Photo Wallpaper For Structure Surfaces

– by Lance Mindheim
Photos by the author

Figure 1: Modeling the logos and faded stucco of Chavez Used Auto Parts would be difficult using a brush. Instead, photos of the actual structure were glued to styrene and then stand-off details added to create a 3D appearance.

Learn the secret to getting amazing structure realism using Lance Mindheim's photo-lamination tricks ...

Certain surfaces have always been a challenge to model. Intricate weathering patterns of peeling paint and stains streaking down a wall, subtle color variations on a brick or masonry wall, murals, and graffiti are a few such examples. No matter how skilled the modeler, there are limits to how accurately we can capture complex color patterns using traditional methods. For many years our only available option for creating what we wanted was paint on styrene.

When we step back, though, and think about what we are really trying to do, the task boils down to applying a color to a surface by any effective means available. There really is no reason why the method for doing so needs to be a brush. It can also be a printer. For some prototype surfaces, specifically those that are essentially flat with very little surface relief, we can get better results by using a photograph for the surface instead of painted styrene. The idea is certainly not new. What has changed is the ease of implementing the technique.

The prices of printers, cameras, and photo editing software have dropped to the point where they are within the reach of anybody's budget.

The coming of the digital age to our hobby has put some of these previously impossible modeling tasks within easy reach. For some surfaces, using a photograph produces a far more accurate result than what we could get with a brush. All you need is a computer, photo editing software, and a printer. You may not even need a camera if you can get the photos elsewhere. Follow along as I walk you through the process of 'wallpapering' photos onto a model surface in lieu of paint.

Before we get into the step by step, I caution you not to get lost in the details. At the most basic level all we are doing is taking a photograph of a surface, printing it to scale, and gluing it to styrene. No more, no less. The biggest obstacle all modelers face is getting over their natural inertia of trying something new. I suspect that after reading this article the reason folks won't try it is that it's out of their comfort zone, particularly when it comes to photo editing software. However, those that are willing to get their feet wet and try something new will find that, in the right instances, the technique produces surfaces far more accurate than can be accomplished with paint, is much faster than traditional techniques, and is far less expensive.

Match the Method to the Task

As with any modeling project, it comes down to picking the right tool or method for the job. Photo wallpaper isn't the best technique for every situation. In general, substituting photos for paint works best in cases where the prototype surface is relatively flat. Examples include doors, windows, walls, and flatter structure faces. Brick and cinder block walls and rollup doors are ideal candidates. The effect is not as convincing for high relief surfaces such as ribbed siding or board and batten siding. Certainly you wouldn't try it for modeling an oil refinery! Also, the photo wallpaper method makes the most sense for surfaces that have difficult to model color patterns. If the prototype has a simple color pattern, you may as well just use paint.

The Downside of Using Photo Wallpaper

No method is without its drawbacks. If I could sum up those of the photo wallpaper technique it would be durability. Paint on styrene is more durable and robust than ink on paper. Ink does fade over time. In my case I've noticed it in a few locations starting at about the five year mark. Reducing exposure to sun and fluorescent lighting can slow the process down. So can using better inks and papers. Long term fading is something to consider if you plan on a layout that will last

decades. My attention span for a project is generally only five to seven years so I didn't even go to the effort to track down more expensive inks and paper.

Water damage is another issue. Spots of water from scenery work, plumbing malfunctions, etc. will ruin many photos. Coating the photos with Dullcote offers virtually no protection. A little care during scenery work as well as putting plastic over the layout beneath our bathroom solved my water damage issue. Finally, some – not all – inks, react to Dullcote and change color. Always test a sample first and if you have a problem use acrylic flat spray.

Photo Editing Software

There, I said it. "New software", that nasty word that will have many saying, 'interesting idea ... or somebody else besides me'. Without the use of a photo editor you won't be able to implement the techniques we will be discussing. Photo editing software is a basic tool, the key functions of which are no more difficult than MS Word. If you can copy, cut, and paste with Word you can do the basic photo editing tasks. In addition, unlike an airbrush, photo editors have an undo button!

