

# FINISHING A FRAG BUILDING SHELL

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What you have in front of you is a shell of a building, made of 1/2 inch plywood walls, and roof panels made of 1/8<sup>th</sup> inch mahogany. And, you may or may not have a chimney glued on an end or both. The walls should already be glued together and nailed with small brads, and have door and window openings cut out. The roof panels should be separate and will be glued on and nailed as described in Paragraph 6 of these instructions. Before actually describing how to finish one of these shells, let's cover various things you should know, and may have to purchase.

**GLUES:** I primarily use 3 types of glues. As stated above, the walls are already glued together.....using "**Gorilla Glue**" .....if you needs some you can pick this up from an **Ace Hardware** store. BUT BE VERY CAREFUL....this glue is very sticky and I have not found anything to remove it from my hands.....except scraping it off with sand paper. So use latex gloves as a precaution. When using this glue, only apply a little on the inside edges of whatever you are attaching. It tends to expand when hardened and will leave hard bubbles around the edges of the joint, so applying it to the inside areas will avoid bubbles occurring on the outside areas where you are finishing the model. I also use **5 Minute Epoxy**. This can be found at **Ace Hardware** as well, in a squeeze tube that allows equal amounts of Part A and B to be pushed out at the same time. I use this glue to apply plastic sidings and roof sheets. **ACC Glue** ..... this glue is made by a number of manufacturers and can be thin or thick. I use the thicker gap filling version mostly. The brand I use is called **Balsa USA Gold**.....and is sold by **Balsa USA** (<http://www.balsausa.com/store/>) I buy a (2) pack of 2 oz thick and (1) 8 oz bottle of Q-Shot Accelerator spray. You can buy these in various combinations, but one 8 oz Accelerator should last with (2) 2 oz glue packs. You apply the glue first to one area, spray the Accelerator to the area you are joining together, and mate both. Hold them for a minute. You can also apply the glue, join the parts and then spray the Accelerator. This stuff will bond your fingers together real quick, so be very careful with it as well. You should probably get a bottle of **Un-stick Debonder** just in case. I have used this type ACC Glue for years and find it very reliable. Once in a while you may also need plain old **Elmer's White Glue**, especially if you are adding wall paper to the inside walls.....which means you are finishing the inside of a room.....which is not really required for most of our buildings.

**PAINT:** To cover outside walls I use a water based **sand textured latex paint**. This type replicates a stucco finish. This paint can be found at **Home Depot or Lowes**.....it lasts a long time so get a small can. Have them premix colors for you (this means buying multiple cans)..... because if you get white paint and then spray a color onto it, the white will show thru very easily from repeated handling of the building at the battlefield and looks bad. Our FRAG buildings are primarily pastel colors.....since they are of French Normandy architecture, but any muted color will work....just no bright oranges, purples etc etc. You can also paint a wall with regular latex paint without the sand texture if you want. Window and door casings are also painted, usually a different color than the main building color, and I use **Krylon Spray Cans** for this. This paint also applies to window frames, doors and shutters or any other trim you may be using. These paints sell for \$4 for a 12 oz can.....buy only the "flat" finish....not gloss or matte. You will use a lot of this black paint.....so get more than one can

**PLASTIC WALL & ROOF SHEETS:** If you chose to not paint a wall, you can glue on molded plastic sheets of various reproduced patterns.....such as brick, shingles, lap siding, etc. We use these materials almost exclusively for our roofs, since gluing on individual tiny shingles in 1/16<sup>th</sup> scale would take you forever. There are two main suppliers of these pattern sheets, and you want to purchase the 1" scale sizes, not smaller. **Model Builders Supply** (<http://www.modelbuilderssupply.com>), whose sheets are larger and cost more than the next group called **Precision Products** ([http://www.aiii.info/precision\\_products/](http://www.aiii.info/precision_products/)). Both of these type products can be purchased locally at Caboose Hobbies and Norm's Dollhouse Supply, or over the internet. You can also get the bass wood strips you are going to need at these two shops.

