

181 Timber Rd.--Notes from the builder

Personally, I have little desire to drive a German made luxury car, own a Nordstrom wardrobe or drink fine wine...I'm more of a barbeque and blue jeans type of guy. But when it comes to log homes, I have Champaign taste, it is my one indulgence. As a log home builder, one's craftsmanship is on display, flaws and failures cannot be hidden from view, and a talented sheet rocker, painter or trim carpenter cannot hide shoddy craftsmanship or cheap materials. As you read deeper into my "notes" I believe you'll find that that the home you are touring offers greater "added value" than either an entry level log home or comparable stick built home, at quality standard that is unsurpassed.

The single greatest drawback to buying or building a log home is cost. For this home I budgeted an additional 40% to cover the added expense for premium materials and skilled labor. I believe a well crafted log home should look like fine furniture--pristine and perfect with workmanship that rivals luxury homes. In term of its overall quality, you are judge.

The most simple and basic log home design, and by far the least expensive to build is, rectangular in shape with four log walls, four interlocking log corners and an exposed beam cathedral ceiling...the first cabin I built on Timber Rd. (1,600'sf) which is currently for sale by its owner, is an example of a simple, basic log home. Across the cul-de-sac is my own log home (2250'sf) with 15 log walls, 20 interlocking corners, attached log garage and an exposed beam cathedral ceiling. Feel free to contact any log home manufacturer in the entire United States to gage their reaction to a log home with 15 full course log walls, 20 interlocking corners, attached log garage and timber-frame roof, floor, carport and porches (and looks like fine furniture.) You may find their feedback enlightening.

Regardless, whether you choose make an offer or walk away never to return, I hope the information I've provided, at the very least, gives you useable information to make an informed decision.

Background

The concept for Timber Rd. took shape in the early 1990's after I made two log home fact finding trips to the Appalachian Mountains of North Carolina and Tennessee. I spent six days total touring countless log home hamlets (and log home suppliers) scattered throughout the Appalachian Mountains. What was particularly appealing to me was that people elected to build modest size log homes using traditional log home architecture. Rather than finding bigger, larger, grander homes, what I found were "gingerbread" log homes whose owners chose detail and craftsmanship over size. At this time (early 1990's) all my log home information was gathered pre-internet, my four years of research was done the old fashion way...and my wife will bear witness to this obsession and the countless hours I spent researching log homes

In these mountain communities, the log home construction industry is pervasive; people could choose from dozens of log home contractors and/or manufacturers at very competitive pricing. Log homes were the norm rather than the exception and an entire industry existed to meet these people's needs. Not so in Washington, in fact, just the opposite. To this day, here in Washington the log home industry offers little choice, few resources and a limited skilled labor pool.

The first log home I built in Buckley, Washington (1997) was milled in Tennessee and shipped cross country on two semi-truck flatbeds. As much as I was taken with Appalachian "gingerbread" I opted for bigger, larger, grander—and I learned a valuable life lesson that owning a 3,500 sf log home is a mistake I would not make twice if given the chance...thankfully, I found a lawyer in need of a trophy. The money he paid for my Buckley log home partly funded my venture here on Timber Rd.

Timber Rd. Development

I had my pick of raw, developable acreage here in Cle Elum but for five years nothing met the criteria I was shopping for: level/flat property, mature timber, walk-able acreage, county maintained roads and backdoor access to public lands with groomed snowmobile trails. I bought the Timber Rd. acreage the very same day it came on the market; it fit my expectations to a tee.

My goal after securing this property was to lay the groundwork for a small Appalachian style "gingerbread" log home community; a designer development of modest size, upscale, high quality log homes that I could insulate from the random mixture of homes and structures of varying cost and quality found throughout the area.

As your home search widens pay particular attention to the eclectic mixture of travel trailers, small rustic cabins, pole barns and sprawling suburban homes found in a given location; how a neighbor chooses to "improve" his/her land will ultimately have either a positive or negative affect on your investment and/or the quality of your life.

On Timber Rd. now that my build-out is complete, you will find the property owners to be "like minded" people in that we believe in preserving the value of our investment while enjoying the charm and uniqueness of log home ownership. All property owners on Timber Rd. are either real estate professionals and/or affiliated with the construction industry. We are people who recognize quality, value and craftsmanship, and reap the tangible benefit of owning a well built home in a controlled development whose developer has skin and sweat in the game. Part of my commitment to my neighbors is to protect their investment as I would as my own. I'm sure they breathe a sigh of relief each time I break ground on a new log home rather than a stick built Rambler.

