KRM S027 - S027 HO Acrylic Silo Kit

Instructions for Construction.

Produced By

Keiran Ryan

Preface

Adding to the range of silo models from Keiran Ryan Models, this kit is a change from the standard range of silos based on the S008. This silo kit has a different footprint to the earlier silo kits. However the methods of construction are exactly the same.

This kit is an acrylic laser cut kit and is consists of laser cut sections of 1.5mm clear acrylic that are tabbed and glued in place to form the basic structure which the modeller can then build upon.

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 Memory Stick. The information on this Memory Stick 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 Memory Stick. 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 Memory Stick, which make this Memory Stick 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 kit 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. as well as Issue 170 October 1991. On this kit, these articles can only be used as a broad guide, as the principles apply but the actual information relates to the earlier silo kits.

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.

The best way to apply this glue is to place the pieces that require bonding, together, hold them firmly and run the glue into the joint, allowing capillary action to secure the parts. Keep them held for 10 seconds and then set aside to dry.

MEK will NOT 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 S027 HO S027 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.

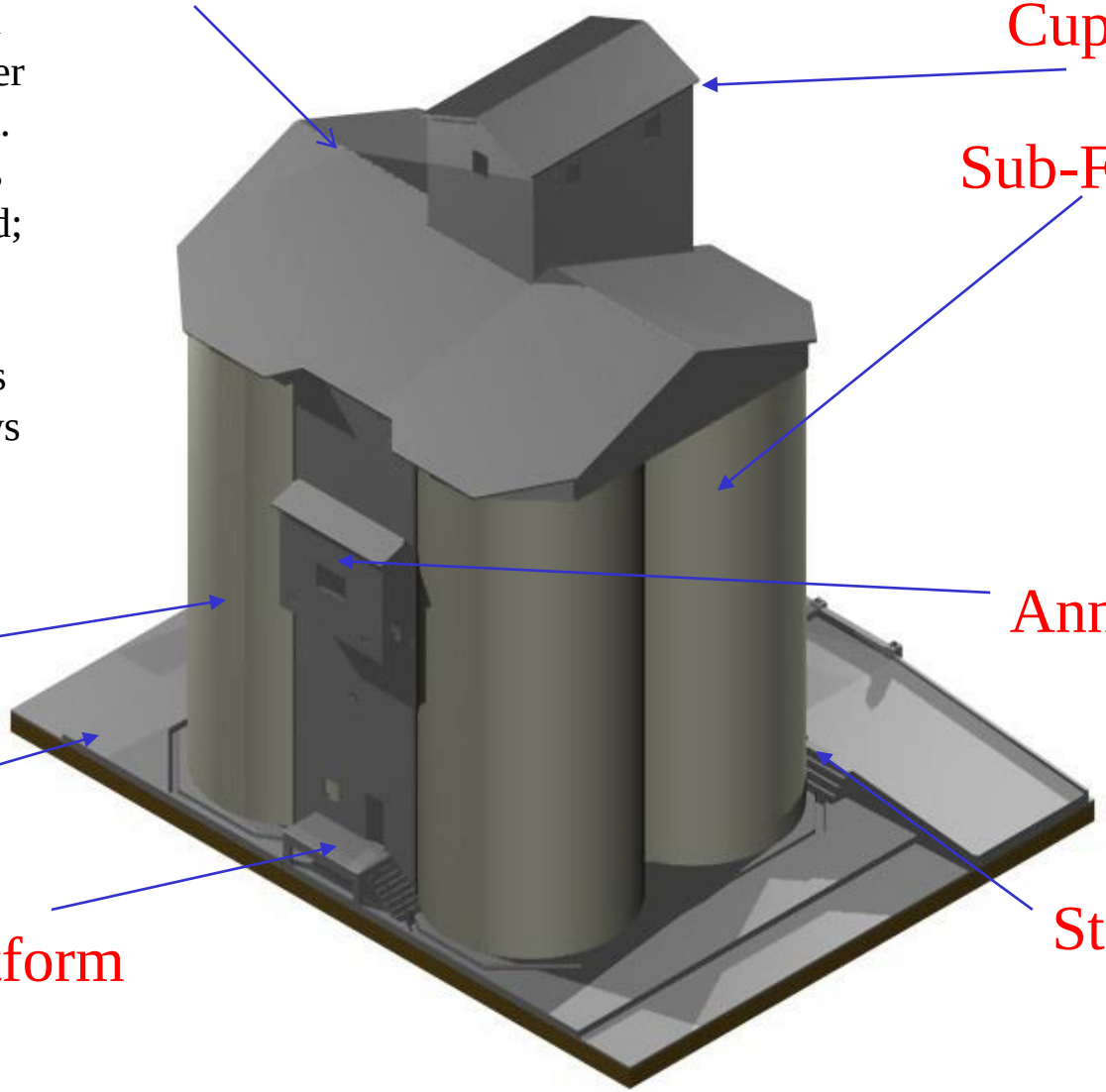
- 8 Gig USB Stick
- 4 Rubber Bands and 4 x 90 mm conduit.
- The Silo Base
- Silo Roof
- The Base Filler Pieces
- The Silo Sub-Frame
- The Cupola
- The Annex
- Rear Road Support
- Rear Road
- 1.2 mm Twist Drill.
- 1 x 300 mm length of 1.2 mm Brass Wire.
- 1 x 100 mm length of 16 mm Conduit.
- 50 mm length of Special Shapes H4 H Pattern Brass.
- 3D Parts include ---- Drainage System, Out loading Platform, Spoil Bin, Wagon Shed Footings, Weighbridge Scale. Rear Steps.
- **Please Note that on each of the instruction slides, the parts required are displayed in purple on the top left or right to assist you in progress of this kit.**

