

SEQUENCE OF EVENTS

What will happen—from beginning to end

Your lot has been cleared and it's time to begin one of the most challenging and exciting experiences of your lifetime: the construction of your new house. This is where it gets fun. You will make it through this process if you have a good understanding of what will happen—and in what order it will happen. Let's start at the beginning of the journey.

Foundation

If you chose any kind of basement foundation, you'll likely see an excavating crew arrive on site first. Don't panic if the hole they dig is larger than the foundation; they need to allow room for workers around the concrete forms. Poured concrete is the most common foundation-wall type, although treated wood, brick or concrete blocks are used, too, depending on your location and soil type.

Assuming your foundation is poured concrete, you'll see the forms go up and reinforcing bars go into the forms. Openings will be marked for windows and utilities. After the concrete is poured into the forms, anchor bolts are placed into the still-soft mixture; these bolts will secure the exterior walls to the foundation. After the concrete hardens sufficiently, when the forms are removed, you might see

waterproofing measures being taken, such as an impermeable membrane or asphalt coating being applied to the foundation wall to prevent water from seeping in. Once the waterproofing efforts are complete, the surrounding soil is backfilled against the exterior of the foundation wall.

If you chose a slab foundation, that's exactly what you'll get: a slab of concrete, usually four to six inches thick, poured right over the ground with little or no soil preparation required. This foundation is cheap, which makes it the foundation of choice in areas like the Sun Belt, where frost heaving isn't an issue. In Texas, slab foundations are common because a thick layer of bedrock often lurks just below the soil's surface; below the bedrock, the water table awaits.

One foundation option that requires less concrete, little excavation and typically no grading is the crawlspace. A combination of concrete footings and wood posts creates suitable space under the home for extra storage as well as easy access to service pipes and conduits. A crawlspace also keeps moisture and cold temperatures away from the finished floor.

Pole (wood posts) and pier (cement posts) foundations are less common, but a necessity in some areas, such as coastal states, where homes are sometimes built either partially over water or in floodplains. In parts of Florida, for example, the seaside houses look like they're standing on stilts, with cars often parked underneath.

Framing

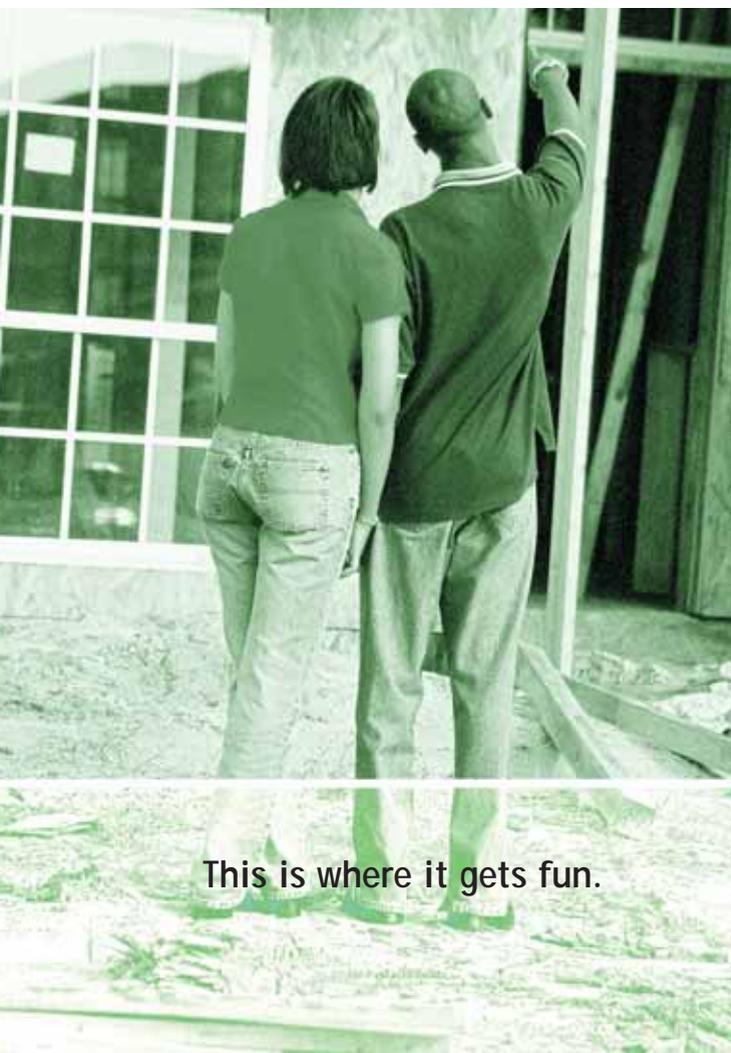
Floor first, walls second. If you have a basement foundation, a subfloor will be installed first, using joists (usually a series of engineered I-joists or dimension lumber, such as 2x10s or 2x12s) with 4x8 flooring material nailed or screwed to the joists. If you have a slab foundation, the exterior walls will be mounted directly on the slab.

