KRM S01 S008 HO Acrylic Silo Kit

Instructions for Construction.

Produced By

Keiran Ryan

Preface

Over the last few years there have been many options to allow modellers to obtain a cost effective NSW S008 Silo in either kit form, or as a completely scratch built structure. This kit is the latest generation of the original S008 silo kit. Those previous kits required the modeller to scribe and snap 1 mm styrene, and then glue these pieces of styrene together, with the result being the basis of a NSW S008 Silo.

This kit is a vast improvement on that idea and offers greater value for money, by providing a 1.5mm acrylic kit that is tabbed together, then glued in place. There is no cutting or snapping required, and the modeller obtains a much more completed structure that is more consistent, squarer, and easier to work with. Thank you for you support in purchasing this kit, and I hope to be able to provide more kits of this type, not just for silos, but for other structures associated with model railways. (Any ideas would be appreciated).

These instructions, as you are now aware, are on a CD. The information on this CD is Copyright protected, as are the photos. The modeller can certainly use the information for his or her own purpose, but they are forbidden to use the material to on-sell or trade or sell without the permission of the author of the CD. There are links in this document that will redirect you to the instructions in various formats, depending on your preference. There are also other plans and photos that can be accessed on the CD, which make this CD a one-stop shop, and great reference source. The basic instructions are also available on the Keiran Ryan Models web site if required.

Introduction to this Kit

Disclaimer

This silo is NOT a complete kit. It is an easy starter kit for modellers who prefer to have a model silo for their layout, with the detail work being assisted by using the original article in the Australian Model Railway Magazine Issue 165 in December 1990 through to 167 in April 1991.

The material used in the construction of this kit is 1.5mm clear acrylic and can be very brittle. You will need to be very careful with the material in the process of construction, and to also be careful with thin sections of the material, as they can easily be broken. If you do break a piece, it will glue back together using Dichloromethane (Simply Glues – Premium) MEK will **NO**T bond this material.

Health Warning

The following is a warning for using **Dichloromethane:**

Principal hazards

*** Dichloromethane is harmful if you swallow or inhale it.
*** It may act as a narcotic, so inhaling it will make you feel unwell.
*** Like many small hydrocarbons that contain halogen atoms, dichloromethane is a suspected carcinogen. It is unlikely to be strongly carcinogenic, but it is important to reduce your exposure to the lowest level possible.

Safe handling

Wear safety glasses. Work in a well-ventilated area. Avoid repeated or long-lasting exposure.

Emergency

Eye contact: Immediately flush the eye with water. If irritation persists, call for medical help.
Skin contact: Wash off with soap and water.
If swallowed: Call for medical help.

Disposal

Store for later disposal as chlorinated waste solvent.

Protective equipment

Safety glasses.

KRM S01 HO S008 Acrylic Silo Kit

The parts in this kit make up into sub-assemblies as per the bags that they were packed in. Parts have been checked when packed, but please check all parts in the bags with the check list provided, and if any parts are missing let me know and I will have them replaced.

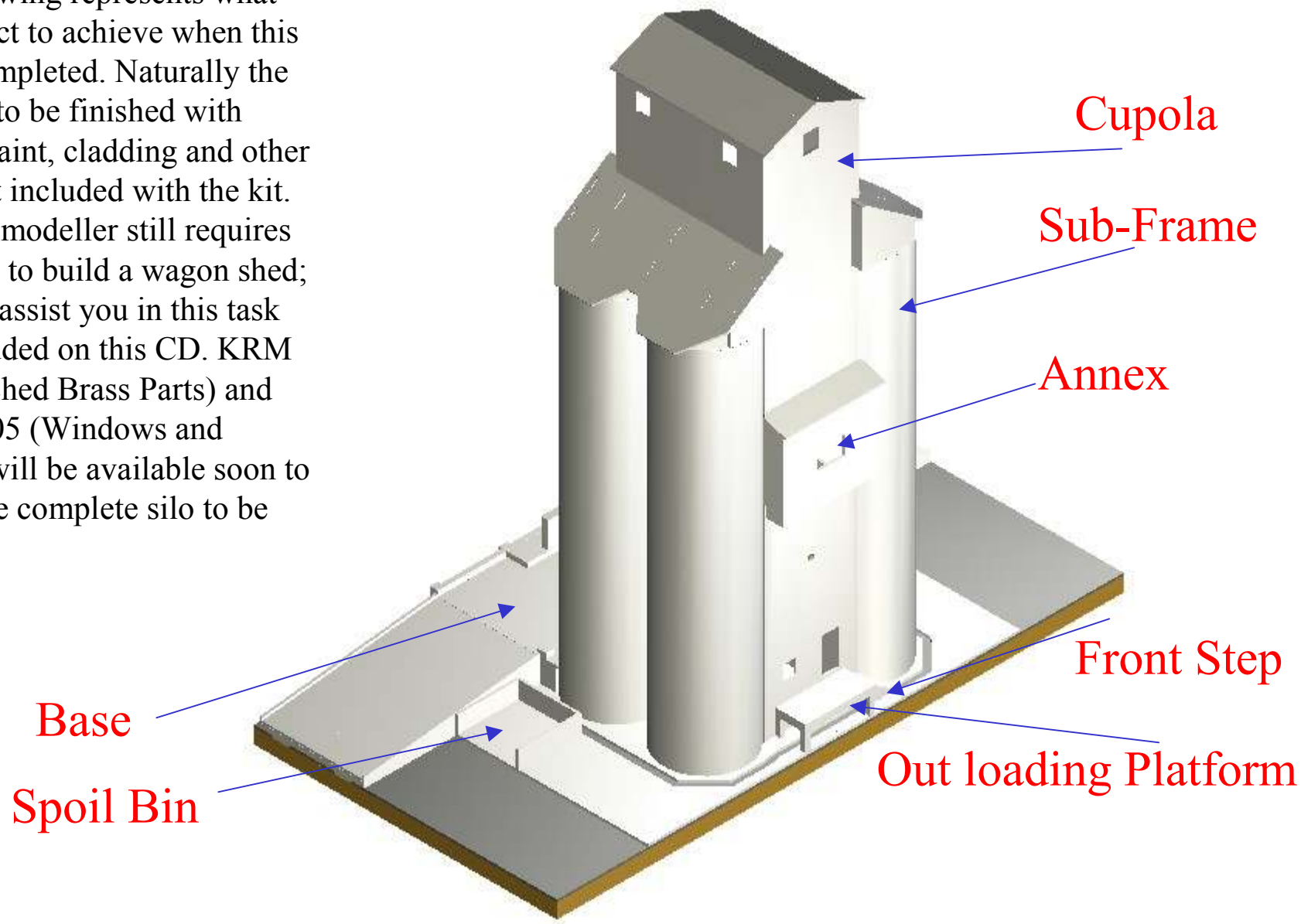
- The Base
- The Sub-Frame
- The Cupola
- The Bin Roof
- The Annex
- The Spoil Bin
- The Out loading Platform
- The Rear Step
- The Front Step

Instructions

- Please ensure that you read the instructions 3 times before you make a start on this kit -------- (I Know----I hate reading them to, but it helps with the kit).
- Keiran Ryan Models does have a breakages policy, which states, that if you break a part in this kit, it will be replaced once, but only once, so be very careful
- This is a simple step by step process.
- The parts in purple are the new parts to be fitted.
- The parts in grey are the parts already fitted.
- Identify parts before committing them to the location. Remove the paper backing before fitting
- DON'T force the parts, as they are brittle and WILL BREAK if forced.
- DON'T glue parts until all parts of the sub-assembly are in place, and ensure that they are the correct part.
- There are parts that will need to be clad in corrugated iron (e.g. Campbell's aluminium) and other parts that will need to be painted. The acrylic takes paint very easily.
- Have fun, as this kit is very easy to build. And I would appreciate your feedback!!!!!

The Outcome

This drawing represents what we expect to achieve when this kit is completed. Naturally the silo has to be finished with fillers, paint, cladding and other parts not included with the kit. And the modeller still requires the parts to build a wagon shed; plans to assist you in this task are included on this CD. KRM S04 (Etched Brass Parts) and KRM S05 (Windows and Doors) will be available soon to allow the complete silo to be realized.



Are

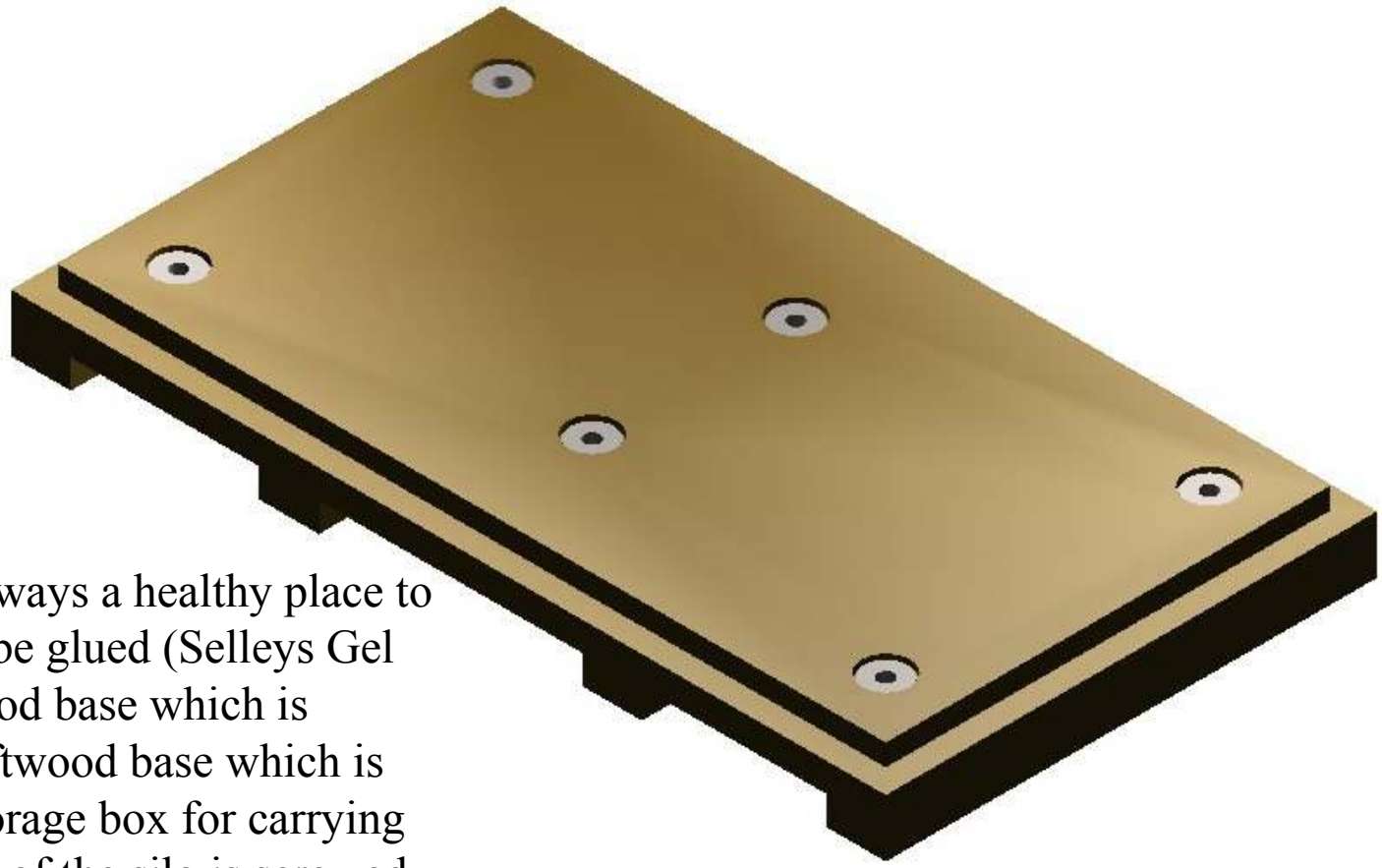
You

Ready

To

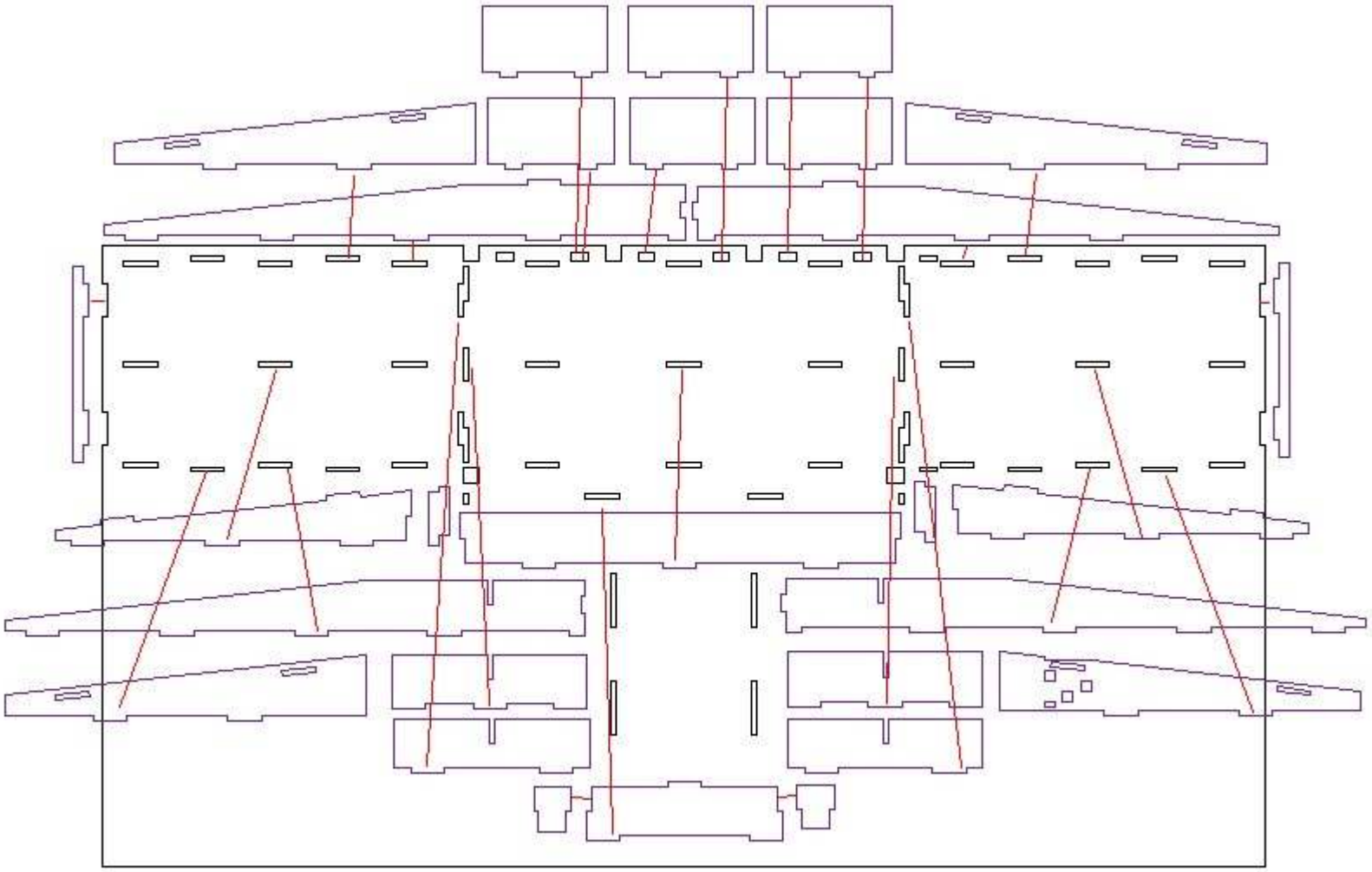
Model??????

A Good Foundation

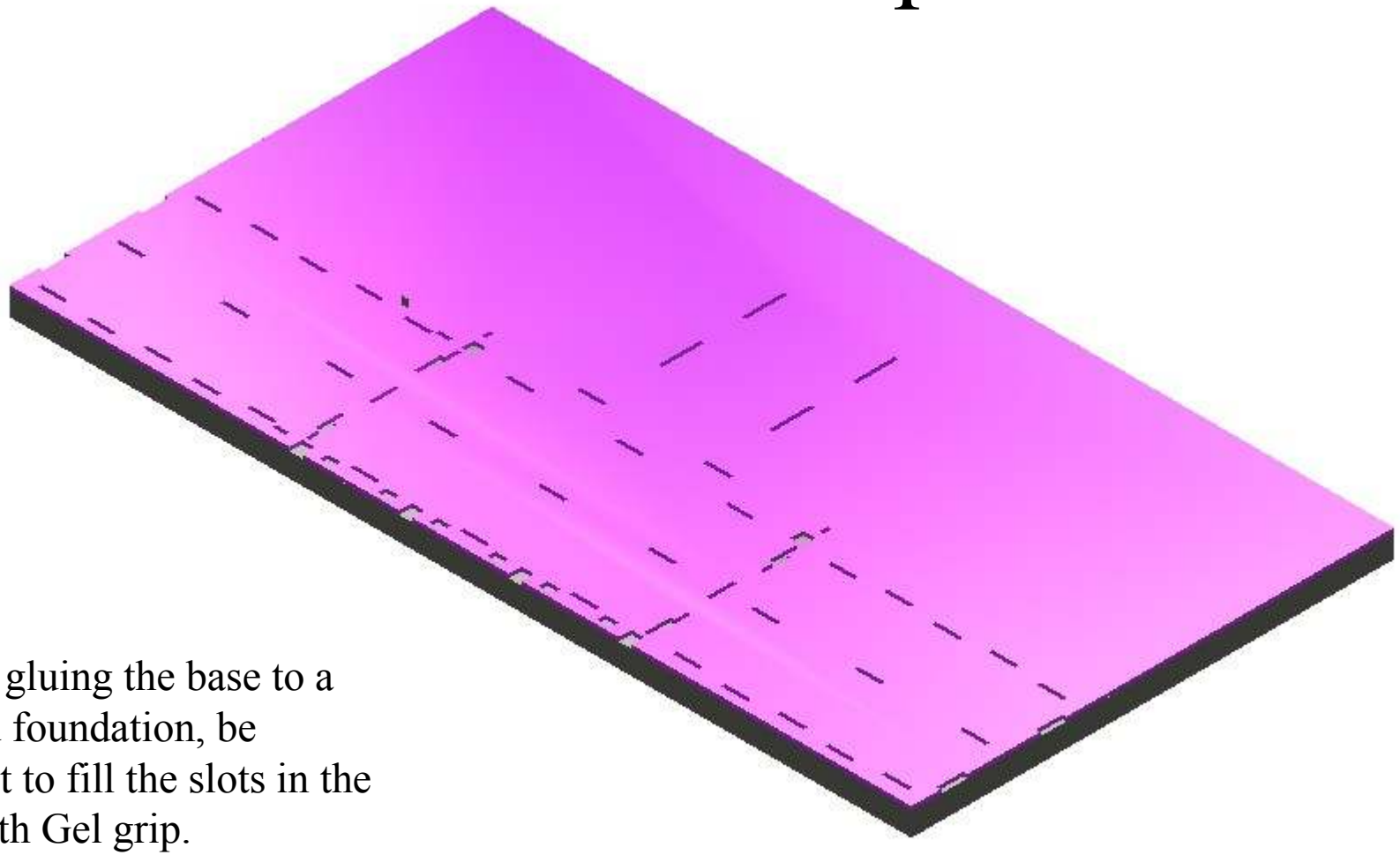


A good foundation is always a healthy place to start. The silo base can be glued (Selleys Gel Grip) to a 9mm craftwood base which is screwed to a 12mm craftwood base which is used as the floor to a storage box for carrying the silo. The foundation of the silo is screwed to the base with 6 x ¼" "T" Nuts and 6 x ¼" ¾ brass cheese head screws. The 9mm bases with ¼" "T" Nuts fitted, are available from K R M for $30.00 + postage, or simply make your own to the template of the Silo Base .

Silo Base Part Location Guide

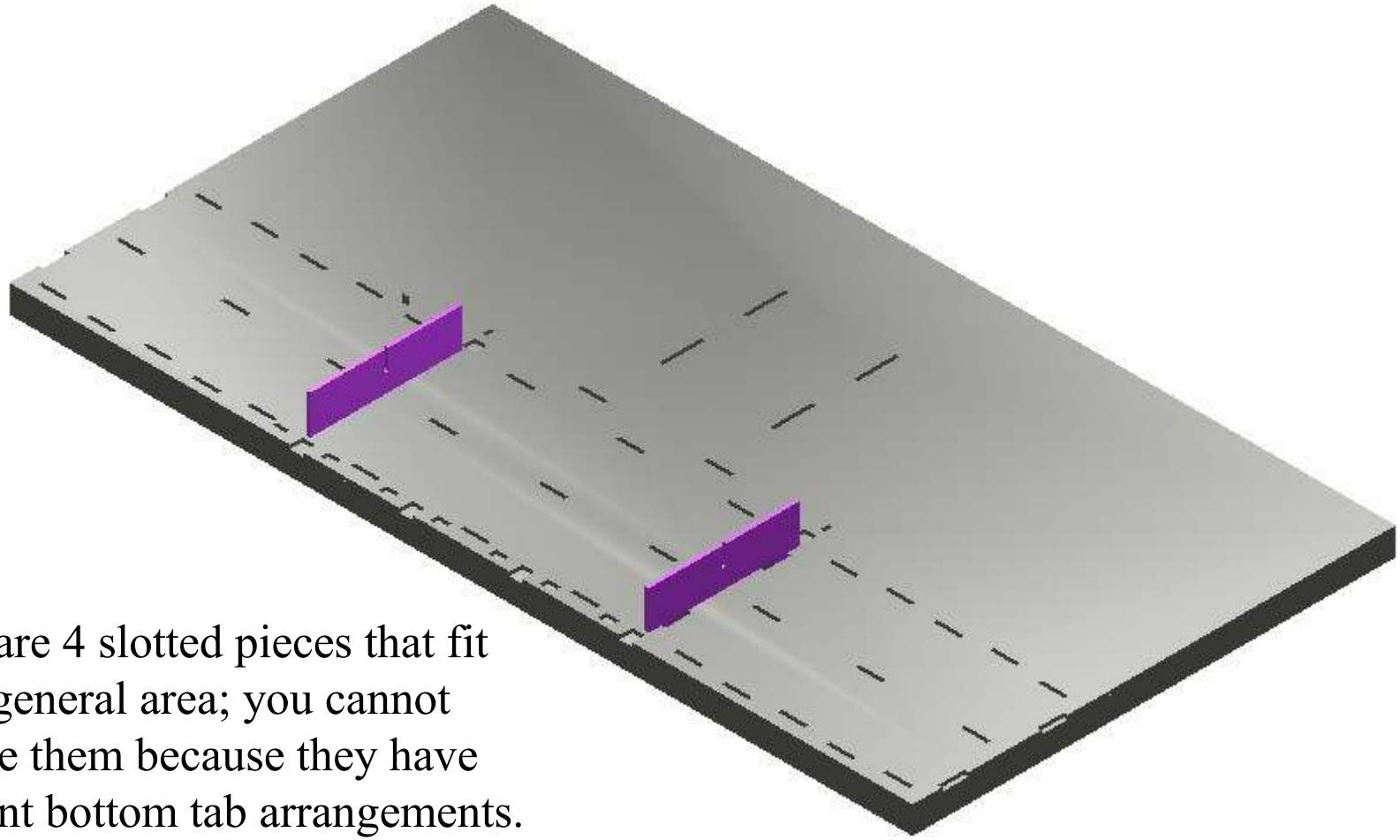


The Silo Base - Step 1



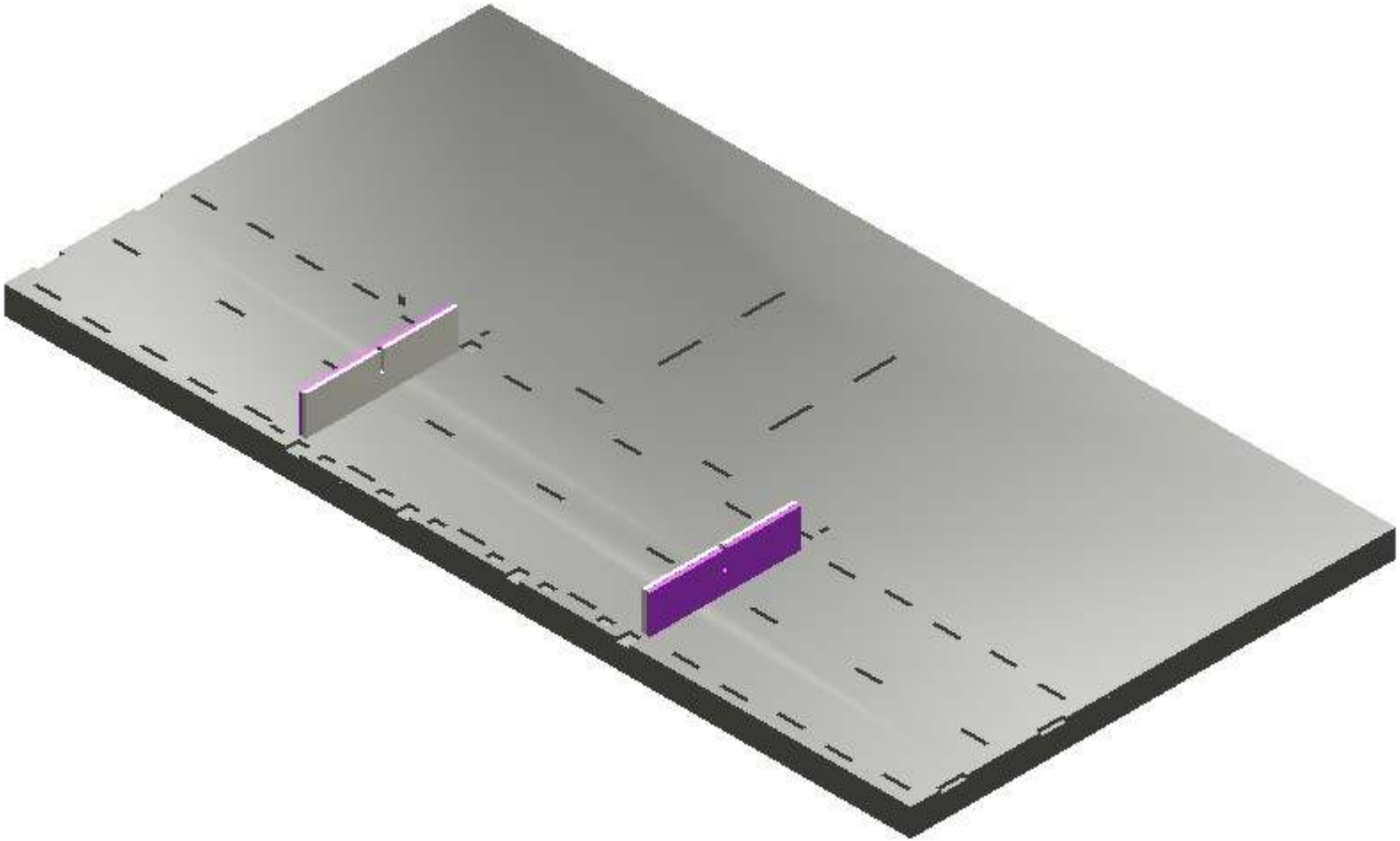
If you are gluing the base to a craftwood foundation, be careful not to fill the slots in the acrylic with Gel grip.

The Silo Base - Step 2

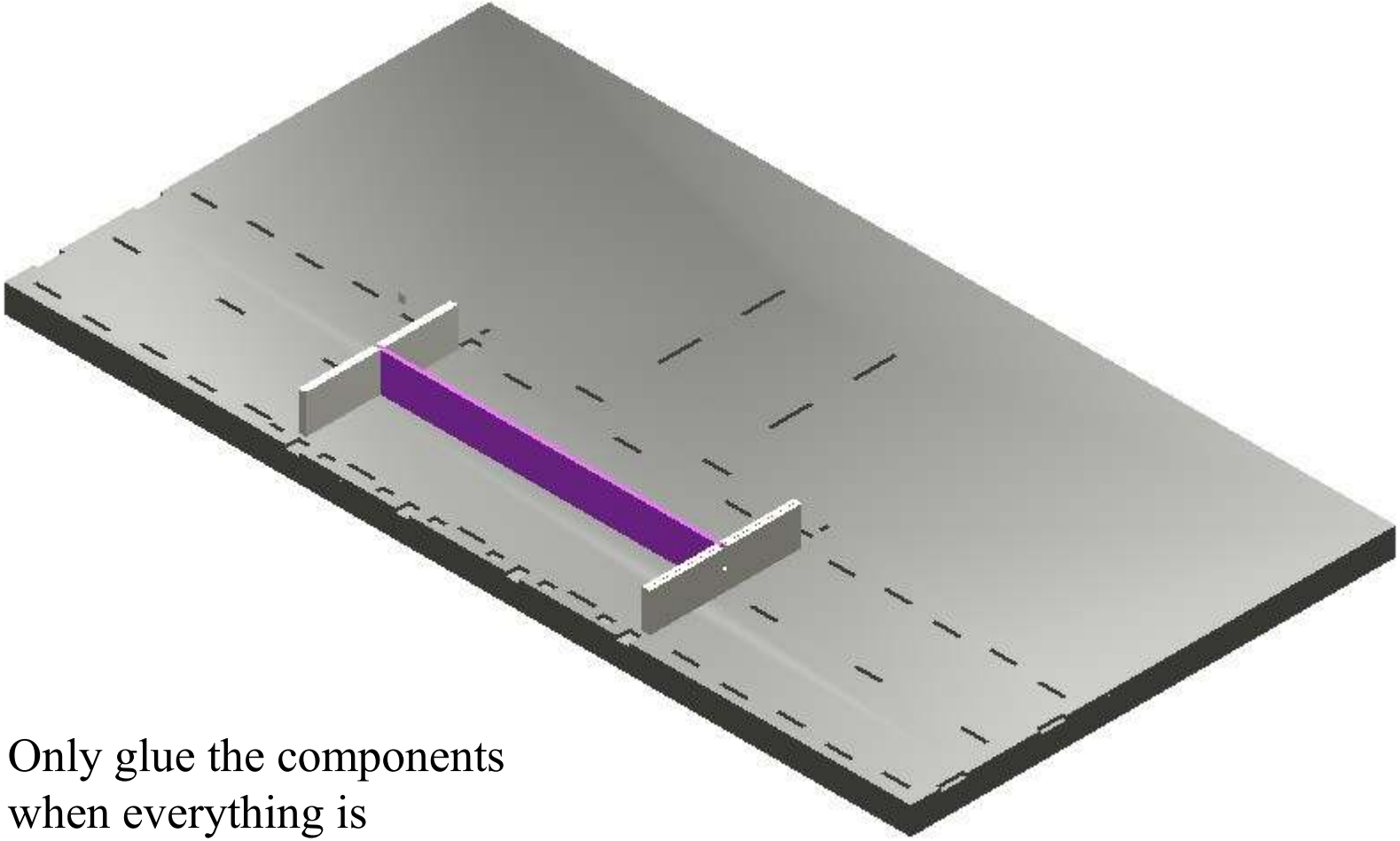


There are 4 slotted pieces that fit in the general area; you cannot confuse them because they have different bottom tab arrangements. One has 2 tabs and the other has 3. Narrower ones go to the outside, as in the next drawing.

The Silo Base - Step 3

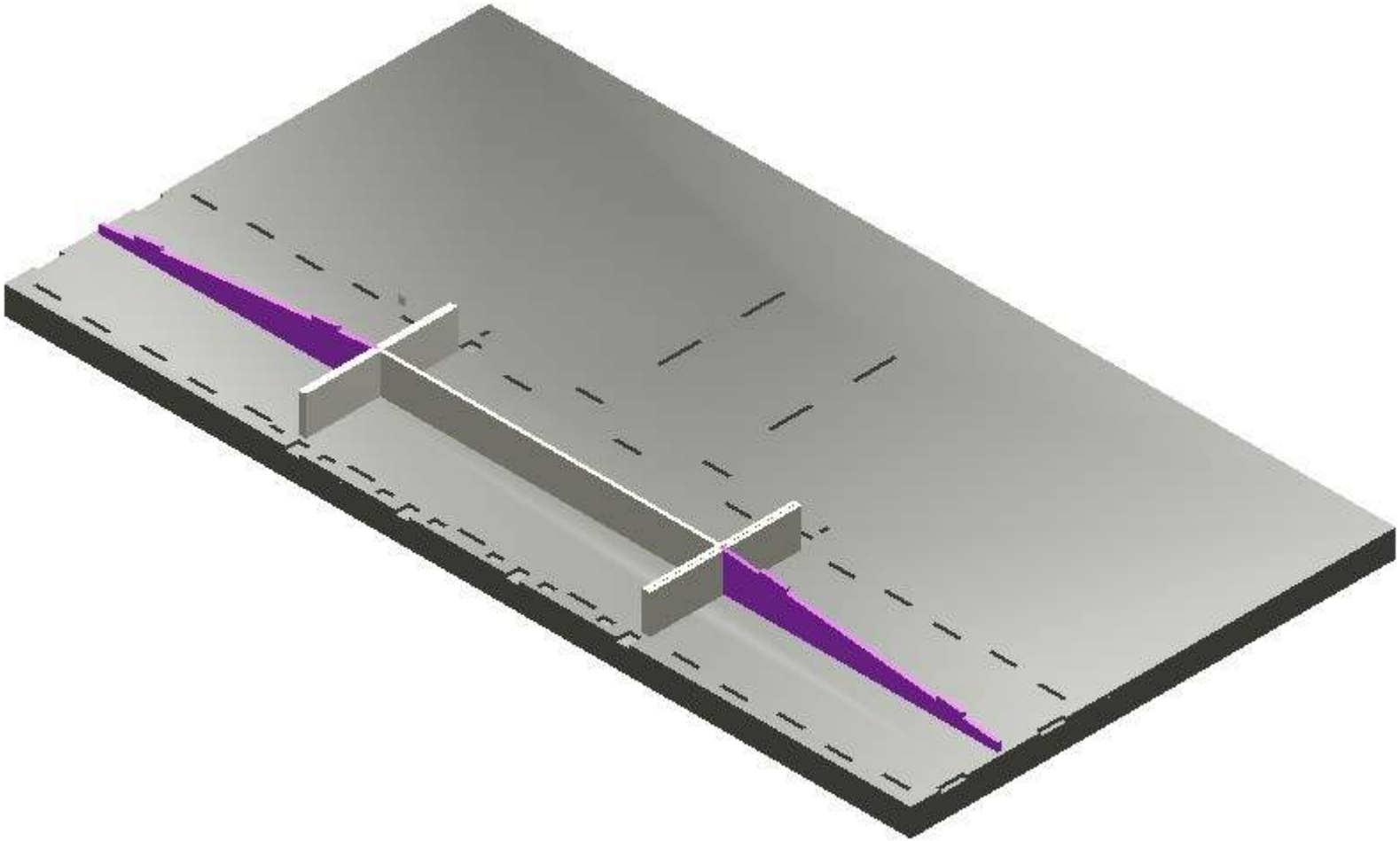


The Silo Base - Step 4

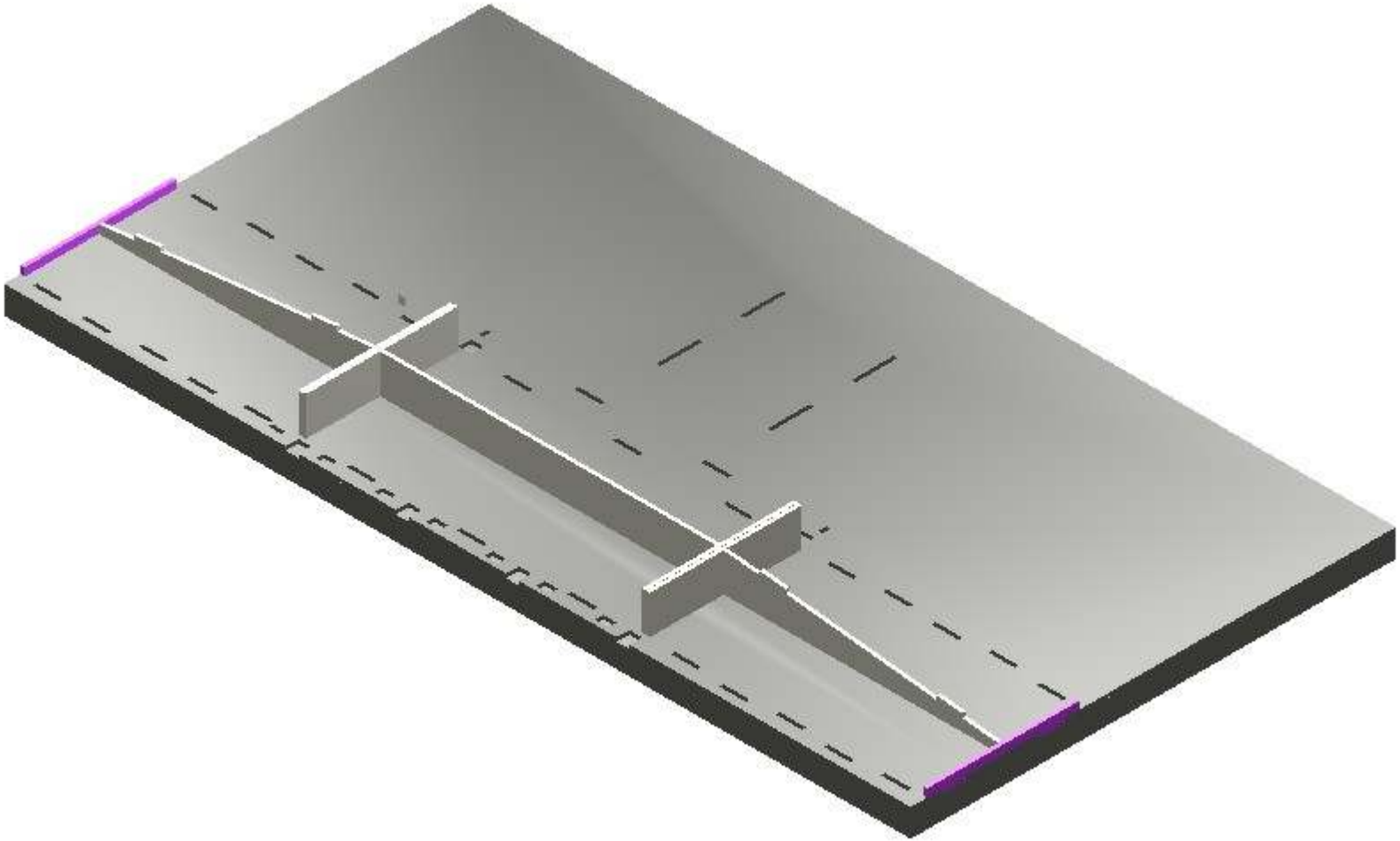


Only glue the components when everything is correctly positioned.

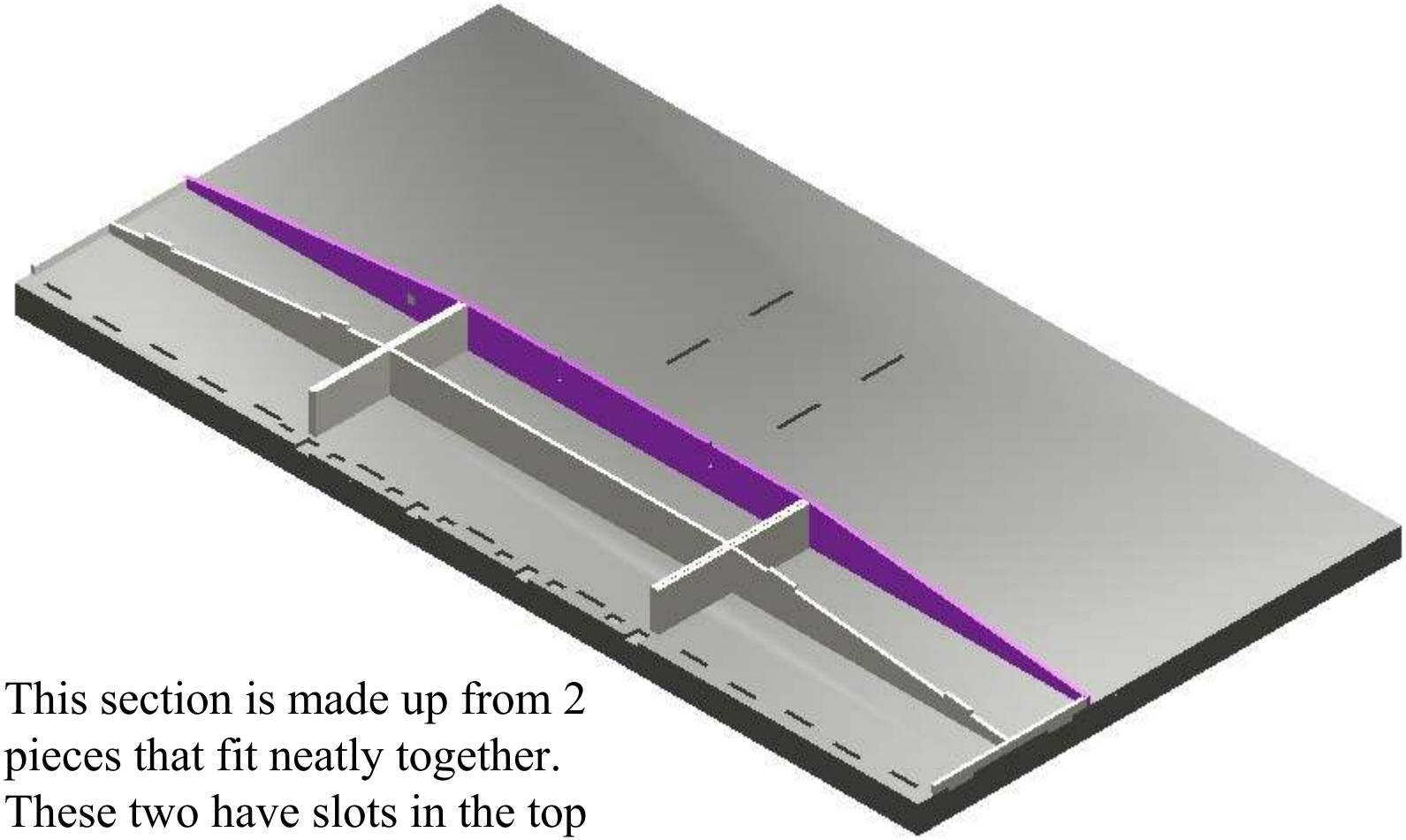
The Silo Base - Step 5



The Silo Base - Step 6

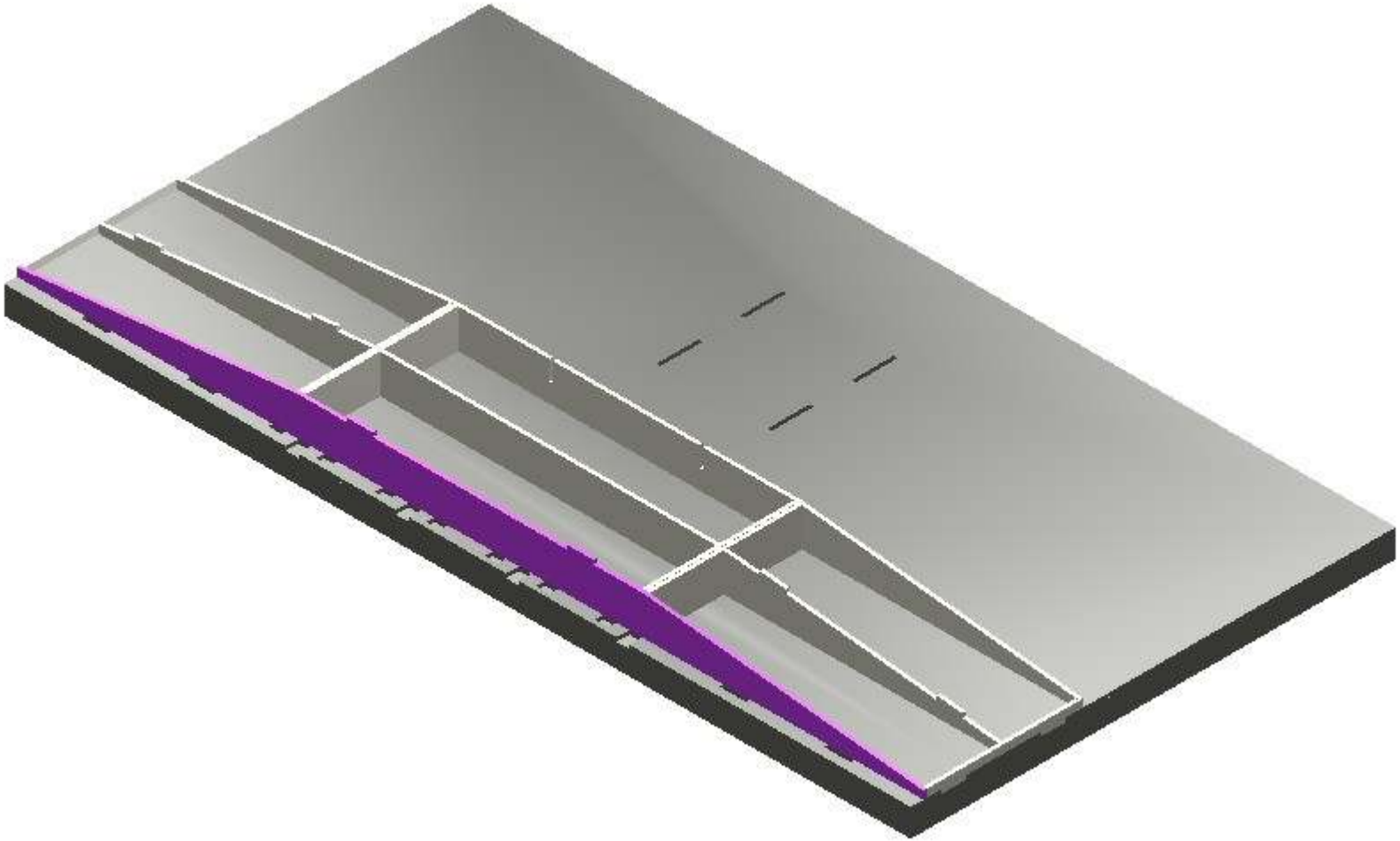


The Silo Base - Step 7

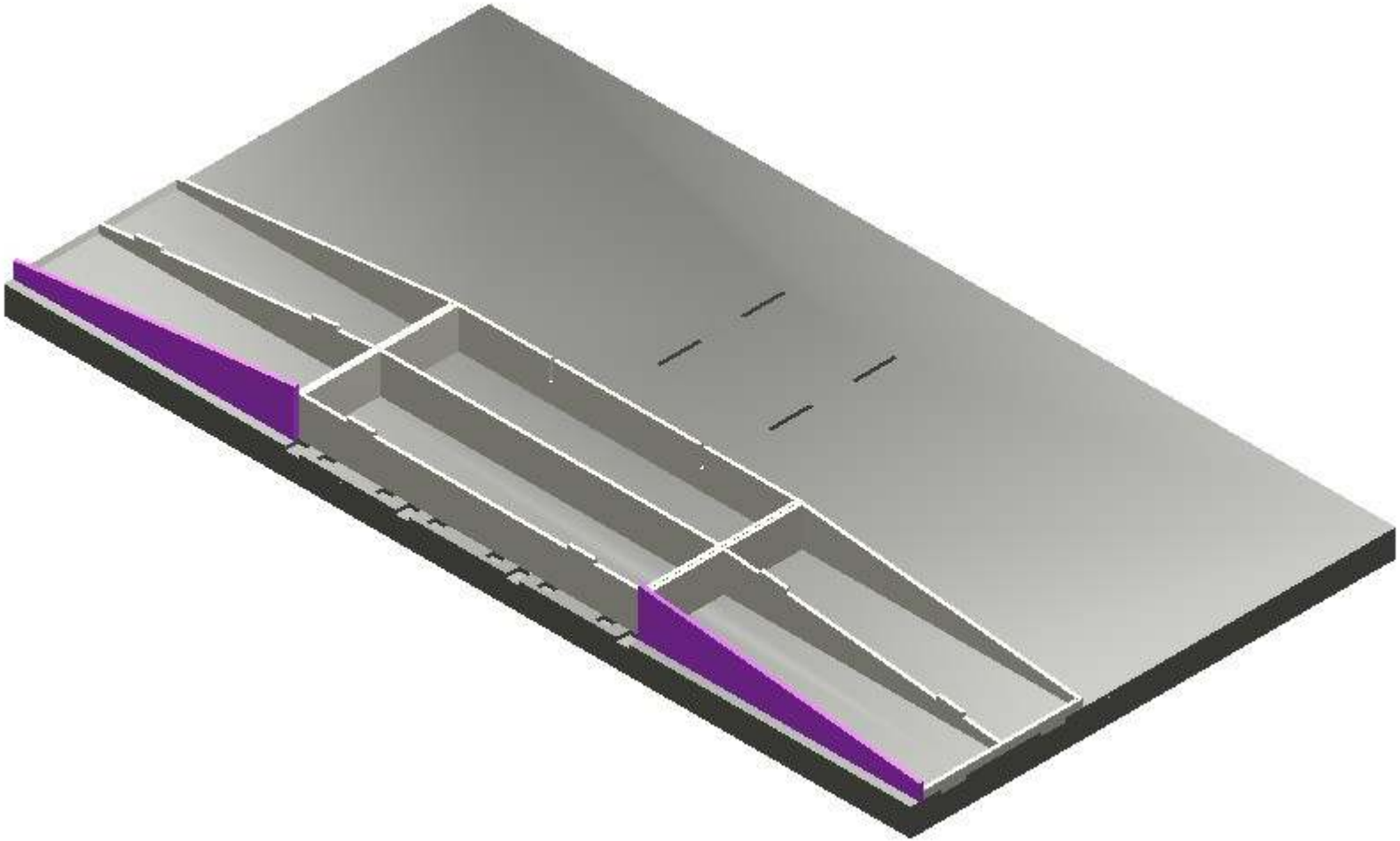


This section is made up from 2 pieces that fit neatly together. These two have slots in the top with no tabs. The next drawing shows the two with tabs and without slots.

