because of this unfortunate occurrence, lending institutions were reluctant to continue to invest funds because of serious losses they had taken during the depression. One of the primary purposes of this legislation was to encourage widespread home construction by private enterprise. In order to restore confidence in lenders, the government made provisions for a sound

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guarantee, which would assure repayments of money advanced on mortgages insured by the administrator.

If the potential home buyer can satisfactorily prove he is financially able to hold and maintain the property both physically and financially, he can (under certain conditions) borrow from a qualified lender as much as 90 percent of the appraised value of the property. The mortgage indenture must meet the following requirements:

1. Be contained in a form prescribed by the administrator.
2. Provide for monthly payments including both principal and interest.
3. Mature in 25 years or less.
4. Bear interest at a rate not exceeding 4½ percent per annum.
5. Provide for the payment of a premium for government insurance in monthly installments based upon 1⁄2 of 1 percent per annum of the outstanding principal balance secured by the mortgage. All of these payments together with one-twelfth of the annual taxes, water rates, special assessments, and fire insurance premiums must be deposited monthly with the lender in order that sufficient funds may be accumulated for the payment by the lender of these various items as and when they fall.

The borrower is required to complete forms of application, of financial statement, and of personal history. When the application is accepted on new construction the administrator issues a commitment that he will insure the loan; however, before the loan can be made, the administrator must

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5Ibid., p. 350.
also issue compliance reports certifying that the construction is up to standard.

When closing the loan the lender shall collect the charges for examination of title, drawing and recording papers, and advance payments for the government insurance premium, taxes, water rates, special assessments, and fire premiums, and pays the borrower the proceeds of the loan.

To summarize the FHA home mortgage financing plan, it may be said that it has accomplished:

1. The setting up of standards for home construction and neighborhoods.
2. More systematic inspection and appraisal of homes for mortgage lending purposes.
3. Elimination of high financing costs by standardizing fees and by eliminating second mortgages and recurring renewal fees.
4. Lower interest rates.
5. Gradual repayment of mortgages through amortization.
6. Greater protection to the lender through mutual mortgage insurance.

Many of the unsound mortgage practices that have burdened home ownership in the past has almost been eliminated by The National Housing Act which has become an important part of our home financing system and has given many individuals an opportunity to own a home of their own.

Taken from the Federal Housing Administration Plan of Home Ownership Booklet, is the following example of financing: A single-family owner occupied a home approved for

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6Ibid., p. 351. 7Ibid.
mortgage insurance before the beginning of construction and was appraised by FHA at more than $7,000. The down payment may be an amount equal to 5 per cent of the first $7,000 of value, plus 30 per cent of the remaining appraised value of the home. The maximum term is twenty-five years. A home appraised at $11,000 could be financed as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraised value of property</td>
<td>$11,000.00</td>
</tr>
<tr>
<td>5 per cent of first $7,000</td>
<td>350.00</td>
</tr>
<tr>
<td>30 per cent of balance</td>
<td>1,200.00</td>
</tr>
<tr>
<td>Total down payment</td>
<td>1,550.00</td>
</tr>
<tr>
<td>FHA-insured mortgage</td>
<td>9,450.00</td>
</tr>
<tr>
<td>Average monthly payment over life of twenty-five year loan</td>
<td>54.88</td>
</tr>
</tbody>
</table>

(Including principle, interest, and average mortgage insurance premium.)

One twelfth of the yearly taxes and hazard insurance is added to the monthly payment, but since taxes and hazard insurance rates vary with the locality they are not included in any of the examples given herein. Also not included in the examples given herein are: the initial costs of appraisal, title search, and insurance charges for preparing, recording, and notarizing deed and mortgage revenue stamps and other initial charges.  

To apply for an FHA insured mortgage loan, the prospective builder should make an application to an FHA approved lending institution in his locality. A list of these approved lending institutions may be obtained from his nearest FHA office.

8The Federal Housing Administration Plan of Home Ownership, pp. 4-5.
GI Loan.—This type of loan is available to World War II veterans only. It was established under the Serviceman’s Readjustment Act of 1944 to provide the veteran with means of obtaining a home, even though he may not have the actual funds with which to do so. The veteran should make it clear to the lender and to the Veterans Administration that he has the financial ability to repay the loan together with the carrying cost of property over the agreed term. The loan can be made for the whole cost of the property, provided such cost represents reasonable value. The purpose of the Servicemen’s Readjustment Act is one with which all reasonable individuals should be in accord, but very few lenders want to lend at their own risk 100 per cent of the value of real estate. From the standpoint of mortgage risk, it may be argued that this type of financing may result in some future loss to the lender, but the added risk is considered worthwhile in view of the worthy purpose accomplished.

In some respects the GI Loan has some characteristics of the FHA insured mortgage. Part of the loan is advanced by the lender and is guaranteed by the government through the Veterans Administration which guarantees up to $4,000 of the total mortgage, provided the amount of its guarantee does not exceed 50 per cent of the loan. In this case, the lender should advance at least half of the whole
loan at his risk. For example: if a veteran buys a home for $8,000 and borrows the whole sum, $4,000 would be loaned by the lender's risk. The additional $4,000 advanced by the lender would be guaranteed by the Veterans Administration. If, on the other hand, the veteran bought a house for $6,000, it would be necessary for the lender to advance at a risk of only $3,000 and obtain guarantee for the remaining $3,000. The rate of interest on the whole should not exceed 4½ per cent, and the time for repayment may not exceed twenty-five years.  

More than 3,000,000 veterans have purchased homes under the plan offered by the GI bill which came into effect June 27, 1947, for a period of ten years.

Ralph G. Campbell, who is president of the Home Builders Association of Fort Worth, Texas, said the home-buying veterans have compiled a remarkable repayment record. The Veterans Administration has had to pay claims to only one half of 1 per cent of all the GI home loans made. The actual losses to date amount to less than one tenth of 1 per cent.

Here are six steps for the serviceman to take in getting a GI loan:

1. Find a home that is desirable.
2. Find a lender, a bank, building and loan association, or any desirable qualified lender.

3. Present the plans of the house, and the original discharge or separation papers.

4. The property will be appraised by a Veterans Administration approved appraiser.

5. The certificate of reasonable value goes to the lender.

6. The loan will be made if the application is approved.

Ralph G. Campbell also reminds the veterans that there are three more years remaining for the veteran to finance the house through this bill.  

Conventional Loan.—A conventional loan is the type of mortgage used mostly by banks. It is similar to the FHA loan with these exceptions: it is not guaranteed by the government, usually the interest rates are higher, and the notes are not extended for a long length of time. Most banks want their money back within seven years; however, they make exceptions to seven years and six months and can make loans to ten years. Most banks will lend up to 80 per cent, that is, on a ten thousand dollar appraisal value they may lend six thousand dollars with a 6 per cent interest.  

10 Fort Worth Star Telegram, June 20, 1954, p. 19.

In buying a home it may be interesting to note the variety of incidental items related to the closing of a conventional loan. Below is listed a typical closing cost for a $6,000 conventional loan in Jacksonville, Florida, in 1950.