**DETAIL ITEMS:** Items of this type consist of chimneys, cupolas, weather vanes, special molded frames for the windows, shutters for the sides of the window and door casings, individual stones and bricks, and if you are finishing the inside: fireplace mantles, picture frames, baskets, furniture, etc etc. These are usually made in a scale of 1" to the foot (which is 1/12<sup>th</sup> scale). Our 1/16<sup>th</sup> scale tanks are 3/4" to the foot, so these 1" detail parts will be oversized for the most part. They will not always look right on a 1/16<sup>th</sup> scale building, so you need to be careful what you use. Detail parts also come in a scale of 1/2" to the foot, but these are way too small because they work out to 1/24 scale. The higher the scale number.... the smaller the part actually is. So, instead of trying to make 1" (1/12<sup>th</sup>) scale parts work all the time, such as for windows, you may have to make individual window and door casings from bass wood pieces, which will fit over the edge of the store bought window frames (use G-Scale windows from Caboose and Norms), or you may use frames that I have cast up in resin to fit the need.....more on this below. Detailing for a building can also include adding the slanted and horizontal wood trim strips found on a "Normandy" style building. For ideas, look at these style buildings found thru an internet search. These wood strips usually go on last and are glued on.....but I have found that they easily pop off of either type of paint, so I also nail them to the building. This means pre-drilling a couple small holes in each wood strip and nailing a small brad thru the holes. If you don't do this, then the wood strip will probably split when nailed. Of course you also have to paint the nail head to match whatever color you painted the wood strip.

**TOOLS:** Various tools are handy in making these buildings. Here's a list of most:

Razor saw.....with fine tooth blade....probably at least 20 teeth per inch

Xacto knife, with 4-5 extra #11 blades

Paint brushes: 1" wide and 2" wide, soft bristle. And a few small type artist brushes: Size OO, O, 1 and 2

Rags and Latex gloves

Paint thinner

Straight edge....metal one preferred with inches shown

Yard stick if you are working with a large building

Pencils

Small nippers and various pliers

Small ballpean type hammer

Small brads (nails) for securing the roof to the walls.....1/2" long at the most, w/o a flat head

Sand paper: Very fine and medium course

An old toothbrush for scraping areas that you do not want to damage

Some plastic clips to hold things down.....Clothes Pin works as an alternative

T-square: I have a 6" and a 12" one.....these come in handy to make sure all is square before glue dries.

Small tweezers

Small screw drivers....both flat and Phillips head

A small wood file....6-12" long with medium fine teeth

Piece of flat 1" thick foam rubber about 12" x 24". This is for laying finished building sides on, so they are not damaged as you work on other sides. This is also useful when working on finished tank models.

And if you have the following power tools, they come in real handy:

Band saw..... Bench sander..... Drill press.....Jig saw.....Overhead Radial and Table saws.

**So now let's get started:**

1. Your roof pieces should be separate from the wall pieces.....and hopefully I beveled the two edges that come together at the roof peak. They should form a fine joint when glued down. If the roof pieces are still nailed to the walls, take them off. If your building has a complex roof, the pieces will be numbered so you know where they go when installed. Each roof piece is to be glued on (then nailed here and there with 1/2" brads). About an inch of each roof panel will "overhang" the walls.....just like real buildings. Make sure this overhang is spray painted black, so figure out where the overhang is on each roof piece and just spray a black swatch 1-2" wide for the length of the panel that will overhang. On most roofs this is the two ends and the front or back overhang. You can also spray paint the entire underside of the roof

black if you want, but no one will see all of it so this is a waste of paint. **DO NOT glue the roof panels on yet.**

NOTE: You should always wash a cast window, frame, door, anything, in mild soap and water before painting. Otherwise the paint will not adhere over time.