Before purchasing your software a few points need to be made. First, even old editions of basic software have far more capability than you will ever use. It makes no sense to buy an expensive, latest and greatest editing

program. Doing so will likely bog you down in elaborate tool bars. I suggest picking up one (or even several) used or old editions and keep the cost in the $20 to $30 range. Amazon.com is a good starting point for making your purchase. For this article I suggest Paint Shop Pro X as it has a few tools that apply particularly well to what we will be doing. Adobe Photo Shop Elements is another good choice. If you can get a good price, pick up both as they each has its selling points.

The fastest way to learn how to use a photo editing program is to load a copy of a photo (always work with copies), open it in the editor, start pushing buttons and play around with the tools to see what happens. If you get stuck click the help bar for a quick clarification.

Getting Started

The process for photo wallpapering a structure is as follows:

1. Buy a basic photo editing software program. As a minimum you need something that can correct for perspective distortion. (Paint Shop Pro X and Adobe Photoshop Elements have this feature)

2. Take or obtain a photo of the prototype surface. Although not ideal, I have used photos captured from

Figures 3: Because of natural perspective issues, the photo of the door is slightly trapezoidal in shape and noticeably tilted to one side. In many cases you'll find that your photos have an even more pronounced perspective distortion. Paint Shop Pro has a very simple and effective tool called 'Perspective Correction' that quickly cleans up the distortion. 1. Click the perspective correction icon. 2. A box will appear on the screen. Drag each dart on the screen box to a corner of the door in your image. 3. Hit the green check mark. That's it! Almost like magic the distortion has been fixed.

Figures 2: I can't imagine a project more difficult than trying to model this roll-up door with paint. The color combinations are very complex. The shallow relief between the slats is minute and typically not realistically produced with commercial door products. Time for the computer and printer.

Google Streetview. Photos taken by others or obtained on the net are other sources in addition to taking the shot yourself.

3. Build a blank core of your structure out of styrene.

4. Edit your photo to correct for perspective distortion and other needs.
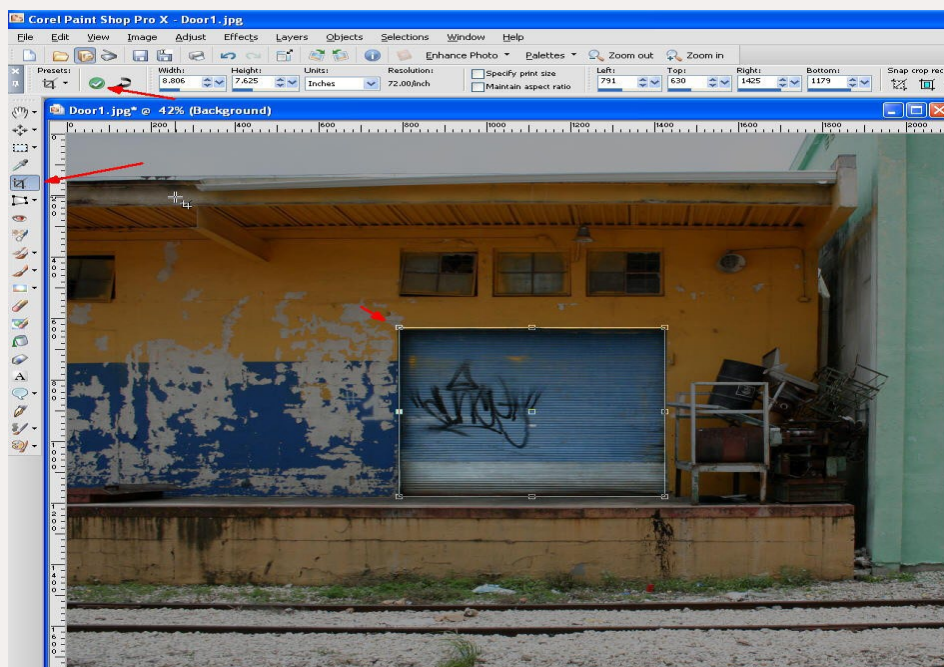
5. Print the photo to the size needed.

