

It's only a paper moon

Budget-friendly architectural details

By Ernest Badgett

SOME TWENTY-FIVE years ago I pondered two vexing questions: One, how can we save the world from being completely buried in scrap cardboard? And two, how can theatres with limited budgets produce the virtually endless array of architectural detailing and other doodads they need to dress their sets?

The answer, of course, is to use the one to make the other. A quarter century has passed since I had that revelation, a period during which I have devoted so much time experimenting, refining my technique, and just generally messing around with this often-overlooked building material that I have become known in some quarters as the Cardboard King.

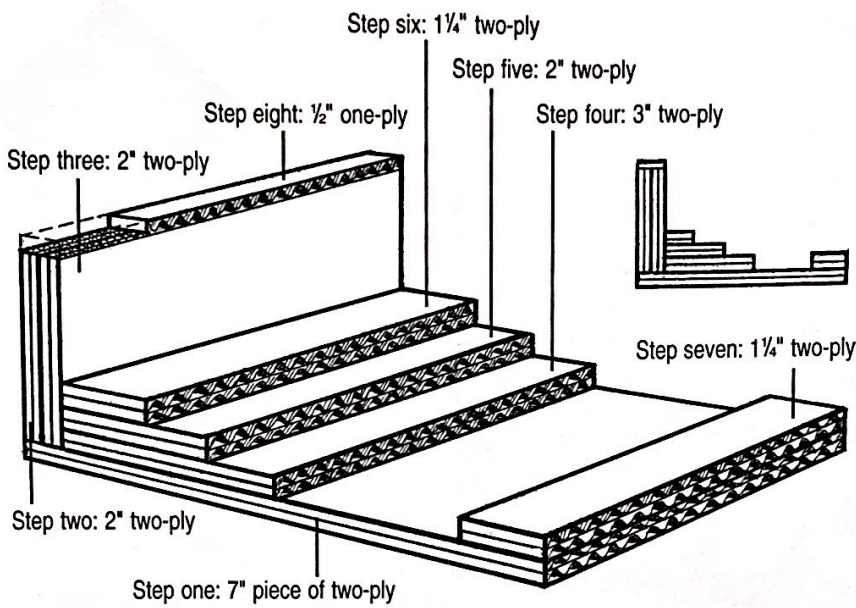
Cardboard is cheap, tough, and lightweight. Things made of it can be painted, cut, peeled, spliced, pieced, bent, split on a table saw, drilled, screwed, glued, carved, twisted, stapled, riveted, wired together, and taped. Unless your daddy owns a lumberyard, you'll have a hard time finding building material that costs so little and does so much.

I often ask people who attend my workshops, "How many of you have used cardboard in the past and swore never to do it again?" Usually several hands go up. Early in my experiments with cardboard, I felt the same way, until I realized I was failing because I was doing it wrong. I was asking cardboard to do what it cannot do, and I was totally ignorant of the vast number of things that it can do.

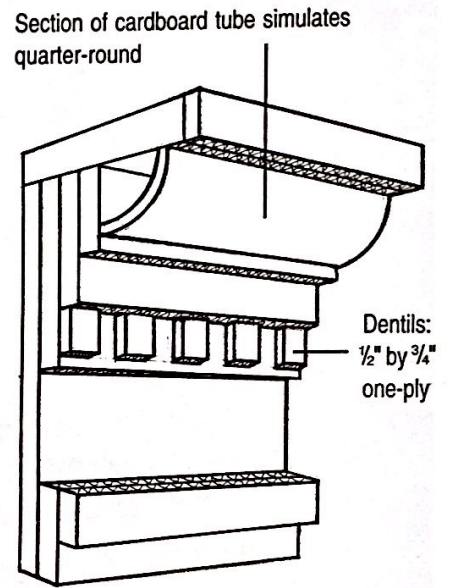
Cardboard does not like to stay flat, period. So don't use it in great big sheets and hope it will be still. It might for a while, but eventually it won't. Cardboard works best in multiple plies and in pieces made up of several small components. It makes a terrible wall, but it makes excellent ornamental trims and doodads. (There's that word again. I define *doodad* as any smallish object or ornament whose precise name I either don't know or am too lazy to remember at the moment. That thing I'm holding in the photograph on the facing page is a good example: a six-ply Greco-Roman architectural doodad if there ever was one.)