**Usual costs:**

- Title insurance: $85.00
- Mortgage service charge: $60.00
- Hazard insurance (13 months): $73.89
- Property survey: $15.00
- Closing fee: $25.00
- Intangible tax on mortgage: $12.00
- Stamps on note: $6.00
- Credit report: $2.00
- Prepaid interest: $15.00
- Taxes (property): $10.50
- Recording fee (mortgage): $2.80
- Recording fee (deed): $1.70

**Total**: $308.89

**Possible additional payments:**

- Appraisal report: $15.00
- Equipment inspection report: $5.00
- Recording fee (assignment): $1.60
- Recording fee (satisfaction): $1.60
- Brokerage: $60.00
- Construction-loan cost: $90.00
- Builders' risk insurance: $6.00
- Water-tap deposit: $38.89

It should be noted that the closing of a loan presents a convenient method to clear the miscellaneous costs incurred in connection with making it, and to get the loan started properly on the longer road of scheduled regular payment.

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Cash Transaction.--There is very little material to write on a cash transaction with the exception that it is the easiest procedure to use in buying a home. Some builders have saved in the form of savings accounts, war bonds, etc., to pay for all the required materials, as well as for any experienced labor that may be necessary. This is the perfect set-up for when the house is finished, it belongs to the individual and there are no mortgage payments to worry about in the future.

Insurance.--Sometimes because of errors in purchasing or maintaining insurance, the home owner may suffer greater financial losses than are necessary. The writer stated in the introduction of this study that a home starts burning in the United States every minute and a half. This may mean that a fire will strike 300,000 homes this year. There are many things that can be done to prevent a fire from becoming a financial tragedy.

A study was made of 427 claims paid by one company last summer for fire losses on dwellings in a midwestern state. The results showed that one out of four home owners had only enough insurance to cover half the value of the home. If the home is not new, be sure to check its present value.

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A Brooklyn banker recently stated: "If your house cost $10,000 to build in 1941, it would cost over $20,000 to replace it today."  

Most standard fire insurance covers property against damage caused from fire, smoke caused by fire, lightning, and means used in fighting the fire. The buyer can also get the "extended coverage," which will give protection against explosion, riot, aircraft, vehicles, windstorms, and hail. In some states a home owner can go a step further and get "additional extended coverage" against vandalism, glass breakage, ice, snow, freezing, falling of trees, and bursting pipes.

Until a few years ago all insurance was written on the basis that if the home is damaged by a peril not named in the contract, the company will not pay the damages. In 1950 a new clause was introduced stating that the home is insured against everything except the things named, such as war, termites, and deterioration. This new type of insurance can be had in thirty-seven states for an additional cost of ten cents on each one hundred dollars.

When insurance is bought, the owner should know what it covers. Many home owners have failed to recover sums to
which they were entitled because of their lack of knowledge of losses which the insurance covered.

An inventory of the household furnishings and personal property is valuable if one has a fire. All individuals can get a room-by-room form to make an inventory. Some prefer taking the inventory with a camera, photographing each room, then placing the pictures in a safe deposit box.

A policy holder can pay the premiums on a three-year or five-year basis rather than annually. By using the five-year basis, one can get five years of insurance for the price of four years, or three years for the price of two and one-half. The property should be specifically described and its ownership correctly stated. A policy may be in the husband's name which might cause difficulty if the property is in the wife's name.

Care should be exercised in selecting an insurance agent. Many home owners have lost money by dealing with a careless agent. A good agent will see that the proper insurance is taken and will also help a home owner get the right settlement after a loss. The bank, a lawyer, or perhaps the employer of the home owner, can help in the selection of an alert broker or agent.  

15 Ibid.
CHAPTER V

PLANNING, SELECTION OF MATERIAL, AND ESSENTIALS

IN THE DIVISION OF CONSTRUCTION

After the financial problem is settled or a means has been found with which to build a home, the next problem is the planning of the building. Since the beginning of time man has been trying to do things better so that life will be more enjoyable. He is forever trying to improve the surroundings in which he lives. An important step toward this improvement is to build a home. The word "home" itself has a tremendous amount of sentiment attached to it, since the home and family life constitute the center around which our civilization revolves. Since the home is one of the most expensive investments an individual makes in a lifetime he should be careful in planning to make every dollar count. To make each and every dollar a well spent one, he should be careful as to his plan.

Planning.--An individual may wonder how he will tackle the job of planning after he once decides to build a home. In the first place, everyone is not an architect; however, one should become familiar with certain fundamentals of
architecture which are necessary for the success of a home building venture. In starting this long but exciting task, one needs something with which to start. A home builder may start with planning on how he wants to live. To do this he may start with looking at some of the homes owned by friends. He may talk to friends about house problems, asking questions such as, do the friends fit the home in which they live? By observing mistakes made by friends with unnecessary expenditures incurred, as well as successful solutions, one may profit. Many times when the family goes for a ride or visits the zoo on Sundays or holidays, a trip could be planned to some new section of the city. As the prospective builder examines different houses he will be surprised at the critical taste he develops and after a few of these visits he forms a basis for good judgment in houses. After looking over many houses he will find it an easy task to go through the current house-building magazines such as House Beautiful, House and Gardens, The American Home, Better Homes and Gardens, Household, House and Home, American Builders, and many other magazines of the same nature. Most of these magazines describe the home in good taste and are valuable in planning. The home builder may go a step further and use books which are good instruments for planning a home.\footnote{Catharine and Harold R. Sleeper, op. cit., pp. 68-69.}
Many books are available which show good designs and plans. The following list may help to avoid the poor books:

**Planning Your Home Wisely.** Royal Barry Wills, Franklin Watts, Inc.

**Better Houses for Budgeteers.** Royal Barry Wills, Architectural Book Publishing Co.

**The Small Home of Tomorrow.** Paul R. Williams, Murry and Gee, Inc., Hollywood.


**House of the Month Book of Small Houses.** Edited by Harold E. Group. Garden City Publishing Co., Inc.

**Houses for Homemakers.** Royal Barry Wills, Franklin Watts, Inc.

**Small Home Annual.** Home Builders Research Institute, Inc.

**Your Own House.** Helen Koues, Tudor Publishing Co., Inc.

**Homes.** Editors of Progressive Architecture. Reinhold Publishing Corp.

(Magazines like Better Homes and Gardens and *Family Circle* sell house plans and specifications.)

Below is also a list of books which contains more than plans and pictures; this material may prove helpful for those who wish to go further into planning:

**Architectural Graphic Standards.** Details of all phases of construction and data from size of piano to size of stepping stones.

**How to Buy or Build Your Home Wisely.** Roland K. Abercrombie. Financial cost and legal fees. The Macmillan Co.

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Ibid., p. 69.
Planning to Build. Thomas H. Creighton, Doubleday, Doran Co. For the sophisticated.


How to Plan the Home You Want. G. Everett Wilson, David McKay Co. Some good ideas at a small cost.