The framing stage is the skeletal stage, where exterior walls in all their bare splendor rise up and provide glimpses of the future shape of the house. Holes for windows and doors appear in the building's "envelope." The interior begins to show its form, too, as interior walls and closets are framed in.

Framing follows a logical progression. After the main-floor walls are up, roof trusses are placed on top of the walls, then linked to the exterior walls by metal straps and tied to each other by 2x4s. Of course, a two-story house would have the second set of walls and flooring in place before the roof goes on. Roof sheathing—usually 4x8 sheets of plywood or oriented strand board (O.S.B.) is nailed to the roof trusses, providing a deck on which the roofing material may be fastened.

Roofing

In the colder regions of the country, such as Minnesota, the first thing to go down on the roof deck is an adhesive, impermeable membrane (nicknamed "ice and water"), which



This is where it gets fun.

is placed along all the eaves to prevent ice-dam-trapped water from backing up under the shingles during the winter. Asphalt paper or “roofers felt” is then applied to the rest of the deck.

Once this base layer of membrane and paper is down, the shingles can go on. Asphalt shingles are most common; these are usually designed to last 25 or 30 years, although longer-lasting (thicker) shingles are available.

Roof-covering choices go far beyond the ubiquitous asphalt type. Clay tiles, slate, cedar shakes, sheet metal—the choices are broad and wide-ranging in price.

Exterior trim

Exterior trim—the home’s “skin”—often is installed while the roofers are carrying out their duties. The bare exterior framing studs are covered over with sheathing (the same material as that used on the roof). Then a vapor barrier is stapled to the sheathing to help prevent moisture and air from seeping in and rotting the studs. Windows and doors are installed, as are fascia boards (nailed to the ends of rafters) and soffit boards (nailed underneath the eaves, parallel to the ground).

The exterior cladding goes on next. This could be stucco, brick, stone, cedar or vinyl. Gutters could be installed next, although it’s usually a good idea to wait until the roof is completely finished before having the gutters put in place. No sense dropping thousands of dollars on new gutters, only to have heavy ladders bend them—or worse.

Mechanical systems

Your heating, ventilation and air conditioning systems (HVAC), not to mention plumbing and electrical systems, will be installed in two stages. The first stage is the “rough-in” stage, when workers install the components that you will not see once your home is finished. Think of these elements as the “veins” in the body of your house—water pipes, ducts,

wiring. The subcontractors will return later, sometime after the drywall is up, to install the “pretty” stuff: light and water fixtures, heat registers, etc.

Insulation

Now it’s time to pad your pad. The exterior wall cavities between the studs are filled with whatever type of insulation you specify. Common choices include fiberglass batts and blown cellulose, but a growing number of home builders are using foam insulation, such as Icynene®, which is applied as a thick liquid that expands and hardens, filling every crevice for an airtight seal.

Environmentally friendly insulation choices exist today, including UltraTouch, a batt-type insulation made from reclaimed cotton that the manufacturer asserts will insulate better than fiberglass and is easier on the installer’s skin.

Drywall

You might be more familiar with a brand name for this material: Sheetrock®. But by any name, drywall will be “hung” (nailed to your interior walls and ceilings) next. In most regions, 4x12 sheets that are 5/8” thick are nailed or screwed to the ceiling first, and then half-inch boards go onto the walls. In areas prone to moisture, such as bathrooms, water-resistant drywall (sometimes called “green board” for the green paper that covers one side of it) is installed around the tub or shower. A more expensive alternative to water-resistant drywall (but a wise investment) is cement board, which is impervious to water rather than simply resistant.

After the drywall is hung, a thin, fibrous tape is spread over the seams between the sheets, and a joint compound (drywallers call it “mud”—a reference to its consistency) is spread over the tape. Up to three coats of the compound are applied, allowed to dry and sanded smooth before the walls are ready for the final step.