The one exception to my advice about using cardboard in large sheets is imitation brick masonry. The puckering, curling, and bulging that cardboard in large sheets wants to do is caused by uneven stresses between the paper surfaces. On a cardboard brick wall, one of the faces is scored uniformly (to simulate the mortar joints between bricks), and the stuff lies agreeably flat.

Here's how easy it is to make a brick wall. Get some large sheets of one-ply cardboard (the familiar corrugated sandwich of which cardboard boxes are made). Paint one side. You'll want to position the cardboard so the corrugation will run horizontally when the finished piece is hung, so the mortar joints will look right. With an X-Acto or box knife, score through the top ply to create the horizontal mortar joints. These should be about $\frac{1}{2}$ " wide and spaced the thickness of a brick, typically about 2". Use a pencil to rout the mortar joints after scoring them, using the corrugation gutter underneath as a guide, and remove the facing sheet only. Staple the card-



Construction of basic cardboard crown molding.



Dentils and sections of tubing add texture and interest to basic molding.

MAKING CROWN MOLDING FROM CARDBOARD

HERE'S A RECIPE that will enable you to make a roomful of crown molding, pronto.

First, measure the perimeter of the set that needs top trim. Add about three feet to make up for the inevitable mitering screw-ups and other small disasters. For the purposes of this exercise, let's assume you need thirty feet of molding.

Gather much cardboard, two-ply, and a little bit of single-ply. Using a table saw with a blade that you don't mind dulling beyond belief, saw it into strips across the corrugations in the following dimensions:

- 30' of 7" wide two-ply
- 90' of 2" wide two-ply
- 30' of 3" wide two-ply
- 60' of 1 1/4" wide two-ply
- 30' of 1/2" wide single-ply

Cut it all at once and stack it by size. You'll need carpenter's glue and some hot glue to tack with. An uncluttered work surface six or eight feet long would also be nice. The pieces you make should not be longer than your work surface. Remember, real molding is not one continuous thing: it has joints. So

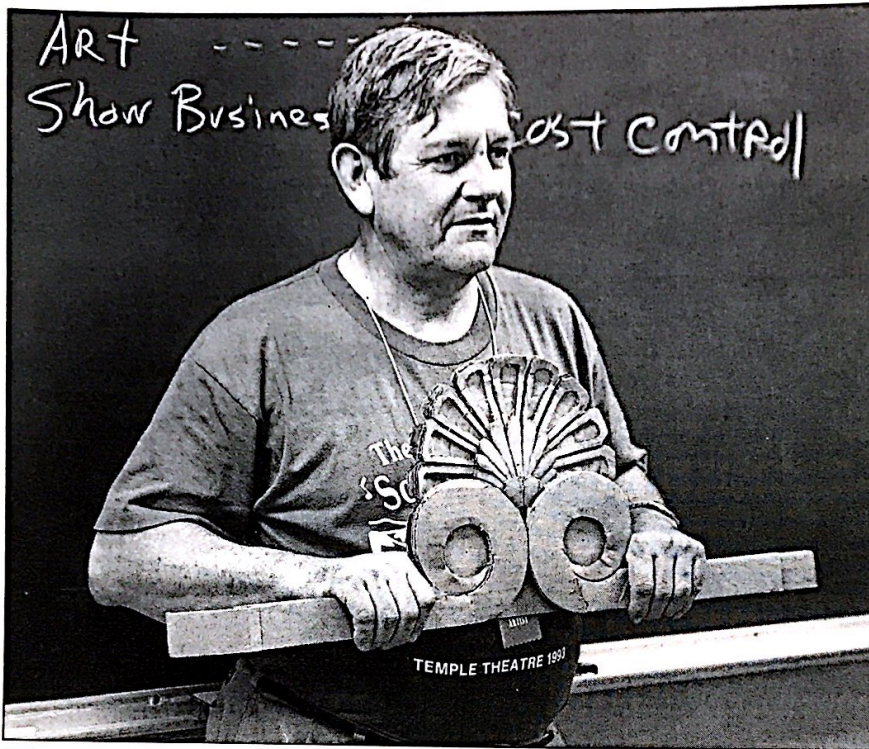
will yours. If you have to piece together any particular width to make one of the six- or eight-foot sections of molding, make your joints tight and stagger them to avoid weak spots in the finished board.

