

# Story of the Process of Building A Home

by Richard Wodehouse

Building a home can be enjoyable, contrary to the many horror stories of going over-budget and missing completion dates. The process of building is chaos waiting to happen. However, with the proper controls and an informed plan, it can be a series of predictable, controlled activities from the start of design to an enjoyable first night at your new home. My background is 32 years of building fine homes for discriminating owners and particular (fussy) designers.

## *Green Building:*

We at Wodehouse Augello are nationally accredited and awarded green builders. In efforts to curb global warming and reduce waste, buildings and their construction can make a significant impact. In the construction of homes we consume many resources and create a significant amount of waste that goes to the landfill. In the occupancy of homes we use electricity and fuels, which, depending on the home, can be excessively wasted or intelligently utilized. Technology and better building practices give us the opportunity to decrease waste generation and energy consumption while maintaining design standards.

## *Our green goals are:*

- To limit consumption of the planet's resources in the building process
- To minimize the generation of waste during construction
- To build homes that consume less energy while maintaining utmost comfort
- To craft custom homes which are healthy and dynamic for the occupants

In our region of the Southern Rockies, we have the benefit of receiving ample amounts of sunshine year round as well as cooling breezes in most locations. This gives us opportunities to lessen the need for fuels for heating and cooling. The most effective action we can take in reducing the heating loads is to design the structure to accept the warmth of the sun and encapsulate it.

In reducing the need for mechanical cooling, the most effective action is to calculate roof overhangs and strategically locate operable windows that allow for a chimney effect on air flow.

Further techniques to lessen the impact of home construction include:

- Select materials that have low embodied energy: the energy that it took to produce the material and deliver it to the site
- Select materials that use fewer virgin resources
- Insulate the building well and use quality windows
- Minimize the sizing of mechanical equipment

The most effective and cost efficient way to optimize green building strategies is to incorporate them into the design early on. This is best achieved by having the team of designers and builders coordinate in an integrated design effort, and yields beautiful results.

## Q&A

This Q&A will answer many of your preliminary questions about selecting a designer and builder, setting a budget, and creating a construction time table. Just like your first meeting with a custom home builder!

*Q. Should I hire a design-build firm or a separate architect and contractor?*

*A.* This decision will be affected by two factors: the region of the U.S. you will build in and the desired uniqueness. There are regions where design-build is the most common and therefore the most efficient process, generally where design styles are more uniform and building sites are not too challenging.

Use of a separate architect and contractor is more prevalent where design styles are varied, architecture is more adventuresome, and building sites are more challenging. The following advice applies to both these situations.

*Q. Which should I pick first, the designer or the builder?*

*A.* Ideally, pick both at the same time so that you have a team. With a design-build firm this is inherent. With separate entities, make your selections of both early on so you have the advantage of a coordinated effort.

Pick existing homes that appeal to you, and ask your realtor who the designers and builders are.

A clever source for information on builders is the local major supplier, such as the lumber yard. Ask to speak to the manager and ask them for their suggestions of the builders that seem to have a history of smooth, successful projects. The local building agencies are typically only allowed to give a list, but with clever questioning you can ascertain their attitude about who represents ongoing trouble. Ask as many sources as is practical: attorneys, local business leaders.

In choosing designers, ask the builders whose projects go smoothly and which are have convoluted designs that create difficulties.

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In choosing designers, the ability to conceptualize an exciting design is just a portion of the skills needed. The designer also needs to complete a thorough set of plans that is coordinated with the various parts of the home. Designers are responsible for everything from steel beams to lighting locations. The scrutiny with which these elements are integrated into the plans will greatly influence how many fixes or changes occur during the construction.

Even though the tendency is to cut short the process and go with one recommendation, it is best to do the homework. This will be a long relationship, often lasting two years, during which trust and cooperation will be crucial. Narrow the lists to a final short list and interview them in person. The level of sincere interest in your project displayed by the applicants is a good determinant of how well they will perform in the future.

*Q. How do I get a budget to begin with?*

*A.* The wants and dreams of the owners and the design of the architect will soon bump up against the desired budget limit. This is where you want to give the builder the authority to be the “guardian of the budget”. The earlier your builder is given a contributing role as part of the team, the more influence he can have on the cost outcome. Make it his role to compare the design evolutions against the budget. A thorough “get real” meeting with the entire team should take place and the budget total should be agreed upon. All projects are driven by cost considerations, whether it is a \$150 per foot residence or a \$1500 per foot starter castle.

The earlier costs are identified and a realistic target budget established, the better the chance for a smooth process. Initially, square foot costs can be useful as a guideline for the cost. However, line item budgets eventually need to be developed. After all, you don’t compare the price of a Mercedes to a mid-grade Chevy by comparing the cost per pound!

