

MYTHS AND TRUTHS ABOUT LOG HOMES Article by Margaret Lowe

Bad news travels far and fast. It can be picked up in the media and not checked. Competitors who tout it as gospel can snare it. Such “bad news” once sprouted out of the log home world and circulated. But they are myths rather than facts and can be dispelled in whole or in part. Check out the myths below and how they simply don’t hold water.

MYTH # 1 LOG HOMES ARE NOT ENERGY-EFFICIENT

False in capital letters. Early in this decade, the nation’s model energy code finally recognized what the log home industry had claimed for 20 years – that a log wall’s thermal mass makes it as energy-efficient as a well-insulated frame wall. This claim wasn’t acknowledged during all those years because thermal mass is difficult to quantify. Log homeowners had the heating bills to prove it was true, but the department of Energy and national code officials needed more than empirical evidence. So for over 13 years the Log Homes Council (a division of the National Association of Home Builders in Washington, DC) gathered scientific statistics from independent research projects to substantiate its claim.

At the heart of the debate were R-values, the measure of heat transfer through materials. When the energy crisis struck in the mid-70s, state and federal governments had to quickly develop new energy-performance standards for residential construction and all the building materials used in that construction. Since the situation was a crisis, and the R-value methodology already existed, it became the standard, no questions asked.

R-value measures a material’s resistance to the transfer of heat from one side to another. Logs have a relatively low resistance to heat transfer; in fact, they actually absorb and store heat in their cellular structure. This put them at a serious disadvantage in the cold weather states. Producers had to overbuild their homes in order to meet total R-value requirements. This not only drove up construction costs, it also created a lot of confusion.

The opposite of R-value, thermal mass, measures a material's capacity to absorb, store and slowly release heat over time when temperatures drop. Logs do this very well because of their cellular structure, bulk and thickness. The problem was proving it.

An early breakthrough came in studies conducted by the National Institute of Standards for HUD in 1981-82. The studies proved thermal mass does significantly reduce heating and cooling loads in moderate climates. However, energy experts continued to question the value of thermal mass during the winter months in northern climates where heat is a constant need (or during summer months in southern climates where cooling is in need) and thermostat settings are opposite outdoor temperatures.

Two more recent studies, both conducted in cold climate states, proved the log home industry was right.

In 1990, an independent testing agency, Advanced Certified Thermography, conducted a study for the Energy Division of the Minnesota Department of Public Service. Its focus was heat loss through air leakage, which was assumed to be a special problem with log homes because of their many joints. The study found the industry's improved joint construction and its use of expanded foam sealants and gaskets at joints and corner intersections had substantially reduced air-infiltration rates. The study concluded that air leakage in a well-built, modern log home is not due to its log walls. In fact, in the 23 homes studied, it found air leakage occurs in conventional frame homes: at the top of cathedral ceilings, around window and door frames and along the tops of walls where they join the roof.

A second study, conducted in 1991 for the Log Homes Council by the National Association of Home Builders (NAHB) National Research Center, discovered the thermal mass of log walls does significantly reduce energy use for heating in cold climates. It based its conclusions on a comparison of actual energy use of eight well-insulated frame houses during one winter. The 16 homes were evenly divided between upstate New York and Montana. The study also compared the homes' actual energy use to their predicted energy consumption. The results led to the conclusion that log homes were as energy-efficient and well-insulated frame houses.

What is especially significant about this study is that average R-value of the log walls was 44 percent lower than the average R-value of the frame walls. Obviously, the thermal mass performance of log walls is an advantage to log home owners.

It is probably well to note here that some log homes are also frame homes with fiberglass insulation. Several log home manufacturers build 2-by-6 frame walls into which they set R-19 fiberglass batt insulation and cover the outside with rigid-insulation (another R-7 or so). On the outside of this they attach half (or one-third) logs. At the corners, however, these same logs are full logs. The interior face of the wall may be covered with logs or drywall or wood paneling. Manufacturers of this type of wall also like point out that wires can more readily through them and that there need not any allowance made for settling or shrinkage of the logs.

MYTH # 2 LOG HOMES REQUIRE NO UPKEEP/

LOG HOMES REQUIRE EXTENSIVE UPKEEP.

Take your pick, both myths are false.

When log homes began to emerge as viable housing in the late '60s and early '70s, the myth abounded that they were maintenance-free. Just build them. People believed in time their log homes would weather to a handsome natural gray color without additional maintenance. They acted accordingly, and in no time their log homes were looking shabby. They discovered the logs weathered unevenly and became streaked with black stains. It was a lesson learned the hard way, for it hurt the log home industry's image for many years, but it also was one learned well.