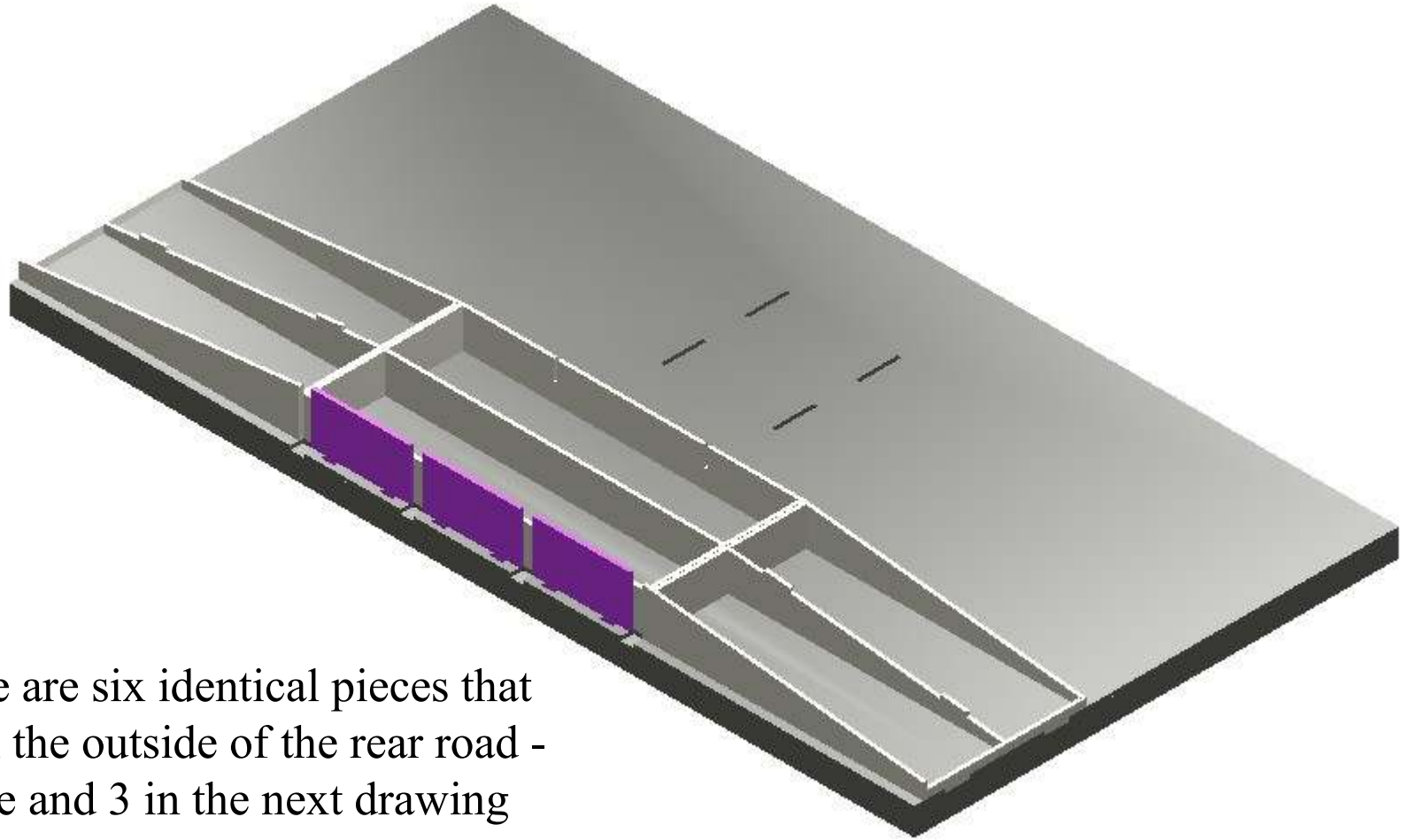
The Silo Base - Step 8



The Silo Base - Step 9

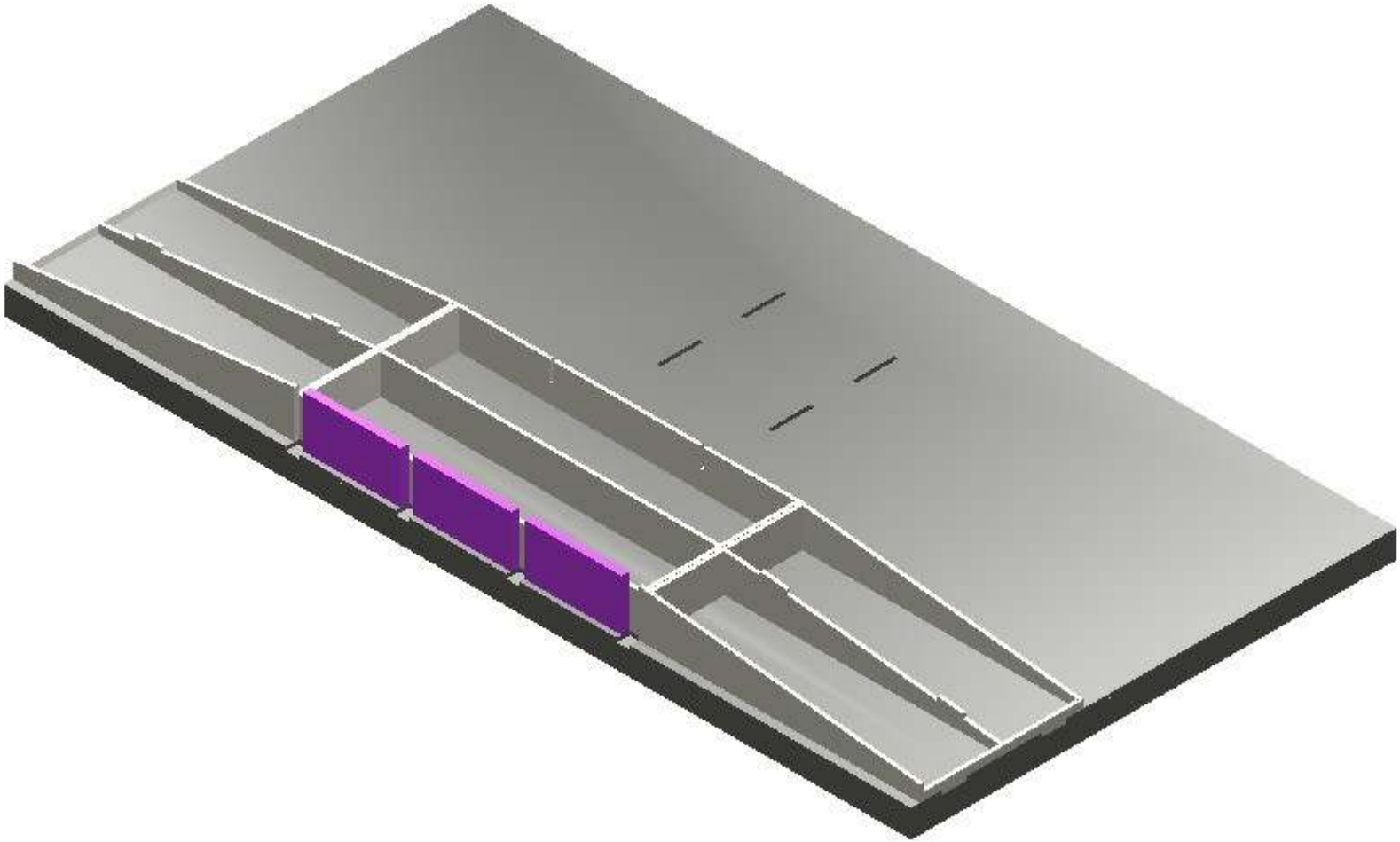


The Silo Base - Step 10

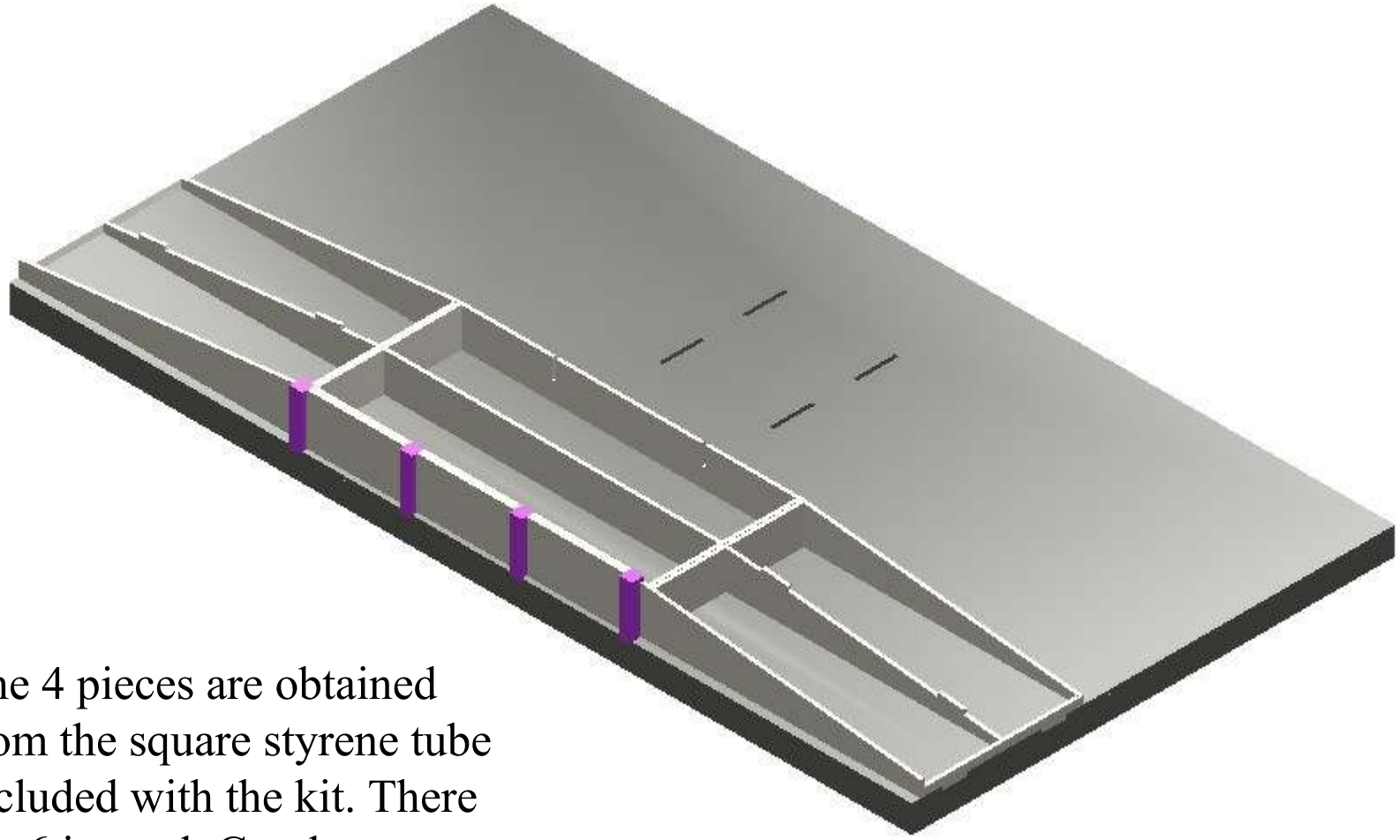


There are six identical pieces that fit on the outside of the rear road - 3 here and 3 in the next drawing

The Silo Base - Step 11

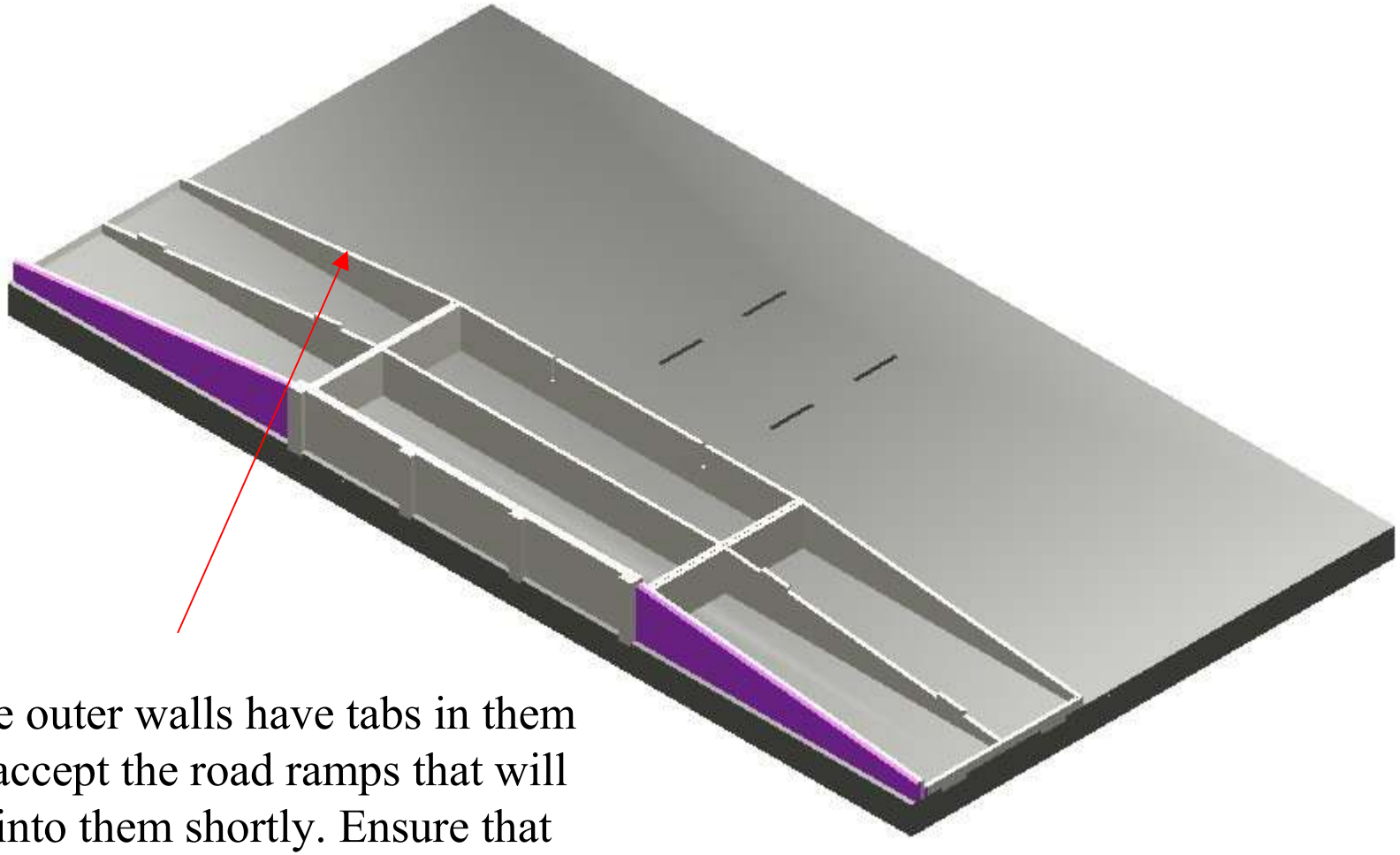


The Silo Base - Step 12



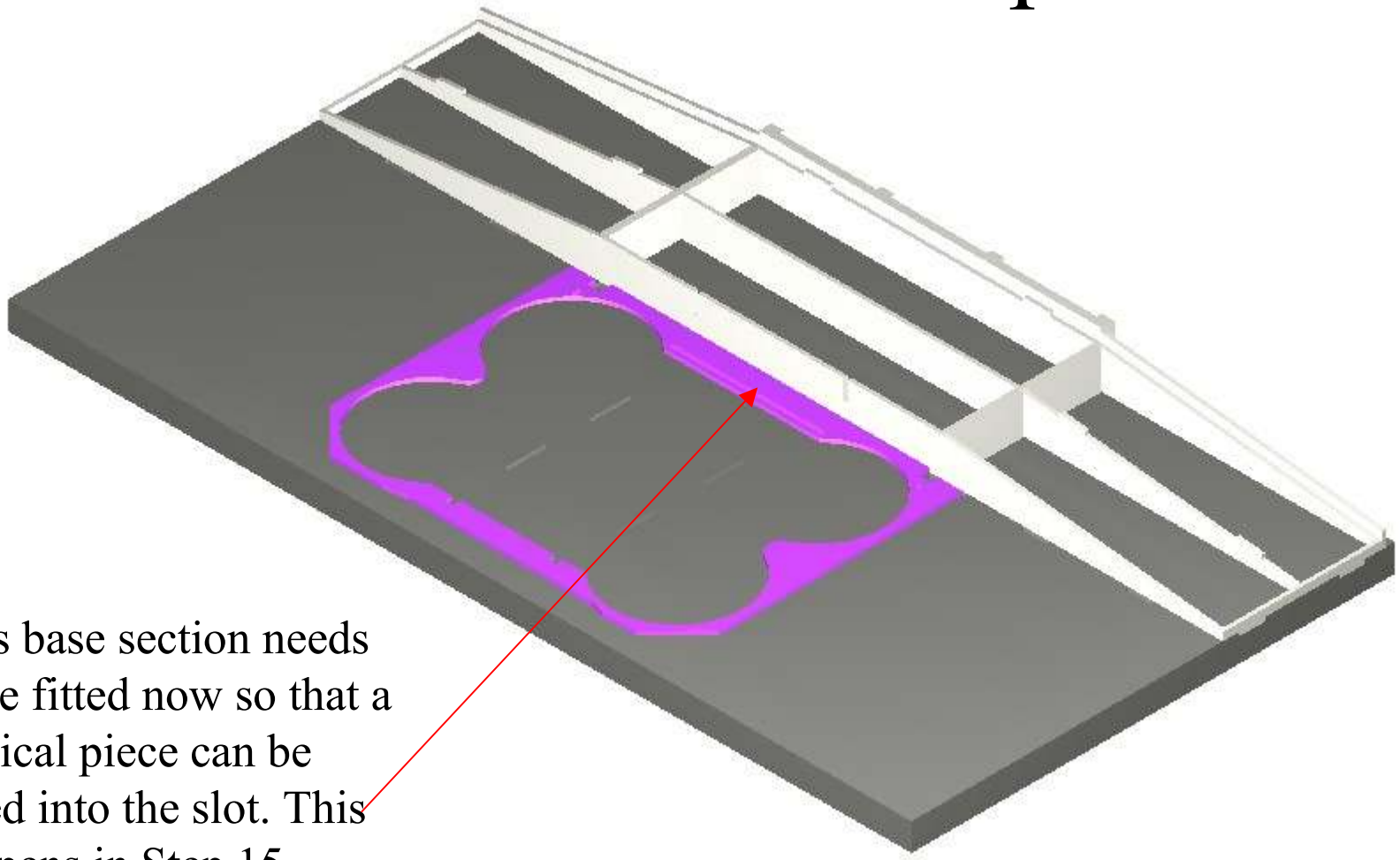
The 4 pieces are obtained from the square styrene tube included with the kit. There are 6 in total. Cut them over length for now and trim them down later.

The Silo Base - Step 13



The outer walls have tabs in them to accept the road ramps that will fit into them shortly. Ensure that the outer wall for the position shown by the arrow, is the one with the cutouts.

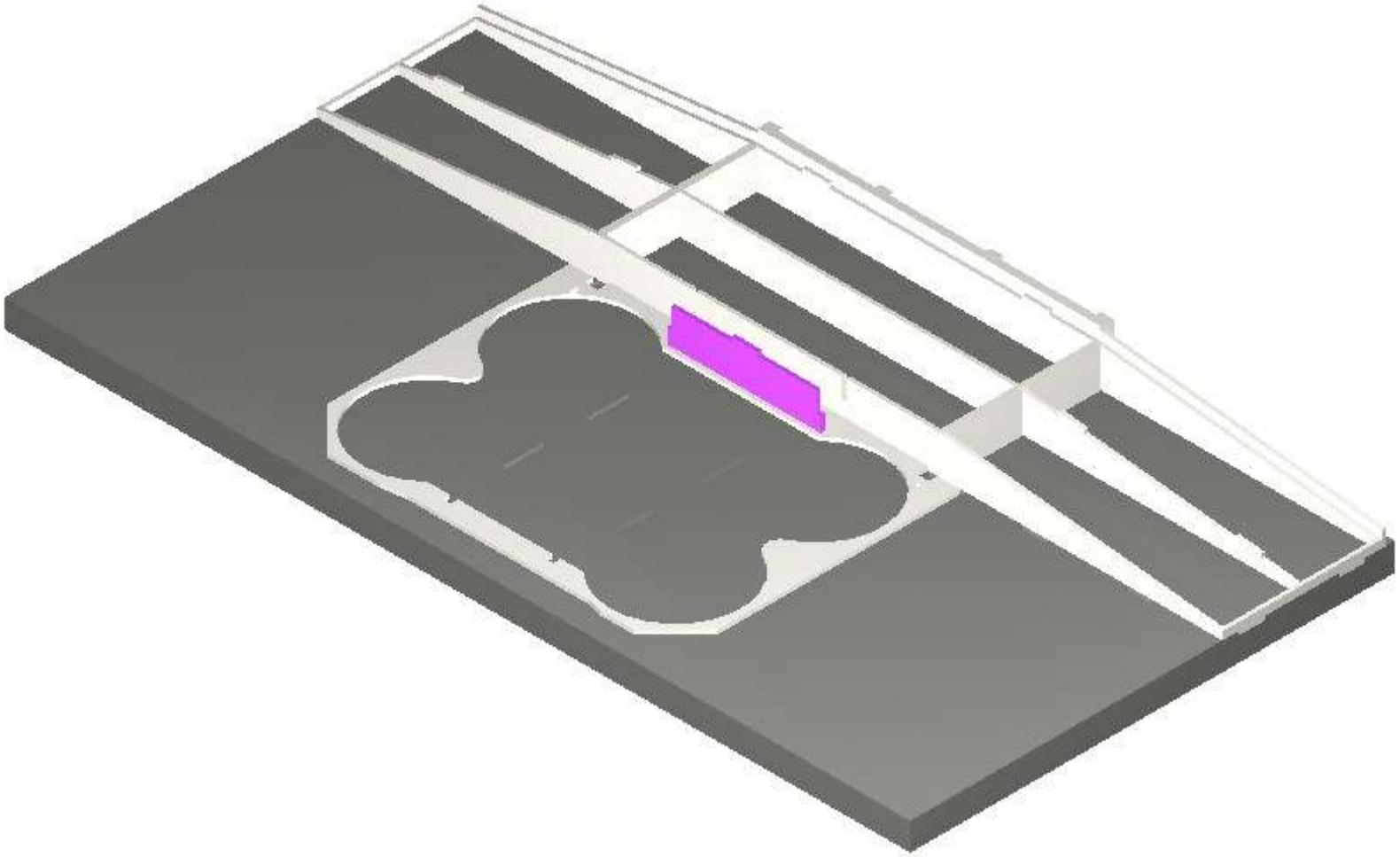
The Silo Base - Step 14



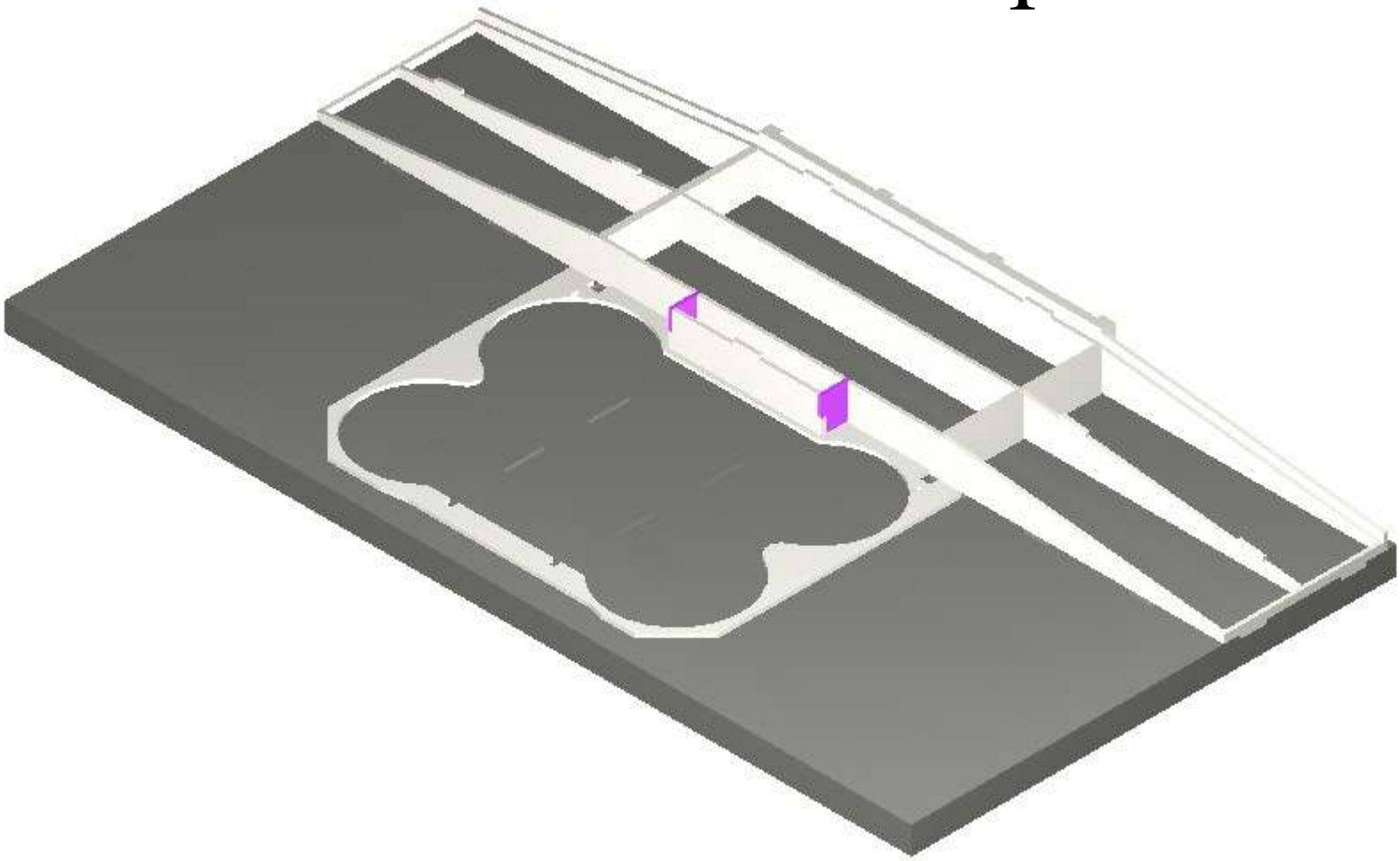
This base section needs to be fitted now so that a vertical piece can be fitted into the slot. This happens in Step 15

Make sure that the base section is in the correct position as it must form the drain with the other base pieces. Please check it before gluing. This part is not symmetrical.

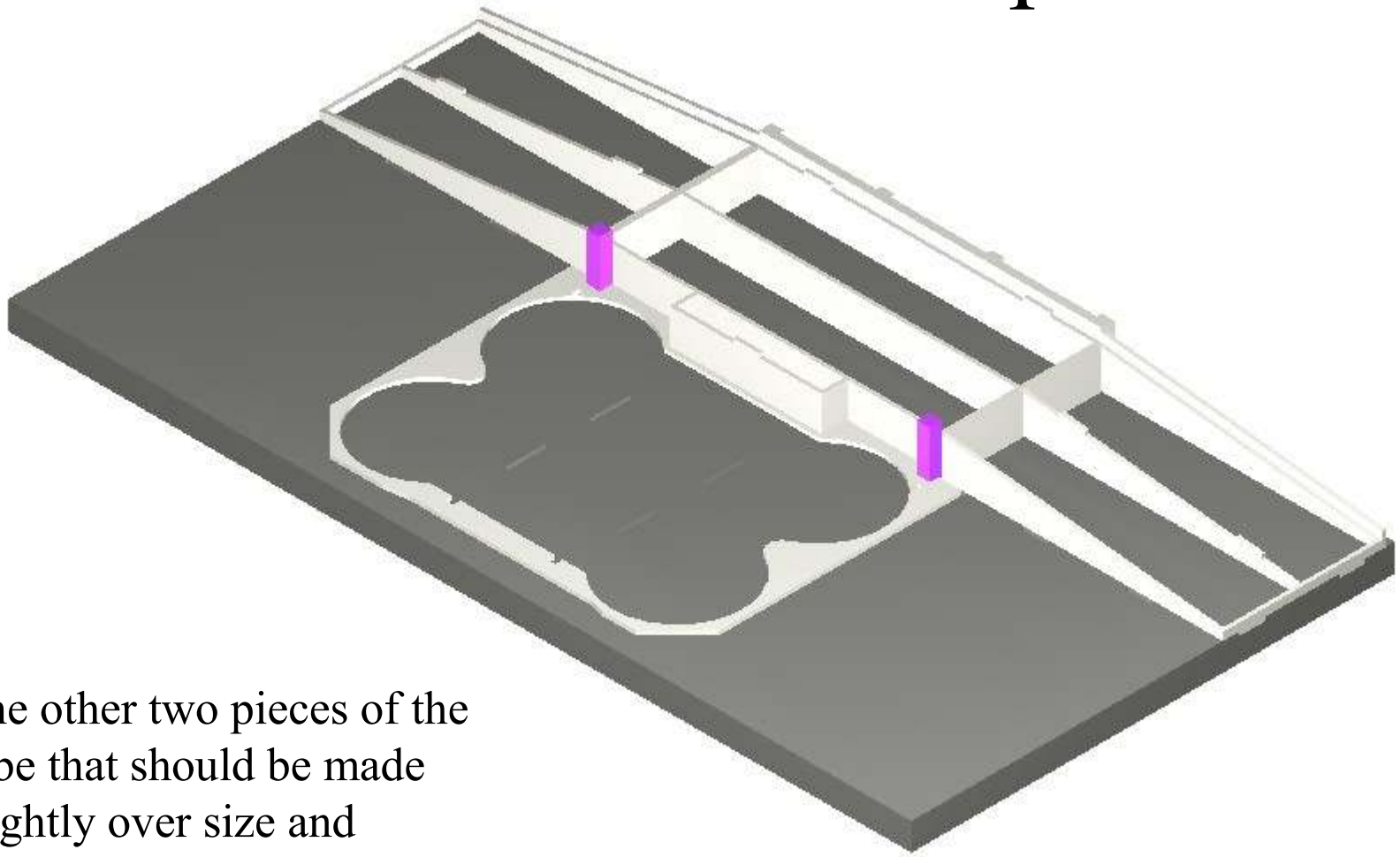
The Silo Base - Step 15



The Silo Base - Step 16

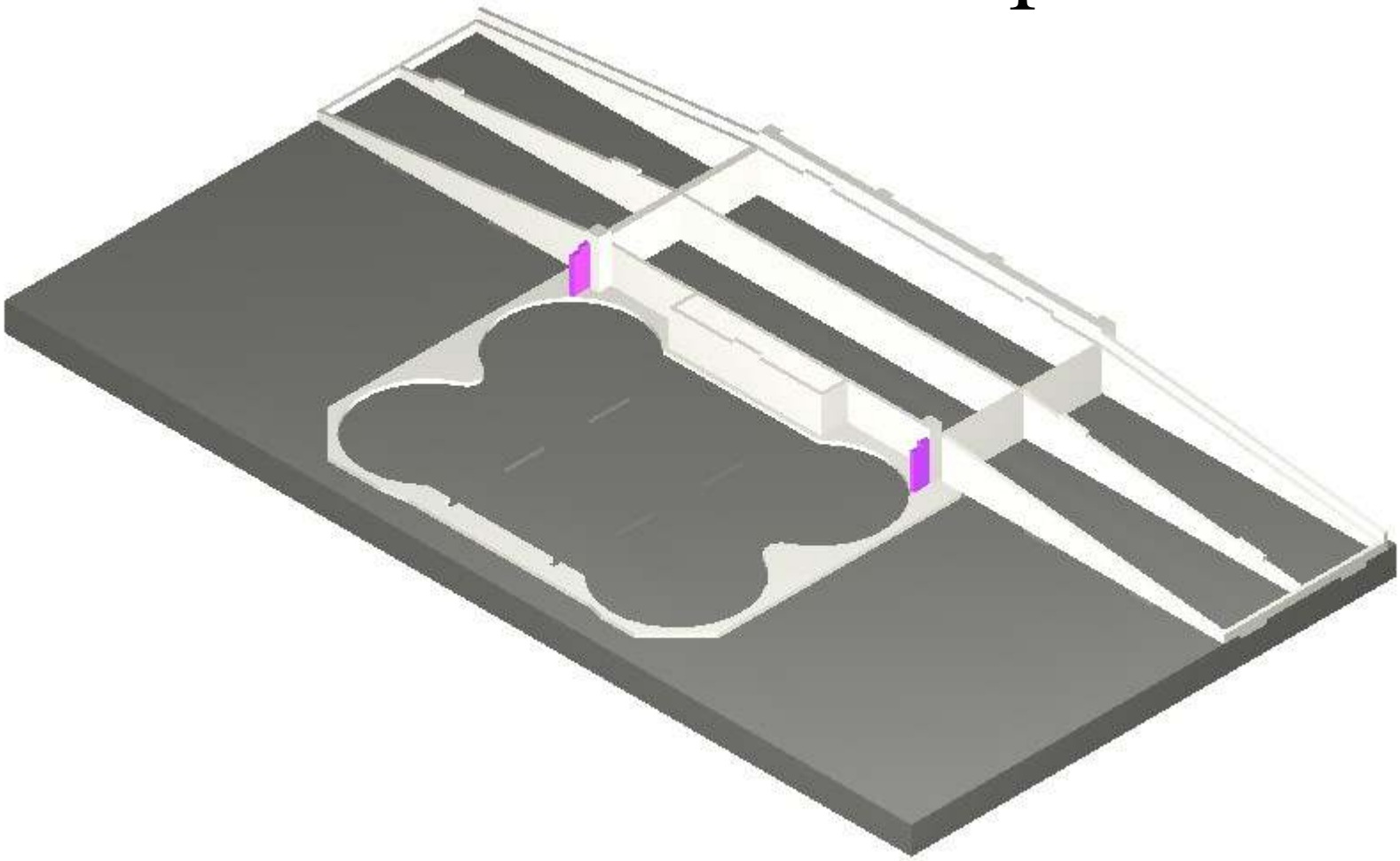


The Silo Base - Step 17

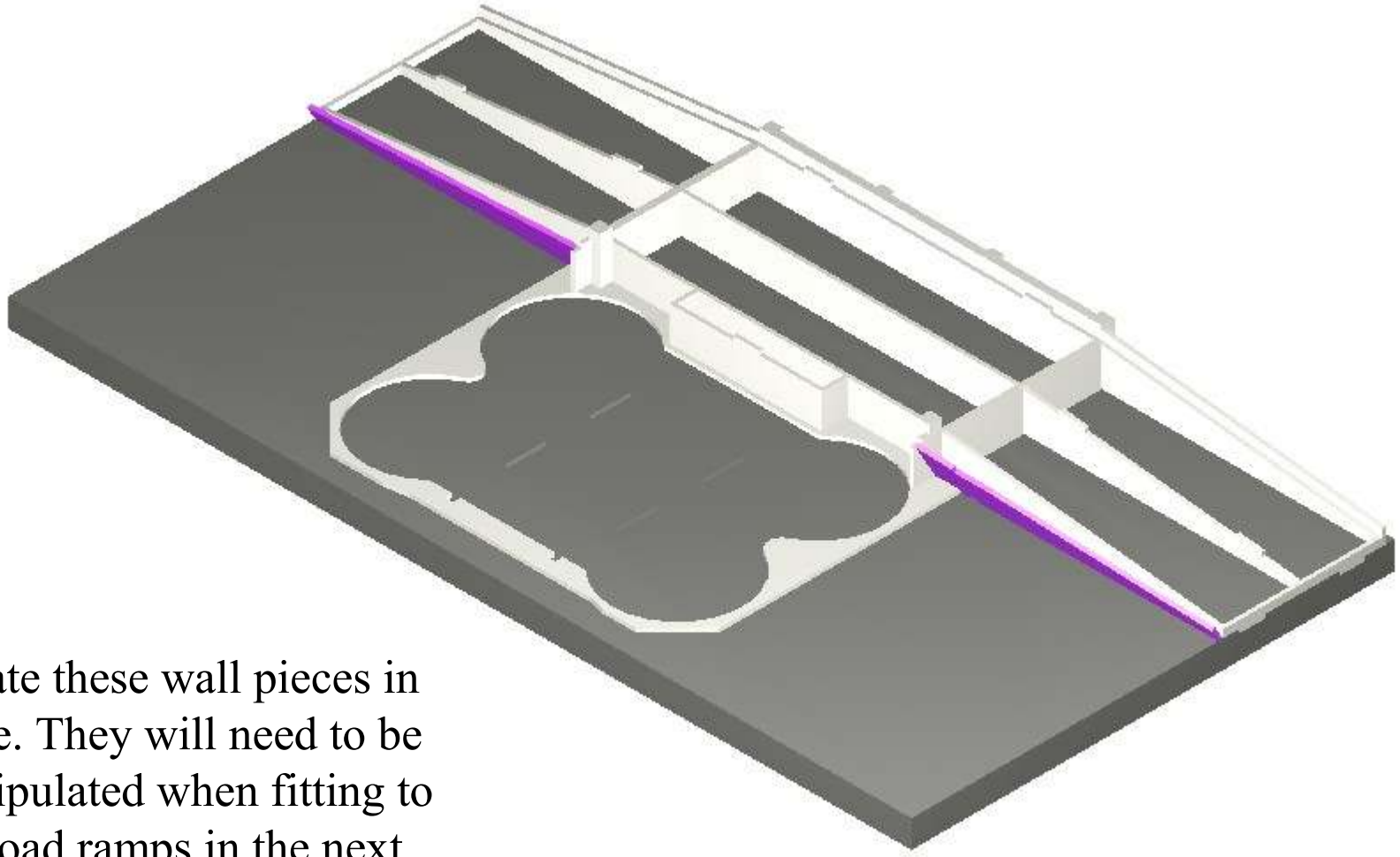


The other two pieces of the tube that should be made slightly over size and trimmed back later.

The Silo Base - Step 18

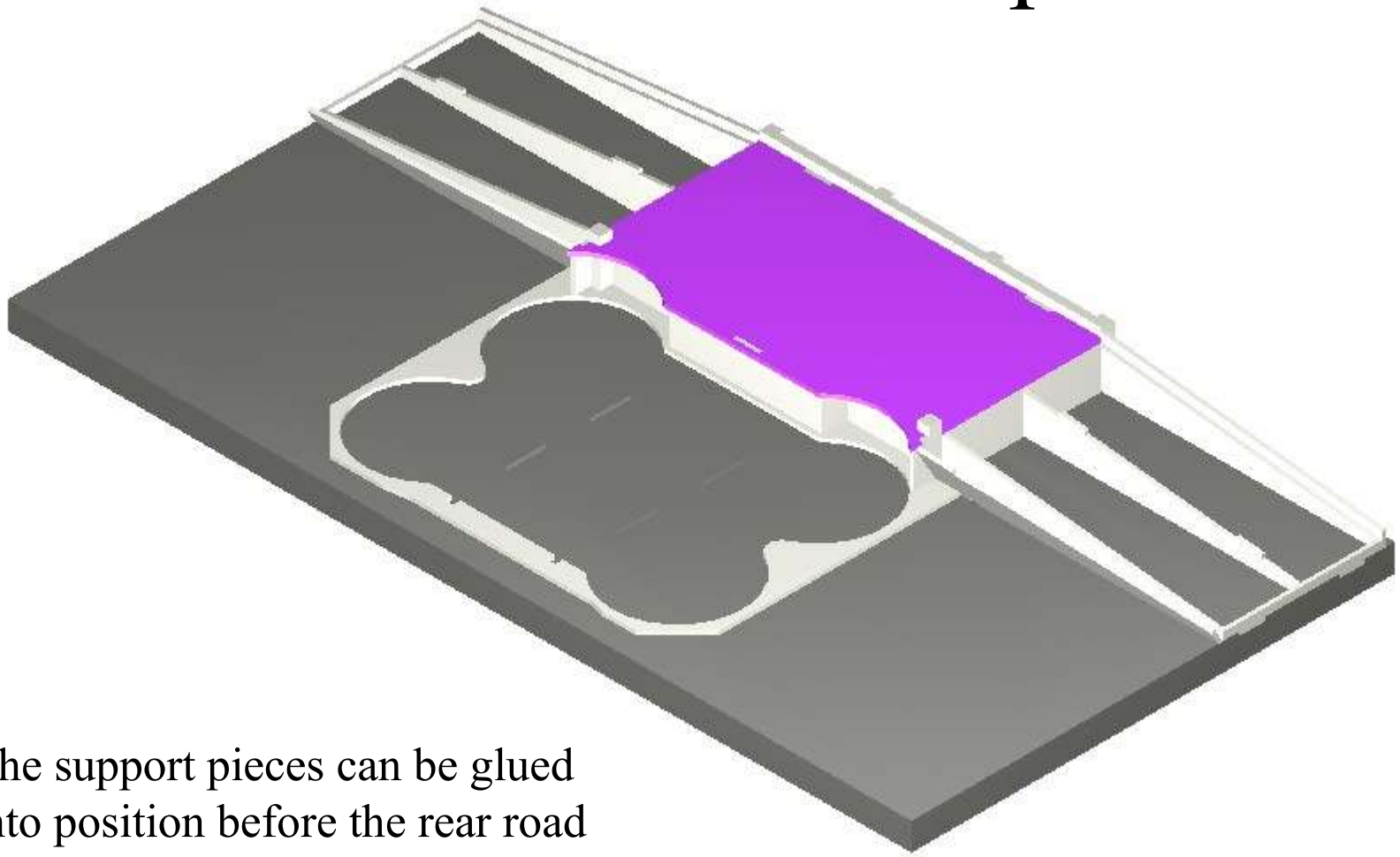


The Silo Base - Step 19



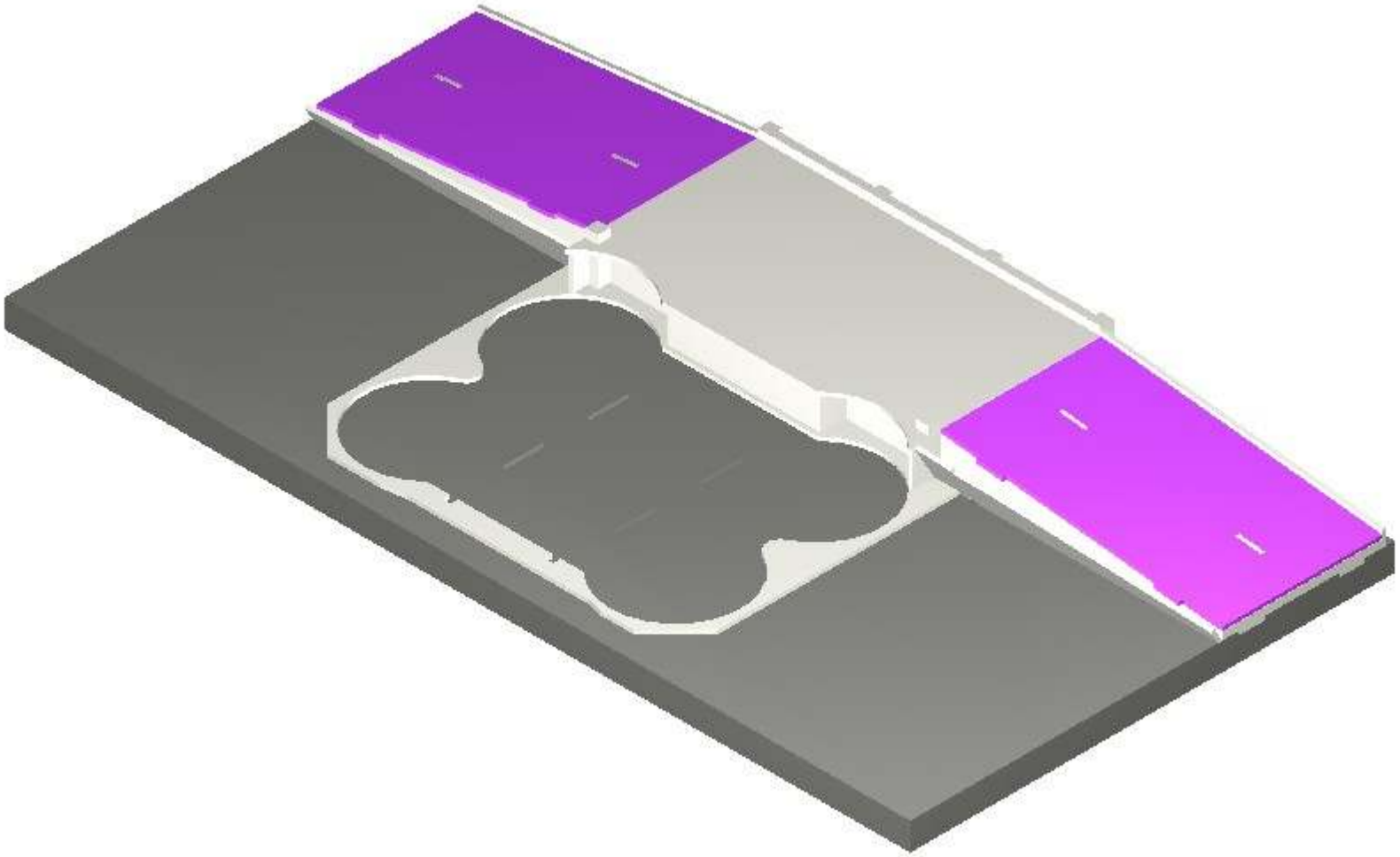
Locate these wall pieces in place. They will need to be manipulated when fitting to the road ramps in the next few steps.

The Silo Base - Step 20

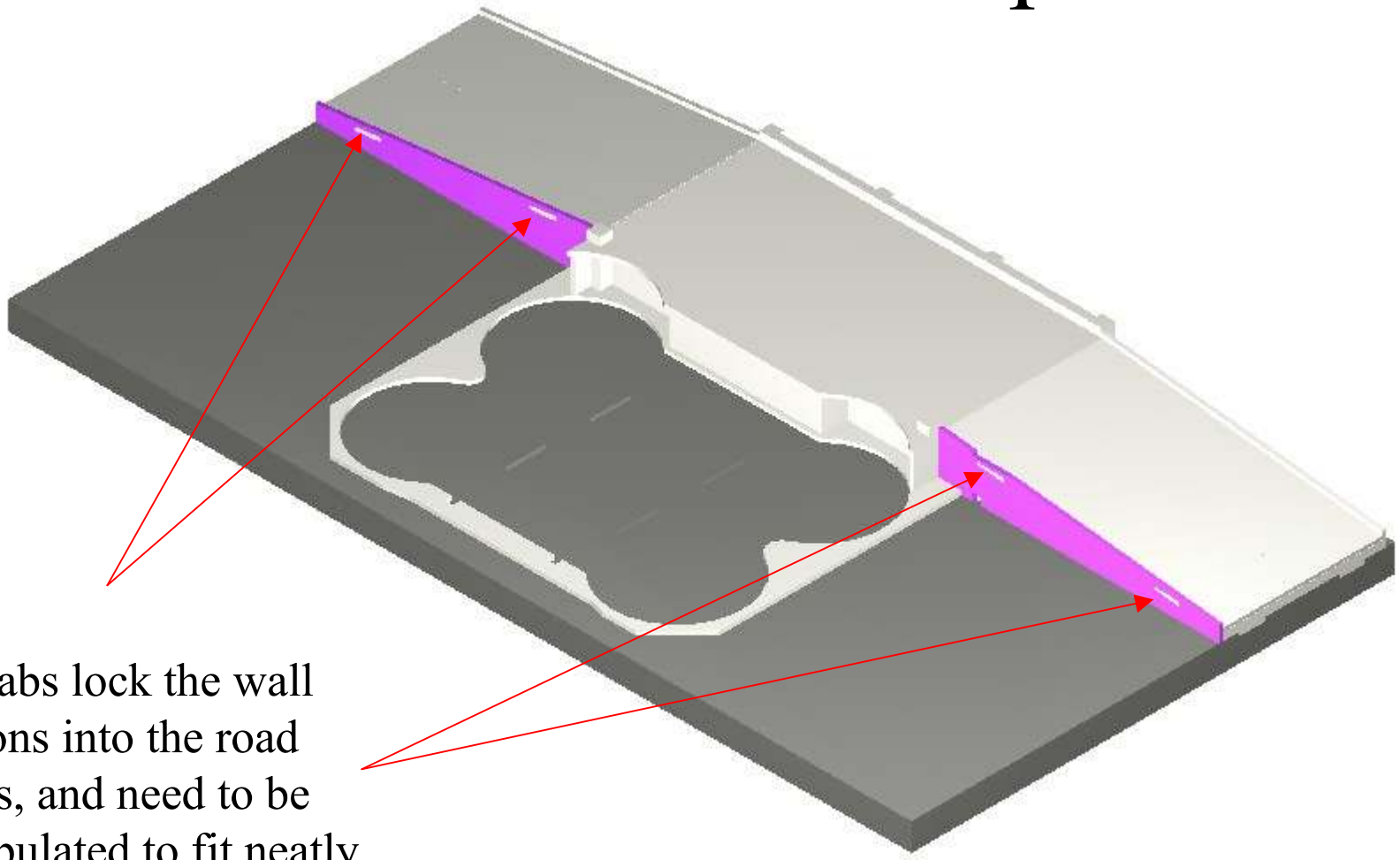


The support pieces can be glued into position before the rear road sections cover them.