Between 80 and 90 % of the project cost is determined by the complexity of the design. Involve a builder from the beginning to ensure the final design is realistic for the budget.

The following items are typical ingredients in the establishment of a real budget:

- The challenges and nature of the building site.
- The size in square feet of the envisioned structure.
- The cost of the design including all the outside consultants such as engineers
- The envisioned quality of finish, using other homes and photos as samples.
- The builder’s fee
- Site costs, such as landscaping and bringing in utilities
- Permits and hook-up fees for utilities.

We call our process at WA “budget before design.” This is a written set of guidelines with clear responsibilities and accountability for each member of the team, including the owners, leading to a guarantee of a realistic cost that is within the previously agreed upon budget.

*Q. Are the horror stories true that many projects are way over budget?*

*A.* It is true that a huge percentage of dream home designs are significantly over the desired budget. Perhaps as many as 70% of designs are over budget, often by as much as 30%. Even in luxury homes, budgets are a big consideration. Usually the next step is a harrowing process of “chopping things out” of the desired design, as well as compromising with lower level of quality in products and finishes. The trouble is, once the dream is visualized it is hard to imagine doing without. What typically happens is these items find their way back into the project as change orders during construction, which is much more costly in time and money.

The “chop” stage is, unfortunately, where green building features usually get eliminated, though that doesn’t need to be the case. It is possible to have a green home and stay within budget, if the plans are well coordinated from the start. Green building means designing and constructing with knowledgeable responsibility for the welfare of the planet. There are many techniques for making a home greener. The earlier WA is brought into the team, the easier it is to seamlessly integrate green features into a custom high-end home. An integrated approach to design and material selection can result in higher performance, fewer materials consumed, and stunning design.

*Q. So, how do I avoid the mess of losing synergy between designer and builder and running over budget?*

*A.* Hiring people who will act as a team and making them accountable is the most important choice you will make, and can preempt most troubling scenarios.

A key ingredient in pre-construction is value engineering-- researching alternative methods and products that attain the design intent.

Building a modern complex home is like building a fancy car, except that all the parts and people are on site building a unique product for the first time. A complicated house will have as many as 30 different sub-trades involved, each with an average of 8 employees. That’s 240 human beings all operating independently to complete the home. Add to this an innumerable number of parts and pieces, from concrete to electronics, which need to be integrated correctly. The builder’s challenge is to coordinate all these people and parts. In building today’s sophisticated designs, experience in process management is equally important as quality of work.

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*Q. What contract type should I have with my builder, Time & Materials or fixed?*

*A.* A Time and Materials contract is common and works well when there is trust and all members act as part of a team. If the design is complex or the site conditions are difficult, it is impractical to arrive at solid costs for many key parts of the work and a T&M contract is best. There can be a fixed price for the site work and the shell, and a T&M price for the later finish choices. If enough of the finishes have been specified, the remaining items can be given agreed upon allowance figures so that a complete budget can be calculated. For any type of T&M it is crucial that the owners want to be active participants in the evolution of the project.

A T&M situation very common in areas with winter weather occurs when building needs to begin during warm months but the design is incomplete.

Fixed price, or stipulated sum, is often erroneously referred to as fixed fee. This is where the contractor guarantees that he will complete the project as specified for a fixed total cost. This works well when design specifications are complete and site conditions allow for accurate pricing of the majority of the work. Fixed price is also advantageous when there is the desire (and it is practical) to get competitive bids. Fixed price also works best when the owners are more concerned with completion date and cost than being involved in the process.

The third choice is a hybrid of T&M and fixed price. This is where the cost of the work is on a T&M basis, but the contractor's fee is fixed. This arrangement works well because the builder's fee can be absent from all the following discussions of budget issues. We at WA often use this arrangement until change orders cause the total cost of the work to increase or decrease up to 5% of the total construction budget. This allows us to truly feel as if we are on the same side of the table with the rest of the team, and allows for quite a few modifications before encountering the added complication of fee considerations.

The major differences between T&M and Stipulated Sum:

#### **The team concept**

In a T&M you form the team early to work together to update budgets, do value engineering, and contribute suggestions. In a Stipulated Sum you have to wait for plans to be completed and then have contractors price it. The true cost is not known until a month or so after plans are completed.

#### **Personal Involvement**

A T&M relationship should allow and even encourage all members of the team to contribute their expertise, from design development through construction.

A stipulated sum contract is a hard line delineation where the owner has to have a hands off position.

#### **Documentation of costs, schedules, problems.**

A T&M contract can be open book where the owner and owner's agent such as the architect are provided with as much documentation as they request.

In a Stipulated Sum contract the contractor provides only progress billings paralleling the amount of work completed.