Mr. Blandings Builds His Dream House. Eric Hodgins, Simon and Schuster. All possible mistakes pointed up with humor. If you are timid, skip it.

If You're Thinking of Building. Brown Rolston, Charles Scribner's Sons. Interesting reading.

Your Planned Home. Home Planners, Inc., General Motors Building, Detroit 2, Michigan. Scale models to cut out and assemble.

In large cities, bookstores, libraries, or magazine stands may have interesting material with which to work. To inquire about magazines at these places, the home builder should ask for the Architectural Record, the Architectural Form, and Progressive Architecture. More information can be secured with very little cost from the Superintendent of Documents, Washington 6, D. C. Some material that may be obtained includes the following:


Ibid., p. 70.

Some companies distribute free booklets for their publicity value: The High Cost of Cheap Construction. Published by Weyerhaeuser Sales Company of St. Paul, Minnesota.

Another experience in planning a home is to visit model houses that are open for inspection. Talk to the salesman, because it will give a potential home builder a good opportunity to test one's knowledge of houses. Many individuals use a scrap book, taking clippings from papers, magazines, and pamphlets. Other home-planners like to draw and when they have an opportunity to sketch a plan, they do so.

This question might be asked: Why should one have to know about planning a house if an architect is used? Of course, if the home owner does not want his own taste, personality, and mode of life in a house, it would be a waste of money to employ an architect. It would be easier to buy a ready-made house.

When an individual plans a house it is an advantage to go to the architect with scrapbook, sketches, and ideas well matured. It may be that only a few of the builder's ideas are incorporated, but they will be the builder's ideas molded by the architect into a home of which the owner will be proud.

4 Ibid. 5 Ibid., pp. 71-76.
Living Room.—Only a few years ago the living room was called the parlor and was reserved for weddings, funerals, and receiving special guests. Today the living room is what its name implies—it is a place in which the family can live at ease and receive guests. Since the living room is used both formally and informally, it should be made as attractive, comfortable, and homelike as possible.

In planning the living room the builder should plan for adequate lighting, space, ventilation in the summer, and warmth in the winter. Ample daylight in the living room is important. A dimly lighted living room makes occupants feel depressed and the room may have a gloomy atmosphere, whereas a sunny cheerful room tends to make the occupants happier and more comfortable.

To get this cheerful effect it will depend on the manner in which the room is designed. The size, shape, and position play an important part. Nowadays, it is not essential to have the living room face the street in spite of the fact that only a few years ago it was considered odd to have the room face any other direction.

Windows have many outstanding features in designing the house, for they not only keep the house cool in the summer, but also keep out the cold winter winds. At the same time they add beauty to the appearance of the house.
The builder should keep in mind that it is well to distribute windows in two or more walls if possible.

When planning the living room, one should take special care not to make it square because this arrangement gives relatively little wall space. A rectangular living room may accommodate the arrangement of furniture, especially if the dining area is at one end of the room.

The builder must be careful when designing the living room and plan the wiring arrangement well, for if he is not careful he may find that lamps and the radio will have to be placed where the wall plugs are located and not in the desired location. It is much easier and less expensive to put wall plugs in when the house is being constructed.

The heating system should be given a considerable amount of attention in the living room, as the family will want to sit in comfort. After all, this should be the most comfortable room in the house. If possible, the builder should avoid skimping and cheating in one's plans and designs. He should make this room as nearly perfect as possible.\(^6\)

Bedrooms.--Much consideration should be given to the planning of the bedrooms, since it is here that sleep and rest take place; therefore, much planning should be given to the location. There are many psychological factors that

govern sleep. An individual may find it necessary to place the sleeping area in a location where the family will not be easily disturbed by street lights, car lights, or light reflection. Skillful planning will eliminate disturbing sounds within the bedroom. Properly placed closets will do much in preventing transmission of noises from one room to another. It may be found that soft surfaced floors, such as cork, rubber, or linoleum will do much to lessen the noise in the children's room. For comfort, it may be an advantage and should not be too expensive to have a window air conditioner in the bedroom. This should help prevent outside noises and disturbing lights, since it will be found necessary to keep the windows down and if preferred, the blinds drawn.

In planning the sleeping area, wall space is very important because the bedroom should be planned in relation to doors, windows, and closets, allowing enough space for large pieces of furniture. Closets and entrance doors should be planned in such a manner to prevent the occupant from having to walk around the bed in order to reach either. The bedroom and living room doors should be arranged in such a manner as to prevent an exposed view into the bedroom from the living room.8

7Sleeper and Sleeper, op. cit., p. 185.
8H. T. Craig and Ola D. Rush, Homes with Character, p.51.
Storage in the bedroom should be made easy by having adequate closet space; at least one closet should be provided for each room and it may be necessary to plan two closets for rooms which are to be shared by more than one person. Sliding doors will probably be preferable to swinging doors, since they save space and contents are revealed at a glance. Shelves above the garment racks may prove very useful for hat boxes, frequently used suitcases, and possibly bed covers. In planning the children's closet, the rods and drawers should be within the children's reach and storage chests should be made available for toys. Built-in furniture may prove satisfactory, since perhaps built-in chests of drawers, shoe racks, and book cases will be less expensive than other furniture.

The color of the walls is an individual preference; however, brightly colored walls sometime interfere with one's sleeping, therefore it is suggested that a moderate soothing color be used in the bedrooms. The most practical and most restful color for the children's room will probably be pastel shades of wall paper or paint. Linoleum floor covering is modern and may be used.

Adequate lighting in the bedroom should be a

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9Ibid., p. 90.

10Sleeper and Sleeper, op. cit., p. 189.
necessity. To provide this lighting it may be found necessary to place a triplex outlet near each bed for the lamps, clock, and electric blanket. A duplex outlet should be near the dressing table, and there should be a light provided for the desk if one is used in the bedroom. Provisions should also be made for an overhead light, since this is a preference of most people, and will also furnish immediate lighting of the bedroom.11

Den.--The den is the man's room, a place to hang the man's coat, shot gun, fishing tackle, storage for the golf clubs, a room to hang the pictures he likes, and a place where he can keep the old smelly pipes without too much "static" from the opposite sex. It is a room that may be called his very own; it can be used for business calls without disturbing the entire household. There he may relax, think, read, and consider himself out of the world. 12

To continue in a humorous vein, Emily Post describes the man's room as follows:

On the other hand, there is neither sense nor beauty in the popular belief that manliness can be expressed only in the sort of solidity suitable for caging a grizzly bear; that a small room set aside for his personal use must be known as a "den," and be furnished with an overstuffed sofa that would support an elephant and with chairs obviously made for

11Craig and Rush, op. cit., p. 69.

baby hippopotamuses. It is not necessary that the
office desk and other objects of wood furniture be
either of raw beef colored mahogany or of fumed oak,
or that the entire color scheme be maroon combined
with wet-mud brown.13

To plan a den the writer was not able to acquire much
material, but in these modern times families plan for the
future and by doing so they obtain or build a house and
design it for three bedrooms. If the house is properly
designed the builder may use one of the three bedrooms,
near the living room, for a den until an increase in the
family demands the use of the third bedroom.

