

Contents

Introduction	4	Chapter 4	Along the urban right-of-way.....	48	
Chapter 1	City and town design and evolution.....	6	Chapter 5	Signs and details.....	59
Chapter 2	City streets and street trackage.....	17	Chapter 6	Passenger terminals and stations.....	78
Chapter 3	Urban structures and scenery.....	33	Chapter 7	Streetcars and electric railways.....	88

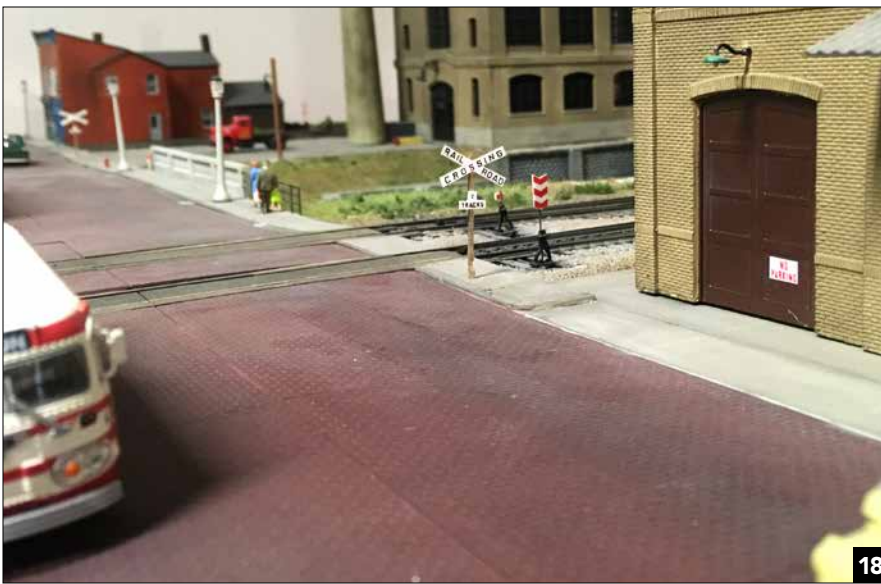


A Kansas City Southern E8 departs Texarkana, Texas, in July 1952. Urban modeling offers many varied appealing facets, such as the multi-track passenger terminal, complex trackwork, and wide variety of industrial buildings with lots of freight and passenger cars to be switched. R.S. Plummer; Louis A. Marre collection



This brick street on John Pryke's HO Union Freight Railroad was modeled with Faller no. 601 brick paper, glued to styrene and matboard inserts cut to fit among the rails. The street in the distance is painted to represent concrete.

John Pryke



Walthers makes its HO street panels with a brick texture. The *Model Railroader* staff used these panels on its Milwaukee Road Beer Line project layout.

Jeff Wilson

sidewalks and curbing, as well as manhole cover and storm drain details. Advantages of using these include realistic crown and pavement textures/expansion joints, intersection pieces, and modular construction. The main disadvantages are the lack of curved sections—it can be difficult to fit odd-shaped spaces—and that only one street width is available. With a bit

of work, however, the pieces can be trimmed to create narrower streets or angled intersections.

Start by laying out pieces to match your structure arrangement, **6**. Make sure you allow for sidewalks, clearance along rail lines, and other details. Start installing the panels at an intersection or key structure. Glue the panels together with plastic cement, making

the joints as tight as possible. Gaps are not as critical for concrete panels, as they can represent expansion joints. Glue the panels to the scenery base with latex construction adhesive.

Grade crossings can be done in many ways. Several companies offer grade-crossing kits for rubber-mat, concrete pad, and wood materials, including Blair Line; BLMA, now sold by Atlas; Walthers; and Woodland Scenics. Wood plank crossings were very common in towns and cities, with rubber-pad and concrete-pad crossings more common since the 1970s. Another common option was having guardrails or timbers inside the running rails, with paving material between the guardrails.

