Everything You Wanted to Know About Pergolas & Pavilions

The Easy Guide to Buying the Shade Structure of Your Dreams

by Raul Hernandez
Founder and CEO, Forever Redwood
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From the Forest, For the Forest...
A pergola is often the ideal solution to complement or complete an outdoor space. With the right vision and planning, a pergola can create a new living space that combines the best of indoors and outdoors. Pergolas are an excellent way to add shade and privacy, or create a transitional area, while preserving a sense of openness to the sky above. If you need a way to keep out the rain and snow and create more of a shelter, consider a pavilion, which is simply a pergola with a closed roof. This book discusses some of the key factors you’ll need to consider in choosing a pergola or pavilion.
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Thank you for downloading our Pergolas and Pavilions manual.

Buying a pergola can be complicated. Our goal is to make your buying process as easy and pleasurable as possible. This guide is packed with information about our products to help you make an informed choice. We are here to fulfill your patio dreams!

Forever Redwood has over 20 years experience building shade structures in all shapes and sizes. As a one-stop woodworking shop with nationwide service, we can handle every aspect of your project—from design and sizing, to structural drawings and permit support, to installation and even long-term maintenance and refinishing.

Over the years we have served thousands of customers, including homeowners, businesses, schools, municipalities, architects, and landscape designers. We hope to make you a happy customer, too.

Our friendly, courteous advisors will answer any question you have, and our highly experienced staff will work with you to make sure your project is completed with every detail just the way you want.

There is nothing like genuine California Redwood for long-lasting value and natural beauty. Let us help you make an investment you will love for years to come.

Call or email us with your project ideas, anytime.

OVERVIEW OF THE PROCESS

1. **Choose a Style.** Shade structures come in a variety of styles. Forever Redwood focuses on long-lasting, natural wood designs. In the next section, start exploring our most popular styles, and see our custom designs featured throughout this guide.

2. **Sizing and Special Options.** Size is determined by roof area. Options include roof style, privacy panels, and more. To determine pricing, use the “Build it Your Way” on our website. You may also call or email for free custom estimates and personal service.

3. **Drawings.** Once you place an order, we create design drawings for you to review. Drawing revisions are included at no extra cost. If you need a permit or HOA approval, you can purchase a drawing deposit before committing to the full cost of the structure. Once you’ve gotten the approval you need to move forward, the drawing deposit is deducted from the order total.

4. **Built and Shipped.** We build, fully assemble, and finely finish your entire order in our woodworking shop—we even send photos of the progress—to ensure everything fits together perfectly. Structures up to 14’ long are shipped in a crate via LTL carrier directly to you. Larger structures we deliver ourselves.

5. **Installation.** You can install yourself or opt for our white glove service, in which we personally deliver and install it for you. Enjoy your new beautiful shade structure, and our lifetime support that comes with it!
Rio on the Hudson: Olympic Village in NYC. Two 20’ x 25’ Del Norte Pavilions in Douglas-fir. We used 2’ x 2’ x 2’ concrete blocks to anchor the structure because it was a temporary installation, then covered the concrete blocks with wooden boxes. Photo Courtesy of A. Fisher of New York, NY.
WHAT KIND OF SHADE STRUCTURE IS RIGHT FOR YOU?

SELECTING YOUR PERGOLA OR PAVILION STYLE

Search online for a pergola or pavilion kit and you’ll get thousands of pages of results. There are countless products on the market, some of which are very good. You’ll also find plans to build your own structure from scratch (which is a lot of fun—we know!). You can also go into most any Big Box store and see relatively inexpensive mass-manufactured pergolas in standard, smallish sizes (under 200 square-feet).

But, if you’re looking for a truly premium product, a special shape, or a relatively large structure—or you need to attach your pergola to a building—your choices drop to a handful of manufacturers. By taking the time to consider your options, you can be sure your pergola will be perfectly designed and handcrafted to provide a balance of shading, visibility, privacy, and proportions for years of enjoyable use. Our most popular shade structure styles are shown on these pages.

POPULAR PERGOLAS

ARCHED PERGOLA
Our most popular pergola includes a beautiful lattice panel roof construction that also maximizes shade.

GARDEN PERGOLA
This classic pergola style features traditional post-and-beam construction. It require less planning since you don’t have to coordinate the construction details to fit with another building.

MODERN LOUVERED PERGOLA
This Garden Pergola, with a sleek modern design, has heavy duty louvers as the main roof component. These adjustable louvers allow you to control the amount of sunlight passing through.
MONTVALE Pergola
A grid roof is achieved by joining the timbers perpendicularly in a cross-notched fashion. This allows the timbers to line up at the same height. Curved diagonal braces complete this breathtakingly beautiful design.

MARIAN OUTDOOR KITCHEN PERGOLA
The playful, arching roof design is a customer favorite. The curves are the same as those of the Backyard Pavilion, but with an open-roof. Can be used for any outdoor function—not only for kitchens!

BACKYARD PAVILION
Featuring a graceful, curved roof, this is an all-around favorite. Perfect for year-round use, rain or shine. For an open-roof version of this structure, see the Marin Outdoor Kitchen Pergola.

DEL NORTE KITCHEN PAVILION
While this design can accommodate any outdoor great room, it’s especially preferred for existing or planned kitchens and dining areas.

MONTVALE PERGOLA
A grid roof is achieved by joining the timbers perpendicularly in a cross-notched fashion. This allows the timbers to line up at the same height. Curved diagonal braces complete this breathtakingly beautiful design.

PARK PAVILION
The Park Pavilion is the perfect shelter for a musical ensemble, a celebratory meal, or an intimate wedding. The large, curving diagonal braces add uplift and elegance to any occasion.

TOLEDO PAVILION
If you are looking for a massive pavilion with a tall, high pitch, expansive ceiling, the Toledo is for you. Built with only huge timbers, this extra-large structure is perfect for events and gatherings.
ASIAn FUSSION PAVILION
Finely finished inside and out, this beautiful open-walled creation will serve you year-round with unique style.

VIKING PERGOLA
Conquer your backyard blues with a design to please your aesthetic sensibility and add a robust covering for your outdoor space.

DOME PERGOLA
This curvaceous design is the instant centerpiece of any landscape. Meticulously handcrafted wood graces every inch of the structure.

PATIO PAVILION
Add some life to your property with this functional, stylish addition to your home or recreational space. This is a multi-purpose, open-air pavilion that can be custom made to suit your space and aesthetic needs.

SMALL PERGOLA
A good option if space is tight, or if you simply prefer a smaller structure. Smaller pergolas are less than 12’ x 12’, and can also be made attached or with an arched roof.

FAN PERGOLA
A unique design for unique outdoor spaces. Two or three smaller Fan Pergolas can accent a larger landscape, or one big one can serve as a full outdoor great room.
ATTACHING A PERGOLA OR PAVILION

Attached Pergolas or Pavilions are sometimes preferable because they use less posts and create immediate transition spaces from indoors to outdoors. Since each building is different, and to be certain your pergola will attach without a hitch, we’ll need to know the height of your eaves; whether there are windows, sliding doors or light fixtures that have to be considered; what type of siding/wall construction exists; and what the ground is (undeveloped, wood, stone, concrete, etc.). Yes, there are few extra details to consider but we do it all the time and can help you get exactly the measurements needed.

When we receive your attached shade structure order, we’ll email you asking for a couple photos of the install area. With the photos, we’ll email (or call if you prefer) and ask a few questions. We don’t charge extra for this level of service and from your answers we will design and then make drawings of the pergola so we can both be sure everything will work prior to building. After many years, we’ve learned this attention to detail is the best way to be sure the pergola will work perfectly for you.

All the hardware for our pergola kits is included.

The standard method to attach a pergola to an existing structure is via a Ledger Board as shown above and lower left. If our assembly team is installing the pergola for you, we use lag bolts on every other framing timber (16” on center in most cases). Sometimes common joist hangers are added for additional strength, but in most cases, they are not necessary.

Sometimes obstructions or other wall details make a ledger board unworkable. We then design and build custom metal anchors (see photos on next page).

Attached pergolas and pavilions are usually custom jobs in some way. In the lower left photo on the next page, the 24 ft pergola was built with only one post with a method of attaching that combined three custom steel anchors attached to the siding using short ledger boards. The ledger boards are sized to bolt into at least 2 framing studs behind the siding for added strength while sized similarly to one another to maintain aesthetic balance.
This custom job started with the masonry columns already in place. We built a better, thicker, and more decay-resistant new pergola roof in Mature Redwood for this Mexico City customer. The prior pergola from another manufacturer had only lasted 6 years. The new Redwood timbers are massive, full-dimension 3x6 and 2x6 timbers, and the arc is built using rounded 4x8s that are bolted together. This pergola’s center arc is 16 feet in diameter and the overall length is over 50 feet.

**IF YOU DREAM IT, WE CAN BUILD IT**

As a real woodworking shop dedicated to the principles of old-world craftsmanship, we specialize in custom work. Our standard customizable options include: roof styles, rafter & slat spacing, privacy panels, premium finishes, and hundreds of sizes to choose from. We can also create custom shapes to fit your unique space. Tell us what you have in mind, and we’ll design and build the finished product for you.

**You might also be interested in...**

ENTRYWAY ARBOR  LORETO PAVILION  CUSTOM FAT TIMBER PERGOLA  CARDINAL’S NEST PAVILION
This custom-designed pergola is 24’ x 22’ in Redwood. It has an open roof with rafters at 15”, and a 9’ Post Height (front posts 2’ shorter). The wood is finished in Transparent Premium Sealant. (Photo Courtesy of Kelly F. of Okotoks, AB, Canada.)

This 24’ x 24’ pergola in Redwood has an Open Roof with both slats and rafters spaced at 18”. The posts are 8” x 8”, support beams are 3” x 12”, and rafters are 2” x 10”. Custom privacy panels wrap around two and a half sides of the pergola. The wood is finished in Transparent Premium Sealant. (Photo Courtesy of Wanlass Park of San Pablo, CA.)

Watch our Videos and See Us in Action! Visit www.foreverredwood.com/videos

SHED PAVILION  HOT TUB PAVILION  ARCHED THICK TIMBER PAVILION  ARCHED GARDEN ARBOR
WE MAKE VERY LARGE PERGOLAS AND PAVILIONS TOO...