*Q. If I choose any of the T&M arrangements, how can I get competitive bids?*

*A.* The combined cost subcontractor work and purchased materials is in 80% to 95% of the total cost. We at WA show owners spread sheets comparing bids from subs and material suppliers. This allows owners tangible evidence that they are getting a fair price. Depending on the availability of qualified bidders, expect between two and four bids.

We at WA work in both T&M and Stipulated Sum contracts. Your builder should always provide you with enough information so you feel knowledgeable and comfortable in any contract.

*Q. Am I better off selecting an individual builder or a larger firm?*

*A.* There are advantages to hiring a firm which provides the strengths of a group of people. A firm assures continuity, shared knowledge about methods and products, and more sophisticated systems for controlling budget and schedule. With a firm you will interact with the on-site superintendent, the project manager, and the principal or owner. Your builder should provide you with multiple levels of support so that your questions are always answered.

An individual builder does not have time to do all the administrative work to run a project, and he will likely not have the time to make multiple thorough inquiries to subs and suppliers to get you the best price. There is also the potential for an individual to be pressed with more projects than he can handle, with no support.

In an open book arrangement the fee should be clearly identified, so you can easily compare the fee independently in the difference in cost between builders.

Sometimes clients are concerned that a firm will add overhead costs to the project, increasing the overall cost. We at WA charge comparable percentage fees to small builders, and get our owners the best value through aggressive bidding as well as a large discount with suppliers. Larger companies do have more overhead, but it is paid by multiple projects, so the fee percentage may be the same for each project as a small builder. Firms also have the advantage of competitive bidding of subs and suppliers, and a firm's buying power may get you materials at a large discount.

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Finally, let's break ground!

It will be a long road ahead with many challenges for everyone.

If you are available, go ahead and stage a ceremony!

Establish a pattern of enjoying the process.

Decisions, Decisions, Decisions

*Q. I am tired from making choices, I am done right?*

*A.* The assumption that all work is spelled out in the plans is erroneous almost all the time. There will be lots of decisions during building. Unforeseen changes in site conditions, product, weather, or budget all affect building, as well as structural challenges or outdated specifications. This is why there is the need for intelligent on-site supervision.

It is impractical, burdensome, and highly unlikely that all decisions as to structure and finishes will be made at one time when plans are being developed. For this reason, we at WA compile lists of decisions organized by the dates when we will need them ahead of construction, so that the team and owner can anticipate decisions well in advance.

In custom home construction, delay of information is the biggest culprit in increasing costs and missing completion dates.

We at WA also send our owners and design team a weekly update that describes the work being done as well as the work that will be done the following week. This way the owner is never taken by surprise or asked to make a decision without enough notice and information. With proper planning and communication from your builder, you can feel in control throughout the process.

*A. If I reside far away from my new home being constructed, when should I plan to visit the site?*

*A.* When visiting the site at any time, get a sense of the mood on the site. Is there cooperation between the various field workers or is there in-fighting? Are the workers glad to see you? A job site with a good attitude will result in better workmanship and fewer complications.

The following building stages are the most critical for the owner to be present:

- When the building is being located on the site or "staked out." Many nuances will appear which may not have been considered earlier, such as trees to be cut, elevations relevant to site conditions, or surprises with view orientation.
- In 2 to 3 months when framing of exterior walls is taking place. We at WA often create "mock ups" of major view openings with a few pieces of lumber so owners can stand back and see the framed view before the wall is assembled.

During the final stages of utilities. Normally lighting and wiring will be the last of these major items. This time is a must for owners and the design team to do a thorough walk through. We at WA encourage owners to visualize each wall in its finished state; do the items now implanted on the wall fit the future image? Is there a wire for a thermostat protruding right where you would like to see your great art piece?

Lighting is often refined during this time when wiring and fixtures can still be moved much easier than after the surface is plastered or painted. We at WA also strive to lessen what we call "wall acne" of switches, controls, etc.

- When finishes are being completed. Although finishes have been selected earlier, it is comforting to see them in reality and to see how they affect each other.
- Final punch-out. It is advisable to get directions of how to use the various controls and features of a home prior to the first night's occupancy. We at WA prepare an extensive homeowners manual that includes photographs and instructions on use and normal maintenance as well as dealing with emergencies.

During your move-in you will likely want the help of a skilled carpenter to hang heavy pictures etc. Plan ahead with your builder to supply you with a tradesman that is familiar with your home and whom you pay on an hourly basis. We at WA have a line item in our cost breakdown for this purpose.

Finally, we offer our unique Home Care service to keep your new home in top shape whether you are home or not. This service provides you with a reliable contact for maintenance, seasonal upkeep, and any future new work you may desire. At Wodehouse Augello, we want to be your builder for life.