Stick Built vs. Log Home

One would see more log homes throughout the Cascade Mountains if they were easy to build, didn't require specialized construction knowledge and mass produced materials

were readily available at a reasonable cost. From foundation to finish, and every step in-between, log home construction is challenging. Log home materials do not come “off-the-shelf” ready to install from a lumberyard, in fact, most materials are difficult to source and need countless hours of “ground” preparation before installation. What follows is a one example of the time, effort and expense involved in prepping a typical fir timber found in the roof/porch structure and will provide you insight as to why these construction methods are avoided by most builders.

Timbers, typically weighing 200lbs apiece and 20’ long arrive on site in large bundles weighing thousands of pounds. I sift through these bundles to find timbers that are defect free. They need to be true and straight with no crown, wane, twists, bowing or cupping. Those that don’t meet this standard are sent back and a new bundle is delivered and picked through. I need to find true, straight timbers to timber-frame the home’s roof and porch skeleton. These timbers, once found, are stacked for 6 weeks to air dry to see if they will maintain their integrity, those that don’t are replaced. After the log walls are erected and the second floor perimeter walls are framed, it comes time to begin assembling the roof and porch skeleton.

Each of the 144 timbers used to timber-frame the home’s exterior roof line must be entirely hand sanded to remove any visible imperfections. While two men sand, another member of my crew is found at a carrier beam hand fitting a template that will be used to mark the *birds-mouth*, *seat* and *end* cut for each individual timber. This template is then place on a newly sanded timber and the cut locations are scribed. Four circular saws are used to make the necessary cuts; each saw has its blade angled to match a particular scribe mark. Once the cuts are made two holes are drilled in either end of the timber to accommodate a steel mechanical fastener that will be used to secure the timber to the carrier beam and perimeter wall. The timber is labeled to ensure it will be placed in the proper location for which it’s been scribed. This timber is then set aside under cover until all of the other 143 timbers have been processed in a similar way. The fit and finish of these timbers is critical to the overall quality of the home, therefore the timber-framing phase of log home construction lasts much of the summer.

An open beam, timber-framed cathedral roof system is the gold standard for residential construction, it is unmatched in its beauty and appeal and there is no economical alternative to achieve this same look.

By comparison, in stick frame construction, a roof system is typically framed in one of two ways—either a truss company arrives on site and the trusses are craned-in and in one day’s time the roof skeleton is complete; or a crew of rough carpenters, in one or two days, hang off-the-shelf, pre-engineered I-joists rafters that serve the same purpose as a truss roof. Regardless of which stick framing method is used, each is simple, fast and efficient, and one-fifth the cost of timber-framing.

Gingerbread

Why “gingerbread” log homes and not bigger, larger, grander log cathedrals? Space is a critical factor in log home design and is driven by cost. As a log home grows in size, the carrying capacity of its load bearing members must increase in proportion. Bigger, larger, grander log homes require bigger, larger, grander structural members to account for seismic forces, wind sheer and snow load...this equates to significant increases in construction costs. This was the lesson I learned building my Buckley home. What began as an already expensive undertaking became a money pit as my appetite for space increased. The solution to *over-building* a log home is to identify the engineering limits of a particular sized home and design the most efficient floor plan that will fit within those parameters and then add as much “gingerbread” as a budget will allow. This is why the homes on Timber Rd. are all similar in nature...four different floor plans designed using the same engineering calculations with varying degrees of “Gingerbread.”

The construction supply industry fabricates interchangeable building materials at a modest cost for stick built homes but markets no equivalent for the log home market. In short, what you see in my homes is the engineering limit that its structural members can safely accommodate that I can readily source within a hundred mile radius at a reasonable cost.

The homes I build are 24’4” wide; to expand the width one foot to 25’4” exceeds my engineering calculations for total snow load. To illustrate, let me to bring you back to the timber-framed roof:

The roof system was timber-framed using Select Structural 6x8 fir timber and can carry a snow load of 134 lbs/sq ft or 12’ of snow...these timbers are at their structural limit. To add one foot of width to this home’s footprint exceeds this structural limit for total snow load so I would have to upgrade to higher grade of timber to carry the slight increase in load, namely a No.1 Dense Select Structural 6x8 fir timber. A No.1 Dense Select Structural timber is twice the cost of a Select Structural timber and requires me to place a custom-cut order from a mill in Idaho specializing in hard-to-source timbers and I lose the option of picking through the pile.

A single foot added to the home’s width will add an additional 68 square feet of useable floor space at a cost upgrade for roof timbers alone of over \$6,000. If this was a custom log home being built to a client’s specs and they insisted on 68 ft of additional floor space and were willing to pay for the upgrade, I’d do it. Personally, I choose to stay within the structural limit of a timber that can be sourced in Ellensburg and make do with less floor space.

In stick frame construction, design changes are simple and easy because structural materials come in a variety of sizes and are interchangeable in a given situation.

If I needed a sturdier roof rafter I would upgrade to a BCI 6000 to replace a BCI 5000 at a cost of a few hundred dollars for the entire roof system.

