

Andrew Morrison's Straw Bale Special Reports

Wall Surface Preparation

Once all of the bales are stacked in place, the wall needs to be prepped for the next stage of construction. The first step is to use flat tampers to straighten out the wall. Keep in mind that at this stage of the construction, no mesh has been applied to the building. The bales are stacked in running bond and secured to the frame in some places, but they are still susceptible to a strong arm so care must be used not to hit the walls too hard with the tamper.

This process requires two people each with a tamper. One person works the outside of the wall and the other works the inside. The goal is to get the bales as plumb as possible and into their final position in relation to the frame. Begin by communicating what the location of your starting bale face (begin on the bottom course) is in relation to the toe-up. Tamp the bale into position making it as flush as possible to the



edge of your toe-up. For example, if the bale is hanging over the toe up by an inch, report that and make adjustments accordingly.

Work your way up the wall noting the position of the bales in relation to each other and to the frame. Staying in constant communication with the person inside, use the tamper to persuade the bales into the best position for both the interior and exterior wall surface. In some cases, the person tamping the bales may need the other person to hold one side of the bale while he or she tamps the other to move it in the wall. Keep moving in this pattern from bottom to top until you have tamped all of the walls into place. This does not have to be perfect however, the more that you are able to accomplish at this stage, the less work you will need to do down the line.

Your wall surface will be a bit messy or even “hairy.” You could plaster directly onto the surface, but it is much harder to get an even plaster coat with the bales in this condition. To eliminate this rough surface, use a weed whacker to smooth the walls. Elec-



tric powered weed whackers are ideal for this application as they do not fill the house with fumes and there is little chance of fire due to the lack of a combustion engine. Use the most aggressive twine that the weed whacker will hold because straw is rough and quickly destroys the weaker twine.

Start at the bottom of the wall at the toe-up and work your way up and along the wall. By starting at the toe-up, a reference point is established and the wall can be cleaned to that point. There are two goals when smoothing walls. One is to create even and clean walls. Another is to create level and plumb walls. If plumb is not a huge concern to you, use your eye to judge when you have successfully cleaned the wall of enough loose straw to move to the next section. If you want to create plumb and straight walls, attach a level to a straight edge and run it along the wall looking for bulges or depressions. If you are confident with the placement of your ceiling nailers, you can use a straight edge that is long enough to reach the ceiling nailer and toe-up at



the same time. Because the placement of the nailer is directly in place with the toe-up, the straight edge will show perfect plumb when in this position. This method creates beautifully plumb and straight walls.

One place where plumb, flat, and square walls are important is around areas where cabinetry will be placed. The smoother the wall, the easier the cabinet installation will be. Plaster can smooth out a lot of wall undulations; however, the less plaster you have to use, the better. Plaster becomes weak after a certain thickness and at any thickness, it is expensive. Pay attention to the details at the wall preparation stage and things in the finish stage of construction will be all the easier.

As you are weed whacking, you may encounter areas where the baling twine is exposed. In this case, you may need to cut and remove the twine from the areas you are going to work on. The simplest solution is to use your razor knife to cut it and then pull it out of the wall. If the bales are stacked so tightly that you can not pull the twine out of the wall, simply tuck the loose ends back into the wall and out of the way of your work area.

Niches and Truth Windows



Once you have the wall surfaces smoothed out to your satisfaction, you can start laying out the locations of “truth windows” and wall niches. Truth windows are areas in the bale walls that show the true composition of the wall. They can be simple designs where the plaster is simply bull-nosed up to the truth window, or can be elaborate with glass and wood frames. In most cases, they are placed somewhere near an entry or

gathering area as they are great conversation pieces for people who have never seen a bale home before. Niches are another great use of the thick straw bale walls. Their location should be established before the electricians come to the site to ensure they do not run wires in the location of your niche areas.

The simplest way to create a niche is by cutting a template out of plywood. Hang the template on the wall with landscape pins and with spray paint, outline the edge of the plywood onto the wall.



I find it easiest when I place the bottom of the niche at a course break (between two stacked bales) so that once the sides and top are cut out, the bottom of the niche is already flat and level. Mark the bar of the chainsaw with some paint to identify the depth to which you want to cut the niche and plunge the chainsaw into the bale, cutting the outline of the niche first to ensure the cleanest lines possible. Be prepared to hit twine and when you do, stop and pull it out of wall or at least out of the way. Once the



entire outline has been scored, cut at an angle across the niche to start plowing out the bulk of the straw. This process takes a bit of time and creates a lot of mess. You will be amazed at just how much loose straw comes out of even a small niche. Because the outline of the niche was cut first, the edges of the niche should remain clean and relatively sharp. If they do not, you can fix them later when wiring the niche.



When creating truth windows I like to create simple windows of glass. A simple way to do this is to cut rabbets into a plywood frame. (A rabbet is a groove that allows the glass to sit flush with the face of the plywood on one side while being supported by the wood on the other.) Glue the glass into the wood with the appropriate adhesive. Turn the assembly so the rabbet faces the wall and then attach the plywood to the bales with 1/2" dowels. Tape off the glass to protect it from the plaster and finish the plaster to a clean line along the glass. There are many other types of truth windows, so be creative and have fun with this detail.

Special Report Quiz

Wall Surface Preparation

1. What is the first step to wall surface preparation?
2. Name two ways to create a flat, clean and plumb wall surface.
3. Do all bale walls have to be plumb or can they simply be clean and flat?
4. Do you have to weed whack the walls prior to plastering? Is there an advantage to doing so? If so, what is it?
5. Describe the steps to installing a wall niche.
6. Describe the steps involved in creating a simple bull nose truth window.

INSTALLATION CHECKLIST

Wall Surface Preparation

1. Starting at the base of the wall, work with a partner and two tampers to even out the wall. Be sure not to hit the wall too hard with the tamper. Get the wall even and as close to the frame layout as possible.
2. Work your way up and along the wall creating a flat and even surface.
3. Using a weed whacker loaded with strong twine, start at the toe up end of the wall and move up and along the wall. The intention is to clean the “hairs” from the surface and to create an even and smooth wall for the plaster.
4. If you want a perfectly plumb wall, use a long straight 2x4 with or without a level attached to it (you only need a level if you are not confident that your ceiling nailer is exactly above the toe up).
5. Move the straight edge along the wall checking for depressions and lumps.

6. If you want a more organic wall that is still easy to plaster, simply use your eye to identify a smooth and even wall surface. You can use a shorter straight edge to increase the accuracy of the wall surface.

7. Be sure to at least mark the locations of truth windows and niches on the wall before the electricians arrive.

8. To create a niche, spray paint the outline of a plywood template onto the wall. Mark the depth you want the niche on the bar of the chainsaw and plunge the saw into the wall. First cut the outline of the niche and then clean out the interior straw. Plaster lath can be used to clean up the shape if needed during the mesh stage of construction.

9. To create a protected truth window, start by cutting a frame from a piece of plywood. The size and thickness of the plywood will depend on the size and thickness of the glass you use. Extend the edges of the frame at least two inches beyond the edge of the glass. Cut a rabbet into the plywood to “let in” the glass so it ends up flush with the surface of the plywood. Use the appropriate adhesive to attach the glass to the plywood. Turn the rabbet towards the wall and attach the plywood frame to the bales with dowels or landscape pins. Tape off the glass and roll the plaster into the pane to create a bull nose plaster round.