BUILDERS TALK

We asked builders across the U.S. to sound off with tips for homeowners. Here are their kindly nuggets of advice for you.

“Enjoy the process. You might have to work at it sometimes, but it can be fun.”

—Jim Carlson
Jim Carlson Construction, Inc.
Kearney, Mo.

“Before the work begins, make sure your contractor is licensed, bonded and insured, and belongs to a local home builders association.”

—Jim Cole
Cole Construction
Spokane, Wash.

“During construction, try to protect any native trees and vegetation on the lot; even driving over a tree’s drip line can irreparably damage a tree, which could take years to come back. That mature vegetation was factored into your lot price; if you kill those plants or trees, you’re just stealing money from yourself.”

—Steve Bumpas
Steve Bumpas Custom Homes, Inc.
Granbury, Texas

“Lock in your material prices as quickly as possible because commodities can be volatile, to the point where if you don’t lock in a price on your insulation, drywall, concrete and lumber, for example, it could cost you thousands of dollars at the end of the process. On a 3,000-square-foot house, lumber costs can fluctuate 20 to 25 percent, which translates to \$700 to \$800.”

—Steve Lauriello
Spectrum Properties, Inc.
West Chester, Penn.



At this point, if you don't intend to paint or wallpaper the walls, you can have a texture applied as a nice finishing touch that also creates some visual interest. Application of wall and ceiling texture sometimes involves the use of a timed machine that—after the windows and door(s) are covered with plastic—switches on and wildly sprays texture about the room in a random pattern. Wait a few minutes and voilà—instant texture. (Just make sure you're not in the room when the machine kicks on!)

Interior trim

First come your interior doors, which are often pre-hung in a jamb that fits neatly into the framed opening. Lengths of trim wood are applied to the outside edges of the door openings. Base molding pieces are applied to the walls where they meet the floor; crown moldings cover the walls where they meet the ceiling.

Other trim needs, such as stair rails and fireplace mantels, also are installed at this time.

Paint and stain

Sometimes the trim pieces are installed unfinished; you may paint or stain them at this point. Any untextured walls may be painted or wallpapered now, too. If you feel up to the task, this is a great job to place on your own shoulders. But if you do, don't skimp on the preparation requirements. Sand down high spots or globs of joint compound that the drywallers missed. Fill in low spots or outright holes in the drywall, and run a bead of caulk around all of the window and door trim, binding it to the drywall. Cover the edges of your trim with easy-to-remove masking tape, and then apply one coat of primer to the walls. Let it dry, then put on two coats of paint for a lasting hue. Wait a day or two, and then remove the masking tape carefully. And don't forget to go over the walls—especially around the trim—with a small brush, touching up any spots you missed.

Finish work

This stage will definitely get you excited. In come your kitchen and bath cabinets, and that granite countertop you've always wanted. The ceramic tile will be installed in your entry and master bath. The carpet will go down. Your kitchen will fill with appliances, as will your laundry room.

All the aesthetic touches that make a house a home will appear: mirrors, medicine cabinets, screen doors, light and water fixtures, heat registers . . . your house is beginning to show its character, because it is almost finished!

Cleanup

After the exterior painting and/or staining is completed, your driveway and/or sidewalk is installed and the cleanup begins. Again, this is a task that you can handle, if you want to take it on and save a few bucks. Call your garbage company and have them drop off one of those oversized trash receptacles. Tour your property and throw away any remaining debris that you find.

A grader will arrive to complete the desired shape of the land around your house, molding it so that water will flow away from your home's foundation. You can hire a landscape contractor to install sod (or grass seed), plant shrubs or flowers, create a hardscape or a pond—whatever your heart desires. A smart landscaping plan will add beauty to your lot, which will help your future resale efforts.

The construction process usually takes months to complete, but the end result is sure to be an almost overwhelming sense of accomplishment and sheer joy. You did it. You built your new house. 🏠

Source: Binsacca, Rich; *The Home Building Process: Everything You Need to Know to Work with Contractors and Subcontractors*; Tucson, Ariz.: Home Planners, LLC, 1999. Smith, Carol; *Building Your Home: An Insider's Guide*; Washington, D.C.: Home Builder Press, 1996.

SAVE MONEY ALONG THE WAY

Here's a collection of our favorite tips for keeping your pockets "green" and making wise financial choices during the construction of your home.