Instructions

- **Please ensure that you read the instructions 3 times before you make a start on this kit** -------- (I Know----I hate reading them also, but it helps with getting the kit right).
- 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. The parts can be re-glued, so try this before requesting a replacement part.
- Construction is a simple step by step process.
- The parts in **grey** are the parts already fitted. - The parts in **purple** are the new parts to be fitted.
- Identify parts before committing them to the location, remove the paper/plastic backing before fitting.
- **DON'T force the parts, as they are brittle and WILL BREAK if forced**.
- The acrylic glue that has been suggested, is used by placing the parts together and then running the glue between the parts, using capillary action to bond the parts together, and holding them for 10-20 seconds.
- If you find that the tabs are tight into the slots, just file the slots and the tabs until they are a better fit.
- DON'T glue parts until all parts of the sub-assembly are in place, and ensure that they are the correct part, and in the correct orientation.
- There are parts that will need to be clad in corrugated iron (e.g. Campbell's aluminum) and other parts that will need to be painted. The acrylic takes acrylic paint very easily, but do use an undercoat.
- Have fun, as this kit is very easy to build. And I would appreciate your feedback!!!!!

The Outcome

This drawing represents what you can 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 this kit. And the modeller still requires the parts to build a wagon shed; plans to assist you in this task are included on this Memory Card. KRM S04 (Etched Brass Parts) and KRM S05 (Windows and Doors) are available to allow the complete silo to be realized



Are

You

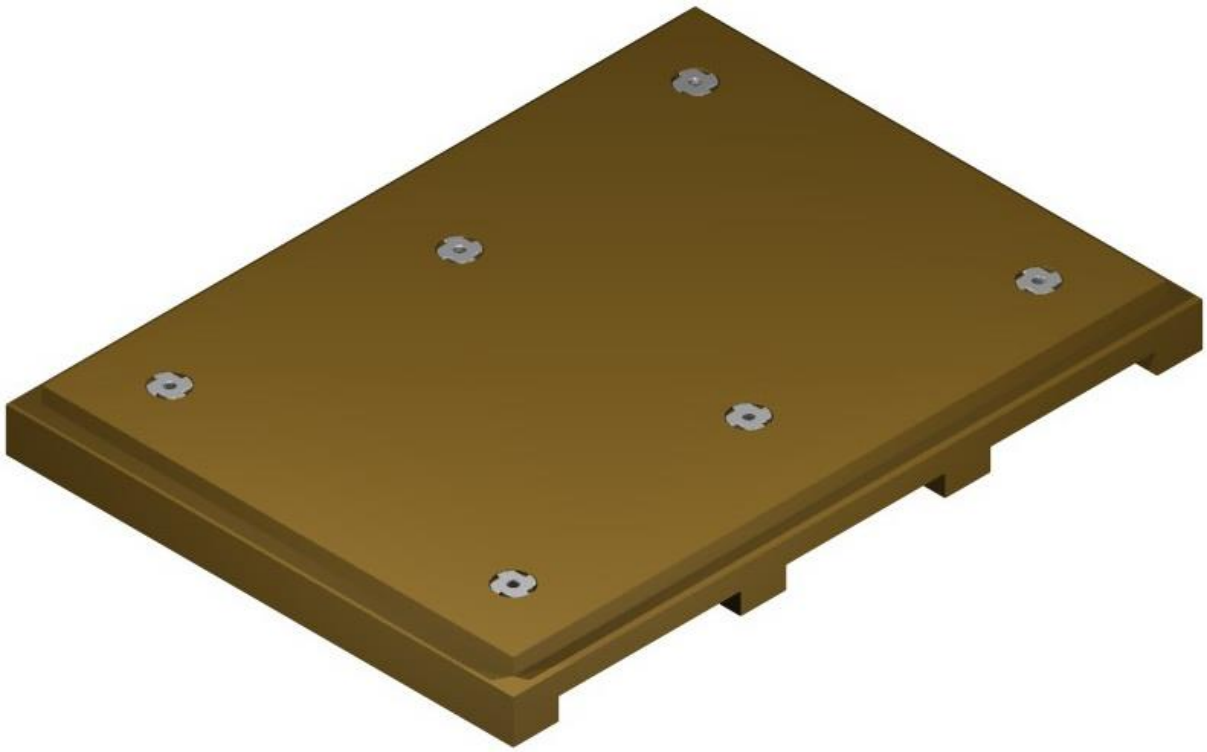
Ready

To

Model??????