The Silo Base - Step 21

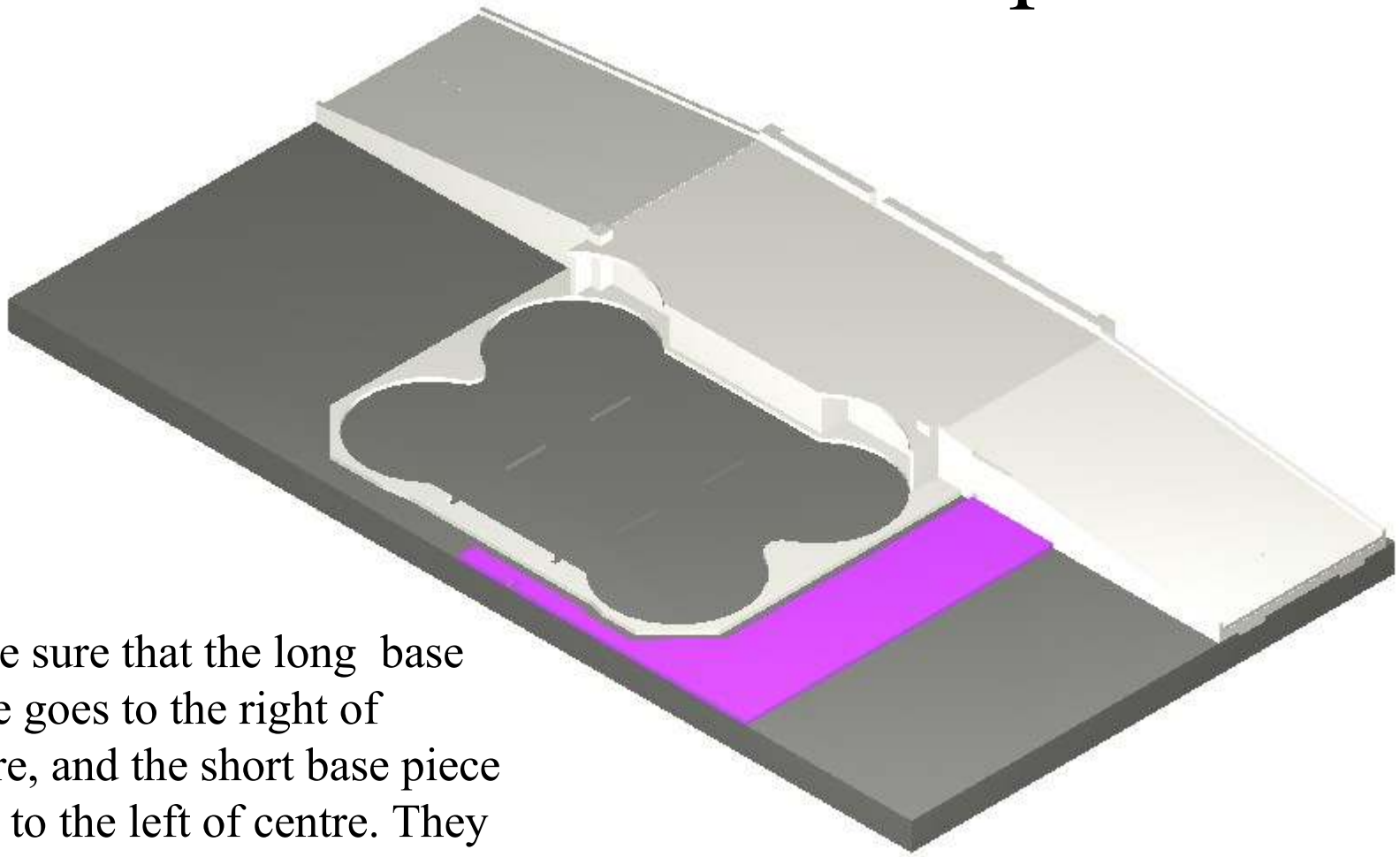


The Silo Base - Step 22



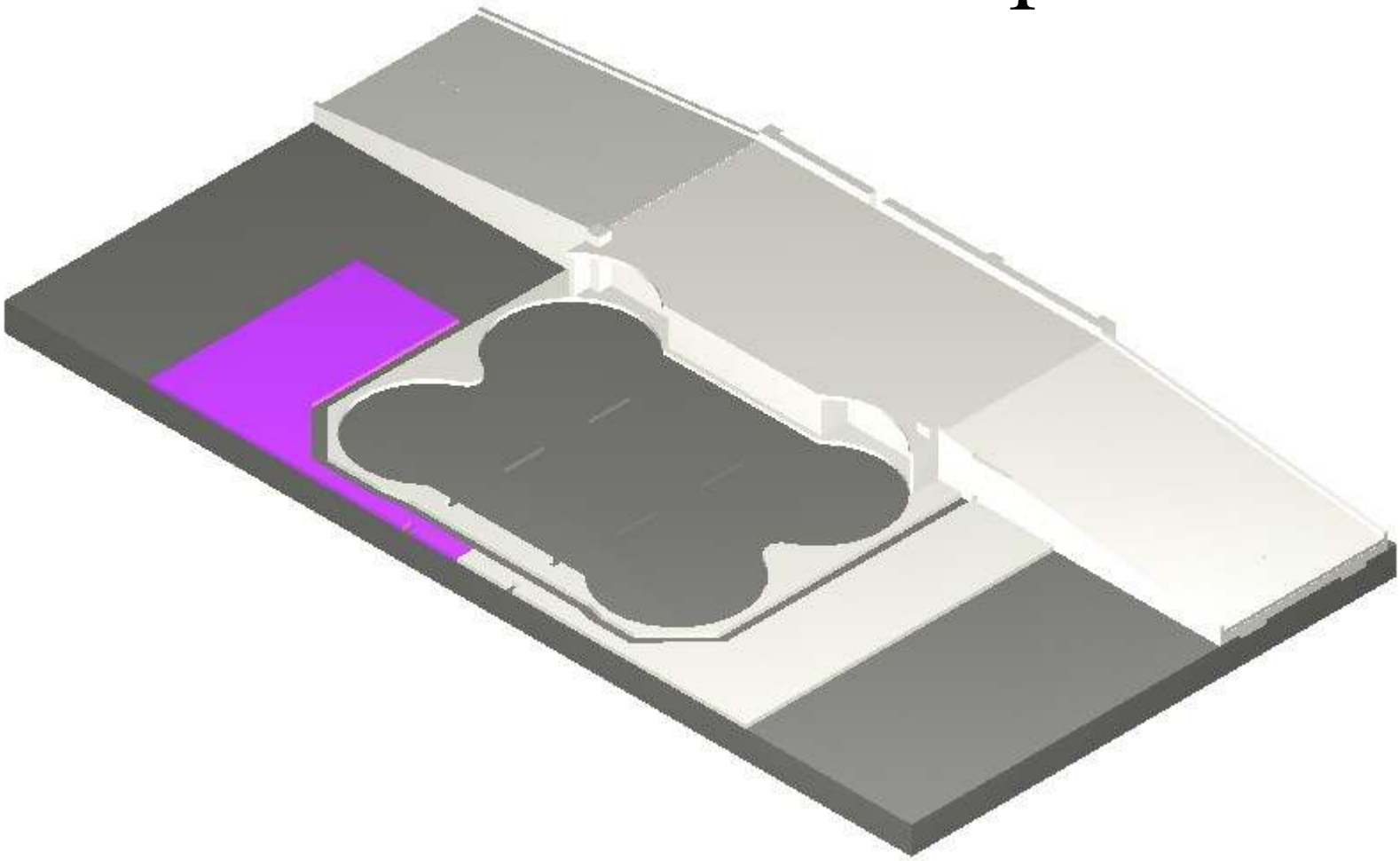
The tabs lock the wall sections into the road ramps, and need to be manipulated to fit neatly. Don’t force the parts as they will break.

The Silo Base - Step 23

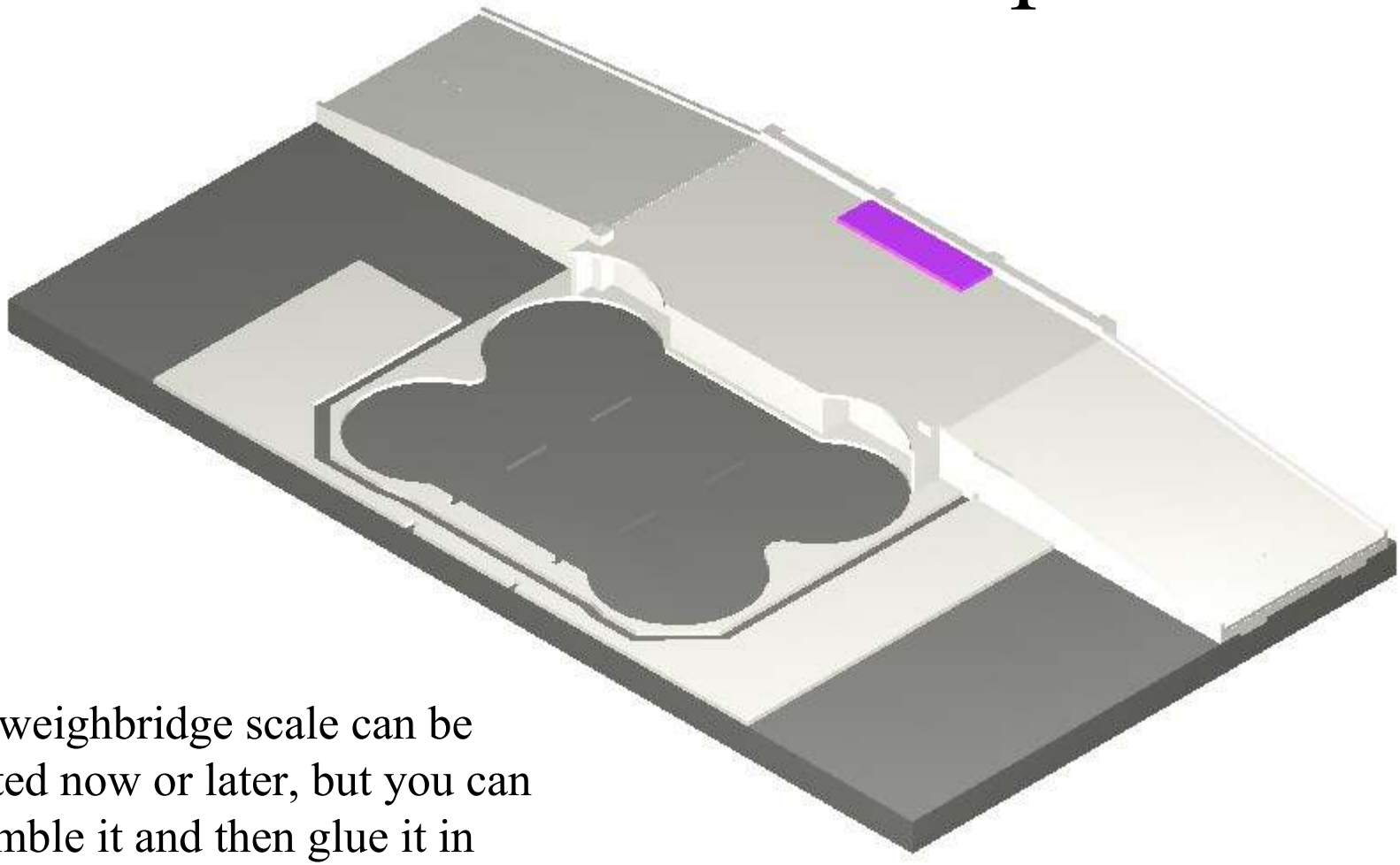


Make sure that the long base piece goes to the right of centre, and the short base piece goes to the left of centre. They should join in the centre when correctly located.

The Silo Base - Step 24

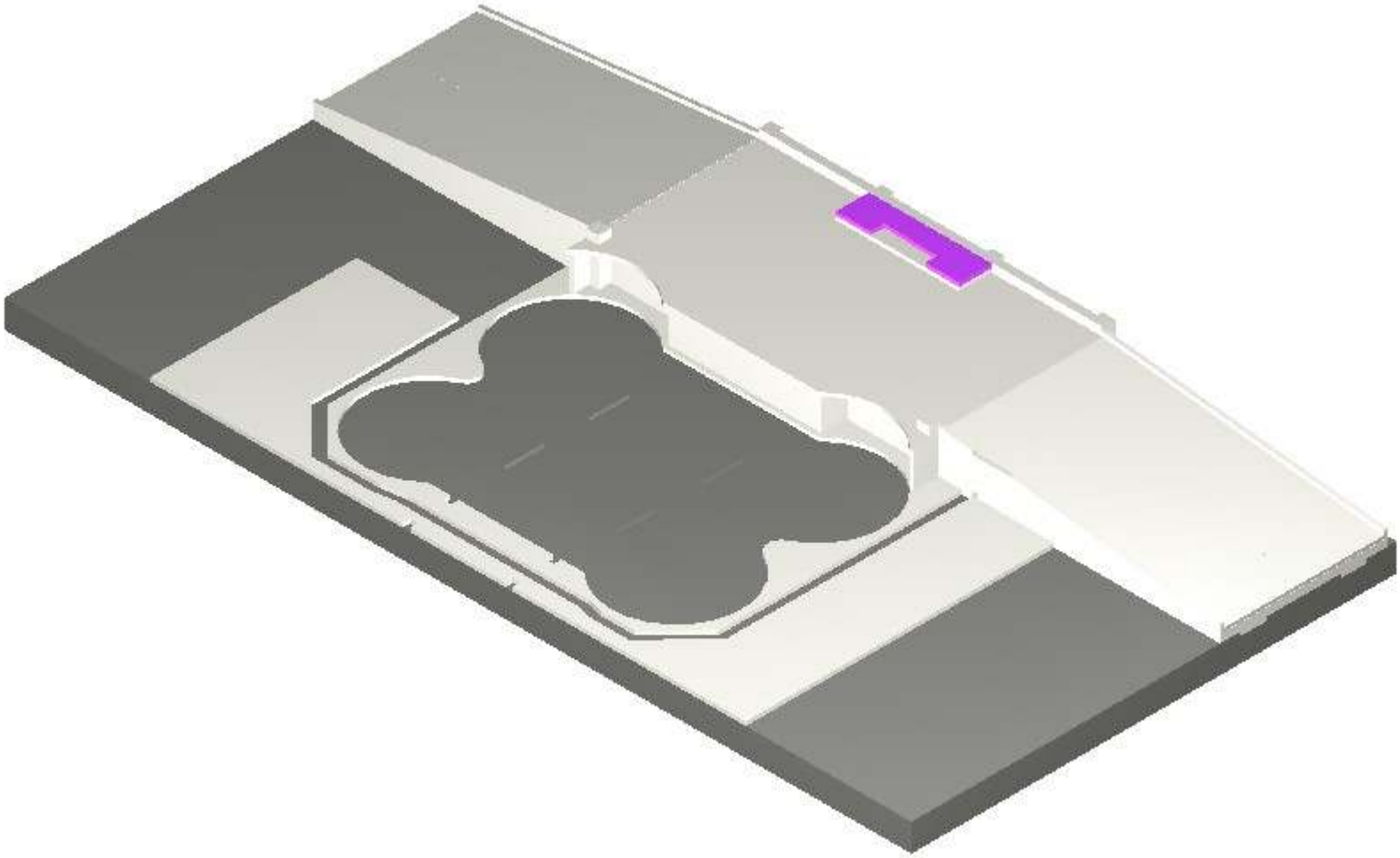


The Silo Base - Step 25

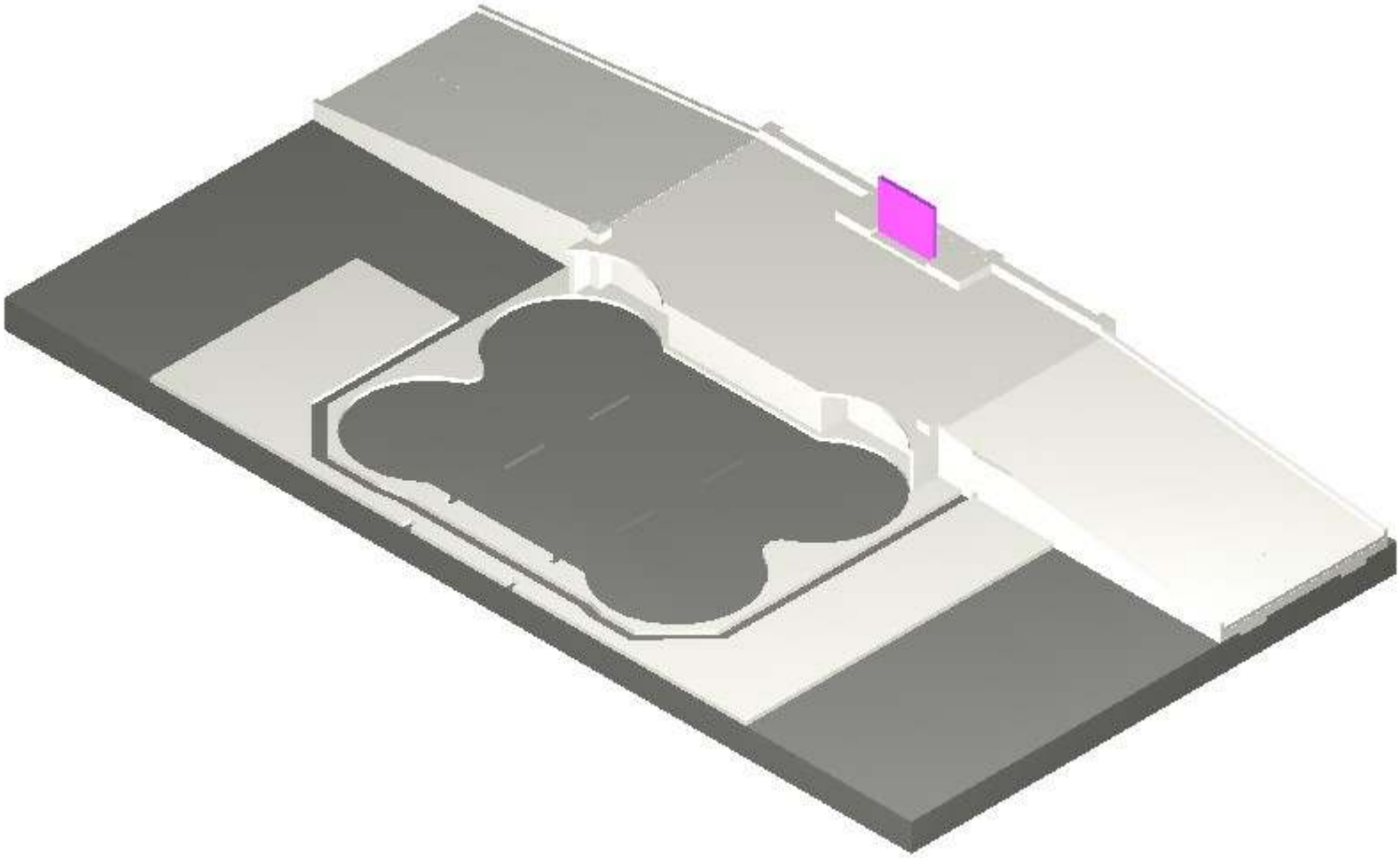


The weighbridge scale can be located now or later, but you can assemble it and then glue it in place at a later time.

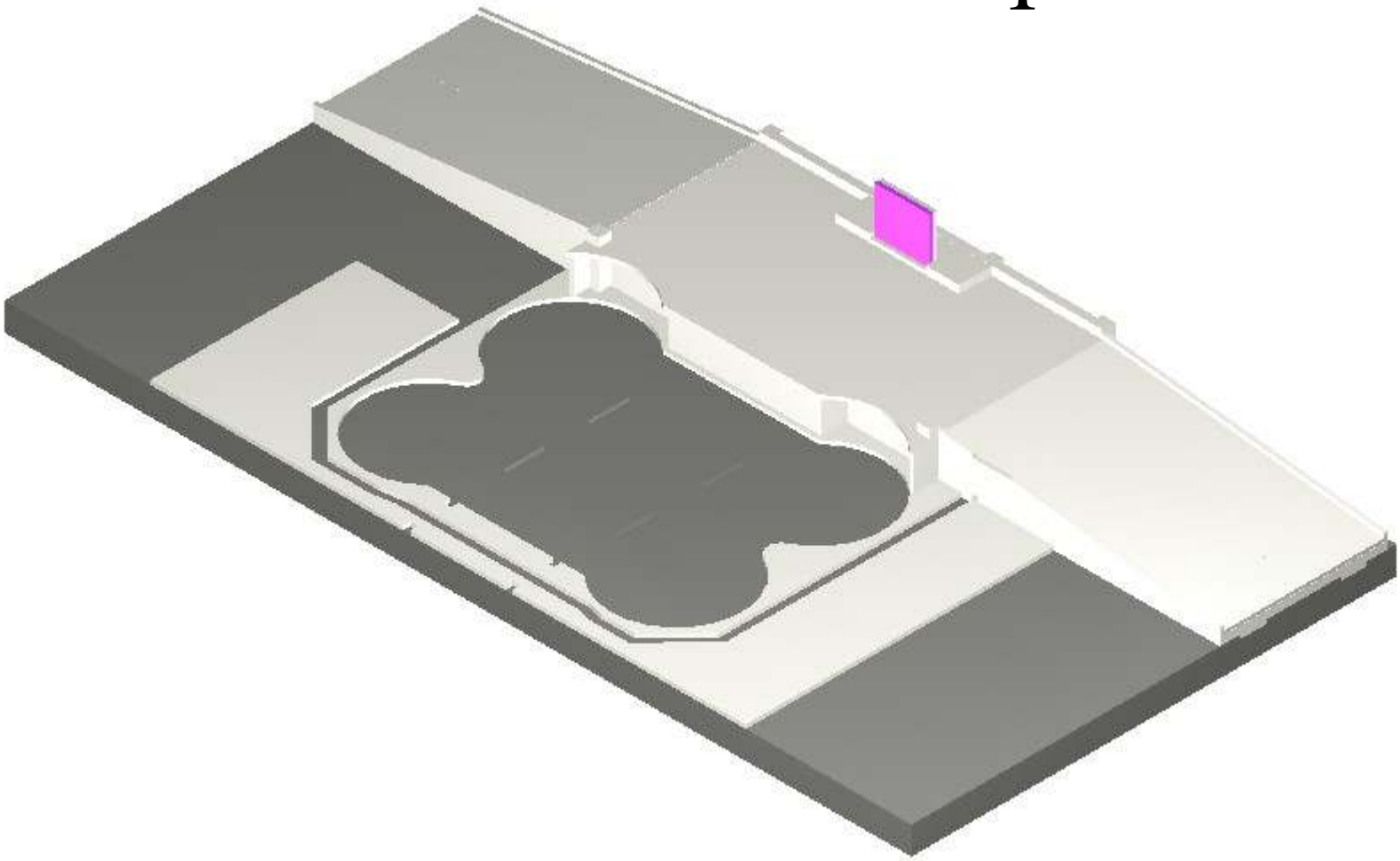
The Silo Base - Step 26



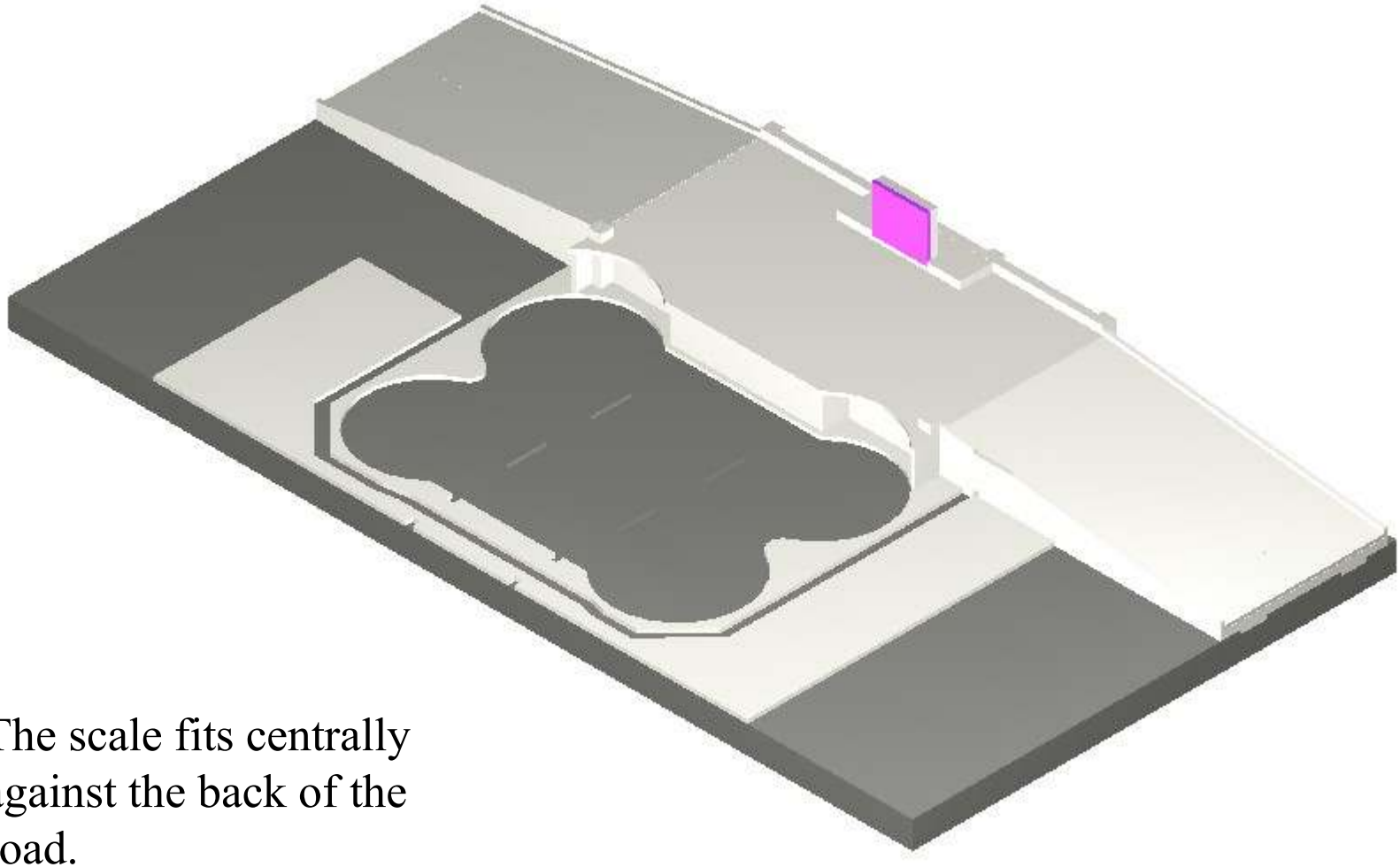
The Silo Base - Step 27



The Silo Base - Step 28

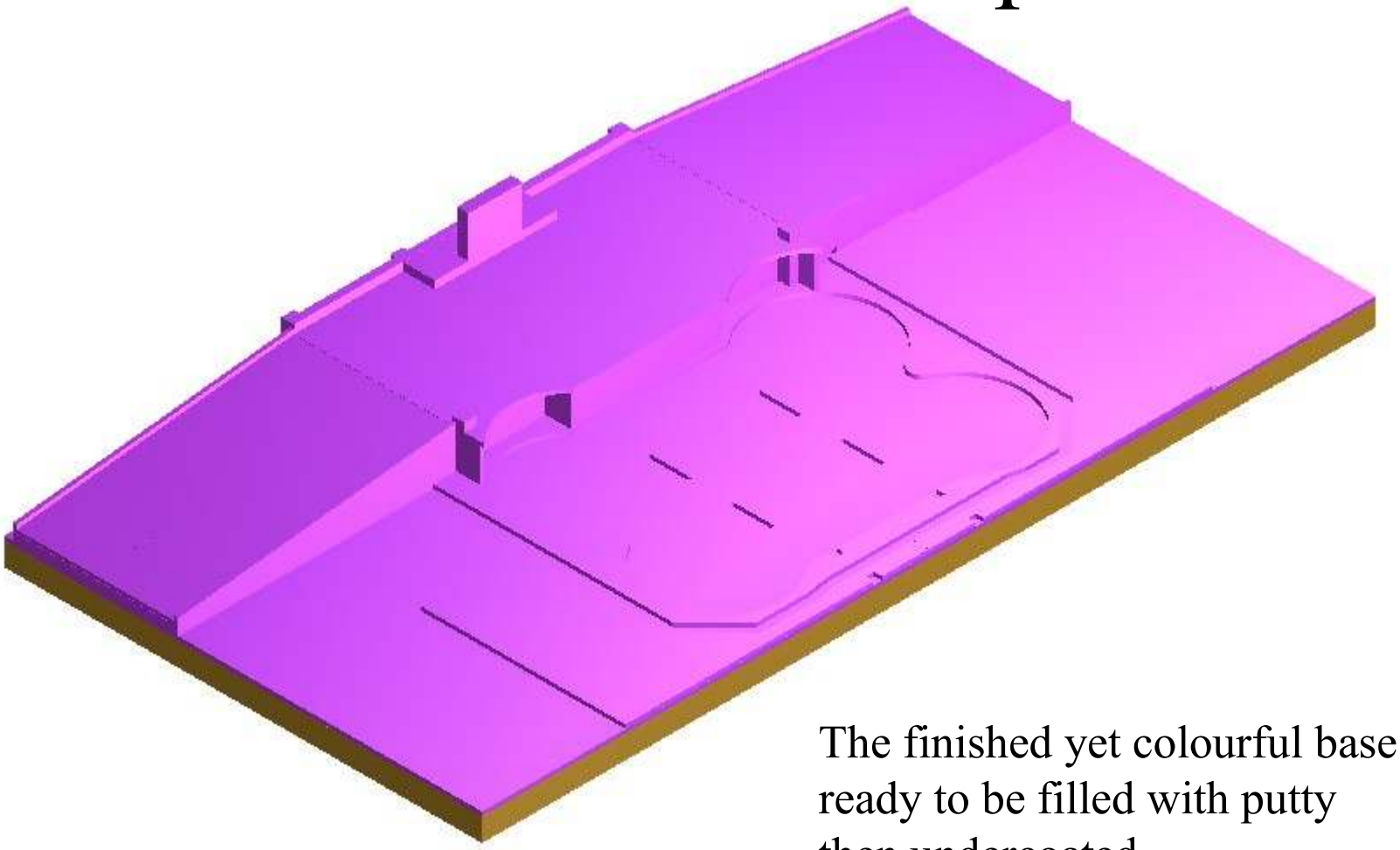


The Silo Base - Step 29



The scale fits centrally against the back of the road.

The Silo Base - Step 30

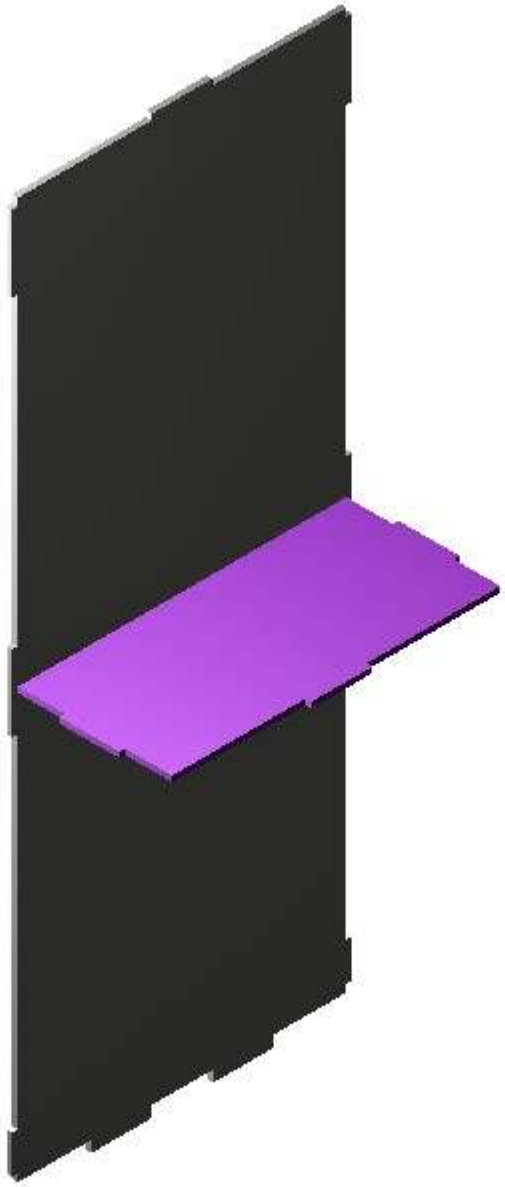


The finished yet colourful base ready to be filled with putty then undercoated.

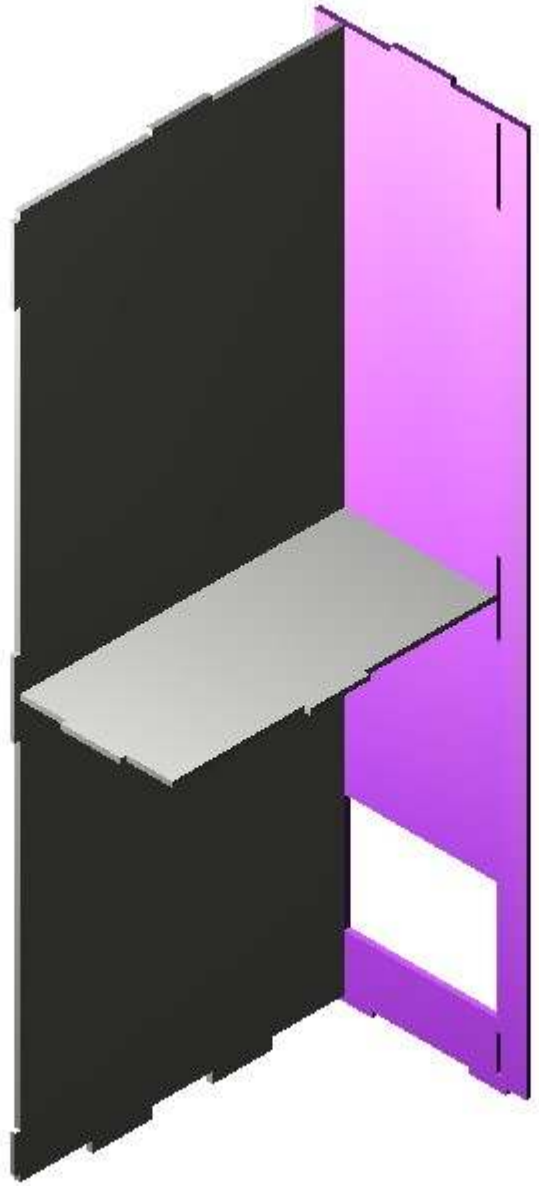
So Far, So Good!!!!!!

- Now if you have got this far without any problems, the hard bit is done - only kidding there are plenty of hard bits to go (joking).
- The base is now all glued together (there is more work to be done on it - but more about that later) and can be set aside to dry, while you proceed with the next sub assembly ---- the Silo Sub-Frame.
- There are a few methods that can be used for this sub-assembly, and it is your choice which one you employ.
- The first method is to glue all of the parts in place, including the bins, and work with the sub-frame as a whole unit.
- The second method is to leave the top of the Sub-Frame and attach it to the base of the Cupola, to assist in locating the cupola and bin roofs.
- A third choice would be to place the Sub-Frame together, without the top, and the bins, and use the top to locate all of the parts of the cupola and bin roof, and judicially glue the bin roof parts together without gluing the Sub-Frame top to the bin roof. This is my preferred choice but fitting the smaller roof support pieces can be a bit fiddly.

Silo Sub Frame - Step 1



Silo Sub Frame - Step 2



Silo Sub Frame - Step 3

Silo Sub Frame - Step 4

Place 3 rubber bands around the Sub-Frame to hold the pieces together whilst the glue is drying. Try and avoid gluing the bands to the Sub-Frame!

The front panel should have the door opening on the right and the window opening on the left, unless you want the silo to be slightly different. There is no fast or firm rule.

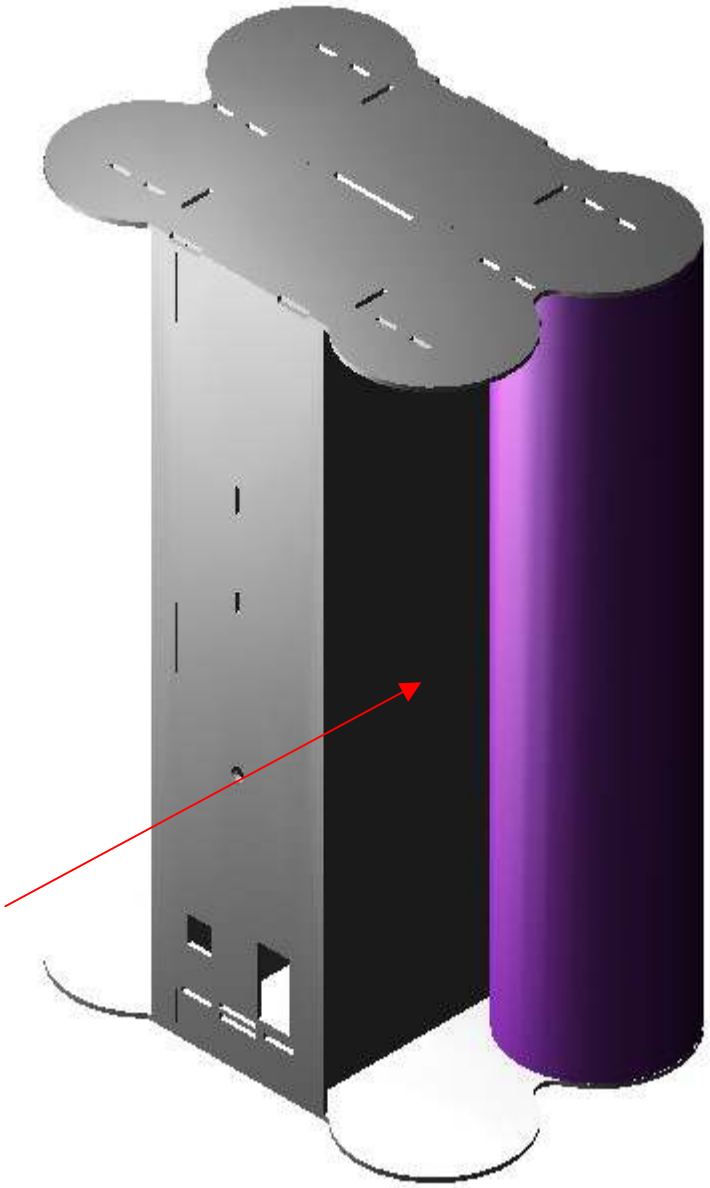
Silo Sub Frame - Step 5

Silo Sub Frame - Step 6

Depending on the method you are employing, you might like to leave the top of the Sub_Frame for now. And fit it later. If you are going to fit it, go to the next stage of the construction.

Silo Sub Frame - Step 7

The bin sections may be slightly oversize (width) and protrude past the top and base piece outer edge. One thing that can overcome this problem is to rub one face of the bin on some heavy Sand/Wet/Dry Paper. This face is then set against the wall of the Sub-Frame. This also allows a greater gluing area to bond the bins to the Sub-Frame



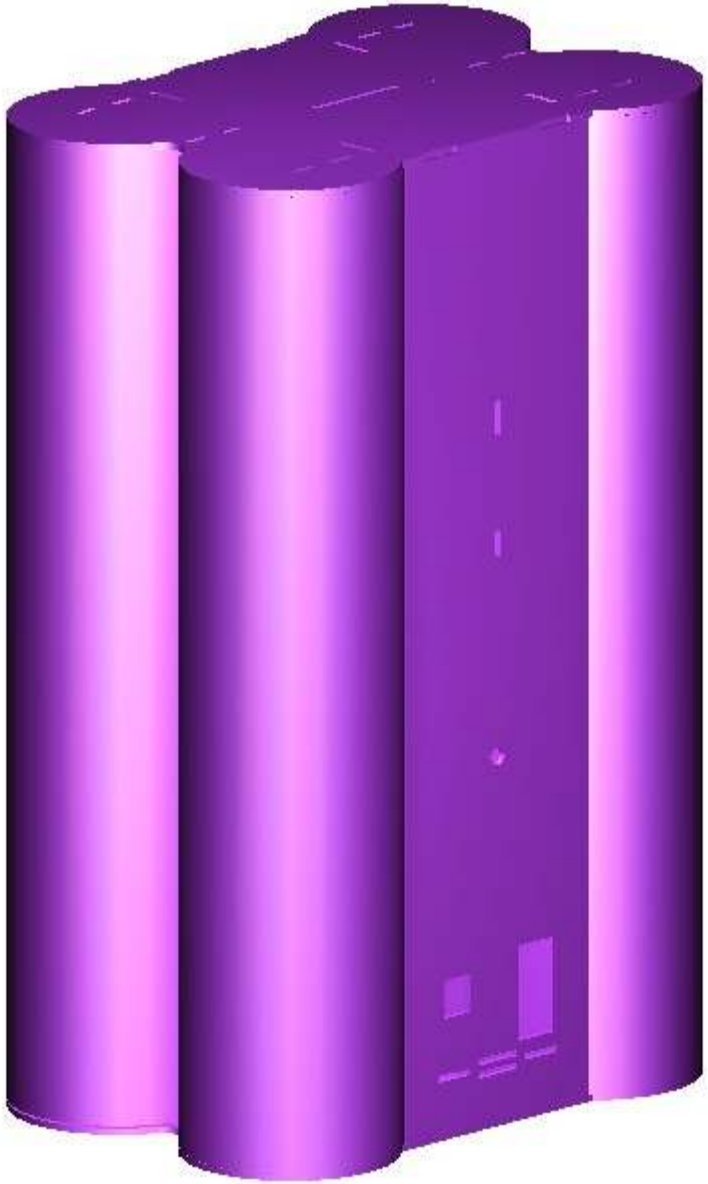
If the Bins are too high, just rub them down with some sandpaper, and if they are too low, they need to be packed and set in Araldite.

Silo Sub Frame - Step 8

Silo Sub Frame - Step 9

Silo Sub Frame - Step 10

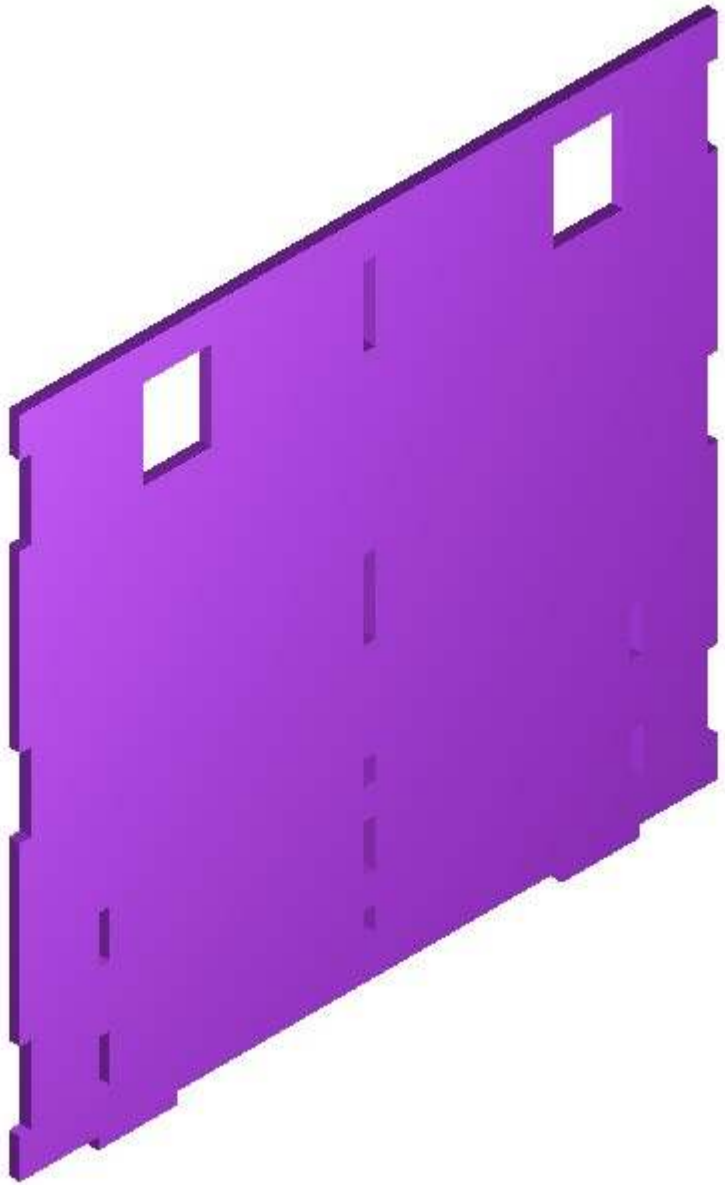
Silo Sub Frame - Step 11



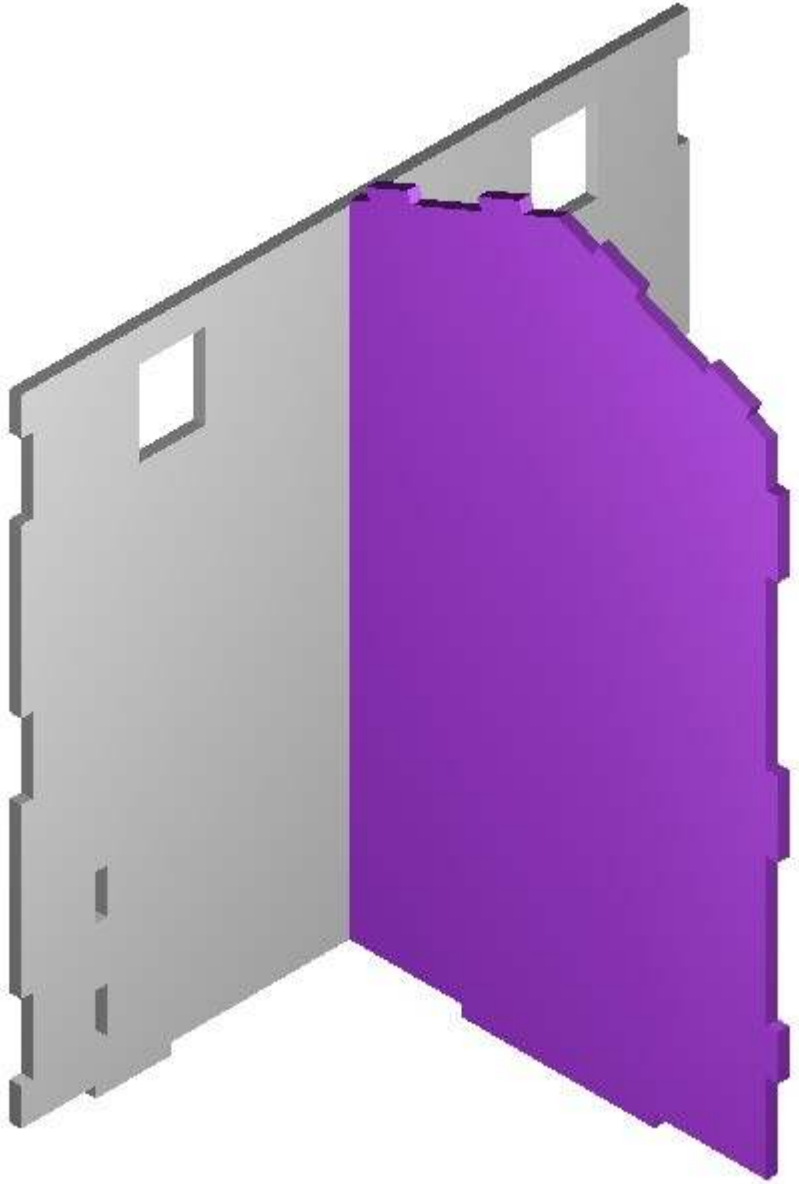
Onward, and upward

- The next step is construct the Cupola and Bin Roof.
- A fairly straightforward process, depending on how you worked with the Sub-Frame
- If you left the top of the Sub-Frame, then ensure that you DON'T place any glue on the top piece in this process, just use it as a guide to line up all the roof components.
- Let us proceed to the Cupola and Bin Roof

Silo Cupola - Step 1



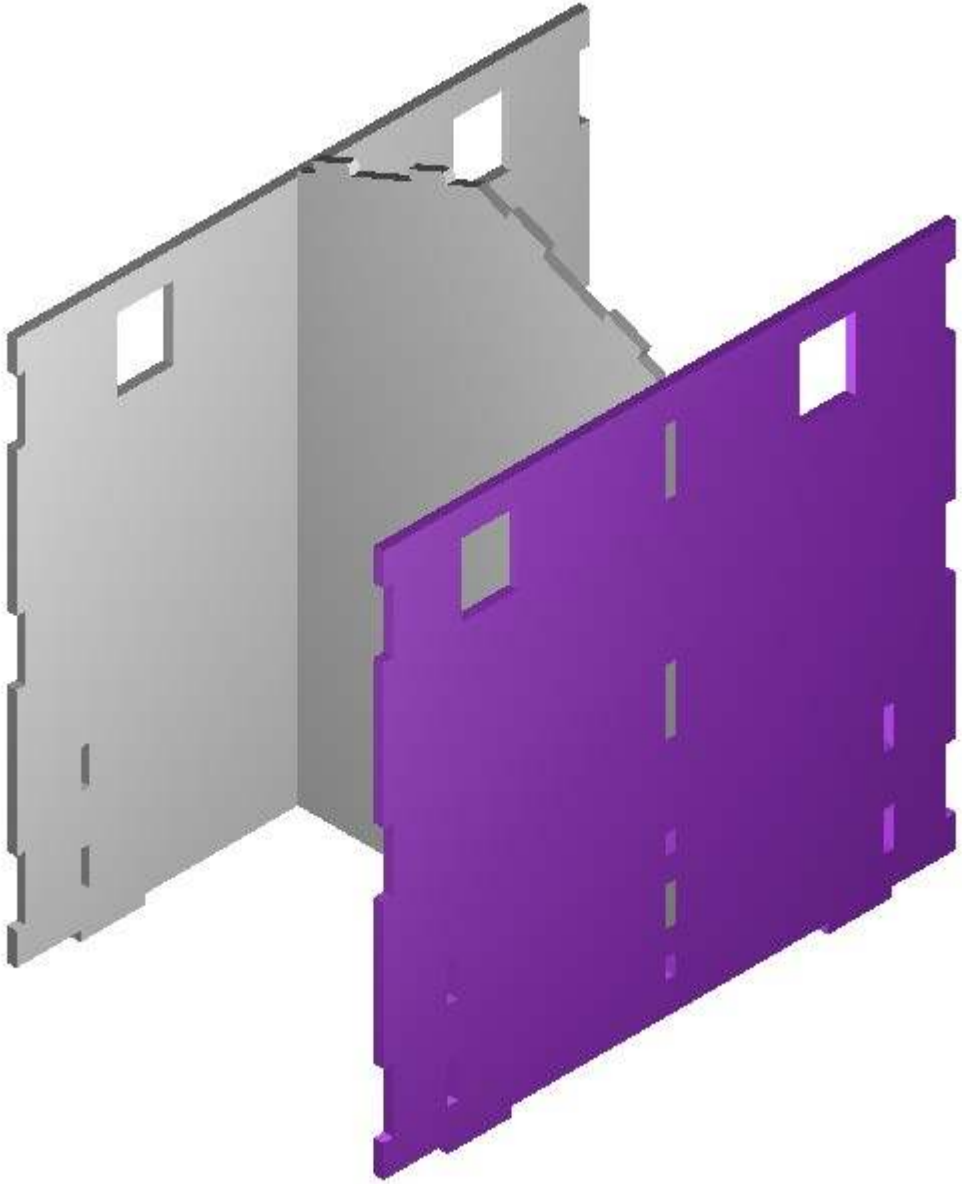
Silo Cupola - Step 2



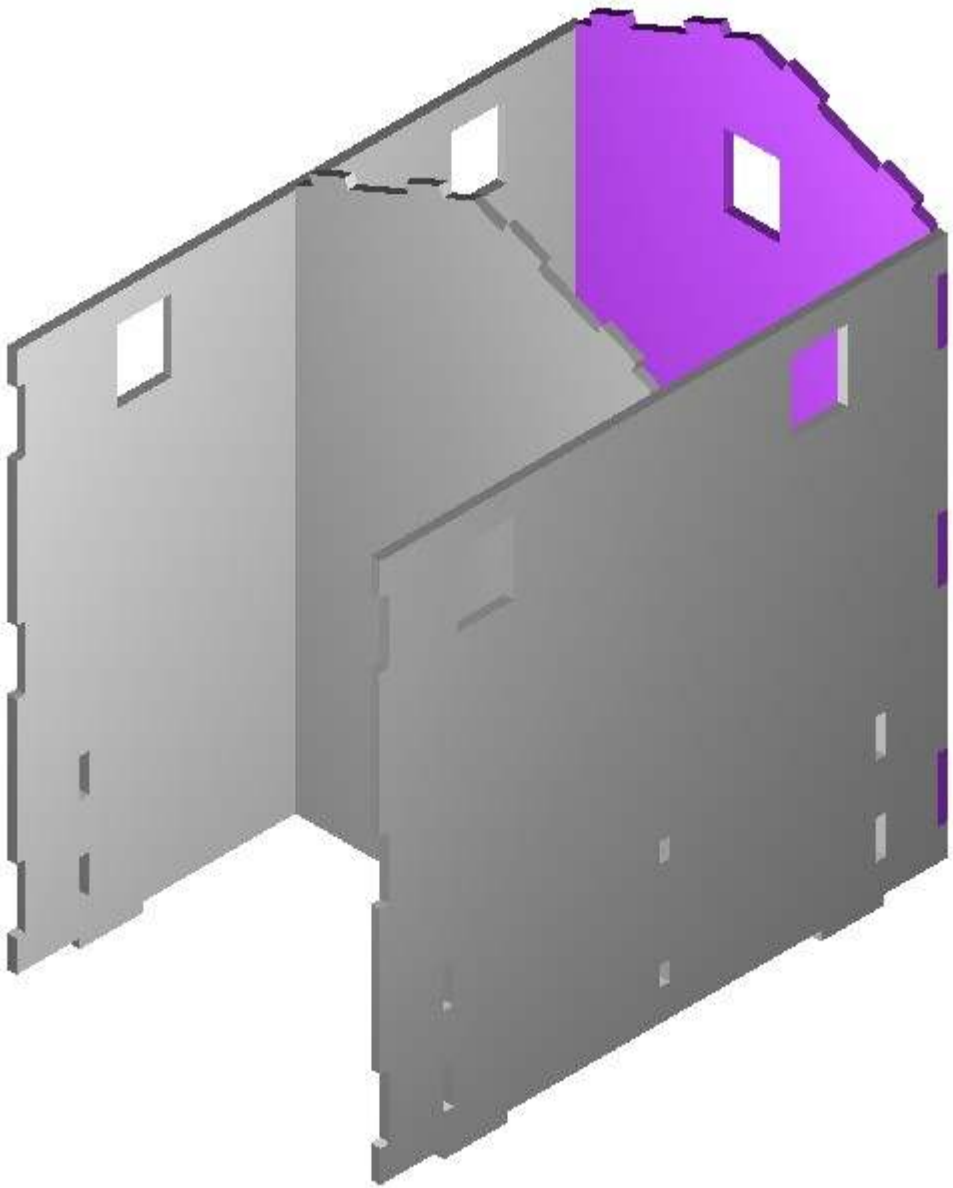
Silo Cupola - Step 3

WARNING

The side panel window openings are closer to the edge on one side compared to the other, so it is important that both panels are the same orientation. At this stage it doesn't matter which side the narrow edge is on, but it will matter when the Cupola is attached to the Sub-Frame