The photos on this page show a 60x30-ft Del Norte Pavilion we installed in 2015 in El Paso, Texas.

Larger structures often require thicker wood and additional posts to support the extra weight. We will work with you to determine the optimal mix of supporting elements to meet your aesthetic and functional needs. For example, instead of adding additional posts to a larger structure, we can sometimes increase the size of the roof support beams to use 2x10s or larger. Our staff engineer will ensure structural integrity and provide drawings for your permitting process.
Meet Forever Redwood’s biggest pavilion to date, a variation on the Del Norte Outdoor Kitchen Pavilion, creating a huge outdoor gathering area for this California customer. This custom pavilion is 51 x 47 feet, with a tile roof installed by Forever Redwood.
So, there was an outdoor wedding and all had to be perfect. The Cardinal’s Nest Pavilion was our answer. Luckily we don’t insist that you must have a wedding to get one built. You don’t have to go with the original 60’ x 34’ size either. If you dream it, we can build it in any size you like.

Photo courtesy of S. H. of Sevierville, TN.
Once you’ve decided on the style you like (or you know for sure you need a custom style, and we’ve discussed what’s possible), it’s time to focus on exact sizing and roof configuration of your structure.

All of our pergolas are built from the ground up in exactly the same way. First, we use large timbers for posts made from 100% real wood. We notch out a portion of the top of the post to place the horizontal beams that will support the roof and they are additionally supported by 45 degree thick timber braces. Atop this basic pergola skeleton, we build all our roof styles.

For additional long-term structural strength, we add solid timber blocking in-between the dual support timbers as shown in the drawing at bottom left. With this blocking, the dual supports are in effect converted into one solid 7 1/4 inch x 6 1/2 inch timber.

On ForeverRedwood.com, you’ll find a product configurator that lets you mix and match sizes, styles, and options for an instant price quote. However, if you don’t see exactly what you’re looking for, you can always contact us to find out if we can make it for you. Odds are, we can. Since each Forever Redwood pergola is handmade, custom sizing/shaping is our specialty.
GARDEN PERGOLA ROOF STYLES

The Forever Redwood Garden Pergola was the very first pergola we built. It is the traditional flat roof design built with large timbers that goes back thousands of years. We build it in a variety of roofing configurations to meet your needs:

STANDARD OPEN ROOF
This is our strongest roof configuration and our most popular. It uses 1 3/4” x 1 3/4” roof slats with 1 3/4” x 5 3/4” rafters perpendicular to the slats below. We usually recommend 18” on center spacing for rafters and slats initially. (Note: rafters on Small Pergolas are 1 3/4” by 3 3/4”, but Small Pergolas with Extra-Heavy Timbers use the same 1 3/4” by 5 3/4” rafters as the Large Pergolas.)

To maximize the shading capabilities of the standard open roof design pergola, you should orient the rafters north and south. This way, as the sun moves from side to side over your rafters, the rafter height will maximize shade most of the morning and afternoon giving you almost total shade over half the day and letting in substantial sun only a few hours when overhead in the midday hours.

On the next page are comparative drawings of the three most often built rafter and slat spacing options on our standard open roof, plus a lattice panel alternative.

Since all of our pergolas are hand built, we can build it almost anyway you’d like. For example, we once tilted the roof a bit from one end of the rafters to the other and then built tongue and groove slats installed flush with one another. The customer added roofing and an instant porch was born. Just let us know what you need.
SLATS AT 18 INCHES APART, RAFTERS AT 18 INCHES APART
Recommended. You get excellent visibility and more shade from it than you would think due to the height of the timbers and because the sun is rarely directly overhead.

SLATS AT 12 INCHES APART, RAFTERS AT 18 INCHES APART
Not enough shade? The second most popular open roof set up is to order your pergola with the slats spaced 12 inches apart while keeping the rafters at 18 inches. This increases shading substantially and makes the structure even stronger. The cost is a bit more for the extra work and timbers.

SLATS AT 6 INCHES APART, RAFTERS AT 18 INCHES APART
For the ultimate in shade, we offer this layout. But, keep in mind the pergola will create more shade than you think and you can always come back later and add slats if you need to.

We keep your pergola details on file so if after installation you realize you still need more shade, you can add slats to create the spacing that works best for you.
LATTICE ROOF
Creates the most shade and privacy. It’s the lowest cost option to maximize shading. Lattice panels are built doubled up using 3/8” x 1 3/4” slats with 1 3/4” x 1 3/4” openings and 1 3/4” x 1 3/4” framing (3/4” total thickness). Each panel is fastened in-between the rafters as shown below. Rafters are normally set at 24 inches on center when lattice panels are ordered.

ARCHED PERGOLA ROOF STYLES

Arched Pergolas can be made with or without Lattice Panels.

At left is a drawing of our Arched Pergola Roof with Lattice Panels. Rafters are normally set at 24 inches on center when the Arched Pergola Roof with Lattice Panels is ordered.

Rafters are set to 18 inches on center when the Arched Pergola Roof without Lattice Panels is ordered.

TIMBER NOTCHING FOR SUPERIOR STRENGTH

If you want a pergola that will hold up well and look great for decades, be sure you get a pergola that is fully notched. Our pergolas have every timber notched into every other timber. Everywhere two timbers touch, we add a notch. This takes a lot of time to do and increases the cost, but it accomplishes two important things: 1) It distributes the stresses throughout the structure for a stronger pergola that will not sag or warp on you. 2) It insures that no timber EVER moves even an inch. The timbers cannot move since each is tied into its neighbor. This keeps the pergola straight and beautiful thru the decades. No notching or incomplete notching will inevitably lead to twisting and turning and shrinking timbers that will throw the lines off as the years go by.
PAVILION ROOF STYLES

Pavilions are just like pergolas, but with a solid roof to keep out the rain and snow. That’s the main difference. Pavilions are especially favored for hot tubs and outdoor kitchens. However, many people searching for a pergola find out that they really want a pavilion—and vice versa. If in doubt, give us a call. Please note that on our website we sell pavilions under a separate category.

Our pavilion roof is waterproof and beautiful, but does require you to provide and install the final roofing skin. The pavilion roof does not need plywood placed over it—it is thick enough as is. We recommend first adding tar/felt roofing paper over it with either 5/8” staples or 1/2” roofing nails. After the tar paper is attached, most customers then add 30-year warranty asphalt shingles. It is the least expensive option (total roofing material costs are less than $2 per square foot in almost all cases) and there is a wide variety of colors to choose from.

Besides asphalt shingles, you could go with cedar shingles. They are a bit more expensive and time consuming, but do have a gorgeous look. For the gable roofed structures that have a straight roof, you could also go with a metal roof. If you are willing to spend more to significantly beef up the overall structure on a gabled roofed pavilion, in most cases you can even go with a tile roof.

Here are some images of the tongue and groove interior ceiling. The standard size is 1x6” boards but we can build with 1x8”, 1x10”, 2x6”, 2x8”, or thicker boards if you are planning to go with a heavy roof like tiles.
Del Norte Pavilion with a typical asphalt shingled roof

Custom Pavilion with a cedar shingled roof

Del Rio Pavilion with a standing seam metal roof

Custom Fat Timber Pavilion with a tile roof
RETRACTABLE SHADE CANOPIES

We also build pergolas using Infinity Canopy or ShadeFX™ Retractable Canopies, which makes it possible to convert your pergola into a “pavilion” as needed—even arched pergolas. Let us know when ordering or during the design phase that you would like to use a retractable canopy. This way, we can communicate with the canopy manufacturer and include their product into our design drawings to make sure your the retractable canopy will fit and attach to our pergola perfectly. In most cases, they will require the addition of a small timber or two to hold the retractable canopy and the cost for this rarely exceeds $100. You will purchase the canopy direct from the shade manufacturer, and they will ship their canopy directly to you for installation. For more information about their retractable canopies, see www.shadefxcanopies.com/retractable-canopies/ or www.infinitycanopy.com

POLYCARBONATE

Wondering about adding a polycarbonate roof to your pergola to keep out the rain? This can work fine, and we can incorporate the option into your design, but you may find yourself having to hose down the panels every couple weeks, as they tend to collect leaves and dirt and look messy from below in almost no time (depending on location). Often, switching to a pavilion is the better answer. That said, one advantage of polycarbonate panels is that they let light pass through. And, they can be added to an existing pergola. We’re happy to discuss your options and help you come to the best decision for you. Most polycarbonate roof options add less than 20% to the overall cost of the pergola project.
MODERN LOUVERED GARDEN PERGOLAS

You can bridge most of the gap between a pergola and a pavilion by way of a louvered system. The louvers are made from high quality thick wood, and held in place with a recessed set of aluminum hardware that will never rust or decay. They can be set to any degree between fully opened and fully closed.

A Modern Louvered Garden Pergola gives you the option to allow more sunlight to enter during low light months—or portions of the day—and less sunlight during hot periods.

A light drizzle can be handled by closing the louvers—it is water resistant, but not entirely waterproof like a pavilion or polycarbonate. Opting to have a Louvered Pergola built with a roof line that has an incline will substantially increase the water resistance.
QUICK FACTS

• Redwood is the most decay-resistant natural wood on the planet, and we offer warranties of up to 20 years for our shade structures. Your pergola will last a lifetime in any climate with minimal maintenance.

• We mill our own lumber extra thick for up to 36% more wood compared to traditional lumber. All hardware is included, and it’s stainless steel.

• We are a real, live custom woodworking shop. We are happy to fulfill your special requests.

• All joints are notched so your pergola will never sag, warp, twist, or shrink. Each timber is finely sanded to a smooth-to-the-touch feel.

• Tailor your pergola with shading options, privacy screens, custom stains and more.

• Every pergola can be customized. You can choose from our standard sizes and options or if you don’t see a size or detail you’d like just let us know!
DIMENSIONS & DRAWINGS

We can customize our Pergolas to suit your needs. Just tell us what size and what options you want. Prior to building, we provide our customers with a detailed set of drawings based on their initial choices and sizes. The drawings are the perfect tool to show you all the details and dimensions. It allows you to double check everything to be sure it is exactly as you'd like before it is built. Drawings are emailed within 3 business days and we’ll revise your drawings as needed to make sure all details and sizing issues are perfected prior to beginning construction.

Custom drawings help you:

✓ Double-check on site to be certain your proposed sizing will work.
✓ Make any necessary changes to your plans—if necessary, we create a second or third set of drawings for a final review, at no extra cost.