6. Glue the photo to the surface of your core with 3M Super 77 spray adhesive.

7. Add traditional three-dimensional details such as gutters, conduit, and downspouts to the structure.

Baby Steps

Rather than choosing a full scale, omplex four-wall structure as a first project, let's pick something with a simple one-dimensional surface to get the hang of the technique and build confidence. Two very simple, big pay-off, subjects are steel roll-up doors and masonry walls. These surfaces are difficult to effectively model using traditional paint and exceptionally easy to model using photos. They are great starting points because they are both easy and produce dramatic results.

Figures 5: Here's our finished door. Note how I've intentionally left the shadows in the corners to enhance the 3D effect.


Figures 4: With the distortion corrected, we can now cut away the portions of the photo we don't need using what is called a crop tool. Think of cropping as digital scissors. Hit the crop icon, drag the box around the area you want to keep, and hit the green check mark.
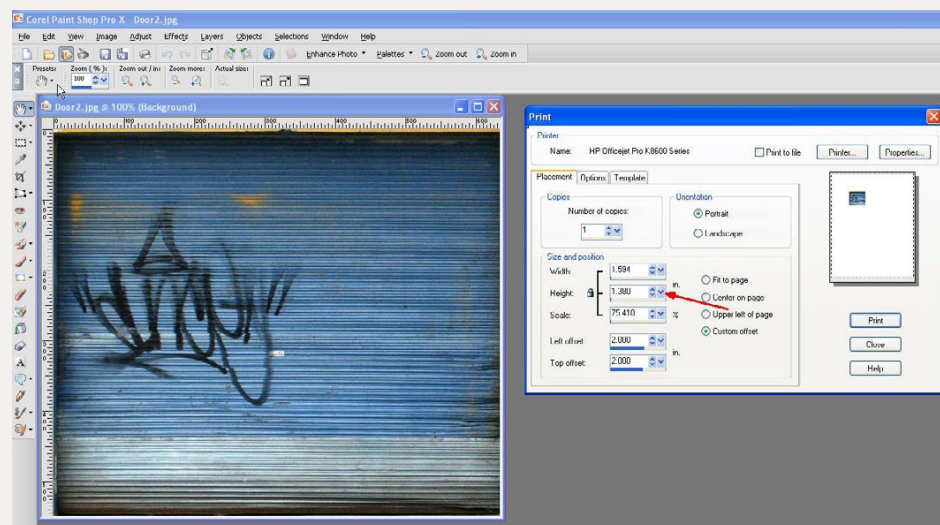
Figures 6: Paint Shop Pro X has a very simple print size feature. Using the masonry blocks as a guide, the door measures out to be 10 feet tall on the prototype. Scaled to HO, we therefore want our printed door to be 1.38 inches high (scale 10 feet in HO). On the tool bar hit "file" and then "print". This will open up the printing functions. Set the image height to 1.38". The width will be automatically set for you to the correct proportions.
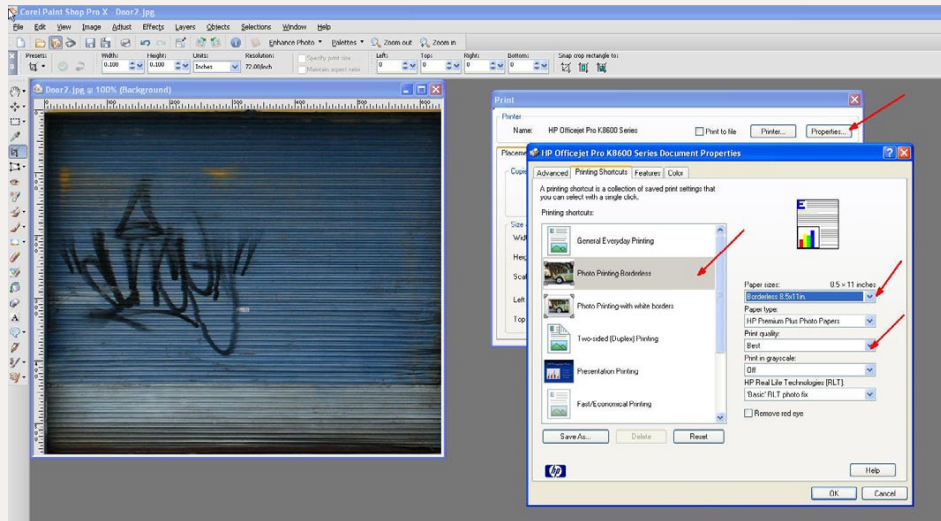
Figures 7: Now that the size is set, let's tell the printer what to do. While still in Paint Shop Pro X's print screen hit "properties." The next screen will be for your printer and there will be some variation by model. Set the printer for photo paper (not everyday typing paper). Under print output quality hit "Best". It's not necessary to use the "Maximum DPI" setting should that be an option that comes up on your screen. Insert your photo paper and print.