Kitchen and cabinets.—Special attention should be
devoted to the planning of the kitchen, since this room is
considered a general meeting place of the home. A well
planned kitchen will do much to preserve family happiness.
It is here the feminine members of a household will spend
numerous working hours, therefore, it would be well to have
the housewife plan it.

In planning the kitchen one could be guided by the
four "A's" of kitchen planning—architecture, appliance, at-
mosphere, and appearance.

When planning a kitchen, architecture should be the
first consideration. The owner should decide what is truly
necessary to meet the family needs, in regards to location,
size, shape, and comfort. After this decision is made he

13 Emily Post, The Personality of a House, p. 403.
should then seek the advice of an architect. The size of the kitchen should be determined by the activity which will take place there and by the size of the family. This room could be made into an ideal place for the children to play, and also be very convenient for sewing; therefore, it may be an advantage to have it large enough for these purposes.

Kitchen appliances should be next in planning. An automatic refrigerator, a two-drain sink, with hot and cold water, and an efficient range should be the three most important appliances. In order to achieve the most benefit from these three necessary appliances, an individual may find it an advantage to supply roomy work counters, with adequate storage space and the necessary small equipment near each appliance. Before disclosing the plans of the kitchen to the architect, it may be wise to check personal demands. This should prevent alterations after work on the house is begun.

The arrangement of the kitchen should be the third "A."

In deciding on an arrangement, the owner may find one of these three types preferable, U-shaped, L-shaped, or long narrow kitchen. The U-shaped arrangement will supply continuous storage and counter space around three walls of the room, and the fourth wall may be what is needed for a dining area. The U-shaped kitchen can also make an
excellent arrangement for the appliances. An L-shaped plan may be used if a large dining area is necessary. This plan will furnish space for entrance, windows, and dining table. If a long narrow kitchen should be preferred, the two walls being parallel, the appliances are placed along them. In using any one of these three plans with equipment properly placed, the kitchen should be made very convenient.

Cabinet selection may be of steel or wood; the builder's choice may depend on the budget, likes, dislikes, and climatic conditions. If the metal cabinet which is the more expensive of the two is chosen, the owner should find this cabinet more satisfactory and convenient. Tests have shown the metal cabinet to be superior to the wood cabinet and it will last longer. Wooden cabinets should be made of fine commercial wood. They may not hold up as well as steel cabinets, but should furnish the same convenience and look as well. Since the local carpenter will build the wooden cabinets, it is suggested that the owner have the plans completed before the work begins.

Along with the convenience of adequate cabinet space, it may be found that vegetable drawers, condiment racks, adjustable shelves, cutlery trays, and flour and sugar drawers will do much in furnishing easy storage.

Appearance is the fourth "A" in kitchen planning and a cheerful kitchen can be obtained by selecting a theme, as
well as having brightly painted walls, woodwork, and cabinets. It is also necessary to have good window lighting.\textsuperscript{14}

Linoleum or tile is a good floor covering and is an excellent backing for the stove, sink, drains, and working areas. The covering should be a color blending with the walls and perhaps the same color as the woodwork. This covering should help keep the kitchen clean.

Convenient location of electrical outlets should also be important. An individual may decide on the placing of these outlets as to the number of electrical appliances used and also for convenience in using each.

Unless there is a utility room, it may be necessary to have a water outlet for the washer in the kitchen; this can be done without too much inconvenience on the part of the plumbers. Even though an automatic washer is not yet owned, it would be wise to have this done while other plumbing is being installed.

Last but not least is the entrance to the kitchen. This entrance should be made so it will not be necessary to walk through the living room each time one is entering the kitchen. The entrance to the garage or carport should be made easy from the kitchen. This will enable the grocery

\textsuperscript{14}Nationally Known Authorities, \textit{Let's Plan a Home}, pp. 46-47, 49-57.
carrying, garbage disposal, and prevent entering the living room from garage or carport.

**Dining Room.**—In most small houses today the dining facilities may be provided for in one of several ways. There are many people who prefer the separate dining room, at the same time, if this room is used only for eating it would be the most expensive room in the house as far as service is concerned. This room, even though it is not used extensively, will add atmosphere to the home. The shape of the dining room can be more nearly square than the living room, in addition, one should be careful and make it long enough so that when the table is extended, the individuals on the end will not be crowded. The minimum size dining room is eleven feet by thirteen feet.

The dining alcove, or more commonly called the breakfast nook, has become a substitute for the dining room. By using this alcove in the place of a dining room, the floor space saved can be added to other rooms. A good location for this nook has two possibilities: it may be placed between the kitchen and the dining room, or can be used in the kitchen as an extension.\(^\text{15}\)

Many individuals dislike the idea of having the alcove

\(^{15}\)Emanuel E. Ericson and Roy L. Soules, *Planning Your Home*, pp. 63-64.
in the kitchen, because they dislike the odors from cooking and others think greasy pots are very offensive while, on the other hand, some disregard everything except the food and the company. Other individuals dislike the idea of bringing company into the kitchen, but one should disregard what others think and build the dining area where it is most satisfactory.

Bathroom.—Because of the high cost of installing bathroom equipment, one bathroom should serve satisfactorily in a small home. It should be situated between the two bedrooms and the entrance should be made easy from all parts of the house.

Equipment in the bathroom should be carefully planned in order to save space. The tub, lavatory, and commode may be attached to the same wall and the lavatory, being higher than the other fixtures, may be placed between the commode and tub. This should allow more space when in use. Because of a draft, it is not advisable to place a tub beneath the window. If there is only one bathroom a tub with a shower should be provided. This should not be much more expensive than just a tub and will also prevent an extra space for a shower.

In choosing bathroom equipment it is suggested that the

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*Sleeper and Sleeper, op. cit., p. 189.*
builder study plumbing magazines carefully before choosing lavatories, commodes, and a bath tub, since equipment varies in style and comfort.

A linen closet with a built-in hamper will add much to the convenience of the bathroom, where towels, wash cloths, and toilet articles may be stored. A medicine cabinet placed above the lavatory will furnish space for everyday toilet articles and first aid supplies. Other bathroom fixtures are soap dishes, towel racks, and toilet tissue racks, and they should be easily accessible to the user. A closet situated in the bathroom should prove very convenient for hanging soiled clothes. This will prevent disagreeable clothes odors in the bedroom closets.

The walls in the bathroom should be finished with semi-gloss paint or washable wall paper. A more colorful bathroom may be obtained by placing tile on the lower half of the room. This will also enable easy wall cleaning. A home owner will probably prefer glazed tile, rubber tile, or inlaid linoleum for the floor covering. If cost should be the main concern, a smooth varnished floor or printed linoleum will serve the purpose.

Tubular type lighting, placed on both sides of the mirror should furnish satisfactory lighting. This type

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17 Craig and Rush, op. cit., p. 65.
18 Ibid., pp. 131-132.
of lighting provides even shadowless light. An outlet near the mirror and also a ceiling light with a wall switch near the door should be of much service.\textsuperscript{19}

Heating should be provided by an individual bathroom heater and should be either electric or gas. It may be found more convenient to have it installed in the wall, since this will allow more space and may be less dangerous for the owner and family.

