

## *Pergola – Adapting the Plans*

### Using concrete to put the posts in.

1. If you would prefer to put your posts in with concrete, lengthen the 3"x 3" posts to 10', as you will need to sink 2½ ' into the ground.
2. Substitute the Metposts, Metpost driving tool and sledgehammer for 1 bag of cement and 2 bags of ballast – (building sand and gravel mix).
3. Dig your holes 2½ ' deep, following instructions as outlined in the plans, instead of putting in Metposts.
4. Important – Your posts must be level at the top. To check this, lay a piece of flat wood over the top of the posts you are putting in and check the level with a spirit level by laying it on top of the flat wood. Adjust the height of the post if necessary. This may mean just lifting or lowering the post slightly or it might mean cutting the posts to achieve the correct height. If the height difference is too great, lay the flat wood on top of the lower post but move the other end to the side of the higher post, level with the spirit level, make a mark on the post where the bottom of the flat wood falls and then cut the post to the correct length. Don't guess! – levels can be deceptive.
5. Push some bits of rubble into the concrete, if you have any, between the outside of the hole and the post, to make the posts even more secure. Check your post is upright. Adjust slightly, if needed.
6. Remember that the cement will take 2 days to dry, under normal conditions. Continue with the plans, as written, after the 2 days.

### Put up your pergola on sloping ground.

If your ground has even a slight slope on it, you will need to adjust the height of your posts. If using concrete, the process has been outlined above in 'Using concrete to put the posts in'.

If you are using Metposts to put your posts in, follow the instructions at step 4. of 'Using concrete to put the posts in'. Both use the same process. Remember – mark out where the posts are going to touch the ground, level the post tops, cut the wood and then continue with the instructions.

### No cross rafters

If you don't want cross rafters, just leave them out!

### Rafters sitting higher on the side rafters.

Quite often you will see rafters that sit more on top of the supporting rafters than those shown in the plans. This adjustment is easy to put into effect. Instead of chiselling out a 2" depth for the notches, chisel out 1 ½ " or 1". This will make the rafters stand proud of the supporting rafters, rather than sit flush with them. Easy.

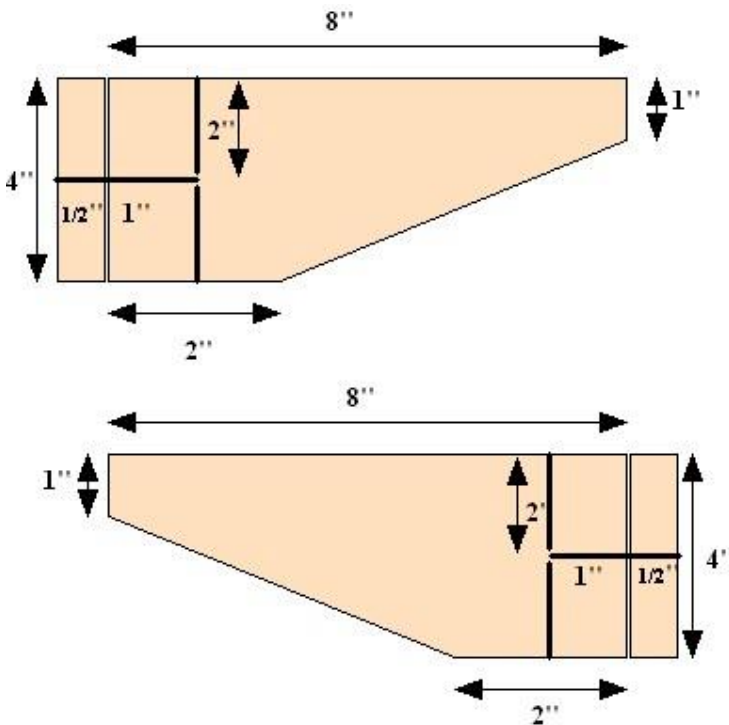
Use 'chunkier' wood.

To give a more solid feel to the pergola, you can use 4" x 4" posts, instead of 3" x 3" posts.

1. Substitute 4" x 4" posts, instead of 3" x 3" posts on your Materials List.
2. Substitute 4" x 4" Metposts, instead of 3" x 3" Metposts on your Materials List.
3. The plans should still work, as written, with thicker posts.