- Save your topsoil when clearing and excavating your lot. Topsoil for landscaping is very expensive.
- A little extra money spent on good waterproofing (or water management, such as a drain field or drain-tile/sump pump arrangement) is a wise investment, because it is very costly to eliminate basement water problems after your home is built.
- Using standard-sized dimension lumber will save you money. Manufactured (engineered) wood products may be the most economical alternative for complex designs.
- Building a two-story home is usually less expensive than building a one-story home of the same square footage. It's easier and more cost-effective to build up than out.
- A subfloor that is glued to the floor joists (as well as screwed) should eliminate squeaks and movement with little or no impact on your budget.
- Maintenance-free windows are cost-effective, saving both time and money in the long run.
- The difference in cost between a nine-foot-wide garage door and an eight-foot-wide garage door is minimal, compared to the additional access provided.
- Anticipate where your basement and exterior outlets will need to be located; identify their locations before the rough-in stage.
- Cast-brass faucets and fixtures are a good value.
- Built-ins, such as bookshelves or a hutch, are an economical alternative to furniture.

EARTH-SMART BUILDING MATERIALS

Today's earth-friendly building materials and products last longer, contribute little to landfills and keep your conscience clean. Here's a sampling of what's out there:

Cover your floors with tough-as-nails, sustainably harvested bamboo flooring. And if you're looking for something to put on those floors, how about . . . more bamboo?

www.bamboohardwoods.com

If your floor just has to be wood, try reclaimed and salvaged planks. Beams are also available.

www.duluthtimber.com

Your kitchen and bath tile needs can be accommodated with recycled glass tiles. Wine bottles, old windows and more are melted down to create stunning pieces of pragmatic art!

www.bedrockindustries.com

Composite woods are great for decks and railings. Manufacturers mix wood and polymer resins (some use recycled plastic grocery bags) to create a product that looks and even feels like wood, but doesn't warp, split, crack or discolor. This is cool stuff.

www.fiberondecking.com

What do you do with obsolete aircraft? Why, melt 'em down and make fixtures and furniture out of them. Chairs, tables, soap trays and toothbrush holders . . . you name it.

www.azcast.com

Insulate, deaden noise and beat back moisture with multipurpose panels made of recycled newspaper. The 4x8 panels may be fastened to the walls or ceilings, or laid down on bare concrete as a subfloor, with your choice of flooring material on top.

www.homasote.com

INSPECTION DURING CONSTRUCTION

Don't wait until move-in day to discover that everything isn't the way you intended. Along the way, keep your eyes peeled for problems that will cost you plenty if you wait to fix them. After the framing is finished and the roof is on, walk through the home with your builder and appraise these key items:

- **Electrical system:** Check the blueprints to verify that all your electrical switches and outlets are where you want them. Here's a tip: Determine where you want your entertainment center and ask for more than two outlets, because two outlets will only handle the TV and one additional piece of equipment. While you're at it, determine your entertainment needs and make sure that the electrical components will support them.
- **In the kitchen:** Verify that you have an outlet near any phone to support a cordless phone, a caller ID box or an answering machine. Look at the location of the outlets along your countertop: Are there enough to support the inevitable plethora of appliances that will crowd your countertops over time?
- **If your kitchen is set up for a gas range,** remember that if you ever change your mind and decide that you want an electric range, you'll need 220 volts. It's best to run a second electrical line with a 220-volt plug right now. (You might consider doing the same thing in your laundry room.)
- **House wrap:** Is it installed properly? Check the windows; the wrap should wrap into the window opening—not stop short of it.
- **Protect the unseen:** Confirm that steel plates are placed in such a way that nails or screws won't puncture the copper water pipes when the drywall is installed. The same goes for your natural gas lines.
- **Ducts:** Find them and make sure they're not crimped, which will lead to decreased airflow and increased utility bills.
- **When hanging your light switches,** consider the shorter members of your family. You might want to place the switches at 44 inches (instead of the standard 52 inches) in kids' rooms.
- **Inspect the framing.** Walk around the perimeter of the house and check that all the bolts on the sill plate (the 2x4 or 2x6 lying flat on the top of the foundation wall) have nuts and washers on them.
- **Are your closets big enough?** Are your halls and doorways wide enough? If you think you might host a loved one in a wheelchair, you might want to pay now for three-foot doors instead of the standard two-foot, eight-inch doors.
- **Is your showerhead high enough?** If not, now's the time to raise it!



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