New Construction

Remodel-Before

Remodel-After

Tear Down

Rebuild

An Instant Download eBook

Build or Remodel Your Own House

Save **25%** without
Lifting a hammer

Be the General Contractor

By

Carl Heldmann

Author of the best seller
"Be Your Own House Contractor"

Step by Step Learn How to:

- Get Started
- Select Land Wisely
- Find & Read House Plans
- Establish a Budget
- Estimate Building Costs
- Find Good Subcontractors
- Get a Discount on Materials
- Schedule the Work
- Obtain Financing
- Get Permits
- 85 pages of fun

Learn the true cost to build!

Take Advantage of Any
Housing Market Condition!

Table of Contents

Best wishes, Carl

Introduction

The six most frequently asked questions I hear are:

1. What is the actual cost to build a house?
   A. 75% of what a builder tells you it costs.

2. What does "contract my own house" mean?
   A. That you are in charge! You're the CEO.

3. Do I have to be licensed?
   A. Not in the USA or Canada.

4. What is the number one problem that builders run into?
   A. Cost overruns.

5. Can I really save 25% without lifting a hammer?
   A. Yes.

6. Isn't this a bad time to build or remodel a house?
   A. There hasn't been a better time to buy, build or remodel in my memory.

For those of you apprehensibly thinking about building or remodeling, here are the facts:

1. Land costs (building sites) have fallen. This is a first in my memory!
2. Lumber costs have fallen.
3. Other building material costs have fallen.
4. Mortgage and construction loan interest rates have fallen.
5. Lender fees have fallen.
6. Subcontractor's labor costs have fallen.
7. Subcontractors have become more available and compliant.
8. General contractors? The same applies, GC's costs have fallen, and they have become more available and compliant.

Are costs and values going to continue to fall or start rising again? I doubt they can go much lower, and in some areas they are already rising. That's why YOU have to know YOUR own real estate market.

Once they start rising, you have already missed the optimum point in time.
As I've always said, whether it be winter time or a housing slow down, for owner/builders, the worst of times are often the best of times!

Here's how it all began.

Back in the 70's, a friend who was a home designer suggested I "build my own home", as I couldn't afford our dream house. I told him he was crazy, that I didn't know anything about building. Besides, I heard builders make less than 10% profit.

"Relax," he said, and proceeded to explain to me that by merely being the General Contractor (GC) and hiring all the "expert" subcontractors (tradespeople), I would save 25% or more on the cost of my dream home.

I was skeptical, I admit, but I tried. I saved more than 25%, and it was so easy that I quit my job, got my builders license and became a professional builder (Professionals need a license). The rest, as they say, is history.

I wrote this book and built its web site so that you'll have an easier job building your first house. You won't have to make the same mistakes I and other builders have made.

The book's web site is: www.byoh.com

On the site you'll find:

► Free spreadsheet software you can install for controlling building costs.
► Up to date, average "true cost to build" figures for all 50 states.
► "Ask Carl" any questions you want and I'll try to answer ASAP on my blog.
► Links to valuable sites **I** use.
► Much more.

By using this book and web site as guides, not only will you save money and avoid mistakes, but by being your own "boss" of the building job you'll get exactly the house you want (based on your budget, of course), done the way you want it done.

In the thousand's (yes, 1,000's) of owner/builder projects I've been involved in, I've seen some people save more than 25%. It all depended on how well they shopped and how well they controlled the costs.

By the way, if you want to save a little more money, you can even do some of the labor yourself, IF you know what you're doing. If you don't, just settle for a 25% savings as the GC.

This is NOT a technical book on how to build. It won't teach you how to "wire" or "plumb" a house, etc., and you truly don't need to know how, but it will teach you how to find, hire, supervise, & pay the professional electricians or plumbers, etc. who DO know how, and at BUILDER'S COST. That's the role of the GC.

Just remember, every builder in the world started with their first house. Most of us didn't have a book or a web site to guide us. You do.

I hope you enjoy my book, the web site and most of all, your own building experience. I hope you save more than 25%. Let me know.
You can reach me at: carl@byoh.com.

Good luck building,
Carl Heldmann

Chapter 1

Be the General Contractor and Save

This book will teach you how to be a general contractor for building your own house. There is one big reason for doing this -- to save money. (Not to mention getting exactly the house YOU want, based on YOUR budget.)

By following the steps outlined, you can save as much as 25 percent of the market value of a new house. Your savings are based on the difference between what the house would sell for when finished, the market value, and what it cost you to build.

The size of the house will be the largest determining factor, as most general contractors base their profit and overhead on a percentage of the total cost of the project. A larger house costs more and therefore will include a larger profit and greater overhead for the builder. You will also save more in real estate commissions as the size and value of the house increases.

You can determine the market value of your new home prior to making a final decision about building. Here's how. Once you select land, obtain your house plans, and complete a list of all the items you plan to put into your house, such as flooring and cabinets, a licensed fee appraiser can determine the fair market value of your future house. Your lender will order an appraisal as part of the loan process, so you could wait until then to make a final decision. If the appraisal shows that you aren't saving enough money based on your cost estimate, there's probably an error in your cost estimating efforts.

Say that as a contractor, I build a house that I am offering for sale to the general public. My costs would typically break down as follows: the land usually costs 25 percent of the selling price, with labor and materials taking another 50 percent. That gives me a gross profit of 25 percent.

Wow, you say. That’s a lot of money to make off of one product. Well, if it were that simple, you would be right. But before you get outraged with the building industry in general, let me show you where that gross profit goes when you build professionally.

First, I have to pay sales expense out of my gross profit. If that involves a real estate broker, it may cost me as much as 6 or 7 percent of the selling price (seller pays). Next, like any business, I have overhead expenses. This varies with each builder, but the National Association of Home Builders suggests that

homebuilders allocate 50 percent of their adjusted gross profit (after sales expense) for overhead expenses. These include, but are not limited to, phone, insurance, secretarial, transportation, rent, and office equipment. That leaves me with 9 percent, which is half the *adjusted* gross of 18 percent (25 percent minus 7 percent real estate commission). That is my real expected net (before taxes) profit. You can see that when builders say they make less than 10 percent, they're not wrong.

But you aren't building professionally. You don't have sales expense. You don't have business-related overhead. You can take the entire gross profit of 25 percent and consider it yours. You may never even have to pay taxes on that gross profit if you follow the Internal Revenue Service guidelines for reinvesting your primary residence capital gains. Imagine! You could actually "make" this kind of money while you go about your regular daily business.

What You Need to Know

You need to know very little about the actual building process to be a general contractor. You don't need to have technical knowledge about framing or bricklaying or wiring. Your subcontractors will know their business just as mine do. I'll help you make sure of that.

You may wish to pick up some information on various aspects of building, and that's fine. There are many excellent how-to books available for the do-it-yourselfer on almost all phases of construction. You may want to read some of them to better understand the process of building a home. But there's no way you can become a master of all trades. Your role as the general contractor is to be an organizer and a manager, not a tradesman. Your responsibility is to get the job done — by other people.

If you can estimate your costs, control those costs, and deal with people in a fair manner, you can build your own house! The most difficult parts of the process will be behind you when you actually start construction. Sounds unbelievable, doesn't it? But it's true. Your job of planning, estimating costs, and organizing will be 90 percent complete when you break ground . . . or it should be. At that point it is up to your team of experts — your subcontractors (subs) and suppliers — to do their job. If you choose them carefully, they will do their jobs correctly, even without you being physically at the building site.

Even though you don't need to be an expert, remember that there are no silly questions. Never be too proud to ask questions at any point in the project from

either a supplier or subcontractor. Most of them are very willing to help. They don't make any money until they sell you something or perform a service.

Don't look at building a house as one huge job. Viewing each phase or step as a separate job that you can easily accomplish and cross off your list makes the overall task seem less monumental.

Find a Good Carpentry Crew

Perhaps the most important step in building your own home, and maybe even in helping you make the decision to do so, is finding a good carpentry crew. Also known as a framing contractor or framer, the carpenter, along with his crew, is your key subcontractor. An experienced, reliable carpenter, hired at the beginning of the process, will help you make many intelligent decisions and will help your local lender make a decision to lend you money.

A personal visit to a few lumberyards or building supply houses (especially smaller, locally based ones) to ask for recommendations will give you more than enough leads to find a good carpentry crew. If the first carpenter you find is too busy, ask him to recommend another. But usually another house can be worked into the first carpenter's schedule, and it is worth waiting for a good crew. Your carpenter will be one of your best sources for finding many of your other subcontractors.

After selecting a good candidate for this job, but before hiring him, check him out. He should give you a list of four or five jobs he's handled. Talk to the owners. Look at the work he did for them. Other sources to check for references with are building suppliers that have dealt with him.

Most experienced carpenters have a thorough knowledge of most phases of construction. These job-site veterans are experts on getting a house framed up and closed in quickly, with all doorways, stairways, and window openings sized and located correctly. A good carpenter may be hard to find and hard to get, but is always worth waiting for. He may cost you a bit more up front, but in the long run will save you money and time.

Time Involved

How much time is involved in being your own contractor? This will differ for each individual, but you'll spend more hours planning and preparing than you will on the construction site — that is, if you let the subs do their jobs without feeling that you must be there every minute. (After all, does your boss stand and watch over you?)

You may spend a month of your spare time or several months in the planning stages, depending on how quickly you are able to make decisions on all the various aspects of the project. For example, settling on house plans can take an hour, a month, or even longer; the same thing is true when you are choosing land, specifications, and subcontractors.

The time involved after you start construction will be short. The maximum time ought not to exceed two hours a day, which need not interfere with your job or normal activities. You will have many helpers and will be able to take advantage of some free management by other people. For example, you can have real estate people (the ones you are dealing with on your lot) do some legwork by checking on restrictions and getting information on septic systems and wells. Your suppliers can also help you save time by finding some of your subs for you, preparing a list of the materials you need that they hope to sell you (this is called a take off), and giving technical advice.

Work by Phone

As a contractor, the success of your house-building venture depends on good communication. Subcontractors have cell phones and/or pagers, making communication a lot easier than it used to be. Frequent phone calls to subs are the key to this business. Make those calls before they leave for work or in the evening when you are not working. You can make on-site inspections before or after work or on your lunch hour.

Daily on-site inspections usually aren't necessary. If you believe they are, and you can't do it, ask your spouse or a friend to check in, but you don't have to be there every minute. There isn't a general contractor alive who is. That would mean that he could build only one house at a time, but most contractors have five or six homes under construction at once.

You don't have to watch masons lay every brick or your carpenters pound every nail. Allow them to do their jobs. Mistakes may be made from time to time. Chances are they would have been made if you were there. There isn't a mistake in

the whole process that can't be rectified. It should be your individual decision on how much time you want to be at the site.

Years ago I built a vacation home in the mountains about 140 miles from our permanent residence. I made only three trips to supervise and check on the progress the entire time the house was being built, from the staking of the lot to the final inside trim. While I don't recommend this, I mention it to show that you don't have to be there every minute or every day. My mountain house was built by phone. This was far cheaper and much less tiring than driving 140 miles each way. The subs did a beautiful job. They wouldn't have done any better if I had been there watching them.

Get What You Want

A major benefit of acting as your own general contractor is that you will get more of what you want in your house, with fewer hassles. Most professional contractors (builders) are stubborn. They tend to like to do things the same old way. This often causes problems for the buyer who wants something done a little differently. With you as the general contractor, you can have things done as differently as you like.

You Can Get a Loan

Unless you are paying cash for your house, you will need a loan. Almost all loans for houses are made by banks, mortgage companies, and credit unions.

Obtaining a loan is crucial. No money, no house. You must determine very early in your decision-making process whether you qualify for a loan.

The intricacies of financing are explained in Chapter 4, where I discuss how a loan works and how much you can borrow. Lenders are somewhat reluctant to lend to an individual who plans to be his or her own general contractor. Lenders do want to be sure the house will be built properly and, most important, finished. They don't want to step in and finish a house. They are lenders, not builders, and that's the way they would like to keep it. It will be a challenging sales job convincing them you can be your own general contractor, but with the knowledge from this book and its companion Web site, you can do it. (If you hire a lender approved building consultant or site supervisor you will have no trouble getting a good construction loan.)

Plan your loan application process carefully. Before meeting with a loan officer, you need to have thought through all the steps in the construction of the house, to understand the problems, and have solutions to them. If the lender isn't

enthusiastic about your decision to be your own contractor, you must do all in your power to present this approach as an asset, not a liability. Your projected savings can make it an asset.

The lender will wonder whether you are an organized person who can handle the details of home construction. You will be convincing if you have all of your homework completed when you reach the bank.

Be Persistent!

After you become familiar with the material in this book, there should be no reason for you not to get a loan if you have good credit. Keep in mind, however, that you may get turned down by one or two lenders before you get an approval. Don't be discouraged. Sometimes it has nothing to do with your ability. Sometimes you just pick a lender who is not interested. That's just the way the lending industry is.

It costs very little to go through the initial stages of discussion with a lender and get a commitment for a loan. By the way, in building my first house, I was turned down by four lending institutions before I found two who would permit me to be my own general contractor. If I hadn't been persistent, who knows where I would be right now? I was turned down because I wasn't thoroughly prepared for the loan application. Each time I was rejected, I would do a little more homework and be better prepared for the next appointment. I didn't have a book to guide me — you do. You can do it.

Alternatives to Being Your Own House Contractor

Let's suppose that for one reason or another you (or your lender) decide you can't go forward with your plan to act as your own contractor. Here are four other ways you can build, using a building consultant or professional general contractor (builder) in a position of increasing responsibility and at correspondingly greater cost to you. (The first three options should still save you money overall.)

1. A building consultant. (Cost = 2-6% of total cost)
2. Site supervisor's contract. (Cost = 6-10% of total cost)
3. Cost plus a percentage or a fixed fee contract. (Cost = 10-15% of total cost)
4. Contract bid for the entire job. (Cost = 25-35% of total cost)

Because each option increases the third party responsibility, the cost of using that third party also increases. The cost of the land, the materials to build the house, and other fixed expenses should remain the same.