PERMIT & HOA SUPPORT

Most pergola, pavilions and gazebos we build are done without permits, and are simply ordered. About 15% of our customers pull permits because their structure is relatively large or they have neighbors that are difficult. In some areas you may need prior approval to put a new structure on your property—whether from your Homeowners Association and/or your municipality.

In some jurisdictions the permit process is simple, and in others it is more complex. We recommend that you have detailed drawings prepared so you can present the building department with a design that is fully hashed out, in which they can see the footings and all timber sizes and hardware. This is often enough to pull the permit, along with a Google Maps photo of your property with a rectangle showing where the shade structure will go (site map).

We can provide these detailed drawings through a $2,000 non-refundable Design Deposit that will cover as much time as needed for our Design Engineer to go back and forth with you to fine-tune all details just the way you want them. This deposit is deducted from the final price of your structure. Please factor an extra 2-4 weeks into the project planning phase. You are still responsible for taking care of your own permit and/or working with your HOA, but we will provide the supporting design drawings you need.

If the local building department does want more info—like structural or wind resistance calculations, etc.—then you have to get a structural calculations package done on the design drawings. We can get this work done by a licensed Structural Engineer. Structural calculations for most structures under 400 square feet are usually $1,000 or less, while larger structures can be a bit more.
After choosing your preferred style pergola or pavilion and configuring its basic dimensions, it’s time to consider what custom options, if any, you’d like to enhance the overall function and appearance of your structure. Here are the most popular custom features we offer. As always, if you don’t see exactly what you’re looking, just ask if we can make it. We usually can!

**PRIVACY PANELS**

Privacy panels are a great way to create more intimacy in your space. They’re especially appropriate for hot tubs, but lend themselves well to outdoor living rooms in general where having one or more partially closed sides may be desirable.

Forever Redwood offers a variety of custom panels installed to let you create the perfect mix of openness and privacy for your structure.

**LATTICE PANELS**

For panels that let some air and light through, with no moving parts, choose this option. The lattice is normally made with 3/8” thick by 1 3/4” wide slats and 1 3/4” wide openings, and the panels can be up to 48” tall each. If you prefer a shorter height, just let us know. To have your privacy panels extend from the ground to the roof on one or more sides, you’ll need two panels to cover the approximate 8’ height.

Horizontally, privacy panels can be made long enough to fit between posts up to 17’ 1” apart (which is for roof sizes of up to 20’ x 20’). You have the option of adding one, two, or three panels, depending on the size of your structure. Just be sure to let us know whether you want them on the long or short side(s). Our custom drawings will show placement, so you can verify it’s correct.
Orientation of the slats is diagonal by default, but can be vertical/horizontal by request.

When ordering privacy panels, please let us know in the Comments box at checkout how high off the ground you’d like the bottom of your panel(s) to be—we’ll drill installation holes in the posts to achieve the height you specify. If no height is specified, we’ll ship your posts without holes so you can determine the best height during installation.

**Louver Panels**

You will love our louvers! This option offers the ultimate in privacy and openness. Simply adjust the angle of the horizontal slats to let in light and air, while keeping out rain, direct sunshine, and noise. They can be made in any configuration imaginable, with a solid wall on bottom and louvers above, or all louvers.

Louver panels are made up to 8’ tall, beginning at 6” off the ground. If you require louvers for only a portion of the height of the wall or a special size or shape, please let us know.
SHUTTER PANELS
Solid, yet adjustable, shutters let you create sections of paneling that open and close on hinges. Shutter panels are normally made full length from 6” above the ground to the height of the first timber in the roof, or 8’ total height. The bottom half is closed and is non-adjustable, while the top half opens like a window. Of course, you can skip the shuttering part and simply have a solid panel wall all the way up. As always, we are happy to accommodate custom configurations.

CURTAIN RODS
For a softer look of your own making and whim, we can add our heavy duty Curtain Rods with strong steel hangers. The hardware to attach your curtain rods is included. The rods are made 2 3/4” in diameter so they’ll never snap on you.
Add walls to a pavilion and what do you get? How about an outdoor room that can serve as a private getaway and an intimate gathering space.

Our gazebos come in many configurations and styles. Special features include sliding doors, hinged doors, sunroofs, and floor to ceiling windows. You can even add electrical conduits for lighting, a fan, a space heater, or an entertainment center.

FOR MORE PRIVACY, CONSIDER A GAZEBO

Add walls to a pavilion and what do you get? How about an outdoor room that can serve as a private getaway and an intimate gathering space.

Our gazebos come in many configurations and styles. Special features include sliding doors, hinged doors, sunroofs, and floor to ceiling windows. You can even add electrical conduits for lighting, a fan, a space heater, or an entertainment center.

Top: 12’ x 10’ Kikue’s Tea House in Redwood with Interior and Exterior Decking

Left: 14’ x 12’ Sun Gazebo in Redwood with Skylight and Complete Floor. Photo Courtesy of P. Gee of Sammamish, WA.
**SUN GAZEBO**
Sun-filled space with sliding and removable acrylic window panels on all sides. This long lasting, light infused gazebo even has a skylight that opens for ventilation and more sun.

**KIKUE’S TEA HOUSE**
For when nothing but a real traditional Japanese Tea House will do, there’s the Kikue’s. The gorgeous, flexible design takes you from complete privacy to a sun-filled open pavilion in seconds.

**DREAM GAZEBO**
The Dream Gazebo is our finest. The cupola roof, the finely finished interior walls, the flooring, the shingle roof...the list of detailed craftsmanship doesn’t fit in this tiny space!

**OCTAGONAL SUNROOM GAZEBO**
Bring new life and energy to your yard with this gorgeous octagonal-shaped gazebo. The dramatic design showcases the natural long-lasting beauty of redwood.

**DIY GAZEBO**
Create a brand new indoor space right in your backyard. This covered, walled gazebo can be a private, quiet space to relax in, or a place to socialize with friends and family.

**SPA GAZEBO**
Perfect for your hot tub, massage table, meditation room, or even hammocks and comfy chairs. The Spa Gazebo Kit even has a sunroof to let in all of those beautiful rays in any season.
POST DECORATIVE TRIM

Another special option we offer is adding vertical or horizontal trim pieces to the standard posts to give them a more multifaceted appearance. See examples below.

DECORATIVE COLUMNS AND MASONRY WORK

DECORATIVE COLUMNS

Many people choose to add decorative columns (or pillars) to their pergola or pavilion. There are two main kinds of columns: **load-bearing** and **non-load-bearing**. The difference is simply that load-bearing columns sustain the weight of the roof, replacing the wooden posts that would otherwise be there, whereas non-load-bearing columns are installed around the wooden posts, which are anchored to the ground.

Although Forever Redwood does not manufacture decorative columns, we can support you in crafting a pergola or pavilion to go with the style of columns you choose. We recommend that if you’re interested in load-bearing columns, you purchase them locally, as shipping costs on them are substantial. If you’re interested in non-load-bearing columns, you can find many examples on the Internet. These are available in fiberglass, wood, PVC, and other materials. You can also google “architectural columns” to see your options.

MASONRY WORK

If you have existing masonry work in place, or would like masonry work to serve as part of your pergola or pavilion support, the post length can be customized to match the existing height of the masonry. Or, we can simply provide you with a roof, without posts. As with decorative columns, your masonry work can be load-bearing or non-load-bearing. In the former case, the posts are anchored to the top of the column. In the latter case, the masonry is built around the standard pergola posts after they are anchored to the ground. When masonry work is added after the posts are installed, it is a good idea to create a barrier between the wood posts and the masonry work. We recommend Hardiboard to do so. It is a small investment that will add piece of mind.
15’ x 20’ Arched Pergola in Mature Redwood with Lattice Roof Panels, 10’ Post Height and Anchor Kit for Stone (non-load-bearing columns)

19’ x 32’ Custom Pergola in Mature Redwood (non-load-bearing Tuscan columns). Photo Courtesy of Mike M., San Mateo, CA.

20’ x 20’ Arched Pergola in Redwood customized with 6 posts instead of 4 (posts wrapped in masonry). Photo Courtesy of Jessy S., MA.

14’ x 18’ Attached Arched Pergola in Redwood with Lattice Roof Panels, 9’ Post Height and Anchor Kit for Stone (posts wrapped in masonry)
A slight variation on combining a pergola with masonry columns involves building your pergola atop a pony wall or crib wall. This photo shows our cherry stain.

The Montvale Pergola (showing our coffee stain) on the opposite page comes with 8x8 posts and 2x8 roof timbers.

You can also combine an Attached Pergola with masonry columns. The possibilities are endless!
To beat the summer heat, you might want to install a ceiling fan. We’ll provide a base and electrical conduits to make it easy. The base is added between the rafters with four bolts (two per side). We’ll place it in the center of the ceiling by default, but of course, you can place it almost anywhere you have sufficient clearance. You may add two ceiling fan bases to larger structures, like the pergola shown at upper left.

When a ceiling fan is part of the project, we will ask that you make a decision on the style and send us the specifications for the ceiling fan you want to include. This way, we will draw the fan’s dimensions into your drawings so you can see how it will look and you can make sure you have the clearance you need before you buy it. Often when we do this, the customer makes an adjustment to the post height.

Many customers have told us that by far the best manufacturer is a company out of Kentucky called the Big Ass Fan Company. Funny name, great fans. They move a lot of air, are quiet and are probably the best in the business. We have also heard from several customers that Craftmade 70” Olivier Aged Bronze Outdoor Ceiling Fan with Scalloped Walnut Blades has a finish that actually looks a lot like Redwood and is a good quality large fan.
TRIM KIT TO HIDE ELECTRICAL WIRING

If you plan to run wiring to add lights or fans to your pergola, we can add a cut out to your Posts and place a trim piece so the electrical wiring will be almost invisible (see drawings below). The trim is on the interior side of the Post(s) and it is attached with finish nails for a smooth finish. When you order a structure with an electrical trim kit, your first set of drawings will include numbered posts so you may choose and let us know which post(s) will have the this option.

14’ x 14’ Arched Pergola in Mature Redwood with Electrical Wiring Trim on 2 Posts and 1 Ceiling Fan Base. Photo Courtesy of Steve W. of Hoboken, NJ.
One of the most important decisions you’ll make about your structure is what to build it out of. For thousands of years, wood has been the traditional and favored material for pergolas. Many wood species are available and your choice of wood will determine how your pergola will look, whether it will be low or high maintenance, and whether it will last just a few years or many decades.

