



Korber Models

Scale Model Railroad Structures

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Model 304 O Scale Steam Locomotive Roundhouse Instructions

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Introduction

Congratulations, you have purchased the Korber Models #304 Steam Locomotive Roundhouse, one of the most popular O Scale roundhouses on the market! This roundhouse is used in thousands of great layouts including yours, and is a great complement to a number of super turntables.




We have provided a roundhouse and turntable planning guide on our web site www.korbermodels.com to help you plan the space for these key features of your layout, and it is a great first step in adding a roundhouse to your layout. You may also find that assembling the floor plan template in step 5 of the instructions will allow you to place a full size roundhouse footprint on your layout so you can get a good feel for how it fits in the space you have allocated for the roundhouse and turntable.








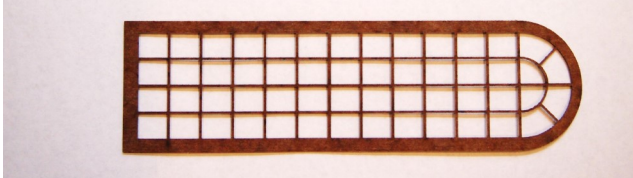
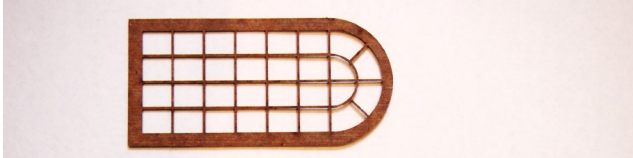
You can follow the simple, step by step instructions outlined in this document to easily assemble this great looking addition to your layout. We have covered not only the key required steps to build the roundhouse so you can get it on your layout the quickest, but have also included several optional steps to enhance the appearance of the roundhouse. These enhancements are based on submissions from modelers just like you who have taken the Korber roundhouse to the next level, and now by following a few extra steps you can achieve the same results.















Before you start you may want to read through the instructions to get a feel for the things you will be doing, and the basic order in which they will be done. You are on your way to adding a centerpiece to your layout, so let's get started!

Parts list & Templates – (What's in the box)

Take a few minutes to locate all the parts in the box to make sure you have all the pieces you will need and that the quantities are right. You may also want to spread these parts out so that you have a small separate stack of each part so it will be easy to find each part as you start the assembly process. If you are missing anything, please contact us so we can get you any of the missing items.

Qty	Description	Photo
2	Tall Side Walls (4 arched windows)	
2	Short Side Walls (4 arched windows)	
2	Short Side Walls (4 arched windows)	

Qty	Description	Photo
3	Back Walls (4 arched windows)	
3	Front Entrance Walls	
3	Long Skylight Windows (back)	
3	Short Skylight Windows (front)	
3	Smokestack molded parts (3 pieces each)	
3	Smokestack wooden dowel 5/16" by 3" (3 pieces each)	
12	Roof Sections (3 each, 4 sizes)	
8	Tall Laser Cut Arch Window & Laser Cut Glass	
28	Short Laser Cut Arch Window & Laser Cut Glass	
1	Sheet Clear Window Glass for Skylights	
1	Bag Roof Sand	

Qty	Description	Photo
6	Round House Doors, wood	
3/8" Wood Stock - refer to framing templates for part #'s		
12	51/4" Long Posts (#1)	
4	7 3/8" Long Exterior Wall, Center Posts (#2)	
2	10 1/8" Long Exterior Wall, Upper Beam (#3)	
4	9 7/16" Long Exterior Wall Frame, Lower Beam (#4)	
4	14 1/2" Long Interior Frame, Main Beam (#5)	
8	9 3/4" Long Lower Roof Support Beams (#6 - shipped length, to be trimmed per instructions)	
4	2 1/8" Long Interior Frame, Upper Roof Support Posts (#7)	
2	2 3/8" Long Interior Frame, Upper Roof Support Posts (#8)	
8	5 1/2" Long Upper Roof Support Beams (#9 - shipped length, to be trimmed per instructions)	
8	1/2" long Lower Roof Support Posts (#10)	
32	1 1/2" long w/ 45 degree ends (#11)	
2	3" Long w/ 45 degree ends (#12)	
2	1/2" Long Exterior Wall, Upper Roof Support Post (#13)	
Diagrams		
6	Floor Plan Layout Templates A and B (3 each)	
4	Framing Templates A, B, C, D	
1	Instructions	

Materials needed – (What else might I need that is not included)

The Korber Roundhouse, like any kit, requires a few additional items to complete the construction. We have included a list here, including some color and brand suggestions based on our experience; however you may use any product that fits the function. Please also note that some items are listed as options such that they either make assembly simpler, or are needed only for optional steps

Flat paint, choice of colors, for doors, windows, trim

“Red” automotive primer spray paint to cover all molded brick surfaces such as Krylon Ruddy Brown primer