If you want 'chunkier' rafters as well, you will need to make measurement adjustments to your 'rafter tail end template'. The plans, as they are, have notches 1" wide to fit the 1" thick wood. If you want 4 x 1½" rafters or some sort of similar thickness, you will need to change the rafter tail end template.

1. Add ½" (or however wide your wood is) on to the end of the template that fits up against the post. The example given below is for 1½" thick rafter wood. You can see where the extra ½" is. So when you are calculating the length of the rafters, they will be the distance from the outside of one post to the other plus, in this example  $2 \times 8\frac{1}{2}'' = 17''$



2. Adjust all your notches to fit the wider wood. So, the plans as written, for 1" wide wood, tell you to mark ½" each side of the notch mark. With 1½" inch wood, you would need to mark ¾" each side of the notch mark. Whatever width the rafter wood is, this is how much you chisel out.

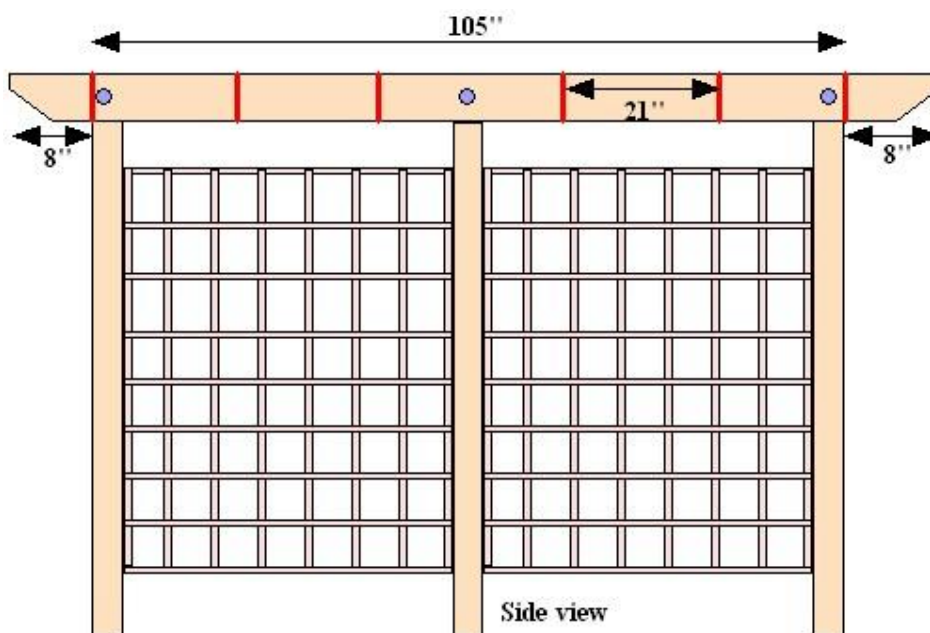
### Put a trellis panel on a third side of your pergola.

1. Add another trellis panel to your list. It could be the same width as your side rafters or it could be different e.g. your side trellis panels might be 4' and your back trellis panel might be 5'.
2. Follow the plans as written, but when you are measuring the distance for your entrance and exit (which should be equal), make sure that the measurement between the inside of the posts is the exact measurement of the trellis panel that is going to go across the back of your pergola. (fig. 5). In other words, the trellis panel is going to run between posts 3 and 4 – this is as well as the side trellis panels running between posts 1 and 3 and 2 and 4.

### Make your pergola longer / wider.

If you would like your pergola to be a longer or wider than the one in the plans, then all you will need to do is extend the length of your rafters but with supporting posts in between to hold the trellis. If you do not want trellis panels then you can just extend the side rafters – simple as that.

1. Adjust the length of your rafter in the 'Materials List' so that it the length/width to the outside of your posts plus 16" for the rafter tail ends.



When you are doing the calculation for where the main rafters will lie, make sure that they don't fall too near the post where the side rafters are joined. So, for the above example you could either have your measurement divided by 5, in this case giving spaces between rafters of 21", or if you would like your rafters closer together go for 12" giving notch measurements of 12, 24, 36, 48, 60 etc. Both ways you avoid the 51" – 54" area where the post is.

Have your two long side rafters and your main rafters, but no cross rafters, as this would make the structure too heavy. So for the diagram above you would need 2 long planks of 4" x 1" and 6 main rafters of the same, running from entrance to exit.