2. First...lets work on the windows. If you are not using pre-made assemblies (that you happen to find at the store that look right), or I have cast them up for you to use then, these assemblies have to be scratch made and consist of (1) the outside casings around the window frame, (2) the window frame itself (which is the wood pieces that surround the glass panes), (3) the structural wood pieces to hold the frame in place, and (4) if you are finishing the inside of the building, you will also need to make inside casings. NOTE: The sizes and shapes of both outside and inside casings can vary and be as fancy as you want. Norms Dollhouse has a wide variety of these. Typically the width of each is no more than 1/4" or 3/8" x 1/32<sup>nd</sup> thick....but you can vary from this a little. All of these parts need to be painted BEFORE you install them. Painting afterwards is a pain. Pick an accent color that goes with your main building color. Window frames can be a different color too, if you want that. Since the walls are made of 1/2" plywood and the window frames are usually 1/8<sup>th</sup> inch thick, we need to glue structural strips that are about 3/8" wide around the inside rear of the window openings. However, you must always make sure that the window frame sets flush with the final surface material that you are using to cover your walls (see Paragraph 4 below). Thus if you are "painting" the wall, then the width of the structural strips could be less than 3/8" and if you are using plastic patterned sheets (which in themselves may be 1/16<sup>th</sup>" thick), then the structural piece may need to be a little wider than 3/8" to make sure the window frame is flush with the surface of the plastic sheet. The reason for this is when you add the outside window casing, it must lay flat and level on the wall surface and over the edge of the window frame. These structural strips are made of bass wood and are usually 1/16<sup>th</sup> or 1/8<sup>th</sup>" thick....depending on the fit of the window frame into the opening....or if I made an irregular cut to the opening.... ☺. These structural wood strips are set flush with the back edge of the wall, which leaves about a 1/8<sup>th</sup> inch recessed area in the front...for the window frame to set into. Figure 1 below shows the front window with these structural strips installed and the 1/8<sup>th</sup> inch gap in front for the window frame to set in (when installed, the window frame will be flush with the outer surface of the red brick). Figure 2 shows a rear window view with a dark broken window frame installed and the inside casings attached. Figure 3 is a section view showing all the pieces except the window frame is not installed....it goes into that opening on the left side behind the outside casing (little bit of red brick edge is evident). Please note in Figure 2 that casings always overlap the structural wood strips so that there is a nice finished look. Do the same with the front casings....they overlap the window frame (as noted above).



Figure 1



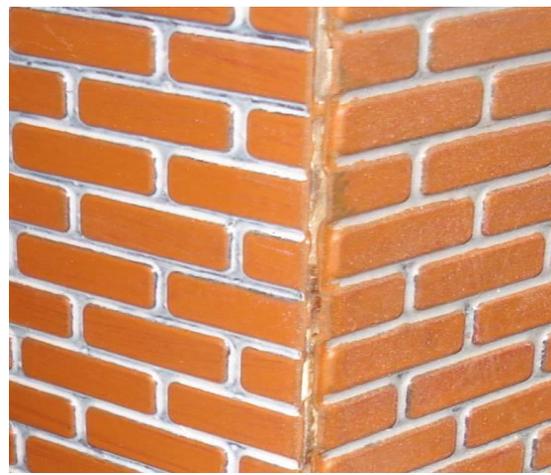
Figure 2



Figure 3

The last comment about windows is that you should glue clear plastic sheets in place from the back, to replicate glass panes. Cut them to fit snug up against the cross bars, just about as wide as the window frame, and use ACC glue to attach. These plastic sheets can be cut at odd angles and scratched if you are simulating broken glass panes. Any kind of clear thin (but sturdy) plastic will work. NOTE: See Paragraph 7 about when to install these glass panes.....its not now.... ☺