Okay. Lay a base of 7" two-ply on the work surface. At right angles to that piece, and flush with one edge, glue on a 2" piece, forming an L shape. Immediately glue another 2" strip directly to the face of the first 2" piece. Now you have an L with a double-thickness short leg. Glue a 3" strip flat onto the 7" base so that it butts the 2" pieces. This will help brace them in position. Directly on top of the 3" piece, glue another 2" piece, also butting the 2" upright. Directly on top of that one, add a 1 1/4" strip, also butting the upright. Now move to the other edge of the 7" base and glue a 1 1/4" band, flat to the base and flush with the edge. Finally, glue the 1/2" single-ply band along the edge of the doubled 2" pieces to conceal the rough surface. Set the molding section aside until the glue is dry, and it's ready to paint. After you've made one or

two six-foot sections of this molding, you'll be able to assemble it just about as fast as you can move.

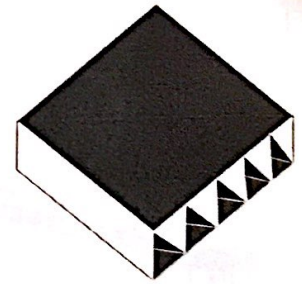
Install the molding to your wall flats with drywall screws; usually three screws per board are sufficient. Place the screws in shadow bands. The audience will never see them, but you will be able to find them at strike.

This design is a basic crown molding. For more impact, you can paint it in contrasting colors, or marbleize the frieze panel, or dress it up with rosettes or dentils. The latter are small rectangular decorations attached to the lower portion of the built-up part of the molding; you can make them from pieces of one-ply cut to 3/4" by 1/2" and glued in position as shown in the drawing at right above. You can also get an elegant look by adding pieces of cardboard tubing sawed into quarters. Glue the tubing into the top corner of the molding with the convex curve out and its quarter-round (as in the drawing); attach it with the concave side out and you've got a lovely cove molding.



DON CORATHERS

The author leading a workshop at the Thespian Festival.



board to a flat, driving the staples through the mortar joints, where they won't be visible to the audience. Once it's in position, cut and clean out the vertical mortar joints. (This is another advantage, in addition to thrift, of cardboard bricks over a store-bought preformed sheet: since you don't make the vertical joints until the wall is in position, you can bend the thing around a corner without sacrificing realism.) The exposed corrugation doesn't need to be painted; from audience distance, it does a convincing impression of mortar.

THE DEVIL'S IN THE DETAILS

As often as not, the difference between a good set and a great set lies in the details: trim pieces like moldings around windows and doors, the doors themselves, cornices, baseboards, chair rails, picture molding, fireplaces and mantelpieces, carved relief panels, and other architectural ornaments and doodads. To this list we might as well add columns, pilasters, coffers, stair ornaments, and

gargoyles. One thing all of these set elements have in common is that they are outrageously expensive to construct in traditional media. But cardboard is free, or at worst cheap. And with some experimentation, you can learn to manipulate this versatile material to make all of these things and countless others. Now, some cardboard construction methods are labor-intensive, but particularly in educational theatre, it's usually easier to find shop labor than an extra couple thousand dollars for the set budget.

These are the three things you need to do to have drop-dead gorgeous sets with little or no strain on your budget. First, become familiar with exactly how things look and how they are made. Second, experiment with cardboard: cut it, glue it, coil it, laminate it, paint it, drive screws and staples into it, saw it, twist it, force it into a hundred shapes, torture it to find out what it will tolerate and what it will not. And finally, have the confidence to try anything. Over time (and less of it than you will initially suppose) you will

develop a degree of mastery over this stubborn but versatile medium that will transform your sets without breaking your budget.

It is important to remember that ours is a world of shadows and illusion. Not only is it unnecessary for any given item on stage to actually be the thing it appears to be, it is often bothersome if it is. A castle wall does not need to be twenty-four inches thick as long as it looks and, for our limited purposes, behaves as if it were. To have a two-foot thick stone wall on most of the stages I have seen would be downright inconvenient, especially if it is subject to a quick change. Make it an inch or two thick, blind hinge it, and fly it.