The least expensive way to go is a building consultant. This is the way by which you can still be considered the general contractor, be accepted by your lender, and possibly feel more comfortable overall.

Under a Site Supervisor arrangement, you hire a licensed general contractor whose one responsibility is to act as your manager with the subs. This contractor, in return for about one-third of the normal fee or profit and overhead, will assist in finding the subs (although you can still find your own), schedule the subs, check the quality of their work, approve the quality of materials, and order materials, when needed, in your name. You will still be responsible for selecting and buying the land; figuring out all cost estimates; securing suppliers, permits, loans; paying all bills, including those from subs; and ensuring inspections for quality and approval. You will be responsible for the final job and its overall acceptance.

Chapter 2

Where to Start

These are the basic steps in deciding whether to proceed with your building project.

1. Make a budget.
2. Deduct land cost.
3. Determine what size and style of house you can afford.
4. Find house plans that meet these criteria.
5. Determine the cost to build this particular house.
6. Get an appraisal on the value of the finished house and land together.
7. Now you can make your decision.

The Budget Comes First

Making a budget *has* to be your first step, even if you are a billionaire! Making a budget for housing is simple. Don't complicate it. The formula is: Cash plus Loan = Budget!

First, add up all your available cash and any assets you want to convert to cash for your dream home. Second, determine your maximum "borrowing power." These two steps determine how much you can spend. It's that simple.

The first step needs no explanation. The second is easy too. Just contact any mortgage lender, and a loan officer will look at your credit history, cash available, your income(s) from all sources, and your total monthly obligations (debt) to determine the maximum loan amount you will qualify for based on current interest rates and loan terms (length of loan) available. (You can also do this yourself on my website.) It also makes sense to contact several different lenders to compare rates and terms.

Land Is the Second Step

You only need to select the land at this point. If you find a particular lot and don't want to risk losing it, you can make an offer with the understanding that your binder or deposit will be refunded if certain conditions or criteria are not in your favor or if you can't obtain construction financing. This is called a contingency offer. Don't put more than 10 percent down as a binder or deposit, and if you are using a broker, be sure that the money is held in escrow.

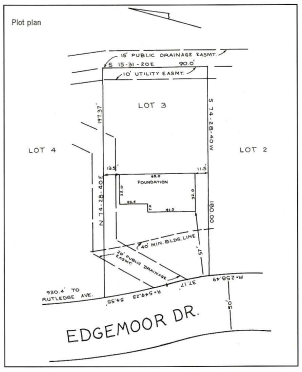
If you already own land, jump ahead to the next topic. If not, read on. If you don't already own land, you must decide where and what to buy. The cost of the land should be your guide for it will be the first item subtracted from your budget. Whatever is left in your budget after subtracting the cost of land is all you have left to build the house. Relax! The cost of the land (or at least most of it) will be included in your construction loan, as you will see.

Choosing the Right Land

First choose the area where you want to live, for location is the main determining factor in land cost.

Next, look for a lot or a site with the acreage you want to accommodate your personal tastes.

If you have lived in a city or town for a while, you probably know where you want to build. If you haven't been looking around, or if you are new to an area, I suggest working with a local real estate broker. These brokers know what each neighborhood offers and what lots cost in different locations. If acreage is what you are after, here, too, a real estate broker is most helpful. A broker can help you locate the property you want and can help with all the details necessary to assure you that it is a suitable building site.



A plot plan

The broker should be able to show you a survey (map) of the lot and point out the boundaries to you during a walk around the lot.

Sloping Lots

If you want a basement and you live in an area of the country where the soil doesn't drain well, avoid flat lots. A sloping lot will provide drainage if you install footing drains.

Another advantage of a sloping lot is that it allows you to design your house with a walkout basement with doorways or windows on one side to provide natural light and ventilation.

Also, in some areas the open side can be frame construction, which is a little less expensive than poured concrete or concrete block.

If you have no alternative to building a basement on a flat lot with poor drainage, be sure to hire a professional waterproofing subcontractor.

They will take extra care in waterproofing the exterior basement walls, providing footing drains that drain either to a sump pump and/or to a lower elevation on your property. Be sure that local codes are considered as to where the drainage can be discharged.

If you don't want a basement, try to find a relatively flat lot so that you won't have an excessive amount of crawl space (or fill, if you decide on a slab foundation).

Building a crawl space is cheaper than digging a basement. If the lot slopes on only one end or corner, though, it will not cost too much more to accommodate the foundation to the lot. Notice that you are accommodating the foundation to the lot, not the other way around.

I can't say this strongly enough: Find the land first and then make the plans to fit it.

Other Considerations

Trees are valuable; if you like trees try to find a wooded lot within your budget. Barren lots are cheaper to build on but more costly to landscape. A wooded lot generally costs more to buy and more to build on, but less to landscape. It's almost an exact cost trade-off. It's your choice, but if you are concerned about top-dollar resale in the near future, it's worth putting a few thousand dollars extra into a wooded lot with mature trees.

If the area in which you are looking has no development activity near it, I strongly recommend taking test borings of the soil before you purchase the lot to determine its load-bearing capability. These tests will also show whether there is a rock ledge on the site that might require blasting. The test is not expensive, and the seller should be willing to pay for it. Without a soil test, you can end up paying thousands of extra dollars for foundation and drainage work. Be sure that this test is included as a contingency in any contract to buy. It can also be included as a refund provision in the contract in the event that non–load-bearing soil is discovered after purchase.

Specialists in test boring for load bearing are listed in the Yellow Pages under "Engineers, Consulting" or "Engineers, Foundation." Most county health departments

make soil tests for septic systems. This is done for free or at a very low cost. These departments also provide information about wells.

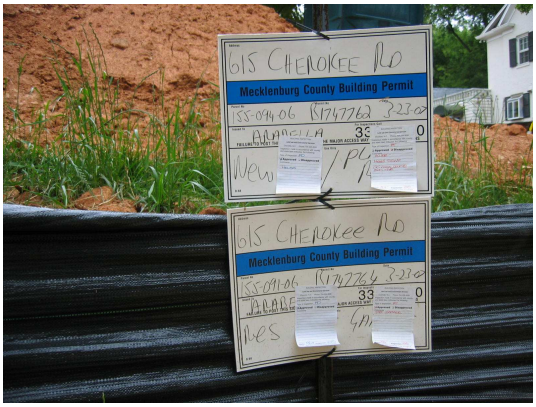
Let the Brokers Do the Work

Put the burden of getting these tests on your real estate brokers. Let them do the legwork and checking. Just make sure those tasks are in the contract you sign with them. Let them earn their commissions by handing you a nice, clean, finished deal — a lot ready for you to build your dream house on.

Make sure you deal with a realtor who is a member of the National Association of Realtors so you have recourse if there is any problem. In almost all towns and cities, the local Board of Realtors is so image conscious and worried about a member ruining that image that it will protect you, the buyer. Simply call the board if you believe a realtor isn't doing a good job or isn't representing your best interests.

Building Permits, Zoning, and Title Insurance

Is it a buildable lot? This is the most important question to ask when deciding to buy a building site, and your local building inspection department is responsible for answering it in the form of a building permit.



They will *only* issue a building permit if it can be considered a buildable lot. Be sure to check with your local building inspection department before you purchase your site.

Consider zoning carefully when you are choosing a lot or acreage. Be aware of what could later be built in your future neighborhood — stores, offices, trailer parks, or industry. Look at what is already there. Such things as dumps, railroads, and industrial buildings can make a lot worth much less as a site for a home. One could write a book on zoning — and many have. A quick consultation with your real estate broker and/or the local zoning department should resolve any fears you have.

If water and sewer are provided, be sure you check out all costs to get the water and sewer to your property line if it is not already there (it may be across the street). You also need to find out about any tap-in fees or privilege fees charged by the municipality or the association providing the services. Do the same for gas, electrical, and phone services.

Well

Septic

Propane gas

Thoroughly investigating wells, the septic system, load-bearing capabilities, water and sewer fees, and zoning may take a few weeks.

You also need to check out all restrictions on the size and type of dwelling you can build and what a neighbor may build. These restrictions may or may not be specifically covered in local zoning regulations. Different parts of the country use different means to protect an area from visual blight.

Finally, the seller of the land should always provide you with a title insurance policy, which insures that you will be buying property with what is called "clear title." The insurance company will have searched the records for previous transactions in order to provide an insurance policy. As with any insurance, its purpose is to bring you peace of mind. If you want added protection in a land transaction, consult an attorney who specializes in real estate.

How Much Should You Spend on Land?

Buying land is a very subjective process, and the cost of land varies greatly in different regions of the country. One tip I'll pass on, however, is to always keep resale value in mind. I know that may not seem important to you, especially since selling is the farthest thing from your mind right now, but some day it won't be. Remember, resale is always on the mind of your mortgage lender.

I recommend spending no more than 25 percent of your budget on the land. While this is not always possible, and gets harder to do every year, it is an excellent guideline. If you have to spend more than that, something else has to give, and that

will be the size and/or style of your dream house. Size and style determine building cost. (Size more than style.) You'll have to juggle hypothetical scenarios in the planning process until it all fits into your budget. In order to do this, you will have to know upfront approximately how much it costs to build a house.

The actual "cost to build" anywhere in the US is the most closely guarded secret in the industry, but here is how you can find out what housing costs in your area by going to www.byoh.com and using the resource links.

Another method is to find a new home being built by a professional builder that is for sale and that is similar in size and style (and quality) to your dream house and do the following: Take the sale price of that house and deduct the land cost, real estate commissions, and 25 percent builder profit and overhead and you'll have the real "cost to build." The land cost may be a bit tricky to determine, but any real estate agent can find out for you. You could even call the builder. All homes, even used homes, have the site value broken out separately on tax records. Now you simply divide the "cost to build" by the square footage of the heated area of the house and you'll have the cost per square foot.

Square footage refers to the heated (livable) area of a house, but ironically it is determined by measuring from the outside surface of exterior walls! For example: a simple house that measures 40 feet X 30 feet = 1200 sq ft. No deduction is made for the thickness of walls.

If you are successful in keeping your land costs at 25 percent of budget, you will have 75 percent of your budget left for the cost of building the house. Take that number, divide by the "cost to build" and you will now know what size (in square footage) house you can afford. Now you can start looking at house plans by square footage, and of course style.

The House Plans

Rule of thumb: Size matters. The bigger the house, the more it costs. Here's a tip: Two-story construction is cheaper than one-story. Two of the most expensive parts of a house are the roof and the foundation. A two-story home with the same square

footage as a one-story has half the roofing costs and half the foundation costs. There are also economies in plumbing and heating in two stories.

There are many thousands of house plans available and several ways to find more than you could ever need. Some places to look are building or renovation magazines, books of plans, the Internet or on CD-ROMS. There are even computer programs that allow you to design your own house plans, although these are not always as easy to use as the creators would lead you to believe. Another, more expensive, possibility is to have a local architect or draftsman/designer draw your plans.

The least expensive way to obtain plans is through the thousands of magazines, books, Web sites and CD-ROMs of plans that are available. Quite often you'll find that one of the plans needs only minor modifications to make it suitable for your needs and your building site.

You either should stick with the plans as drawn or order the minimum number sold (sometimes this is only one set) and get advice from a draftsman/designer or an architect on any changes, no matter how minor. This will be much less expensive than having the entire plan drawn for you. An experienced draftsman can even make major changes in a set of plans and advise you on the practicality of changes you suggest and the additional cost, if any, of those changes.

If you do hire a draftsman/designer or an architect, obtain estimates from several before hiring one. Ask for examples of work done and get references.

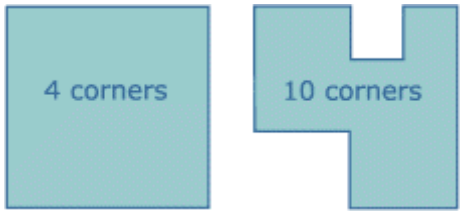
You'll need about six sets of plans: one for yourself, one for your Construction lender and one for each of the major subs. If they are inexpensive, it's good to have as many as possible. If you're going out for bids, for example, each of the bidders for the job should have a copy of the plans to study.

Cutting Construction Costs

Your first chance to save a lot of money is now, when you are selecting the plans for your home. Think about the following issues.

▪ Do you need that many square feet? Every reduction you can make in size will cut the costs.

▪ One story or two? It's cheaper to build the same number of square feet of housing in a two-story house.



▪ What is its shape? A simple rectangle is the cheapest to build. Curves, extra corners, and extensions in the floor plan will all increase costs.

▪ What style roof? The least expensive is the common gable roof. Dormers and multiple gables make the roof more difficult to build and therefore more costly.

▪ How's your timing? If you're building when there's a lull in construction (such as in winter), chances are you'll get your money's worth — and maybe a bit more.

Make Changes Early

Try to make all changes in the plans before you start construction. You need not have the plans redrawn for minor changes such as moving, adding, or deleting a window or door, but you should if you move walls or change roof lines and roof pitches. On-the-job changes are expensive, so make your decisions on paper and live with them or expect high cost overruns.

Pay strict attention to what is in the floor plans. Picture yourself walking through the house from room to room. If you are unsure as to whether a room is large enough, find a room of about the same size in another house, and compare.

This is a good time to mention the only two tools you'll need as a general contractor: a 25-foot tape measure and a cell phone. Try a laser tape measure for measuring room sizes when you are out and about.

A laser tape allows one person the ability to measure the inside dimensions of a room. No other end to hold!

Studying Plans

Figuring out the plans is easy, although it may look difficult at first. You'll be looking first at room sizes, room placement, traffic flow, kitchen work flow, closet space, number of baths, and overall size. Those are the major functions of design. Without

too much effort you can move doors and windows, add them, or delete them — on paper.