Figure 10: Glue your photo door behind the door opening of your desired structure.

Figures 8-9: Using a new, sharp blade and steel rule as a guide, cut out your photo. As you go about cutting your photos, change blades frequently to prevent snags and burrs. Turn the photo over and spray the back with Super 77. Place the photo on a scrap of .060" styrene and firmly seat it with a rubber roller. Note that with Super 77 you only get one chance. Once it grabs it really grabs, so make sure you have things lined up correctly from the outset.
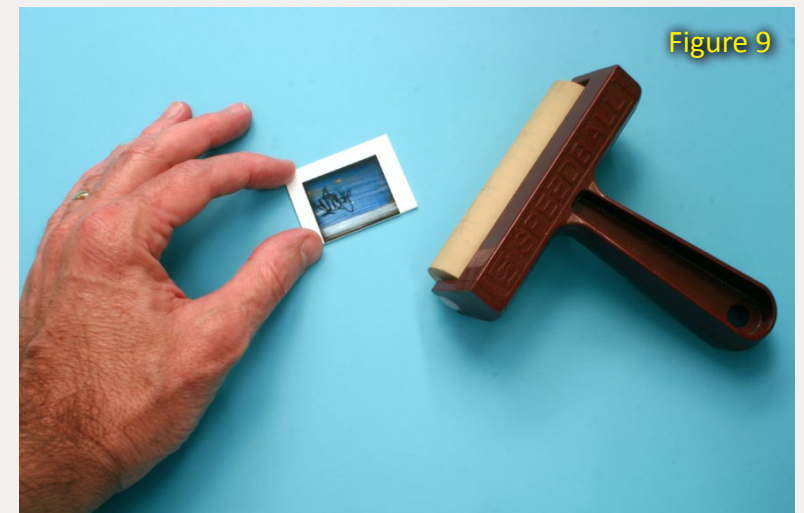

Figure 8

Figure 9

Once you've practiced with one-dimensional projects such as a door or wall let's move onto three-dimensional structures. The techniques are essentially the same as what we did for the doors but we will now 'wallpaper' all four walls of the structure.

Figure 11: All four walls of the Antillean Marine office structure shown above are photos, as are the containers.