One note, once a set of plans have been approved by the county building department, no on-site alteration to the plan is allowed, therefore any changes to the plan must be made prior to permit application and involves the re-drawing and re-engineering of the plans.

With stick framed homes a contractor can build a much larger home with greater design flexibility because the entire home building industry is geared to mass produce a home at the lowest possible cost in the least amount of time while leaving a sizeable portion of a budget for interior upgrades (the frosting) And in the end, the finished product, if built on spec then commands a ridiculous price tag in relation to the cost of materials and labor invested. And unless otherwise specified, all materials that go into a stick framed home are contractor grade ...this translates to using the lowest quality materials allowed by code. This entire process makes perfect economic sense for a contractor whether he builds spec. or custom because he can profit a tidy sum of money with no skin in the game; he can supervise numerous job sites, never gets his hands dirty and lets a bank or client assume the financial risk....and in the event that the market collapses....well, we know how that story plays out.

181 Timber Rd.

This home at 181 Timber Rd. was built with the vacation home owner in mind. The floor plan in this home combines the most desirable elements found in log home construction at a price point that's within reach of a wider range of buyers. The fact that you are reading these notes, suggest this home may fit within your budget.

The building of a larger log home is counter productive... the price becomes out-of-reach to all but the most affluent buyers. Therefore it is desirable to build a well designed log home that maximizes space without sacrificing comfort, quality or craftsmanship. Also, you will find that our property taxes are affordably low given that the county assessor views my homes on par to well built stick framed homes.

There is no question that greater square footage is the barometer that guides many buyers...more home for less money, and many people are quite content sacrificing quality for quantity...as a younger man, I subscribed to this philosophy. Eventually, I shifted my thinking by placing greater value on quality. I grew tired of maintaining a large home, furnishing its unused spaces, paying the property taxes, insurance and utility bills...all to garner a few oohs and aahs from my family and friends.

Following the sale of my 3,500'sf log home my wife and I bought a turn-of-the-century remodeled 940'sf "transition" home within the city limits of Buckley...it was here I experienced the charm and character of smaller spaces. After living in this home for two years, I grew convinced that Appalachian "gingerbread" would have broad appeal in Cle Elum's vacation home market.

The Log Shell and Timber-Framed Roof

The two elements that best define log home construction are found in its log walls and the methods and materials used to assemble its floors, porches and roof. Incorporating these two elements significantly increases a home's cost.

Log walls— The log shell is pre-built in Canada, disassembled, and arrives on site in large covered bundles ready to be re-assembled. Each individual log, of which there are hundreds and hundreds, is coded by location and log course...wall 7-course 1-log 1. Each of the log walls has 15 courses of logs and a stack height of 9'1." The walls themselves will compress to 9' as they reach moisture equilibrium with Cle Elum's dry climate. The entire log stacking experience lasts about ten days and is by far the most enjoyable construction phase unless it rains. Like the roof timbers, these logs are quite heavy and pose some difficulty when fitting higher log courses, and the milling is so precise that moderate humidity levels make for a difficult assembly as the logs take on moisture. Over the years, through trial and error, we have mastered techniques that allow us to assemble a log shell that is straight, plumb and tight.

This home's log walls were produced using the highest quality dense grain/slow growth Spruce/Pine timbers from the interior mountains of British Columbia; each log timber is kiln dried and precision milled to exacting tolerances for an air tight fit. Each individual log interfaces with the log below it using tongue and groove joinery lined with two compression gaskets for zero air infiltration. Spaced every two feet are threaded mechanical fasteners used to secure each log to the log course below it. These fasteners, 2000 in total, individually exert over 1,000 lbs of mechanical pressure drawing the log courses together thereby compressing the gaskets between the two logs; this structural integrity is what gives its log walls enough strength to bear the massive weight (90,000 lbs dry weight plus snow load) that will be placed upon it. Where two logs butt together in a log course, complimentary finger joints lock the logs to one another. To add even greater structural integrity to the walls, my engineer called-out for 22 threaded rods, each exerting over 1,000lbs of mechanical compression, to run from the top of the log walls down to the foundation as added insurance against seismic, wind and snow forces.

My Canadian log supplier goes one step farther; each log wall comes pre-drilled for electrical wires, threaded compression rods, outlet boxes and wall lights. In addition, the door and window openings are dado-cut to accept a T-shaped spline-buck to which a window or door is fastened....you do not want to attach a window or door to a solid log wall...not good.

A typical log home and by far the most popular log floor plan to build is rectangular in shape having four log walls with four interlocking log corners. The 128' feet of lineal log walls it would take to build the shell for a 2,000 sf log/box home will be 7 to 9 times the cost that it would take a framing crew to build a 2x6 framed wall equivalent. This may help to illustrate why so few log homes are ever built. The initial cost for just the logs and labor alone to build a simple rectangular log shell is prohibitive regardless of how one chooses to frame the roof system.