You can use commercial crossings, **7**, or simulate wood crossings with scale stripwood. Either way the key is to make sure the top surface of the crossing material is slightly below the railheads to avoid catching a low-hanging uncoupling pin or pilot, and to make cleaning track less hazardous.

Streets and railroads sometimes cross at 90-degree angles, but other angles are more common. To make these crossings, simply cut the road material to match the angle of the crossing, **8**.

I'm a big fan of sheet styrene for making asphalt and concrete streets. Sheets are available up to 4 x 8 feet (check plastic dealers and wholesalers in cities) making it easy to lay out large areas (including multiple blocks) on a single piece. Styrene is very versatile: the material is easy to cut, glue, and paint, and sheet styrene allows customizing street width and making curves and odd-angle intersections.

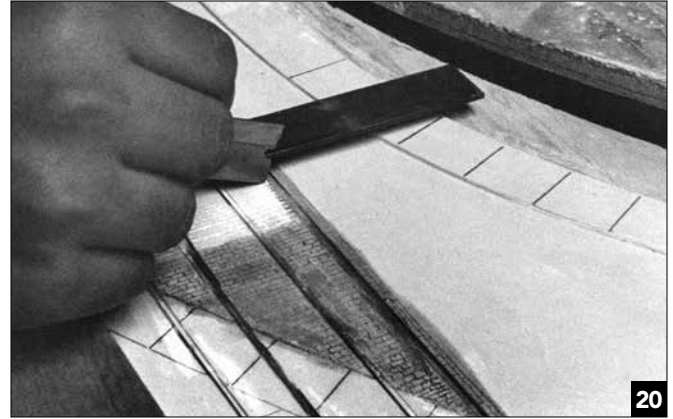
Start with a pattern: large sheets of craft paper work well, **9**. For large flat areas, you can use the styrene as a sub-base under structures (more on that in Chapter 3). For most scenes, I make a sub-base of cork roadbed and sheets.

Transfer the outline of the streets to the styrene sheet, **10**. I prefer .060" styrene, which is sturdy but still easy to cut. Trace along the line with a sharp hobby knife, then bend the plastic to snap it along the score.

Prep the plastic before gluing it in



Available materials include, from left, textured brick paper from Faller (17061) and Noch (56613), plastic from Vollmer (46028), flexible vinyl from Chooch (8620), and foam from Faller (170803). *Jeff Wilson*



Walt Olsen is using a razor blade (a hobby knife would also work) and steel straightedge to carve plaster to represent bricks. Hand-carving bricks offers the most flexibility in design. *Walter R. Olsen*

place. Because styrene is very smooth, I like to add texture by sanding it. A piece of 160-grit sandpaper in a rubber sanding block works well. Use a circular motion and move along the surface until the plastic shine disappears. Joint lines (as with concrete) and cracks can easily be scored with a dental tool, **11**.

Once the styrene is in position, **12**, glue it to the base with latex contact cement, or a thin coat of latex construction adhesive.

Plaster and patching cement

Plaster also works well for creating streets. A key advantage is that it can follow curves and hills easily, and be customized for various street widths as well as parking lots and other paved areas. A key is to have a smooth, solid base for the material.

Add forms to make the outline for the street surface. This can be stripwood, strip styrene, thick tape (Woodland Scenics makes Paving Tape for this purpose), or layers of masking tape. Molding plaster (Woodland Scenics offers Smooth-It) should be mixed to a consistency of pancake batter, then poured into the form, as Pelle Søbørg is doing in **13**. (You can also color plaster with craft paint, powdered tempera paint, or masonry dye—the goal isn't necessarily to capture the final color of the road, but to tone down the white to hide any later chipping or cracking.)

Level and shape the material with a screed made of heavy sheet styrene,



Walt carved bricks only along the tracks, keeping the outside rows parallel to the rails. The bricks have a realistic, slightly uneven look. The layout is the HO scale Brandywine Transit Co. *Walter R. Olsen*

14. This can be slightly curved to allow for a crown in the roadway. Work the screed along the street with a slight back-and-forth motion. Work for a thickness of $\frac{1}{16}$ " to $\frac{1}{8}$ "—any thicker and the plaster will not dry properly, and will tend to crack.

