



PHOTOS BY THE AUTHOR

## Structures: Selective compression

Learning how to scratchbuild structures will open up whole new worlds for you. While kits have much to offer, there may come a time when you will want to build something special, such as an old schoolhouse from your childhood, a summer home, or a family store, or you may want to add an industry to your line for your railroad to serve. A scratchbuilt structure will personalize your garden railway. There may never come a time when I have *only* scratchbuilt structures on my own railroad but I will continue to supplement and improve my railroad by adding those special, scratchbuilt buildings.

Whenever possible or practical, I like to build in scale but this is not my main concern. More importantly, I try to build things in proportion so that they look good with the rest of the railroad. I include enough detail to make my structures believable. I work in 1:24 scale

( $\frac{1}{2}$ "=1'), so I'll be using this particular scale in my discussion. If you are building in 1:22.5, 1:20.3, 1:32, etc., you will have to convert dimensions to your desired scale. When I refer to "large scale," I include all the above scales. The construction-method basics are the same. You can find a scale conversion chart at the following web site: [www.urbaneagle.com/data/RRconvcharts.html](http://www.urbaneagle.com/data/RRconvcharts.html)

Something you will quickly learn is that even a small, full-size building can be quite sizable when scaled down to garden-railway size. For that matter, even an HO-scale building, scaled up, can become quite large. I learned this firsthand when I took some HO-scale plans to a copy shop and had them enlarged to approximately 1:24 scale (HO is 1:87 scale, or approximately  $\frac{1}{8}$ "=1'). This means that the plans had to be doubled twice. The enlarged structure will take up 64 times more volume than

1. A mockup of this house was made to check its size (right). When found to be too big, it was selectively compressed into a similar, smaller structure (left).

its HO original. This is something to consider if you, like most of us, are working with limited space.

To economize on space and still end up with a believable structure, you can use a technique called selective compression. With this method, certain dimensions are cut down to make the model smaller, while retaining its character and credible proportions. Some HO kits have been compressed in this manner. In HO scale, space is often at even more of a premium than in the garden.

When compressing a structure, make the ground-floor doors and windows to the correct scale. An average doorway for people is around seven feet tall ( $3\frac{1}{2}$ " in 1:24 scale). A quick way to see if a door is



2. St. Michael Church, as it appeared in the Pola catalog.



3. In order to fit the allocated space on Dart and Dottie Rinefort's railroad, the church was reduced in size without affecting its scale or character.

the proper size is to place a scale figure next to it and see how it looks. Once doors and windows are correctly scaled, you can start compressing. In actual practice, windows can actually be made slightly smaller than scale without changing the general appearance.

In most cases, the most important feature of the structure is its façade. If, when planning a façade, you put the windows and doors in their correct relative positions, you can cut down the overall width of the building by trimming the wall areas, including spaces between doors and windows. The second story can also be compressed. The next time you are at Disneyland, look at the Main Street buildings. You will notice that the second stories are compressed to give the illusion of taller buildings. The second story is, in fact, not full height and the openings are smaller. You can see an example of how this works in my October 2008 article (page 73), which shows how the Hoboken, New Jersey, terminal façade was compressed.

Another way to fit a structure into a small space is to reduce the depth of the building. Let's say the side walls of a model structure are 15" long (30' in 1:24 scale). You could cut this down to 10" (or 20' in 1:24 scale) without losing the flavor of the building.

Photo 1 shows an example of how I used selective compression when building a model of the Silverton house that I discussed in the last issue. I originally drew my plans for the house based on actual



4. Work continues on the Lackawanna Terminal. This is a picture of the courtyard in front of the station. The Ferry House is on the left. The statue is of Sam Slone, founder of the Delaware & Lackawanna Railroad.



5. A modern photo of the prototype Ferry House on which the 1952 model was based. The model was selectively compressed to get everything to fit into the available space.

scale sizes, thinking that the building was small enough that no compression was necessary. I was surprised, when I built a mockup, to see how big the model actually was, so I decided to compress it. The picture shows the structure built full size at 1:24 scale (right), then compressed by 10% (left). Notice that the doors and

windows are the same size in both versions. The cut-out figures are 1:20.3, 1:22.5, and 1:24 scales, respectively. As you can see, this building could be used for all these scales if the door and window sizes were changed accordingly.

The purpose of the above exercise is to show how you can reduce a building's

dimensions so the structure can fit into the available space without altering its general appearance. In most cases, if you get the doors and windows right, the building will look okay. For example, if you have modeled in 1:24 scale and decide to change to 1:20.3 scale, you may still be able to reuse some of your structures just by changing the doors to 1:20.3 scale.

Another example shows how a stock, plastic kit was selectively compressed. Photo 2 shows Pola's St. Michael Church as it appeared in the Pola catalog. This is how the structure was intended to look. However, in order to fit it into the allocated space on Dart and Dottie Rinefort's railroad, they used selective compression to decrease its depth. The back third of the building was cut off and the vestibule walls were cut down and reconfigured (photo 3). The result is that the building can now fit into a smaller space but still retains its original character. Several other modifications have been made, such as the addition of front steps, custom work on the steeple, and the addition of stained glass, which makes this a good example of kitbashing as well.

Progress continues on the Hoboken Terminal. Photo 4 shows the courtyard area that ties together the Ferry House (on the left) to the main railroad-terminal waiting room at the right and to the rear. The train sheds are at the right and are in front of the waiting room. Through the use of selective compression, the depth of the main terminal building was reduced, allowing the sheds to be made longer and making room to add the Ferry House. This is not exactly how the prototype is laid out but it captures the look and feel of the complex.

We are modeling 1952. Photo 5 shows a modern view of the area so some details are different. However, when comparing it to the model, you can see the basic layout of the area and some of alterations that had to be made to the model to get everything to fit. The important thing, when designing a model such as this (and using selective compression), is to maintain the character and feel of the subject.

In the next issue I'll begin talking about plank-on-frame and plank-on-solid construction. 