\textbf{Garage}.---For the protection of a car the garage is important. It is true, however, if the car sits in a parking lot all day, the chances are, it should not be harmed much more by leaving it out all night. In the second place, when winter comes, snow, ice, and rain are hard on the finish. One must keep this in mind, since a car will be hard to start when left outside all night in the cold weather. Even the partial shelter afforded by a car port is worth considering to give the car the protection it deserves against the damaging effects of sun, rain, and snow.\textsuperscript{20}

When planning a house, the garage is definitely a part of the plan and should be convenient to the kitchen, because there will be many trips made from the car to the kitchen after shopping.

\footnotesize\textsuperscript{19}Ibid., p. 69.
\footnotesize\textsuperscript{20}Wayne Charles Lackey, "How to Build Your Own Garage," \textit{Popular Mechanics}, p. 6.
One should be careful not to make the garage too small. The owner will need enough space to get around at least two sides of the car and when the car doors are opened they will not bang against the wall or objects stored. If the garage is well planned there will be space for the children's toys, garden implements, and lawn mower.

In some cases it may be wise to build a work bench and allow a space for hanging old clothes, ladders, shovels, etc. In other words, plan the garage to have enough space and the builder will not have to worry about adding to the garage later. 21

Selection of Building Material.—If the builder has some knowledge of building material he may be able to build and save money from the foundation up to the roof. Two factors determine the cost of the house. One is the type of material used and the other is the type of house built.

One who plans to build a house should first gather necessary information regarding building materials. Because new products appear periodically, they should be investigated and evaluated according to the durability, suitable effect, and costs. 22 Since new products are put on the market for sale so often, it may be that local building concerns would not be informed about a material that

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21 Nationally Known Authorities, op. cit., p. 33.
22 Ericson and Soules, op. cit., p. 21.
would be of interest to the builder. It is suggested that the builder write the Architect' Samples Corporation, 101 Park Avenue, New York City. It is a duty they reserve to serve as a directory for building materials. The builder should be cautioned against the tendency of an inexperienced builder to allow cheap materials to be used in the construction of a house. This practice may be regretted at a later date when repair and replacements become necessary.

Wood is used more commonly as a building material for houses in this country because of the large quantity of lumber resources. It is preferred by most builders, because it is easy to work with and it gives a bigger house for the money. It was stated by George Daniels, the author of the book, How to Build or Remodel Your House, that eight out of ten homes throughout the country are built of wood. Another important factor in using wood for building a house is that when using wood the house is usually easier to heat because it is a good insulator. In most cases one inch of ordinary lumber gives the same insulation value as six inches of brick and fifteen inches of concrete or stone.

23 Paul Corey, Build a Home, p. 177.
24 Ericson and Soules, Ibid.
Some potential home builder may ask, how long will wood last? The answer to that question is that the oldest frame house in America is still standing, and the house is over three hundred years of age.25

Brick has been used as a building material from time immemorial. In the construction of a brick house the builder has a feeling of dignity, stability, and endurance. The builder may select brick in a great variety of colors and textures. He may select the color and texture for different surroundings and architectural effects.

There are two general classifications for brick in regard to building material, one is the "common brick" and the other "face brick." The common brick is used mostly for the interior building while the face brick is used for the exposed surfaces.26

Solid brick houses are extremely expensive and few houses have been built in comparison to the veneer type of construction. The veneer method, simply explained, is only a common wood frame house veneered on the exterior walls with bricks. The brick veneer house may be built at a more

25 George Daniels, How to Build or Remodel Your House, p. 35.
reasonable cost, and achieves the same appearance as the more costly solid brick house.

Hollow tile is made by practically the same processes and from the same materials as brick. It is used for the main wall structure and takes the place of wood framing and lath. An advantage of the hollow tile is that it allows needed air space in the walls; however, a disadvantage is that its strength is not great and should be adequately reinforced with steel or otherwise supported. The tile is often given a stucco finish. One should waterproof this type of finish, in order that the moisture may not carry through to the inside wall.

Other building materials, such as siding, flooring, windows, insulation, etc., will come later in this chapter.

Foundation.—The foundation is a vital part of the house, even though in most houses it cannot be seen. It should be strong, solid, and well planned, for the entire house depends largely upon its construction. A poorly constructed foundation usually leads to a never-ending series of repair bills due to cracked walls and ceiling, sagging doors, window frames, and jambs.

The foundation is not only constructed to provide a

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base on which the house may rest, but also to deliver and
distribute the weight of the house to the ground in such a
way there will be very little unequal settling. The
builder should also take into consideration that soft ground
requires wider footing. Other ground factors should be
considered before the construction of the foundation, such
as the climatic conditions, ground levels and drainage.

There are several different types of foundations, but
for this study only the pier and the slab will be discussed.
The pier foundation may be built of bricks, cedar, blocks,
or poured concrete. About twenty inches of space should be
left between the framework and the ground to allow for re-
pairs and investigation. The slab may be used successfully
in moderate climates, but is more expensive. The slab
should be at least four inches thick and should be water-
proofed. Many times a provision will have to be made to
protect the slab against light frost. To do this, a pri-
mary bed of broken stone or gravel eight inches thick will
act as a drainage cushion. A builder must also be careful
when building in places where sudden heavy frosts occur.
Sometimes the ice forms in the cracks and crevices and
causes an increase in cracking. This may be eliminated to
some extent by laying a steel reinforcing mesh in the slab.
In large houses it is advisable to cast the slab in two or
more pieces and to fill in the joint with hot pitch.
It may be an advantage for some builders to build the
foundation in the winter, especially in the South. With
the proper equipment nearly all building can be carried
on in winter. One may save on materials and interest rates,
due to the fact that most building is done in a different
season. Skilled workmen sometime do more efficient work
because they are not rushed from one job to another. Skilled
workers are easier to obtain and may work in some cases for
a lower rate of pay.

In the construction of a foundation the builder should
remember that it is one of the most important parts of the
house and one should use durable construction and the best
quality in material. Poor construction may mean high main-
tenance costs, because rebuilding and remodeling is expen-
sive and houses that are poorly constructed and use in-
ferior material soon become obsolete and the resale is
usually difficult. 29

The writer suggests that if the reader is interested
in more details about the construction of a foundation he
should read the book written by Hubbard Cobb, Your Dream
Home--How to Build It for Less Than $3,500, Wise and Company,
New York.

29 Vivian and Reade Martin, That New Home of Yours,
Build It Right, p. 21-23.
Framing.--Like the foundation, the framework of a house cannot be seen but it should be strong. Skimping on the framework is false economy, for the little extra cost of a sturdy skeleton gives the builder added years of comfortable shelter without having to worry about major repairs to twisted or slipping walls.