Unless you have an unlimited budget, and very few of us do, a house is a series of compromises. We can't afford all of those beautiful things we see in home magazines. A house is going to cost so much per square foot using the average number of windows and doors and average appliances. If you want an expensive whirlpool tub, you may have to compromise on something else, such as the size of the house, adding a garage, or installing a paved driveway.

Don't make any of your decisions a "matter of life and death." You may be surprised how unimportant that "big decision" becomes when you are finished. Agonizing over decisions only leads to friction — within yourself and with others. Make all of your decisions conscientiously but quickly, and then move on.

Be sure your plans include specifications (specs). Specifications are lists of materials that are going into your house. Most plans come with a set of specs and include a "for input" section for you. You will see that there are places for indicating decorative items, such as wallpaper, carpet, paint, stain, and door hardware. Obviously, you will choose these. Since specs come early in the game, most people haven't selected these decorative items at that point. Therefore, monetary allowances are used with the term "or equal." This means that the actual item finally selected, such as a kitchen faucet, will be of an approximately equal dollar amount and of similar quality to the one in the specs.

Parts of Plans

Be sure your plans include the following pages.

A plot plan. If your plans are drawn locally, the designer can prepare this plan for you. Otherwise you or a surveyor will have to do it. It is merely a plat (map) of your lot with the position of the house drawn or blocked in. Its purpose is to ensure that a given house plan will fit on a given lot. If it doesn't fit on paper, it surely won't fit in reality. (Note: A plot plan is required during the building permit application)

First, the lot is drawn, then all the setbacks required by zoning and/or restrictions are sketched in, then the location of the house is indicated. The exact location may be slightly different when the house is physically staked out, but will be close to the indicated position on the plat — especially if it is a tight fit. If you have a lot consisting of several acres, the actual position of the house from that indicated on the plat could change by many feet.

The plot plan won't be drawn first if you have a set of plans but no lot. It's better to find a lot first, then make the plans to fit, though this is not an absolute rule. Some people love a certain set of plans or they want a particular house they have seen in a magazine. They would rather search for a lot to fit the plans. It can be done, although not always easily or inexpensively.

Spec sheets. In these lists of materials for your house, spell out as much detail as possible.

Foundation plan. This shows the overall dimensions of the house and the locations of all load-bearing requirements, such as piers, steel reinforcing rods, vents, basement slabs, and, if a basement house, all walls, windows, doors, and plumbing of that basement.

Floor plans. You must have a plan for each floor that shows outside dimensions plus locations of windows and doors, plumbing fixtures, and large appliances. You may add the electrical drawings as well. These drawings show the locations of receptacles and switches. It is not necessary to have these shown on the floor plans. You can go through the house with your electrician after it is framed and locate receptacles, light fixtures, switches, cable outlets, and phone lines. However, when getting quotes or bids from subs, it is best to have the electrical, cable, and phone requirements included either in the floor plans or on a separate sheet.

The same is true for heating and cooling (mechanical) requirements. It is best to have these drawn out in advance, for bid purposes and to locate the furnace. If you plan to heat with wood, coal, gas, or oil, then planning the flue location is necessary, especially in a house without a basement and/or in a two-story house, unless your appliance is a direct-vent model.

Detail sheet. This shows cabinet details, cross sections of the inside of the house if there is a section that may not be perfectly clear from the floor plan, and wall sections to show all the materials that make up a wall, such as brick, sheathing, studs, insulation, and inside wallboard or paneling. A detailed section of a foundation wall is also sketched in order to show proper construction technique, drainage, and waterproofing.

Outside elevations. These sheets (usually two) show an outside view of how the house will look when finished. Usually all four sides are shown.

Cost, Appraisal, Decision!

Just a few steps remain in your decision-making process. Step 5, estimating the cost to build the house you have selected, is discussed thoroughly in the next chapter.

Step 6 involves getting an appraisal of the final value of your house. As I said in chapter 1, you can obtain a written appraisal of what your dream home will be worth after it is built on the land you have selected (or own). You will be getting such an appraisal ordered by your construction lender, but you can order one yourself as soon as you have selected land, plans, and basic specifications. Look in the Yellow Pages under Appraisers. It is not expensive to order an appraisal for yourself and it is folly not to have one at all.

Now you can move on to Step 7: Decision time! Based on total cost of land, labor, and material, is this project worth it? With the appraisal in hand, you will be able to make your decision intelligently by reviewing the following factors.

1. Are you saving any money?
2. Is the house over, or under, priced for the neighborhood? (Under is better!)
3. Can you revise your cost estimate if there is less than 25% savings?

Once you decide to move ahead with your dream house and have obtained financing, you can start on the fun part of seeing the work actually begin.

Chapter 3

Cost Estimating

I used to say, "Estimating the cost of a new house is not an exact science." Now I believe that due to technology, it's more exact than some sciences. You can come very close to estimating your total cost to build, and you can guide your construction project toward that estimated cost right up till the last cost expenditure, but you can only do it if you are the general contractor.

Why is cost estimating more accurate today? One word: spreadsheets. When I started in this business in 1970, I didn't know what a spreadsheet was. I always found it difficult to manually list costs (bids from subcontractors and suppliers), make adjustments, and keep track of overages during construction. (There are rarely lower cost adjustments!) However, over the years, I have been involved in thousands of construction loans and have seen the absolute necessity for cost control.

I try to stay abreast of technology as it relates to helping builders figure their cost estimates and track those costs during construction, and I have seen cost estimating become more accurate and easier to calculate. There are many spreadsheets available. Some are expensive or difficult to use, and most require expensive software, such as Microsoft Excel, which few people have on their home computers. So I designed a simple preformatted spreadsheet that is available at www.BYOH.com that comes with its own software

On byoh.com you'll find:

- Free spreadsheet software you can install for controlling building costs.
- Up to date, average "true cost to build" figures for all 50 states.
- "Ask Carl" any questions you want and I'll try to answer ASAP on my blog.
- Links to valuable sites I use.
- Much more.

Remember: cost estimating is the most important step! If you can't afford the house, now is the time to find out. My Web site will help you accurately figure out the cost of a new home in your area and the give you up-to-date interest rates to work with. The cost-estimating program comes bundled with its own software and is very easy to use. It (almost) makes estimating fun!

It is critical to do accurate cost estimating and even more important to control those costs as the house progresses. If you don't calculate an accurate budget before you start building and stick to that estimated budget, you probably won't save 25 percent of the cost of the project, and you may well end up not being able to afford to finish and/or keep the house. This is not good!

The Process of Estimating

Do you like to shop? If you don't, you may not save as much as someone who does. As I am fond of saying in my seminars, "Building a house is the largest shopping expedition you will ever go on. You will 'shop till you drop' and you'll still be shopping as the moving van pulls up to your new house. For some people, it's as if they died and went to heaven. For others, well, it's tough."

Putting together your bids and estimates requires shopping around. And as you'll see in chapter 4 on financing, you'll have the world's biggest credit card.

How do you shop for a whole house? Use the cost estimate form as your shopping list.

Important note: GET ALL BIDS & ESTIMATES IN WRITING!

Let Your House Plans Do the Talking.

Once you get your house plans, start shopping for bids and estimates from subcontractors and suppliers. The items you will be shopping for are broken down into categories as seen on the sample spreadsheet. These are suggested categories. You can alter them and/or add more as you see fit. Your objective is to get firm bids for all items.

COST ESTIMATE

Name:
Job Address:

			A	B	C	D
SUBCONTRACTOR, SUPPLIER	DESCRIPTION	ORIGINAL COST ESTIMATE	ADJUSTED COST ESTIMATE	TOTAL OF PREVIOUS PAYMENTS	CURRENT DRAW REQUEST AMOUNT	ESTIMATED COST TO COMPLETE
	Permits, Fees, Surveys					0
	Utilities					0
	Excavation					0
	Foundation					0
	Rough Lumber					0
	Rough Labor					0
	Windows/Ext Doors					0
	Roofing					0
	Concrete Flatwork					0
	Siding					0
	Plumbing					0
	Heating					0
	Electrical					0
	Insulation					0
	Water (Well)					0
	Sewer (Septic)					0
	Fireplaces					0
	Drywall					0
	Cabinets					0
	Interior Trim					0
	Interior Trim Labor					0
	Painting					0
	Appliances					0
	Light Fixtures					0
	Floor Coverings					0
	Driveway					0
	Garage Door					0
	Land					0
	Misc.					0
	Other					0
						0
						0
						0
						0
						0
TOTALS		0	0	0	0	0
NOTE: TOTAL OF COLUMNS B+C+D SHOULD = TOTAL OF COLUMN A AT ALL TIMES						

Never accept a bid that is "by the hour." It doesn't work. Remember Murphy's Law # 390: "If you want to see how long a job can take, pay them by the hour." You may pay a little more for a firm bid, but it's worth it for peace of mind. For example,

if an excavator quotes $X per hour per man plus $X per hour per piece of equipment, insist on a firm total. If he (or she) won't offer one, move on to the next excavator on your list. See chapter 6 on finding good subcontractors.

The people and companies you will be contacting know how to give estimates based on plans and are used to being asked for bids. Don't worry, this is part of their job, whether you eventually hire them or not. I take my plans, drop them off or mail them to a sub or supplier, and say, "Give me a price on XXX. If you see anything else on the plans you can provide, give me a price on that too."

One morning early in my building career I met with an excavator at my lot to give him the plans and get a price for excavating. I had never met him before. He was a friend of a friend. He gave me what I thought was a good price. He then said, "We also do septic systems, driveways, backfill, rough and final grading, and a few other things, and my brother does foundations, concrete slabs, flat work, etc." Wow, I struck gold! I hate to shop, so I got bids on four more parts of the project. Got the picture?

Note that your suppliers and subcontractors will determine the exact (almost) number of items and square footage of materials needed based on your house plans. This is called a "take off."

As you go through this process line by line, category by category, you may find even better prices for previous line items that you already have bids for. With the spreadsheet up and running, you'll be amazed how easy it is to watch that bottom line (that's the "total" line, by the way) shrink as you get the best prices.

You can make as many spread sheets for subcategories within the line items as you need. For example: Foundation costs may be made up of several costs such as sand, fill dirt, steel reinforcing, forms, etc. Simply start a new spreadsheet, label it "Foundation," and change the list of costs by typing in what you need. The pre-typed ones can be overwritten. Do a new one for each "Main" category as needed. It's fun!

"Whew!" you may be saying, "it's a lot of work getting all those bids and estimates!" Well, I never said you didn't have work to earn your 25 percent, but you still won't have to pick up a hammer!

When you finally see the bottom line of the first column approaching 75 percent of your budget, you should feel pretty good. As I have already mentioned

and will discuss further in chapter 4, your lender will be ordering an appraisal that will tell you the market value of your completed house. Your estimated total cost of construction (that bottom line), excluding land, permits, and the 6 or 7 percent real estate commissions figured in by the appraiser, should not exceed 50 percent to 60 percent of that market value. If it's higher, get back to work shopping.

Building supply companies, home centers, carpet stores, appliance dealers, and so forth all know what to do. They will give you the best price they can, as they know you are shopping elsewhere. If they don't, you'll know as you enter their bids on your spreadsheet, and the bottom line grows too large.

Balancing Costs

As you pay for items during construction, enter the actual price paid under the "adjusted cost estimate" column on your spreadsheet. Scroll down to the "total" lines, compare "adjusted" to "original" and you'll know instantly if you are running over cost. If expenses run higher than estimated in some categories, you may have to trim costs in others.

Most of the heavy costs come at the beginning of construction for such items as excavation work, well and septic digging and installation, lumber, masonry, carpentry, plumbing, electrical work, windows and doors, and heating, ventilating, and air-conditioning (HVAC). Some of the items bought later still have a very significant effect on the total cost of the house. These include hardwood floors and other flooring, appliances, plumbing fixtures, wallpapering, millwork and interior trim, and carpeting. It is possible to cut costs on many of these items by choosing less expensive options or postponing installation of certain items (such as wallpaper) until after you've moved in.

Molding and trim details (such as a wainscot or cornice molding) can be added later if reducing immediate costs is important. Windows can vary as much as $100 each just because of brand name, though the difference in quality is negligible. Do you need a ten-cycle dishwasher, when a five-cycle or a two-cycle will do as well? So it is with each item. Compromise is the key to happy home building!

Some of the expensive items you may want in your house may add little, if any, increase in appraised value (resale value). Examples are handmade tiles, exotic wood trims, and granite counters. Sorry, but that's a real estate fact of life.

Cost Breakdowns

Here is a more detailed description of the items and categories you will most likely encounter in building your home. If an accurate dollar amount estimate isn't available, use an educated guesstimate for now.

▪ **Permits, fees, surveys.** Your building inspection department can give you the cost of permits and fees, which vary by locale. Permits in some areas include water and sewer tap-in fees. Permits can be very expensive and time consuming.

Your lender will require you to have a vacant land survey and another survey once the foundation is in, called a mortgage survey, which determines where the house actually is placed relative to property lines and setback requirements. (You should get one of these even if you are paying cash and don't have a lender.) You will also have to insure your building project against loss due to fire and other loses. Any other costs necessary to get your project started can be included in this category and some guesstimates can be utilized.

▪ **Utilities (electric, gas, phone).** In some rural areas this item can be very costly, running into thousands of dollars. Check with your local utility companies in advance.

▪ **Excavation.** This item will depend on such factors as locale, soil conditions, terrain, and season of the year. Excavating for a basement will cost more than excavating for a slab or a crawl space. Get a written bid.

▪ **Foundation.** This item will vary considerably based on factors such as slope of lot and the height of basement walls.

▪**Rough Lumber.** This includes all materials except windows, doors, and roof shingles (although it can include those as well). These are most of the materials necessary to dry-in the house, which means putting up the walls, windows, exterior doors, and roof to make the interior waterproof. A good lumber company will put together this material list for you free of charge because it wants your business.