The six most abundant woods available for outdoor use in the U.S. and Canada are Cedars, Pressure Treated Woods, Pines, Teak, Exotic Hardwoods and California Redwood. This chapter will review the pros and cons of these woods specifically for use in pergolas.

THE TRUTH AND FICTION OF TEAK

Teak (Tectona grandis) is a deciduous hardwood renowned for its elegance, durability, and longevity even under severe climate conditions. Teak is becoming the most widely used outdoor wood in the U.S. and Canada. It’s a good economic choice for outdoor furniture or structures you want to last. It has some maintenance issues, but it is reasonably priced and well distributed.

Environmentally, it is a mixed bag with teak. Teak sold in the U.S. and Canada is 99% plantation grown. There are teak plantations all over the world now with a growing concentration in Central and South America. These plantations grow Teak in rows and harvest in 20- to 40-year rotations in most cases. The highest quality teak plantations have up to 80-year rotations, but they are rare. Teak is marketed as a “sustainably harvested” alternative to exotic woods taken from rain forests. The teak industry is large and strongly markets this environmental angle. It’s part truth, part fiction.

The truth is teak does take pressure off the native forests as a source of good quality wood. The fiction is a significant percentage of these plantations are grown on lands that were once forests. And, teak tree farms are not native to the Americas (they are from Asia). They replace native biologically diverse lands with an imported monoculture that is known to degrade the wildlife habitat for many species.

So, it’s a mixed bag with the teak. Good quality wood and better than logging the Amazon, but not “green” in the real sense either.
20' x 14' Garden Pergola in Mature Redwood with Slats at 6", Rafters at 18", and Lengthwise Roof Support Timbers

Opposite page: 26' x 24' Arched Pergola in Mature Redwood with Custom Design: open roof with extra slats, plus extra large timbers (8x8 posts and 2x10 arches)
WHAT ABOUT REDWOOD?

Redwood was the outdoor wood of choice for most of the 20th century. Like teak, it is a beautiful wood with an excellent reputation for outdoor durability. It was available nationwide and used for anything outdoors until the early 1990s. But, the Redwood forests were over-logged and in the 1990s, lumber production collapsed to 1/3rd the levels of prior decades. It has not recovered and will not unless major changes are implemented in the way the privately owned forests are harvested. Today, Redwood is available only in California and a few western states. The overall quality has dropped because the average size of trees being harvested is smaller than in prior decades.

In 1995, Forever Redwood purchased and began to restore its Redwood forestland. We offer pergolas and pavilions in 3 grades of wood (2 grades of Redwood and a Douglas-fir grade).

Redwood, our most popular grade, has a 15-year decay warranty and is better quality than the standard Redwood available on the West Coast market today. The Mature Redwood, has a 20-year decay warranty and is comparable in durability to the highest grades of teak.

FOREVER REDWOOD WOOD CHOICES FOR SHADE STRUCTURES

- **MATURE REDWOOD**

- **REDWOOD**

- **DOUGLAS FIR**
AND CEDAR?

There are six Cedar species available in the U.S. and Canada. We only recommend Western Red Cedar and Port Orford Cedar.

Western Red Cedar is native to the west coast and is the most common Cedar. It is more rot and insect resistant than the Eastern varieties. Western Red Cedar is a fine option because of its naturally strong decay and insect resistance. It is lightweight, dimensionally stable, relatively strong, and has a beautiful grain that is easy to work. Tables, pergolas and other outdoor structures built from all-heartwood Western Red Cedar can be expected to last 15 years or more in most climates with minimal maintenance. With some maintenance, they’ll last longer. The heartwood is a fragrant red/dull brown and the sapwood is nearly white. If the manufacturer won’t specify all-heartwood, then it has sapwood in it and you can expect decay issues to start showing up within 10 to 12 years if you live in a moist climate.

Port Orford Cedar is a West Coast native of Oregon and California. It is also relatively strong and highly decay resistant. It’s similar to Western Red Cedar, but not as abundant. If you can purchase an item made with all-heartwood Port Orford Cedar, you’ll have a long-lasting beautiful piece at a reasonable cost.

The other North American Cedars—Atlantic Cedar, Incense Cedar, Northern White Cedar, and Southern Red Cedars—are not recommended for any large project like tables, pergolas, big benches, or planter boxes. They are beautiful, aromatic, and have good to excellent decay and bug resistance, but they are relatively weak in structural, compression, or bending strengths. They will not hold up well to wind, weight, or other structural stresses unless you significantly overbuild in terms of the amount and size of the timbers used.

In general, for any large project involving cedar, we recommend:
1) Make sure all the timbers are heartwood only for maximum durability. 2) If you’re ecologically minded, ask where the wood is coming from and how it was harvested.

HOW CEDAR COMPARES TO REDWOOD, TEAK, AND THE EXOTIC HARDWOODS

Western Red Cedar competes mostly with Teak, Redwood, and exotic Hardwoods for the higher-end outdoor market where appearance and durability are the main points being considered. Exotic Hardwoods are not considered in this chapter because they tend to be harvested in ecologically murky ways and are not widely or consistently available.

Cedar is just as beautiful, dimensionally stable, and easy to work as Redwood. Like Redwood, it takes well to just about any stain, but it is priced lower than Redwood because even though it will be highly decay and bug resistant, a pergola built with the best all-heartwood Western Red Cedar will not last as long as the same structure built with the best all-heartwood Redwood.
Redwood has more decay and insect resistant tannins in its wood. For outdoor applications, it is the longest lasting wood that grows naturally in North America. Comparing the same wood grades, Redwood tends on average to last 30 to 35% longer than Western Red Cedar.

Western Red Cedar is relatively strong in terms of compression, bending, and overall structural strength, but Redwood is a bit stronger in all strength categories.

We have built a few items using Western Red Cedar over the years for the Cedar enthusiasts that don’t know Redwood. If you’d like to build using Western Red Cedar let us know. Please keep in mind it will have a bit thinner timber sizes than the photos seen on our website because we cut our Redwood timbers on average 25 to 30% thicker than standard lumber sizes.

WHAT ABOUT PINE?

In dry climates you can build outdoor items from untreated Pine and either paint it or use a good quality oil finish. But most Pines tend to not have great insect or decay resistance naturally. For example, Southern Yellow Pine is a beautiful wood that is readily available at a good price, but it won’t hold up in the moist outdoors more than 5 to 7 years unless you are regularly refinishing/resealing it.

In almost all cases you are asking for a lot of work to maintain any outdoor item built using Pine, regardless of how dry your climate may be. Planter boxes in particular will not hold up well because of the constant moisture from the inside out. By contrast, anything built from Western Red Cedar, California Redwood, Teak or Pressure Treated Pine will require minimal maintenance once up.

A BETTER, ECONOMICAL ALTERNATIVE: DOUGLAS-FIR

Blonde or light-brown colored, Douglas-fir is structurally very strong, with substantial decay resistance (though not as much as Redwood). It’s ideal for drier climates, where you could see a 20-year lifespan with little maintenance. In wetter climates we recommend painting your Douglas-fir pergola to help the wood last longer. Forever Redwood offers all our products in a Douglas-fir option with a 10-year warranty.
LAST AND...LEAST:
PRESSURE TREATED WOOD

Pressure Treated Timbers are popular because they are inexpensive, long-lasting, and available almost anywhere in any size you need. They are made from average quality Pine lumber of several species that is processed chemically into rot and insect resistant timbers. Pressure Treated Pine has improved in appearance over the years and is heavily marketed. Pressure treated pines can last for several decades and are also structurally relatively strong. They will work well for some installations, but they do have a few drawbacks worth considering:

- The surface tends to dry out and develop splinters in a few years unless regularly maintained.
- The wood is toxic due to the chemical processes used to make it rot resistant (not recommended for seating surfaces or eating surfaces).
- The appearance just can’t match up to the natural beauty of Teak, Cedar, Redwood or an exotic hardwood.
- The wood grain is punctured and of an unnatural color. It requires more staining and other finish work to create a decent surface appearance.

A NOTE ABOUT ALUMINUM

Although this is beyond the scope of this guide, we do want to mention a couple points about aluminum. Unlike natural wood, aluminum gets very hot to the touch in summer, very cold in winter, and is quite noisy when it rains. While we do not recommend all-aluminum structures, we have seen customers choose to add metal roofing of various kinds above our pavilions (see page 25), and this does work well because the solid wood ceiling helps muffle the rain noise. If you are considering this, please let us know during the drawing process so we can coordinate the spacing requirements of the product you have in mind.
Now that you’ve chosen the optimal wood for your structure, it’s time to protect the surface and get it looking its best.

**TRANSPARENT PREMIUM SEALANT**

The most popular finish is our Transparent Premium Sealant, which is recommended for outdoors. This sealant leaves your furniture looking natural. It is a non-shiny penetrating oil finish that helps keep the beautiful wood surface colors from fading for several years. We will send your pergola completely sanded and sealed with three coats of the best penetrating oil finish on the market (Sikkens Brand). We recommend adding one more coat about six weeks after the structure has been up. This allows the wood to adjust fully to its new environment before adding the final coat that will seal the surface.

This is also the best option if you want to let the wood’s finish fade over time, as is traditional for wood pergolas. Most of our customers like the traditional “I have been here forever” look that a quality wood pergola develops over the years. If you go this route, give the pergola a hosing and brush down every once in a while and otherwise just enjoy it! Often customers choose to grow vines when they let their pergola weather. Then even the need for brushing or cleaning is eliminated.

Leaving your Forever Redwood structure out in the weather without refinishing will not affect its longevity. Redwood is very decay resistant and even if you allow the finish to fade, the wood will remain in excellent shape for decades!

On page 44 are the three grades of wood we offer with the Transparent Premium Sealant applied. The color tones shown are close representations of the color your structure will look like. There is no extra charge for the Transparent Premium Sealant.
STAINS

We also offer the Transparent Premium Sealant with the following stains added: Cherry, Coffee, Black, and White Wash. There is a small charge for adding these stains. Please note that Douglas-Fir stained dark creates a “tiger stripe” effect. It is beautiful and most customers love it. If you are looking for a dark consistent stain and do not want this, please go with any of the Redwood grades for a more consistent stain finish. See the images below:

L-R: Transparent, Cherry, Coffee, Black, White Wash

“Tiger Stripe”

OTHER FINISH OPTIONS

UNFINISHED
If you are applying your own stain or want the surface color to fade to a “weathered look” in a few months.