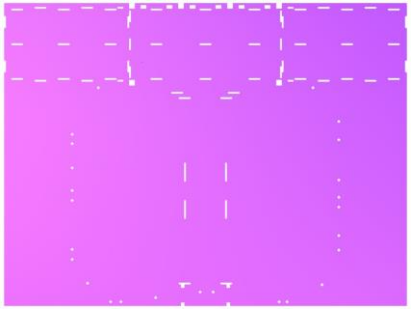
A Good Foundation

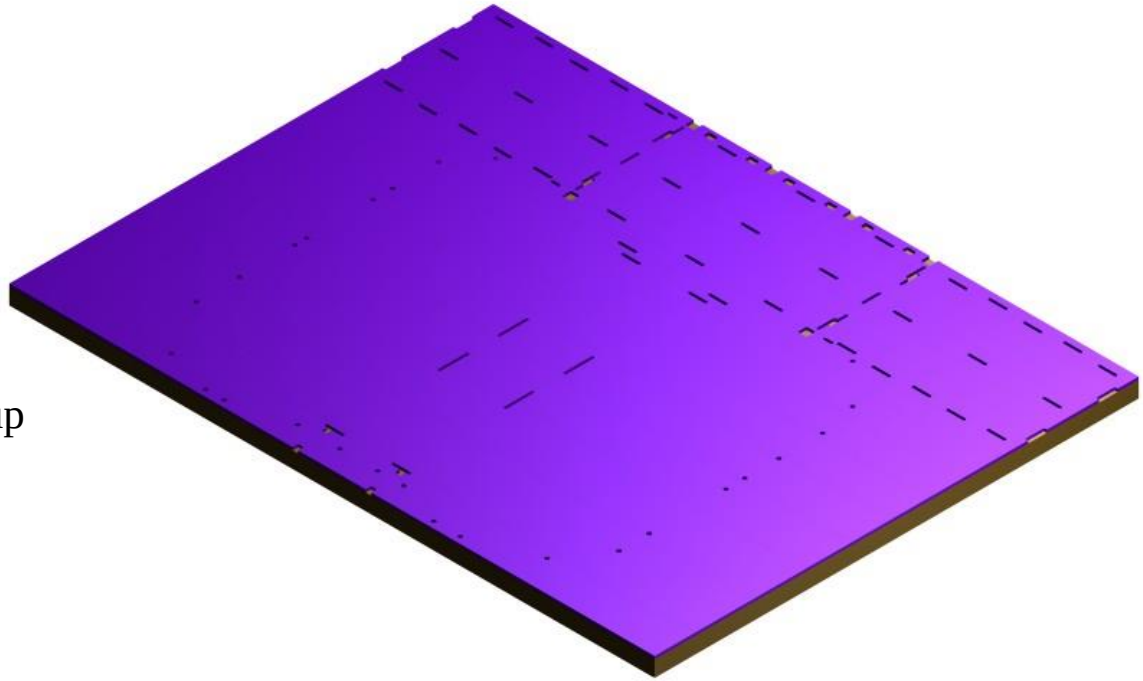
A good foundation is always a healthy place to start. The silo base can be glued (Selleys Gel Grip or Selleys Contact Spray Adhesive) to a 9 mm craft wood base which is screwed to a 12 mm craft wood base which in turn is used as the floor to a storage box for carrying the silo. The foundation of the silo is screwed to the base with 6 x ¼" "T" Nuts and 6 screws made from wing nuts and sections of booker rod. The 9mm bases with ¼" "T" Nuts fitted, are available from K R M for $35.00 + postage, or simply make your own to the template of the Silo Base .



The timber base is optional, and not absolutely necessary, and you can use the base acrylic as a template to make your own.