▪ **Rough Labor.** This is the labor required to bring the house to the dry-in stage. After this stage is completed, all other stages can commence, some simultaneously. The best way to contract for this job is by the square foot, with the square footage agreed to before you start. Five people will arrive at five different square footage totals, using the same set of plans. Some will vary by 300 square feet or more. Sounds incredible, doesn’t it? But I swear that it’s true. In determining the square footage, houses are measured from outside wall to outside wall, not from roof overhangs. If the house is not easily divided into rectangles for simplifying square

footage determination and you can't figure it out, have the designer do it for you. Ready-made plans generally come with the square footage broken down for you. Use those figures.

▪**Windows and Exterior Doors.** This cost is simple to estimate since you have an exact count. I do not recommend any particular brand, but I do recommend that you visit a couple of building supply companies and compare. Most carry more than one brand. Locally made windows usually are less expensive than national brands and often carry comparable warranties. For special windows such as angular or bay windows, get exact quotes from the supplier. Generally there is no additional cost to install windows (except special or unusual ones), as that labor is included in your carpenter's framing charge. Be sure it is.

Exterior doors are as easy to estimate as windows, and all the same factors apply, including that the labor to install them should be included in the framing bill from your carpenter. Sliding glass or patio doors will be slightly more expensive and may require a separate installation charge, depending on your carpenter. Be sure that the installer caulks under the threshold thoroughly, using exterior grade silicone or polyurethane caulk.

▪**Roofing.** This is measured and estimated by "squares." A square of roofing is the amount of roofing material required to cover 100 square feet (10 feet X 10 feet). I advise having either your supplier or your contractor do this estimate. They won't be exact, but may come a little closer than you will, though you might want to make your own calculations and see how they compare. Asphalt-fiberglass shingles are priced according to the guarantee offered by the manufacturer. Fifteen-year shingles will be less expensive per square than 20- or 25-year shingles. It is probably best to go with a better-quality shingle, which will still be more economical than other types of roofing such as cedar shakes or steel panels. The cost of labor to install will depend upon the sub, the weight of the shingle (more durable shingles are usually heavier and therefore more expensive), and the pitch of the roof (the steeper the pitch, the higher the price for labor). The most common shingles for roofing are the 245-pound asphalt variety, and an average roof pitch is about 6 inches rise for each foot of horizontal travel (a 6/12 pitch).

▪ **Concrete flatwork (slabs), garage floors, basement floors.** This refers to smooth finish concrete work, not rough finish as in driveways, patios, and walks. It also involves the use of other materials such as Styrofoam, wire mesh, expansion joints, and polyethylene. Extra site preparation and gravel base installation can also

figure in this expense. Your concrete subcontractors can explain this to you. The work is closely inspected by most building departments. Get a bid based on square footage of actual concrete area.

- **Siding.** Depending on the material used (which may range from brick to vinyl), you can get an accurate bid from a subcontractor that includes the cost of siding materials and any flashing required around windows and doors.
- **Plumbing.** This bid should include all fixtures such as toilets, sinks, and water heater. It will not include such items as a dishwasher, garbage disposal, washing machine, or other household appliances. If you supply the plumbing fixtures, your plumbing labor bids will be higher to offset the plumber's loss of profit on the fixtures. If a fixture you supply is defective, you will be responsible for taking care of warranty work, not the plumber. Keep that in mind.
- **Heating.** Use heating and air-conditioning systems recommended by your local utility company experts. Cost of installation should include proper ventilation for the bathrooms, the kitchen, and the clothes dryer.
- **Electrical.** In addition to electrical wiring costs, this bid should include all switches, receptacles, wires, panels and breakers, wiring of all built-in appliances, cable and phone wiring, and compliance with codes. It does not include lighting fixtures.
- **Insulation.** Get a bid per local code for minimum insulation. To get the maximum insulation for number of dollars spent, consult your local utility company experts.
- **Water (Well).** For water tap-in fees, call your local municipality. For a well bid, call a well drilling firm familiar with the area and get a firm maximum bid as well as a drilling price per linear foot drilled.
- **Sewer (Septic).** For a sewer tap-in fee, call your local municipality. For the price of a septic field, get a written bid from a local contractor who does septic system installation. Note: Alternative types of septic systems for clay soil, high water table, etc. are very expensive but usually doable.
- **Fireplaces.** Masonry or prefab. Prefabricated fireplaces are less expensive. Masonry fireplaces may give you more options. Shop around for differences and determine what your budget can handle.
- **Drywall.** Bids should include labor and materials to hang the wallboard, tape joints, and finish with joint compound (two coats). If you supply the drywall, you won't save any money, but you will be responsible for scheduling delivery, so decide how much your time and stress is worth.

▪ **Cabinets.** Bids should include kitchen cabinets and bathroom vanity cabinets. Labor to install should be included in the carpenter's trim labor.

▪ **Interior Trim.** A bid from the lumber supplier should include all interior doors, moldings, closet shelves, and stairway trim. It should also include additional sub flooring (also called underlayment) for carpet.

▪ **Interior Trim Labor.** You should get a bid to install all the materials for both cabinets and interior trim listed above.

▪ **Painting.** First-time house contractors (builders) often skimp on this category by planning to do it themselves. But it is still smart to get an estimate, even if just for the materials. If you are not planning on doing the labor yourself, get a written bid for both labor and materials. If you prefer to do your own labor, remember Murphy's Law # 414: "Do-it-yourself labor takes twice as long and you get half the quality."

▪**Appliances.** In the planning stage, you don’t need the actual models picked out, just a ballpark idea of what you think you will eventually buy. Use a dollar allowance in your estimate that you feel is adequate to get the appliances you want.

▪ **Light Fixtures.** Though you probably won’t have your actual fixtures selected, figure an amount that will be enough to cover the costs of all necessary fixtures. You can do this by shopping around at lighting stores, home centers, and online.

▪ **Floor Coverings.** Estimate approximate costs for all floor coverings, taking into account varying amounts for wood, carpet, tile, or other coverings.

▪ **Driveway.** Depending on the material used, get a bid in writing based on the square footage of the area to be covered. Make sure you agree on the square footage.

▪ **Garage Door.** If you can still afford one, get a price from your local lumber company — with or without operators, installed or uninstalled.

▪ **Other.** Anything not included above, i.e., fences, sidewalks, decks, swimming pools, saunas, etc.

Chapter 4

Financing

The most common way to finance the building of a home is to obtain a construction loan, which is a short-term line of credit for paying construction costs. There are two kinds of construction loans.

The one-time close construction loan: As the name implies, there is one closing (signing papers) for both the short-term construction line of credit and the "permanent" end financing (mortgage).

One closing means one set of closing costs, which is the main advantage for this type of loan. Since the lender's policies on these types of loans vary so much and change so fast, you will need to talk directly to a lender when you are ready to shop for your loan.

A small disadvantage of this loan is that the dollar amount of both the construction line of credit and the "permanent" end financing (mortgage) cannot be increased. If the house ends up costing more than you planned, and your loan isn't large enough, you will end up taking out another loan and paying for a second closing anyway thus defeating the advantage of a "one-time close" construction loan.

Note: These loans are not always available to owner/builders as lenders feel that an owner/builder cannot estimate costs accurately and is not a good risk. However, as I mentioned in chapter one, by using a building consultant, a site supervisor, or a contract to build from a builder (that the lender approves) a one time close construction loan most likely will be obtainable, often with 100% financing of all costs, including land, as long as the loan doesn't exceed 95% of the appraised market value of the completed house. This is incredible. Nothing down is the only way to go if you can get it. There is a great tax advantage!

The two-time close construction loan: This type of loan involves two separate loans with two sets of closing costs, but offers you more flexibility. If you do decide to increase the amount of your construction loan (and if you qualify), it's no big deal. You will pay off the construction loan with a refinance mortgage. Refinance

mortgages are very competitive, and you might get a better deal by being able to "shop" for the loan that you'll paying on for years.

How a Construction Loan Works

A construction loan is like a credit card with a low interest rate and a high credit limit.

If you were able to secure a mortgage for the construction of your new house and the lender were to give you a check for that amount before you started, both you and the lender would be in trouble. The lender, because they just loaned a large sum of money on a house that doesn't yet exist; you, because you'd have to pay interest and principal on that loan before you even broke ground for your new house. Considering the interest expense, this could mean you would have to pay a large amount of interest each month on a nonexistent house, along with your regular monthly fixed expenses for items such as food and rent.

Enter the construction loan. The money you need to pay for construction costs, even the land in some cases, is disbursed to you as the building progresses. You pay only interest, no principal, on the total amount lent to you for any given month during construction. For example, if the house is 20 percent complete after the first month, the lender, after a physical inspection of the progress of construction, will advance 20 percent of your total to you to pay your bills. If your total construction loan is $300,000, then you will receive 20 percent of $300,000 which is $60,000.

The house is now 20 percent complete, you are one month along in progress, and you have paid no interest yet. And you won't have to until next month, when you will start to pay the interest only on the money you received.

Construction loan interest is a "cost to build" item of any new home, whether you build it or I build it for you. It's not even part of the builder's overhead. It's a cost like lumber and nails. Treat it as such and plan for it, along with other financing charges, and it won't bother you. Think of all the money you are saving by being your own general contractor.

There is a considerable time period during construction in which the house is progressing toward completion, but you haven't yet received bills for materials. It should take approximately six months to complete the house, and because of the billing time lag from suppliers and the loan interest being one month or more in

arrears, during those six months you will have had an average of only 40 percent of the total money available disbursed to you. This is an approximate figure, obviously, as is the amount of time needed to complete your house. I'm merely pointing out that you won't pay interest on the full amount of your mortgage until the house is complete. At that time the lender will complete the disbursement of the construction money and convert the loan to a permanent mortgage for 15 to 30 years, or you can refinance the construction loan with the "permanent" end financing (mortgage) that you were pre-approved for. Only then will you be making your full payment of principal and interest. But by then you will have moved in to your dream house. If that sounds simple, it is only because it is.

Two Homes?

By the way, even in a sluggish market, houses do sell sooner or later, but if you already have a home and you fear it won't sell before your new one is ready, go ahead and sell it first and live in an apartment while building your new home. Also, you may not qualify for a construction loan with an existing house payment. Talk to a lender. Some lenders do not count the debt from your current housing against your borrowing power. Try and find one of those.

Financing charges will vary with lenders but will be estimated in advance for you. They will probably total about 1 to 3 percent of the mortgage amount. They may have to be paid when you close your construction loan, or they may be deducted from the total construction loan amount.

Cash Needed

You will need some extra cash. Call it interim (short-term) working capital. Some expenses will occur before your lender makes the first disbursement of construction money, and you will need a few thousand dollars to bridge that gap for such things as paying subs, fees, and permits. If you have cash available, fine. If not, you may want to borrow from a commercial bank or take a second mortgage on your existing home or get a bridge loan.

Excluding the cost of the land and the 1 to 3 percent in financing charges I discussed, you shouldn't need more than an additional 5 percent of the cost of the house for interim operating expenses. This money is needed only until the house is finished or you get a draw for reimbursement. When the lender disburses all the

money in the form of the permanent loan, the need for your operating cash will disappear and you can put it back where you got it.

Lenders will have different opinions on many of your particular financing needs, and you need to shop around and spend some time talking to them. They will help you tremendously in putting your financial package together. In this aspect, they are like subcontractors. Each of them will also explain their policies on construction draws, inspections, construction loan interest payments, points, credit reports, qualifications, and interest rates.

Qualifying for a Loan

The requirements for qualifying for a loan change from time to time and are different for each lender. Generally speaking, the better your credit, the more money you put down (increasing your equity) and the lower your total debts in relationship to your total income are, (called debt to income or dti) the more a lender will be willing to lend, and often at a lower interest rate. Also, you should only be applying for a loan that is approximately 80 percent of the "subject to completion" appraised value of your project. This is considered a low loan-to-value loan (LTV). I mentioned earlier that your lender would be obtaining such an appraisal as part of the loan application process. You should also have gotten such an appraisal early in the planning stages.

The end loan, or permanent mortgage application, is always part of the construction loan application process, regardless of whether or not you obtain a one-time close or two-time close construction loan. The number of end loan programs available today is staggering! You can find everything from 30- and 15-year fixed (very traditional) to adjustable rates tied to various markets to "interest only" mortgages. There are hundreds of programs where 25 years ago, there were a half a dozen. This is good for you as a borrower!

Chapter 5

Further Preparations

You are making great progress. You have purchased a lot, selected the house plans, estimated your costs, and arranged your construction loan and permanent mortgage. Several details still need your attention before you break ground.

By now you should have found out from your building inspection department the procedure and cost for obtaining your building permit. The sample form on the following two pages gives an example of information you will need and the inspections that will be required. Ask your local department about regulations in your area. Good subcontractors will take care of the inspections for you.

Inspections Required

Inspection requirements vary from place to place, but as an example, the county I live in requires the following inspections.

- Temporary electrical, or saw service, to ensure proper grounding.
- Footing, before pouring concrete, to make sure you have reached solid load-bearing ground.
- Slab, before concrete is poured, to determine whether it is properly insulated. Any plumbing in the slab is also inspected.
- Electrical, plumbing, heating, and air-conditioning rough-in, to ensure that in-the-wall installations are correct before they are covered up.
- Framing rough-in, to ensure structural integrity, especially after electrical, plumbing, heating, and air-conditioning installations. Workers have been known to cut too deeply into a joist or stud and weaken it.
- Insulation, to ensure compliance with local standards.
- Final electrical, plumbing, HVAC, and building to ensure systems work properly, comply with codes, and are safe. All final inspections must be completed before residents can get more than temporary electrical service.
- A certificate of occupancy (C of O) will be issued when all inspections are complete.

Final Details

If you haven’t already done so, now is the time to select materials such as brick, shingles, windows, doors, roofing, trim, plumbing, fixtures, built-in appliances, light

fixtures, flooring, hardware, and wallpaper. As you visit building supply houses to see their samples, you can also take care of a couple of other important tasks.

▪ Open your line of credit with them. This is quite easy, even for an inexperienced builder.