Antique white craft paint for cement lines

Light grey or cement color paint for stone foundation portion of the walls

Brown color for interior wood pieces

Wooden doors could also be stained with any flat wood stain

RustOleum camouflage flat spray paints work well for painting window frames, skylights, interior wood and doors

Small paint brushes

Paper towels or soft cloth rags

Cyanoacrylate (CA) glue. Also known as Super Glue, Gorilla™ super glue works well

We really like the new Gorilla brand super glue because it is thicker than most super glues, and allows you to put in on a seam while holding the part in your hand, and will not run when you turn the seam on the side to put two pieces together. This glue is available in most retailers, including the larger home improvements stores

CA glue accelerator (optional) (turns any CA glue into quick set glue (optional)

White glue or carpenters wood glue for building wooden structure pieces

Medium grit sandpaper or emery board

Wax paper

Testor's Dull-cote™ (optional)

Small clamps (optional)

Flat black or grimy black spray paint (optional)

1 - Parts preparation & painting

Look over all the molded parts and remove any flashing that might be left on them. Flash is the thin pieces of the molding material that may be left in widow openings and along edges in the molded parts. This can quickly be removed with a razor type knife, a small file, or an emery board.

The parts in the kit will need to be painted to the final colors you select, and it is much easier to do this step before you assemble them. All the wall sections come colored in a brick red, however many modelers find a light coat of flat red auto primer spray paint gives not only a great look, but also makes it easier to add the mortar color lines to the walls later on. In a well ventilated area (outside is good) apply a coat to the inside (smooth side) of all the brick wall sections first; once dry, do the same to the other side. By painting the back side first you avoid any marks that might appear on the brick textured side.

Use a similar process for the skylight pieces, window frames, and doors. You may want to paint all three of these types of pieces the same color to create a theme for your roundhouse. You will also need to paint the wooden dowel pieces for the chimney a flat black.

The internal wooden pieces also will need to be painted or stained. Stain allows the adhesives to work better after the stain is applied and dries. Golden Oak or Walnut works well. However they are best painted once they are assembled and we will do that in a later step.



Option

An optional step that adds a great deal of realism to any model of a brick building is to add the mortar lines to

contrast with the red brick color. The ability to lay the wall sections on a flat surface, when done prior to assembly, makes this detail step simpler. There are several ways to do this, including use of water based paint (Light Grey latex well diluted with water until the consistency is as thin as milk), some commercially available products, and the use of light spackling compound to fill mortar joints. In all of these approaches the general concept is to spread the white product you are using over the brick walls, filling in the mortar line groves in the wall section, and then remove the excess from the top of the bricks. We will walk through the water based paint method.

One simple method we have used is to dilute some water based antique white or light grey craft paint to create a soupy like consistency

- Cover entire wall section with diluted white paint, letting it settle and collect in the mortar lines.
- Wait a few seconds and lightly wipe off excess paint using a slightly damp paper towel or soft cloth until paint is removed from the brick surface, but not the mortar joints.
- Keep flat and let dry before moving so the paint in the joints does not run.
- To remove haze from brick surface, apply a thin layer of Dull-Cote and wipe gently.
- It may require several applications to achieve the mortar line that you want
- A finish light coat of Polly Scale Grimy Black done with an air brush will tone down the grey wash and give it an aged look. (Apply lightly and highlight the area where you would expect dirt to collect flat black spray paint can also be used
- Applied Grimy black



The good news with this option is that if you don't like it, the paint is water based, so you can get it wet, remove it, and start over.



The bottom of the brick walls has the impression of a stone foundation. This area should be painted a cement or light grey color to represent stone. There are other stone details that also can be highlighted with the cement/stone color you choose. Once dry, this area should be washed using a mix of either watered down black paint, or alcohol and India ink. The purpose of the wash is to settle the black color in the groves/joints around the rocks and give definition. The wash should not be so dark as to overpower the cement/light grey color.

The tops of the side walls also have a cement colors "tile" along the top edge next to the roof line. They should also be painted the cement/light grey color.

2 - Assembling wood frames

The Korber 304 Roundhouse has internal, detailed scale wooden beams to provide both realism, and structural support. The provided 3/8" by 3/8" pre-cut wooden parts are used for this step. There are two different styles of these frames; one style will be used between each stall, and a second style will be used against each outside wall. In a three stall roundhouse you will build three stall-to-stall frames, and two outside wall frames.

To aid in the assembly, we have included full size templates upon which you can build the frame. The two templates are made up of two sheets of paper each; the one for interior (stall-to-stall) frames is labels parts A and B, and the templates for the exterior walls are labeled parts C and D.