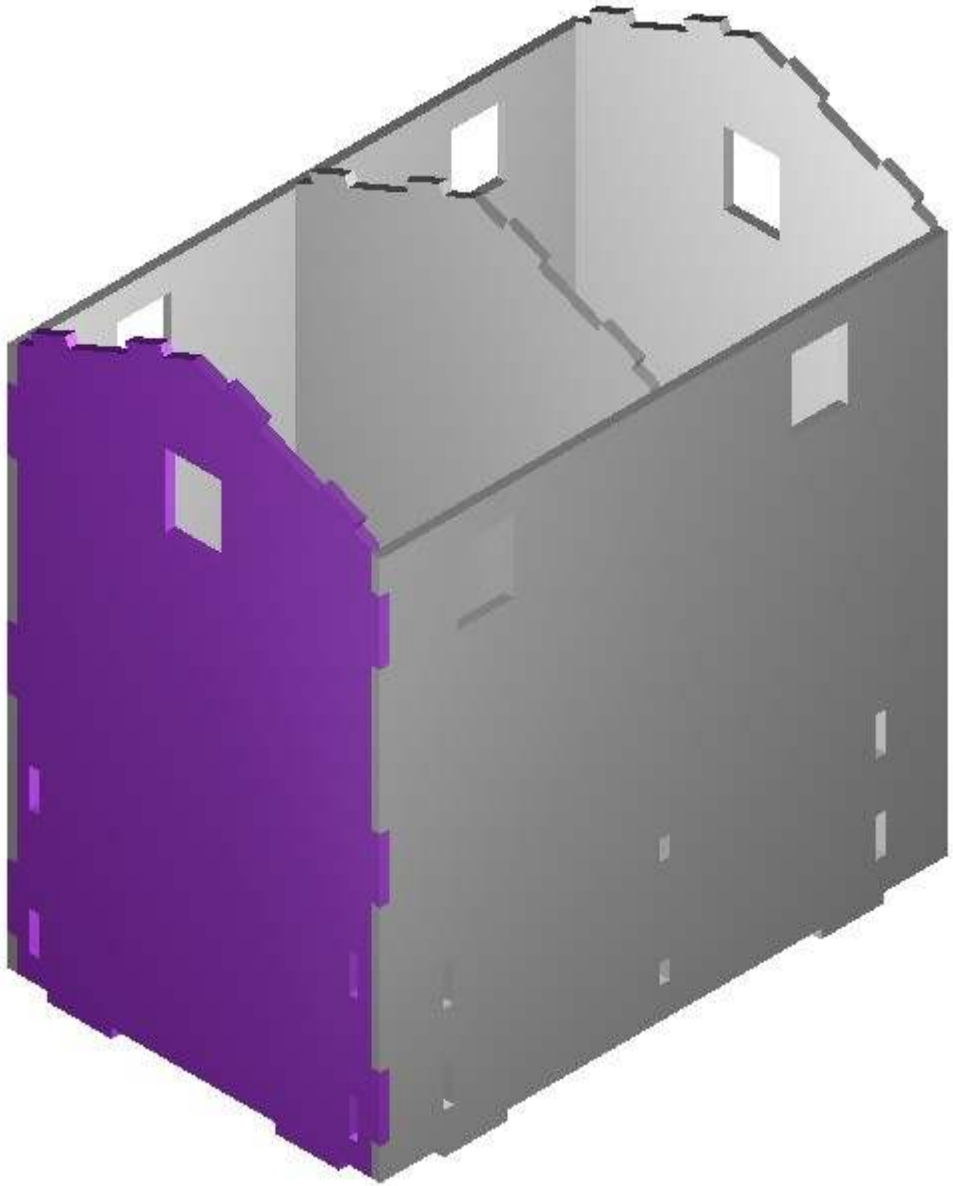


Silo Cupola - Step 4

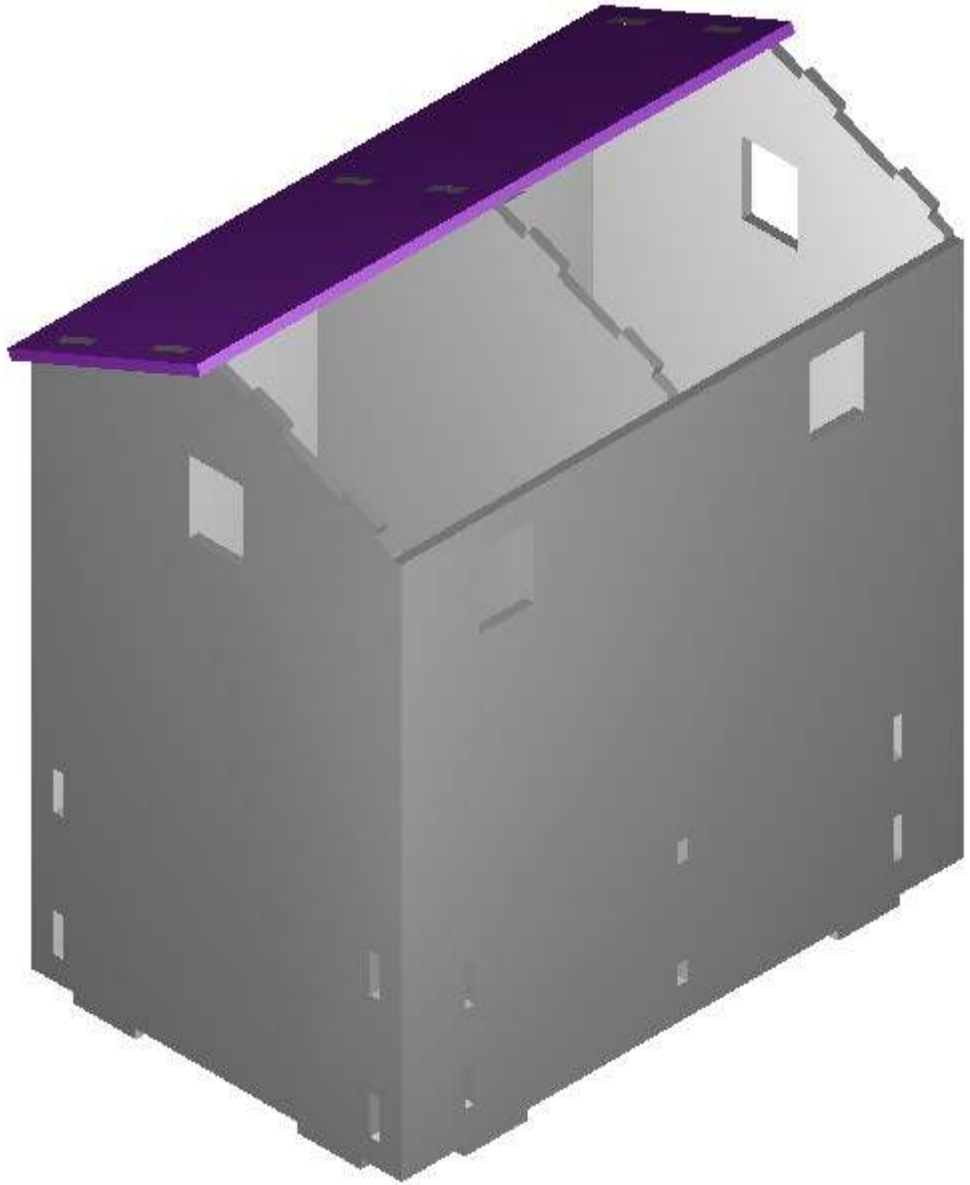


Silo Cupola - Step 5

The use of rubber bands is again suggested to hold everything together whilst the glue is drying.

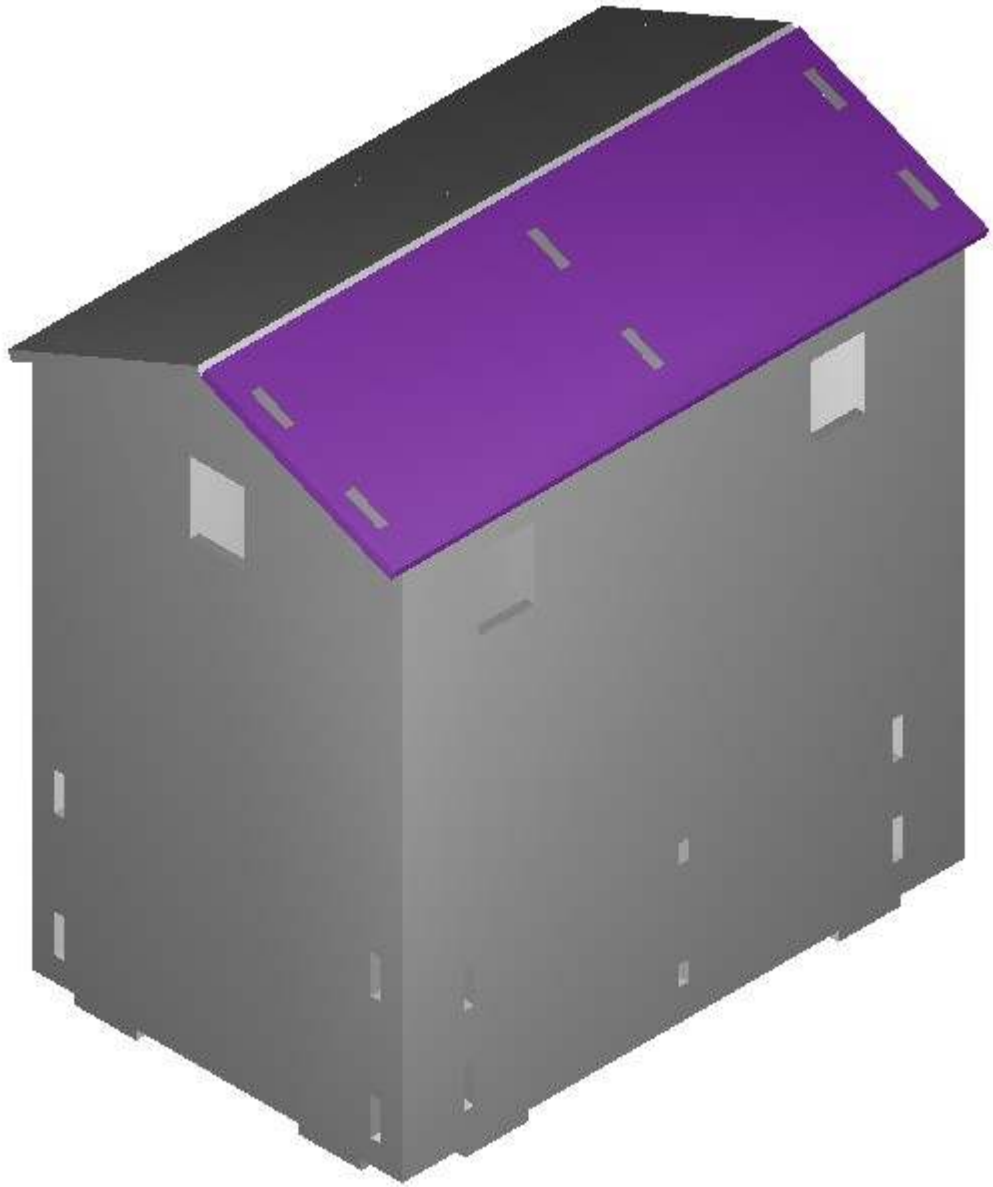


Silo Cupola - Step 6



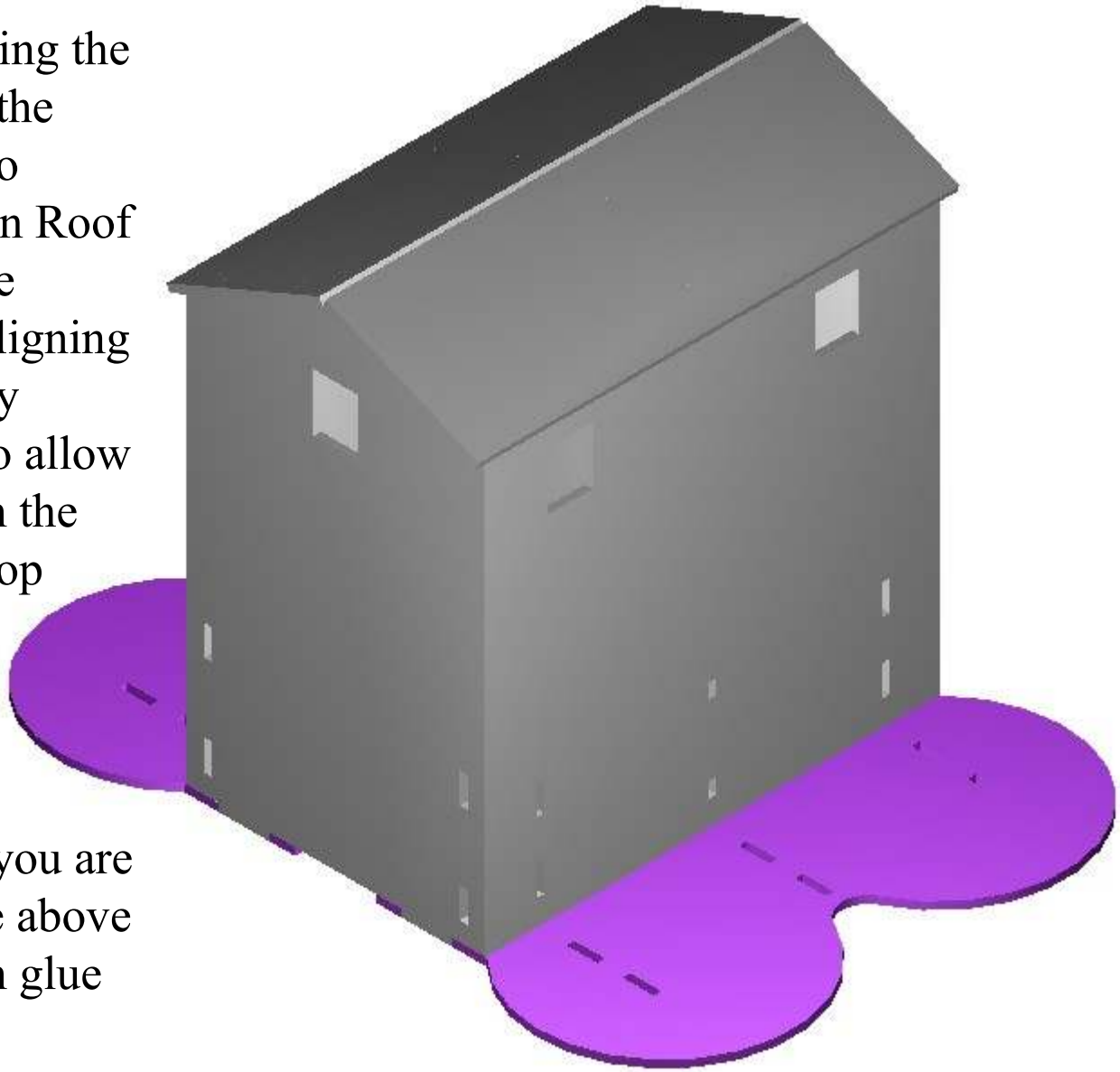
Silo Cupola - Step 7

The rubber bands could be used here as well to hold the roof pieces in place whilst waiting for the glue to dry.



Silo Cupola - Step 8

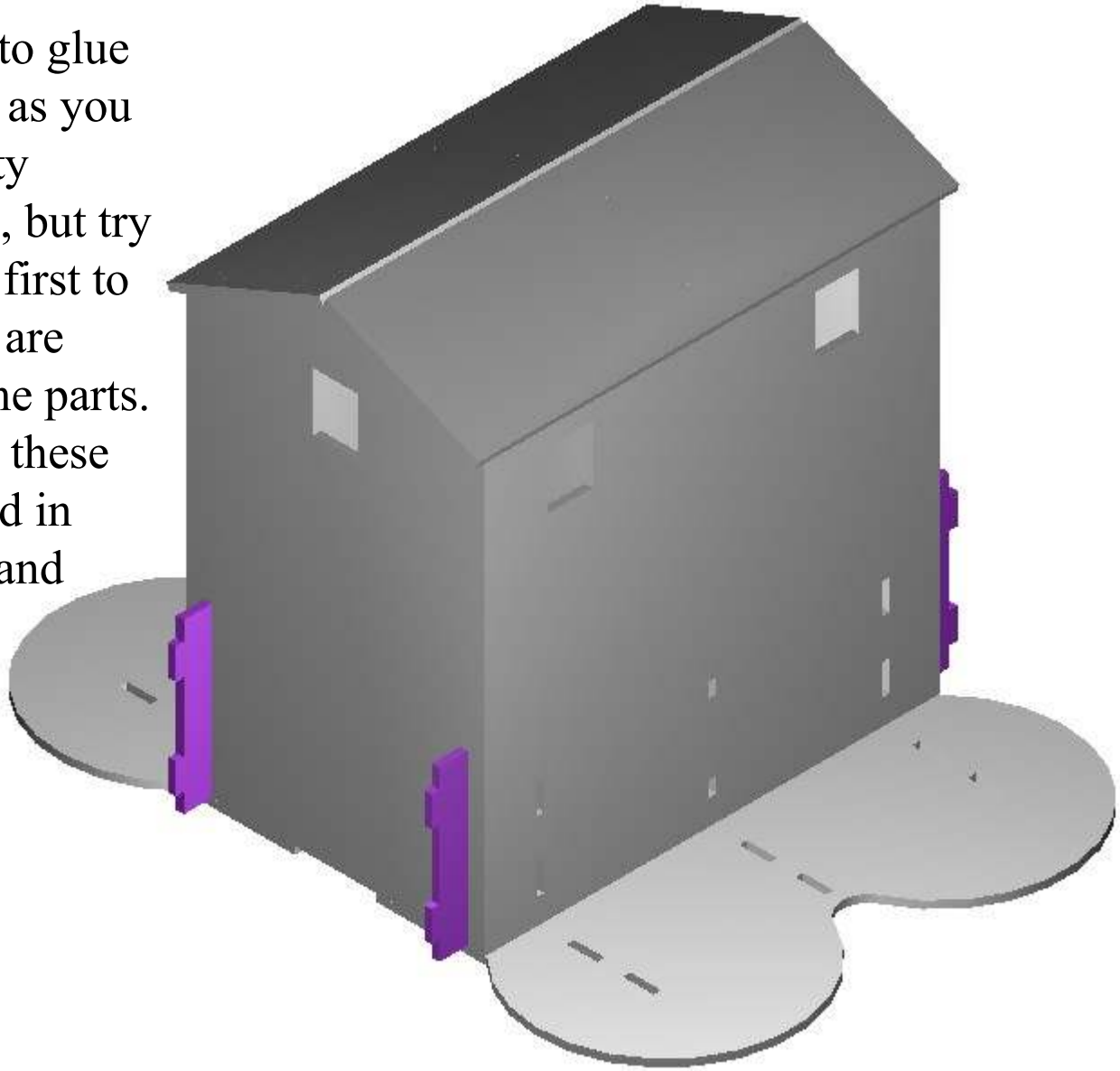
If you are using the top piece of the Sub-Frame to locate the Bin Roof pieces for the purpose of aligning them, be very careful not to allow glue to touch the Sub-Frame top piece.



If however, you are not using the above method, then glue away.

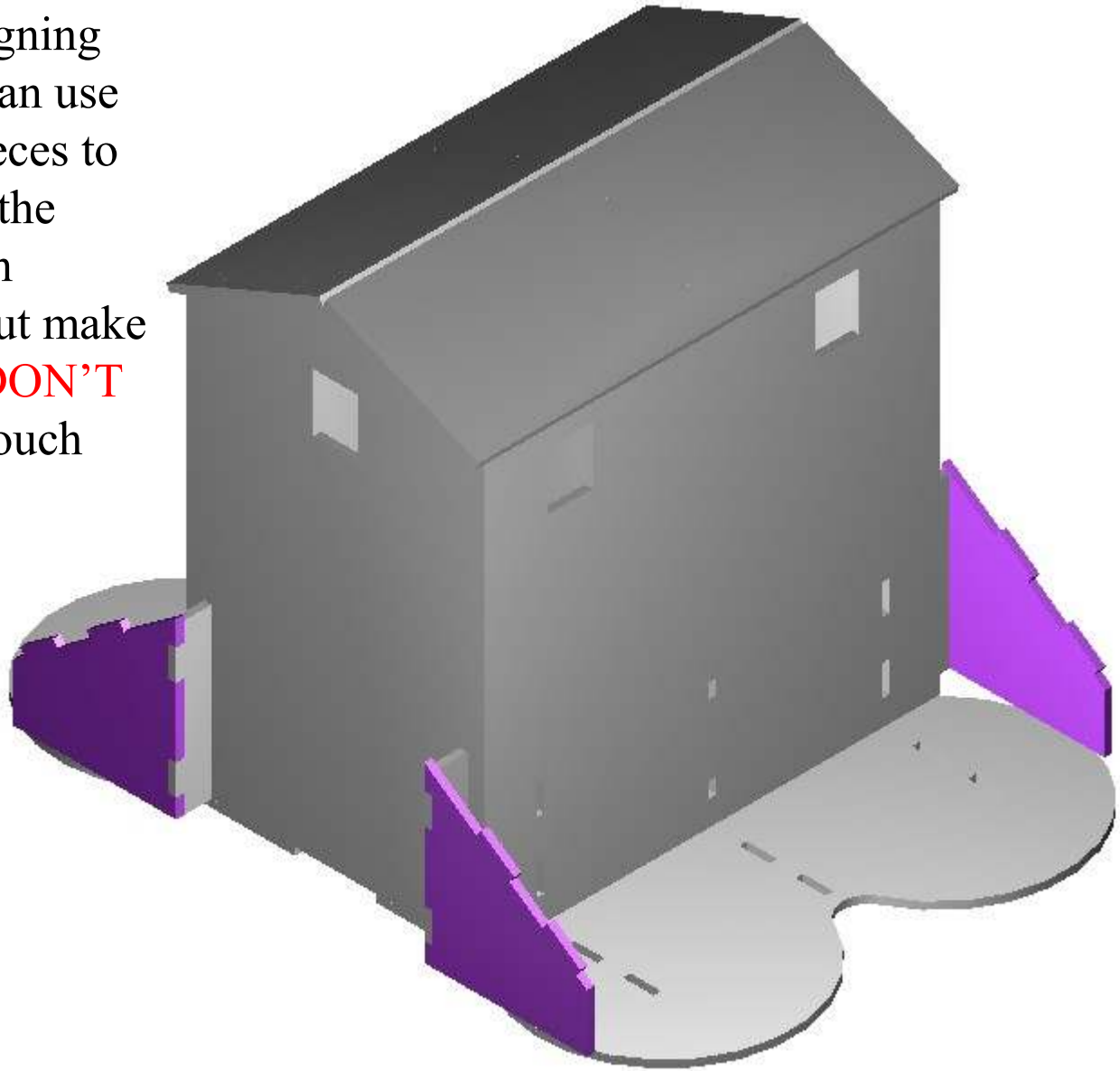
Silo Cupola - Step 9

You will need to glue the roof pieces as you proceed (gravity sucks-literally), but try to test fit them first to make sure you are familiar with the parts. Make sure that these pieces are glued in place, straight and square.



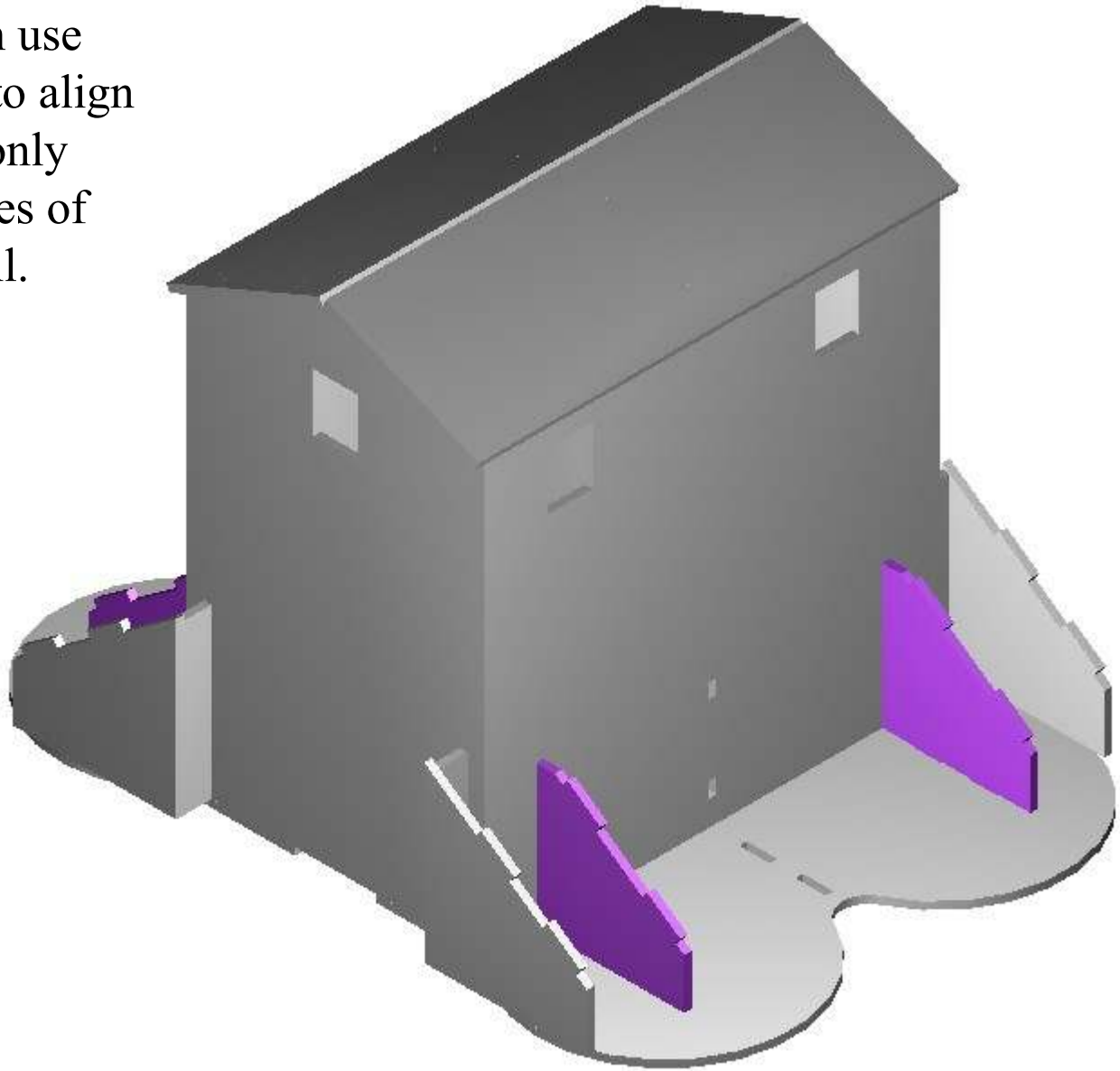
Silo Cupola - Step 10

To assist in aligning the sides you can use the bin roof pieces to locate them in the correct location temporarily. But make sure that you DON'T allow glue to touch them.

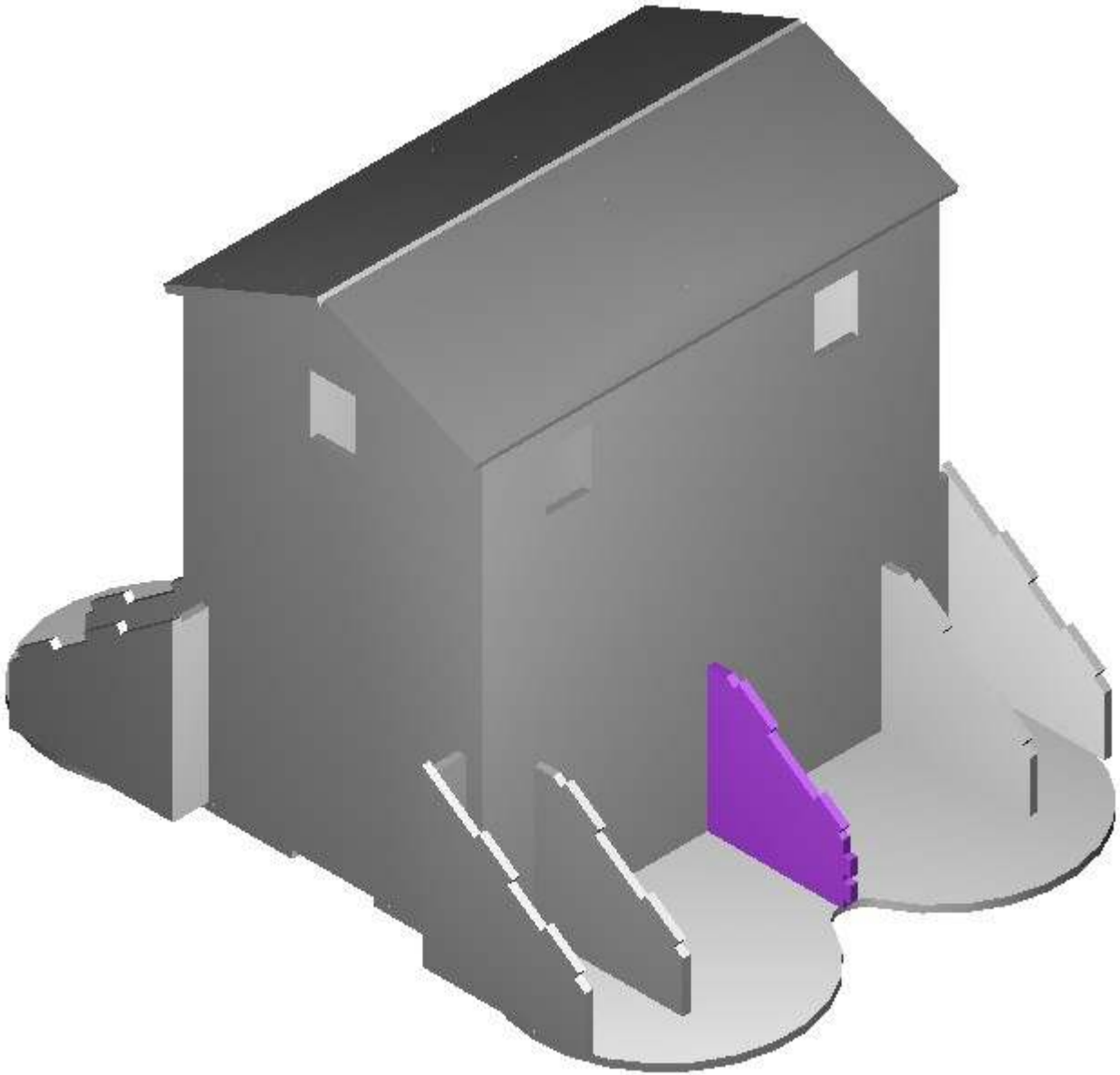


Silo Cupola - Step 11

Again, you can use the roof piece to align the parts, and only glue at the edges of the Cupola wall.

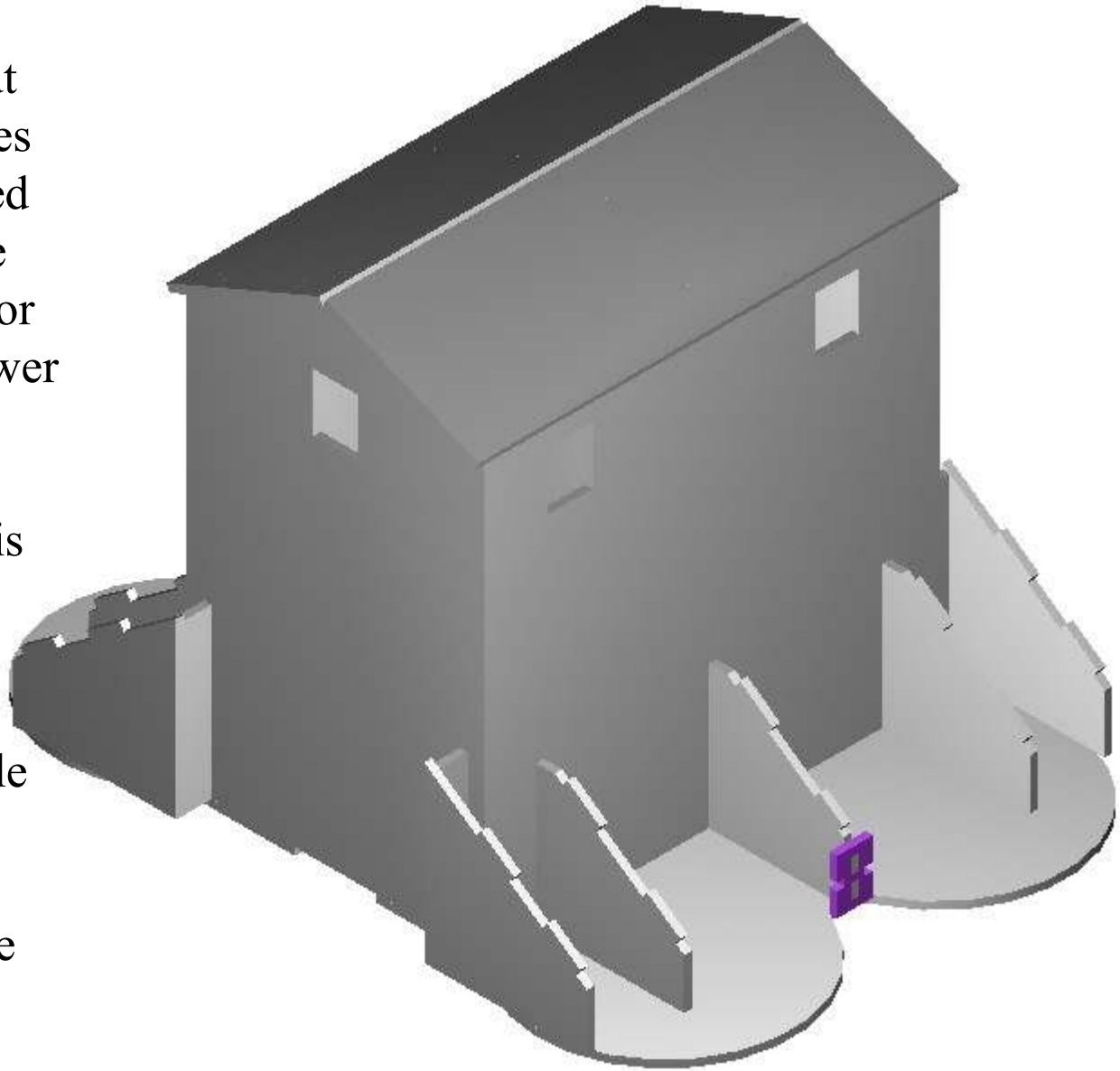


Silo Cupola - Step 12



Silo Cupola - Step 13

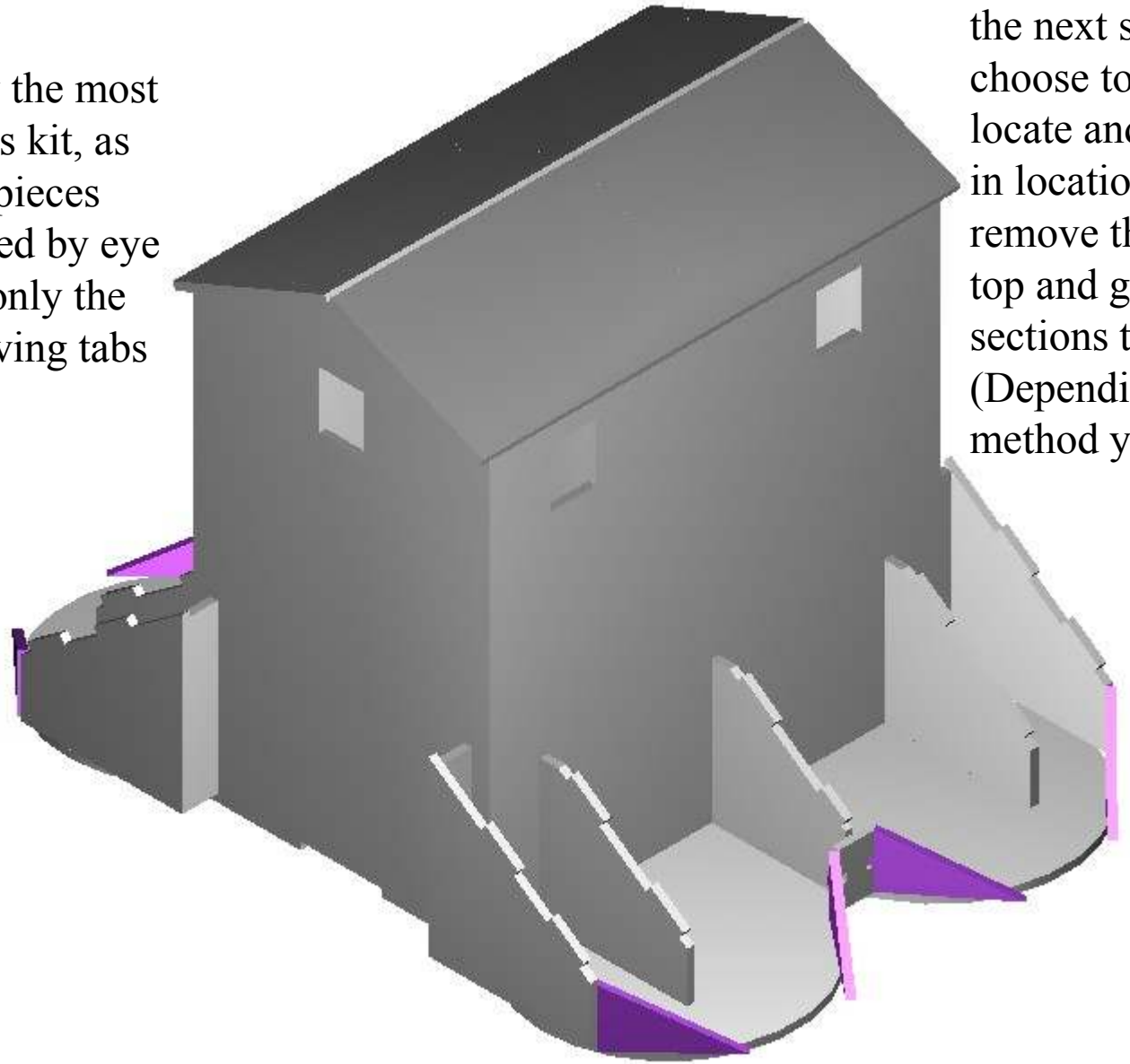
These small but important pieces need to be glued square with the support piece, or the bin roof lower walls will look out of square when the roof is clad.



Spending a little time doing this now will save much heartache later on.

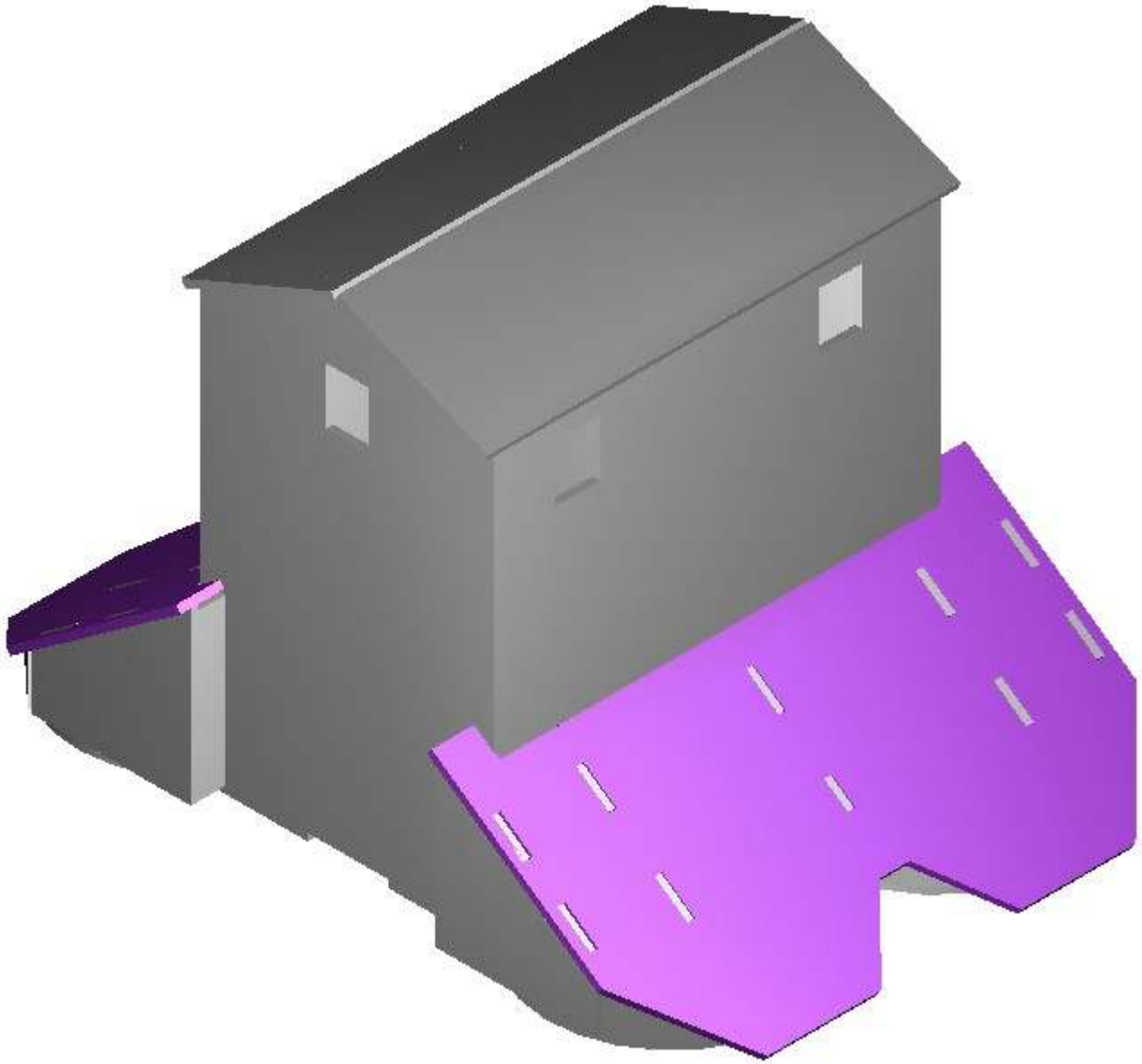
Silo Cupola - Step 14

This is probably the most fiddly job on this kit, as the small angle pieces need to be aligned by eye and hand, with only the centre wings having tabs to locate them.

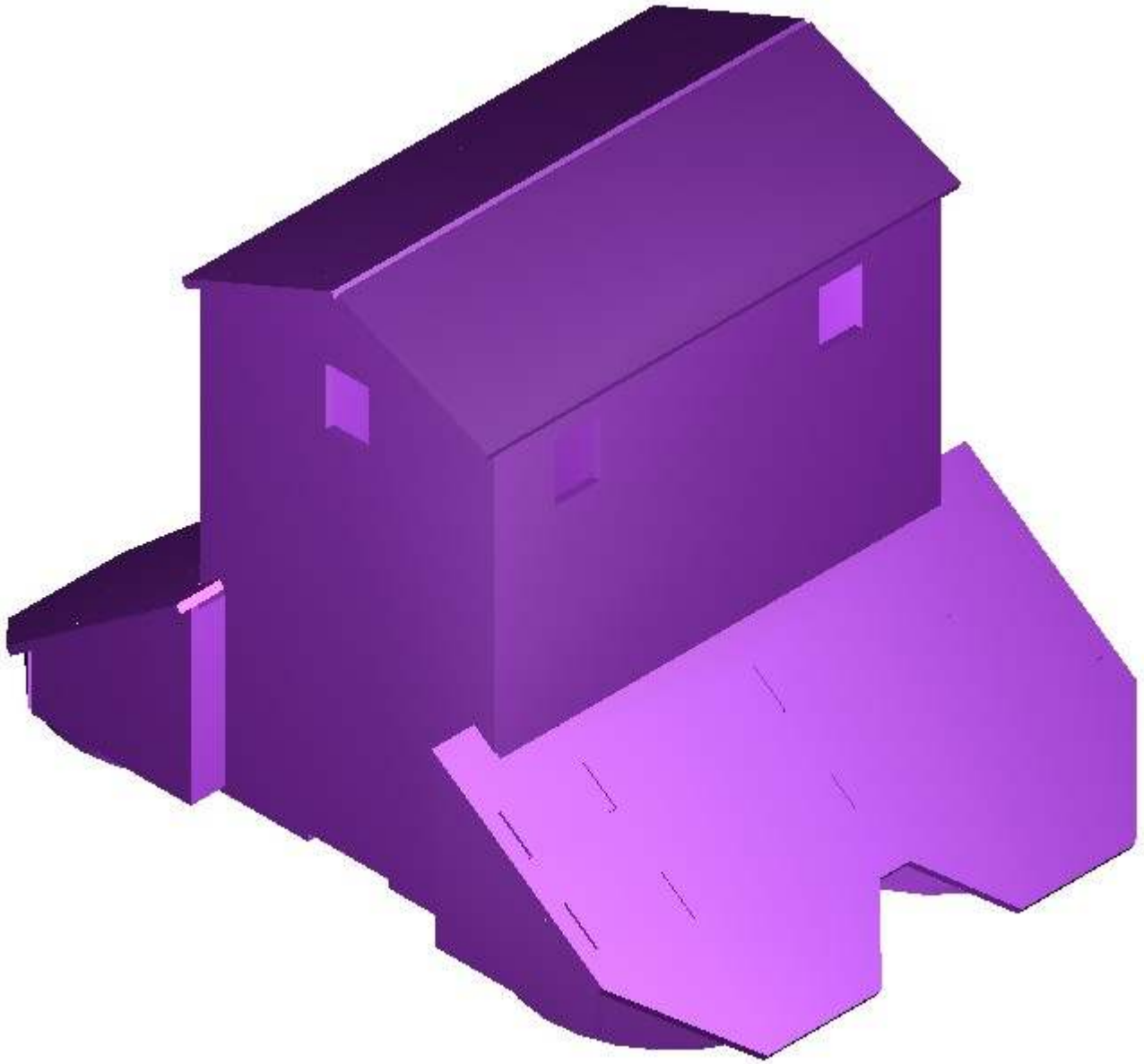


The roof is attached in the next step, so if you choose to do so, you may locate and glue the roof in location and then remove the Sub-Frame top and glue the small sections to the roof. (Depending on which method you use).