The house must remain stationary during high winds and storms, and in order to insure this stability the framework should be bolted to the foundation and the upright framework should be fastened to the sills. An infrequent storm that has a wind velocity of 115 miles per hour will exert a pressure of approximately forty pounds per square foot on the walls of the frame. This should give the builder some idea of how much the framework should be able to withstand.

To use inferior material or poor construction would be unprofitable to the lumber dealer, the contractor, and the builder, for after a few years the floor may sag, walls crack, and roof leak, leaving the builder displeased with the whole construction. When the builder spends money for joists, rafters, sheathing, etc., he should make certain the money is well spent for good quality materials.

If the joists (the horizontal timbers which boards of the floor and laths of the ceiling are nailed, and rest on
the outer walls or girders) are constructed incorrectly there is no easy way to correct them. Faulty construction means springy floors, settling walls, and plaster cracks. The builder should not try to economize on undersized joists; normally joists are one and five-eights inches thick. To use eight-inch width in place of ten-inch ones would again mean sagging floors and the floor would have to be removed to correct this fault. If the builder is inexperienced he should follow some reliable architect's specification and employ a contractor who is dependable.

After the joists are nailed in place and the sub-floor is laid, the studs are erected. They should be on sixteen-inch centers like the joist and be toenailed into joists to eliminate shrinkage. At each corner three studs should be used and the lower ends of the exterior walls the studding should be spiked to a two-by-four plate. There should be two two-by-fours at the top to form the plate on which the rafters rest. Of course, around openings the studs should be doubled, but since this study is only a guide, the writer suggests that the reader get a book which will give a more complete detail of the frame construction. The bibliography in the appendix of this study should help the reader choose material for the construction of the frame-work. 30

30 Better Homes and Gardens Building Leaflet, bt 1, p.7.
Roof.--The roof is a protective covering designed and constructed to close the entire top of a house, in addition to protecting a family against rain, snow, and the extremes of heat or cold. It is also a decorative feature of the house.

Roof framing is considered the most difficult problem in construction; however, if the builder understands a few simple rules of geometry and can apply them to roof-framing he may be able to solve problems involved in roof construction.

The roof should be constructed to shed falling water as quickly as possible and should be sloped or inclined. On the other hand, the flat top is about the most economical roof built. This roof serves the needs for all practical purposes in warm climates, but in cold climates snow may pile up on the roof, causing an excessive load on the surface. If the builder uses the flat roof, special provision should be made for carrying a load, because the roof may collapse.

Regardless of who builds the house, the builder should know some common terms used in the construction of a roof, such as:

Gable roof. The ordinary gable roof has two sloping surfaces one on each side of the center line of the building. These two surfaces come together in the middle of the roof at the ridge, forming a gable.
Hip Roof. The hip roof has four sides, all sloping toward the center of the building. The line where two adjacent sloping sides of a roof meet is called the hip.

Ridge. The highest horizontal roof member is the ridge, which helps to align the rafters and tie them together at the upper end.

Rafter Plate. The framing member upon which the rafters rest is known as the rafter plate.

Rafters. The sloping structural timbers of a roof designed to support roof loads are called rafters.

Common Rafters. The series of framing members which extend at right angles from the plate line to the ridge or purlin of the roof are called common rafters.

Hip Rafter. The roof member extending diagonally from the corner of the plate to the ridge is known as a hip rafter.

Valley Rafter. The rafter extending diagonally from plate to ridge at the line of intersection of two roof surfaces is called a valley rafter.

Jack Rafter. There are three kinds of jack rafters which are a part of the common rafter. These are known as the hip jack rafter, valley jack rafter, and cripple jack rafter.

Cripple Rafter. A rafter which extends from a hip to a valley rafter is a cripple rafter.

Overhang, Lookout, or Tail Piece. The three names overhang, lookout, or tail piece refer to the same part of the roof. This is the portion of the rafter extending beyond the outside edge of the plate or walls of the building.

Bird's-Mouth. The cutout near the bottom of the rafter which fits over the rafter plate is known as the bird's-mouth.31

It is advisable for the builder without building experience to get a diagram of a roof and study the terms listed above. He should learn enough about the construction of the roof to at least give one an idea of the type of roof he desires. A good roof designing should improve the appearance of the house immensely.

Siding.—If the builder is erecting a frame construction, there are certain kinds of materials that can be used as exterior finish. With the self-supporting walls the material itself is often the finish; on the other hand, there is a comparatively new product named asbestos siding. This siding is applied to the wall of a house in convenient sizes and nailed on in the same manner as shingles. Some outstanding advantages are: protection against fire, good insulating qualities, neat in appearance, offer low fire insurance rate, can be bought in any desired color, and require no upkeep.

Another new product is the aluminum siding, and some of its advantages are: light in weight, requires no special tools, can be applied quickly, helps hold down the construction cost, is corrosion resistant, termite proof, fungus-proof, and allows the siding to go down to the grade line of the house without danger of deterioration. 32

Other siding products can be bought at lumber yards

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and salesmen will gladly give the builder more information and the prices of each kind of siding.

Floor.--Houses that use hardwood flooring should meet every important requirement for a desirable flooring material, both practical and aesthetic.\textsuperscript{33}

Hardwood flooring should be laid on a subfloor; however, for inexpensive houses the hardwood may be laid directly on the floor joist provided the flooring is thirteen-sixteen inches in thickness and joist spaced no wider than sixteen inches apart. For best results a subfloor is made of kiln dried or air dried boards and surfaced on one side. The subfloor should be no wider than six inches and nailed with one eighth inch allowance between boards and laid at a forty-five degree diagonal with the joist. This permits the top floor to be laid at right angles to the joist. If one-by-six boards are used for the subfloor they should be nailed with three ten-penny nails at every bearing. This type of flooring can also be used on concrete. Sleepers are laid down and securely tied to the concrete with steel clips when the mortar is poured. The sleepers should be spaced about sixteen inches apart and the subfloor is nailed to them. Then the hardwood floor is laid in the

\textsuperscript{33} Leroy W. Neubrech, \textit{American Hardwood Flooring and Its Uses}, p. 3.
usual manner, but one should be certain that building paper which is waterproofed with asphalt placed between the subfloor and the hardwood top. \(^{34}\)

In general, the principal floor requirements for a home are:

1. It should have suitable structural strength.
2. It should have high resistance to wear.
3. It should resist such natural elements as aging and sunlight.
4. It should be comfortable.
5. It should have a pleasing appearance.
6. It should be economical to install and readily available.
7. It should be restorable to the original condition at moderate cost. \(^{35}\)

Many species of American hardwoods are used commercially, but the hardwoods most commonly used for flooring are oak, maple, birch, beech, and pecan. The different types of hardwood flooring are strip, plank, pattern, or parquet and block flooring.

If the reader will write to the National Oak Flooring Manufacturers’ Association, 814 Sterick Building, Memphis 3, Tennessee, and ask for reading material on floors, the Association will send three pamphlets describing everything pertaining to hardwood floors.

There are many kinds of flooring, but some of the outstanding ones are: asphalt tiles, linoleum blocks, ceramic tiles, and terrazzo flooring.