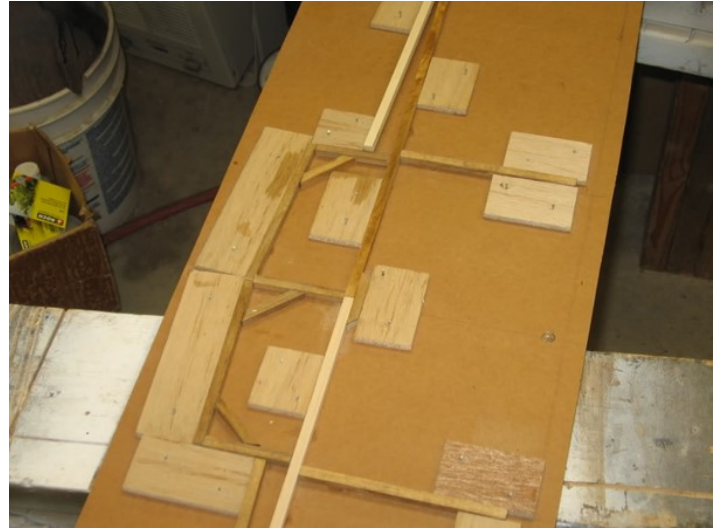
You should use white glue or wood glue to assemble the frames.

Interior (stall-to-stall) frames (you will need to repeat these steps three times).

- Attach templates A and B at match line and A><B Marks. When templates are matched up, verify that the frame measures 29" from one side to the other. Tape together and cover resulting single template with wax paper.
- Begin on the lower portion of the structure and glue in place posts #1 and beams #5 and connector #12– while making sure that the corners are square, add bracing pieces #11. When dry, proceed by dry fitting roof supports #7 and #8 to roof beams #9, and file the upper ends of the posts to match their contact points with #9. Then file the center contact points of the (2) #9 pieces first and then trim and file the #9 ends to match the length of the beam below. Glue in place, making sure #7 and #8 are square to #5. When dry, fit #11 pieces and glue in place.
- Next proceed to each outer section of the frame and dry fit #6 and #10 on each side, file #6 to match the connection at post #7 first, and then trim and file the ends to length. Glue in place.
- You may want to use small clamps to hold the pieces together while the glue dries
- Next, allow glue to dry thoroughly and repeat two additional times to make a total of three interior (stall-to-stall) frames.
- One optional suggestion is to build a template jig used to assemble the framing.

Exterior (outside) frames (you will need to follow these steps two times)

- Attach templates C and D at match line and C><D Marks. When templates are matched up, verify that the frame measures 29" from one side to the other. Then cover template with wax paper.
- Begin in the center of the structure and glue in place Posts #2 and Beam #3, and while making sure that they are square, add bracing pieces #11. When dry, proceed by dry fitting roof supports #9 and #13, file the ends to match at the center contact point first, then trim and file the ends to length. Glue in place.
- Next proceed to each outer section of the frame and glue #1 to #4 and #4 to #2, Again, while making sure that the pieces are square, add bracing pieces #11. When dry, proceed with dry fitting #6 and #10 on each side, file to match the connection at post #2 first and then trim and file ends to length. Glue in place.
- You may want to use small clamps to hold the pieces together while the glue dries
- Next, allow glue to dry thoroughly and repeat two additional times to make a total of two exterior (outside) frames.



Once all the parts are assembled and dry look over the joints for any excess glue, and remove prior to painting, sanding or the careful use of a sharp knife works well.

You can now paint and or detail these to your liking. You have several choices, a dark paint such as a dark brown works well, or you could use a wood stain to allow any wood grain to come through. You can also leave them the natural wood color they come in. You may also choose to add a light spray from a distance of flat black spray paint to give a grimy – sooty look.

3 - Sidewall construction

The sidewall consists of three pieces, which will need to be glued together to create a single sidewall assembly. It is important that the sides that touch, as noted by the circle in the photo, must be sanded before gluing to make a tight seam.

- Sand wall seams that touch between pieces 1, 2 and 3, it is important only to sand the portion of the side that will be

glued, the top portion of section 2 will not be glued, and will remain exposed.

- Apply and glue together making sure the bottom of the three wall sections are even.
- Let dry and repeat for the second side wall.

4 - Assembly & Install windows

Brick Wall Windows



The windows are made from two different pieces, a piece of clear plastic “glass” material laser-cut to match the frame, and laser-cut frames, which have a peel-and-stick backing.

- Carefully remove any hanging pieces from the window frames.
- If the window frames have not been painted, and if you would like to do so, paint them now and let them dry before moving to the next step.
- Carefully peel away the protective coating on the adhesive backing.
- Press the window frame, sticky side down, on to the clear sheet of plastic, and repeat for the number of windows you have.
- Place the walls to which you want to add windows brick side down on a flat surface.
- Apply a small amount of glue around the edge of the frame and insert over the openings on the wall pieces. Be careful not to use too much glue or you can destroy the plastic windows panes by getting glue on them.
- The windows are designed to overlay the window opening from the back, or inside of the building, and will not fit inside the window opening.
- Let dry before moving the wall sections to a vertical position to avoid glue running or the windows falling out.