Silo Cupola - Step 15



Silo Cupola - Step 16

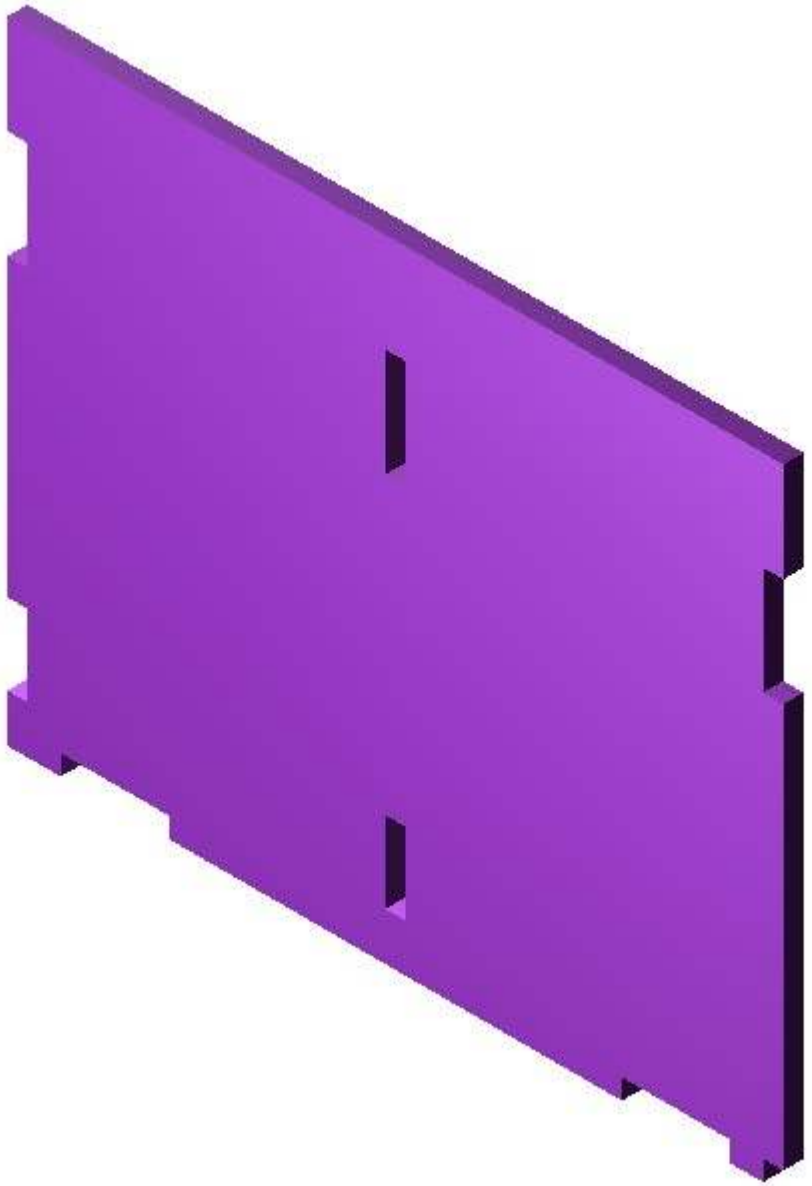


Another Step Down – Nearly Done

- If you chose to leave the top piece of the Sub-Frame and used it as a template to locate the Bin Roof, you can now place it on the top of the Sub-Frame, and glue it in place.
- The main 3 sub-assemblies are now built. Now we can concentrate on the smaller sub-assemblies.
- These smaller assemblies are very easily fitted to the main assemblies at a later time.
- Firstly the Annex, then the Spoil Bin, The Out loading Platform, the rear Step and the Front Step
- The Annex is located on the front of the silo and slots are provided where it will fit.

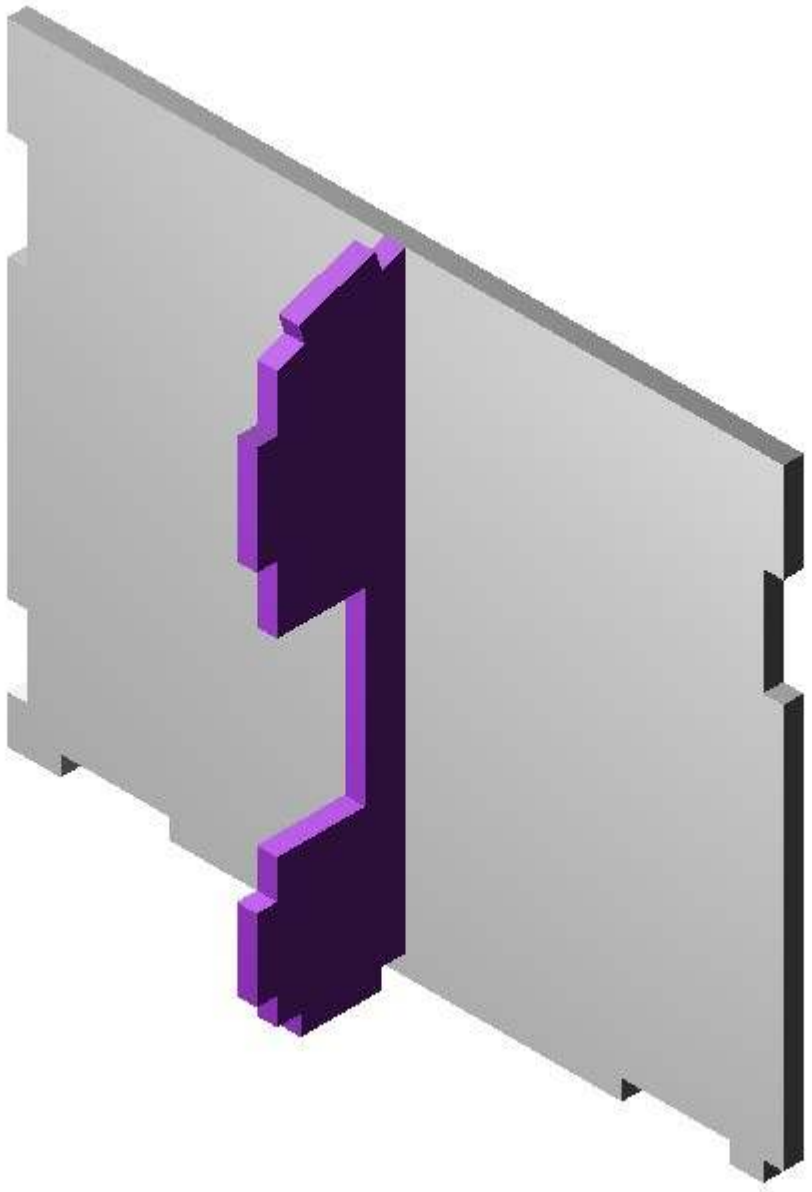
Silo Annex - Step 1

Important that this panel is correctly aligned. NOTE that there are two slots on the left side, and one on the right, with a very small slot the the lower right.

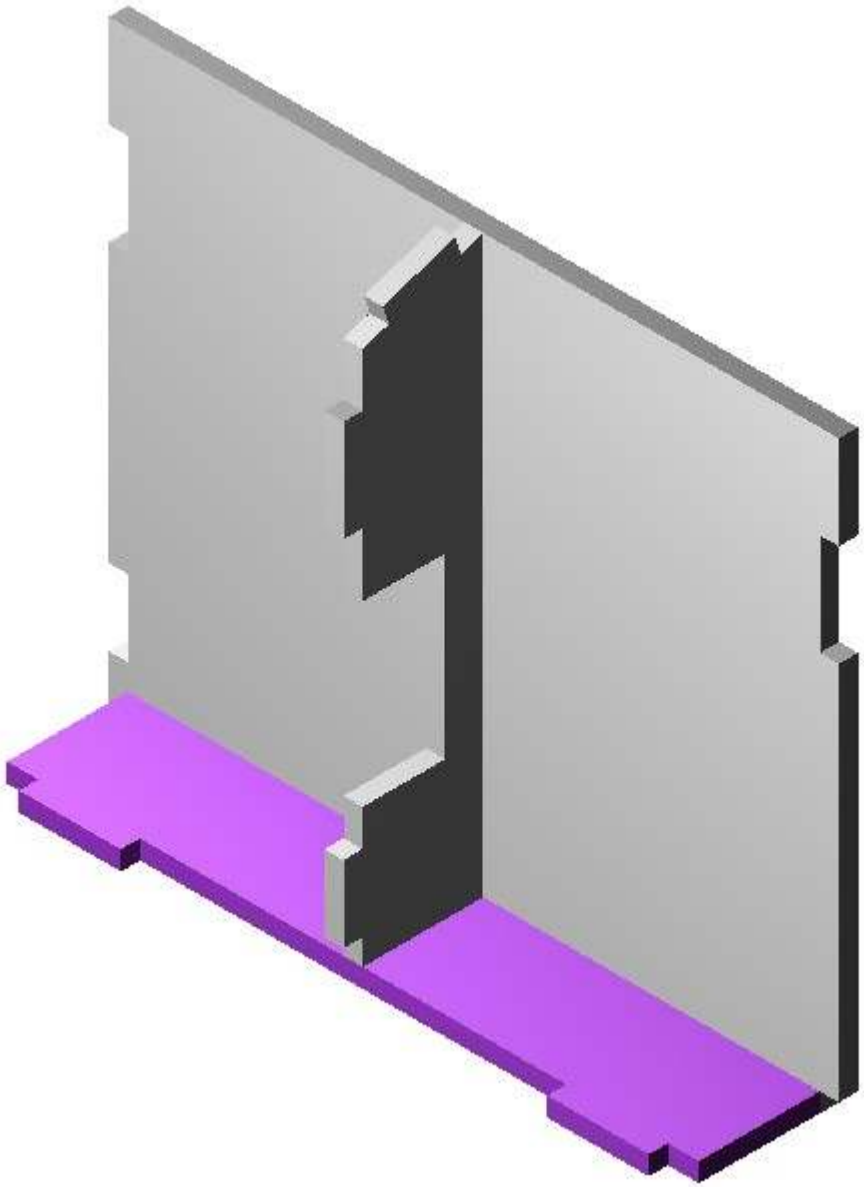


Silo Annex - Step 2

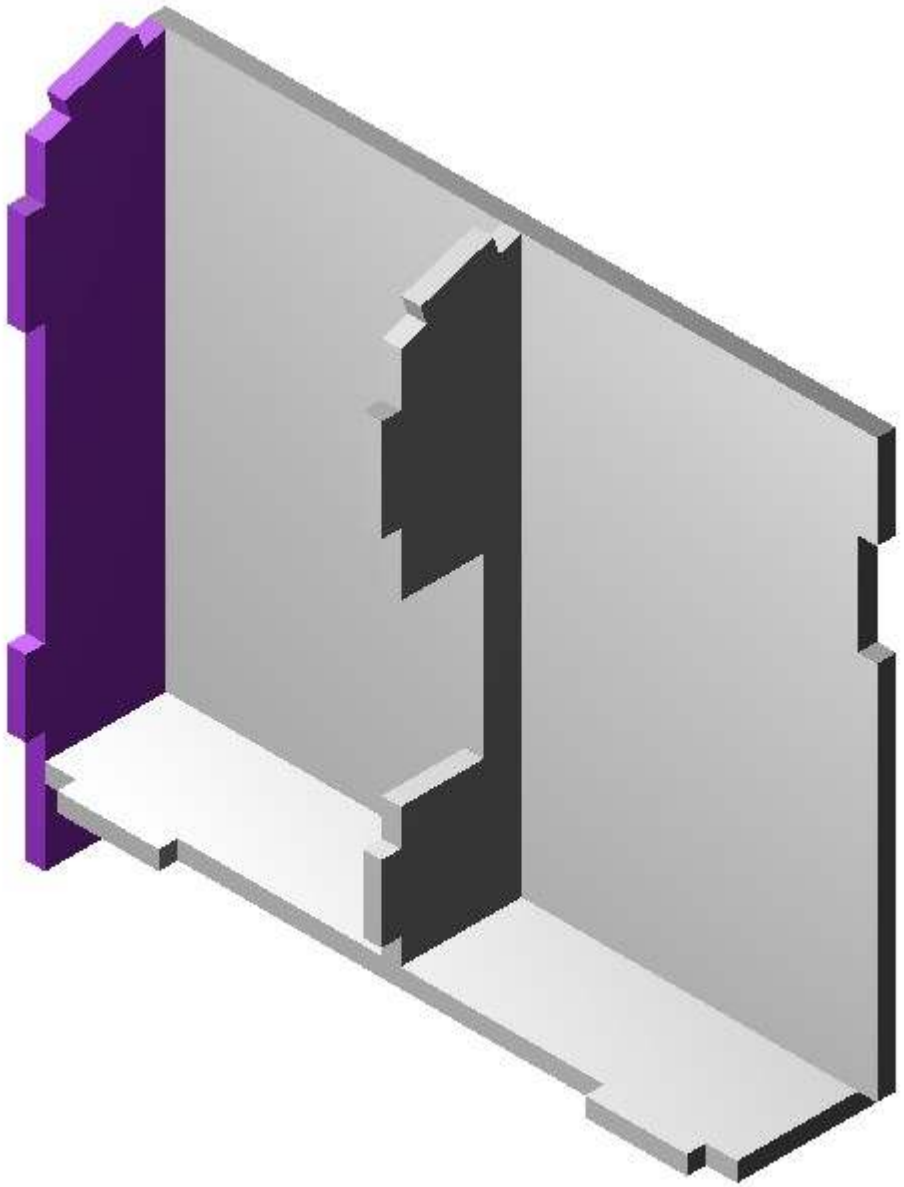
The roof line slopes down from back to front. The wall sections will only fit one way, as the tabs will not line up if an attempt is made to fit them incorrectly. The cut out on this part is to accommodate the front window.



Silo Annex - Step 3

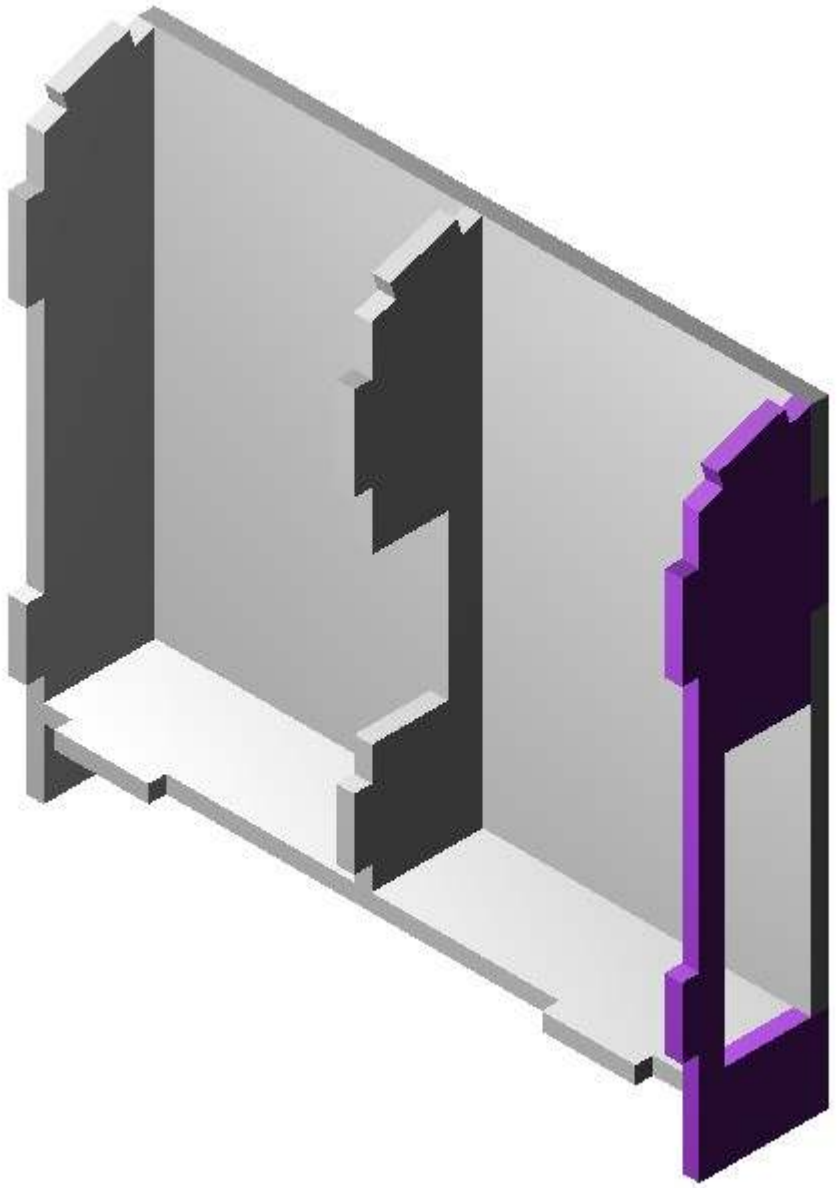


Silo Annex - Step 4



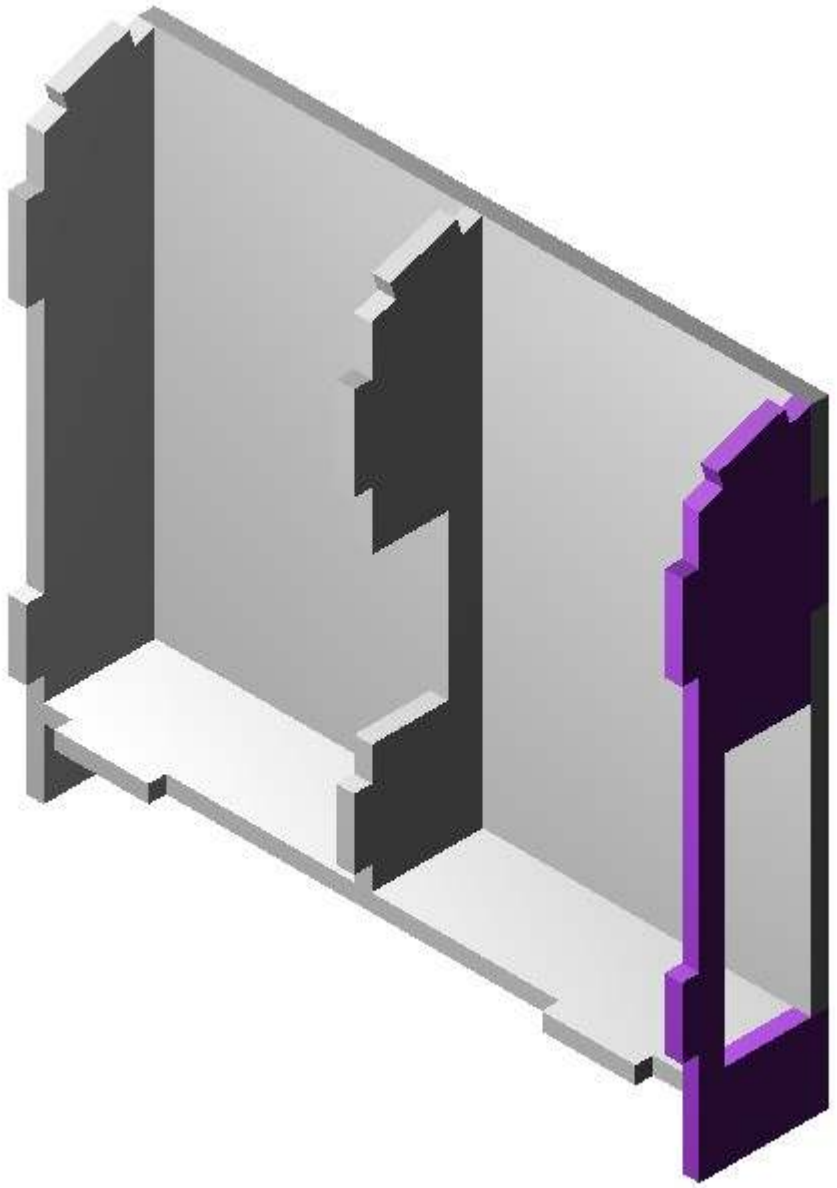
Silo Annex - Step 5

A side door is fitted to the hole in the right side of the annex, and will be available with other doors, windows and fittings in the KRM S05 parts kit.

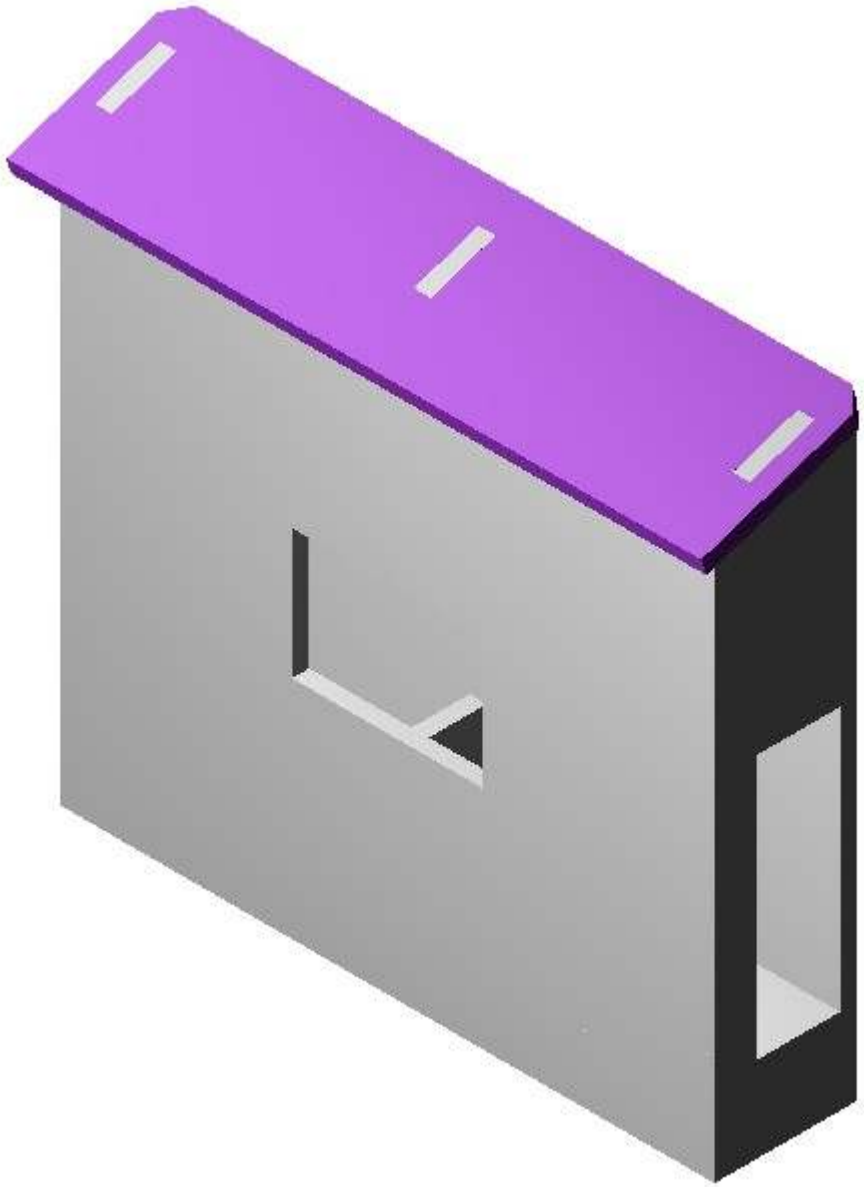


Silo Annex - Step 6

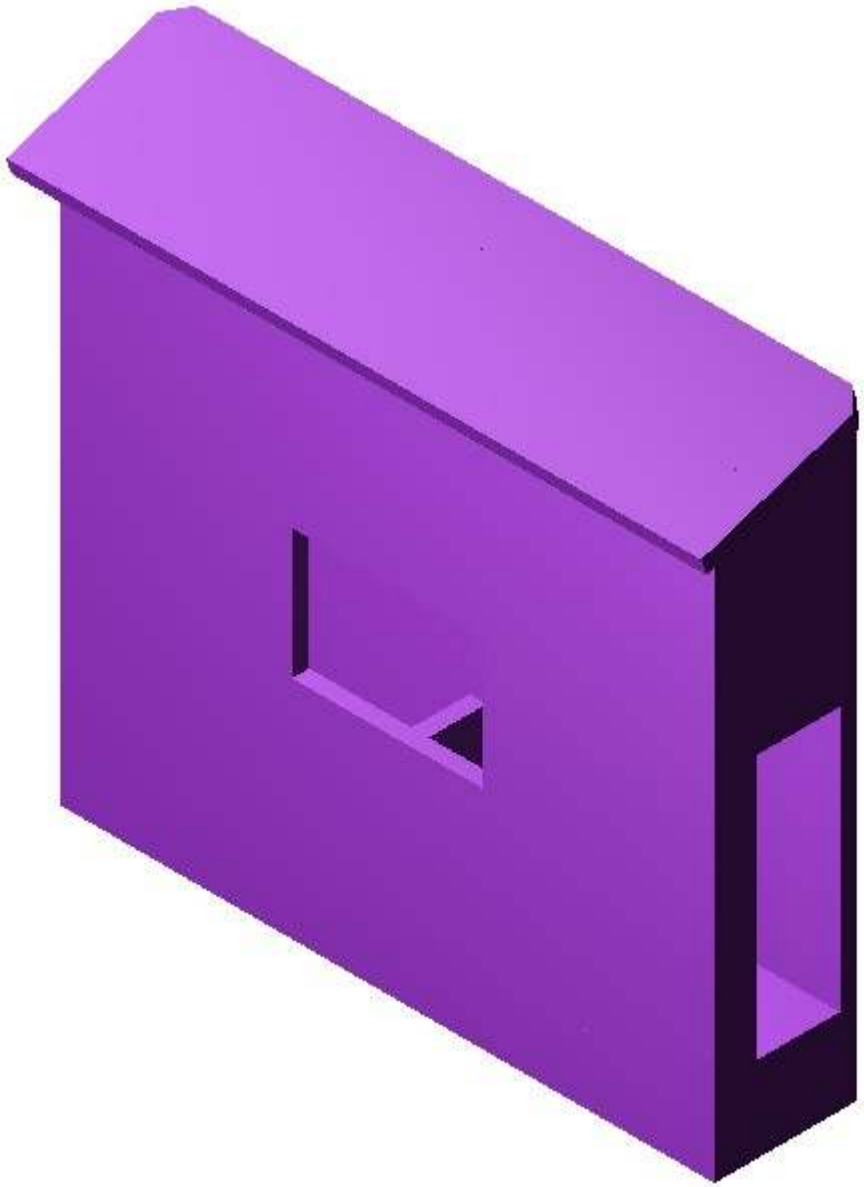
A side door is fitted to the hole in the right side of the annex, and will be available with other doors, windows and fittings in the KRM S05 parts kit.