▪ Ask them to recommend reliable subcontractors. Smaller building supply companies are better equipped to furnish this information because the management is more directly involved with customers. Remember, the key sub you are looking for is your carpenter, and most of the good ones patronize building supply houses from time to time. Many make building supply houses their source of referrals. This is especially true in rural resort areas. (Don't forget, you can also use this book as a guide to building a second home in a resort area.) You may find other subs here as well. Refer to the next chapter for more about subs.

Now is the time to contact your gas, electric, and water departments for hookup procedures. Every locale has different procedures. You may also want to order a pre-wire from your phone, cable television, and broadband internet company at this time, as these companies sometimes requires three to five weeks' notice. Some don't charge for this, some do. Ask first.

You will also want to shop around for a builders' risk or fire policy from various insurance agents. In most states, agents are fairly equal in policy offerings, since they're governed by state laws. But be sure to check. The policy should take effect when materials arrive on the job, but your lender may want it to be in force before closing the construction loan. The lender will be the payee in the policy since it is the company's money. When the house is complete, and you move in, the fire policy can be converted to homeowner's insurance, often at a fairly good savings over a new homeowner's policy.

Doing Your Own Labor

If you plan to do any of your own labor, I have only one thing to say: If you aren't an expert at the particular trade you plan to do yourself, forget it. This is especially true in painting. People think it is so easy, but unfortunately it comes at a time when the house is quite far along, and construction disbursements will be approaching their maximum amount. You need painters who can get in and get out, do the work fast, and do a respectable job. If you seek perfection in painting, wait until you are living in the house and do your own touch-up painting.

If you hire painters by the hour, plan to stay with them the whole time or plan on it taking twice as long. You won't get a better job for the extra time. Hire them by a contract amount, such as $X a square foot based on the amount of heated area.

When it comes to doing your own work, remember Murphy's Law # 555—"Nothing is as easy as it looks."

Chapter 6

Subcontractors

A subcontractor (sub) is an individual or a firm that contracts to perform part or all of another contract. In your case you are technically the builder or general contractor, and you will build your house by subcontracting with others for specific jobs. You will pay for the project by setting a predetermined contract amount with each sub. This is important. You will have no hourly wage employees working for you, which means you will avoid all of the governmental red tape and taxes concerning employees. Your subcontractors are not considered to be employees.

Your Subcontractors and Professionals

Here is a list of the subcontractors and professional people you probably will be contracting with, listed generally in the order in which you will need them.

- Real estate broker for land search
- Loan officer at banks, credit unions, or mortgage lenders
- House designer or architect
- Licensed fee appraiser
- Framing carpenter (your key sub, to be lined up early)
- Surveyor
- Grading and excavation contractor
- Soil Treatment firm
- Footing contractor
- Brick masonry contractor to build a block foundation
- Concrete subcontractor to pour concrete walls, and the slab or concrete floors, as well as drives, walks and approaches.
- Waterproofing contractor
- Electrical contractor
- Plumbing contractor (also well and septic system, if needed)
- Heating, ventilation, and air-conditioning (HVAC) contractor
- Roofing contractor
- Insulation contractor
- Drywall contractor
- Painting contractor

- Finish carpenter (Installs kitchen and other built-in cabinets and trim around doors and windows. This work is often, but not always, done by main carpentry sub.)
- Flooring, carpet, and countertop contractor
- Tile contractor
- Cleaning crew contractor
- Landscape contractor

Finding Your Subs

As mentioned earlier, a lumber supply store is the best place to start for finding your carpenter subcontractor. Your carpentry sub will be able to recommend almost everyone else, as he is on the job more than the others and knows most of the other subs involved in building a house.

"A good sub is a working sub," especially during a recession or other downturn in housing starts. This is not always true, but it is a pretty safe bet. The really good ones are sought after and always busy because they do good work and are reliable.

If you can't find a sub through a supplier or your carpenter, the next best place to look is on a job site. Find a house under construction. Stop and ask around. You can get names, prices, and references. This takes only a few minutes. It is done all the time, and the general contractor shouldn't mind. He probably won't even be there. Besides, he does (or his superintendents do) the very same thing.

Often the boss or owner of a subcontracting firm is on the job. Get his number and arrange a meeting. Sometimes there are signs at the job site advertising different subs.

Only certain trades of subs are listed in the Yellow Pages. Most independent carpenters are not listed. You should be able to find heating and air-conditioning companies, plumbers, electricians, roofers, waterproofing companies, lumber dealers, appliance manufacturers, and a few others.

I once hired someone who was probably one of the best drywall subcontractors in the Southeast, but he was not listed. He didn't live in the same city; he lived out in the country. He was so good that he stayed backlogged two or three weeks even during recessions. His name was given to me by a lumber dealer.

Each subcontractor should carry insurance on his or her employees and should provide you with a certificate of insurance. Since this is your first experience and you won't be familiar with prices in your area, get three or four bids, or quotes, from different subs before selecting one. Use a written contract with all subs.

You may use the very simple ones I have provided or an attorney can provide you with one. Subcontractors may have their own contracts. At any rate, use one. Don't trust anyone's memory when it comes to dollars. Spell out your specifications thoroughly in your plans to be sure your bids are comparable and that all subs are bidding on exactly the same work.

Carpentry Labor Contract
To: (your name)_____Subcontractor_____
(address)_____

Date: _____Job address_____
Owner:_____
Area: Heated _____sq. ft.
Unheated_____sq. ft.
Decks _____sq. ft.
Charges
Framing @_____sq. ft x _____sq. ft. = ...$ _____
Boxing and siding @_____sq. ft x_____sq. ft. =.....$ _____
Interior trim @ _____ sq. ft x_____sq. ft. = ...$ _____
Decks @ _____ sq. ft x _____ sq. ft. = ...$ _____
Setting fireplace .....$ _____
Setting cabinets .....$ _____
Paneling .....$ _____
Misc. .....$ _____
Total charges .....$ _____
Signed: (your name) _____Date _____
Signed: (subcontractor) _____Date _____

Subcontractor's Contract
Subcontractor: _____
Address: _____
Builder: _____
Date: _____ Plan No. _____
W. Comp. Ins. Co. & Agent _____
Certificate No.: _____ Expiration Date: _____
Location of Work: _____
Total Price per House: _____($) Dollars
Terms of Payment: _____

Work to Be Performed and Materials to Be Supplied:

For Subcontractor: _____
signature and title

For Builder: _____
signature and title

Asking for Bids

For every job you hire a sub to do, make sure you ask for bids from several different ones and make sure the bids are for similar work. Here is what you should expect when getting bids for various jobs.

Plumbing: Plumbing bids should include all plumbing fixtures right down to the toilet seats. They will not include accessories such as toilet paper holders. If colored fixtures are to be used, specify color and brand. Plumbing showrooms are your best bet for the selection of these fixtures. Magazines and brochures don't tell you enough and often don't give prices. Most plumbing showrooms won't tell you the wholesale price, but you'll be paying list anyway, as the plumber makes a profit on each fixture and it's included in the bid. Don't make an issue of this. The small profit in the fixtures is one of the plumber's sources of income and he earns it.

HVAC: Your heat and air-conditioning contract should include vents (generally fan-powered) for the bathrooms, clothes dryer, stove, and range hood.

Electrical: Electrical bids should include all switches, wiring, receptacles, circuit breakers and their respective panel boxes, a temporary service box and installation, saw service, wiring of all built-in appliances, and installation of ovens and ranges, furnaces, heaters, and air conditioners. Electricians in many areas do the rough wiring for phones and Internet.

Utilities must be connected. Exactly who is responsible for running water lines, sewer lines, and electrical hookups will vary with each subcontractor involved. Get

the responsibility pinned down when you are hiring the subs, then follow through to be sure it is done properly.

All subcontractors should be responsible for obtaining inspections from the building department, but make sure they do or you will have to do it yourself. Lack of inspections can cause delays. Proceeding without getting inspections can be troublesome and expensive. If, for example, you put up drywall before having your wiring inspected, you could be made to tear down some of the drywall for the electrical inspector. This is not likely to happen, but the inspector could force the issue.

Scheduling Your Subs

Try to schedule your subs to fit into the sequence of events outlined in Chapter 8. This won't always be possible, and one sub can hold up the process. This is why you should check their references and ask whether their previous work has been completed on time. Reliability is as important as quality and in some cases more so.

Working with Subs

If you get along well with everyone at all times, you may not need to read the next few paragraphs. But if you occasionally run into conflicts, read them carefully. The fault — sometimes — may be yours.

At this point you've selected your subs. You've checked them out and are satisfied that they are honest, trustworthy, and experts in their fields.

Now let them work. Don't try to supervise every blow of a hammer or the placement of every stud. These guys are professionals and they know more about their trades than you do, and probably, if they came to you well recommended, they take pride in their work. Let them do it.

And, more emphatically, don't try to tell your subs their jobs just because you have read this book and a few others. You'll get good work out of your subs if they understand that you realize they know their jobs, and you're depending on them for good advice and quality work.

When a sub's work is completed, when the work looks good, and when the relevant inspections have checked out, make sure to pay the contracted amount

promptly. A hearty thank you is also in order. Subs who get treated right throughout the job and afterward will do a better job for you, and they'll come back when you build your next house. And you will build another.

Paying Your Subs

When you sign your contract with your carpenter, you will agree on a contract price for the work. It is usually based on X number of dollars per square foot of heated area and X number of dollars per square foot of under roof, such as in the garage. Prices will vary with the area, unions, and the complexity of the job.

Never pay a sub for work not done, for work that is incomplete, or for an unsatisfactory job. **Never pay in advance.** Paying in advance destroys incentive to get your job done ahead of other jobs. Paying in advance could result in a financial loss to you if the sub is incapacitated in some manner. I don't know anybody who gets paid in advance in any job field. If the sub says he (or she) needs money to get materials, etc., find somebody else.

Work out a schedule of payment with your carpenter. The carpenter and some of the other subs may require draws, or partial payments, as work progresses. This should be discussed before work begins. Don't be shy about it. They are accustomed to discussing such matters.

It is all right to pay a draw, but never pay for more than the work already done. If, for example, your carpenter says he is 50 percent finished framing, but he has only framed the floors, walls and hasn't finished the ceiling joists, roof framing, sheathing, or bridging, he isn't 50 percent complete. He is nearer 40 percent complete. Pay him no more than 40 percent of his contract price (bid).

Plumbers and electricians usually get 60 percent of the total contract price when their rough-in work has been completed and inspected. Heating, ventilating, and air-conditioning rough-in payments depend on the installation of equipment such as furnaces. If payment is just for ductwork and some low-voltage wiring, 20 percent of the total should suffice. If a furnace had to be installed during rough-in, add another 10 percent. Work out the arrangement with the sub before he starts. Subs almost always would like to get more money up front than they have in the job. Be sure there is enough money left in the total bid to complete the job if one of your

subs goes broke while you are still building. It has happened. You don't want to be stuck paying more to complete his job. You'll be covered better if you don't overpay him on his rough-in.

Brick masons and painters are about the only other subs who will require a draw in progress. You will have to use your best judgment as to how much of the job is done. Again, don't get ahead of them in paying.

I seem to be saying the only way you'll get your sub to complete the job is if you owe him money. In some cases that is true, but in others it is only partially true. Some subs would finish regardless. Often the issue is that subs have more than one job going at one time, and your main objective is to get your job finished before one that was started after yours.

Make sure inspections by your county or city are completed and the work is approved before you make any payments at any phase of construction, other than partial draws. This is your assurance that the job has been done, and done properly.

Chapter 7

Suppliers

The suppliers that you will be buying from are listed in this chapter by the type of products they sell. Some sell several different products, so you can shorten your shopping time when you patronize them. All of them will require a credit check on you. Your suppliers will also want the name of your lender. This lender reference is the key to your getting credit with them. Obviously, if your credit is strong enough for the lender, it's strong enough for the suppliers, and often just the lender reference is enough.

▪ The suppliers you most likely will be using are:

▪ Sand and gravel company

▪ Brick company for face (decorative) brick

▪ Concrete block and brick company (for mortar mix and the building blocks for foundations)

▪Concrete supply company (for concrete for basements, garages, footings, and driveways)

▪ Lumber company or home center (for framing lumber, nails, windows, doors, roofing, siding, paneling, and interior and exterior trim)

▪ Flooring company (for vinyl, wood, and tile flooring and for carpet)

▪ Cabinet shop (to fabricate custom cabinets. Most lumber companies also sell both ready-made and custom cabinets.)

▪ Countertop company (for granite, marble, etc. countertop, hearth, vanities, etc.)

▪ Lighting fixtures supplier (for light fixtures, bathroom fans, exhaust fans. The firm will do a complete count of your lighting needs and help you stay within a dollar figure set during estimation.)

▪ Paint store (for wallpaper. Paint is usually purchased by your painter and included in the price per square foot.)

▪ Appliance store (Some lumber companies and lighting centers carry appliances.)

▪ Insulation company

▪ Tile company (for ceramic tile, marble, and any decorative stonework)

▪ Drywall company (Sheetrock is the most common brand. Some lumber companies and home centers also sell drywall.)

▪ Any other specialty type suppliers that you may need for certain items not carried by one of the above, such as cabinet shops.

Large home centers or lumber companies may carry most of your needs. Some carry everything from bricks to wallpaper. As long as their prices are competitive, that's fine.

This is my recommendation: When you find a lumber company or home center, give your plans to the "contractors" sales department and let them give you a list of all the items the company can provide and a complete cost list. I have never found a company that wouldn't do this. Some will do a complete take-off (material list) of all the lumber and other materials you will need.

You will get a material list from your lumber company of the number of studs, floor joists, windows, and rafters. It will be fairly accurate, so don't be afraid to use it. Remember, the company is eager to sell to you, and this is part of its service. Company personnel can also explain different products to you and show you new products and ideas. Let all your suppliers aid you in take-offs and different product ideas.