Skylight windows

The skylight parts that will mount near the roof of the roundhouse are molded plastic pieces with several openings in them that represent windows.

- If the skylights have not been painted, and if you would like to do so, paint them now and let them dry before moving to the next step.
- Cut a piece of clear plastic to fit behind the window openings leaving enough extra clear plastic to provide an area to glue, but not to exceed the total size of the skylight part
- Run a thin bead of glue lightly around the window openings on the back (smooth) side of the skylight piece
- Gently apply the clear plastic over the opening on the back of the skylight and let dry
- Repeat for five more pieces for a total of six (three long, three short) for a 3-stall round house

5 - Floor plan

To aid in the assembly we have included full size floor plan templates upon which you can build the roundhouse. This will be necessary to make sure the stalls are lined up at the proper angles. The kit includes a total of six pieces of paper to form a three-stall floor plan. Each stall is made up of two sheets of paper each; one contains the drawing of the front half of the stall and the shape is narrower, and the other contains the back half of the stall and is wider.

- Fold or cut the paper along the line marked and tape together at letters A and B. Once joined, this represents the full size floor plan for a single stall.
- Repeat step above two more times until you have three separate single stall templates

- In a similar manner as the step you took to make a single stall, now fold or cut the paper template along the side lines to create a stall shaped piece of paper, wider at the back, and narrower at the front.
- Join these pieces along the side lines by lining up points C and D until you have all three pieces together to make one full size floor plan for your roundhouse (two joints).
- For additional stalls, add additional templates until the desired number of stalls are represented.
- Cover template with wax paper.

Now that you have the floor plan completed you have a few choices about how to proceed, including a few optional steps that some modelers have done to enhance the realism and structural integrity of their roundhouses.

- Proceed using the template to build the roundhouse directly on your layout. This is often the most common approach, especially if you have good access all around the roundhouse.
- Proceed using the template and build the roundhouse on a flat surface near your layout, and move it to the final location once constructed. This again is a common approach; however, if you have to move it far to the final spot on your layout it can be difficult as there is no “floor” to the structure.
- Using the template, create a base or floor made from wood upon which to build the roundhouse. This method gives your roundhouse more stability, and makes moving it from the location where you build it to the final location on the layout easier. To use this option go to Option 1 - Base

If you plan to use method A or B go to 6 – Assembly of Main Structure.

6 - Assembly of Main Structure

The assembly of the main structure is based on placing the walls along/on top of the outline of the floor plan template. Once all the walls are glued together and match the floor plan, the interior wood frames are added, and then skylights

Placement of brick walls

- Take one sidewall and one back wall and line them up on the base layout template (make sure layout lines on inside of walls fit tightly)
- Some sanding may be necessary. Rough up edges only where you need to glue.
- Repeat on other sidewall.
- Glue in place remaining back and front walls following the floor plan and sanding the sides as needed to create a tight fit.
- Optionally use clamps as necessary to hold pieces together.

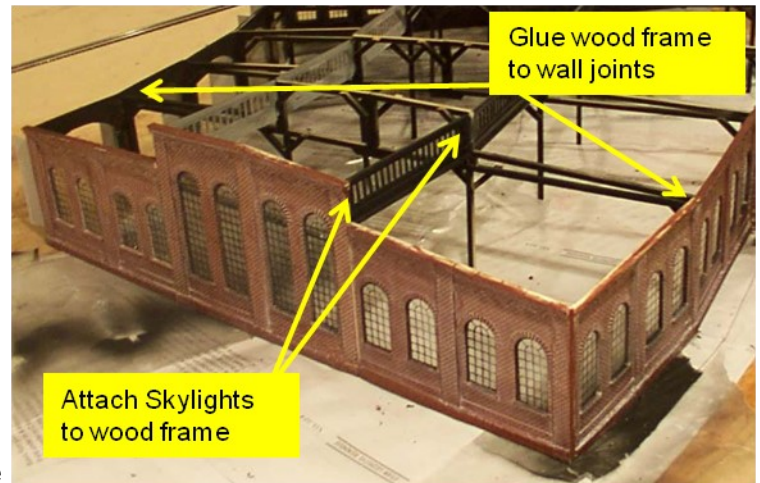
Note: If you plan to add the internal floor option, proceed to the option 2 section now. It is important to do this before you proceed to the placement of the wood supports.