OFF-WHITE OIL-BASED PRIMER
If you are painting a light color. We apply two coats so that it is ready for one final coat.

GRAY OIL-BASED PRIMER
If you are painting a darker color. We apply two coats so that it is ready for the final coat.

WAX FINISH
Recommended for indoor furniture. Two coats of Howard’s Feed ‘N Wax. Without maintenance the finish becomes a beautiful patina.

CUSTOM STAIN
If you need a specific stain, let us know. We can accommodate most requests.
InStAllAtIon MADE eASY: ANCHORING OPTIONS EXPLAIeNED

All pergola and pavilion posts should be attached to the ground. We offer three different options: a Standard Anchor Kit, a Gale Wind Anchor Kit (rated to 100 mph), and a Hurricane Wind Anchor Kit (rated to 150 mph) to secure your structure. All anchor kits come with wood trim that will hide the metal of the anchor. Which anchor kit is best suited to your situation depends on a combination of what type of hardscaping you have (or intend to have), shade structure type, and how much wind you get in your area.

Confirm your drawings before laying new foundations. All shade structure orders receive design drawings within three business days. In reviewing your drawings, you may realize that you overlooked something or want to make a change that will affect the position of the posts. For example, for a standard 10’ x 12’ Arched Pergola, the posts are recessed back 12 inches from the edge of the roof. This places the outside four corners of the posts at 8’ x 10’ and inside four corners at 7’ 6 ½” x 9’ 6 ½”. It is not unusual for customers to decide to change some detail like adding a bit more space between posts or adding a foot or two to the length or width after seeing their drawings.

It is especially important to confirm your drawings for structures that will require footings, as once footings are installed you will not be able to move post positions without undue complications. Additionally, if you desire a paver or stone patio, or if you live in a high wind area, a little preplanning concerning how the footings are installed will be necessary to achieve a seamless surface, as in the photo at left. Read on about the different scenarios and the best anchors for them, and learn how installation works.

PAVIlIONS
All Pavilions require either a Gale Wind Anchor or a Hurricane Wind Anchor Kit because the closed-roof design creates a lot more wind resistance. Unless the pavilion is relatively small, say under 150 square feet and in a low-wind area year round, we recommend at least the Gale Wind Anchors for all designs and sizes. In hurricane prone areas, the Hurricane Anchors and large footings are required to make sure your pavilion stays planted in your yard when the next storm blows in.
**ANCHOR SOLUTION FOR MOST Pergolas (UNLESS IN HIGH WIND AREA)**

If you have an existing concrete pad that is in good shape, in most cases you can use it without the need to dig footings. Our standard metal anchors are attached to the surface of the concrete pad or a wooden deck using either four anchor bolts (for concrete) or four lag bolts (for a wood deck). The posts are then attached to the anchors with lag bolts. All the hardware is included; simply choose our **Standard Anchor Kit** for the appropriate surface. The sidebar at right illustrates the 5 simple steps for installation.

**IF WHERE YOUR POSTS ARE BEING PLACED IS CURRENTLY UNDEVELOPED GROUND...**

You’ll need to install footings (concrete foundations for the posts) to ensure you have zero issues long term. For pergolas in most areas, you’ll install the Standard Anchors on the top of the footings once the concrete has cured. For pergolas in high-wind areas and all pavilions, the Gale Wind and Hurricane Wind Anchors are set in wet concrete. The size of the footings is determined by post size; see details below for Standard Anchors, and page 54 for high wind anchors.

**STANDARD ANCHOR FOOTING DETAILS**

Dig holes 30” deep (in freeze areas, adjust depth to go below the frost line by 6”) and place cardboard Sono tubing in the hole up to ground level or higher, if desired. (See table and drawing at right for proper footing dimensions.) Add some rebar, then pour concrete. Allow up to 7 days for the concrete to cure (or the next day if using fast-drying concrete) before following the Standard Anchor Kit Installation steps in the sidebar at right.

<table>
<thead>
<tr>
<th>Post Dimensions</th>
<th>H</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 x 3 (2 3/4” x 2 3/4”)</td>
<td>30”</td>
<td>10”</td>
</tr>
<tr>
<td>4 x 4 (3 3/4” x 3 3/4”)</td>
<td>30”</td>
<td>10”</td>
</tr>
<tr>
<td>6 x 6 (5 1/2” x 5 1/2”)</td>
<td>30”</td>
<td>12”</td>
</tr>
<tr>
<td>8 x 8 (7 1/4” x 7 1/4”)</td>
<td>30”</td>
<td>14”</td>
</tr>
<tr>
<td>10 x 10 (9 1/4” x 9 1/4”)</td>
<td>30”</td>
<td>18”</td>
</tr>
<tr>
<td>12 x 12 (11 1/4” x 11 1/4”)</td>
<td>30”</td>
<td>20”</td>
</tr>
</tbody>
</table>

**STANDARD ANCHOR KIT INSTALLATION**

1. Place the anchor where it will be installed; mark the ground as shown.

2. For anchor bolts, drill holes ½” wide and 4” deep, then hit down the bolts with a hammer; take off the nuts before placing the metal anchor (wood decks use lag bolts in this step).

3. Place and attach metal anchor, then place the post.

4. Attach post to metal anchor with lag bolts (5/16” x 3”).

5. Place the wood trim boots to hide the metal anchors, fix in place with screws.
IF INSTALLING OVER AN EXISTING OR PLANNED STONE OR PAVER PATIO...

For stone or paver patios, you’ll also need footings. If you don’t mind seeing them, you can pour the footings to the level of your existing or future patio and use the anchor kit best suited to your structure and wind levels. For a seamless look, you’ll want to use our Gale Wind or Hurricane Anchor Kit, even for pergolas. The footings are poured to align with the top of the final patio surface, and the anchor is set in the wet concrete. After the footings cure, just enough of each footing is removed so that once the wood trim is installed, the footing is not visible. See diagrams below.

Want a seamless look and need help with the footings? We can help. Inquire about our installation services.
CONCRETE WITH PAVILIONS OR HIGH WIND AREAS
Concrete pads are best poured after setting your footings, since if hardscape work is done prior to installing your high wind anchors, you wind up having to cut into that hardscape to set them, which results in a joint around the posts. Even when it is concrete next to concrete, the best you can manage is something like the image at left.

Digging the footings and setting the anchors ahead of time allows it to be done in a way that leaves the last 4 inches of the footing unpoured. The anchor has plenty of steel under the saddle so it is still firmly set in place, and the final concrete patio contributes to the overall structural stability. You can then pour your new pad right over the footing and have no seams around the posts. See diagrams at right showing a Gale Wind Anchor, and the images below showing Gale Wind Anchors on left and Hurricane Wind Anchors on right.

Above is before, below is after final concrete hardscape.
MORE DETAILS ABOUT GALE AND HURRICANE WIND ANCHORS

Each structure order includes drawings for concrete installation instructions.

The Gale Wind Anchors are normally installed in a 30” deep concrete pour. Footing diameters are based on post dimensions, please see the table below and key drawing at right:

<table>
<thead>
<tr>
<th>Post Dimensions</th>
<th>D</th>
<th>Steel Bar Diameter</th>
<th>Base Steel Gauge</th>
<th>H</th>
<th>H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 (3 3/4” x 3 3/4”)</td>
<td>10”</td>
<td>1/2”</td>
<td>3/16”</td>
<td>8”</td>
<td>6”</td>
</tr>
<tr>
<td>6 x 6 (5 1/2” x 5 1/2”)</td>
<td>14”</td>
<td>1/2”</td>
<td>3/16”</td>
<td>10”</td>
<td>8”</td>
</tr>
<tr>
<td>8 x 8 (7 1/4” x 7 1/4”)</td>
<td>16”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>12”</td>
<td>8”</td>
</tr>
<tr>
<td>10 x 10 (9 1/4” x 9 1/4”)</td>
<td>18”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>14”</td>
<td>10”</td>
</tr>
<tr>
<td>12 x 12 (11 1/4” x 11 1/4”)</td>
<td>20”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>16”</td>
<td>10”</td>
</tr>
</tbody>
</table>

A significant portion of our Hurricane Wind Anchors are placed in the concrete underground, as shown in the drawing at right. Below is a table for determining footing dimensions, which is based on post dimensions:

<table>
<thead>
<tr>
<th>Post Dimensions</th>
<th>H Footing</th>
<th>D</th>
<th>Steel Bar Diameter</th>
<th>Base Steel Gauge</th>
<th>H</th>
<th>H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 (3 3/4” x 3 3/4”)</td>
<td>30”</td>
<td>12”</td>
<td>1/2”</td>
<td>3/16”</td>
<td>12”</td>
<td>6”</td>
</tr>
<tr>
<td>6 x 6 (5 1/2” x 5 1/2”)</td>
<td>30”</td>
<td>16”</td>
<td>1/2”</td>
<td>3/16”</td>
<td>15”</td>
<td>8”</td>
</tr>
<tr>
<td>8 x 8 (7 1/4” x 7 1/4”)</td>
<td>30”</td>
<td>18”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>18”</td>
<td>8”</td>
</tr>
<tr>
<td>10 x 10 (9 1/4” x 9 1/4”)</td>
<td>48”</td>
<td>20”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>20”</td>
<td>10”</td>
</tr>
<tr>
<td>12 x 12 (11 1/4” x 11 1/4”)</td>
<td>48”</td>
<td>24”</td>
<td>5/8”</td>
<td>1/4”</td>
<td>24”</td>
<td>12”</td>
</tr>
</tbody>
</table>

**Note:** In all areas where the ground freezes, you must go at least six inches below your frost line with the concrete pour.
A Forever Redwood Pergola in Bermuda
For many people, buying a pergola is a significant investment. It’s an exciting purchase that adds beauty and value to your home. But, it requires some foresight and planning to avoid any problems. We’ve helped thousands of customers—be it homeowners, restaurants, hotels, government installations, parks and other public locations—through the pergola buying process, from choosing the right style, size, and custom options; to shipping and help with installation; to long-term support such as providing replacement parts. Here are some things to consider beyond simply the style of pergola you choose.