Delivery of Materials

Most companies will also assist you in, or be responsible for, delivery, by making certain the materials are delivered on time, but not so far in advance that they may be stolen. Make sure there's a flat, clear area close to the foundation where the load of framing lumber can be off-loaded. This delivery system has worked particularly well for me when I have used one supplier for all framing and as much of the rest of the supplies as I could. In such a case I have permitted my carpenter to order needed materials from that supplier alone. The supplier has aided me in keeping an eye on the additional materials ordered.

Buying at Builders' Cost

"Ask and ye shall receive." If you don't, you won't. Be sure to ask whether the quoted price is the "builders' price." Tell the supplier that you are a builder, because you are. If you want to add "company" to your name (that is, John Smith Company), fine. If it makes you feel better, do it. It costs nothing and changes nothing legally (the credit will still be in your name). If you want to incorporate (form a corporation), talk to an attorney. I don't think you'll find it necessary.

Paying Your Suppliers

Some suppliers offer at least 30-day terms so that you pay the stated amount within that time without penalty. Some independent stores may also offer a small discount if your bill is paid by the tenth of the month following purchase. If you buy supplies on June 20, you must pay by July 10 to receive the discount. If you buy on June 1, you would still have until July 10 to pay and get the discount. I try not to order too much toward the end of the month and wait as much as a week, if I can, to get an extra 30 days to pay. Not all suppliers are as generous as this, and their terms will vary. Check with your suppliers on what terms will be offered you.

By getting favorable terms and extra time in which to pay, you can be sure that your construction draw will cover the bill. You will use construction draws to pay for all your supplies. You should seldom have to use any of your own money. If you do, your construction loan should reimburse you.

Construction draws are based on labor completed and materials in place, not stored or sitting on the job site, although some lenders will pay for materials on the site. For example, if you order brick for the whole house (a brick veneer home) at the start of the job, you'll have to pay for the brick that's going to be used in the veneering before the lender advances the dollars for veneering. Instead, you should order the brick in two stages, first for the foundation, then for veneer when you're ready.

Bookkeeping

Bookkeeping is very simple when you are building only one house. Open a separate checking account to handle the construction of the house and pay all bills, no matter how small, by check. Code each check written to one of the appropriate categories on the estimate spreadsheet and record each amount on a separate sheet of paper or separate spreadsheet until you have totaled all of the money spent on that category. Then enter the total amount in the adjusted cost column of the estimate spreadsheet and compare the adjusted cost to the original estimated cost. You will find the use of my spread sheet/computer program at www.byoh.com very helpful in your bookkeeping efforts.

You can make as many spread sheets for subcategories as you need – its fun! For example: Foundation costs may be made up of several costs such as sand, fill dirt, steel reinforcing, forms, etc. Simply start a new spread sheet, label it "Foundation," and change the list of costs by typing in what you need. The pre-typed categories can be overwritten.

Chapter 8

Building the House

Look at how much you have accomplished. You have your building lot, you've arranged your loan, and you have a house plan you can live with and are able to finance. You've completed the vast amount of paperwork that includes any necessary permits and insurance policies.

You have located most of your subs and have contracts with them. You've visited various supply houses and worked out your accounts for bricks, concrete, and lumber.

Congratulations. You've reached the day you thought might never come. You're ready to start building.

What is the proper sequence of steps in building the house, and how long will each take? Let's make a list of them. You can also see a photo sequence on www.byoh.com.

1. Staking the lot and house: 1–3 hours
2. Clearing and excavation: 1–3 days
3. Ordering utilities, temporary electric service, and a portable toilet: 1 hour
4. Footings (steps 3 and 4 can be reversed). First inspection must be made before pouring: 1 day
5. Foundation and soil treatment, then foundation survey: 1 week
6. Rough-ins for plumbing, if on a slab, and inspection: 2–4 days
7. Slabs, basement, and garage: 1–2 days
8. Framing and drying-in: 1–3 weeks
9. Exterior siding, trim, veneers: 1–3 weeks
10. Chimneys and roofing: 2 days–1 week
11. Rough-ins can be done while steps 9 and 10 are in progress: 1–2 weeks
12. Insulation: 3 days
13. Hardwood flooring and underlayment: 3 days–1 week
14. Drywall: 2 weeks
15. Priming walls and "pointing up": 2 days
16. Interior trim and cabinets: 1–2 weeks
17. Painting: 2–3 weeks
18. Other trims, such as Formica, ceramic tile, vinyl floors: 1 day–1 week
19. Trimming out and finishing plumbing, mechanical, and electrical and hooking up utilities: 1–2 weeks
20. Cleanup: 2–3 days
21. Carpet and/or hardwood floor finish: 3 days–1 week
22. Driveway (if concrete, can be poured anytime after step 14): 1–3 days
23. Landscaping: 1–3 days
24. Final inspections, surveys, and closing of construction loan and interim loan: 1–3 days
25. Enjoying your home: a lifetime

The Steps Explained

Let’s take a closer look at those steps and clear up any details you should know about them.

STEP 1: Staking the Lot and House (1–3 hours)

The number one problem that occurs when building is the placement of the house on the lot. Staking is vitally important in the early stages of the building process. Since this will be, most likely, the first house you build, I recommend that you have a registered surveyor/engineer stake both the lot and the position of the house. Surveying is an important function, as houses have been placed in violation of certain setbacks or restrictions, and if a surveyor does this, he or she is responsible for the expense of making corrections. I have seen surveyors who made errors have to pay for rebuilding a foundation. (You can't move a foundation). It's rare, but Murphy’s Law says it will happen to you. Builders have placed houses straddling property lines and have had to tear the foundations out and start over. Best to be safe.

Locating the house on the lot

The stakes for the lot itself may have been moved or torn down since you purchased it. A surveyor will check this. The cost to re-stake a lot and stake a house should be minimal, depending on the complexity of the house and the terrain. You, of course, will

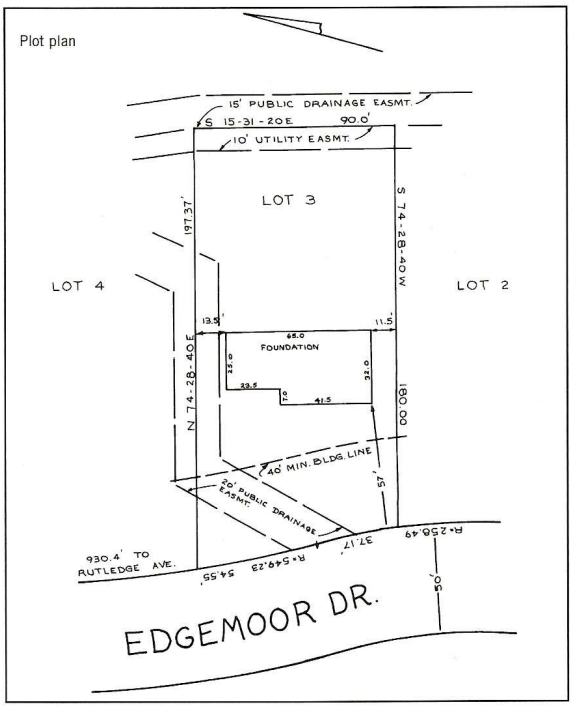
want to be present for the staking or placing of the house to be certain it faces the direction that you want. If possible, meet with the surveyor at the site before he begins working. Or you could put some stakes in the ground over a weekend to indicate the approximate location and direction you desire. Then let the surveyor do it accurately and you can inspect it when it is done.

When the lot is cleared and the basement — if you have one — is dug, you may want the surveyor back to re-stake the house. On his first visit he usually will put in offset stakes. Offset stakes are the original four or two corners offset as much as 25 feet to the side so they won't be disturbed during clearing and excavation. Then it's a quick job for him to find the exact locations on his second visit.

Usually your house should face in the same direction as other houses on your side of the street. It doesn't have to, especially if your house is on a large lot, unless the building code demands this.

If your lot slopes more than 3 or 4 feet, you may need a topographical plat (called a "Topo") from a surveyor. Shop for the best price. Topo's are expensive, but you'll need it so that you can fit the house to the slope and be certain water will go around the house as it drains off the grade.

Water is, has been, and always will be the biggest problem that interferes with the construction of a building. As nature's strongest force, it goes wherever it can, taking the shortest route. It is stronger than anything man can make. Keep in mind that gutters help get rid of water; they don't control it.



Locating the house on a survey of the lot

The house should be positioned first on a map of your lot, then that position should be staked on the site by you and your carpenter, surveyor, or footing contractor. The surveyor is best for the job. An architect or designer can position the house on the lot on paper, considering water as well as solar energy, wind, light, and the location of other houses. Make sure you contribute your ideas to the person positioning the house before they start working on your job. A few things to consider:

▪ Interior light: A north-south facing house will be darker than an east-west facing house.

▪ Water flow: How will it affect landscaping and basement drainage?

▪ Other houses on the street for setbacks. Setback requirements are determined by local zoning and deed restrictions, but, setbacks are also influenced by your neighbors' houses

▪ The street itself: Should the house be parallel with the street? What if the street curves? What about a corner lot?

▪ Privacy on the front, back, and sides. Think about what your windows will overlook and what your neighbors might see from their homes. You may want to change window placement based on this factor

▪ Solar orientation: To get the most benefit from the sun's energy, homes should have as much surface as possible facing south, with broad expanses of glass on that side and a minimum of doors and windows on the north side. Homes may also be designed to allow for roof solar collectors or other solar energy devices.

▪ Minimum setback and side-yard requirements: Make sure you are within the legal boundaries of your property.

I don't want to frighten you with so many considerations. I have built many houses for my family, and I still have to think through these decisions. Positioning the house is a very personal decision, one you should make when you first buy your lot. If you are stumped and you can't decide for yourself, and you don't have an architect or designer involved with your plans, spend the money and get the advice of an architect for that particular decision.

STEP 2: Clearing and Excavation (1–3 days)

Clearing the lot includes clearing trees, brush, rocks, roots, and debris from where the house will sit, and usually 10 feet or more around the foundation, thus allowing space for tractors, fork lifts, and trucks working at the site. Obviously, the more area to be cleared, the more it will cost. Removing big trees is time-consuming and expensive. Rocks may have to be blasted. If you want unwanted trees to be cut into firewood, the crew you hire will charge dearly for doing the job. Best to have the good, manageable-sized logs cut down to 10 to 12 feet in length and piled at the side of the lot for you to cut up at your leisure.

Your best source for finding a sub for clearing and excavating is by word of mouth or in the Yellow Pages.

Rough excavation

Excavation finished

Get a contract price for this work. It may cost a little more, but you will be assured of not having your first cost overrun. If a basement is to be dug, your sub must have and know how to use a transit. You may also want your surveyor/engineer to oversee this digging to make certain it is the proper depth. Some or all of the dirt removed from the basement site might be put out of the way for later backfilling and landscaping. Topsoil should be separated out to be spread later for the lawn or garden.

Your contract price should include hauling all trash, such as stumps, branches, and rocks, to a suitable landfill. I don't advise burying trash on your lot, as these stump holes tend to form an unsightly depression as the material in them settles or rots. Some areas ban stump holes. Of course, if the distance to a suitable landfill is prohibitively expensive and you have enough land, a stump hole may be your best choice.

You may want to put one or more loads of stone on your driveway so that supply trucks can drive in during wet weather. The best stone for this is unwashed crushed stone. It has all the powdery substance created in crushing the stone, and it will harden after getting wet. You also may need to put drainpipes in at the roadside if they are required by either ordinance or common sense. They allow roadside water to flow under the driveway and prevent water from washing the stone away.

STEP 3: Utilities Hookup (1 hour)

When you purchased your lot, you were told — be sure you were — what utilities were available and how much they would cost. Now it's time to make plans for a couple of months down the road with a few phone calls and/or a visit to each utility. Pay all fees and complete any necessary forms. Arrange for temporary electric service for your subs.

Temporary Electric (Also called "Saw Service)

Usually your electrician is responsible for installing the temporary electrical panel box and having it inspected, but you will have to apply for the service from the utility. This usually can be done over the phone.

Wells and septic systems, if used, can be installed now, and it is best to get this work done at this time. County or city health inspectors may be required by code to determine the location of these. Tell them your plans for such things as gardens or driveways, or which trees you hope to save, to guide them in their decisions.

Well

Septic Tanks

If no temporary source of water is available, such as a house next door, you will have to have the well dug and temporarily wired for your brick masons, who will be needed shortly, or they will have to truck in their own water.

I also recommend, and some locales require, a portable toilet on the job site. Sources for renting these can be found in the Yellow Pages under Toilets-Portable.

STEP 4: Footings (1 day)

The footing is the base of a structure. It is a mass of concrete supporting the foundation of the house. It can be poured into wooden forms or in trenches. It must be below the frost line, or it will heave when the ground thaws and freezes. In the northern states and higher elevations of any area, this line may be 4 or more feet below grade level. This is one reason there are more basements in a northern climate. If you have to be several feet below grade level for your footing, and thus need several feet of foundation to get back up to grade level, only excavation and a concrete slab are needed for a basement. Local codes will clearly state the requirements for footings in your area. The subcontractor you choose should know the code.

Footing forms set

Concrete footings

I have a footing sub that stakes, clears, excavates, digs, and pours footings. For your first house, I recommend that you find one who does the same. The cost will be comparable. The footing is probably the most important part of the house. If it settles or moves, so will your house. If it is not done according to the dimensions of your plans, you will have to change the plans to accommodate the footing or do the footing over. I recommend the former if the situation arises, unless the deviation is too severe.

After your foundation walls are up, put in a footing drain. Your code may require this. The drain can be connected to a dry well, storm sewer, or any other approved means of getting rid of the water. In some places, it can simply drain into your yard.

As a rule, footings are better today than they were 100 years ago. Well-built houses of today will probably last years longer than those built long ago. Technology has improved materials such as concrete, and our knowledge of how to use them has increased. I say this to help ease your mind about this important step.

Building inspectors usually check the locations of footings before they are poured to make certain they are deep enough and resting on undisturbed earth. Don’t complain about this inspection — it could save you thousands of dollars if it means that you will avoid some future problem.