Placement of wood support

- Assembled wooden beam frame supports for outer walls total of two and different from the internal or stall to stall support frames) are to be glued directly to the exterior side walls
- Roof supports MUST butt up against front wall
- Glue in place remaining roof interior stall to stall frame supports between front and back wall sections at the seam between stalls
- Optionally use clamps as necessary to hold pieces together

Placement of the Skylights

- There are two different size skylights; the shorter ones are to be used on the front or door side of the roundhouse, and the longer ones in the back
- Skylights should be glued along and against the top roof supports
- The bottom of the skylight provides a lip to rest the roof material on
- Optionally use clamps as necessary to hold pieces together



7 - Install roof

The 304 roundhouse has three levels of roofing that are covered with four different pieces of black plastic. The intent is to glue these plastic pieces to the wood structure and wall tops on the front and back to create three solid roofs, and then cover the roof with the provided gravel material.

- Black plastic roof material should fit on top of the support beams
- Front lower roof uses the narrowest pieces; one per stall
- Middle upper roof uses two pieces, wider than the lower front roof, to make the center section for each stall
- The rear lower roof uses the widest piece to create the rear roof; one piece per stall
- Textured side should face up
- Taping roof sections together from bottom to form a single piece is helpful, consider using black tape, or coloring the tape so you don't notice it when looking inside the roundhouse
- The roof sections go between the sidewall sections and rest on the wood frame
- Seams between stalls should be over the wood frames
- The back of the front lower roof should fit snugly up against the skylight piece and rest on the lip of that piece, the front of the roof should rest on top of the brick front wall of the roundhouse
- Glue in place the roof sections
- Glue in place the smoke stacks; typically on the rear lower roof
- If you want to add more smoke stacks, additional ones are available from www.korbermodels.com
- Roof gravel mixture may be applied for a gravel roof look. Use a spray adhesive or white glue diluted with water to attach the gravel to the roof.

8 - Install front doors

The wooden laser-cut doors have markings on both sides so they can be used in any stall, right or left side. The doors are made with three tabs that match three slots in the front walls.

- Dry test fit the doors to make sure the tabs fit securely in the slots on the front walls, and sand the front wall slots as needed to provide a good fit.
- The doors are not intended to swing open or closed.
- Doors can be glued in place in any desired position.
- If it is desired to have closed doors, the tabs can be cut down such that only a small portion fits into the slots on the front wall and glued in place.

- The roundhouse doors would typically be grimy-sooty due to the engines coming and going. You can provide a light over spray of flat or grimy black paint to take the bright color of your doors before you glue them in place.

9 - Final detailing – weathering

Your Korber 304 Roundhouse is now assembled and ready for placement on the layout. You may wish to provide some additional weathering before you install it as a roundhouse would be a heavily used structure in the engine service facility, and would rarely look brand new.

To add a weathered look, spray the entire model with flat black from a distance. This will give a sooty look. Over the doors should be darker black, in the center from the soot that rises from the locomotive smoke stacks that would have passed thru the doorway.



Option 1 – Base / Floor

The optional base can be built on any sort of rigid, material such as $\frac{1}{4}$ " or $\frac{1}{2}$ " plywood. This type of plywood is commonly available at most home improvement stores in 4'x8' sheets. They also have smaller 2'x2' and 2'x4' precut sheets which are ideal for smaller buildings and easy to get home in a car; however, the roundhouse footprint is larger than either of those smaller pieces. It is important to make the base from a single piece of stock to provide rigidity. For particularly large roundhouse you may need a $\frac{3}{4}$ " base. If you choose to do the optional interior floor, total stack up of the material used material used should be close to $\frac{3}{4}$ " with layers for the base, filler, and interior floor.

Getting the wood home. Most home improvement stores, including the big box stores will cut down the 4'x8' piece to a smaller dimension for you, often at no charge. Simply provide them the smallest square or rectangle dimension that your roundhouse will fit in., For example, a three-stall 304 roundhouse would fit on a 33" by 33" piece of wood. You can have them cut the rest of the sheet in to smaller pieces that you can handle and use them for other places on your layout.

Use the paper layout template to trace out the outline of the round house on to the plywood to mark the lines. This will represent the inside walls of the roundhouse. You will need to make the base a larger to accommodate the walls, simply add $\frac{1}{2}$ " to 1" to each side of the template to provide some leeway in the final placement of the walls. This exposed "lip" can be easily covered with ballast or other ground cover once you install the roundhouse on the layout.

Note if you use a sound absorbing /insulating material to top your layout. If you use a covering for your layout like Homasote or other material, you can use a base that is the same thickness of you material such as $\frac{1}{2}$ " and make a cutout in the Homasote the same size as your base. This will provide a level transition for the track from the layout to the floor of the roundhouse. In addition, you can keep your base square if you have the room, and not cut it to the shape of the template.

Once you have your base complete, you can proceed to the next step

Option 2 – Interior Floor

An interior floor adds to the detail, and also increases the structure's stability. It is an important part of a good solid base. This is a 3-layer system that brings the finish floor to the top of the rail. There are two layers pictured in the close up photo that can be seen at the bottom of the side walls, $\frac{1}{4}$ " Luan on the layout deck, and $\frac{1}{4}$ " masonite (brown) under the side walls. The third layer inside brings the floor to top-of-rail height.