**FINDING A RELIABLE MANUFACTURER**

Look for a manufacturer that has been in business for at least 5 years. If they haven’t been making pergolas for long, they may not be around down the road to help you if something comes up. Also, don’t settle for incomplete answers to any of your questions or concerns. Incomplete answers are a sure sign of future trouble. If the company you are considering doesn’t have an experienced pergola representative to answer all your questions, move on.

Forever Redwood has experienced personnel available to help you with any questions upfront, during, and after—from sizing, selection, and design to shipping, assembly, and refinishing or restoring your pergola twenty years down the road.

For example, if your pergola suffers storm damage a few years from now, will your manufacturer send you replacement parts? It is worth asking if you can get parts should the need arise. Forever Redwood keeps all your details filed. If an old oak trees sheds a branch atop your pergola someday, just call us. We’ll make and completely finish the necessary replacement parts at a reasonable cost so you don’t have to spend a substantial sum again.
If you are considering a pergola or pavilion purchase, you may be curious how you’d get one delivered to your home.

We ship pergola kits cross-country (or across the oceans) to your door via common carriers like Conway Freight, UPS Freight and others.

Since 1995, Forever Redwood has shipped thousands of crates all over the US, Canada, and occasionally Europe, Africa and Asia. Forever Redwood pergolas ship in a custom crates built in our shop. All parts are contained in padded cardboard boxes strapped inside.

We ship from San Diego, CA and it usually takes 4 to 6 business days transit time to locations in the U.S. and Canada.

Our shipping partners are fast and reliable. They will call you a couple days in advance to set up a time for you to receive the crate. Once your crate arrives at the distribution center near you, you’ll be called to set up a convenient time to deliver. Sometimes—for large structures that have huge crates—the trucking company will ask for some muscle to be on hand to assist with the unloading. If you are unable to help in these occasional cases, we can arrange for White Glove Service. Please let us know ahead of time so we can arrange for this service at a minimal cost.

Crates are usually dropped off on a driveway (for homes) or a loading dock (for buildings). Once you’ve received the crate, moving it is difficult (it can weigh thousands of pounds). Just unscrew the crate so you can move the relatively light individual boxes. We package individual boxes to be under 90 lbs for ease of movement.

Over the years, we’ve fine tuned the pergola design to minimize re-assembly. When you receive your Forever Redwood pergola crate, you will never receive a bunch of boxes full of hundreds of parts to decipher. All of our pergolas are fully assembled in the shop to be sure all parts fit perfectly and you have the least amount of work necessary to re-assemble. All sanding, routering, drilling, cutting, planing and sealing is done. All parts are numbered so you know which corner post...
goes with which corner roof support notch. All hardware is included so you don’t have to run to the hardware store in the midst of the job. All you have to do is put it back together again like a giant Lego set!

If you’re curious how our pergolas are re-assembled, visit our website for downloadable PDF files: http://www.foreverredwood.com/redwood-furniture/assembly/

When your order ships, you’ll receive tracking information by email to know when it’s arriving. Most orders ship in 4 to 6 weeks, but you can have your set ship in 2 to 3 weeks or faster. If you need something in days, we can have a couple carpenters come in at night and build your order as a Rush Order to ship in 1 week. There is a surcharge for Rush Orders to pay for the overtime.

In the rare case something gets damaged in transit, we ask that you accept the crate nonetheless and assemble the pergola. Once assembled, send us a couple photos so we can quickly identify which part needs replacing. Crate damage occurs less than 1% of the time, so it is rare. But, if your order has any damage at all, Forever Redwood will quickly remake replacement parts at no cost to you.

We offer a “Wait & Save” shipping option, which lets you save a significant amount on the price of your order while allowing us more time to manufacture and ship it. Visit our website for more details about your shipping options.
TWO EASY INSTALLATION OPTIONS

Do it Yourself: Assembly is best done by two people and takes about half a day to a day and a half, depending on size. Pergolas are not difficult to assemble. If you plan to pour concrete, the project will require an additional half day to square your corners and let the concrete dry. If you have assembly questions, email or call us.

Let Us Help You: We regularly install in California, and can install anywhere in the continental U.S. with advance planning. Assembly outside of California usually adds 2 to 3 weeks beyond completion date. You can calculate the cost of White Glove service by choosing it in the shopping cart or at checkout. In most cases, White Glove Installation adds between 10 and 15% to the cost of your project.

Yes, you can buy a wooden pergola kit online and get personalized, professional support from Design to Installation!

Forever Redwood has been building premium quality wood products since 1995. Whether you’re interested in a custom size, a new design, or an off-the-shelf product, we have honed the process to just a few minutes upfront by phone and/or a couple emails to finalize most orders. Our White Glove service offers:

- Phone and Email Support
- Detailed Design Drawings
- Permit Support
- Assembly Instructions
- Emphasis on Quality Communication, Follow Up, and Lifetime Support
- Green Focus
We have been shipping our shade structures to the toughest climates in the U.S. and Canada for over two decades now. We offer **decay warranties of up to 20 years** regardless of how harsh the weather is. No other outdoor furniture line has warranties anywhere near it. We are often asked if our kits will really hold up that long. They will. And, with a bit of TLC, they'll last much longer.

Because of the quality workmanship and materials used, a Forever Redwood structure may cost a bit more upfront than some of our competitors. **But, you save money by NEVER having to replace it.** Besides some surface fading, you can expect it to last for decades without maintenance. And, if you ever have a problem with one of our products (like a tree falling on it...), just contact us and we’ll ship replacement parts to you at minimal cost.

There are three reasons we confidently offer the long decay warranties.

First, Redwood is extremely decay resistant. We regularly pull old logs off the forest floor that have been sitting on the ground for decades. Some logs have been sitting on our forestland soil for over a century and we find the Old-Growth wood to still be in perfect condition!

Second, Forever Redwood pergolas and pavilions are built the old-fashioned way using genuine high quality thick-timbers that are no longer available in the marketplace. No make-believe wood is used. No particle board or “plastic looks like wood stuff.”

And lastly, Forever Redwood is fastened with **stainless steel hardware** so no matter where you live you don’t have to worry about staining, rust, or replacement issues.

**Combining generous amounts of the highest quality lumber with the best hardware insures your structure will last decades in any weather.** Yes, we have customers in Chicago’s winters, Florida’s summers, Arizona’s 110 degree dry heat, the stormy high and dry Colorado Rockies, Quebec, Manitoba, Montana, Washington State, Alaska, Yukon Territory, and so on.

**SPRUCING UP IS OPTIONAL, BUT A NICE THING TO DO**

Generally speaking, your Forever Redwood shade structure will require no maintenance. You can just put it out and not worry about maintenance ever. Anywhere. Really.

That said, we recommend a yearly hosing off and wipe down of your shade structure (no power washing). Exposed timbers will be the first to show finish fade and surface drying. If there are signs of drying, please add another coat of sealant to keep the lumber supple long-term. In most areas, resealing every 3 years is more than enough. In very dry and hot areas, it is usually a good idea to reseal the first spring and every other year. Each round of resealing will handsomely darken the finish.
Without refinishing, the surface color will eventually fade to a darkish silvery finish. This tells the story of daily battles with moisture, pollution, and sunlight.

These color changes are not indicative of decay. The wood will not be compromised in any way if you choose to let your structure silver over the years and do nothing to restore the original gorgeous wood tones. It is only surface deep. If you scratch the surface you’ll see the beautiful natural wood tones again. We have display items that have sat out in the weather over 10 years. We have never refinished them on purpose so they stand as a testament. They’ve silvered, but are as strong as day one.

About the worst thing that may happen over the years is the wood can develop a couple light checks (surface cracks). This happens because the wood has to expand and contract to daily changes in temperature and humidity. The constant minor size adjustments sometimes cause a few boards to develop these small fissures. A bit of checking is part of the charm of having wood, adding character to the piece. It is no cause for concern.

If, down the road, you find yourself saying “I wish my pergola looked as good as it did back when...”, our website offers several different solutions to completely restore the original surface beauty of the wood.

**LIFETIME SUPPORT**

Not interested in restoring the finish yourself? **We offer refinishing service nationwide**—we’ll come to you! Contact us for a free quote.
Creating an Outdoor Great Room is the perfect way to enjoy dining and relaxation in the comfort, privacy, beauty, and openness of the outdoors surrounding your home. This chapter will offer five key tips for how to personalize your furniture choices to best meet your needs within the space you have available.

Whether you’re envisioning a traditional space for small barbecues and family get-togethers, or a full-featured kitchen and dining complex, ready to entertain dozens of guests, by following a few easy tips you’ll be sure to create a space that you’ll love for years to come.

**TIP #1: THINK BIG (EVEN IF YOU’RE GOING SMALL)**

Your Outdoor Great Room will probably want to include a central dining area, but it doesn’t have to stop there. In fact, the best outdoor spaces are multi-purpose. By properly designing your outdoor room, you’ll be able to easily transition between:

- Fun with family
- Entertaining friends & neighbors
- Social functions
- Intimate evenings
- Relaxing solo

Take a moment to imagine all the different ways you would like to use your space. This will help determine the table styles, quantity of seating, little extras, and other options.

**TIP #2: PROVIDE FOR SHADE & PRIVACY**

The beauty of an outdoor room is that you get to enjoy the sunshine, breeze, bird sounds, and other natural wonders. But
nobody wants to sit outside on a sweltering hot, sunny day without some shade!

One of the best ways to provide a shaded area is with a pergola. Although pergolas are open structures, you’d be surprised how much shade they can provide. A pergola can be attached to your house (see our Attached Pergolas) or freestanding (see our Garden Pergolas).

The style of the pergola roof can be customized to your desired level of shading. You can even grow crawling vines along the posts and beams of your pergola for extra shade and visual interest.

For additional privacy, consider adding a privacy screen to one or two sides of your pergola. Finally, a great way to create a boundary around your outdoor area is by using a series of planter boxes (see our Planter Boxes) filled with flowers, veggies, or even small bushes and trees.

TIP#3: CHOOSE A BEAUTIFUL TABLE THAT MEETS YOUR NEEDS

The first question many people have when it comes to dining tables is: What shape should I get, round or rectangular? Keep in mind, a round table (see our Round Dining Tables) will tend to promote more intimate and inclusive conversations, while a rectangular table (see our Rectangular Dining Tables) will afford greater seating capacity.