Figure 12

Figure 13

Figures 12-13: The starting point of the project was the photo on the left. Google Streetview had some good angles to fill in a few of the blanks.
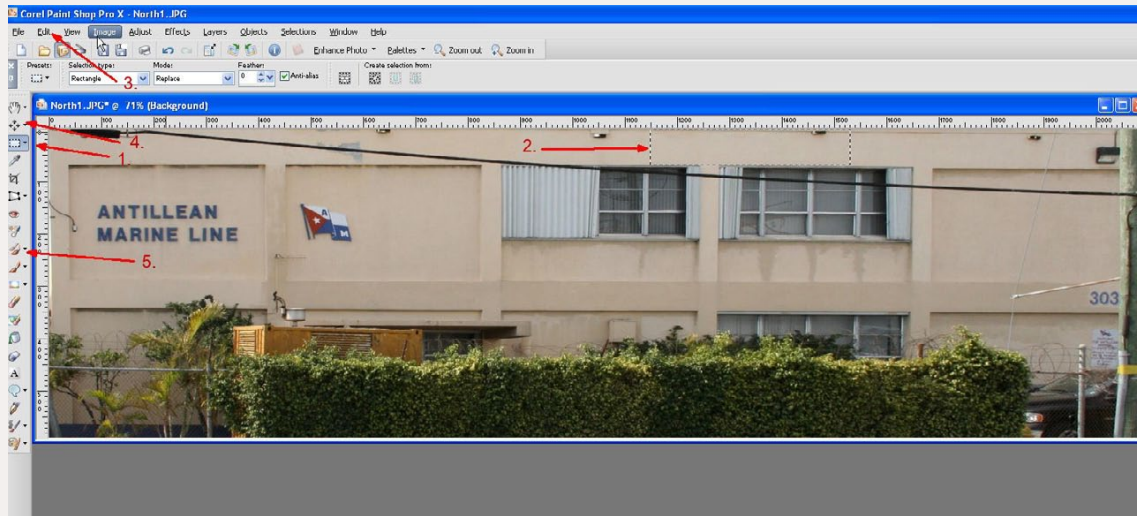
Figure 14: After correcting for perspective you'll see that the image has a number of issues that must be resolved before it's useable. As is commonly the case wires, fences, and foliage are in the way. Fortunately, there are enough 'good' areas that all we have to do is copy clean wall sections over those with the obstruction. The process is very similar to that of MS Word, in that we will select/highlight, copy, and paste.

1. This is the selection tool. 2. Drag a box around the area you want to copy. 3. Hit edit, copy, paste. 4. Using the 'pick' grab the copy and drag it over the section we want to replace. 5. The clone is a much more powerful copy/paste tool that allows for finer correction work. Learn to use it as it's handy indeed!

Figure 15: Using the copy/paste and clone tools the image above shows how I gradually replace obstructed sections of the photo with similar shaped 'clean' sections.

Figure 16: Here's the finished wall after clean up with the cut and paste tools. I selectively compressed it by removing one panel. The glass entrance door is from my door image library.

Figure 17: The only real photo I have of the prototype structure is of the north face. That's common. Using a little creativity I varied the patterns enough to create all four walls. Shown above is the west wall of the structure.

Figure 18: The next step is to prepare the core of the structure itself. In most cases you are essentially creating a blank box. Your prototype photos can be very helpful in determining the actual dimensions of the of the structure being modeled. The standard 8"x16" masonry block or 80" standard personnel door height are good scales and appear in many photos. For the core, my material of choice is .060 inch styrene. When complete, make sure the surface is clean prior to attaching the photos. Wiping the surface with rubbing alcohol will do it.

Figure 19

Figures 19-20: Although we could simply glue photos of each wall to our core, the resulting surfaces will be obviously flat, especially when viewed from any angle other than straight on. We can take some simple steps to create the illusion that the surface is three-dimensional. I typically print three photos for each wall. The first photo is printed on glossy paper and is the bottom layer. Print the second photo on matte paper, cut out the window and door openings and glue it over the first so that the glossy windows show through. Print the third photo on matte paper as well. We will use this for any stand off details such as columns or other protruding features. This three-layer sandwich is certainly flatter than the prototype but the optical illusion of depth can be convincing.