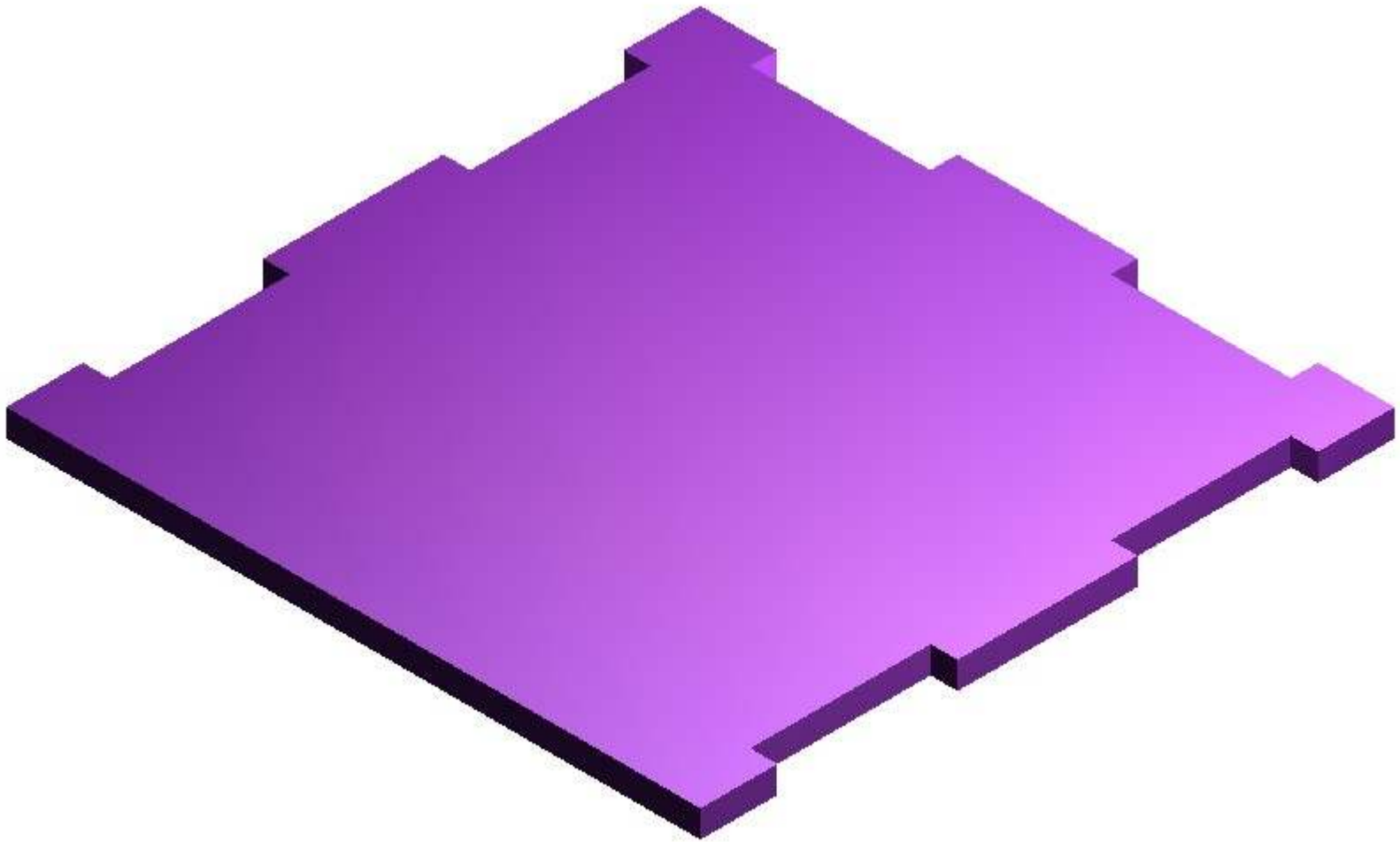
Silo Annex - Step 7



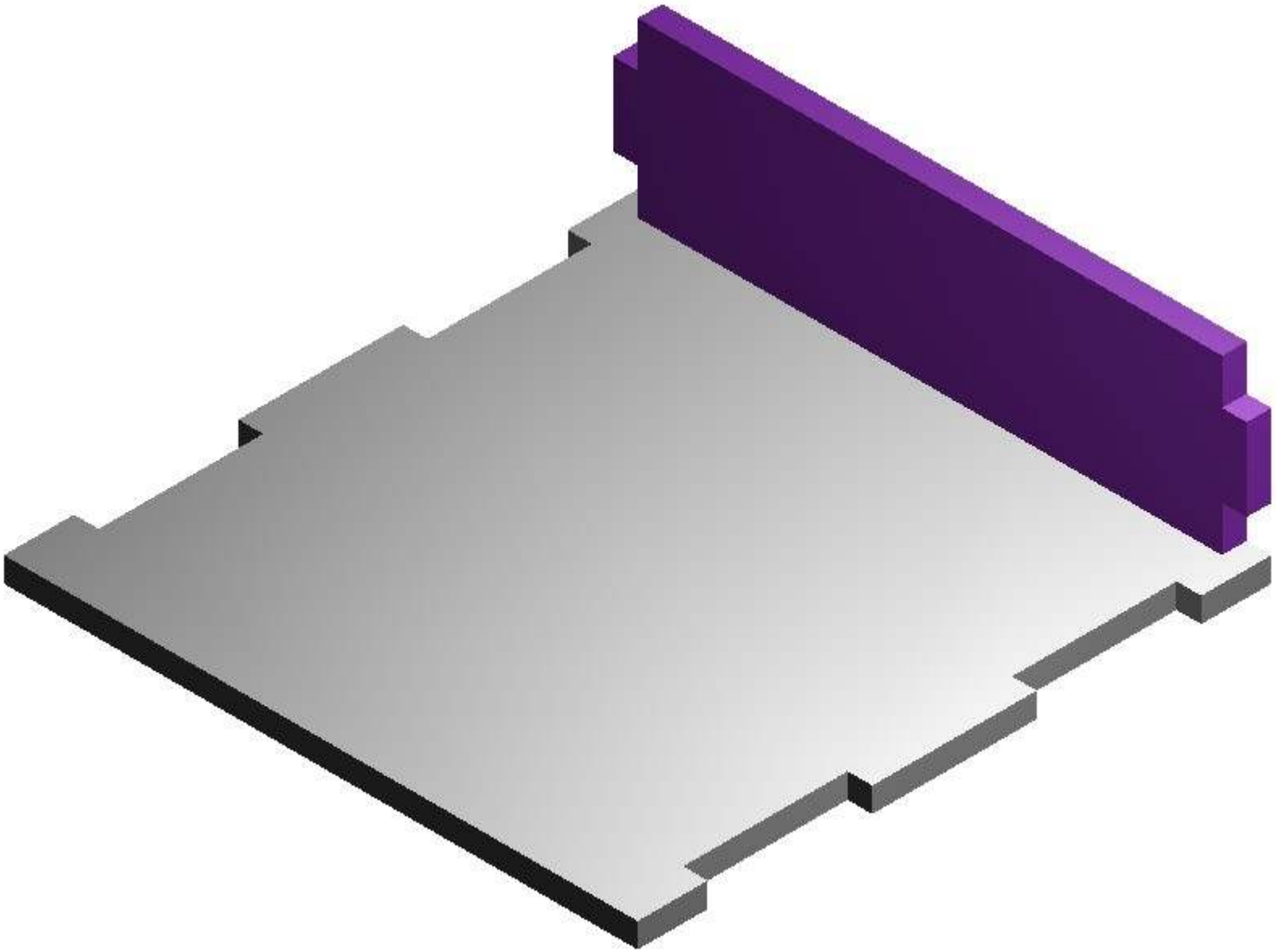
Silo Annex - Step 8



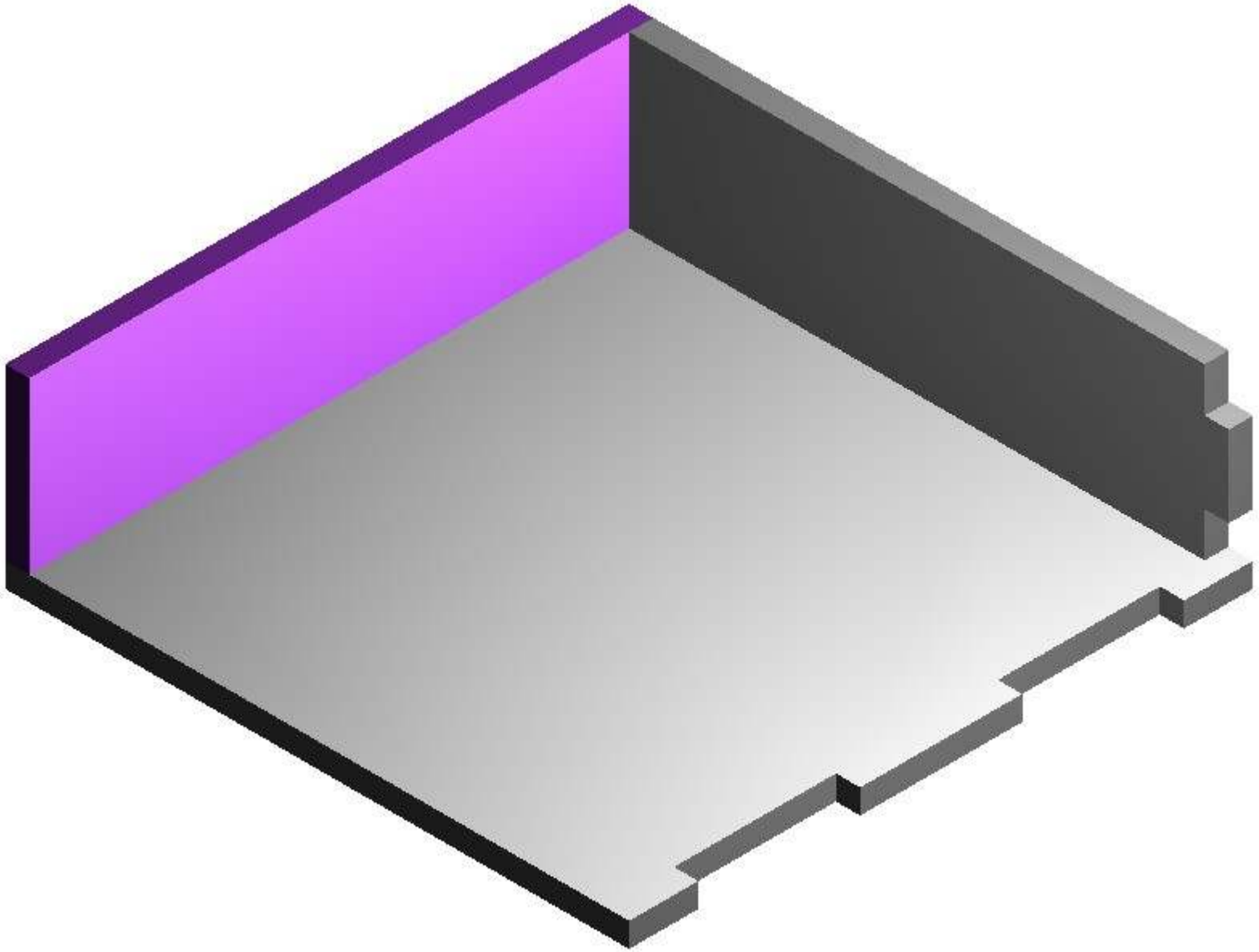
Silo Spoil Bin - Step 1



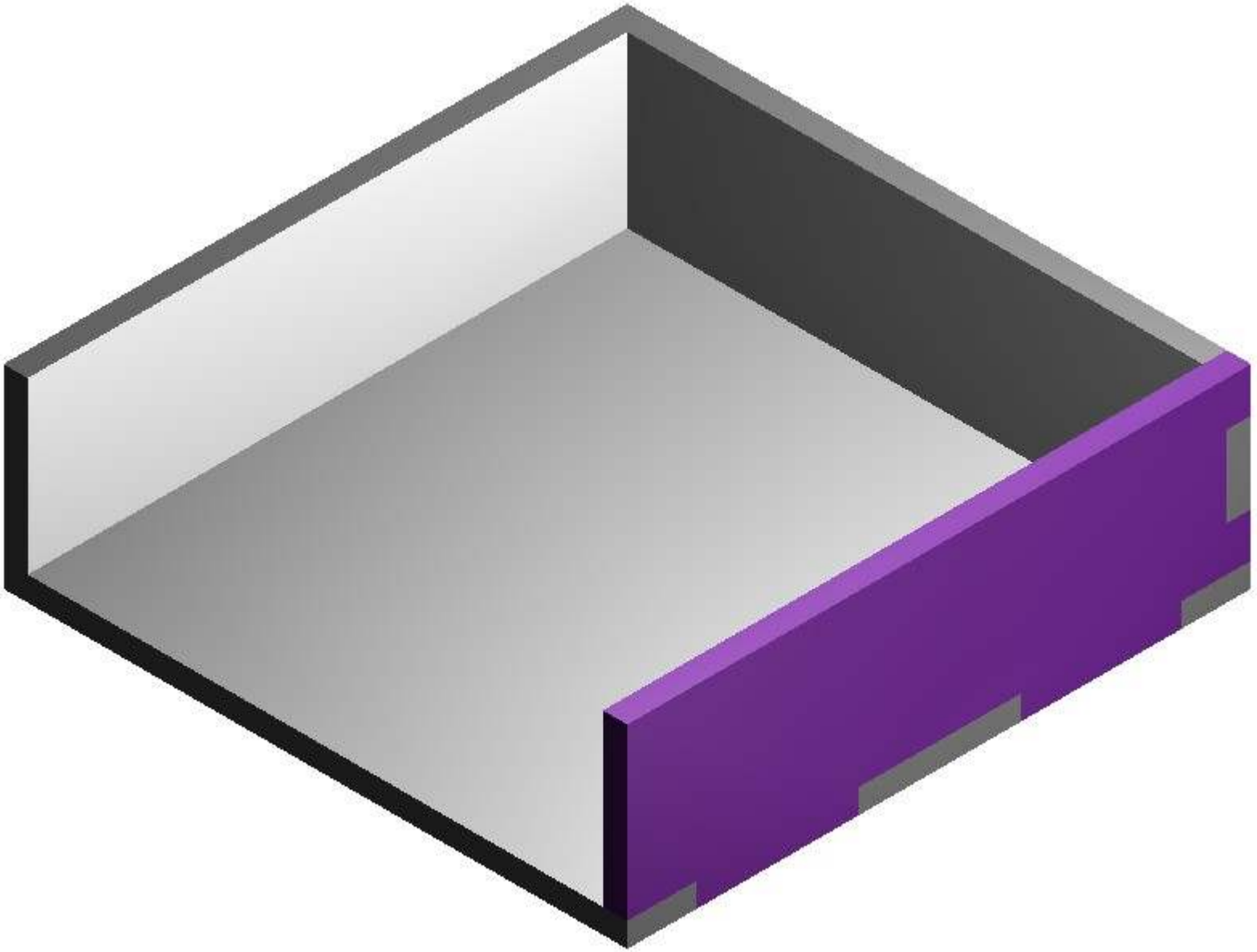
Silo Spoil Bin - Step 2



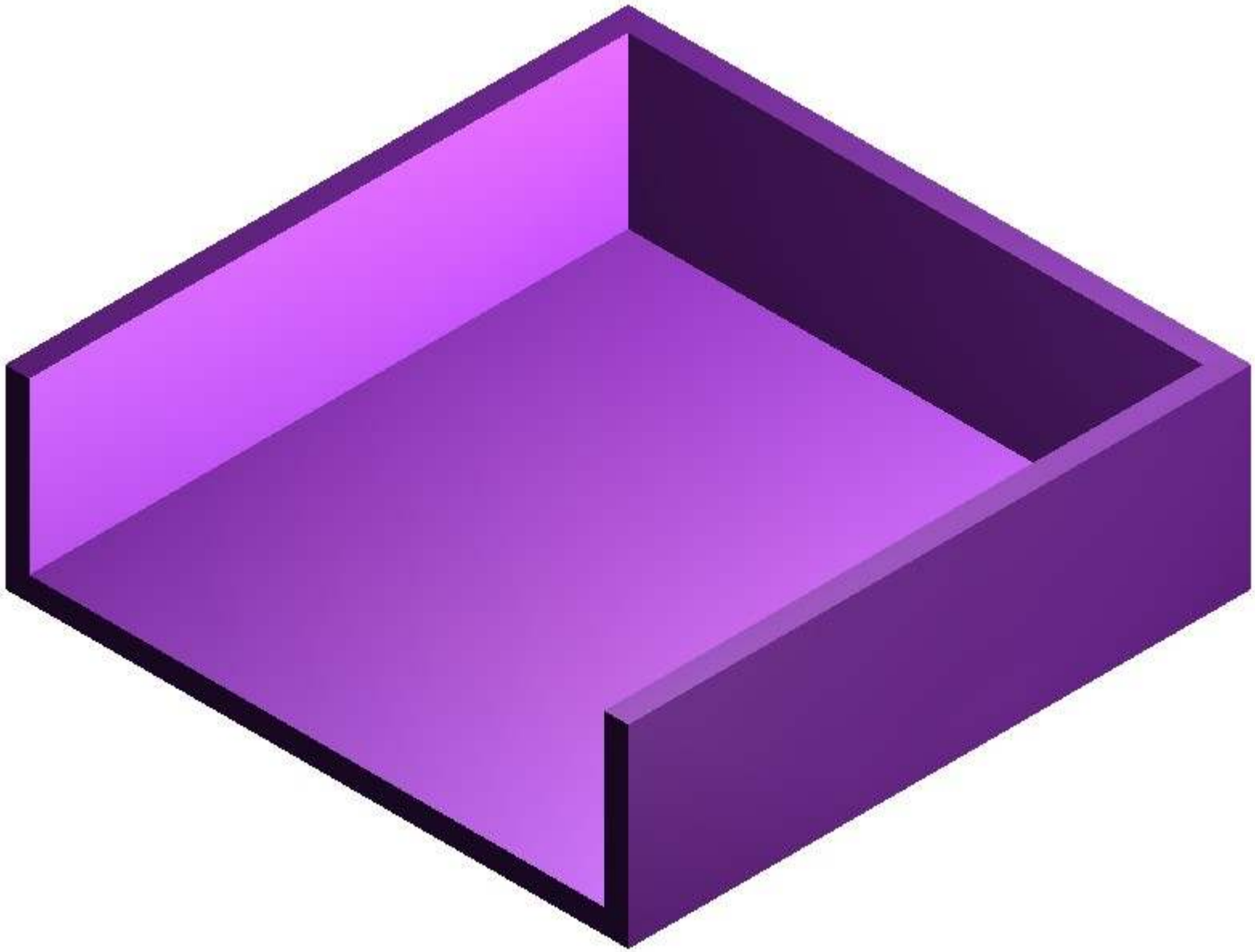
Silo Spoil Bin - Step 3



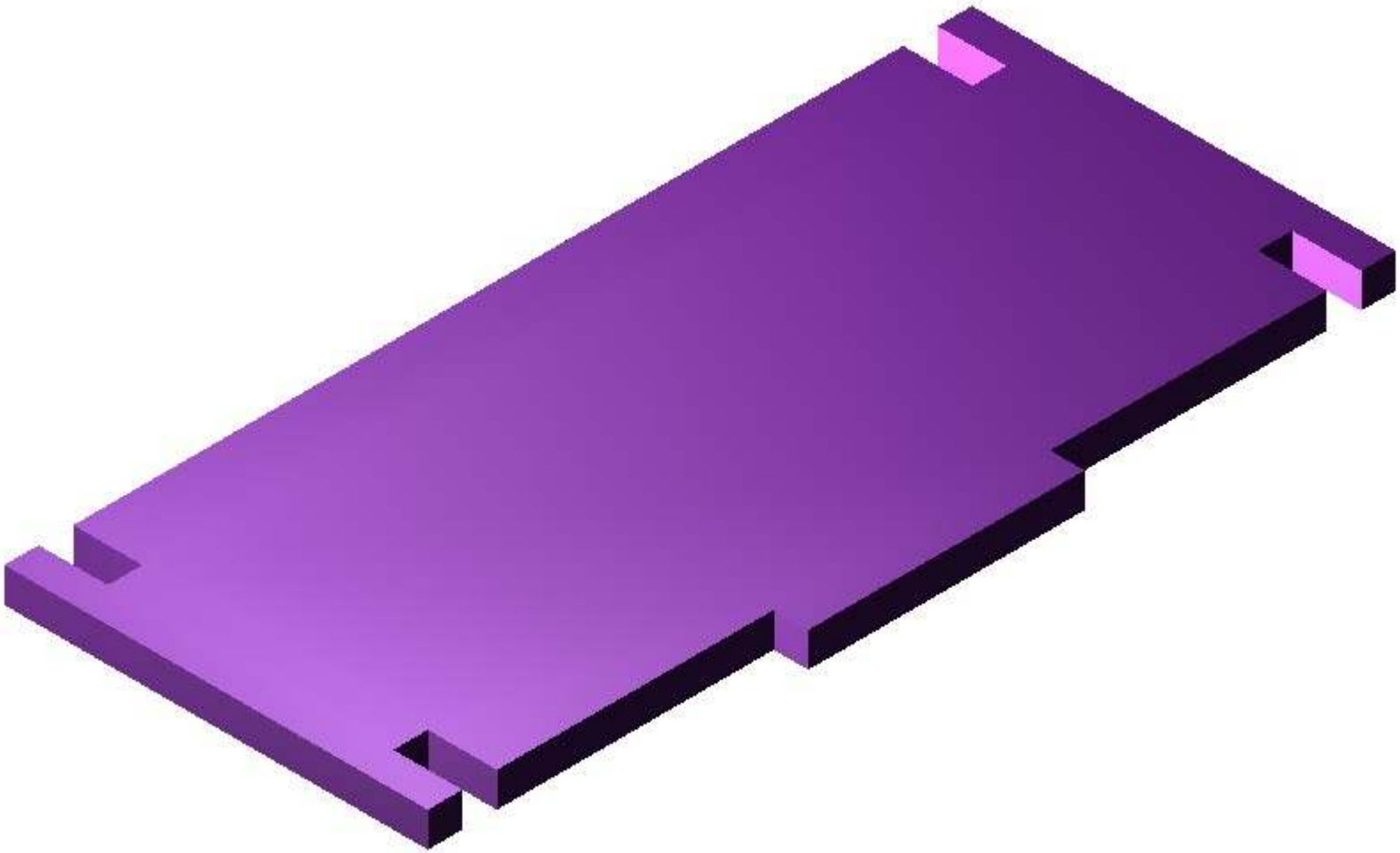
Silo Spoil Bin - Step 4



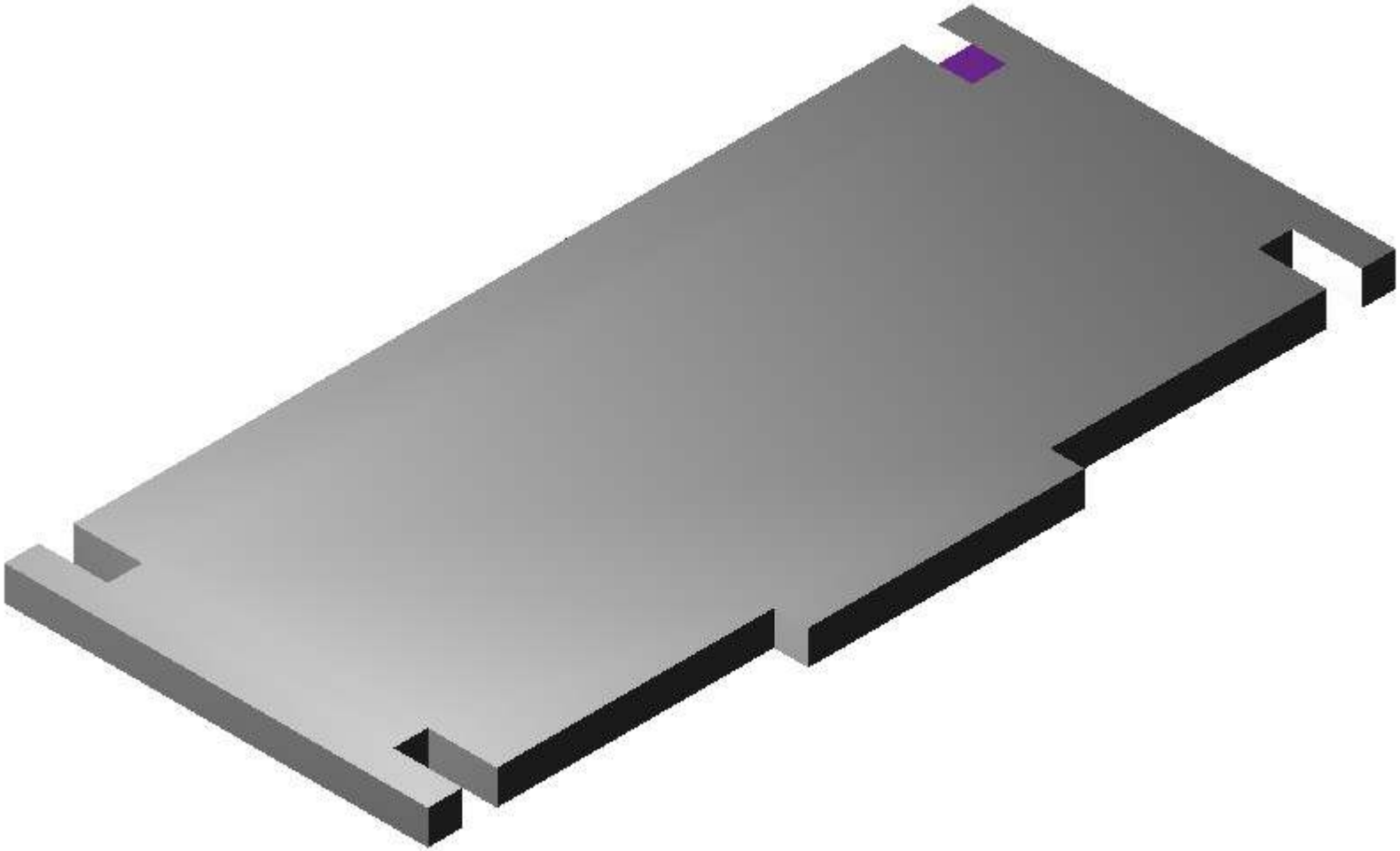
Silo Spoil Bin - Step 5



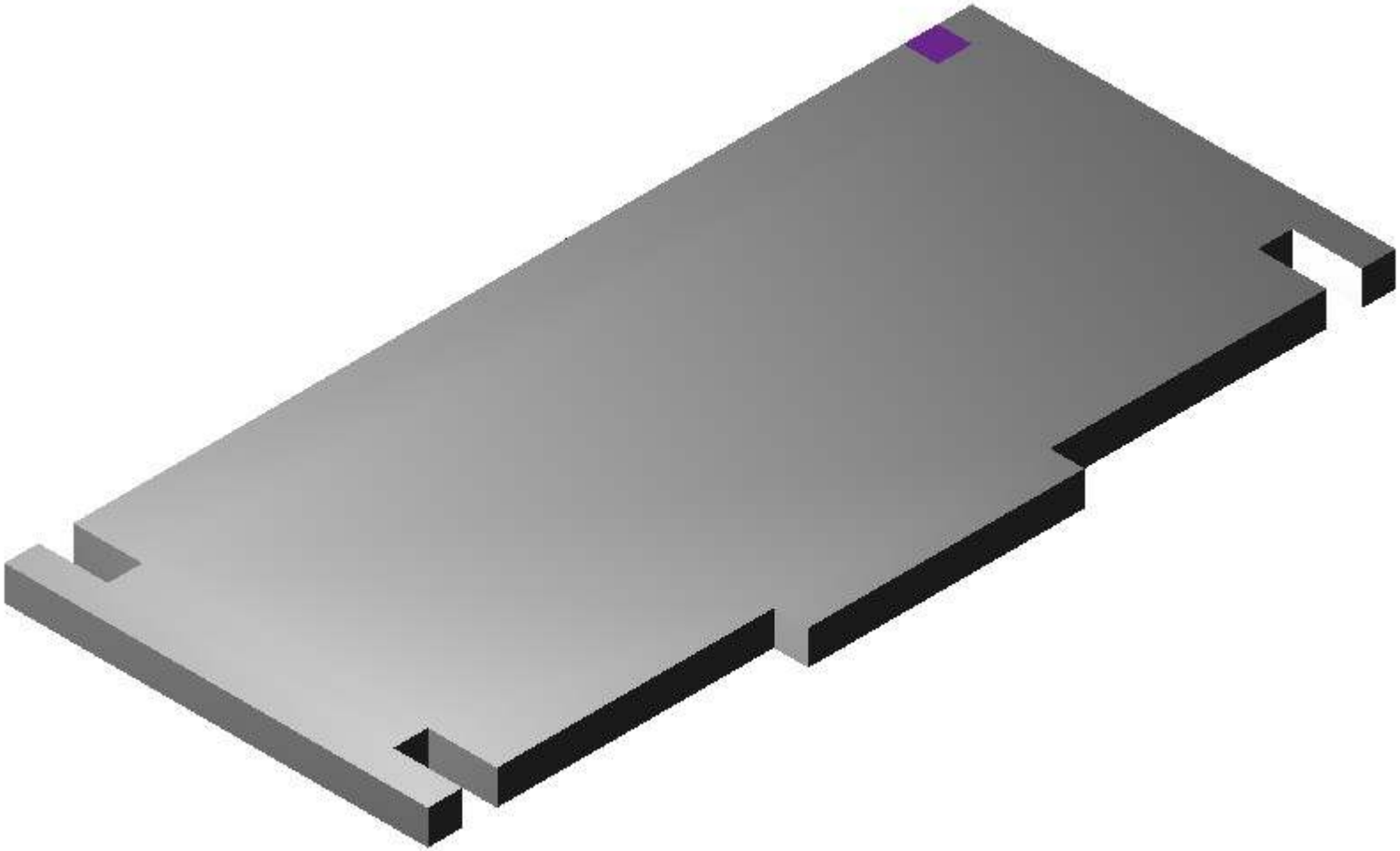
Out loading Platform - Step 1



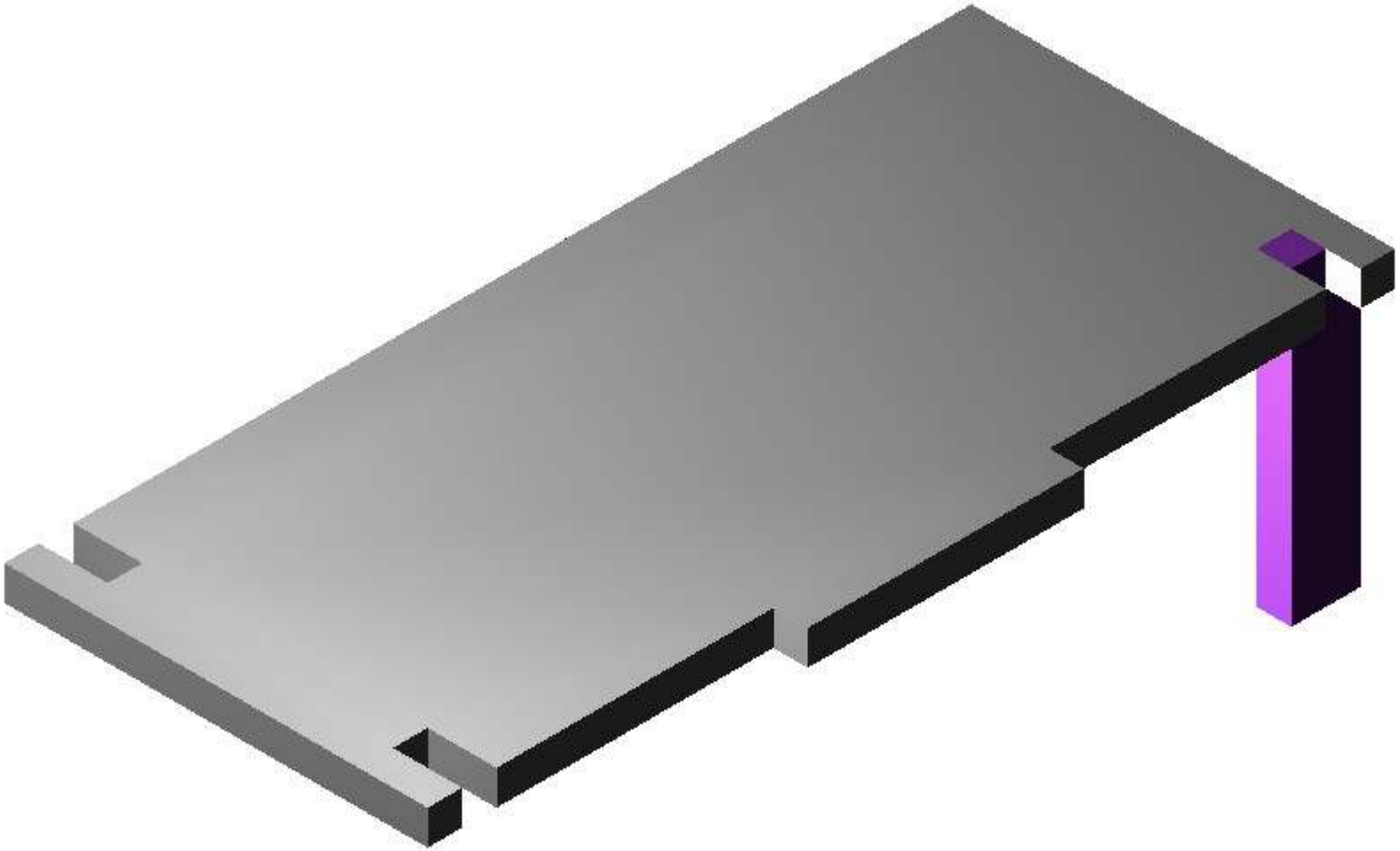
Out loading Platform - Step 2



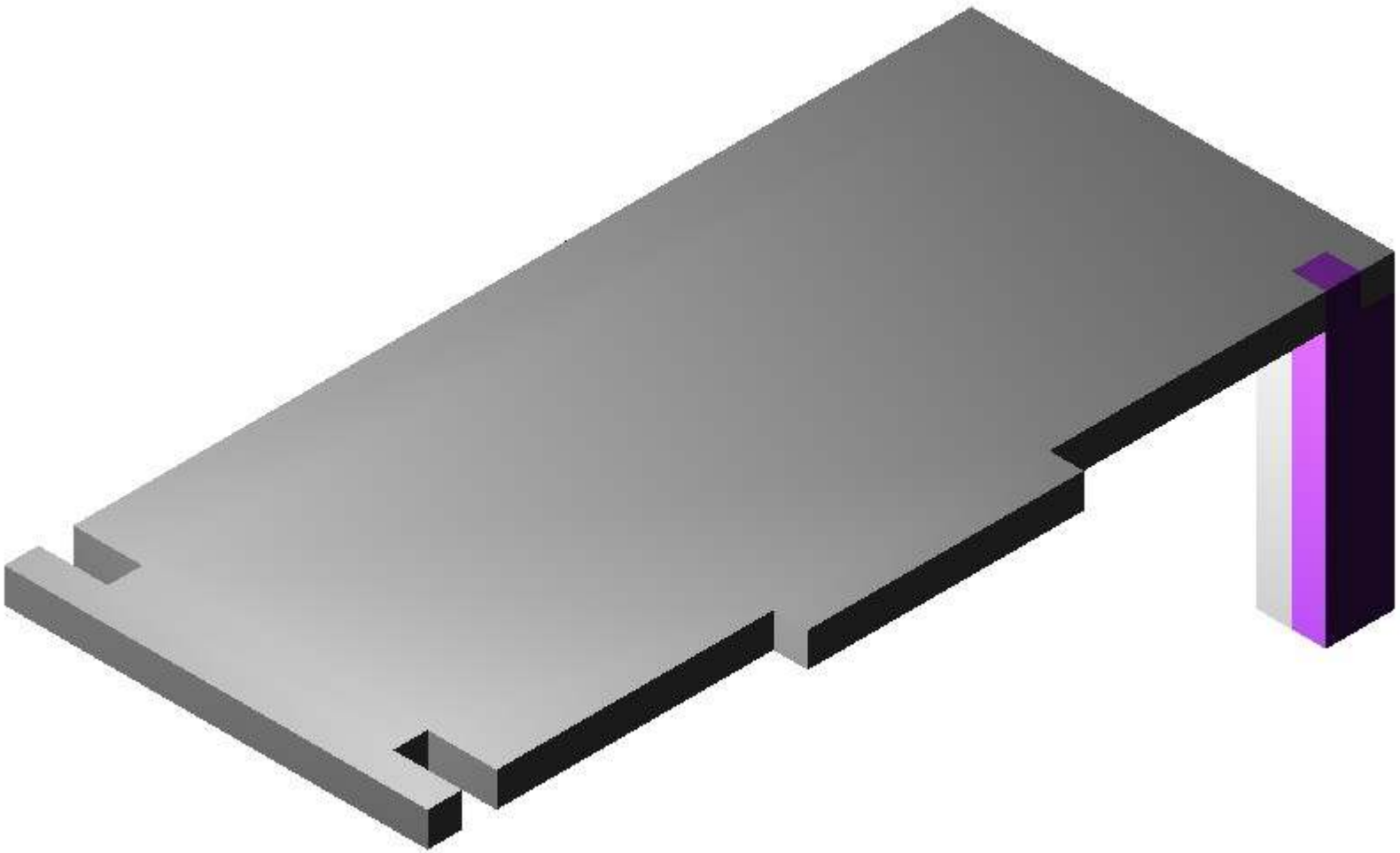
Out loading Platform - Step 3



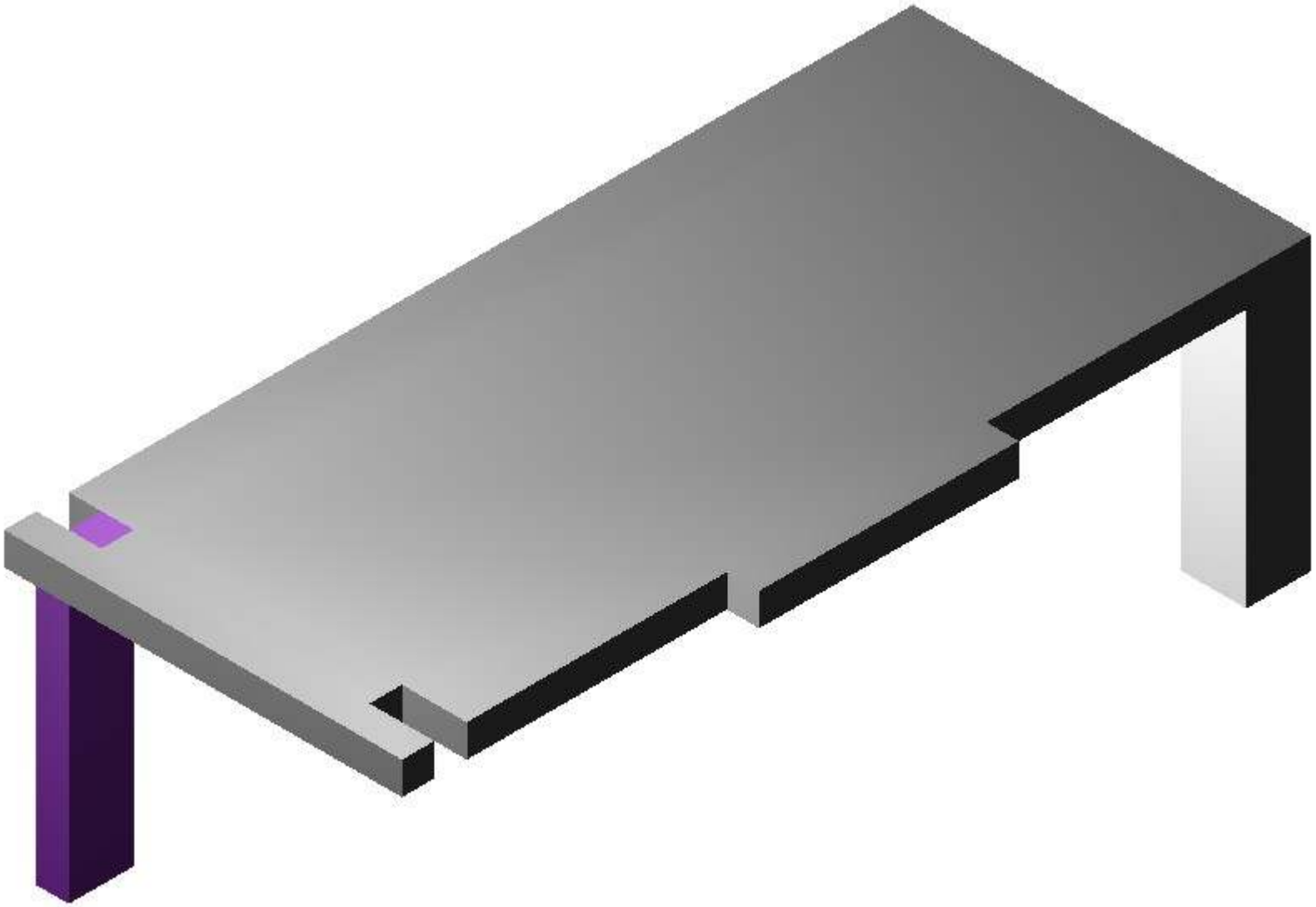
Out loading Platform - Step 4



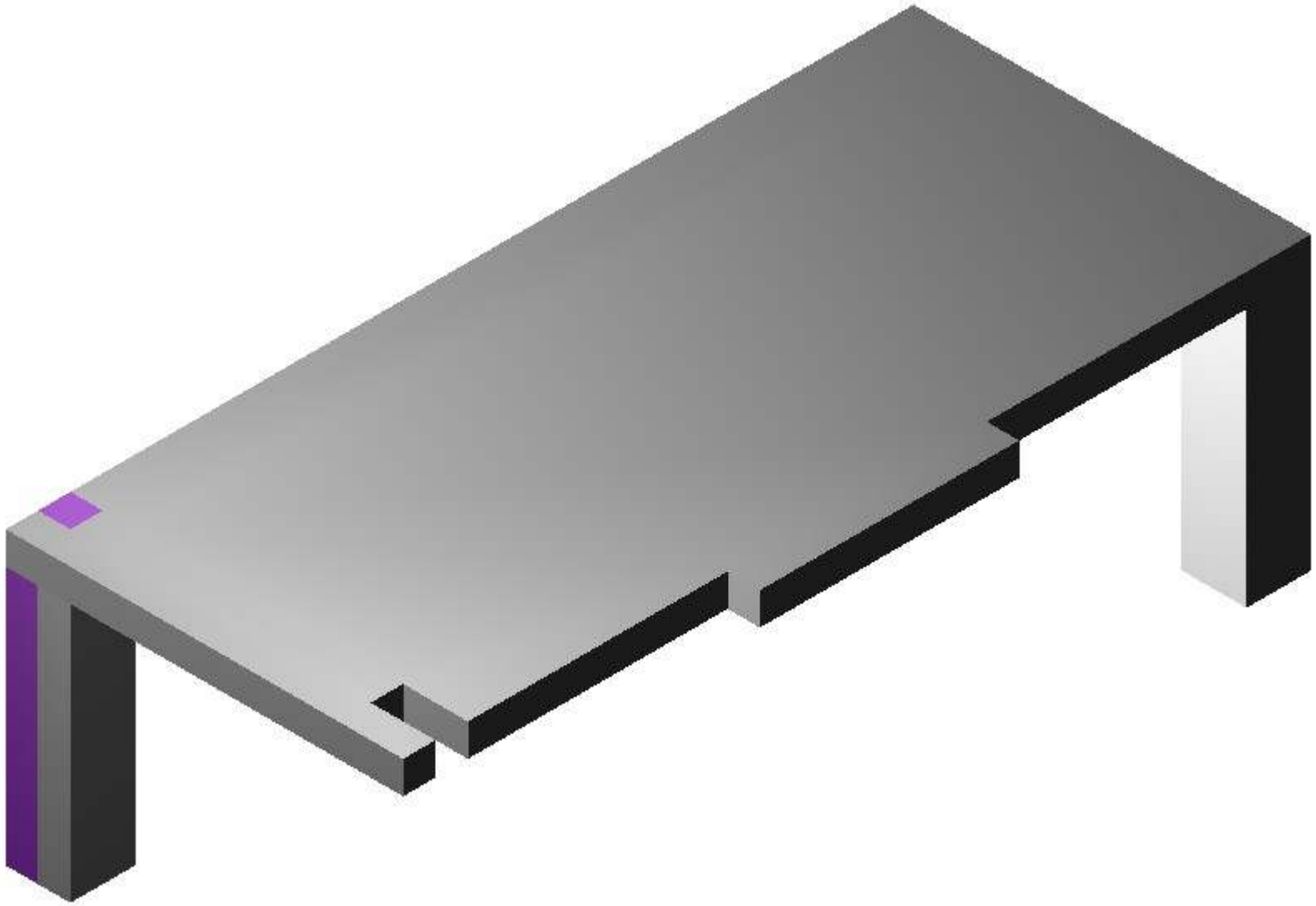
Out loading Platform - Step 5



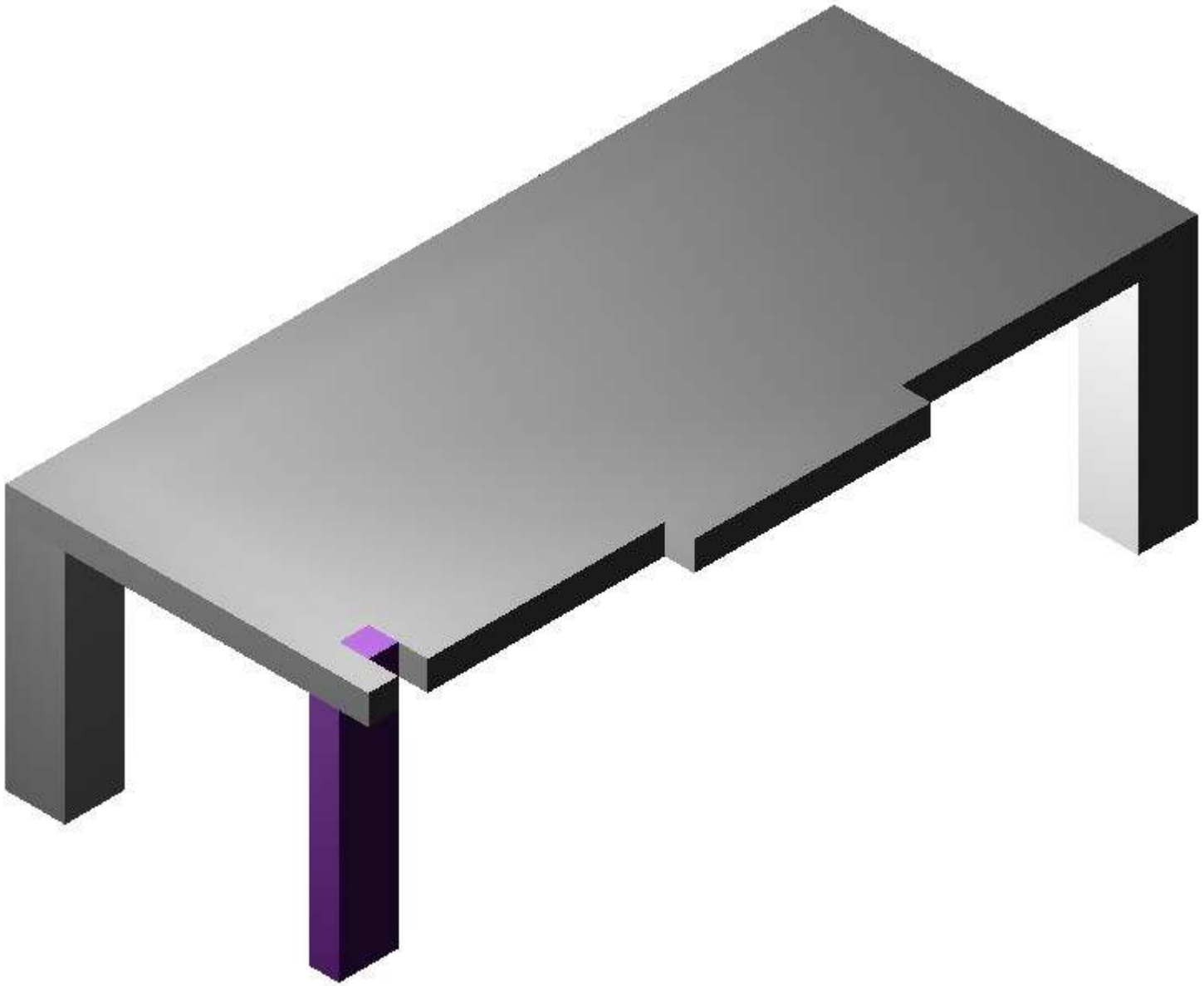
Out loading Platform - Step 6



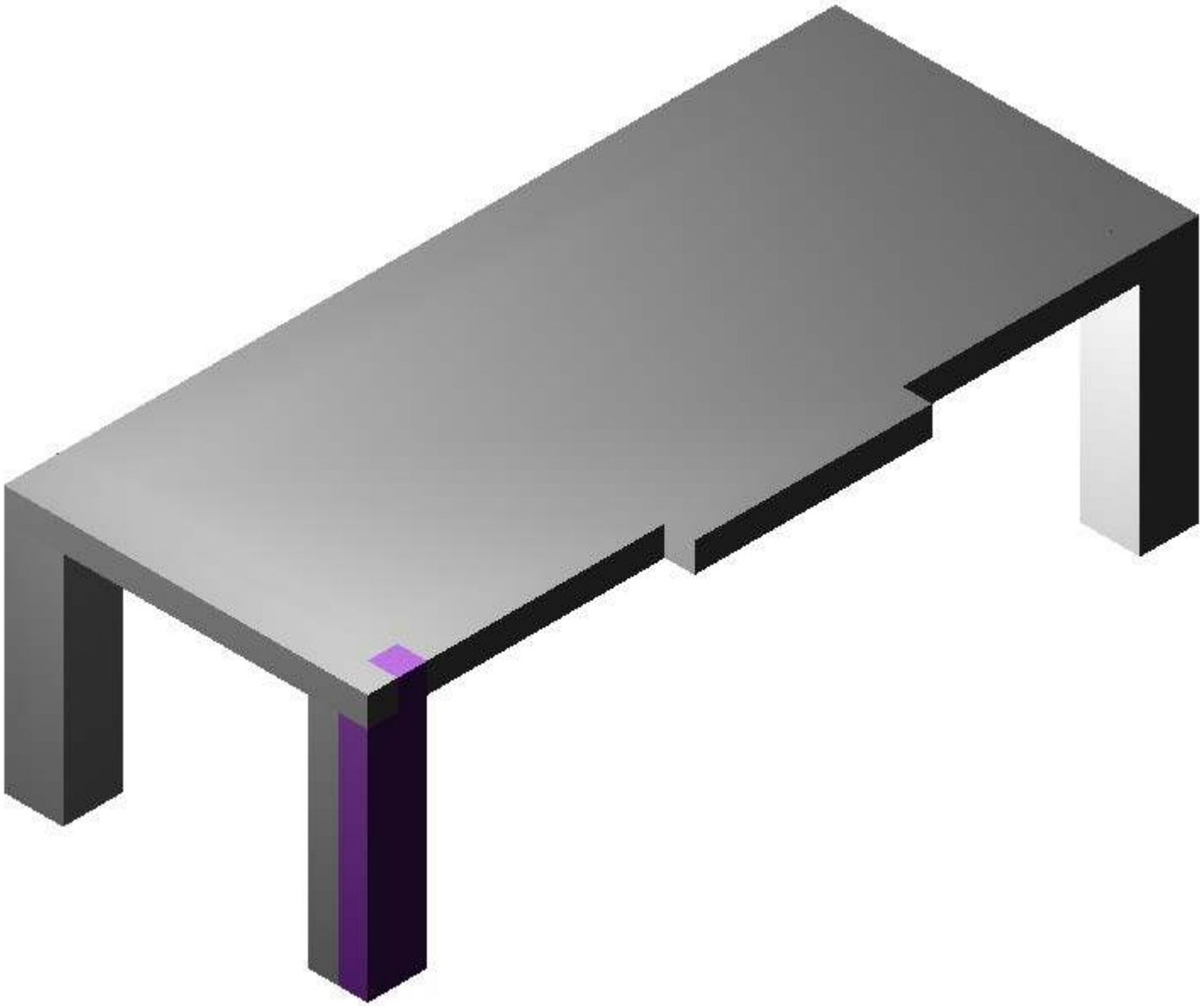
Out loading Platform - Step 7



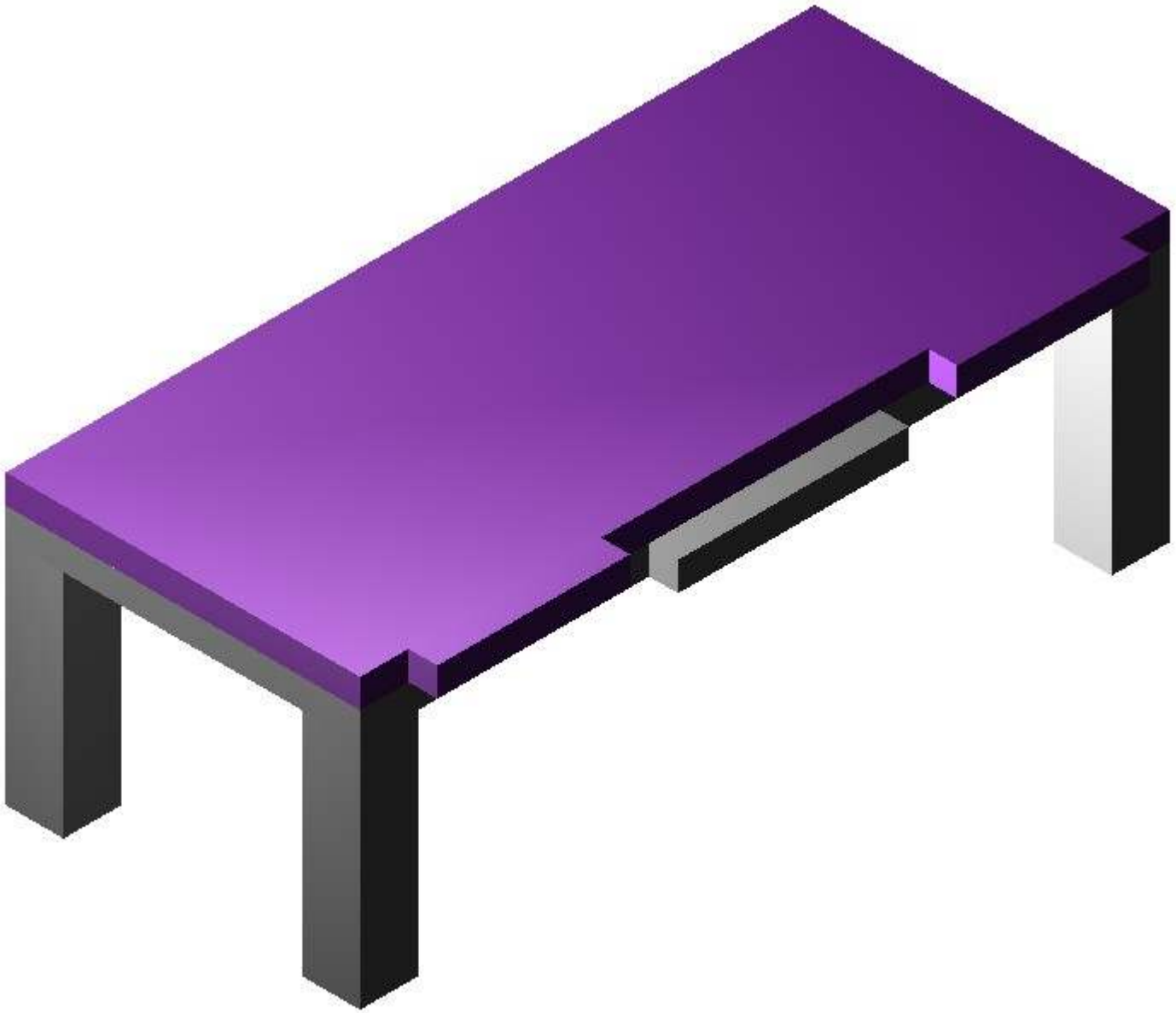
Out loading Platform - Step 8



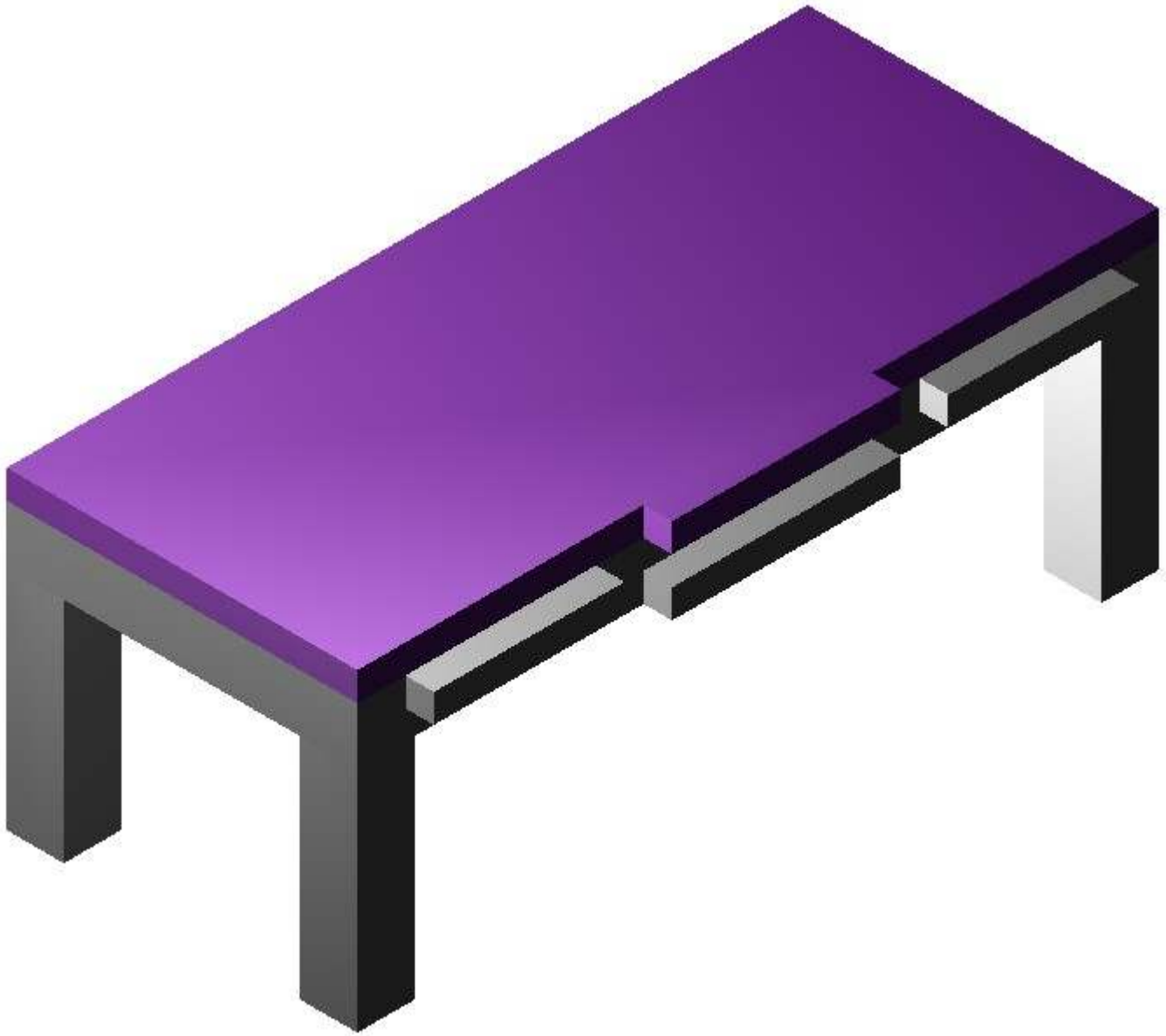
Out loading Platform - Step 9



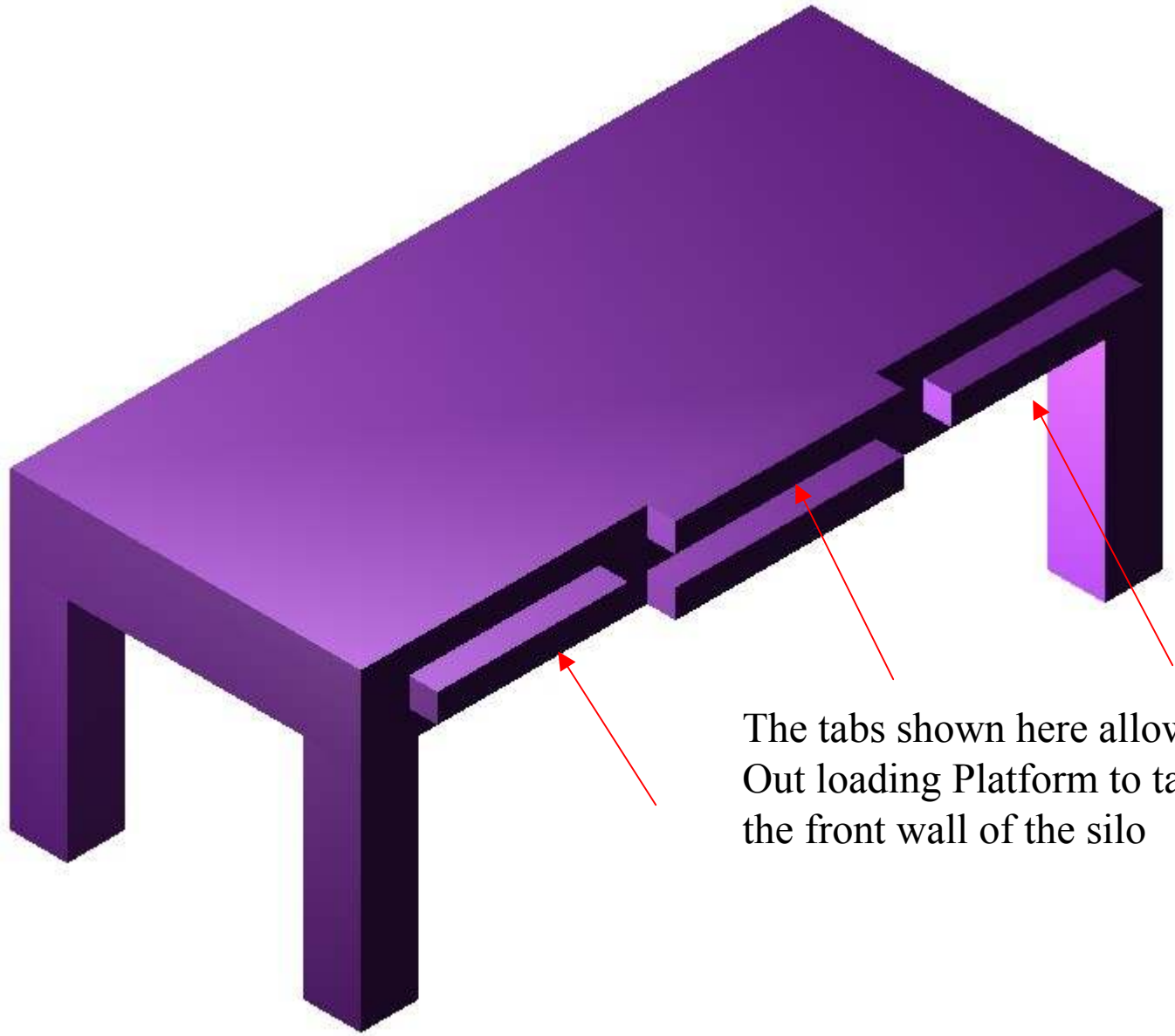
Out loading Platform - Step 10



Out loading Platform - Step 11

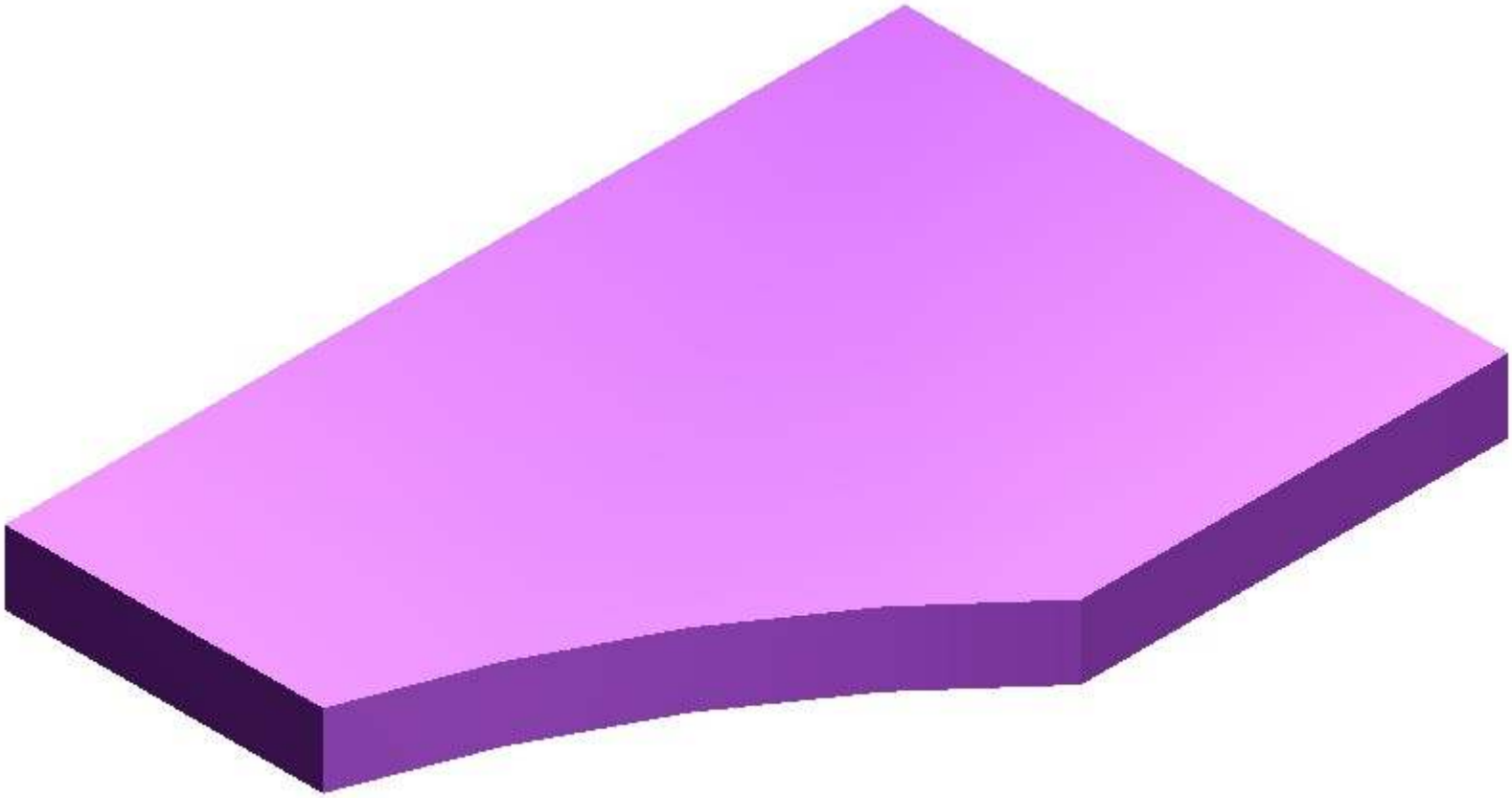


Out loading Platform - Step 12

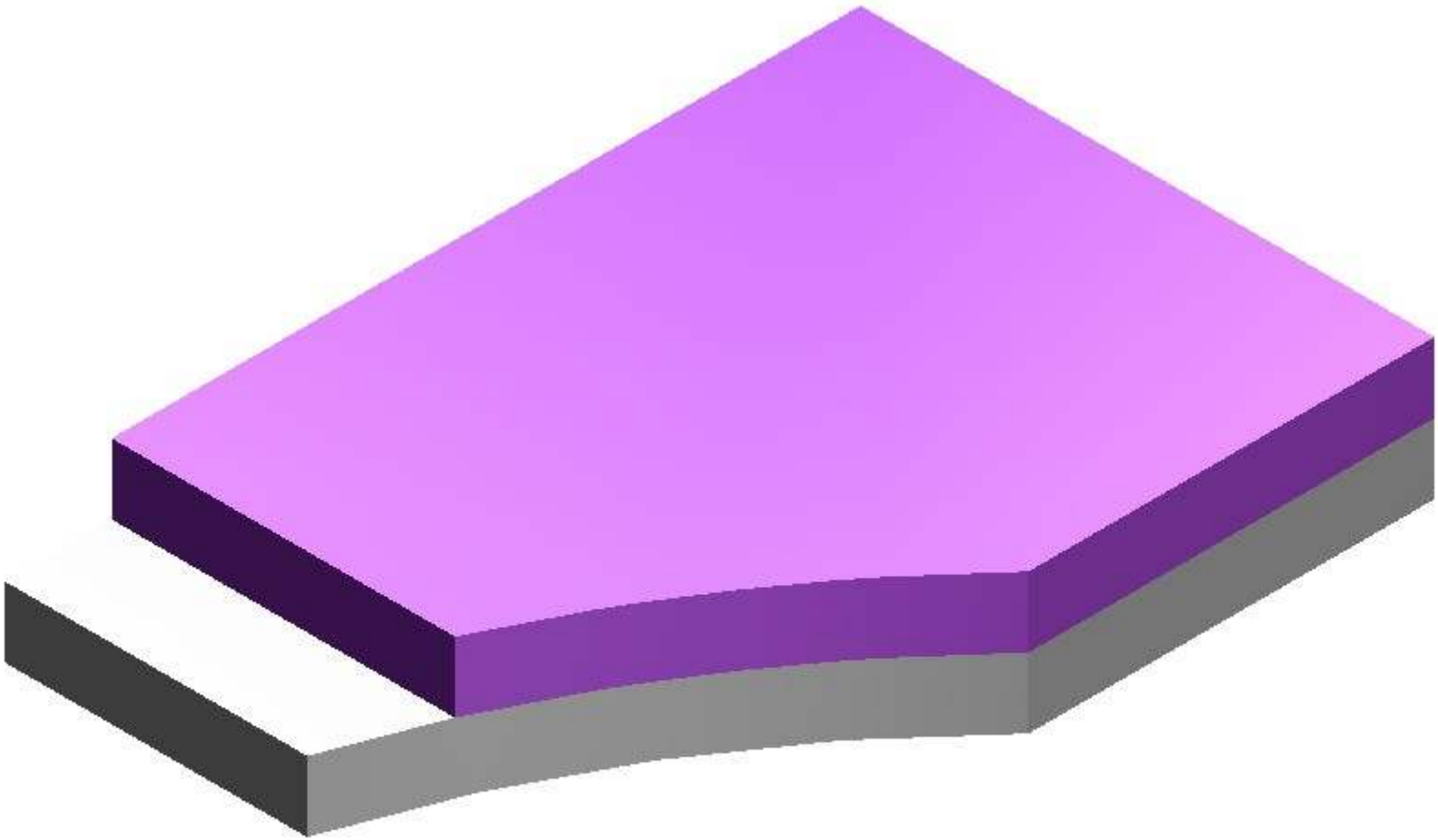


The tabs shown here allow the Out loading Platform to tab into the front wall of the silo