Getting an extra-wide table can be especially useful if you have large platters you’d like to place in the middle of the table. Forever Redwood tables can be easily customized in larger widths. If you prefer a smaller main dining table, a couple side tables (see our Side Tables) can provide useful surface space for platters, trays, extra utensils, etc.
TIP #4: CREATE INTERESTING & USEFUL NICHES

Depending on the amount of room you have to work with, you may wish to create small niches apart from the main dining area. Here are some ideas to consider:

Conversation areas — Great for smaller-scale socializing and private conversations. What you’ll need (per area):

- 2-3 Chairs, Rockers, or Benches
- 1-2 Side Tables
- Coffee table

Breakfast nook — A wonderful place to enjoy your morning coffee, alone or with your spouse. What you’ll need:

- Cocktail table and Bar Stools

Sunbathing area — Especially nice near the pool or any water feature, like a fountain. What you’ll need:

- Chaise Loungers
- Side Table

Arboreal retreat spot — If you have surrounding trees, you can turn them into little intimate retreat areas. What you’ll need:

- Tree Bench

Kid Zones — Give them a place to play, laugh, make messes (and stay out of your hair!). What you’ll need:

- Kid’s Picnic Table
- La Playa Sandbox
- Tree Disk Swing
One you have the basic layout of your outdoor room, the fun really begins. The little details will help make your space more charming, unique, and functional. Here are some ideas.

To bring in more flowers, herbs, or small veggies, add a couple Window Box Planters or Vase Planters into the mix.

Would you like to invite birdsongs into your yard? A birdfeeder on the periphery of your outdoor dining space is a lovely touch (see our Aviary Oasis Birdfeeder).

Finally, for a distinctive conversation piece, consider adding a Wishing Well. You can fill it with flowers and invite the kids to imagine their dreams coming true.
CONCLUSION: GO WITH REDWOOD FOR DURABILITY & DISTINCTIVE STYLE

There are dozens of choices when it comes to the materials for your outdoor room. Authentic California Redwood stands apart for its proud tradition, earthy tones, robust strength, and virtually decay-free longevity. Feel free to request wood samples to see for yourself. The impressive quality of our redwood is why we offer up to 30-year warranties on all our products.

Last but not least, by investing in a Forever Redwood set you’ll be able to tell your friends and neighbors that your outdoor room is helping to restore the Redwood forests (learn more about our Restoration Forestry practices in “The Forever Redwood Story” on page 76). Beyond just going “green,” you’ll be fostering a subtle and sustainable connection to a majestic species—one of the most powerful and beautiful trees on the planet. And you’ll feel it as you sit back and watch the sun go down, enjoying an evening surrounded by elegance, strength, serenity, and a classic style.
FAMILY’S PAVILION OFFERS RELIEF FROM THE HOUSTON SUN FOR THEIR DISABLED SON

John and Ann L.’s youngest son, Benjamin, was born with severe disabilities. Now a young adult, unable to walk or speak, Benjamin is being cared for by his parents, who also have two older adult children, Jeb and Jenny, and five grandchildren between ages 2 and 7.

Five years ago, John and Ann decided to move from Boston to Houston, where their elder son and daughter had moved after college and started their own families. This would allow the entire family to spend more time together and let the grandkids see uncle Benjamin more often.

There was just one problem: the scorching Houston sun!

Benjamin enjoyed sitting outside in the backyard during the day, but the picnic table umbrella simply couldn’t provide enough shade—and certainly not when the entire family was over.

It was Ann’s idea to consider adding a larger shade structure. During a visit to a local Big-Box store, she and John saw a prefab pavilion that could potentially meet their needs, but unfortunately, as John not-too-delicately put it, “It looked like a piece of crap that I knew could only look a lot worse with age.” (You can take the man of out Boston, but not the other way around.)

Then John started looking online for something nicer, but most of what he saw looked like “similar junk.” That is, until he found Forever Redwood. He saw the photos on the website and began learning about the quality of our pergolas and pavilions.

“I noticed that it was more expensive,” said John. But in the back of his mind he was thinking, “You try to cut corners, you end up spending more money in the long run.” So, he decided to give us a call and find out if our pavilions were really worth the additional investment.

A conversation with our resident pergola and pavilion expert, CEO and founder Raul Hernandez, was enough to convince him. “I was impressed by Raul’s honesty and open-handedness,” said John. “I could tell that quality is important to Raul and that he was a savvy businessman. It was evident that Raul knew that the best referral is a happy customer.”

After reviewing the project requirements and making a set of drawings for John’s approval, Forever Redwood built the family a beautiful 14’ x 16’ Backyard Pavilion, including electric wiring trim for two ceiling fans.

I was concerned about the fact that it would be a “big Lincoln log set,” said John, “but it’s not Lincoln Log, it’s Raul Redwood!” (We might just need to steal this phrase.)

He installed the structure in a day and half with the help of a friend, and hired an electrician only for the ceiling fans and lights.
“I couldn’t believe how easy it was to put together. And I can’t believe how much it’s dressed up the backyard! It’s a piece of art that I can take personal pride in helping to create.”

Being a retired Wall Street professional, it was not lost on John that his investment would pay off should he ever decide to sell the house.

“Most slapped together outbuildings end up detracting from the properties’ value.” But, with a Forever Redwood structure, “not only will not cost me anything in the end, but I will make money on the investment for the structure has enhanced the value of my property.”

In the meantime, and most importantly, John and Ann are enjoying having their family all nearby. The Backyard Pavilion serves as a gathering place by the pool, where John has also added a couple Forever Redwood Pool Loungers.

“My initial objective was a shelter for Benjamin. The end result is my pavilion gives the entire family an enhanced view, relaxation, and pleasure.”

Working from home, John gets to have his lunches outside in the shade. And Benjamin now has a place to sit outside more comfortably and enjoy the warm Houston days.

We’d like to deeply thank John and Ann for sharing their story.
COUPLE’S PERGOLA PROVIDES A PRIVATE RETREAT SPACE ON THEIR BEAUTIFUL PROPERTY

Bob and his wife Jill own a large, beautiful property northwest of Los Angeles. Semi-retired, but still active, Bob has enjoyed a long and successful career in the entertainment technology industry, winning numerous awards and even being inducted in the Video Hall of Fame for his contributions to the growth of home video.

Behind Bob and Jill’s hilltop home, there is a large infinity pool, an outdoor kitchen and dining area, a fireplace, and a bocce court. Beyond the fenced yard and down the hill, there is an undeveloped piece of land, where Jill, a yoga enthusiast, saw the perfect little spot, by the stream that trickles through the valley, for a private oasis to nurture body, mind, and spirit.

She envisioned a quiet, secluded spot where she could lay down her yoga mat and meditate. But the couple also imagined it as a place to read, enjoy a glass of wine, or simply talk.

“We’re a close couple,” Bob says. “And we love being outdoors.”

In fact, they often read books to each other. (Most often, Bob reads while Jill listens.)

The architect who designed their home recommended they contact Forever Redwood about designing and building a pergola to provide the shade structure around which Bob’s friend, a landscape architect, would help create a small park.

When Bob first spoke with Raul, he described his idea for the pergola park and the two quickly began fleshing it out. Partly because of the strict zoning requirements in Bob’s city and guidelines from the homeowners association, the original drawings required a few revisions and took longer than usual. However, the delay turned out to be a blessing in disguise, as it inspired Raul and Bob to add to the original idea and make it something even more special.

“Raul’s recommendations were amazing,” Bob says. “He knows what you need to do and he has good taste. The guy did a wonderful job.”

Working with Forever Redwood engineer Paty Vallejo, the team created at least 7 iterations of the project plans, along the way adding some beautiful features and touches. (This is not normal, by the way—most projects take only one or two revisions, but when a project requires it, we love to engage the process. It’s an art.)

It started with a 14-ft Arched Pergola, which quickly became an 18-ft Arched Pergola with a deck. Two hanging Bench Swings, to be facing each other, were added, then made bigger to fit Bob’s frame (he’s tall and wanted to be able to nap on the swings). A Storage Bench followed, to be placed opposite the steps, Raul suggesting it be made the same length as the swings, for symmetry.

Railings and steps were added. Electrical conduits were provided. Timbers were beefed up to meet local code.

After a number of conversations and email exchanges, finally the plans were done and approved and an installation date was set.

Forever Redwood’s team performed the installation over a couple days in the summer of 2014.
“The guys were detailed, very detailed, let me tell you,” reports Bob. “They walked around with a level and showed me every railing, every beam. All the joints fit perfectly.”

See Bob and Jill’s pergola and deck installation in a 2-minute video at https://www.youtube.com/watch?v=vUbmr7qxumc

Bob is quick to point out that the overall project is not yet done, so the photos and video don’t quite do it justice. He expects to finish the landscaping in the spring.

Nonetheless, Bob is thrilled. “I have nothing but plaudits for Raul and his team.”

A winding gravel path leads from the backyard patio area down the hill, over a small wooden bridge and past some large boulders, to his beautiful pergola retreat. Bob doesn’t mind that the grandkids (he and Jill have seven of them) will go exploring in the “park” when they come over.

The path is gently lit. The pergola sports a wireless music system. Bob is thinking of adding electric lights and a small fridge.

“The reason you’re so happy is that you took your time,” Raul commented to Bob.

We are delighted to have helped Bob’s vision take shape and become a place that he and Jill will use to read, reflect, spend precious time together, and find their inner peace for years to come.
“We purchased a custom pergola and material for railling this summer. We are thrilled with the results, and wanted to share with you. Your product is more than one could ever expect from looking at the website. It is the talk of the neighborhood to say the least. We have already spent many enjoyable hours there. It is very peaceful and quiet, especially at night. Everyone who has been over is in love with what we have done. Thanks again for such a tremendous product and for all your help in the ordering and shipping process. It was a delightful project—and I haven’t ever been able to say that about any of our home improvements before.”

“I just wanted to let you know how very pleased I am with the purchase of our 16×20 Pergola from Forever Redwood. The wood was beautiful and the installation fairly simple, even for two old guys who had never put one together before. We installed our new pergola on our little lake island, pictures attached, to provide additional shade. I know people are concerned about how sturdy their pergolas might be in strong winds. Within two weeks of installing our new pergola we had a strong storm pass through our property that produced 80 miles per hour straight winds. Our pergola stood up with no problem or damage unlike the many trees we had that lost significant limbs. Thanks again for the wonderful design and construction.”