Figure 20

1. Glossy photo as base.

2. Matte photo with windows cut out.

3. Cut out and remove everything except stand off elements such as cornices, protruding slabs, and columns.
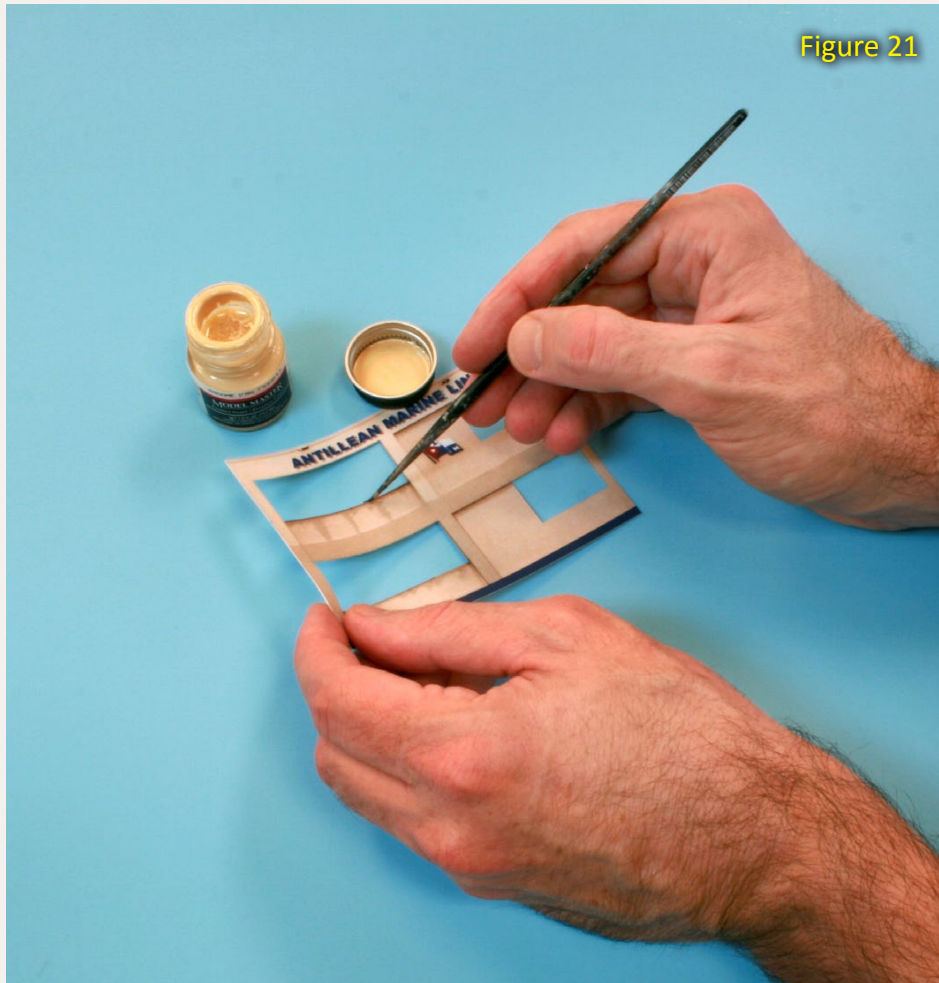
Figure 21

Figure 22

Figure 23

Figure 21: Optional Step: The photo paper is pretty thin but as you cut out the openings you'll be able to faintly see the white edges where you made the cut. Depending on how much of a stickler you are, these white lines may or may not bother you. If you want, you can dry brush a similar color paint around the photo edges.

Figure 22: Here's the assembled west wall of the office comprised of three printed photos stacked on top of each other.

Figure 23: Spray the back of the print with Super 77, align the photo with the core and firmly roll it into place. Repeat for each of the four walls.

