This Place Is A Site

By George Porter

For the first twenty years of so in this business, I thought site preparation meant removing things on the ground that would cause the tires to go flat as you backed the home on the lot. Few things are more frustrating than having to put on some new tires so the home can go another five feet to its final destination.

How many times have you put a home on a lot and before you were through, you wished you had done a few things to the site that would have made the job a little easier. If we could turn our hindsight into foresight, we would all be a darn sight better off.

In the last year or so, I have come to believe that site preparation is one of the absolutely most important and most overlooked steps in the installation of a home. Improper site preparation can adversely affect (and this is only a partial list):

- The ability of the anchors to hold;
- The depth of the frost penetration;
- The amount of frost heave in the area of the home;
- The stability of the footings;
- The ability to skirt the home;
- The ability for the home to resist moisture and the subsequent rotting and mildew;
- The resale value of the home five to ten years down the road;
- The ability of the home to remain structurally sound and livable on that location;
- The health of the people inside the home;
- The amount of energy needed to heat and cool the home;
- The ability to ever put additions on the home;
- And, possibly in the future, the ability to finance or insure the home.

What do you have to do to avoid all these problems? It's simple. The home should be located in an area that's higher than its immediate surroundings and free of vegetation. How much higher is determined by the topography of the ground in the area it's located. In an area that has large amounts of rain, it should be able to flow around and away from your home by at least ten feet. If you are in an area that doesn't get much rain, and you are on fairly well drained land, your site can be as little as four to six inches above its surroundings. On very flat land that is not well-drained, you may want the site to be a foot or higher above the surrounding area.

The idea is to keep the area under the home as dry as possible. Water is the enemy here and we have to do our best to be sure that it does not get under the home and stay there. Moisture drastically affects the load-bearing capacity of soil. It acts as a lubricant, and the grains of sand, silt and other particles in the dirt will part more easily. In other words, if the ground beneath your footings turns to mud, the mud will part and the footings will sink. If the ground around your anchors turns to mud, the anchors will easily pull out. Consider what could happen when a hurricane visits a site like this. You have strong winds and lots of water. Improper site preparation will cause the anchors not to hold, the footings to sink and away goes the house.

Unfortunately site preparation can usually only be accomplished at one point during the installation, it has to be done before the home gets there. If you decide to re-grade after the home is already installed, how do you get the ground under the home higher? Conceivably you would skirt the home and bank the dirt up against the ground enclosure and slope it away from the house. What you end up with is a somewhat shallow, to maybe fairly deep dirt basement that will fill with water and stay there. The ideal situation is that if you threw buckets of water under the home before it was skirted, it would drain away to an area at least ten feet away from the site.

An improperly prepared site is one of those problems that you start putting band-aids on. The customer may have high humidity due to water under the home, so you then advise the customer to get a de-humidifier. The customer begins to de-humidify inside the house, but the moisture in the underside of the home causes the frame to rust out prematurely and the floor joists to warp, crack and grow mildew. If the home has paneling, it will begin to delaminate. In the north in winter, when you have excess dampness under the home, water vapor will find its way to the roof cavity, freeze on the underside of whatever kind of roof you have, be it metal or wood, and form fairly large sheets of ice. When the sun comes out, it will melt these areas of ice, water will then run down the underside of the roof and create stains in your ceiling, giving the impression of a roof leak. Unfortunately it is a roof leak that no amount of patching on the roof can fix.

Site preparation is one of the cheapest and most effective ways to preserve the quality of the home, and the comfort of the people residing therein. Damp insulation in the belly board below the floor suffers a drastic reduction in R value. If it becomes so laden with moisture that it actually falls through a rotting belly board, your heat bill can skyrocket. The humidity that forms on the inside of the windows of the home due to the dampness underneath the home can cause a lot of damage to the windowsills and in worse cases, even rot away the framing that surrounds the window. Proper grading of the lot prior to the installation of the home should eliminate nearly all the moisture caused problems we face in our housing today.

All vegetation should be removed in the area under the home. Once the perimeter of the home is enclosed, the grass and weeds die and become an enormous fire hazard. The least little spark from a heat tape, or any place else can set it off and it will completely engulf the underside of the home in less than a minute. Another reason for removing the vegetation is that it harbors all sorts of vermin. I have personally found myself face to face with raccoons, rats, and reptiles in an area with very little room to maneuver. As a result, I have had to repair and/or replace three and four foot sections of skirting on customer's houses where I felt the need for a quick exit.

Attention should be given to things that may eventually come to reside under the home, like the roots of nearby trees. Even under the best of site preparations, the area under the home is an ideal environment for tree roots. Over the years, they will seek it out and the roots that were already there and were not removed during the site preparation will grow larger. Once these roots have expanded and shifted the footings, you have no choice but to redo the foundation. If you cut the tree root, it will rot and create a soft spot where it once was, and if you don't cut the tree root, it will continue to grow. If you remove a big enough root on a tree that's very close to the home, you could very well kill that portion the tree that is hanging over the home. If the tree is large enough, the dead limbs could eventually fall onto or into the roof.

These considerations merit some discussion with the homeowner as to exactly how he wants to take care of the tree problem. You can't set the home on the roots, and if you cut the roots, you will probably damage the tree. Whatever the homeowner's decision is, make sure you have a short letter describing the problem, his decision and have him sign it. Keep the letter in a file for as long as you have a place to store it. Sometimes, many years down the road, homeowners have a way of forgetting details when they have a large tree limb in their living room.

As a sales person of manufactured housing, I would be very concerned about what lot this home was going on. Site preparation is very important and I would certainly want to know how much of it my company had to do when I told them that set-up was included in the price of the home. If you simply roll it on to a field with poor drainage and no site preparation, the customer will always have complaints caused by moisture. The dealership will never be able to correct these complaints short of re-installation after a proper site preparation of the home and the industry as a whole will have suffered because the customer will be absolutely sure his problems are caused by the fact he bought a "trailer".

If I were a lender making fifteen to twenty year loans on homes, it would be extremely important for me to know the site was properly prepared. It would be so important to me that I would allow customers additional financing for site preparation. It is one of the most important ingredients in the preservation of their collateral. Banks really should take a much larger interest in these things.

All the installation manuals I have ever read require you to put at least six millimeter plastic down under the home to help retard the moisture. If the site is improperly prepared and water runs under the home and gets under the plastic, there is no way for it to evaporate. The plastic is good and necessary, but only on a site that is graded for drainage away from the home. If you leave the vegetation on the ground and put the plastic down, you are creating an enormous mushroom and slug farm—the odors of which will be most unpleasant to the occupants of the home, particularly people with allergies.

All of the things talked about here are the reasons you should do the right thing—grade the lot and keep it free of vegetation. Having completed that, you will then be able to say, "This place is a site".