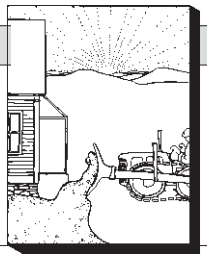
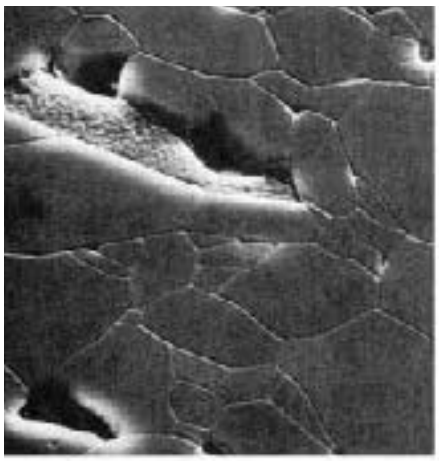


The Secret House

by John D. Wagner

If you could take your job-site transit and, instead of shooting grades, you could crank it up to 4,000 times its normal power, you'd encounter an entirely different world around your job site. In his book The Secret House, *author David Bodanis takes just such a look around a normal household.* The Secret House, *published by Touchstone/Simon and Schuster, has some truly amazing pictures—a few of which we've reprinted below—and explains what happens around you at the microscopic level.*

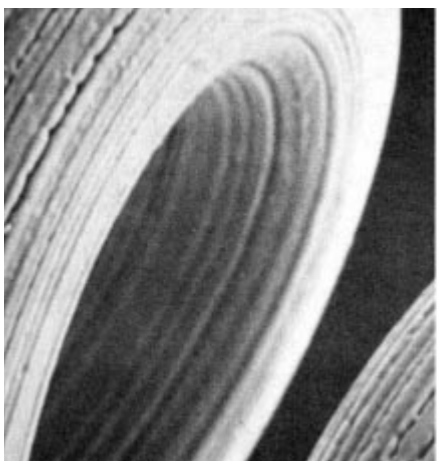


The next time you install an aluminum sliding window or pick up a piece of aluminum siding, take a real close look. Do you see any imperfections? Any holes? The piece of aluminum shown here is purer than most aluminum on any job site. But when it is magnified 4,000 times, cracks, gaps, and holes become evident.

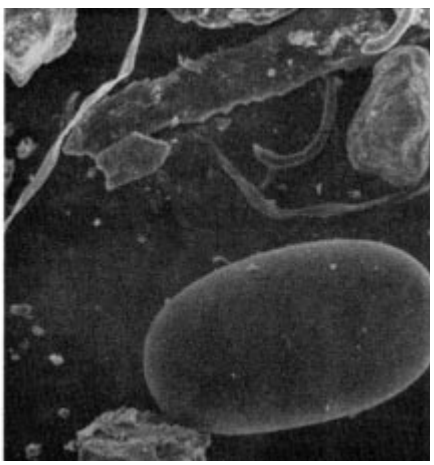
Do you use Velcro to secure any of your tools or power cords? Here's a close view at what the stuff really looks like when it's just about to close. The nylon hooks on the top dig into the coiled fibers below. The fibers hook into the loops. When you pull the two sections apart, the fibers slice through the hooks, thereby producing that infamous ripping sound.

What do you do when you get a splinter? Lots of guys sterilize a needle by torching it with a lighter and then use the needle to gouge out the sliver of wood. Safe enough, right? Well, here's a close look at a clean pin. You can see in the photo that not only are there clusters of household bacteria having a little social gathering on the needle's surface, but the needle itself is a rather rough surface indeed.

Some of you may find a striking similarity between this creature and the last helper you hired, but this is simply a 1,000 times magnification of a common household dust mite. The serrated front claws are for collecting flakes of human skin; his body is armored against attack. If a house has too much moisture and too little ventilation, these guys can multiply like crazy and produce an allergic reaction in many homeowners.



Drop your utility lamp and out goes the light in a flash. The fragile filament that shatters is shown here. An electric field curves around these wires and makes them heat up so they glow with a visible light like a miniature branding iron.



The next time you empty your shop vacuum cleaner into the dumpster, you may want to hold your breath and cover your mouth. Here's a look at what's really in there. The rough looking rocks are pieces of sand, the strings are strands of carpet or pieces of hair, and the oval object is a cat flea egg. Not stuff you necessarily want to inhale at the beginning of the day.

John D. Wagner is features editor for The Journal of Light Construction.