\(^{34}\) Ibid., p. 21-22. \(^{35}\) Ibid., p. 5.
Most flooring can be done by the general carpenter; however, there are men who specialize in putting in floors. These men can do the job in such a short time that it pays to have it done. The general contractor will let out the work to a sub-contractor.

Windows.—If the builder does not select the proper windows to fit the house he builds, he may find that regardless of how handsomely the room is furnished, it will not look well. Windows not only afford light and a beautiful view, but they are a source of beauty; therefore, the builder should study the house he is building and select the proper windows. It is wise to remember that different styles of houses and rooms require a different treatment.36

For the inexpensive house the average builder uses the double-hung window, which is also called the guillotine sash, or just the up and down type. The most reasonable window is wooden, factory weather stripped, rot-proof, and provided with full-length copper screws. This window is chosen for the tightness against wind and rain and for its strength.37

The Reynolds Metal Company has this to say about the product they handle:

Everything you want in a window.

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36 Craig and Rush, op. cit., p. 145.
37 Frazier Forman Peters, Buying a House Worth the Money, p. 90.
Handsome, functional lines. The lightweight strength of Reynolds aluminum permits slender window members... greater areas of light and vision.

Attractive "satinized" finish. Aluminum blends beautifully with interior finishes, takes on hue of its surroundings.

Non-staining, rustproof. Reynolds Aluminum Windows cannot cause ugly stains on outer surfaces. They are immune to rust.

No painting--ever. Because it cannot rust, aluminum maintains itself without protective painting at any time (Painting contractors estimate that window painting accounts for a substantial part of the cost of painting a house.)

Warp-free and split-proof. Aluminum is not subject to common wear hazards such as warping, splitting, and swelling. These windows keep their beauty through all types of weather.

Fire and corrosion resistant. Aluminum adds to the protection of your home...also resists the inroads of corrosive atmosphere.

All Reynolds Aluminum Windows are furnished in a complete carton for greater protection of the window, and for ease in storing and handling.38

If the builder is interested in aluminum windows of different styles, such as: double-hung, casement, projected, combination, manual awning, awning, and basement windows, he should write Aluminum Window Manufacturers Association, Seventy-four Trinity Place, New York 6, N. Y., and get all the information he needs concerning aluminum windows.

Another modern and popular window for the living room is the picture window. When the house is located in a

section that offers a beautiful view, this type of window is an exceptionally good choice.

Plumbing.---It is important that the builder have the plumbing installed by a licensed plumber and to have it inspected.

If the builder is buying in an area that has a code and a building inspector, he should not worry about the drainage system as far as health is concerned, but if one buys in the country, a knowledge of the factors involved should be taken into consideration.

The greatest hazard to plumbing today is corrosion or rust, and there are reasons for using a non-rusting pipe. One reason is that the chemicals used in the water so extensively cause the pipe to rust and cause corrosion, therefore, it should be important to use a brass or copper pipe that is rust proof and non-corrosive. This pipe will have a higher initial cost but it will last much longer.

It is necessary to choose quality in fixtures, faucets, and other plumbing equipment. Bathtubs come in many styles including square with diagonal tub areas and seats. Separate stall showers can be bought that are safe and easy to clean, and also provide an additional bathing place. Mixing or combination faucets can be installed and each faucet should be equipped with a stop valve so it can be shut off when repairing another line.
When building a home the builder should avoid an excessive amount of piping by planning the kitchen and bathroom back to back so all plumbing can be installed in one wall.\(^{39}\)

**Insulation.**--Besides reducing fuel cost the insulation adds healthful comfort in the summer and winter. A well insulated house not only keeps the heat out in the summer but keeps it in the house in the winter.

It is recommended that a reputable brand of building paper of minimum weight be used for subfloors and sheathing. It is also advised to caulk around the joints of all doors and window frames. Caulking should have the following qualities: adhesiveness, permanent elasticity, waterproofness, and minimum shrinkage with age.

Weather stripping a new house for cold climates is essential. It consists of fitting strips (usually metal) around windows and doors. The stripping under normal conditions should reduce the fuel, electricity or the gas bill, about 15 to 20 per cent. This material should be made of phosphor bronze or zinc and the nails should be treated so as to be rust proof.

When insulating the attic, between the studs, etc., it is suggested that the following requirements be kept in

\(^{39}\)Martin and Martin, *op. cit.*, pp. 53-56.
mind: the insulation should have good qualities; it should be moisture proof, vermin proof, permanent under normal conditions, and in humid climates it should form a "vapor barrier" in the walls and attic and thereby minimize the accumulation of condensation.40

There are many kinds of insulating materials. Mineral wool and aluminum foil are among the good ones. However, if stiff insulation board is used for the exterior sheathing and interior wall or plaster base, the filling of the air spaces between the studs can be eliminated.41

Wiring.--Wiring a house with electricity is not a simple job. Most cities have a city ordinance stating that it be necessary to have a licensed electrician to install the wire in a house and have it inspected by an official inspector. The inspector's business, when he goes on a job is to see that the wiring is adequate for the outlets installed. He should see that wiring to the kitchen or laundry is heavy enough to carry the usual appliances, however, it is not his duty to fix the location or the number of outlets or even to suggest the provision for future expansion. On the contrary, it is his job to.

40Morris, op. cit., pp. 134-137.
41Martin and Martin, op. cit., p. 34.
investigate the work done by the electrician for adequacy and see that the builder gets what the specifications provide. The following electrical wiring equipment should be installed:

1. A light fixture at the outside of every entrance door, controlled by a switch on the inside.
2. Base plugs located along the walls of every room so that the distance between them never exceeds ten feet.
3. A ceiling light in every hallway.
4. A light in every clothes closet.
5. Adequate lights in the kitchen, placed so as to avoid shadows in the working spaces.
6. A base plug in the bathroom and lights adequate for shaving and illumination for the shower, if there is one.
7. Utility outlets in the kitchen, conveniently arranged with respect to working spaces and separate receptacles provided for the stove, refrigerator, dishwasher, and washing machine.
8. An outlet in the attic on a special trunk circuit.
9. A ceiling light and one base plug in the garage.
10. One light operable from a switch in each room, and, in the case of rooms that have more than one point of entry, a switch of the 3-way or 4-way type at each entrance.
11. Electrically operated bells and buttons for the front and rear doors.
12. Attic and cellar lights provided with "telltale pilots."

In the average house the cost for installation should be about 2½ per cent for overhead service.

Air Conditioning and Heating.—The average person should drink about three pounds of water and eat five or six pounds of food each day. He should breathe about

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42 Peters, op. cit., p. 103. 43 Ibid., p. 104.
thirty pounds of air in twenty-four hours. He could do without food and water for several days, but without air he cannot live ten minutes; therefore, air is important to the human needs. In order to have clean air it is sometimes necessary to have it conditioned.

Air conditioning equipment should perform several functions as heating and humidification for winter, cooling and dehumidification in the summer; therefore, air filtering and proper ventilation are required during all of the year.