- (1) The floor build up detail. Use the full size floor templates provide in Step #5 above to build your floor. Be sure that all your wall pieces (assembled) match the floor template. If not, alter the wall pieces as needed. The wall pieces should be slightly larger, requiring sanding/filing to the exact assembly dimensions. Note that the edge angles on the rear walls and front door walls are critical.

Completed three layers.

- a)The bottom layer of luan board matches cork thickness to be installed under the track

- b)The masonite layer compensates for the tie thickness.
 - c)The top layer is the finished floor.
- (2) The top layer also provides a building template and ledge to assemble the walls. Pieces are cut and fit between the rails as needed to complete the floor.
 - (3) The tracks are taped with masking tape and wood fillers/drywall spackling is used to smooth the surface. More than one application may be required, sanding between application much like a drywall installation. The base in this picture used Sherwin Williams PreRite ProBlock primer sealer (141-1669) in cans, before the finish paint. It is then spray painted with Krylon Camouflage ultra-flat (4291) Khaki that is a good substitute for aged concrete.
 - (4) Once the ledge is established, assembly of the wall panels can be done.



(5) Interior detail work with a floor installed should be easier to add

(6) The additional 3/8" X 3/8" basswood framing detail shown has been added; it is not part of the kit. This detail also adds to the model's structural integrity.

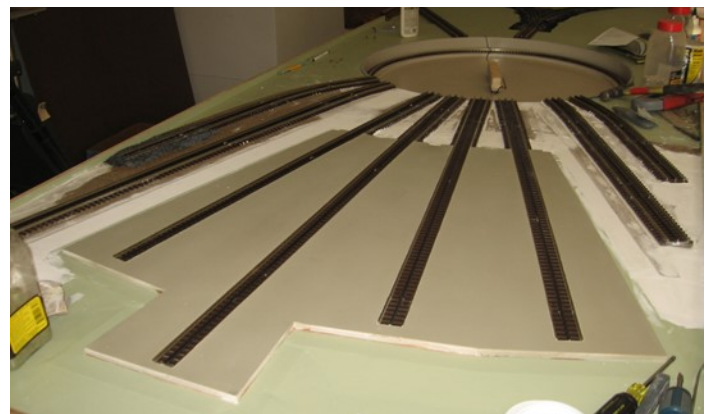
Option 3 – Lighting

Interior lights add more realism to this great structure that serves as a busy hub of activity on your layout. Following a few simple steps outlined here you will be able to add this improvement to your roundhouse model. While we will be discussing using LED's for the lights, one can also use incandescent bulbs in the same manner.

In this build, five 3mm flat-top white LEDs were used along each beam between the stalls. The flat-top version LED's spread light over a 120-150 degree angle as opposed to the 30 degrees or so that the dome-top LEDs give. This broader beam of light provided an even light inside the house instead of a series of spotlights.

This simple diagram shows the basic electrical circuit. The value of Resistor #1 (R1) depends on the LED's used. You can find a good on line calculator and more information on LED's at <http://led.linear1.org/led.wiz/>.

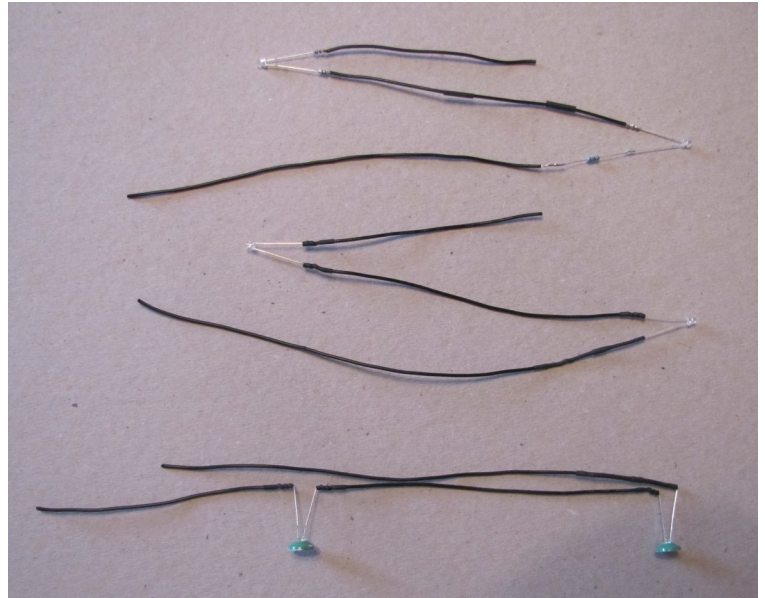
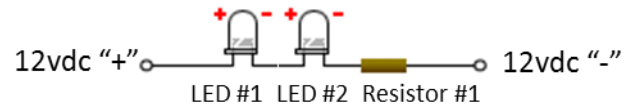
It is best to make up the wiring harnesses prior to installation