Security
Light

Conduit

Hurricane
Shutters

Security
Light

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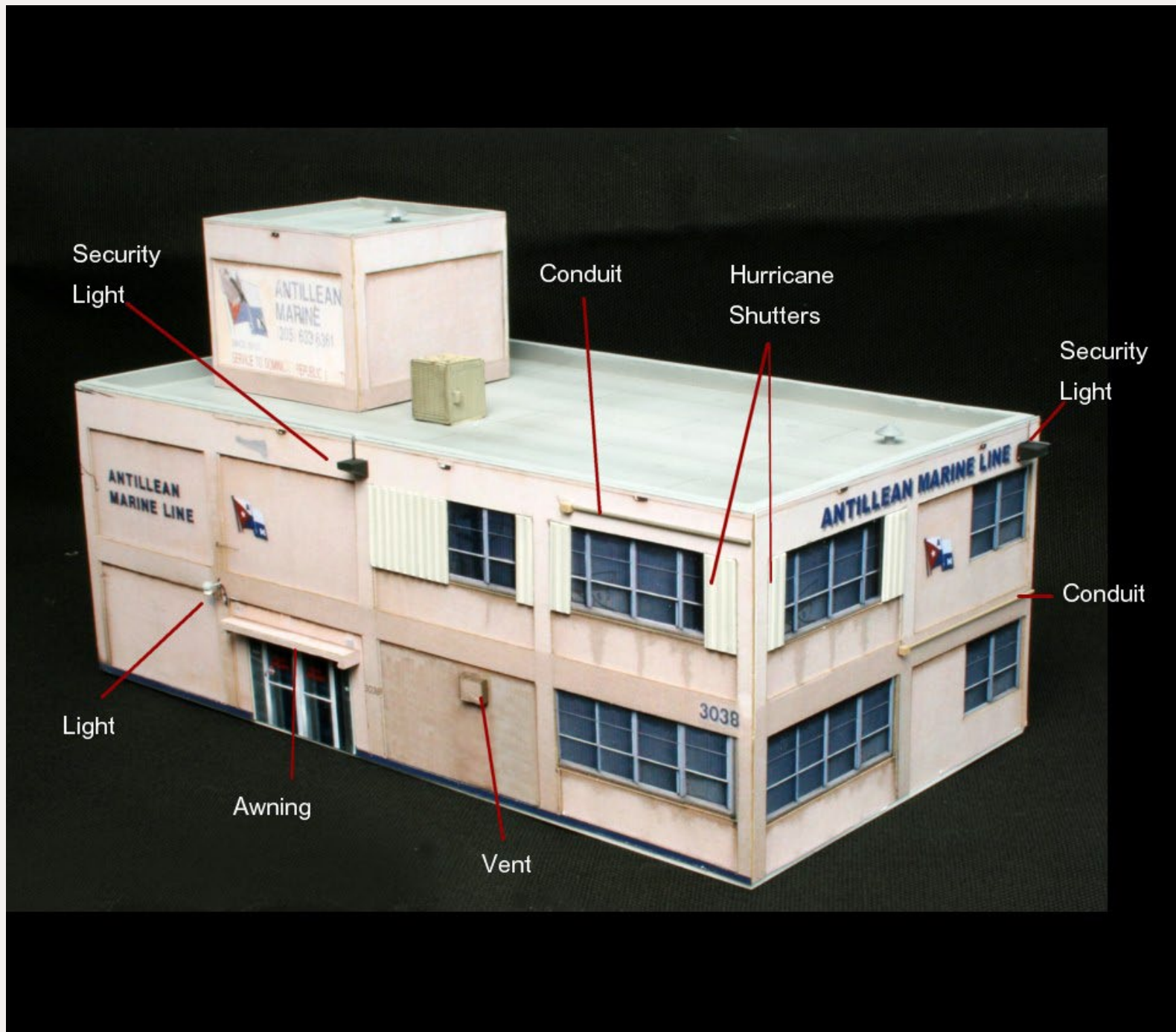Conduit

Light

3038

Awning

Vent

Figure 24: The only purpose of the photos is to provide color and the illusion of shallow depth. In order to keep it from looking obviously flat, add traditional 3D standoff details such as lights, awnings, and conduits.

Photo Gallery of Other Photo Wall Covered Structures on My Layout

Figure 25: Proveedora Jiron.

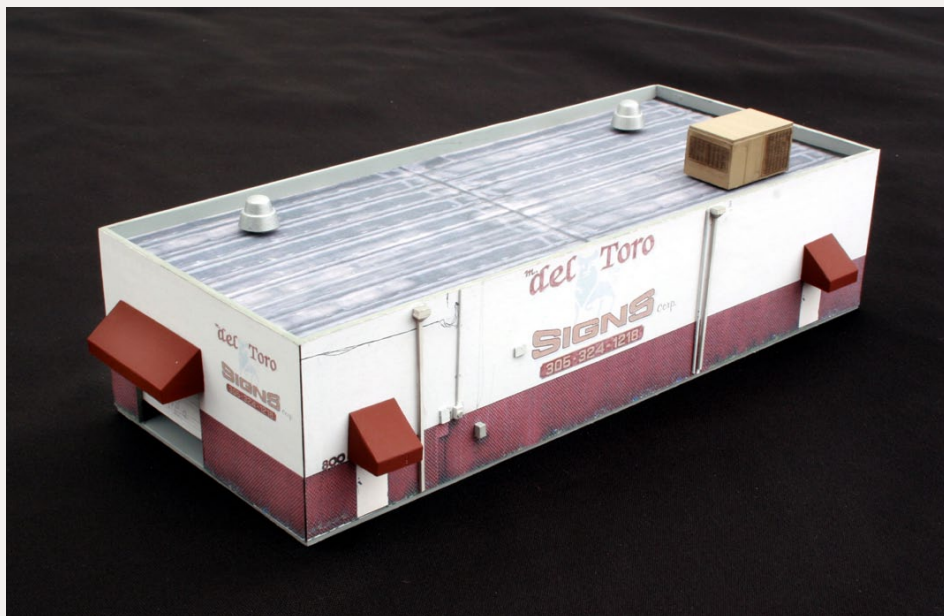Figure 27: Graffiti laden background structure.