STEP 5: Foundations (1 week)

Foundations can be made of brick, concrete block, or poured concrete. Stone foundations generally aren't built anymore, as they aren't as strong as the others. Stone can be applied as a veneer just like brick, for aesthetic purposes, and you would be wise to use it only as such. Local codes may actually prohibit stone as a foundation load-bearing material.

Your masonry contractor needs to be one of your better subs. Next to your carpenter, he is the most important. Your carpenter probably can recommend a good mason, as he usually starts his work soon after, if not directly after, the mason is finished. He knows the good ones. I'm sure he's had to follow bad ones and probably remembers having to shim walls or compensate in some other way for an out-of-square foundation. Houses can and should have square corners.

Setting the Forms for pouring

Walls finished & waterproofed

The foundation wall for any type house needs to be high enough so that water will be diverted away from the house by the final grade of the soil around the house. It must also be high enough so that the wood finish and framing of the house will be at least 8 inches above the finish grade and thus protected from soil moisture.

Crawl space with gravel floor

Space for screened vent

A crawl space should be at least 18 inches high so that you can crawl beneath the house annually to inspect for such things as termite damage. The crawl space walls should have screened openings for ventilation. If you are planning on a full basement, your foundation walls should be high enough so that you have at least 7 feet 4 inches of headspace in the finished basement.

If you are in doubt about the foundation height, consult an engineer. Usually you, with the help of the carpenter, mason, excavator, or anyone who can use a transit or a level, can determine the needed height. If the lot is almost flat, the job is simple. It becomes tricky when the lot is steep or has opposing grades. Experienced contractors make certain the foundation is high enough at the highest point of the outline of the foundation wall, and use that highest point as the control point.

The finished foundation should be waterproofed from the footing to the finish grade line. I recommend hiring a professional waterproofing company for this. Companies are listed in the Yellow Pages under Waterproofing. Don’t let one of your regular laborers do it in his spare time, if he offers to. A professional company will stand behind its work.

Also, depending on your locale, you may need to have the soil treated for insects and pests, particularly termites. Hire a professional. This job is done after the foundation is in, but before any concrete is poured for either the basement or the garage. The cost is small.

STEP 6: Rough-in plumbing (2–4 days)

You can see the "rough-in" plumbing

If you have a basement with plumbing or if you are building the house on a concrete slab (as opposed to wooden floor joists), once the foundation is in and backfilled and tamped (packed down), and the soil treated, your plumber needs to install the sewer line and the water pipes that will be under the concrete. Also, any wiring that will go under the concrete needs to be placed in a conduit and roughed-in. Most wiring, though, can be run through the stud walls and ceiling joists to any given point.

Your soil treatment company may want to wait until the rough-ins are completed before treating the soil so it won't be disturbed by digging in the plumbing lines. Ask about your company's policy.

STEP 7: Slabs — for Heated Areas (1–2 days)

Many locales require slab perimeter insulation. The most common perimeter insulation is extruded polystyrene foam board (poly), which is available in various thicknesses. The board extends from the top of the foundation to at least 12 inches below finished grade. I recommend a 1-inch or thicker board, even if it is not required by codes. I also recommend using a plastic barrier of 4 to 6 mil thickness under the concrete to prevent

moisture from working up into the concrete. A 6-by-6-inch #10 wire mesh should be placed in the concrete to reinforce it.

The top of the slab should be at least 8 inches above the finish grade. Your sub should put down a base for the slab, tamping down gravel or crushed stone to form a layer 4 to 6 inches in depth. The poly goes down on this just prior to pouring the concrete. If you cannot cover the entire area with one sheet of poly, any joints of the poly should overlap by 4 inches and be sealed with silicone caulk. The wire mesh is laid on top of the poly. Call for an inspection before pouring concrete if your code requires it.

A good concrete sub will do all of this. I stopped checking my slab pourings when I found a terrific concrete subcontractor.

For garage slabs, with proper backfilling and tamping, you don’t need the wire mesh, but if you believe the added strength is required, use it. I recommend an expansion joint of fiberboard around the perimeter. Garages are subject to extreme temperature changes, and concrete expands and contracts with those changes. The expansion joint permits this expansion without cracking the concrete. Both this slab and the house slab should be at least 4 inches thick. Be sure your sub thickens all slabs wherever they will be carrying load-bearing posts or walls. Codes differ on the additional thickness required, but it is often the thickness of the footings.

STEP 8: Framing (1–3 weeks)

If you have a good carpenter, this is the easy part. And if that sounds too simple, wait and see. You need only order the lumber, the windows, and the exterior doors, and in two or three weeks you'll have a house (or at least something that looks like a house). Rain or snow during framing is not desirable, but it seldom does much damage beyond an occasional warped piece of lumber. But once the house is dried-in (making the house secure from rain), the work inside can progress regardless of the weather if windows and doors are in place.

1st Floor framing

Wall framing

You will want to check with your carpenter about any problems with materials. Because it is impossible to estimate exact needs in materials, some ordering will have to be done during the course of construction.

You could give your carpenter permission to order what he needs and then tell the supply house what you have done. The decision is up to you. I do it.

Roof framing

Exterior sheathing & wrap

Nearing "dry-in" stage

"Dried-in"

When the framing is completed, order cabinets, bookcases, and vanity cabinets. Space for them can now be measured on the job by the salesman. This is far more accurate than measuring from your blueprints (house plans).

STEP 9: Exterior Siding, Trim, or Brick Veneer (1–3 weeks)

This phase of construction is carried on while work progresses inside and should be done before roof shingles are installed. Masonry chimneys are installed after siding or veneer.

Vinyl siding

Brick veneer

Veneers such as brick should be installed before final exterior trim (boxing) is added. At completion of this step, you are ready for exterior painting.

STEP 10: Chimneys and Roofing (2 days–1 week)

Chimneys should be built before the roof is shingled. This will allow placement of sheet metal flashing around the chimney for waterproofing, and will also avoid damage to the shingles. A prefab fireplace and flue would also be installed at this time. Roofing follows completion of the chimneys.

STEP 11: Rough-ins (1–2 weeks)

All electrical, plumbing, heating and air-conditioning, phone pre-wires, cable or satellite TV lines, stereo and intercom, Internet, and burglar alarm systems should be roughed-in at this time or anytime after step 8 is completed. This does not mean that these units are installed at this time — only the wiring or plumbing for them. Inspections are needed when this step is complete.

Plumbing "roughed-in" walls

Bath tub(s) set in place

Wiring "roughed-in" walls

Heat ducts "roughed-in"

Fireplace "roughed-in"

Furnace & water heater "roughed-in"

STEP 12: Insulation (3 days)

Consult with your local utility company on the insulation you need to qualify for their lowest rates. Some locales require an inspection of insulation by both the utility and the building inspection department when it is completed, and before it is covered with drywall or paneling (or plaster, if anyone still wants plaster walls).

Photo courtesy of Johns Manville

STEP 13: Hardwood Flooring and Underlayment(3 days–1 week)

I find it easier and neater to install unfinished hardwood flooring and vinyl or carpet underlayment before I have the drywall installed. It can be done afterward.

Finished flooring installation

However, never install finished flooring before complete drywall installation.

STEP 14: Drywall (2 weeks)

Most residential interior walls are finished with 1/2"x4'x8' gypsum wallboard sheets called drywall (Sheetrock is a brand name).

Figure on 3.5 or 4 times the square footage of floor area for the total square footage of wallboard to be used. Your drywall sub can give you a price based on a square foot charge. Some will give a bid that includes materials. On your first house you may want to go this route.

For baths and other moist areas use a waterproof board or paint the drywall with enamel paint, even before wallpapering.

STEP 15: Priming Walls and "Pointing Up" (2 days)

After the drywall is finished and before the interior trim is applied, I prime all walls and ceilings with a flat white latex primer. My two painters do this with a spray gun and in one day can do a house that measures 3,000 square feet. Priming reduces the finish painting time considerably, which saves you money. With no trim installed, only windows need to be protected during spraying. If all of your woodwork (trim) is going to be painted instead of stained, priming the walls by spraying can be postponed until the painting stage.

When the walls and ceilings are primed, the slight imperfections that sometimes occur in finishing drywall will show up. At this time you can have your drywall subcontractor touch up these places so that the walls and ceilings will be ready for final painting (this is

called pointing up). Pointing up can also be done just after the interior trim is finished in case the walls get nicked during this process. I have done it both times, and at no extra charge.

STEP 16: Interior Trim and Cabinets (1–2 weeks)

Doors, moldings, cabinets, countertops, and shelves are installed at this time. This includes kitchen cabinets, bathroom sink bases and medicine cabinets, and all other built-in cabinets such as bookcases.

Cabinets that were ordered after the completion of step 8 should be ready for delivery and installation. The cost of installation should be worked out in advance between you and either your carpenter or supplier (or cabinetmaker if you use shop-built cabinets). Interior trim labor usually includes standard trim and moldings. Any special molding or trim work, or any paneling, should be discussed with your carpenter in the planning stages to determine the extra cost of installation. Your millwork supplier, usually the lumber company, can do a complete material take-off for your trim and discuss the costs of extra items.

STEP 17: Painting (2–3 weeks)

You are ready for final painting inside. Your exterior painting can be delayed until this time, too, to save your painter from hopping back and forth from job to job. Work this out when you first discuss painting with your sub. You don't want to leave the exterior trim unpainted or unstained too long, as it may warp or get moldy.

STEP 18: Other Trims (1 day–1 week)

It's time to install vinyl floors and ceramic tiles.

Wallpaper can be hung at this time or delayed until after you move in. The flooring can't be delayed, because the plumbing cannot be completed until the floors are finished.

STEP 19: Trimming Out (1–2 weeks)

It's time for the plumber to finish his work.

This is called trimming out or setting fixtures. Some of the fixtures he installs must be wired, so he needs to finish before the electrician can finish.

Also, your heating and air-conditioning must be completed before your electrician finishes his work. Next, your electrician can install switches, receptacles (sometimes called devices), light fixtures, and electrical appliances, such as the oven and range. He will also wire the electrical apparatus that has been installed by your plumber and heating and air-conditioning subs.

STEP 20: Cleanup (2–3 days)

Both inside and outside cleaning can be started. The bulk of outside trash, and an incredible amount of it that comes from inside, can be picked up by truck and hauled away.

If you want a dumpster, well that’s fine, but they don't hold much and are best suited for renovation work where trash containment is more critical. On new construction sites where there is no landscaping in place, it's cheaper to bulldoze all the trash and truck it away at the end of the project. You can do the inside trash removal work. If you don’t want to, you can hire a professional crew. Be sure to add the cost to your estimate.

STEP 21: Carpet (3 days–1 week)

Hardwood floors should be finished before any carpet is installed, because of the sanding required before the floors are stained and sealed with polyurethane.

The dust from sanding usually is controlled, but some could permeate the rooms with carpeted floors. Because of the dust, you may want to finish the floors before step 20, cleaning up. I’ve done it both ways and found advantages to both.

STEP 22: Driveway (1–3 days)

You should keep heavy trucks off newly laid concrete or asphalt drives for a period of time. Try to time it so that you have received all heavy shipments of materials, hauled off all heavy loads of trash, and finished with any heavy equipment coming to do work.

Realize that if you wait until the end with the driveway, you'll at least have a moving van on it. Concrete can support a moving van a week after the concrete is poured, but asphalt can't. If you use asphalt, wait until after you move in to pave. Put down a good stone base on the drive before moving in. My asphalt paving contractor insists on this and puts down the stone base and then redoes the stone (or dresses it up) before paving it with asphalt several days after the moving van leaves.

STEP 23: Landscaping (1–3 days)

This job can be put off until after you move in, depending on the requirements of your lender. Such a situation may arise due to weather or scheduling problems or lack of money due to other cost overruns at the end of construction. You might get by with just grading and seeding, or mulching disturbed wooded areas.

STEP 24: Final Inspections, Surveys, Loan Closings (1–3 days)

After the completion of the actual house (not the driveway and landscaping), all final inspections from the county or city for building, electrical, mechanical, and plumbing should be made. Also, the lender will make a final inspection of the house at this time and may require driveways and landscaping to be complete before it will disburse the balance of the construction loan. When approval is given, your loan officer will coordinate the necessary

paperwork and schedule the refinance or modification of the construction loan. The lender will most likely require a final survey to be sure no additional structures or additions have

been placed on the lot in violation of deed restrictions or zoning. Generally, your lender will order this final survey and any other necessary documents required for closing.

The actual loan closing may take only about 15 minutes, depending on the efficiency of the lender. One document you must remember to obtain (your lender will remind you of it) is your insurance policy. It will need to be converted into a homeowner's policy prior to closing. This merely takes a phone call to the agent who issued you your builders' risk (or fire) policy.

STEP 25: Enjoy your new home!

Carl Heldmann

Renovation –Remodeling –Home Improvement - Additions

Additions, Renovations, and Extreme Makeovers to an Existing Home

If you can be the General Contractor (GC) to build a new house, doesn't it make sense that you should be able to use the same process to remodel or renovate or build an addition? Well, you can! General Contracting is General Contracting.

There are three things you can do to an existing house to increase its value, and/or increase its livability.

1. Add on
2. Remodel
3. Tear it down and build a new one (the Extreme Makeover approach)

With all three approaches, remember that "general contracting is general contracting," and you will always save money being your own house contractor, no matter what the size of the project.

Obviously, you can, and people often do, combine an add-on project with a major renovation, but I will treat them separately, for there is a difference in the scope of each job. In both cases, you will save even more (as a percentage of cost) by acting as your own contractor than on new construction, as I will explain. With the third option, other than the demolition, the process is the same as building on an empty lot.

Building an Addition

If you already have a house but would like more room and don't want to move, you can add to your present home. It could be easier than you think. You may already have a head start toward additional space.