3. Door openings are treated in the same fashion as windows, except that you can either install the structural wood strips to be flush with the front (which means the door is then recessed 3/8<sup>th</sup> of an inch) or flush with the rear (which makes the door flush with the front building wall). In the first case, glue the outside wood casing to overlap the structural wood pieces and in the second the casings can be flush with the edge of the door (not overlapped). Remember to pre-paint everything before assembling. NOTE: Shutters can be added to the sides of these door and window assemblies (and painted a different color if you like), but should only be added after all the painting and assembly of the building has been completed. Nail these on just as you do other trim pieces. They tend to pop off from handling if not nailed.
4. Now take the shell assembly with all the windows and doors installed and add whatever covering you have decided to use for each wall surface. This is the time where you start using that 1" thick foam rubber piece to protect your finished work (if you didn't already start before). If you are going to paint, then it may be beneficial for you to use masking tape and paper to cover each finished window/door to keep from slopping paint on them. Don't press the masking tape too tight as it will pull the casing paint off when you remove the paper. Usually its best to paint one wall at a time and let it dry thoroughly before moving to the next. Brush the paint on from top to bottom, not sideways. Brush strokes will probably show up and its best if these are vertical. If you are using the sand paint, you may want to apply two thin coats per wall. Let it dry between coats. Be careful not to slop paint on any finished frames and casings if you did not cover them with paper and tape. If you have decided to use plastic sheets for wall covering, such as a brick pattern, you have to measure, cut and fit the brick to each wall surface and around the finished window and door casings....all before gluing it down. This can be a lot of tedious work, so please NOTE.....often times I will add the plastic wall material first before I install the outside casings around the window openings. This saves a lot of time and the outside casing can be glued on top the plastic sheet, overlapping the window frame. But the casing tends to pop off over time, so I also pre-drill and nail a small brad thru the wood casing strips to secure them (see Detail Items paragraph above). Depending on what the brick/stone pattern actually is, you also have to figure out how they will butt joint at each wall corner/edge, so they look plausible....no open joint areas....no missing bricks or stone.....nothing out of alignment. Any small openings should be sealed with glue so when you paint the pattern, no joint opening shows. If you are using a board and batten plastic pattern sheet, installation is simpler. You can always cut the plastic sheet a bit short along the wall edge and glue a 1/4" wide vertical wood strip (usually 1/16<sup>th</sup>" thick is enough) at each wall corner to cover the end of the plastic sheet. When you glue the vertical strip on the other side wall, just overlap them so there is a nice joint. If you are applying plastic sheets, bond these to the wood walls with 5 Minute Epoxy.....spread out a thin coat here and there, it does not have to cover the entire plastic sheet, but be sure it is applied along all the edges so nothing comes loose later on. Once the glue has been applied and the sheet is fitted in place, lay a flat board over the plastic sheet and add a weight of some type to keep it all flat against the wood surface while it is drying. Be careful it does not shift position when adding this weight. And, by the way.....5 Minute Epoxy takes 10 or more minutes, not 5 to cure. Figure 1 shows how brick (or stone) should fitted at a wall edge so it matches up and has very little openings. I didn't do a very good job of matching brick courses as I moved up the wall.....it should have matched perfectly. Figure 2 shows how the gaps are glued shut in preparation for painting. Use ACC glue.



One last thing about walls. Not all walls of the building need be covered with the same material. Its OK to mix sand paint on one wall with plastic patterns on another. And even doing this on the same wall is OK.....like brick below and paint above. Just make it plausible.

5. Once the walls and window/doors are all done, you can add the Normandy style slanted and horizontal wood trim strips, IF you have decided to do this. If not, skip this step. Be sure and paint these strips prior to installation and keep a similar theme throughout. And don't forget to pre-drill and nail all of them.
6. Now for the roof. You will most likely be using the pattern sheets for wood, tile or slate shingles, but I sometimes use corrugated steel for industrial type buildings, and even some old fashion fine textured sand paper painted black, to simulate a tar paper surface. This was not very common during WWII, but if used sparingly, its OK. If you are up for the punishment, you can always glue down individual wood shingles on the roof.....just keep them straight, work right to left, from the bottom of the roof to the top, and use the 1/2 inch scale ones (not 1" scale).....in this case smaller is better.....but means twice the work. But more than likely you will just use the plastic pattern sheets. So, first cut off all the edges of these sheets, so that there is no perpendicular side plastic edge, which are called fascia strips (usually these are only a 1/16<sup>th</sup> inch overlap of the plastic). This is done because you can not guarantee that this plastic fascia edge strip will exist on all sides of your roof. Instead, we are going to add our own fascia edge strips made from bass wood..... So, now you have a flat plastic pattern sheet that can be glued to the 1/8<sup>th</sup> inch mahogany roof by using 5 Minute Epoxy. Use the same procedure as described with the walls. Glue does not have to be everywhere, but should always be along all the outer edges and at the roof peak, and lay a board over top with a weight while the glue cures. This will keep the plastic from curling up here and there.....everything will be flat. If you did not cut the plastic sheet to precisely fit the roof panel, go back now and cut off any plastic that sticks out beyond the edge of the roof. Next, paint the roof whatever color is appropriate.....grays, greens (for slate), browns, red (for tiles) and blacks. Be sure you do not splash over onto that black paint that you put around the bottom of the roof panel (see Paragraph 1 above). Next take some bass wood that you bought which is 1/32<sup>nd</sup> inch thick (or thereabouts), by 1/4" wide (these usually come in 18" and 24" lengths), and paint them a black on both sides. Just spray them all over and set them aside to dry. Once dry, you are going to glue the appropriate length to the sides on the roof panel (this is the new fascia strip). Don't glue a fascia strip to the panel side where the roof peak is created. This joint is hidden and need not have a fascia strip. Usually its just the 3 other edges of a roof panel that need these fascia strips. The strips are to be glued on so they are flush with the bottom of the roof panel and stick up enough to hide the side edge of the plastic sheet. The purpose here is to prevent someone from looking under the edge of the plastic sheet. Now glue the roof panels to the wall shell using ACC Glue, and add a few 1/2" nails to guarantee they do not come loose. Cover the nail heads with the same color as the roof. If you have a chimney coming out of the roof, cut away just enough of the plastic sheet so that the chimney sets snugly inside. Glue it on. And if you are up to adding flashing around the chimney where it set into the shingles, use a 1/2" wide strip of heavy duty aluminum foil. It should be folded and glued (with ACC) so that 1/4" is attached to the chimney and 1/4" to the shingles.