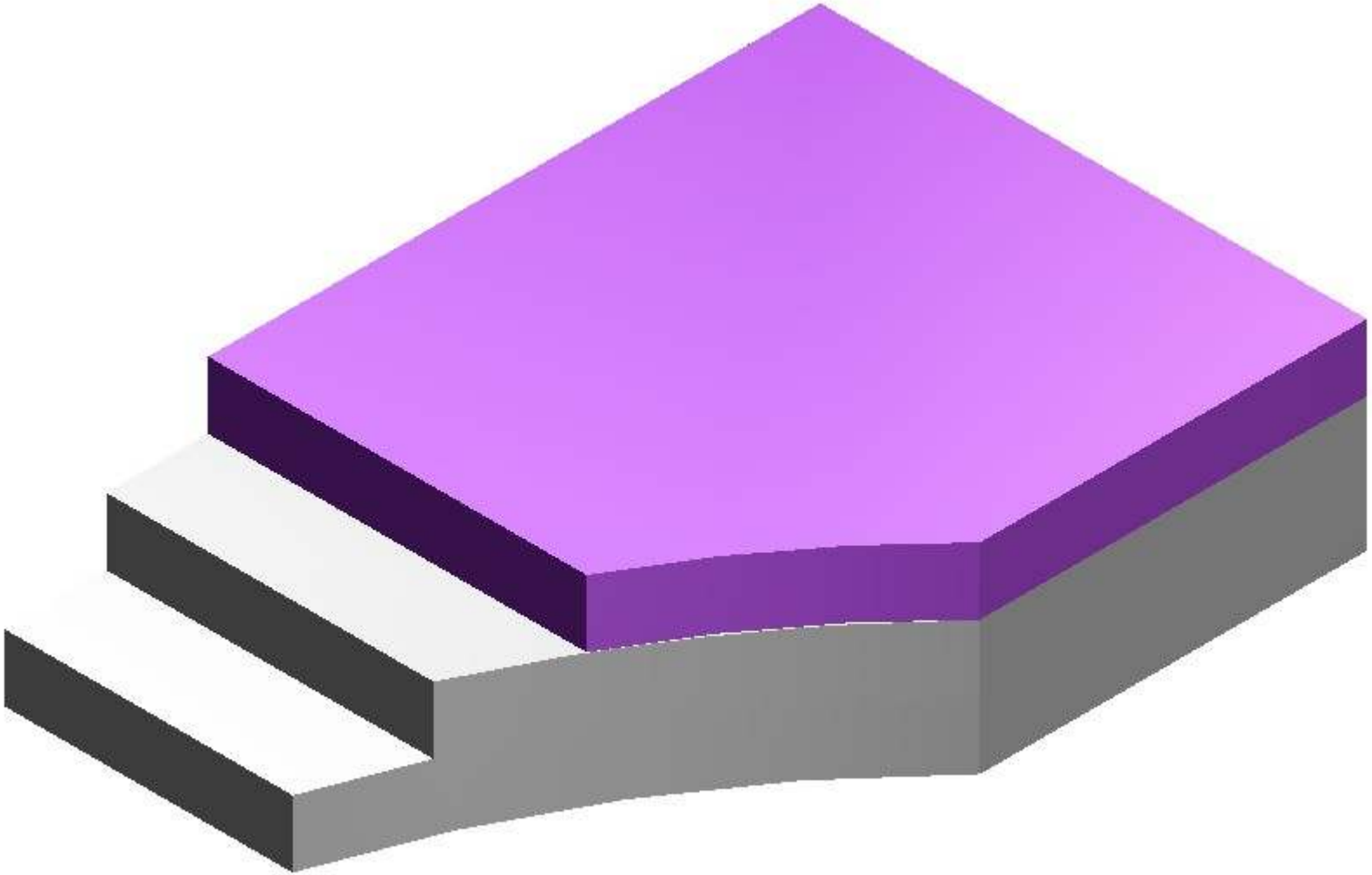
Front Step - Step 1



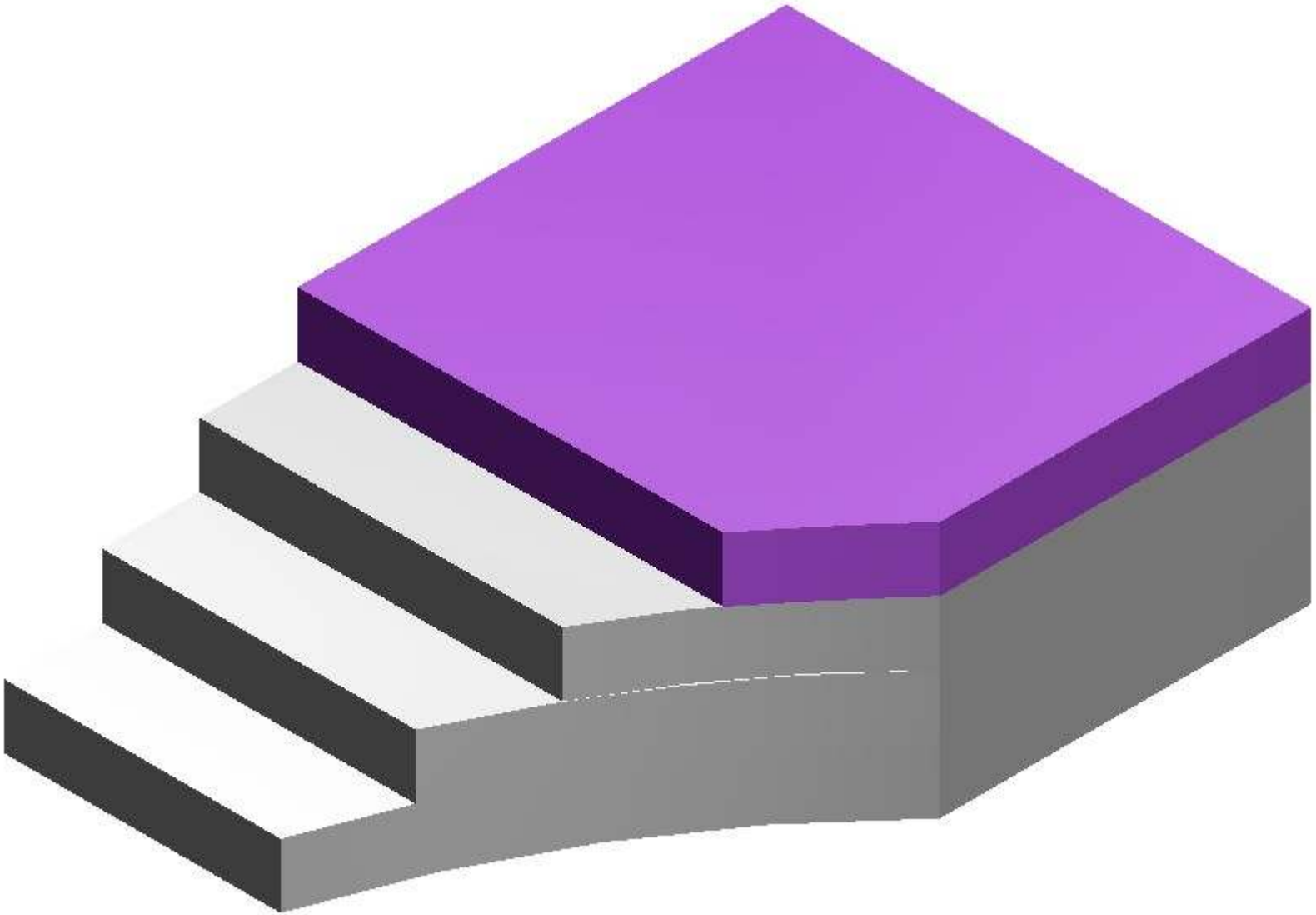
Front Step - Step 2



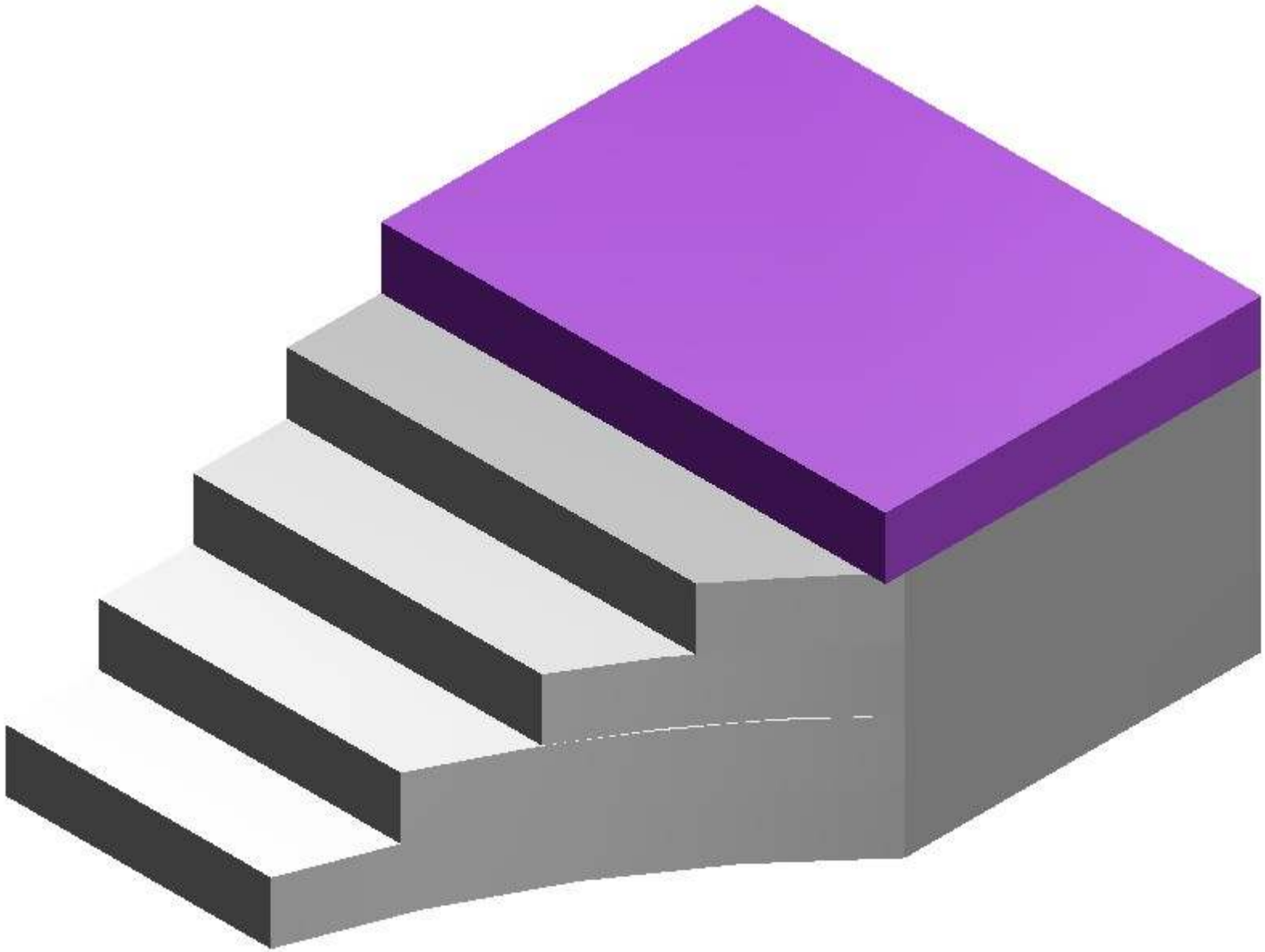
Front Step - Step 3



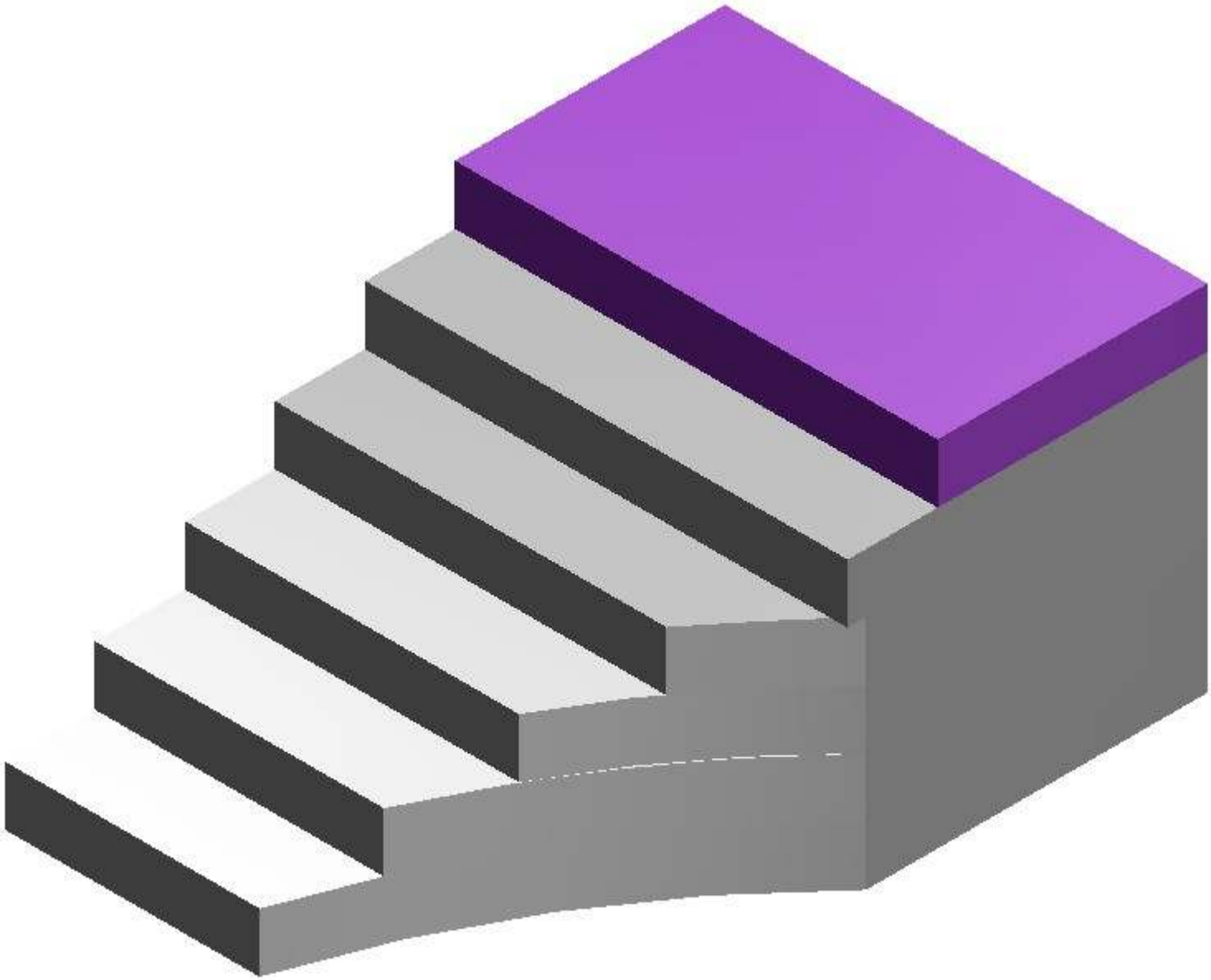
Front Step - Step 4



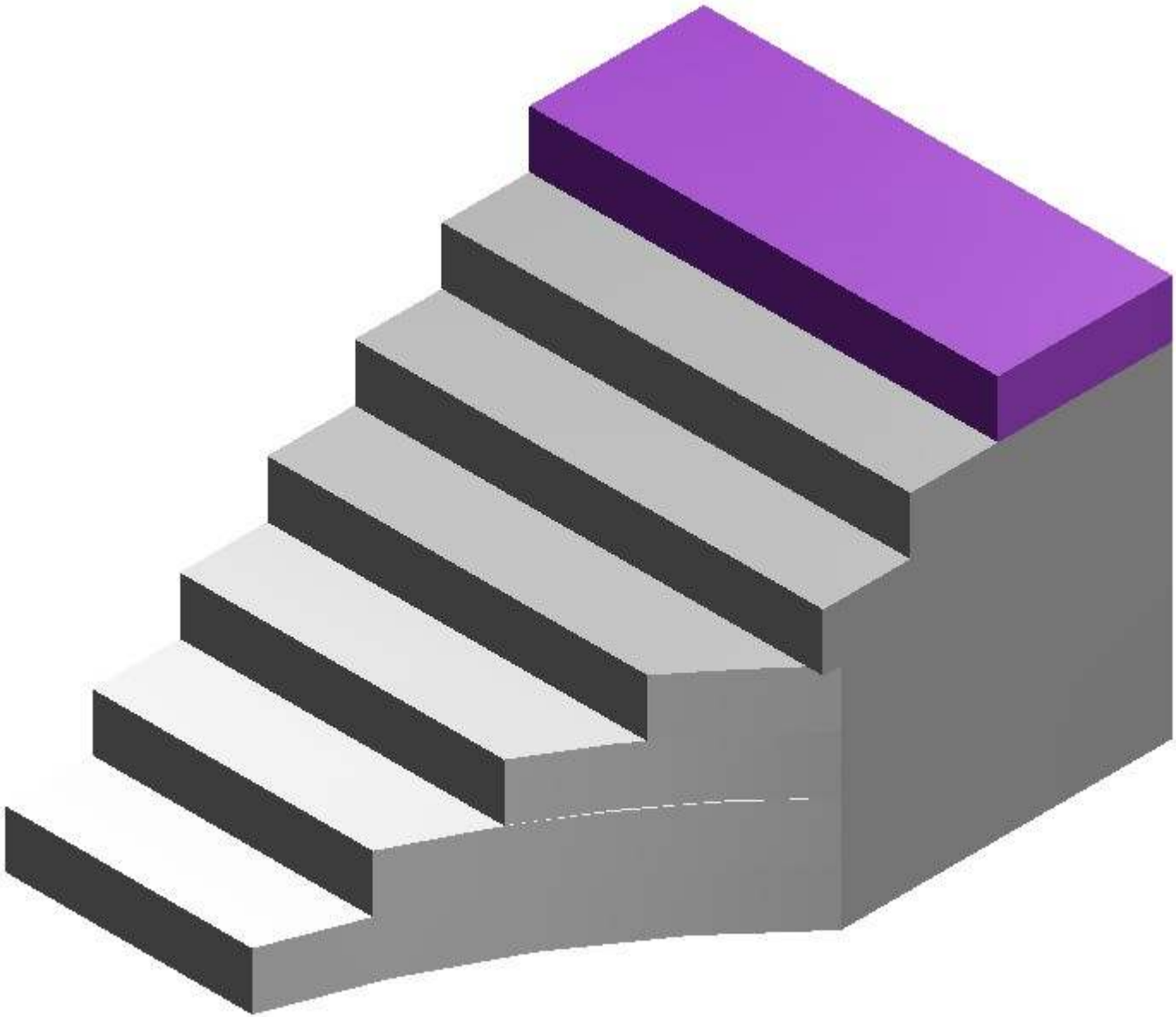
Front Step - Step 5



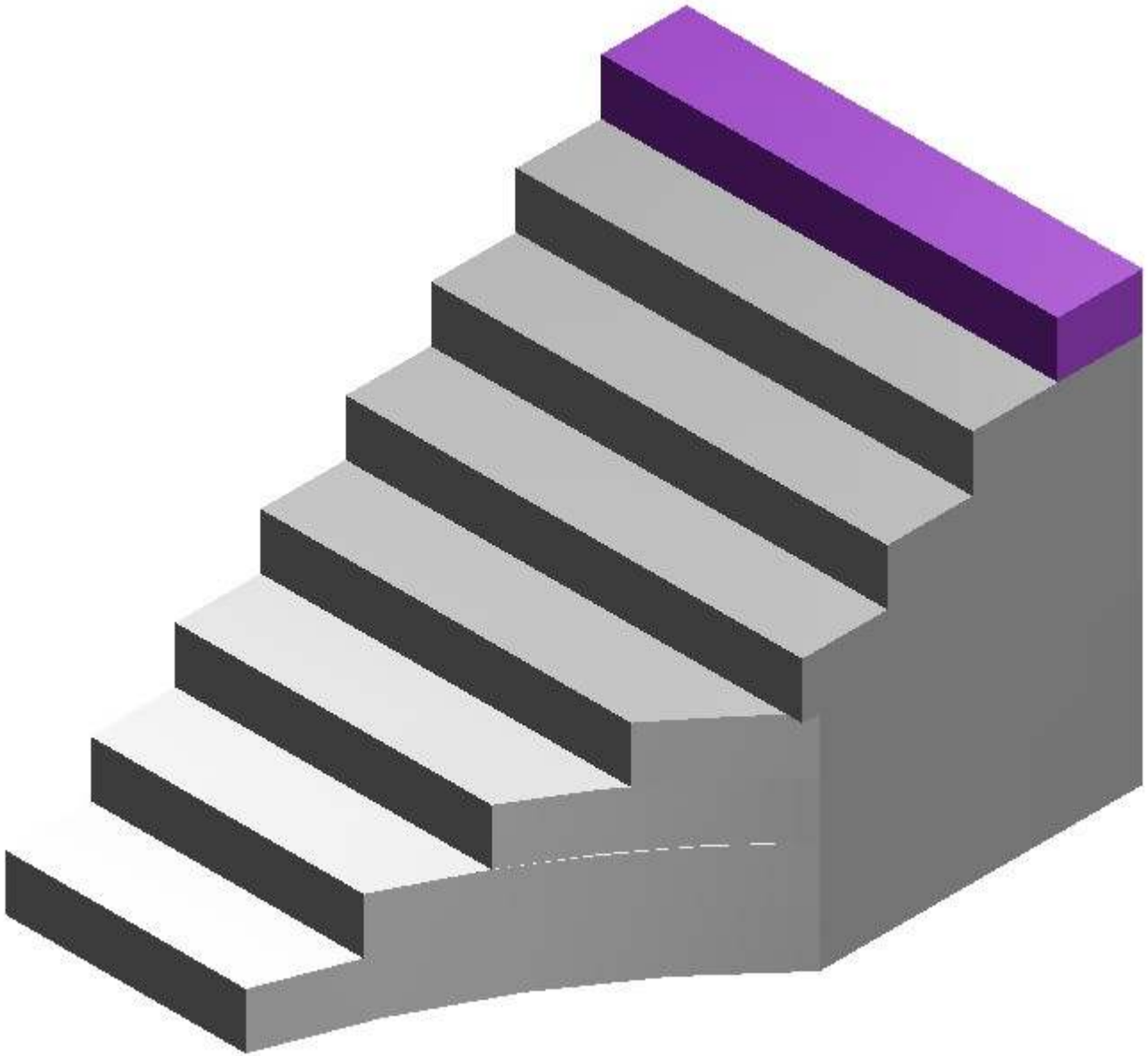
Front Step - Step 6



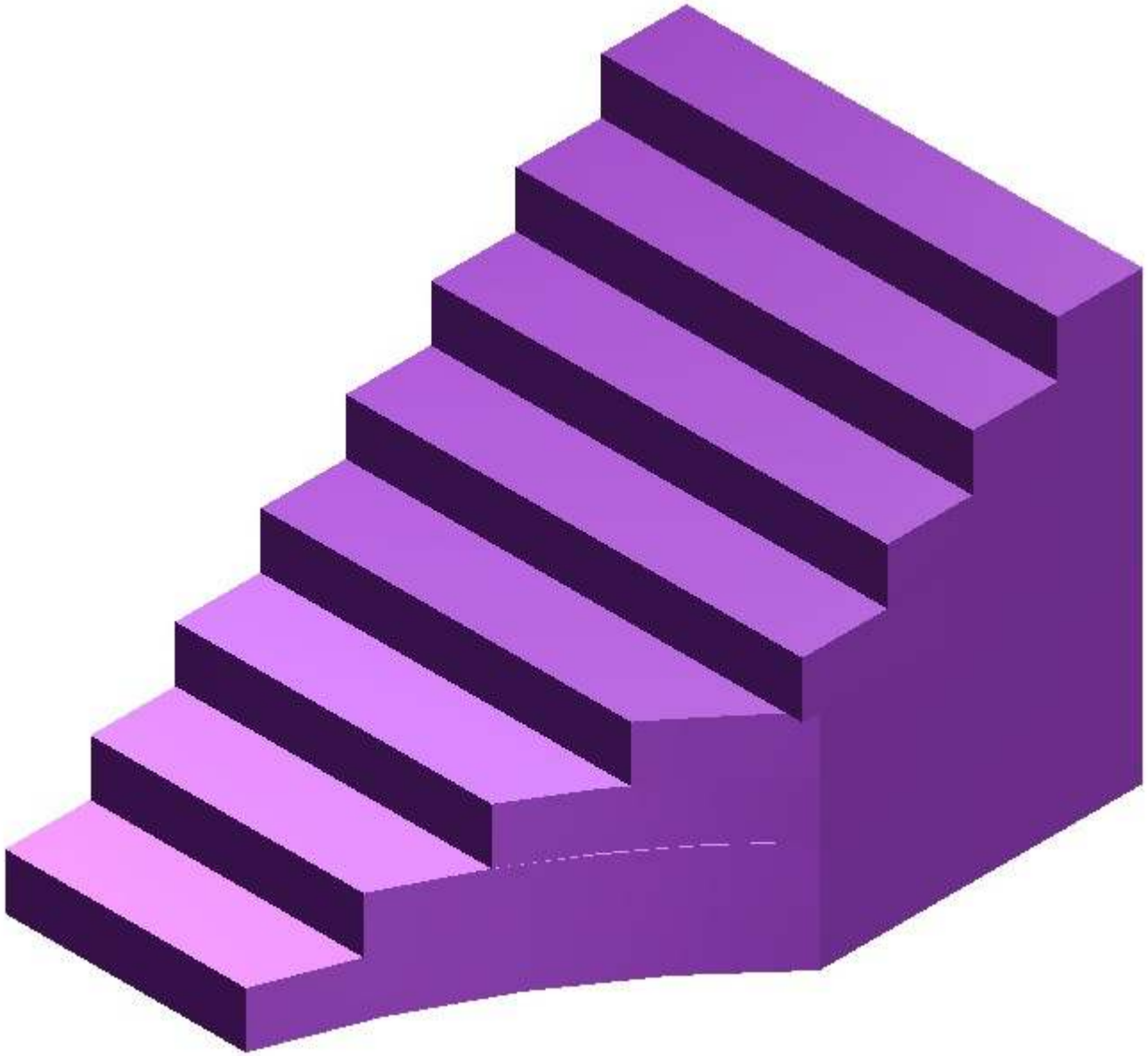
Front Step - Step 7



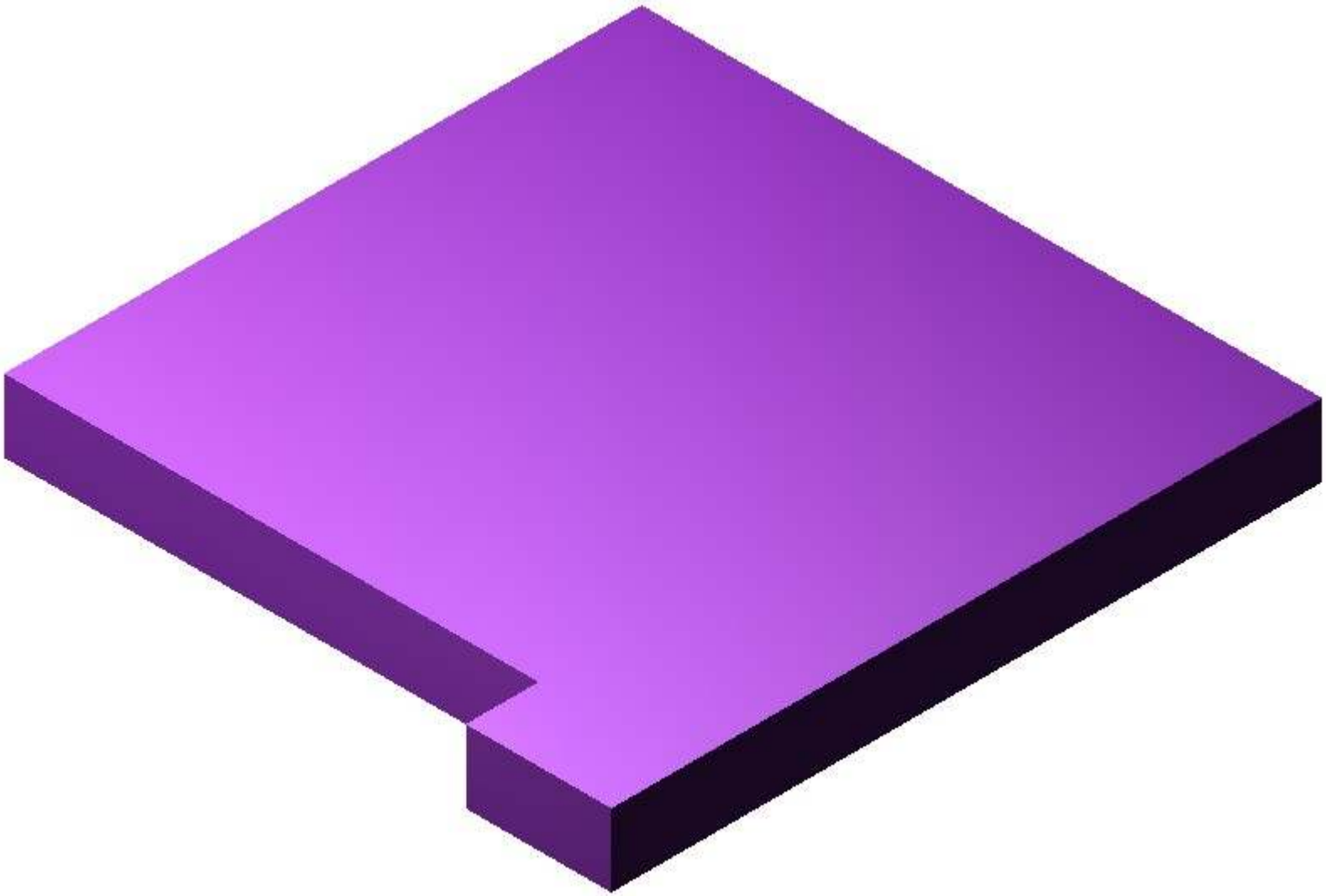
Front Step - Step 8



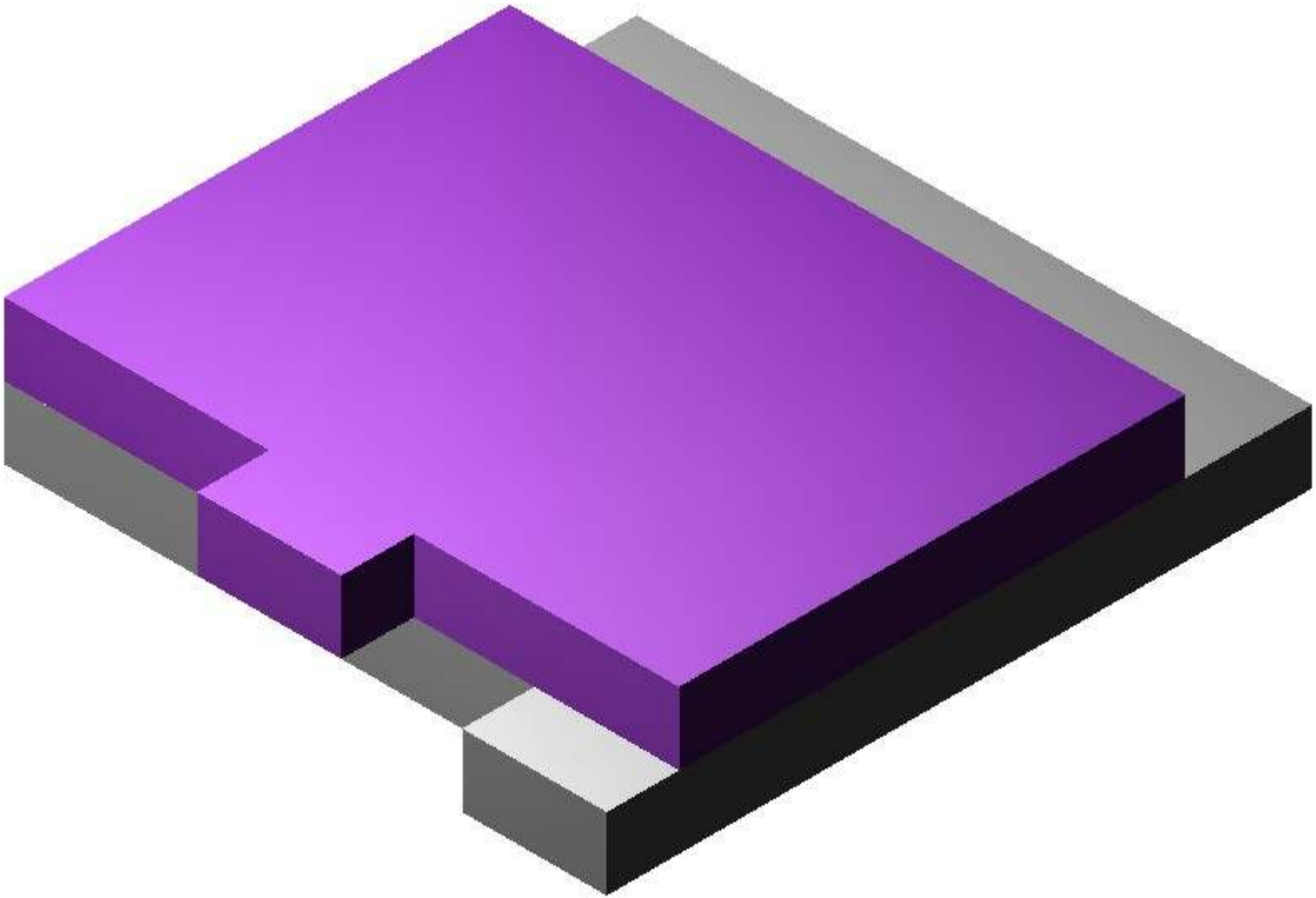
Front Step - Step 9



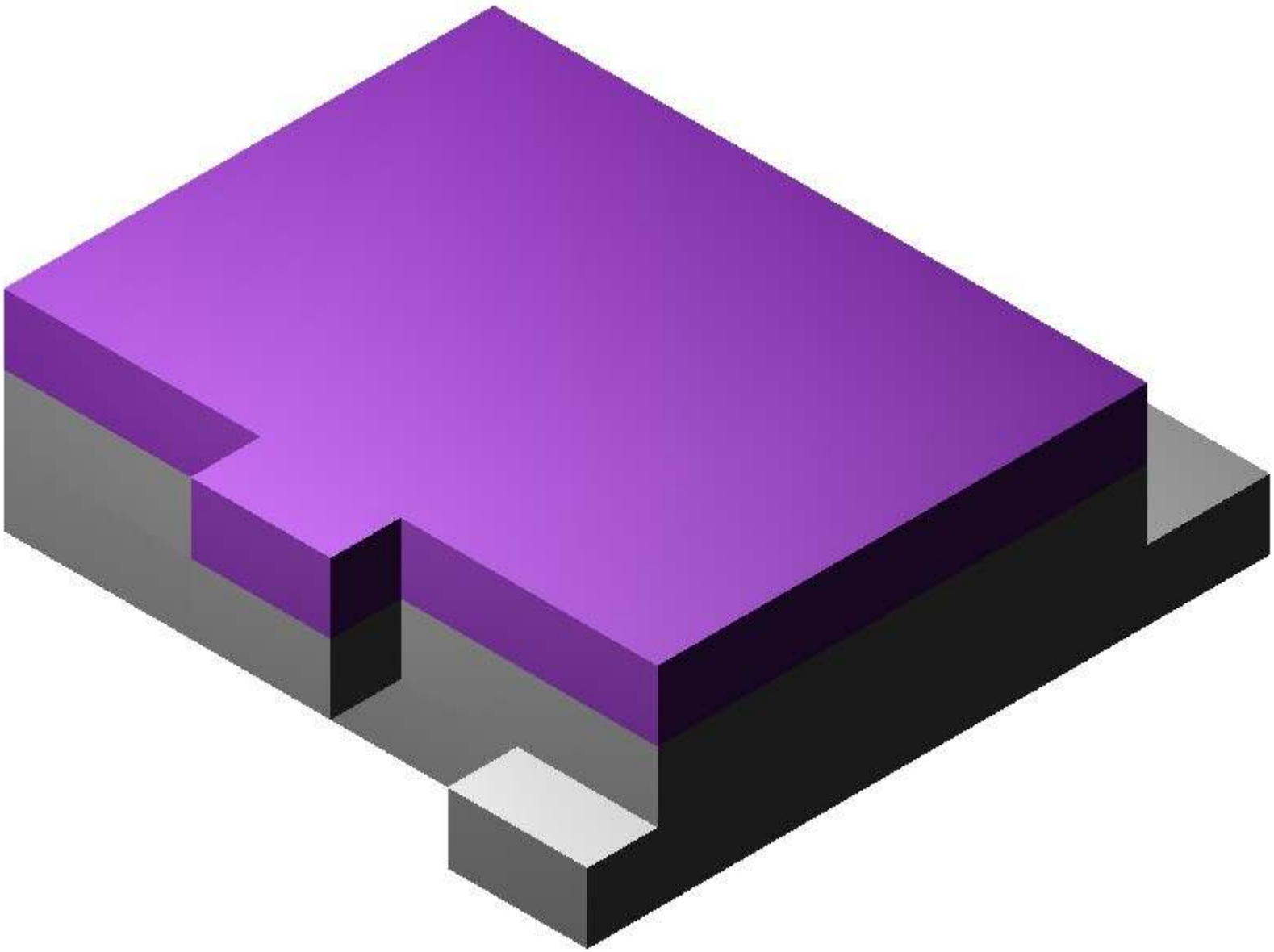
Rear Step - Step 1



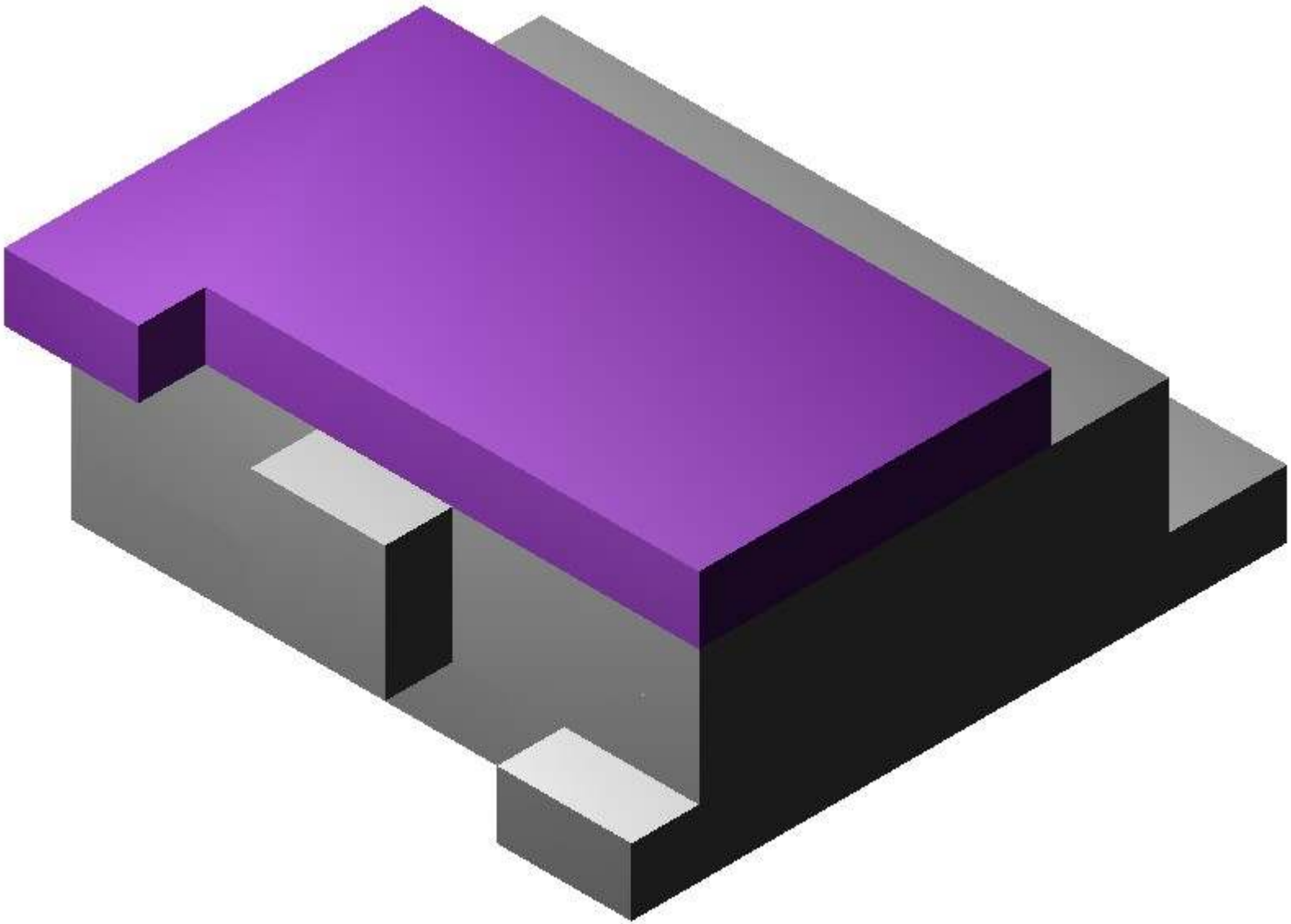
Rear Step - Step 2



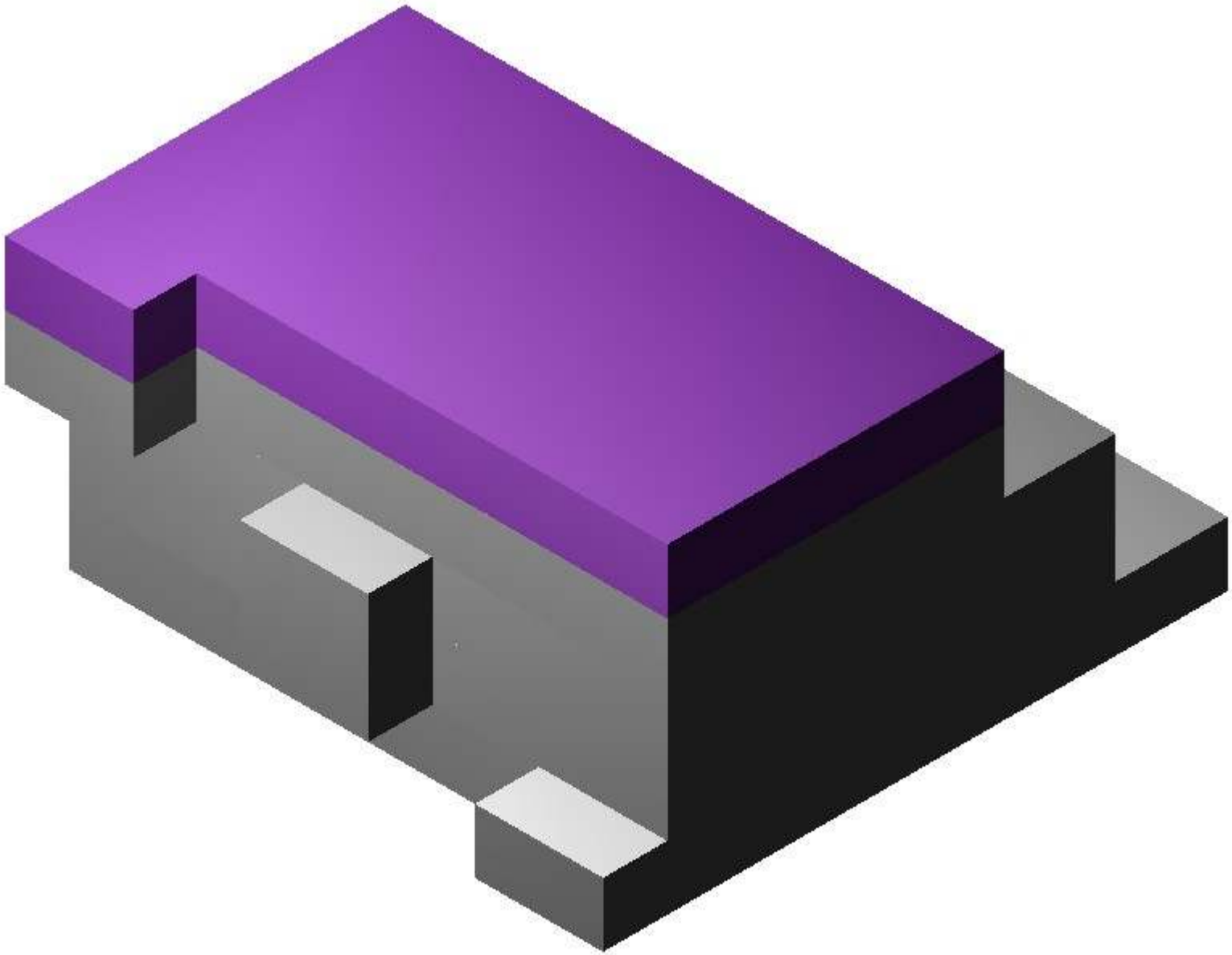
Rear Step - Step 3



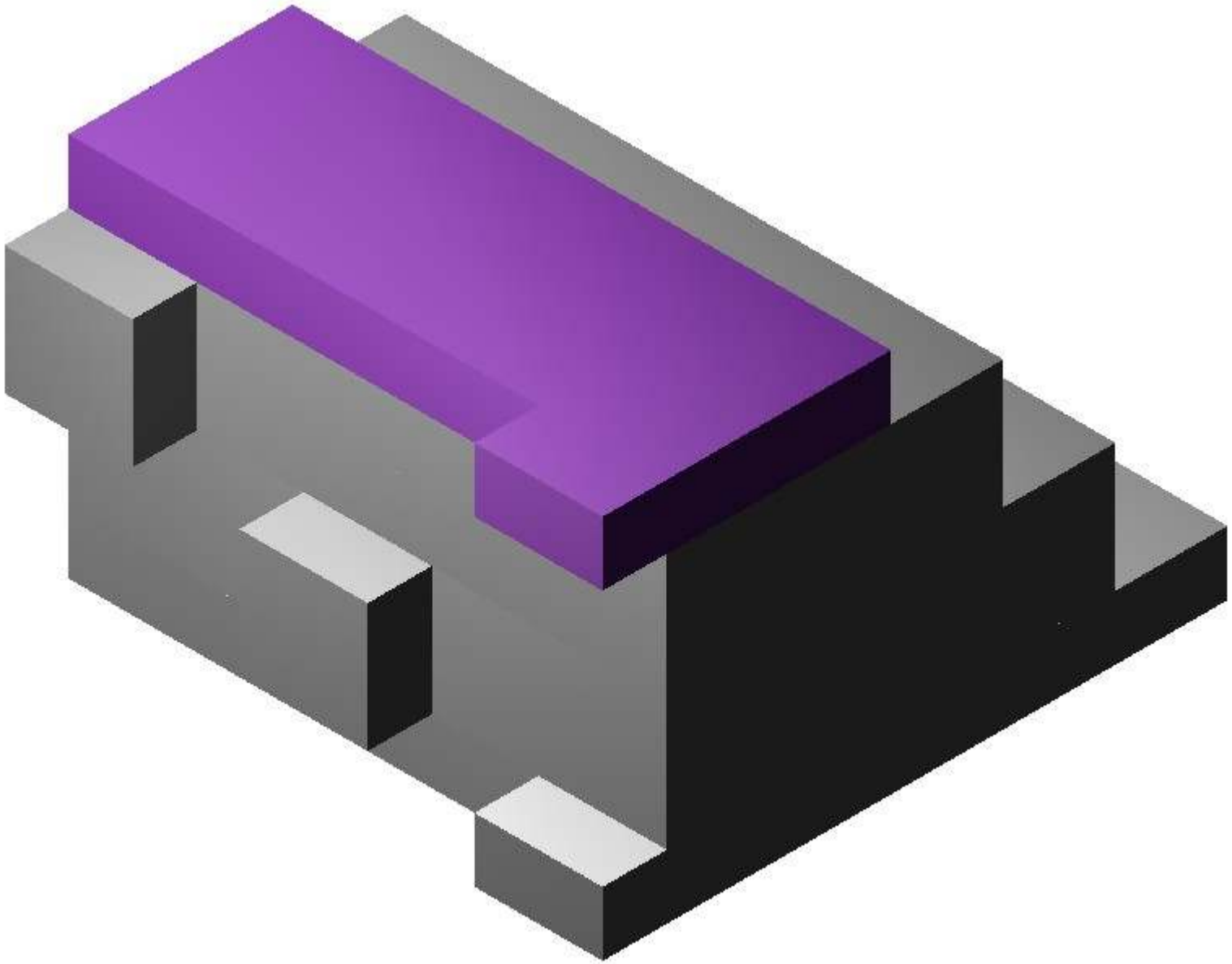
Rear Step - Step 4



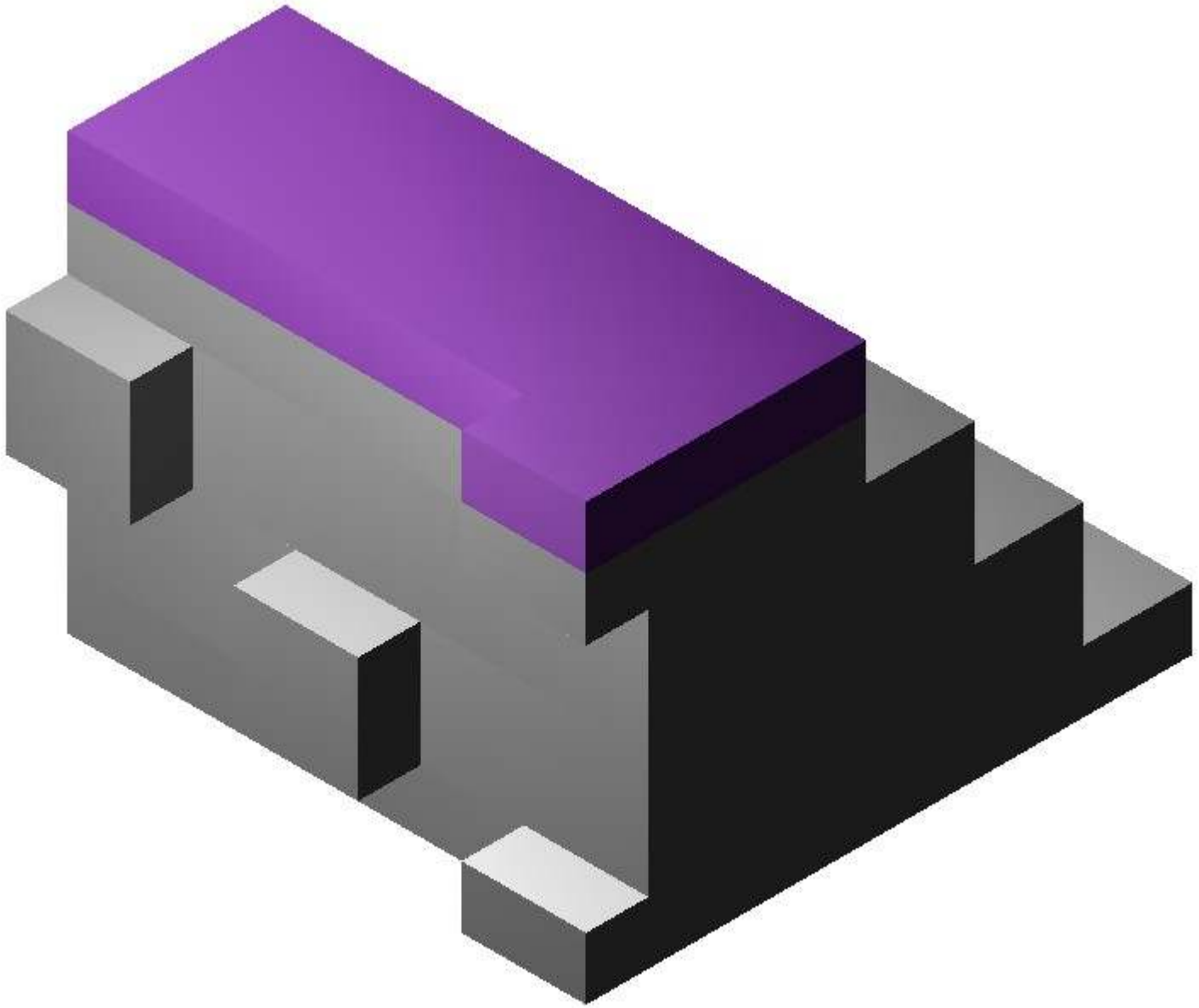
Rear Step - Step 5



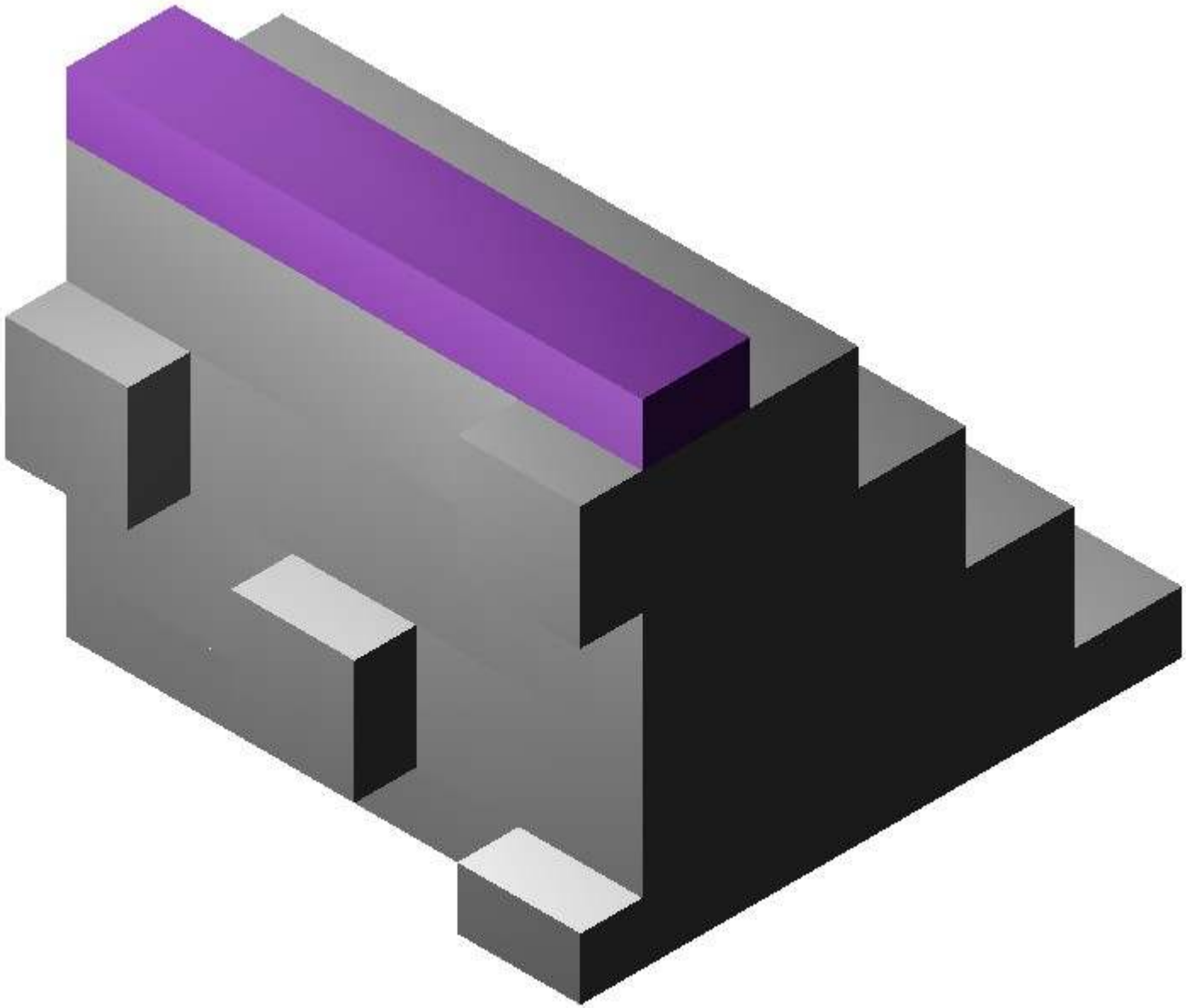
Rear Step - Step 6



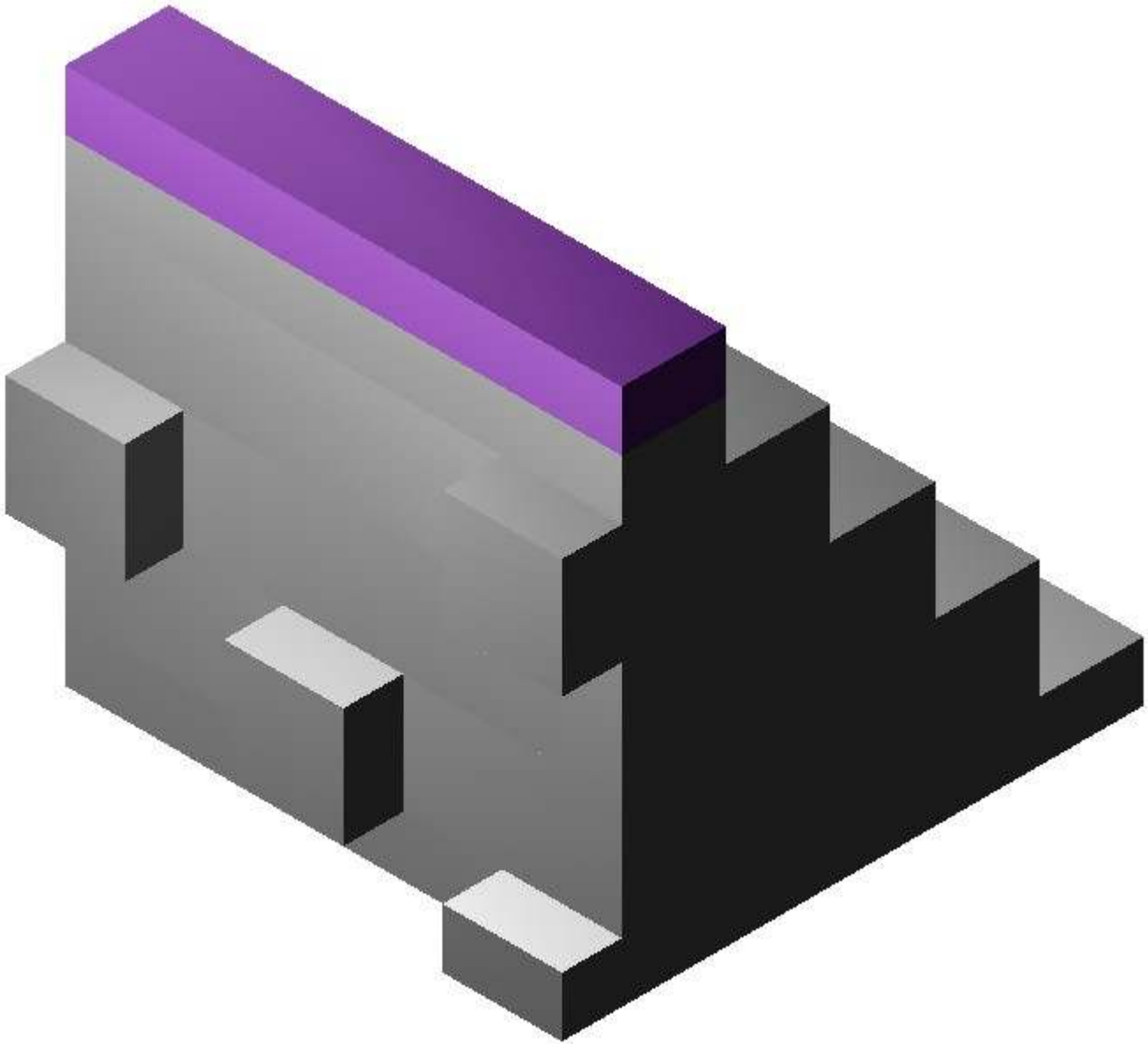
Rear Step - Step 7



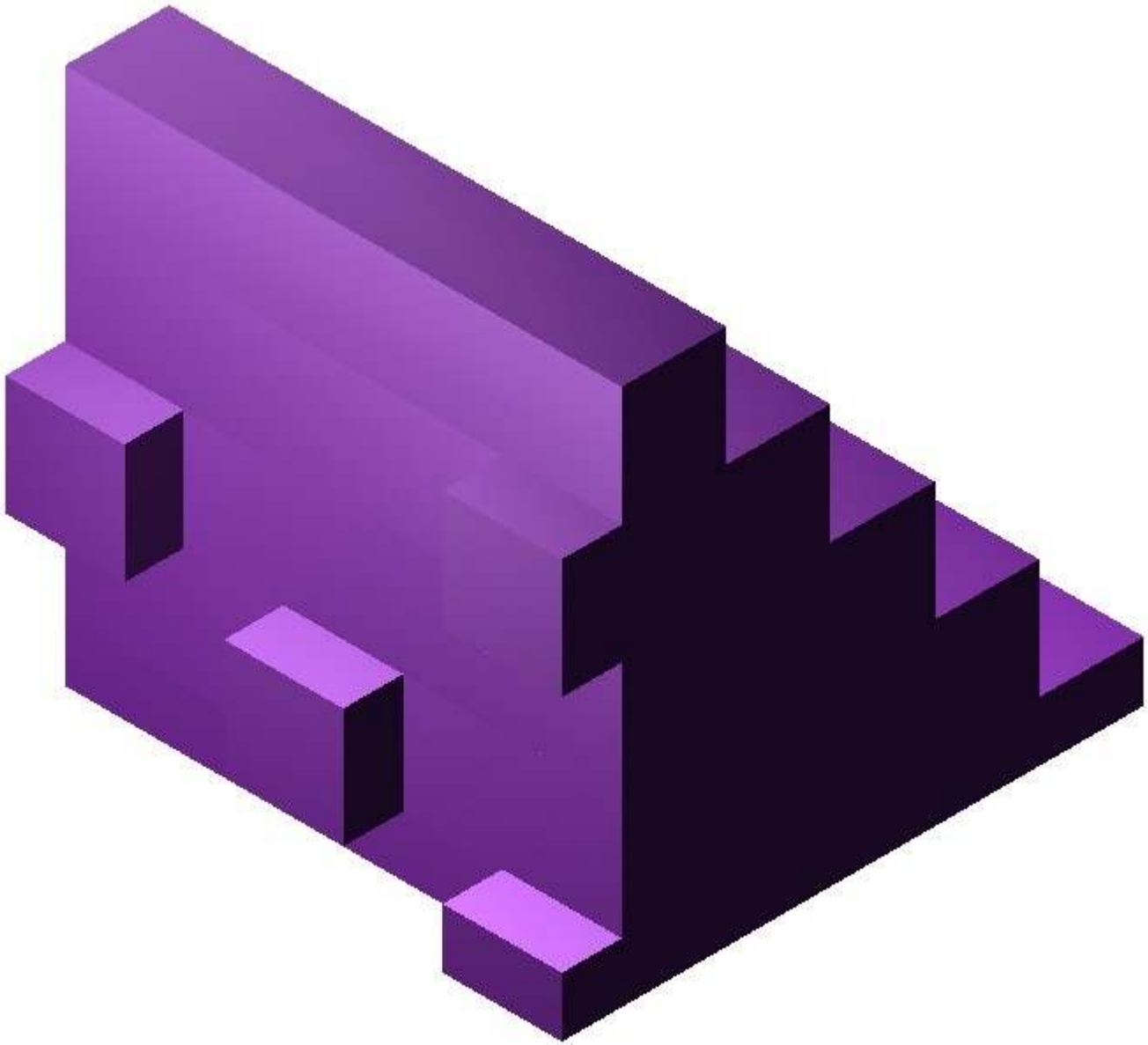
Rear Step - Step 8



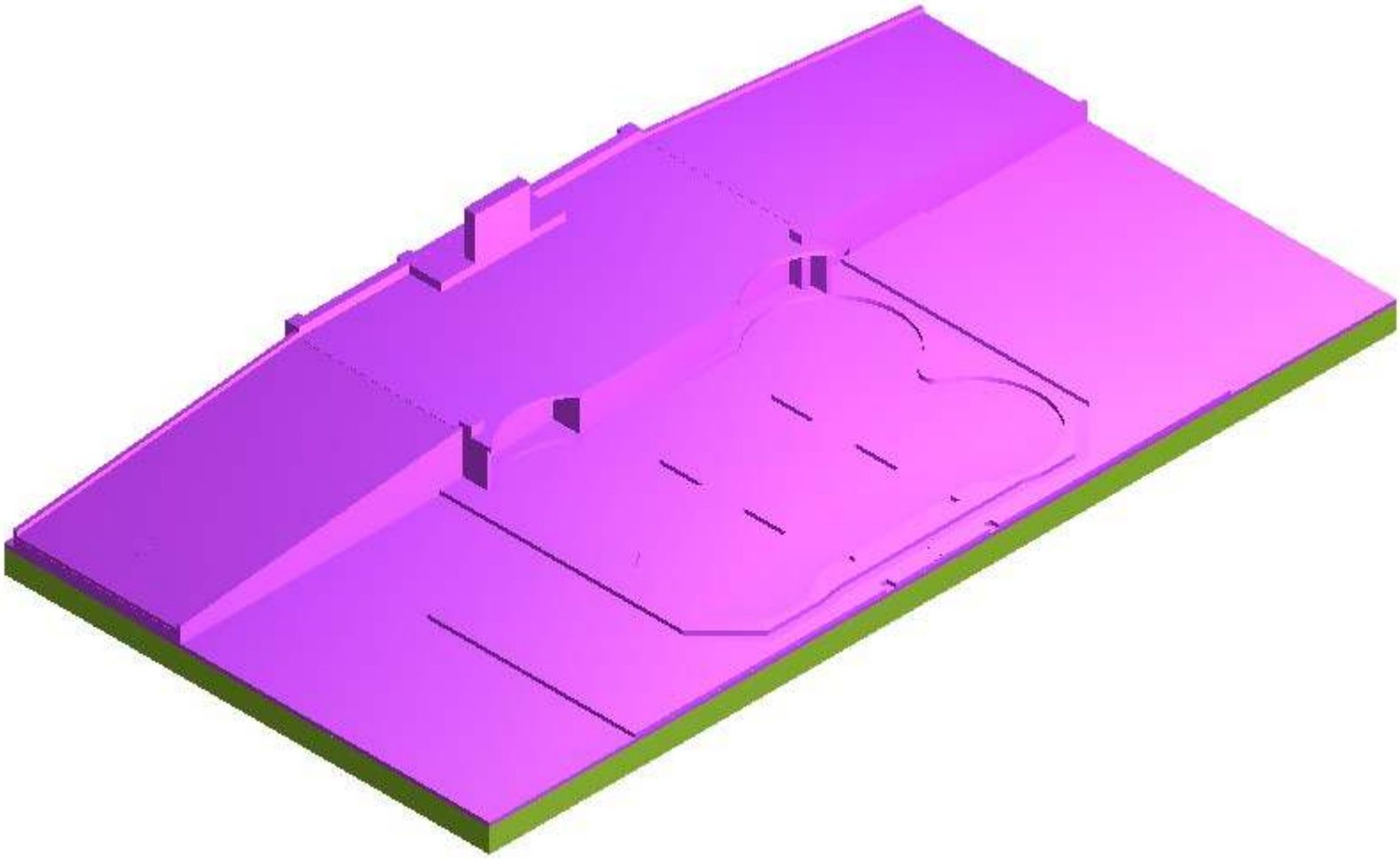
Rear Step - Step 9



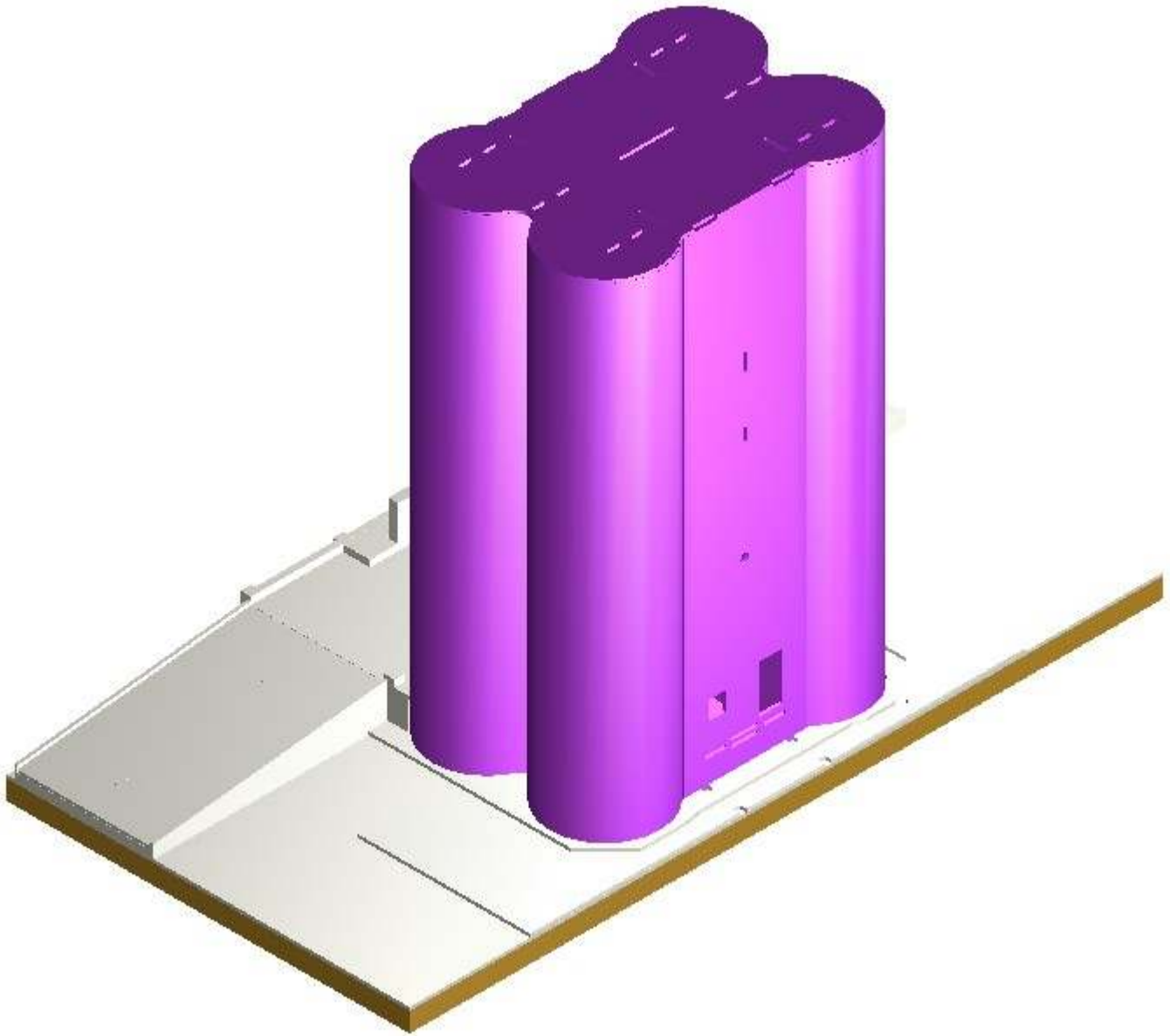
Rear Step - Step 10



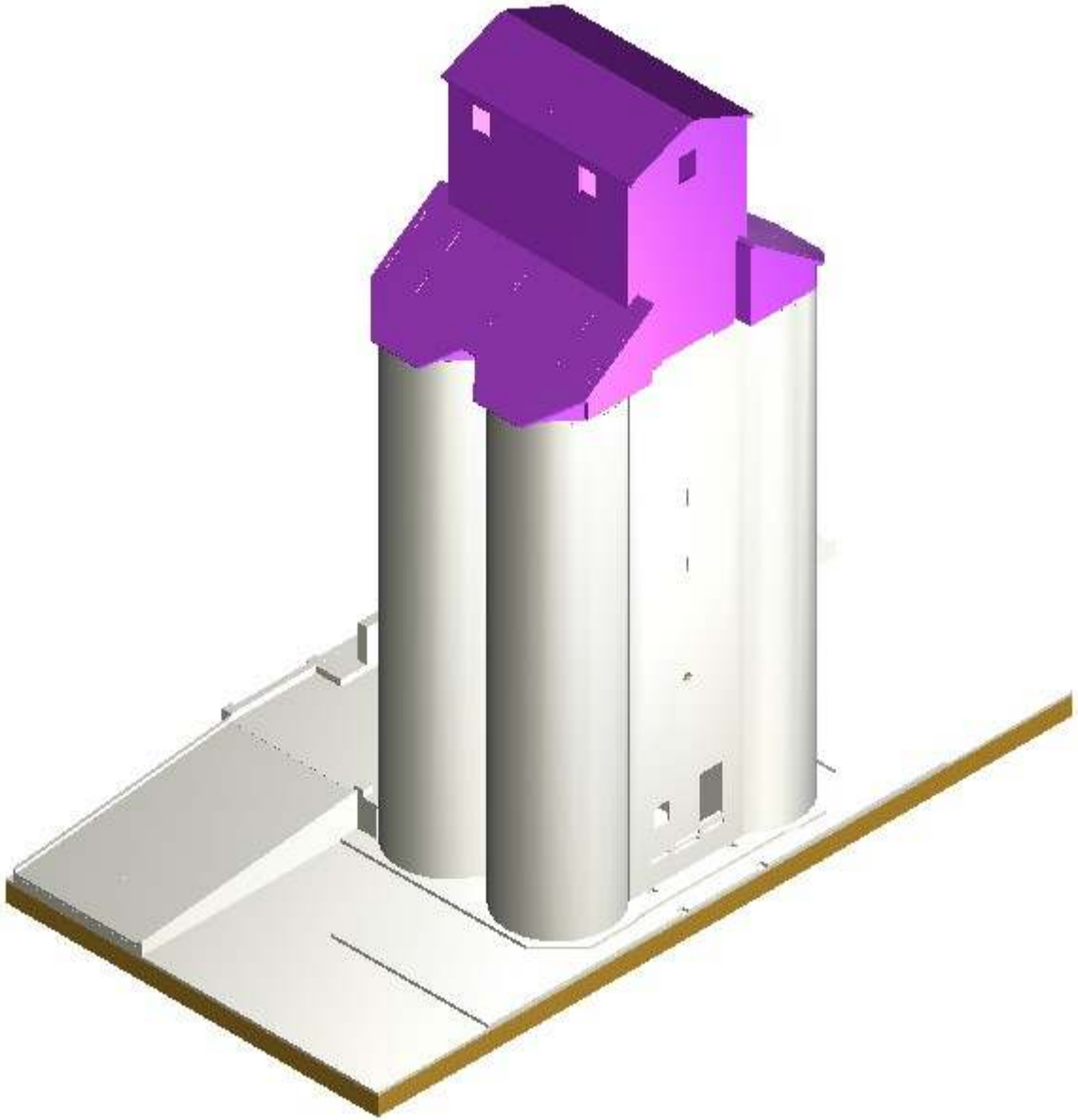
Fitting the Sub Assemblies Step 1



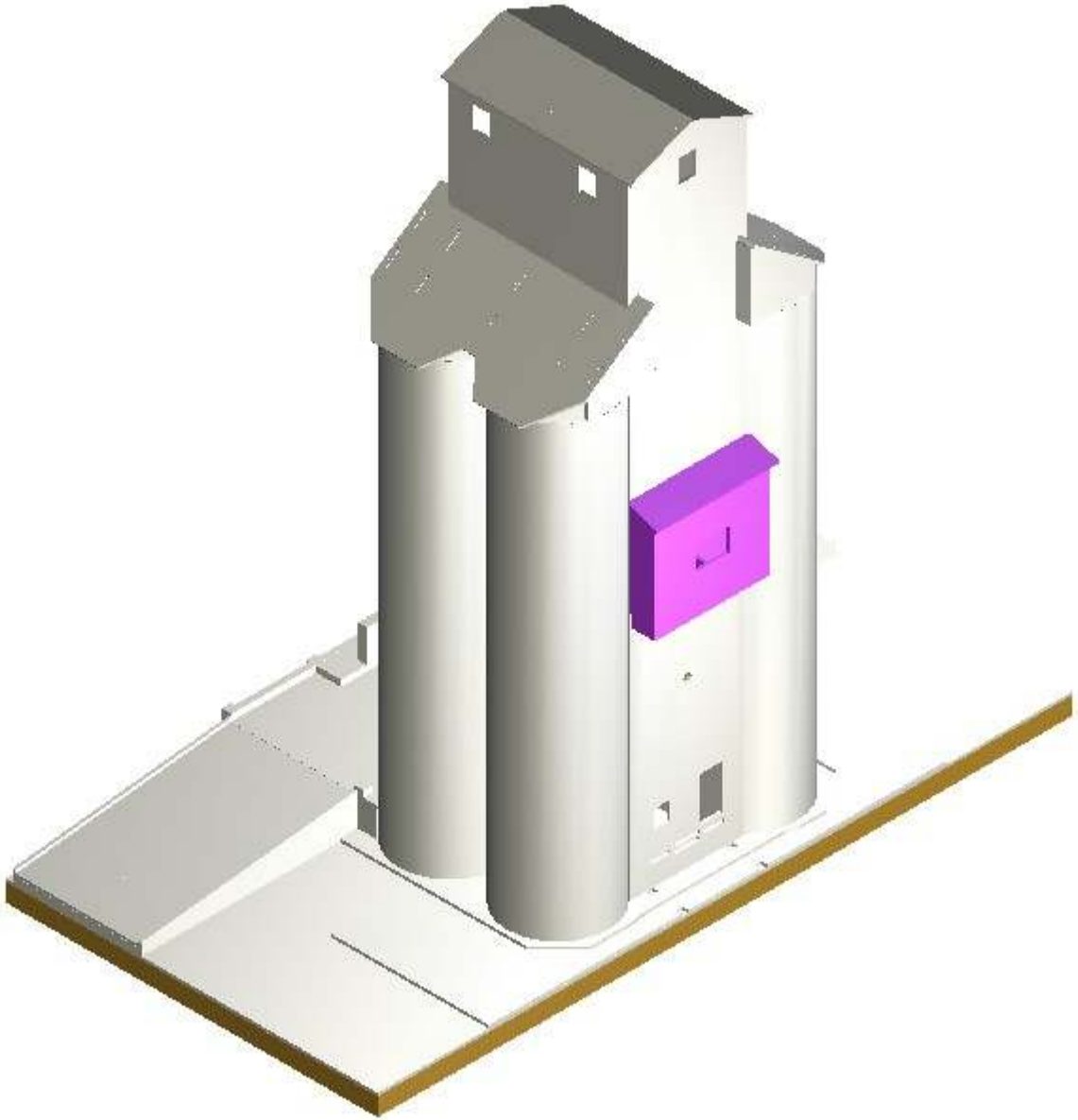
Fitting The Sub Assemblies Step 2



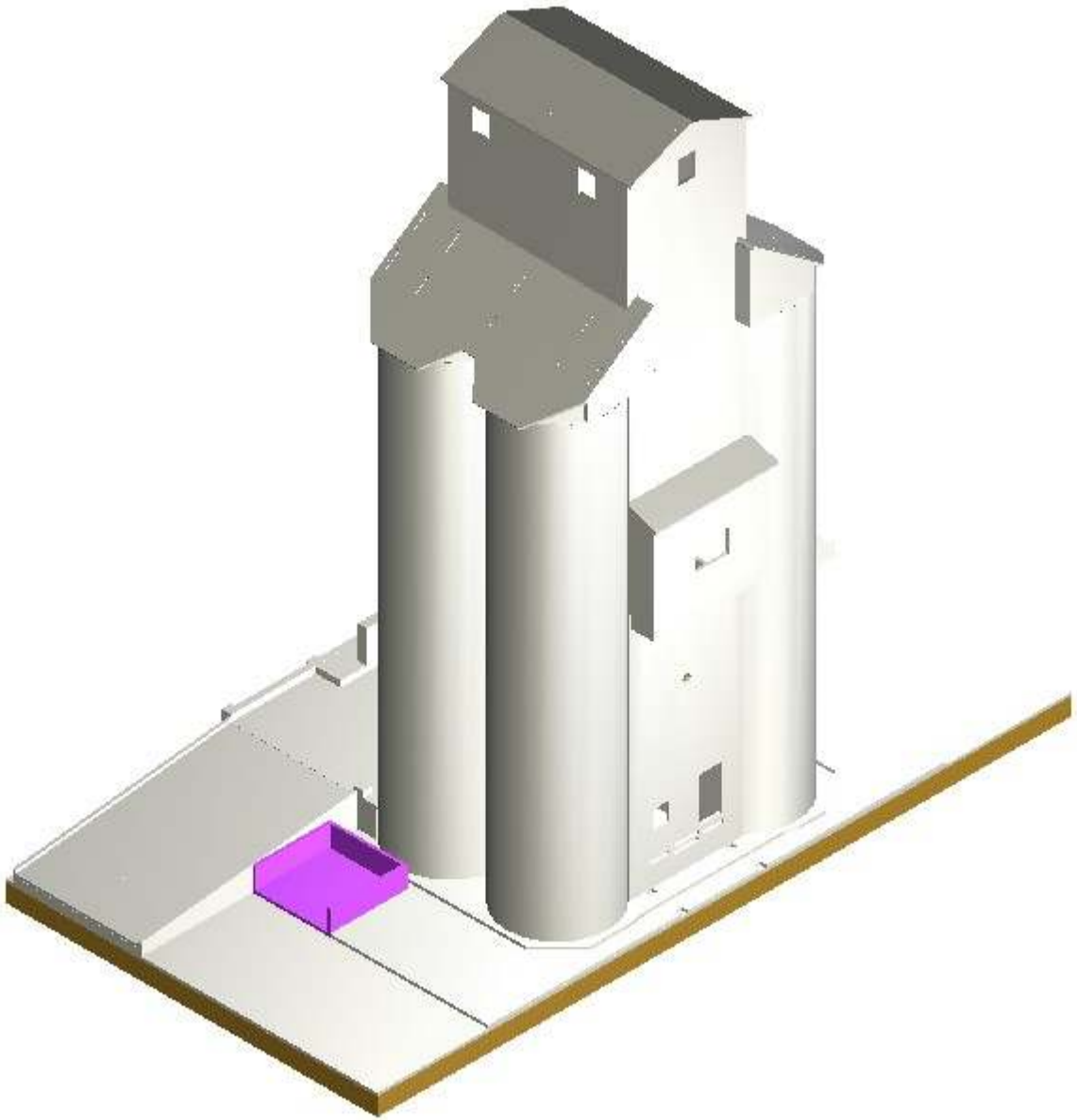
Fitting The Sub Assemblies Step 3



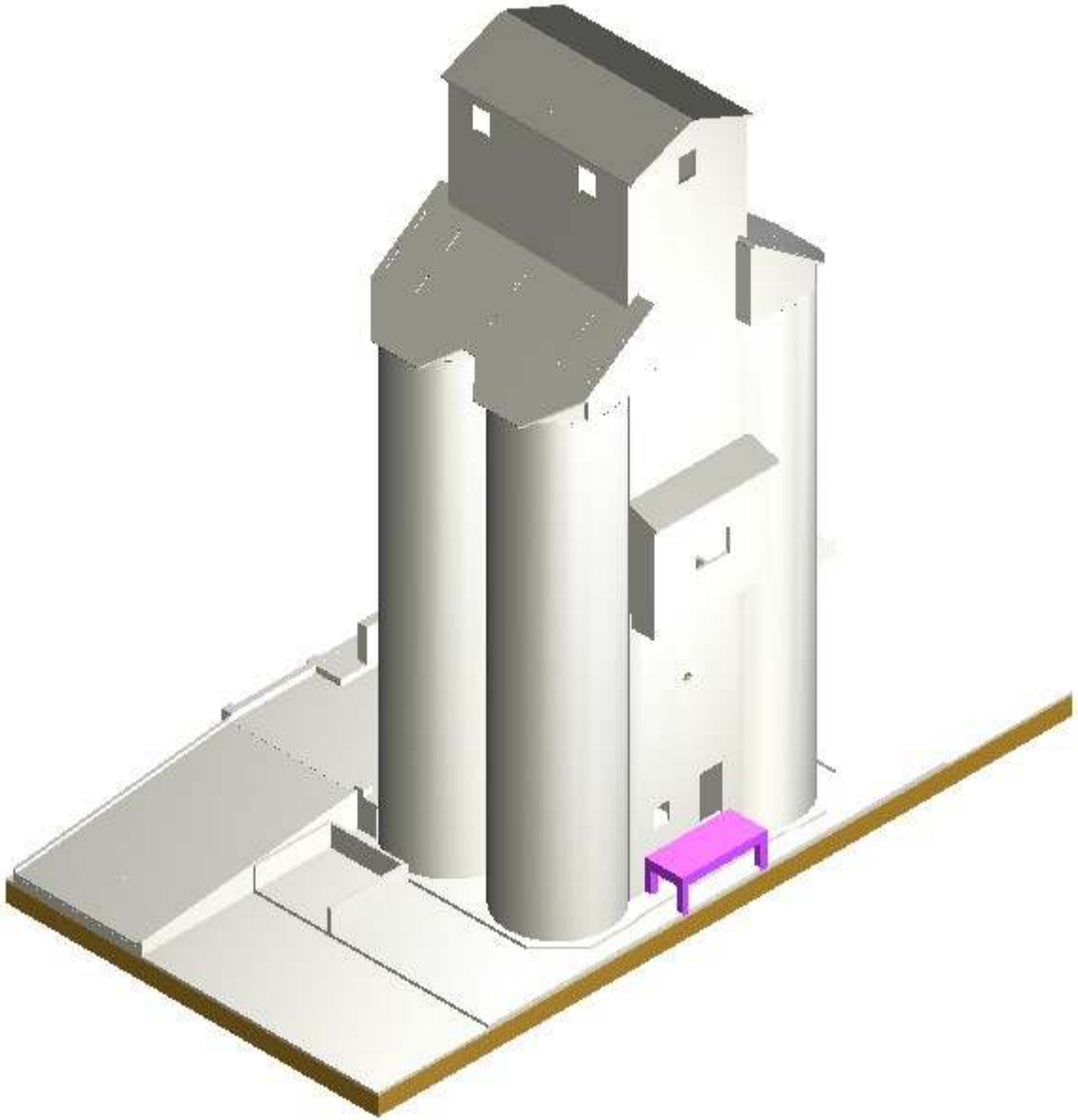
Fitting The Sub Assemblies Step 4



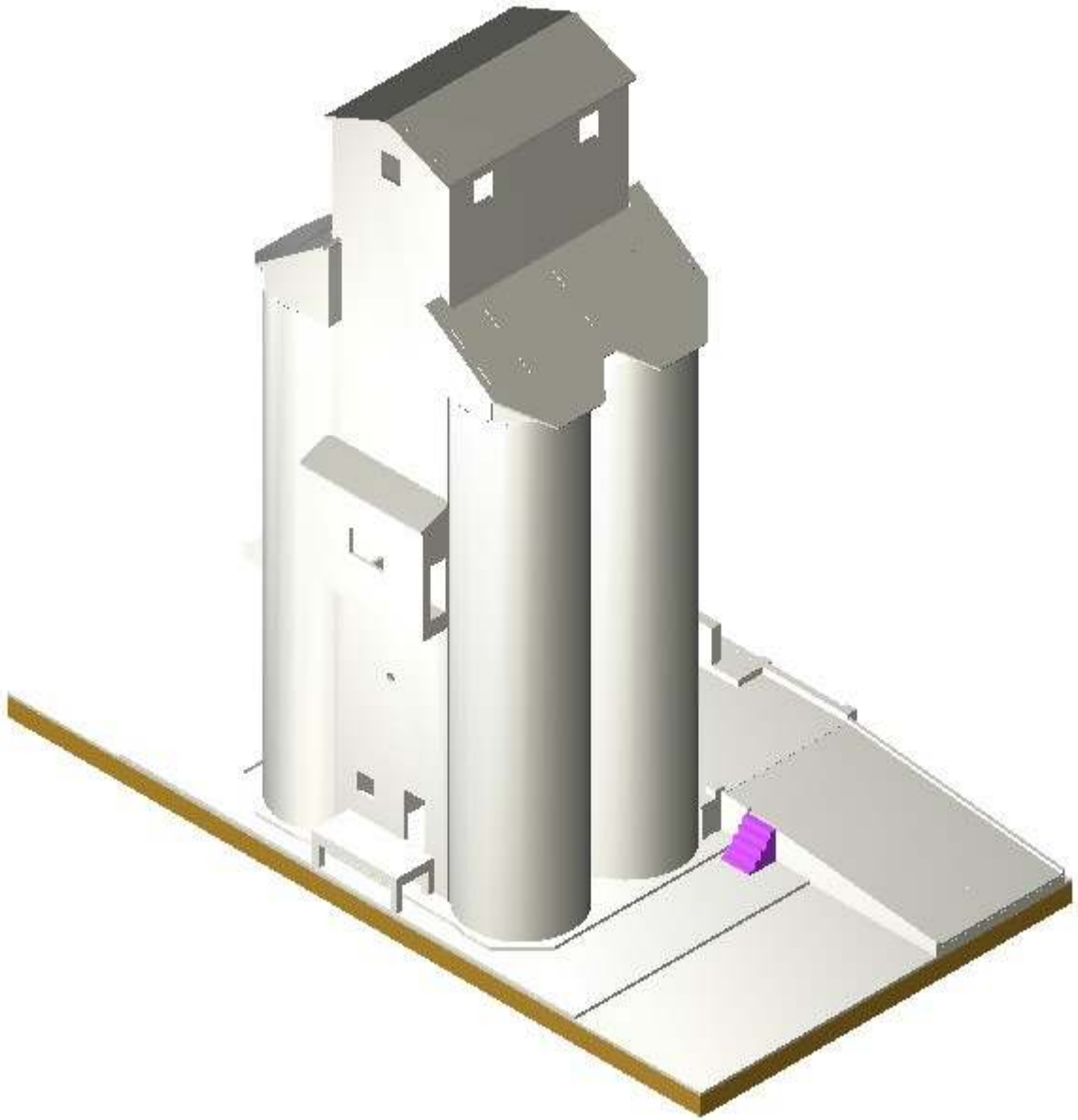
Fitting The Sub Assemblies Step 5



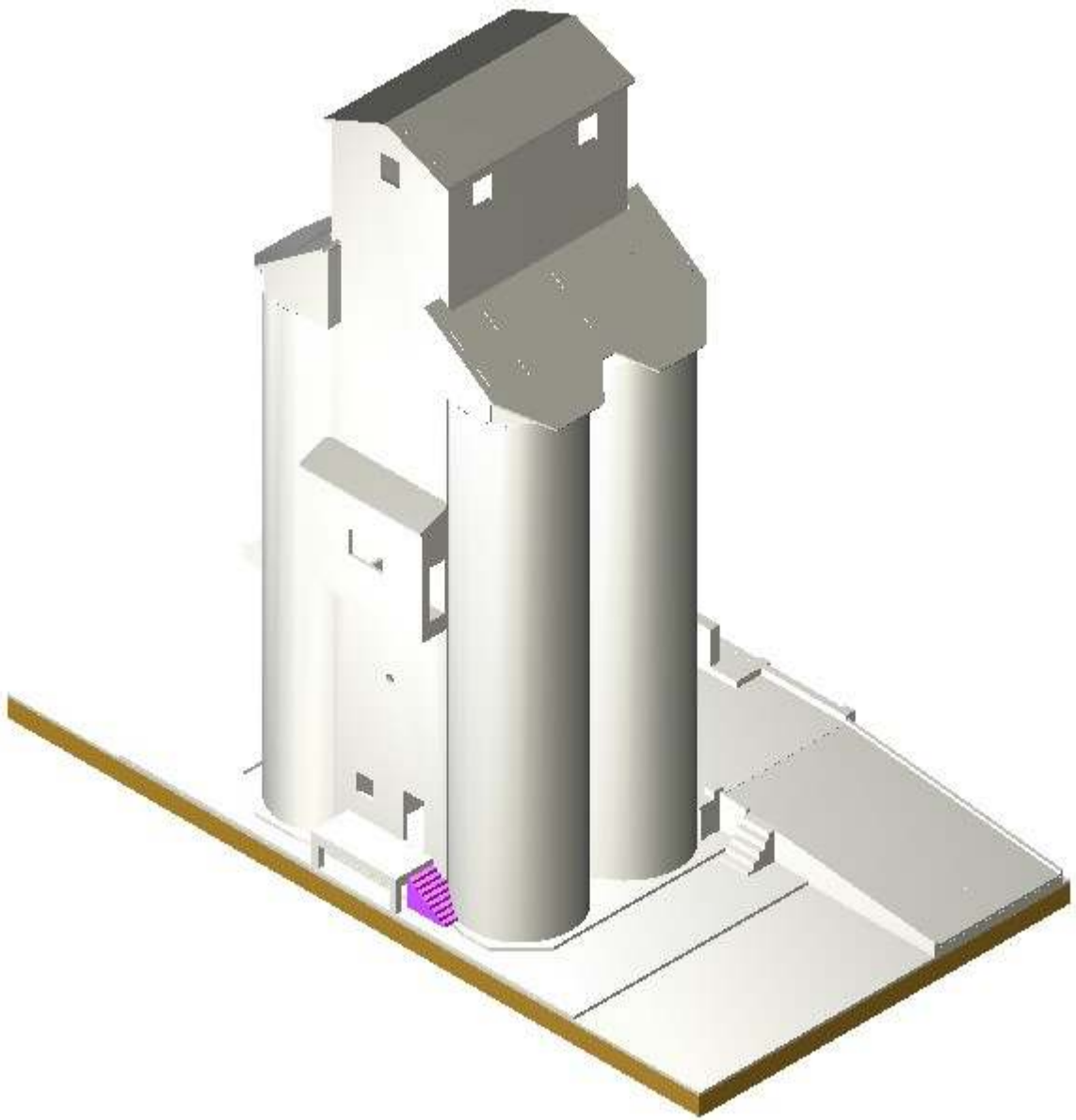
Fitting The Sub Assemblies Step 6



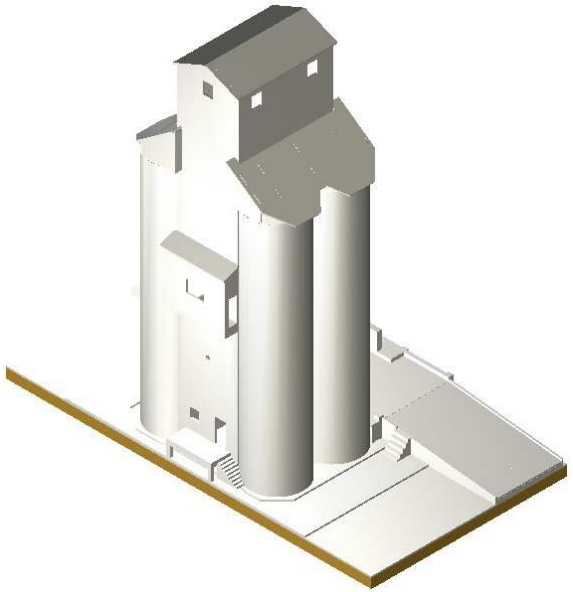
Fitting The Sub Assemblies Step 7

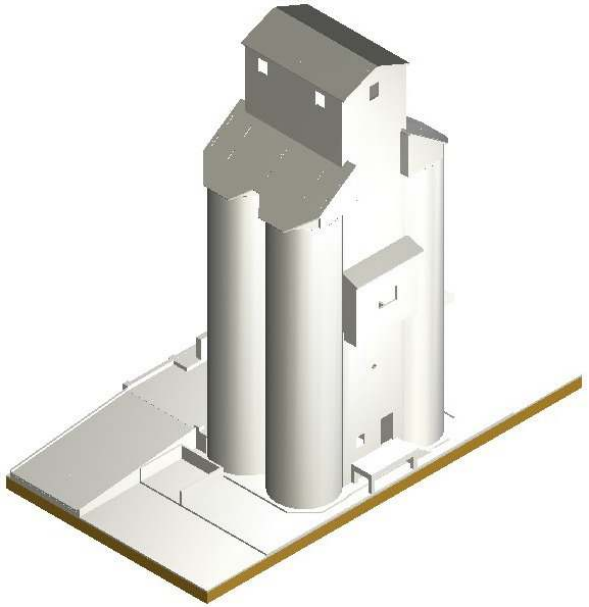


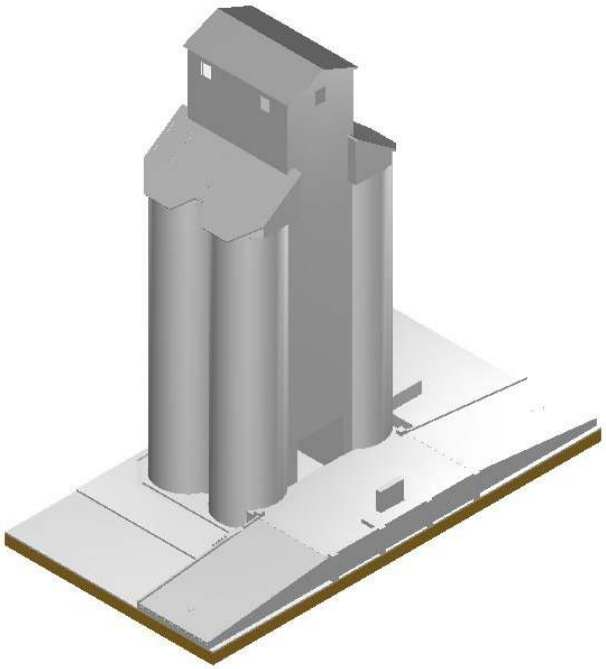
Fitting The Sub Assemblies Step 8

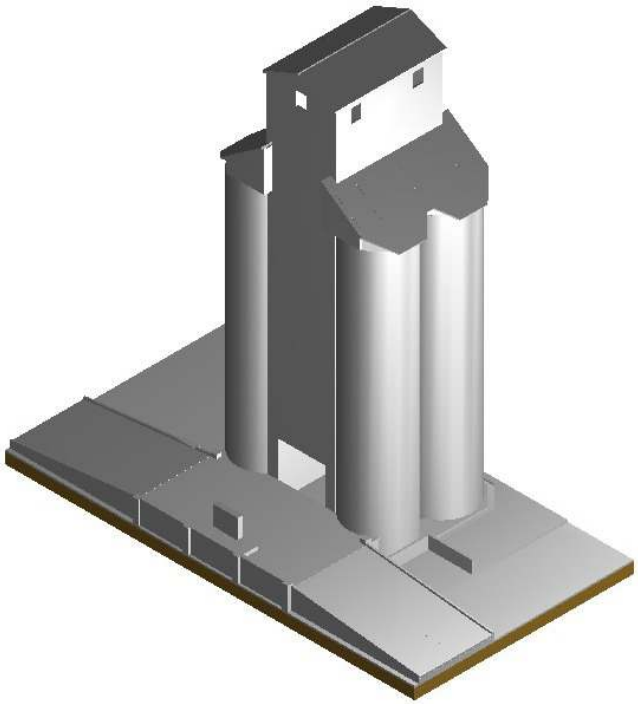


Fitting The Sub Assemblies Step 9









Putting it all together

- Although the sub-assemblies can now go together, there is work to be done on each sub-assembly before they are joined permanently.
- By all means test fit the parts, but be aware that there is much work to be done before they can be permanent.
- Some of the work will require other kits such as the KRM S04 Etched Brass Parts Kit, and the KRM S05 Accessory Parts Kit.
- These kits are in production and will be available early 2008.
- Hints on cladding are also available in this presentation.
- The Information in the next few slides is not comprehensive and more detail can be found in the original article in the AMRM.
- Let's start with the Silo Base.

Putting it all together - The Base

- The weighbridge and partitions need to be fitted (KRM S04 Etched Brass Parts Kit)
- The wagon shed frame feet need to be fitted into the 6 support piers (styrene tubes)
- The rear step needs to be filled, sanded and fitted to the base.
- The drain needs to have an edge fitted to make the drain deeper.
- The base will need to be given an undercoat, joints and tab slots filled and sanded to represent concrete (new or old – your choice).

Putting it all together - The Sub Frame

- The Sub-Frame will need to have door holes cut in the bins.
- Down pipes will need to be fitted to all 4 Bins, made up from 1mm brass wire and the Astragals supplied in the KRM S04 Etched Brass Kit.
- The rear door will need to be fitted to the Sub-Frame (KRM S004 Etched Brass Kit).
- The front door and window and the bin doors will need to be fitted to the Sub-Frame (Bins) (KRM S04 Parts Kit).
- There is also a down pipe from the annex to the base of the silo that will need to be fitted.
- And a Ladder/ Ladder Guard will need to be fitted to the front of the silo on the right side of the Annex.
- The joints, bins and front and rear panels will need to be filled with a two-part auto body filler, using a 10mm rod to achieve a neat blended contour.
- The large joint on the sides, between the bins, needs to be filled by body filler, and can be done in a similar way to the other joints, using a 12mm dia. rod to obtain a nice even contour.