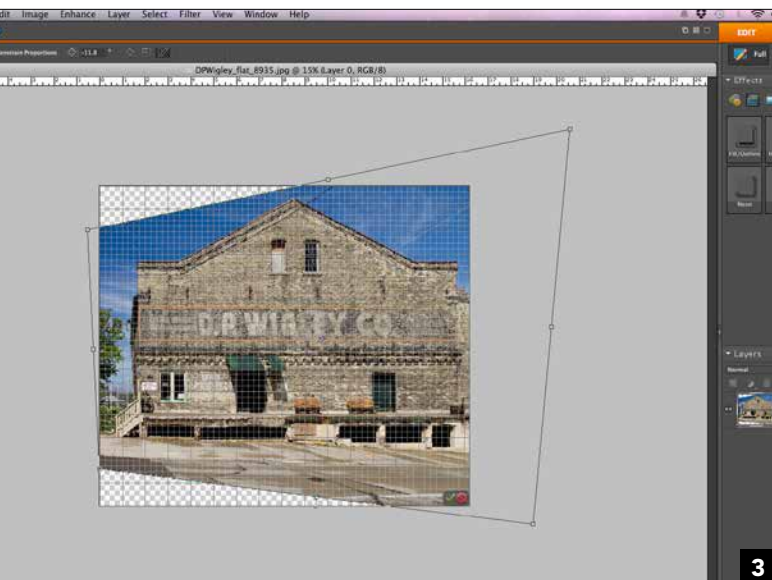
When the plaster has set, remove

the forms (don't wait until it dries completely or the edges may crack). Once the plaster has dried, sand any rough areas with fine sandpaper. This can be a dusty process—having a shop vacuum handy will help. Wiping the surface with a damp sponge can also work well, but the results will vary



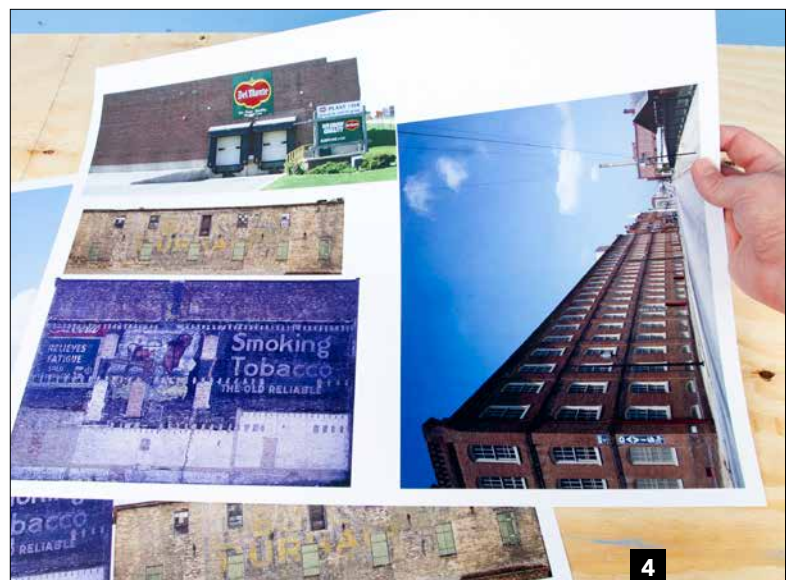
2

A Baltimore & Ohio tank engine moves cars along street trackage among storefront and industrial structures. The Severna Park Model Railroad Club's HO layout features a lot of city modeling based on Baltimore. *Paul J. Dolkos*



3

To use structure photos as flats, edit images with the "skew" tool (this is Photoshop Elements) to straighten walls and other features. *Jeff Wilson*