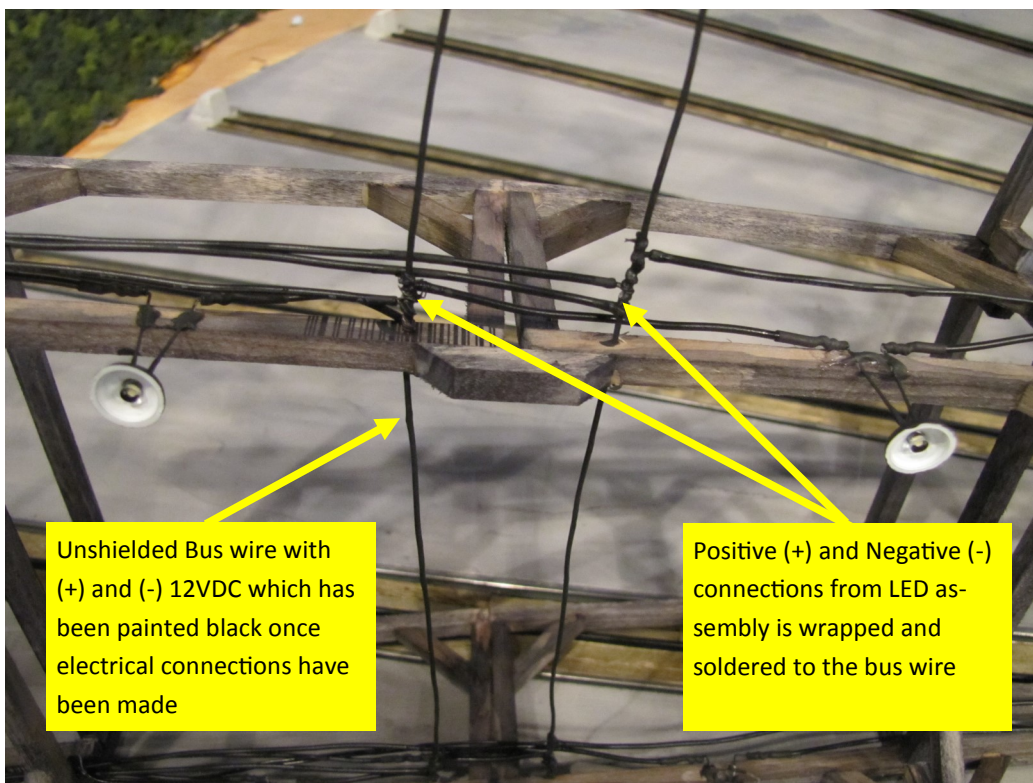
in the house. The photo shows how a harness for 2 LEDs was made. On top are the LEDs and a current-limiting resistor (value depends on what LEDs you're using) soldered to black wires. In the middle, shrink tubing has been added to hide the resistor and the solder joints. On the bottom is the harness with the LEDs fit into Plastruct light shades (part number LF-6). The hole in the shade needs to be drilled larger (a #31 drill is perfect) so that the LED will be a slip-fit. The underside reflector part of the shade should be painted white (took 3 coats of Polly Scale for complete coverage) prior to assembly. The harnesses with 3 LEDs were constructed in the same manner.

The model in these photos had a couple of bare copper bus wires run down the middle of the roundhouse and the LEDs and their resistors were connected to them. Those wires carry 12 volts DC and have been painted black in the photos. The two legs of the LED were glued to the roundhouse frame using "ACC gel" or other similar "superglue gel" type adhesive. The photo shows the bus wires and how the harnesses were soldered to them. You need to be careful to keep the polarity correct on the LEDs. Once all the wires were soldered together and tested, the bare wires were painted over in black to help them blend into the structure.

You should test each harness prior to installation. Note that the harnesses were made so that the wire lengths determined that they be soldered to the correct bus wire (couldn't get the "+" and "-" wires mixed up).



The finished photos show 5 LEDs along each beam between the stalls. They provide a nice even light to the entire interior of the house and are reasonably scale in appearance. The prototype light shades were typically painted white on the underside and black or dark green on top (and the suspension pole). That is what has been done here. Shade tops are black in the roundhouse and it did take a couple of coats of paint to stop any light from the LED being visible on top of the shade.



Option 4 – Wood Roof

This wood roof is made out of 1/4" luan plywood, a common underlayment for flooring. Its



actual thickness is about 13/64".

The structure, as supplied, has to be altered for this roof. The back and front walls have to be shortened at the bottom of each panel to allow for the roof thickness. In addition, there are slight modifications that have to be made to the window panels. This also changes the framing template. Scribe the roof thickness on the side wall and determine the framing accordingly. You need at least this much sidewall exposed for the wood roof as seen in the following photo.