- And finally the Sub assembly will require sanding and painting then fitted in place.

Putting it all together – The Cupola, Bin Roof

- Glue the Cupola to the Sub-Frame.
- Fascia and guttering need to be secured to the cupola and bin roof. Fascia from 10”x 2” Evergreen Styrene, and guttering from small Evergreen “C” channel.
- The Cupola and Bin Roof needs to be completely clad with Campbell’s Corrugated Aluminium.The cladding overhangs the silo bins by a scale 4” - 6”.
- The cladding comes in various sheet lengths, but my preferred option is to obtain the 12ft length, as other sizes can be cut from the longer sheets. And always start the cladding at the lowest point and clad up to the highest point.
- Ridge capping made from 8”x 1” styrene with 0.025” styrene rod for the ridge.
- Downs pipes are fitted on both sides of the Cupola, and are distributed onto the bin roof by a “T” piece. Two astragals each side secure the down pipes.
- Lead flashing can be made from masking tape, cut into thin slithers, and placed in the appropriate locations.
- Finally windows need to be fitted to the cupola.

Putting it all together - The Annex

- Fit the barge board and fascia
- Fit the guttering
- Fit main beam and cross beams under the Annex, as well as a locating loop for the winch rope to go through
- Clad the Annex roof
- Clad the rest of the Annex from bottom to top
- Fit the down pipe (using photos for reference)
- Fit window and door after painting the Annex
- Only glue the Annex in place with a couple of dots of white glue so that it holds in place but can be removed if required..

Putting it all together - The Out loading Platform

- The Out loading platform can be modified with a pipe safety barrier if required
- The front steps can be glued to the Out loading platform, but be very careful when fitting the platform and steps to the base and Sub-Frame
- Use photos as references for various out loading platforms.

Putting it all together – The Out loading Chute, Winch and Pulley

- The Out loading chute needs to be scratch built, as per the original article.
- At this stage the pulley and winch also need to be scratch built, but this is being looked at.

Putting it all together – The Wagon Shed

- The Wagon Shed is built from plans in the original article, as well as the plans supplied on this CD.
- The 6 square styrene tube pieces (rear road) can be trimmed down to the top of the rear walls. Castings (KRM S05 Parts Kit) will be available to locate the wagon shed feet into; these castings will fit into the tubes, allowing the shed to be located and removed if necessary
- The vertical beams for the wagon shed can be made from commercially available H beam.
- The battens and purlins can be made from Special Shapes' 3/64"square brass, which gives more surface area to solder to the beams than brass angle would allow.

Corrugated Aluminium

- Campbell's Corrugated Aluminium is my preferred cladding material to use when cladding Australian buildings in HO scale. It comes in 4, 6, 8, 10 and 12 scale ft lengths, and the best value is the 12 ft packs.
- I make up a template with one full sheet, marked with a thin black Pental pen. This is used to make the other sheets. I then cut the sheets with a ruler and sharp snap off blade. If small sized sheets are required, they can be cut from the 12 ft sheets.
- The material is them overlapped by 1 corrugation, and is glued to the building, using Selleys Gel Grip.
- The layering of the cladding is important. It must be layered from the bottom up, with the overlapping dimension not being all that important.
- The use of prototype photos is essential to achieve the correct look
- The material can be obtained from the retailers mentioned on the resources page.

Resources

- Brass Section
  - Special Shapes Brass
  - IR Models
- Styrene Section
  - Evergreen Styrene
- Paint
  - Floquil Paints
- Corrugated Aluminium
  - Model Railroad Craftsman
  - The Railcar
- Local Suppliers
  - Casula Hobbies
  - Berg's Hobbies