Our job is to create not reality, but illusions of reality. We provide targets for the lighting designers to hit. In effect, we make shadows, and what we make them with is far less important than whether or not our shadows define appropriate shapes and forms to enhance and advance the story. If a cardboard cornice above a door helps sell the idea of opulence when opulence is called

for, we have succeeded, and we don't have to go broke doing it.

WHERE TO FIND IT

You can buy cardboard, but you probably don't have to. Large household appliances, auto body parts, and furniture all are shipped in one-ply or two-ply cardboard, both of which are useful in building scenic details. Visit body shops and appliance and furniture stores in your town and ask for Dumpster privileges. For large cardboard tubes, try carpet stores; for smaller tubes, fabric shops and upholsterers.

Cardboard has two major limitations: it does not like routers and it does not like water. Its incompatibility with water can present a problem when painting time rolls around. For brickwork, where absolute flatness is required, I use spray enamel only. But trim pieces, which are always multilayered, can be painted with water-based latex paint without warping or separating so long as you don't slop the stuff on in huge amounts. Use good judgment, paint

two thin coats without added water, and let it dry between coats.

Fire, too, in large quantities, is bad for cardboard, but oddly enough for a paper product, it is highly flame resistant. Its natural tendency not to burn can be enhanced with a flame retardant solution. There are several good ones available. I use Rosco Flame Retardant, which can be brushed or sprayed on as a top coat or mixed directly into the paint. If you have a play that uses a lot of flash pots, it's a pretty good idea to avoid getting them close to anything but granite anyway.

While we're on the subject of hazards: probably the single most destructive element of any theatre production, besides of course actors, is inept or clumsy stagehands. Not much can be done about that, but fortunately most of the really ornate, fragile stuff is in the crown moldings and cornices, which are stationary and happily out of reach. Multilayered, composite structures of corrugated cardboard, once they are painted, are remarkably tough and

will tolerate a surprising amount of abuse. There is, incidentally, a product called Sculpt-or-Coat that you can brush onto cardboard that will make it harder and substantially more durable.

When I present a workshop on the scenic uses of cardboard, one of my chief objectives is to have people walk out (preferably not before the end of the session) saying, "I can do that." The plain fact is that anybody who is good with his hands—drawing, painting, sewing, or generally making things—can get the hang of this. If you build sets on a budget, you ought to give it a try.

Ernest Badgett has been involved in the theatre since the time he played a pumpkin in his second grade Thanksgiving play. He's worked with high schools, colleges, community theatres, and professional theatres, primarily as a set designer, painter, and prop maker. For information about his workshops, demonstrations, and instructional videos, write him at Cardboard King Productions, P.O. Box 3847, Sanford, NC 27330.

ADVERTISER INDEX

For more information about advertisers in this magazine, circle the appropriate number on the reader service card.

Reader Service Number	Page Number	Reader Service Number	Page Number
40	ACTeen	17	Ithaca College Theatre
23	American Academy of Dramatic Arts, Eastern	159	The London Academy of Music and Dramatic Art
24	American Academy of Dramatic Arts, Western	21	Muhlenberg College
91	American Musical and Dramatic Academy	170	National Foundation for the Advancement of the Arts
84	American Musical Theatre of San José	46	New York State Theatre Institute
4	University of the Arts	101	Oswego Summer Theatre Institute
52	Ball State Summer Theatre	50	Point Park College
47	Barat College	70	Roosevelt University Theatre
177	Boston University Theatre Institute	32	Rosco Laboratories, Inc.
200	University of California Los Angeles	86	The School for Film and Television
82	Choate Rosemary Hall	182	Shenandoah University
128	Columbia Gorge School of Theatre	109	Singers On Stage
178	Dramatic Publishing Co	8	Stagecraft 1
35	Drew University	48	Walnut Hill School
58	Ensemble Theatre Community School	65	Walnut Hill Summer Programs
139	Idyllwild Arts Academy	41	Webster University
54	Interlochen Center for the Arts	25	Wright State University
			Page 46
			Page 35
			Page 45
			Page 7
			Page 11
			Page 11
			Page 4
			Page 10
			Back Cover
			Page 19
			Page 18
			Page 10
			Page 46
			Page 44
			Page 45
			Page 6
			Page 33