There are two basic ways to add to a home. One is to make habitable an existing unfinished area such as a basement, garage, screened porch, breezeway, or attic. This is the least expensive way because you already have the basic room with a foundation and some or all of the outside walls. The other and more expensive way is to build on to your house. If you are considering this, check to see that you have room on your lot without violating required setbacks and that you meet any subdivision or deed restrictions.

Whether you finish an existing space or add to your present structure, the procedure will be the same. Start at the beginning of this book and treat the addition as a small home. The only things that will be different from building a house are that you already have the land and the costs will be somewhat different. Don't skip any of the applicable steps I outlined earlier for building a house.

Don't add too much value to your home. Sooner or later, all houses need to be sold, and you don't want to have the most expensive house in the neighborhood when you put it on the market. It's a real estate fact of life: The most expensive house in the neighborhood is very difficult to sell.

How to Estimate Costs

The basic difference in estimating an addition against a complete home will be the increase of some square footage building costs due to the smaller size of the job. Subs may want a few more dollars for their labor because they could be earning more on a larger job for almost the same amount of time.

The general contractor that you won't be hiring because you're doing it yourself would also have charged a greater percentage for profit and overhead. As I mentioned earlier, the National Association of Home Builder recommends that professional builders aim for a 50 percent gross profit margin! The savings you realize by being your own general contractor will more than offset the increase in labor costs from subs.

You should make a list of all the materials the project will need and use the cost estimate spreadsheet on www.byoh.com as a starting point. Obtain competitive bids as though you were building a house and proceed from there.

How to Finance an Addition

Financing an addition could be easier than financing a new home. You may be able to simply get a home equity loan based on the equity you have in your home. (Your equity is the difference between what the house is worth and what you owe on it.) Quite often you don't even need to give a reason to borrow against that equity because the lender is well protected if you should default. The house already exists and serves as collateral for the loan.

The amount you can borrow varies from lender to lender, but if you have been in your house for at least three years, it is safe to assume you have built up some

equity. Typically, you can borrow up to 100 percent of your equity. If you don't have sufficient equity for an equity loan, a construction loan based on what the "completed value" of the house should be the answer.

Financing small jobs can also be done with cash from savings, low interest credit cards, or even a construction loan. Construction loans however, because they are more costly, are usually for larger jobs than a kitchen or bath redo. Generally they are for projects that approach at least a 50% (or more) increase in value to the entire house.

Just as in planning new home construction, your local lender can sit down with you and discuss your lending needs.

Remodeling: Renovation or Restoration

Over the years, finding inexpensive historic houses to buy for the express purpose of restoring them has gotten harder, except in areas that no one wants to live in. It is hard to increase the value of a home through renovation if it is in an undesirable area. The result is you may have to pay too much to make renovation feasible. If the price of the house plus the cost of renovation exceed the fair market value (appraised value), it makes little sense to proceed. You must keep in mind that sooner or later all houses will have to sell.

There do remain a few pockets of desirable older homes, usually in established neighborhoods close to viable downtown areas, where paying more to purchase is rewarded in the end. But the big bubble of the 1980s and 90s is long gone. If you already own a house in need of renovation, however, or have found an appropriate one to buy, here is how to analyze the situation.

1. Make up a budget.
2. Have the house inspected by a reputable home inspector.
3. Determine what upgrades must be done and what improvements you want to make. Consult the inspector.
4. Determine costs by completing the cost estimate spreadsheet just as you would for a new house.

Note: You will find that labor costs in renovation are much higher (as much as double) than with new construction or even additions. This is because subcontractors know that there are often hidden costs in renovation such as finding problems behind walls or making things fit into an existing space. They also know that extra care

must be taken when working in an existing house. Don't worry, though – material costs are the same for either new construction or renovation.

5. Get an appraisal as to what the house will be worth when the work is done.

6. Make your decision based on the appraisal. Will the added cost make the house too expensive for the neighborhood? This will be indicated on the appraisal. If it does, it will be hard to sell and/or you will lose money. The appraisal may actually indicate a value far below your estimated costs, which could be a function of the neighborhood housing values dragging your project down or an indication that you didn't do a careful enough job of estimating.

7. If you do decide to go ahead, follow the same steps for general contracting as you would in new construction as far as obtaining financing, scheduling subcontractors, etc.

Even with small remodeling jobs, it makes sense to act as your own general contractor. After all, why pay a remodeling general contractor to make the same phone calls you can make to the plumber, electrician, tile contractor, cabinet shop, painters, flooring contractor, home center, and so on.

Say you're planning a new kitchen. Make a list of what you want done. Find corresponding subcontractors for each type of job and get bids from them as well as a list of materials they may need you to supply. Enter all those costs on a spreadsheet and see what it costs with you being the general contractor.

Next get a bid for the whole job from a remodeling general contractor, where all you have to do is write the check. See which way is cheaper. Will your homework and scheduling efforts be worth it? I think you'll find out the answer is yes!

Tearing Down and Building Up

There are two phases in renovation: tearing down and rebuilding. Both stages have their own set of challenges. Following is the general order of steps for the completion of the tearing down phase of a renovation project.

Wall Removal. This phase follows your master plan and blueprints. If only a few walls are to be removed, your carpenters can usually handle first the removal of the plaster or wallboard for those walls only. If all the plaster is to be removed from all the walls, remove the plaster before tearing out any walls. Your carpenter may want

to hold off on wall removal until ready to do any additional framing or bracing. This is fine. Discuss this scheduling, as well as costs, in the planning stage.

Plaster Removal. Other than cutting holes to change wiring or plumbing, I recommend removing plaster only if it is severely cracked or falling down. Patching is always cheaper — even covering cracked walls with drywall is less expensive than totally gutting them. Keep in mind that all interior trim must be removed, and can seldom be saved, in total gutting. Allow one-half to one day per room, including trim removal.

Plumbing removal may necessitate removing some plaster, but usually in small areas that can easily be patched. The time taken will vary with the difficulty of the job and the extent of work to be done.

Wiring and Plumbing Removal. If you are doing a total gut and have removed all the plaster or drywall, then this is the time to remove any plumbing pipes, electrical wiring, radiator pipes, or boilers you have decided to replace.

For New Additions. Clearing, grading, excavation, and hauling away trash are the first steps for new additions, and should take one to three days, depending on the scope of the job.

Once the teardown work is complete, the fun part of the project begins. The following is the general order of steps for completion of the rebuilding phase of a renovation project.

Foundation, Concrete, and Brick Work. Adding or repairing footings and foundations, slab work in basements, and such brick work as chimneys, new foundations or other brick repairs can be completed before any of the items in this chapter is begun, but I prefer to do all the removal necessary before I start repairing anything. The only exception is the roof, which I will discuss momentarily.

If your inspection engineer has reported or if there is evidence that water is or has been in the basement or crawl space, now is the time to call in your waterproofing subcontractor. Both types of space can be waterproofed from the inside, but it is best to do it from the outside. This often requires digging around the foundation and can be expensive, so be sure to get bids. If a footing drain is required, your

waterproofing sub is responsible for installing it. Seek additional advice or opinions, if needed, from your architect, inspection engineer, or building inspector.

Rough Carpentry. Your carpenter is one of your key people, for he is needed from the onset of the project for plan review through the initial stages of renovation. This is the time to remedy all sags in an old house. Sags should always be taken care of prior to doing any new plumbing because correcting them can crack existing pipes.
It is wise to have your carpenter ask the electrician, plumber, and heating/air-conditioning subs what he can do to make their jobs easier. For example, many old houses have receptacles in the baseboards. Removal of the baseboard facilitates replacement of wiring, but the baseboard removal is a job usually handled by your carpenter. The same is true with the removal of kitchen cabinets to aid the plumber. Chases may need to be constructed for pipes, heat vents, A/C lines, and service wires. This is accomplished by furring out a wall, or building a box-like run from floor to ceiling in closets, or wall-to-wall along the ceiling at an inconspicuous place. These chases or furred areas may or may not be indicated on the plans. If they are not, your subs can work it out on the job.

Roofing. With an existing structure, have the roof repaired as soon as possible to prevent further deterioration. With additions, the roofing is completed early on for the same reason. Also, with the roof in place your other subs can work inside on other phases regardless of the weather. Your carpenter will repair any rotted or sagging roof framing and your roofing sub will then install new roofing or patch existing roofing per your specifications.
Note: If there is to be chimney repair or a new chimney, and you are putting on new roofing, have the roofer leave undone an area adjacent to the chimney. This will prevent damage to the new material while the chimney work progresses. Hold back 10 percent of the roofer's contract amount until he can come back and finish this area after the chimney is completed.

Electrical, Plumbing, Heat-A/C. All your electrical, plumbing and HVAC should be completed at this time, prior to insulation of side walls. Note: Don't change the pipes, unless you do not have good water pressure. You can change them later if necessary with little damage to existing walls. The same applies to electrical work. If existing electrical service is adequate for most of the house, don't remove it unless

you are doing a full gut. Of course, you can upgrade if added electrical demand will require it. Of course if it is deemed unsafe, remove it.

Chimney. Chimneys can now be added or repaired. Old chimneys, if they are structurally sound (see your inspection engineer's report), should be relined with terra-cotta flue liners and new dampers, if this was deemed necessary when they were inspected. This is faster and less expensive than completely rebuilding.

Exterior Siding and Trim. This phase can be completed while your electrical, plumbing, and heating and air work is being done inside.

Insulation. The cost of energy is sure to keep rising, so it pays to insulate well. Virtually every structure can be insulated without removing the inside walls. This is accomplished by drilling small holes in exterior walls from the outside and blowing fiberglass or cellulose insulation through the hole into the wall-cavity. The hole is then plugged.

The alternative is to remove the interior plaster or drywall of all exterior walls to install insulation batting. This obviously is quite expensive unless you are doing a full gut anyway. Blowing the insulation into the wall cavities provides adequate insulation for most climates, and a reputable firm should do the job neatly. You will not, however, have the vapor barrier that you would get with insulation from inside. You can compensate for this by painting all exterior walls with a vapor barrier paint. Check local suppliers for types available in your area.

Vapor barriers are important because moisture escapes through the walls, lessening the effectiveness of the insulation and rotting the framing. Before the insulation was added there was no such problem because the moisture went through to the outside. Now it can't, so the object is to keep it inside the heated area. This also adds to your comfort, as moist air is more comfortable than dry air.

Be sure attic areas, crawl spaces, and basements are insulated as well as you can afford. Your utility companies can provide you with information on the amount of insulation needed for lowest rates and greatest savings.

Drywall or Plaster. Now you are ready for the installation or patching of plaster or drywall. Where possible, use drywall to replace missing plaster or to cover cracked plaster. It is far less expensive and looks better. Look for a drywall sub who supplies

all materials and removes all trash. Plasterers always supply materials. In the winter you will need temporary heat to help speed the drywall or plastering job and to prevent cracking caused by freezing — both drywall mud, or filler, and plaster are water-based.

Prime Painting. I find it beneficial to prime the walls as soon as the plaster or drywall sub is finished. Imperfections in the wall show up after priming and serious flaws can be corrected now or later. Discuss that with your drywall or plaster sub beforehand.

Interior Trim. Interior doors, trims, and moldings are repaired, replaced, or added at this time, and new cabinets, if any, for your kitchen and baths installed.

Painting. You are now ready for interior as well as exterior painting, although exterior painting could be completed earlier — right after exterior trim. That should be discussed and worked out with your painting sub. It is usually easier to complete the whole job at one time.

Final Trims. At this time you are ready to install any countertops, vinyl flooring, plumbing fixtures, electrical trims, light fixtures, and final trim for heating and air conditioning — in that order.
Note: If you are finishing or refinishing hardwood floors, I recommend you wait until all the above work is complete and have the floors done just prior to laying any carpeting. Install carpeting and hang wallpaper, then proceed with the cleanup. (You can reverse carpeting and cleanup.)

Cleanup. With final cleanup also comes trash removal, which should take only a few hours or one day, maximum. At this point you can complete any necessary landscaping.

Final Inspection and Loan Closing. When all is done, be sure your subs have called for their final inspections and that you have called for a final building inspection. Again, if you don’t have a building inspection department, for peace of mind, call in an inspection engineer before final payment to relevant subs. Final inspections will verify compliance with code and that everything works.

When all work has been approved by inspectors, utility companies (if applicable), your lender, and most importantly you, you are ready to convert any construction financing to the permanent mortgage. This is usually arranged at the convenience of the lender, attorney, and you. It takes less than an hour.
Now you can move in and enjoy.

Starting from Scratch – the Extreme Makeover

If you determine that the effort, cost, and "value added" in renovating a house just doesn't make sense or you just want a new house on a particular site and there is a house in the way, then tearing down the existing house and building a new one may be the option for you.
This option usually requires a lot of cash or existing equity in the project. The only legal way to tear down a house is to either own it free and clear or to pay off any existing mortgages. One could get permission from the mortgagor, but this only works if the loan balance is less than the value of the land, since once the house is torn down, the only thing of value left is the land! Whatever improvements you put into the house as cash or equity over and above the value of the land is gone forever once it is torn down.
Here are some other things to think about.

▪ An appraisal will determine what the land alone (with the house torn down) will be worth prior to you getting involved too deeply. Get one!

▪ A construction loan can often pay off an existing mortgage (up to the value of the land). It takes an experienced loan officer to be able to structure an extreme makeover loan (and I speak from that kind of experience.)

▪ Other than surmounting the legal and financial obstacles of tearing down a house (assuming you don't feel it's just not right to tear down a house) you'll simply be building a new house.

▪ Start at the beginning of this book and proceed with your project. The only additional costs will be demolition and demolition permits, neither of which are cheap.

A NOTE OF CAUTION!!
Don't tear down a house that is financed and has a mortgage on it without getting written permission from the lender or paying off the loan first! It's illegal.

THE END

I certainly hope this is not the end. I hope it is a beginning for you. I hope you have gained enough from this book, even if you don't build right away, to fight what I consider one of the most serious problems in America, if not the entire free world, the high cost of housing.
Best wishes,

Carl Heldmann