Learned so well that a counter-myth developed—that log homes were high-maintenance, requiring extensive upkeep with expensive products. That is equally false. Log homes are neither no-maintenance nor high-maintenance. When manufactured by a reputable company and properly constructed, they are low-maintenance. "A log home requires the same amount of protection and maintenance any other wood home requires, including those sided in redwood and cedar," says

Mike McArthur, manager of the Log Home Products Division of The Continental Products Company, a major manufacturer of wood preservatives and finishes.

That proper care consists of a simple maintenance program developed by the log home industry in cooperation with the nation's leading wood-preserved and wood-finish manufacturers. It uses three steps—cleaning, preserving, and coating—to protect logs from their natural enemies: fungi, moisture, insects and the weather. These enemies and the right ways to protect log homes against them are discussed in greater detail in “Maintenance” in this issue.

MYTH # 3 LOG HOMES ROT AND SETTLE

Wrong again. This is an extension of Myth # 2—and it involves the assumption that there is no way to protect a log home from the organisms that cause wood to decay or to prevent it from settling. It's a false assumption.

Simply designing and building a log house to withstand the rigors of weather and then keeping it protected with periodic applications of a water-repellent preserves the natural beauty of logs and prevents decay indefinitely and with minimal effort.

Settling is another problem that plagues poorly built log homes. All houses shift and settle, whether they are frame construction or log construction. Agreed, without proper construction, settling poses a bigger problem with a log home because the logs shrink as they dry out. In addition, log walls are subject to compression from the weight of the logs stacked one atop another. A good producer takes this natural shrinkage and compression and the consequent settling into account when designing the home.

One technique is to have the weight of the roof and the second story rest on posts rather than partitions. Screw jacks placed under the posts allow the homeowner to lower them as the house settles. There are many other techniques as well. Producers don't all handle settling the same way because the home's design, the wood species used and the building environment differ from house to house.

MYTH # 4 LOG HOMES BELONG IN THE COUNTRY

False. True, log homes look wonderful in the country, whether it's on the open prairie, in the woods, on a lakeshore, or hanging off a mountainside. But they also look good in near-in exurban areas and in outer-ring suburbs if they are well designed and well built. The only criteria are that their quality, size and basic style fit the neighborhood. Constructing a log home with flat or D-shaped logs and corner posts can actually give their exteriors the appearance of conventional clapboard siding, which is truly suburban in style. The point is, log homes belong anywhere people want to build them.

MYTH # 5 LOG HOMES ARE CHEAP TO BUILD

Another falsehood. The truth is a log home costs about the same to build as a comparable-size, comparable-quality frame house. It's possible a small, remote, rustic cabin built entirely by the owner acting as his own builder could be built for a lot less. But we're not talking rustic cabins here. We're talking about large—the average is about 2,242 square feet—sophisticated custom homes complete with all the amenities. In 1996, according to the Log Homes Council, the average price of a custom log home was \$158,989 plus the cost of the land. That was comparable to the average price of a custom home in the same area.

Many log homes have big windows, deluxe kitchens with adjoining family rooms, whirlpool baths and steam showers, large master bedroom suites, additional baths (at least one, maybe two), big fireplaces (sometimes in several rooms), complete stereo sound systems, large decks and so forth. All of these materials, from doors, plumbing fixtures and mechanical systems to kitchen appliances, cabinets, countertops, light fixtures and flooring, to name a few, cost the same whatever type of house they go into. So, too, does land.

Of course, the determined and energetic log home buyer can act as the project's general contractor, even be an owner/builder who does a substantial amount of the work, and save anywhere from 10 to 20 percent, occasionally 25

percent, of the cost, but that can be done with a frame house too. That's personal preference, not a requirement.

MYTH # 6 YOU'LL GET TIRED OF SO MUCH LOG

Maybe, but not necessarily or automatically. Many people love logs and want their entire house built with them. That includes the interior partition walls. Others don't. They feel smothered by so much log. It's strictly an individual preference, but either way, the log home industry is set up to accommodate these personal preferences.

For those who want logs on the outer walls only, they build interior walls with studs covered with wallboard. Some manufacturers offer exterior frame walls covered over with partial logs on the exterior. Homeowners of these can cover even the interior surfaces of the exterior walls with paint, wall coverings, or fabric. These multiple-finishing options let the homeowner add personal expression to the traditional beauty of logs.

MYTH # 7 LOG HOMES ARE A FIRE HAZARD

Ouch, what a low blow. Tell that to the 26 forest firefighters who, trapped by a raging fire in the California hills, took refuge in a log home and waited out the firestorm as it passed them by. They'll laugh and tell you log homes are not a fire hazard, especially when they have a metal roof, as did this house. Yes, this actually happened in Topanga Canyon in 1993, and it demonstrates that log homes don't burn easily.

Although there is no official burn rating that covers log walls—owing to the vast differences in size and profiles of log wall members—the Log Homes Council has managed to get 6-inch (or thicker) log walls exempted from the one-hour fire rating requirement for exterior walls in the new Urban-Wildlands Interface Fire Code. This model code was developed and recently adopted by the International Fire Code Institute with support from the Federal Emergency Management Agency.