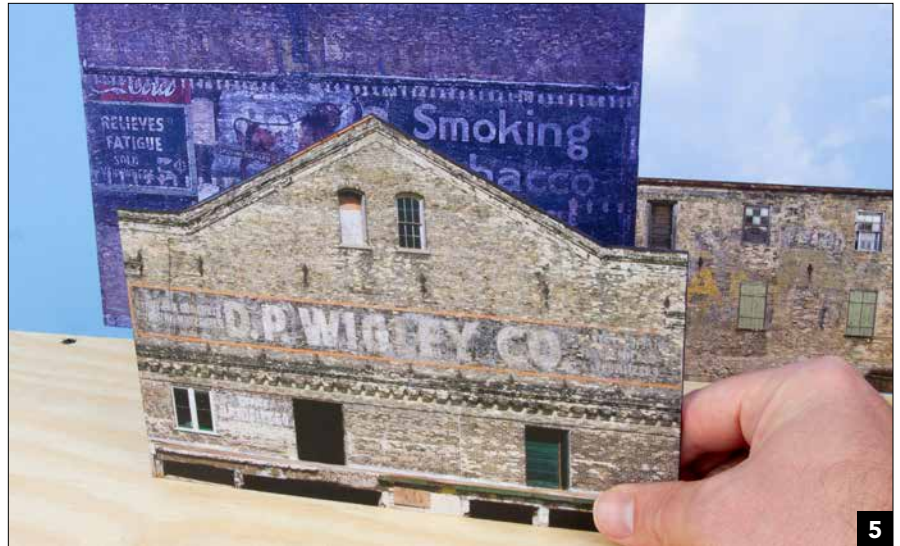
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Poster prints work well for outputting photos of structure walls. Conventional matte photo paper or light cardstock can also be used. *Jeff Wilson*

This can be a good thing if re-creating hillsides, trees, and grassy meadows isn't your favorite modeling activity. Urban modeling has its own special appeal, **2**; it does, however, present its own challenges in realistically arranging and blending scenic elements while keeping trackwork accessible for maintenance and operation.

Prototype cities and towns have many types of structures. For the most part, in modeling them we concentrate on structures near the tracks: Retail buildings and blocks, industries, stations (Chapter 6 looks at passenger terminals), freight houses, crossing towers, interlocking towers, and the like. Although significant and dominating, high-rise office buildings and skyscrapers are usually best left to be represented as distant buildings on backdrops with photos. Houses and residential areas are also not as prominent (except where tracks run behind residential neighborhoods).

Entire books and hundreds of magazine articles have discussed structure construction and detailing (my book *Modeling Structures*, published by Kalmbach in 2015, is a good start), so we'll focus more on how to plan groups of structures, how to layer structures and building flats with photo backdrops to make realistic scenes, and how to effectively plant buildings and blend them with streets, trackwork, and scenery. We'll also look at tips and tricks like using mirrors and



5 Images can be glued directly to the backdrop (background) or to mat board or foam core for use as flats. *Jeff Wilson*

making buildings, flats, and backdrops with photos of real structures.

Photo backdrops and flats

The wide availability of photo-editing software such as Adobe Photoshop and its less-expensive cousin, Photoshop Elements, has made it much easier to create realistic customized backdrop images and structure flats. Several manufacturers also offer backdrops that can be used for backdrops and flats; some, such as railroadbackdrops.com, will customize them for you.

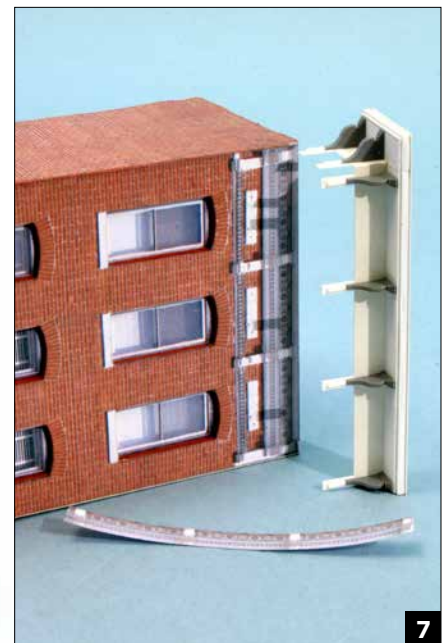
I keep my camera handy when traveling, and I'm constantly taking photos of buildings and signs that I think might be good candidates for turning into models. Many older

buildings are still standing, so even if you model the steam era, you can, with a bit of photo editing, produce structure flats that will work on your layout.