-Robert T., Omaha, NE
“We are very pleased with the pergola. It exceeded our expectations and we think makes our house better looking from all angles. We think the privacy screen adds more than privacy. It acts as a architectural element and defines the space making it seem like an outdoor room and barrier to the deck drop-off.”

-Bob D., Orting, WA

“I’ve lost track of the amount of compliments we’ve received. Forever Redwood’s workmanship stands on its own with top quality.”

- Donn D., Stansbury Park, UT
“I have to say that I am quite impressed with the way my pergola all went together. I was worried mail ordering a pergola over the internet, but I am quite pleased. I expected there to be some “fudging,” but I laid out the footers as you stated, and the pergola went up straight and true!“
- Nick P.

“The pergola has been up now for two years and is just beautiful. It is the focal point of the memorial garden that I created for my husband. It is just the greatest, and I couldn’t be happier. Thank You so much!“
- P. Anderson

“The new pergola we just finished today was a breeze to install. It took less than 5 hours to assemble it.”
- Glen V.
“In these days of Walmart and other discount houses, it is a pleasure to work with Old World craftsmen such as Raul and his team of artisans. They patiently worked through the process with me, helping me determine the exact size of the pergola I needed to cover my hot tub. Timing of the installation was critical, as it was a surprise wedding present for my wife. His crew was on time, diligent and set up the unit in less than 3 hours. Absolutely spectacular service. The quality of the workmanship is second to none, equivalent of what you would get from a high end woodworking company at low prices: stainless steel hardware, champered and sanded edges, custom sizing, high quality redwood. They even did a custom engraving. I would highly recommend Forever Redwood.”

“Wow, I’m impressed. The pergola is even better than expected! The quality of the redwood is outstanding. Everyone is asking me where it came from.

With help from a couple of friends, we assembled and anchored it in about 5 hours. Now I have shade in my backyard that I can sit under and watch my kids play in the pool.”

-Brian R., League City, TX
INTRODUCTION

Forever Redwood builds its beautiful pergolas using lumber from forests we’ve carefully managed since 1995. We believe good forestry practices are central to mankind’s future. Our company was founded to demonstrate the highest standards of forest restoration. We hope you agree it is important to consider where the lumber is coming from and how it is harvested.

Here we’ll discuss how forestry practices have begun to improve in some parts of the world and how you can tell if your pergola lumber is coming from real, ecologically positive forestry or from questionably managed forests.

Although the airwaves are flooded with promising, green marketing campaigns, if you look closely, much of the talk is less than it seems. For example, forestry is at the center of the climate change equation because forests sequester enormous amounts of carbon. The larger the trees are in a forest, the more carbon is held per acre. But, what is really going on in forestry?

WHAT ABOUT SUSTAINABLE FORESTRY?

Since the early 1990s, a fast-growing “Sustainable Forestry” worldwide movement has been making positive inroads. A handful of organizations now “certify” many millions of acres of forestland as “sustainably harvested.” Standards vary, but certification requires overall improvements in forestry practices away from traditional industrial models. Sustainable forestry is helping many forests around the world reverse degradation and rehabilitate deteriorated stands to a limited degree.

Unfortunately, even the more stringent sustainable forestry standards can only have a modest impact on the climate change equation. To actually stop and reverse climate change—inducing global cooling back to pre-industrial levels—we will need to trap a lot more carbon dioxide from the air. The way a forest is managed has a direct impact on the amount of carbon it sequesters.
For example, in California’s Redwoods, several large forestland owners are certified sustainable. These sustainably harvested forests are logged at approximately 20% of the standing timber volume per decade. (Most “certified” sustainably harvested forests are cut at 30% per decade.) An average quality young stand of Redwoods adds about 30 to 35% per decade in new wood volume. As it ages, this growth rate slows. If cut at 20% per decade (let alone the more typical 30%), the young stand will add a modest amount of net volume for a few decades and then level out. The forest will then be maintained as a healthy and robust stand of trees of average size, with few if any large or old trees—and little net gain in carbon sequestration.

**THE FOREVER REDWOOD DIFFERENCE**

Our mission is to demonstrate a much higher standard for working forestlands than what exists today. Since the majority of the Earth’s forests are working forests (either in private hands or government), it is in this area that a higher standard needs to be demonstrated.

Parklands are gorgeous and indispensable, but it is cost prohibitive to convert most of the forests of the world to parklands. Setting aside more forestlands as parks will help, but they will still only represent relative islands of stability.

**Restoration forestry** has many aspects that work together to restore most of the ancient forest conditions over time. The two most important are to protect and restore the soil’s productivity and to strictly limit the rate of cut. For example, to be truly restorative, the rate of thinning living trees must be limited far below the natural rate a young or maturing forest grows new lumber. This central practice is key to allowing the forest to grow the large ancient trees again.

By limiting the rate of cut to a maximum of 10% in any one decade, the forest will retain more than double the wood volume per acre over the coming century than if “sustainably harvested” at 20% per decade. Forestland managed at this more conservative rate will grow ancient trees again over time and make a large contribution to global cooling. This is “Restoration Forestry” in a nutshell.

**OUR HISTORY AND FUTURE GOALS**

Forever Redwood currently manages 700 acres of average-quality forests that had 95% of the Redwood volume cut in the 1960s. By the mid 1990s, the forest had
too many hardwoods (uncut when the land was harvested) and endless young trees of average to poor quality. Instead of about 80 to 100 trees per acre of all sizes and ages, we inherited over 1,000 mostly small and suppressed trees per acre just waiting for a fire to set them off. Most were dying or going to die from a lack of growing space.

The roads were leaching soil into the streams. Poorly constructed roads were collapsing in the winter storms. You couldn’t see a foot in front of you because most trees had grown low lying branches that were in your face. It was the furthest thing from the cathedral-like open spaces under an old-growth forest canopy.

We started in 1995 by thinning out the poorest quality trees and the over-represented tree species (mostly hardwoods and some Douglas-fir). It was an acre by acre “hands-on” thinning from below. A couple chain saws, manual loppers and a pole saw is all we used. We fixed the worst erosion problems by adding lots of natural structure to the soil and thinned most of the lower
branches away to lower the fire hazard and open up the understory. It took two men three and a half years working two days per week to complete initial thinning and planting of the first 40 acres—while also selling firewood, building a cabin, and woodworking. Over time we’ve become much more efficient, learning to leave most of the thinned material as woody debris to build soil structure and moisture. Now we can complete an average acre in twelve to fifteen hours, including planting.

GETTING RESULTS

When the initial thinning was completed in 1999, a strong contrast with neighboring parcels was obvious. The neighbors noticed, the government noticed, our friends noticed. We began to receive requests to work on neighboring lands and modest financial offers to help buy nearby parcels and restore them. We purchased a portable mill to process some of the downed material—and a furniture company was born.

In the last 15 years we’ve grown to manage nearly 700 acres. In 2011, we completed the first round of thinning and planting on all the acreage that we felt needed to be thinned (some lands are too steep and best are left alone). The thinned stands are already significantly transformed. If we do nothing else, the forest will grow back to Old-Growth Again with much better spacing, significantly restored species composition, improved tree quality, and partially restored soils. The fire hazard will have been reduced, wildlife habitat improved, and the forest opened from below and closed from above as it should be. (For example, birds can now fly through the forests where before it was mostly an impenetrable maze of branches and dying trees.)

If we repeat the thinning, planting, and soil building two more times over the next three decades, the forest will return to being multi-canopy and full of large, mature trees with the general structure of the original stand essentially restored. Then the passing decades will add the larger old-growth trees whether or not the land is managed ever again. And, this is after yielding a modest timber harvest every decade or so to help pay for the restoration!

We have recently partnered with a couple of like minded landowners that have deeper pockets than we do. As our company has grown, we cannot cut sufficient lumber from our own lands any longer and buying more parcels is a slow as you can process. Almost everyone claims to be green these days, but, if you shake the bushes, you find most of it is green marketing and legal mumbo. But, there are a few persons that put their money where their mouths are besides us. And we are proud to work with them. With them on the same team, with the help of our thousands of customers, we are now directly helping to restore over 23,000 acres of Redwood and Douglas-fir Northern California forests.

To learn more (and download our manual) visit http://www.foreverredwood.com/restoration-forestry/overview/
Raul D. Hernandez founded Forever Redwood in 1995 by purchasing 41 acres of logged forestland to focus on “hands-on” restoration. He incorporated Forever Redwood in 1999, serves as its CEO and wrote the manual “Old-Growth Again, Restoring Logged Forests One Tree At a Time.” Raul spent years in management positions with the Miami Herald Publishing Company before moving to Northern California to become vice-president of Urban Renaissance, Inc., an inner-city low-income housing redevelopment firm (1988 to 1993). Raul studied forestry and ecological issues exhaustively and accumulated a wealth of “hands-on” experience in forest restoration. He has a Bachelor’s Degree in Business Administration from Florida International University (Miami, Fl). Raul has five children: Sky, Lucio, Raulito, Norma, and Santiago. He spends his time between the Redwood forests of Annapolis, CA and our new wood working shop in Ensenada, Baja California.

From left to right: Raul Hernandez, founder of Forever Redwood; Ian Morris, forestland owner partner and early permaculture consultant; Frank Marrero, co-founder; Terry Patten, forestland owner and early investor.

Photo taken in January 2015 on the Cataract Trail on Mount Tamalpais in Marin County, Northern California.
TAKE THE NEXT STEP

SCHEDULE A FREE 10-MINUTE PHONE CONSULTATION WITH A PERGOLA ADVISOR

• Get help choosing the exact right options for your space.

• Ask about any custom features you might have in mind.

• Learn more about custom drawings, shipping, assembly, and other crucial details before you buy.

• Find out how to save money on a new pergola.

There is no obligation during this call, no hard sell. We know that our best customers are educated customers. Let us help you get to the place where you feel comfortable and confident with whatever decision you make.

To schedule your free consultation please go to www.foreverredwood.com/pergola-free-consultation, enter your name, email address, and phone number, and let us know the best time to call. You can also call us at (866) 332-2403 and ask for Raul. Our hours are 7 a.m. to 7 p.m. Pacific time.