- 1) Note the roof thickness and how it should be flush with the top of the side walls.
- 2) Use the floor layout templates to develop a roof template. The roof should be as close as possible as the floor approximately. Add 2" to the rear for roof overhang and 2" inches to the front for roof overhang. Work on the largest, back roof section, first. On the rough cut layout that was done with the floor template, measure the sidewall section (approximately 9.5"), add the two inches of overhang, and then carefully mark the inside cut where the roof will match to the grey windows pictured. You need to mark the section lines. In this picture there are three pencil lines visible on the top roof. These section lines are important for determining the window cuts.

- 3) The first rough cut from the floor template will probably yield the rear large section and the front section of the roof. You will have to do a second rough cut to finish the center section.

- 4) Carefully cut the rear roof section and install it. If it doesn't fit the way you want, alter the piece accordingly. You may have to scribe cut the edge against the windows. It will take some time to get this right. You may have to scribe cut the edge against the side walls. This is done with a wood file/rasp or very small saw. Pictured is the desired fit, of the lower

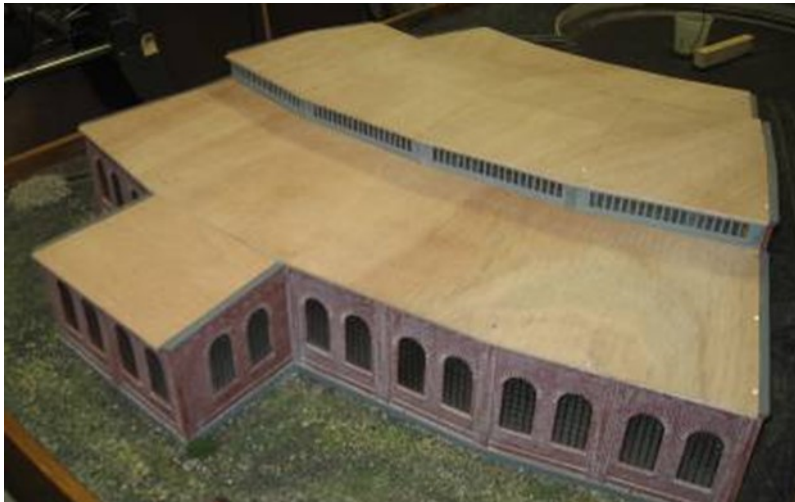


also have to alter the edge fit

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roof to the skylights.

- 5) At this point determine the rear overhang that you want and make the final cut on the roof panel. This cut is a bit tight; 1" is a good overhang, but it's your choice.
- 6) Use the same procedure for the front roof section.



7) The top section of roof will have to be done from another rough cut piece using the floor templates again. This piece needs to be relieved in the middle, as shown next, so that it will bend over the crown in the roof, change in pitch/slope. Note the cut along the ridge line.

8) The relief was done carefully with a utility knife; be careful not to cut completely through the luan board. When held in place with a few screws, the



one-piece upper/center roof should fit the two different roof pitches.

- 9) Band the edge of the roof pieces with Kappler scale lumber (www.kapplerusa.com). We used either a 2"X10" or a 2"X8" scale piece. It finishes the edge nicely and allows for the addition of gutters if desired. Note: Kappler lumber between the roof edge and the gutter.
- 10) The gutters are K&S brass C-channel (3 ft pieces). These



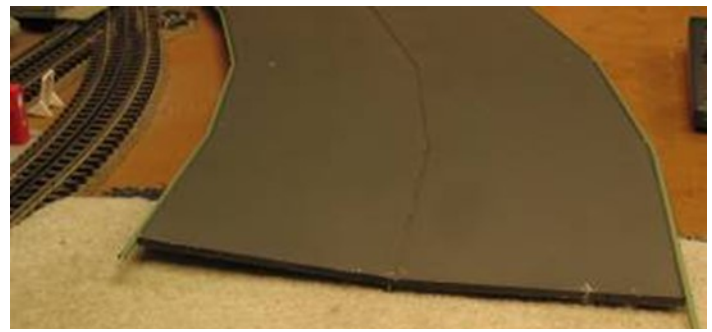
were painted and drilled to fit small wire brads which were used to attach the c channel to the roof. Note the bend done at installation.



- 11) Roof material is N scale ballast. We used a combination of grey and black on one roof and all black on the other. Each was applied with a liberal application of diluted 50:50 white glue and water. Note that the luan board is much heavier than the original mat boards use on very

old Korber kits.

- 12) It is important that you paint both sides for a consistent look of the wood roof.
- 13) Downspouts added were made out of 1/16" brass rod to simulate a 3" pipe. Floral wire is also a good product for downspouts.
- 14) Completed roof
- 15) The luan material with wood fillers/drywall compound,



and painting primer/sealers can be made smooth and just painted if desired.