When taking photos for this, get as square to the side of the structure as possible. If you can, get back far enough to use a 50mm or longer lens, as wider-angle lenses can create distortion and curved lines. Fill the frame if possible; otherwise take



6 This structure is a styrene shell with a photo print of a laundromat on the front and a wall from another structure on the side. *Jeff Wilson*



7 Paul Dolkos modeled this building with a print of a real building, but built the windows in layers, then added a three-dimensional cornice. *Paul J. Dolkos*



CHAPTER SEVEN

Streetcars and electric railways

A Milwaukee streetcar waits for pedestrians at Third Street and Michigan in 1947. It's easy to see the appeal of streetcar modeling, with the colorful cars, period vehicles, signs, and track in brick streets. T.H.

Desnoyers; Krambles-Peterson collection

Streetcars, operating on rails in streets and electrically powered by overhead wire, were a common sight in cities of all sizes (and even in some smaller towns) from the 1890s through the 1930s—later in some areas, **1**. Other electric railways using their own rights-of-way were developed in many areas as well.

Although not frequently modeled, electric traction (named for the electric traction motors that power the equipment) lines are an active niche segment of the hobby, and electric railroads have a definite appeal among modelers, **2**. This can mean simply adding a streetcar line to an existing layout, or basing an entire model railroad on a streetcar, interurban, or heavy electric railroad.

Prototype electric railways first appeared in the late 1800s as electricity came into wide use in American cities. Streetcars were an efficient early way to move lots of people in densely populated areas. Because a self-powered trolley or streetcar weighed less than a steam locomotive or conventional passenger car, electric railways could be built with lighter rail, tighter curves, steeper grades, and lighter bridges—making installation less expensive.

Electric lines eliminated issues with pollution from steam locomotives—critical in crowded urban areas.

Streetcars could stand idle until needed, unlike steam locomotives, which needed constant tending.

By the turn of the 20th century, streetcar lines were being built in cities across the country, and lines were also being built between towns—interurbans. Meanwhile, steam railroads were beginning to string overhead wire and use heavy electric locomotives in high-density areas and mountainous regions.

Streetcars

Streetcars first operated as horse-drawn carriages (“horsecars”), with the first U.S. line operating in 1832 in New York City, **3**. These cars could carry more passengers with less resistance than a conventional horsecar on the street, and the steel wheels and rails offered a smoother ride. More than 400 street railways were in service in the U.S. using horsecars by the 1880s.

The first successful electric street railway using overhead power was installed in Richmond, Va., in 1888,

and electric systems were soon being installed in other cities. Electric streetcars could move faster and were efficient—horses were labor-intensive to keep.

Streetcar lines followed the same basic construction as steam railroads, but their lightweight single cars didn’t require support like track that had to handle steam locomotives and long strings of heavy freight cars. As Chapter 2 noted, this meant lighter rail, steeper grades, tighter curves, and sharper turnout angles.

City lines kept to one-way operation whenever possible. This meant double-track was common, with a track in each street lane, so cars could follow the direction of vehicle traffic. At the end of lines, this track typically looped for the return trip. Most cars were bi-directional, with controls at each end and two trolley poles. Changing directions was a matter of lowering one pole, going to the other end of the car, and raising the trailing pole.



Les Lewis models the Connecticut Company on his basement-size O scale layout. The structures in this city, based on New Haven, are scratchbuilt. Fred M. Dole