Press with your thumb to impress the foil into all the grooves and cracks. Take a look at a couple of real chimneys to see what this flashing looks like. When the roof is all done, you should be able to (1) look at the underside of the panel overhang and only see black, (2) only see a black fascia strip around the edges of the roof panel and (3) only see shingles (or other style) on top. What is left now is only to glue a “V” shaped bass wood strip over the roof peak. This is to hide the joint of the wood panel and the plastic sheet. This strip usually comes in 18 to 24” lengths (from Caboose or Norms) and is formed at a 60 degree angle, not 90 degrees. Obviously paint this strip before installing.....the same color as the roof.

7. After the building has reached this point of completion (and hopefully before you installed the plastic window panes), take a can of black spray paint, holding the can about 15” away from the building wall and roof.....shoot the spray very quickly from side to side, just to add a layer of dirt over what you have created. This is a fine mist that floats onto the building, NOT A HEAVY COAT. You can also use brown or gray paint for this. You may have to do this a few times to make it look dirty.....don’t over do it. After this is dry (2-3 mins), add chalk stains all over the place to make realistic weathered patterns on the walls and roofs, running down like dirt or water stains, etc etc. The chalk can be black, gray, brown, green and even rust colored. Once the chalk is in place you can spray over it all with **Testor’s Dull Coat**, which mutes all the colors and blends everything in. To know exactly how and what to do when adding weathering, you have to **study pictures** of old, dirty, weathered buildings. My personal opinion is that this effort can not be overdone.....because there is bound to be a really old, run down, dirty looking building somewhere in the world, to justify what you want to show. Now add the window glass panels and if you want to “lightly” spray the outside window with Testor’s Dull Coat, this will add a light hazy look to the glass panels, making it hard to see thru like some really old glass windows of WWII. This way, no one can see inside your empty building.
8. Your building should now be just about done. But of course you may want to add some final details like door knockers, knobs and hinges (probably should have installed these when you glued the door in place back in Paragraph 3 .... ☺).....and don’t forget the window and door shutters.....some can be partially damaged or missing.....and maybe a flower pot on the door stoop.....which you bought in 1” or ½” scale when you were at Norm’s Dollhouse Shop.....or perhaps some vines or ivy growing up the side of your building.....you can use very, very tiny leaf patterned dry flowers from **Hobby Lobby or Michaels Craft Shops** for this technique.....and how about a flag pole from a window, displaying the French or German flag from 1944. These are just some added ideas.

One more thought. If you built a structure that had the chimney added to the end of the house (usually made from a cut down 2x4), you can use brick or plastic sheet to replicate a masonry chimney, or you can also just paint it with sand paint to make it look like stucco...over brick. And if you really want to get creative....cut out a bit of the wood chimney and stick in some 1” scale bricks (**from Norm’s Dollhouse of course**) and leave these exposed from the sand paint. This looks like stucco that has peeled off of the brick masonry underneath. This is a neat trick to do with any of the building walls too....just don’t over do it.

So.....you are done.....doesn’t it look good !!!!!!!!!!!!!!! Aren’t you proud !!!!

Now you can do the next building from scratch.....make the ½” shell.....cut out the windows.....make the roof panels.....etc etc etc. There is no limit to what you can build....just find a picture of a Normandy WWII building and have at it.