By comparison, in the 2,000 sf home you are touring, the floor plan I designed incorporates 260' lineal feet of log walls (enough to build 2.5 box style log homes,) 13 log wall planes with 17 interlocking log corners. What you see in this log home exceeds all definitions of "gingerbread," it is "uber gingerbread" and reflects my obsessive nature to give this home added value and character.

As my relationship with my log and timber suppliers developed over the years, I was able to command better pricing for their products. This allows me to be more creative using their products and offers me the flexibility to price my homes to better compete with other homes in this price range. In exchange for the wholesale pricing I receive, I make my homes available for their prospective clients to tour and/or engage in Q&A with me.

True story: Last summer I gave a home tour to a very engaging couple who showed up driving a gorgeous red Porsche convertible; they were on a log home fact finding mission referred to me by my Canadian log supplier. The husband, who works in the Alaska oil industry, could afford to build the finest home money can buy, but was looking for something much more practical. Like me, he has owned bigger, larger, grander and wasn't interested in building a monument to himself. They fell in love with my home at 181 Timber Rd. and will reproduce this same home somewhere in Methow Valley serviced by its own private airstrip. He knew log homes like mine existed but had never physically seen what his mind envisioned.

Roof, Floors and Covered Porches—As mentioned earlier, each timber (posts, rafters, joists, beams--144 in total) is hand sanded, hand notched and either hand or crane fitted. The better part of two months is spent processing and fitting each timber one by one to form the home's skeleton and another two months decking and insulating the roof.

Over the tops of the timber-framed skeleton, 10,000 lineal feet of 2x6 tongue and groove pine decking is hand nailed. Once the home is completely decked, plywood sheathing is nailed over the top of the pine decking to give it added sheer strength. Over the heated interior space, sixty-eight 10" thick Styrofoam (4'x8') insulating blocks are "hot wire" cut to create a form-fitted impervious insulated barrier through which little or no interior heat can escape. On top of the foam block insulation, another layer of plywood is mechanically fastened to create a nailbase for the 40 year roof shingles. The entire system (timber-framing,

decking, insulation and shingles) consumes the lion's share of my construction budget, but the end result speaks for itself and is a necessary compliment to the log wall shell.

By comparison, in stick framed construction, once roof trusses or I-joists are installed, a single layer of plywood is nailed over the top of each truss or I-joist and in a matter of a few days, the home is ready for roofing materials. Once the roofing materials are installed, fiberglass batt insulation will be added to the cavities between the trusses/joists. This process is fast, cost efficient and allows the home to be "dried-in" in weeks rather than months, but it will be nowhere near as energy efficient as a timber-framed roof with foam block insulation. The winter time utility bill for this home averages less that \$140/month, whereas my neighbor down the road has paid upwards of \$800/month to heat their large 4,000'sf stick framed home...and I have no reason to believe they were exaggerating this cost given the home's size.

For six months, from April to October, while assembling the home's log walls and timber-framed skeleton, the home sits expose to the elements. For six months the accumulation of dust, dirt, sawdust, sun and water damage is extensive-- this leaves me no option other than to give the entire home a mild acid bath followed by hand sanding every inch of its interior and exterior wood surfaces before a finish can be applied. This is by far the worst part of log home construction because it comes at a time when my body is fatigued and exhausted.

Subcontractors

The hiring of subcontractor is always a gamble, and as in all log homes the electrical, HVAC and plumbing systems can pose an installation challenge, however you will be hard pressed figure out how we made each system functional. I've come to expect that any sub-trades I hire will factor in a sizeable up-charge when performing their services on a log home, however once you find a good sub and educate them about the peculiarities of log home construction, they become invaluable.

Conclusion

I have over 2,000 hours of my time invested in this home and I worked on-site for 14 months taking this home from foundation to finish. I front fund the home's entire construction costs out-of-pocket and answer to no one but myself. I'm not held accountable to a bank, construction schedule, time clock or client. Due the reasons just listed, I have turned away dozens of potential clients.

If your dream is to own a log home, you will either have to have it custom built, build it yourself (which I don't recommend,) buy one that is pre-owned, or stumble across one brand new built on spec. Regardless of how you fulfill this dream, expect to pay an up-charge for time, materials and specialized labor...or be content with something more mainstream.

In closing, a log home is more than just its walls and roof, it's the sum total of all components found in the construction process having a complimentary effect on one another. I will let you be the judge if I succeeded in maintaining the same level of craftsmanship and quality in the rest of the home as I did with the roof and walls. Personally and professionally, I believe this home is a knock-out, and my Timber Rd. neighbors and the hundreds of clients who rent my model log home on weekends enthusiastic agree.

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