Figure 26: Del Toro Signs.
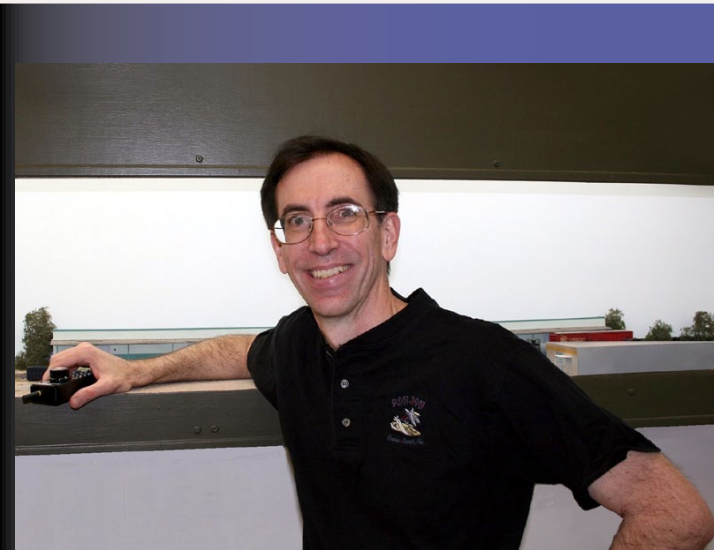

Figure 28: Lowell Distributing.

Figure 29: Chavez Used Auto Parts.

Figure 31: The graffiti'd masonry wall in HO.

Figure 30: Graffiti 'art' on masonry wall.

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Other Applications

There is no limit to the application of this technique as long as you are dealing with prototype subjects that have a relatively flat surface. Try it on containers, truck sides, as wrapping on storage tanks, and perhaps even road surfaces.

The photo wallpaper technique, while not the solution to all color issues, can get you out of more than a few jams. Think of the process as a digital paint brush with the exceptionally nice feature of an 'undo' button.

The biggest challenge is taking the first step and that begins with obtaining your photo editing software. A small investment there will be rewarded many times over. Give it a try! ☑

Figure 32: If your layout requires a large number of containers you'll find that it can get expensive as well as time consuming when it comes to weathering them. In addition, some of the logos aren't available as commercial products. Photo wallpaper can be a good solution in this case. Build an appropriately sized cube and glue photos of stacks of containers to create realistic looking and inexpensive container stacks.

Figure 33: After editing the panel of the prototype delivery truck I printed it out to size on label stock and glued it to the side of a Boley vehicle.

Figures 34-35: Models of the 20-foot Tropical Shipping reefer containers simply aren't available on the market. To get around this I glued a photo to the side of an undecorated Walthers container.
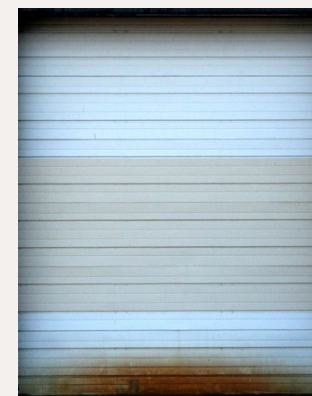
Pros and Cons of the Photo Wall Paper Technique

PROS:	CONS:
Perfect color	Too 'flat' for some materials
Inexpensive	Possible fading of ink over time
Fast	Potential for water damage

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