Equipment for air conditioning generally falls into three classes, self-contained air conditioners designed for one room, unit-type, also designed for one room and requiring a remotely connected refrigeration machine for cooling, and the last is central air conditioning. 44

There are many different brands of cooling and heating systems on the market today and the buyer should be careful to select the system that will be suited to the house he builds. One should not buy the water evaporator type cooler for the southeast section of the country or near the Gulf where the climate is humid. This type of cooler will cool the house with a vapor that will ruin furniture. The more suitable unit for that area is the window fan, attic fan, or the unit type requiring refrigeration.

44 E. Richard Holmes, Air Conditioning in Summer and Winter, pp. 46-50.
The builder may buy the combination heating and cooling system. This type is not an expensive one and can be placed in the window, and will add beauty to the room in most cases.

Heating.—The kind of heating unit an individual selects should depend upon the plan of the house as well as its insulation and the financial condition of the builder. The least expensive heating equipment and most simple to install is the space heater; however, this stove will not distribute the heat through the house very satisfactorily.

Distributing the heat is usually a main problem with any heating system. A simple heat circulating device is a gravity warm air furnace with ducts to each room and it is made more efficient with the electric blower attached. This type of furnace can use coal, gas, or oil as fuel and is easy to install; however, usually the company that sells it will make the installation. This furnace is very economical considering the benefits one will derive from its use. Other heating systems are hot water system equipped with radiators, oil-fed furnaces, natural gas stoves, and the radiant heating. The latter type is not a new system because the Romans were known to have used it by making openings under the floors. Fires were made and the floors were used for chimneys and by doing so this heated the rooms.
Today, especially in the slab floor, pipes are laid in the concrete foundation and are distributed over a large area of the floor. Hot water is run through the pipes, thus heating the floor and rooms. This is an excellent heating system for a family with children.\(^45\) Another popular heating system is widely used and is the floor furnace. This furnace is inexpensive and economically appropriate. It is designed to circulate warm air throughout the house. A furnace on the same design is the wall panel-ray. It is in about the same price range as the floor furnace and serves the same purpose.

The buyer should visit several dealers and gather some advice from them, and also get advice from friends who have used the equipment. He should discuss the heating and air conditioning problems with the architect and the contractor before the equipment is purchased.

**Finishing.**—For most houses the builder or contractor will employ a carpenter who has knowledge and has had years of experience as a finish carpenter, for the work he does sometimes determines the beauty of a well-built house.

For the exterior work, such as windows, exterior doors, siding, porch, cornice, molding, etc., one should use naturally durable, paint-retaining wood. This wood is used

to keep the builder from having to paint too frequently. Only hot-dipped galvanized nails and bronze or brass brads should be used. The exterior of the house should be permanently weatherproofed, so the builder will have a minimum amount of upkeep.

For the interior millwork, such as finish flooring, paneling, trim, etc., these should be selected in accordance with the taste and desires of the builder. This work can be simple and inexpensive, or can be exceedingly costly. Regardless of the cost, the lumber should be kiln-dried and primed before it is erected. This interior finish should also be erected by a skilled carpenter. 46

The painting of a house is usually let out to a subcontractor. Here again the builder should be careful and select a painter who is well qualified. After spending a large amount of money to have a house constructed, it would be disheartening to have a painter ruin the appearance of the house by using unskilled labor. All the woodwork should be sanded smooth and be free from defects and defacements. Some of the purposes of painting are: it provides an attractive decorative coating, protects the exterior surfaces from the weather, usually makes dark rooms lighter and makes the interior surfaces more sanitary. Some of the outstanding paint materials are: white lead

46 Morris, op. cit., p. 29.
and oil paint, lithopones (a white pigment containing zinc sulphide), enamel, flat wall paint, varnish, shellac, and colored paints.

For exterior finish the paint should be carefully selected. The same brand of paint should be used for the priming coat as for the finishing coat, because when one brand of paint is applied over another, poor results are apt to result.\(^{47}\)

\(^{47}\) Ibid., p. 149-150.
CHAPTER VI

SUMMARY

This study was made to develop a guide for those individuals who plan to build a home but find it difficult to acquire information pertaining to the buying, planning, and the basic fundamentals of constructing a home.

After reading material from books, text-books, periodicals, pamphlets, government documents, newspapers, related studies, private interviews, and illustrated material sent out by companies advertising their products, the material was studied and selected by getting a general opinion from numerous works of authorities, and the following summary was derived.

1. In the first section of this study an introduction was given and following it was a check-list prepared by the Southwest Research Institution. This list was devised to help buyers assess a house on the basis of things that can be seen and recognized.

2. The next section of this study was devoted to sites and city ordinances. Before an individual buys a home he should consider some of the advantages and disadvantages of the sites such as:
a. Convenience of public transportation
b. Convenient location of a shopping center
c. Possibility of excessive traffic noise
d. Location of smoke and unpleasant odors
e. Play area available for children
f. Fire and police protection provided
g. Residential usage safeguarded by zoning
h. Schools and churches conveniently located
i. Compliance with the city's ordinances
j. Inquire about building codes at the city hall with the inspector.

3. Another division of this study concerns the selection of an architect, contractor, and owner builder.

a. In the selection of an architect and contractor, one should check the background, qualifications, and experience.

b. Blueprints, bids, and specifications are important to the architect and contractor.

c. Owner builder, being his own contractor will depend on how much skill he employs with his hands and how well he can follow directions.

4. A full chapter was devoted to financing a house.

This was an important chapter of the study, because one of the most important and expensive decisions an ordinary
individual makes in a lifetime is to buy or build a home. The different mortgages that were studied are: FHA, Conventional, and GI loans. Cash transaction and insurance was also discussed.

5. The last section of this study was concerned with planning, selection of materials, and the essentials in the division of construction.

a. Several different suggestions were made for the builder in planning a home. Some of the suggestions were to plan if possible weeks, months, or years before the construction actually begins. Read magazines, books, observe and investigate the homes of friends and order books and magazines suggested by these friends.

b. Each room was individually planned to provide as fully as possible the following fundamental requisites of a real home: privacy, convenience, efficiency, roominess, light and air, facilities for recreation, study, hobbies, quietness, comfort, security, cheerfulness, beauty and permanent value.

c. Some of the most important building materials that are used in constructing a home were discussed according to their use, expense, wear, easy management, and places to get information concerning them.
d. The essentials in the division of construction were listed according to their importance and some information was given about each. An explanation was made stating that the foundation, roof, roofing, siding, flooring, and other divisions of construction, are sometimes let out to sub-contractors.

Concluding Statement.--In conclusion, the writer wishes to express his appreciation of the various authors of books, pamphlets, bulletins, advertising material, along with magazine articles, personal interviews, and the advice of friends and acquaintances who have had experience in building, financing, and planning homes. It is a known fact that everyone does not think exactly the same, therefore, some of the writer's ideas may not coincide with the reader's; however, it is the writer's opinion that some good will be derived by the reader from the many hours of work the writer spent in deriving the guide to help those who are interested in building a home.
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