Arising from experience with recent devastating forest and brush fires in the West, *this new code requires the “exterior walls of buildings or structures to be constructed with materials approved for a minimum of one hour-rated fire-resistive construction on the exterior side,” or, to be constructed with* approved noncombustible materials.” The exemption for 6-inch or greater walls recognizes that log walls retain their structural integrity even if their exterior sides are set afire by burning brush. Actually, they would last much longer than one hour because logs don’t burn easily. They smolder for a long time before they ignite or flame, which means it takes a long time for logs to burn to the point where they lose their load-carrying capacity, according to Barbara Martin, Log Homes Council’s executive director.

One thing more. Log homes have established a record of surviving other natural disasters in much better condition than frame houses. Ripped from their foundations by flood waters, they’ve been known to simply float intact down the river. During Hurricane Hugo, a log home was the only Carolina beachfront house to remain standing. Florida log homes survived the destructive winds of Hurricane Andrew in 1992 with only minor damage, and in areas of utter devastation during the most recent California earthquakes, log homes were among the few dwellings that escaped major damage before the earth stopped shaking.

MYTH # 8 YOU WON’T BE ABLE TO GET FINANCING

False. Once it was sporadically true, not because bankers were curmudgeons, but because they are a cautious and conservative group. Log homes were relatively rare and that made bankers reluctant to finance—or finance to the normal 80 or 90 percent of appraised value—a house they feared would be difficult, even impossible, to sell if it were repossessed. Today, most mortgage bankers have seen the light. As the popularity and perceived value of log homes has improved over the years, they have become easy to finance.

Another major event also makes mortgage lenders more willing to underwrite log homes. In November 1992, Fannie Mae eased its comparable appraisals

requirement in favor of unique and special homes, a classification that includes log homes. The old rule required basing a log home's appraisal on the sales prices of comparable log homes sold in the same market in the preceding six months. Finding such comparables was next to impossible in markets where a log home hadn't been built or sold in the previous six months. Under the 1992 directive, when direct comparables aren't available Fannie Mae accepts appraisals based on three other types of unique, special or rustic homes in that or a neighboring market area. The only qualifier is that the appraiser's decision must be based on sound judgment. Fannie Mae just wants to be sure the market area accepts unique or nontraditional houses so the house will sell if the buyer defaults on the mortgage.

The removal of this comparable stumbling block put a mark of approval on log homes that makes them easier to mortgage.

It is true that log home buyers face a more complex financial situation than conventional home buyers because they are building a specialty house. With a conventional frame home, the builder makes all the financial arrangements. With a log home, the buyers must obtain a mortgage lender's commitment to mortgage the house before they can obtain a construction loan from a bank. Many producers help their clients make these financial arrangements. In addition, to combat the few mortgage bankers who are unfamiliar with log homes, or who don't know how to interpret the Fannie Mae directive, Log Homes Council members have formed a cooperative to share financial resource information with one another. Within this cooperative, they help direct one another's customers to cooperative mortgage companies.

MYTH # 9 LOG HOMES DON'T INCREASE IN VALUE

Again, false. Naturally, all home buyers ask, "If I build this house will it increase in value?" or "and, if I must sell, will it sell in a reasonable amount of time?" In the case of log homes, the answer to both questions is yes.

The whole picture for financing log homes has changed dramatically during the past 20 years. They have gone from being quaint country cabins to being sophisticated mainstream houses. Almost 90 percent of them are their owners' primary homes. In the process, they have developed a record for appreciating in value and selling well, according to the Log Homes Council.

As the industry's principal trade association, Log Homes Council closely monitors the performance of log homes in the custom real estate market. It finds log homes are a fast-growing segment of the custom-built real estate market today, and they do very well compared to the appreciation and resale of other types of custom homes.

In the opinion of Dana Delano, long-time vice president of marketing for Ward Log Homes, Houlton, Me., log homes have achieved market parity with conventional frame homes because they appeal so strongly to well-educated professionals who want to separate their private from their public lives. "They don't necessarily want to lead rustic lives, but they definitely do want to get out of the city and live in a secluded, low-key, personalized, even private, environment. Their special needs give log homes a distinct, solid, and growing market base,"he says.

His opinion is corroborated by marked research conducted by the NAHB for the Log Homes Council. This research shows log home owners are better educated than the typical conventional home owner. They are more secure financially, which makes them better credit risks. More careful about making their home buying decision, on average they take two years to research homes and develop their plan. In contrast, the conventional buyer takes an average of six months to make the same decisions.

Then there are the people who are attracted to log homes but who do not want to build one from scratch—they don't want to build any home from scratch. They just like them and want to live in them, and this keeps the resale values up.

Now you are armed with the facts. We hope this makes your research of log homes easier and of more benefit.