Cutting your own Timber Base



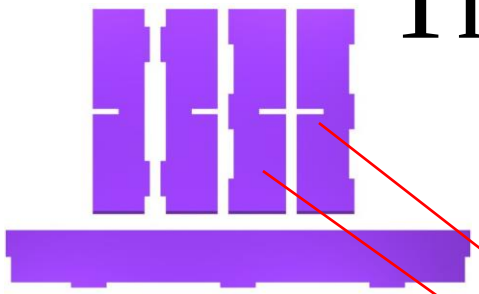


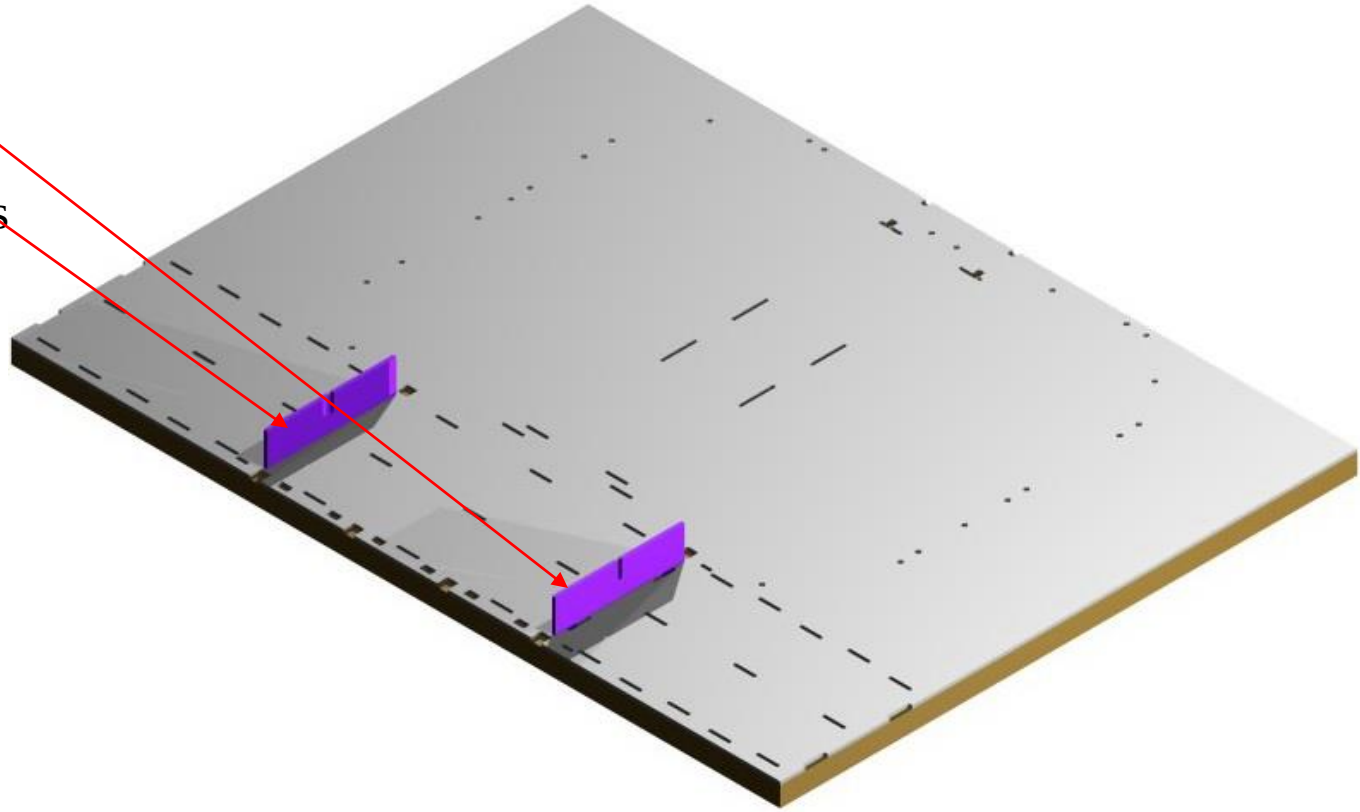
If you are cutting your own timber base, please read this page carefully

The original kit had the base made up from 2 pieces of acrylic but this has changed to make the job a little bit easier. Using the base acrylic as a template, cut a piece of 9 mm craft wood and insert ¼" "T nuts" if you want to be able to remove the silo from it's location on your layout. Trim the base exactly to the acrylic dimensions.

Using spray on contact adhesive, give the timber base and the underside of the base acrylic piece a coating of adhesive and allow the 2 surfaces to go dry. Gently and accurately press the to surfaces together, and place a few weights on the acrylic piece for a 12 hour period until the acrylic had adhered to the timber.

The Silo Base - Step 1

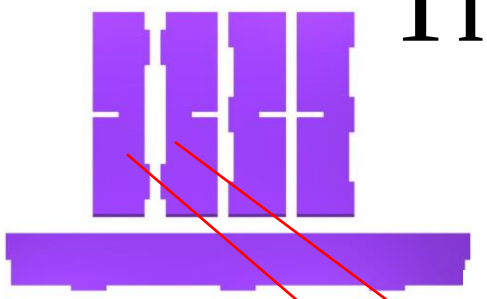




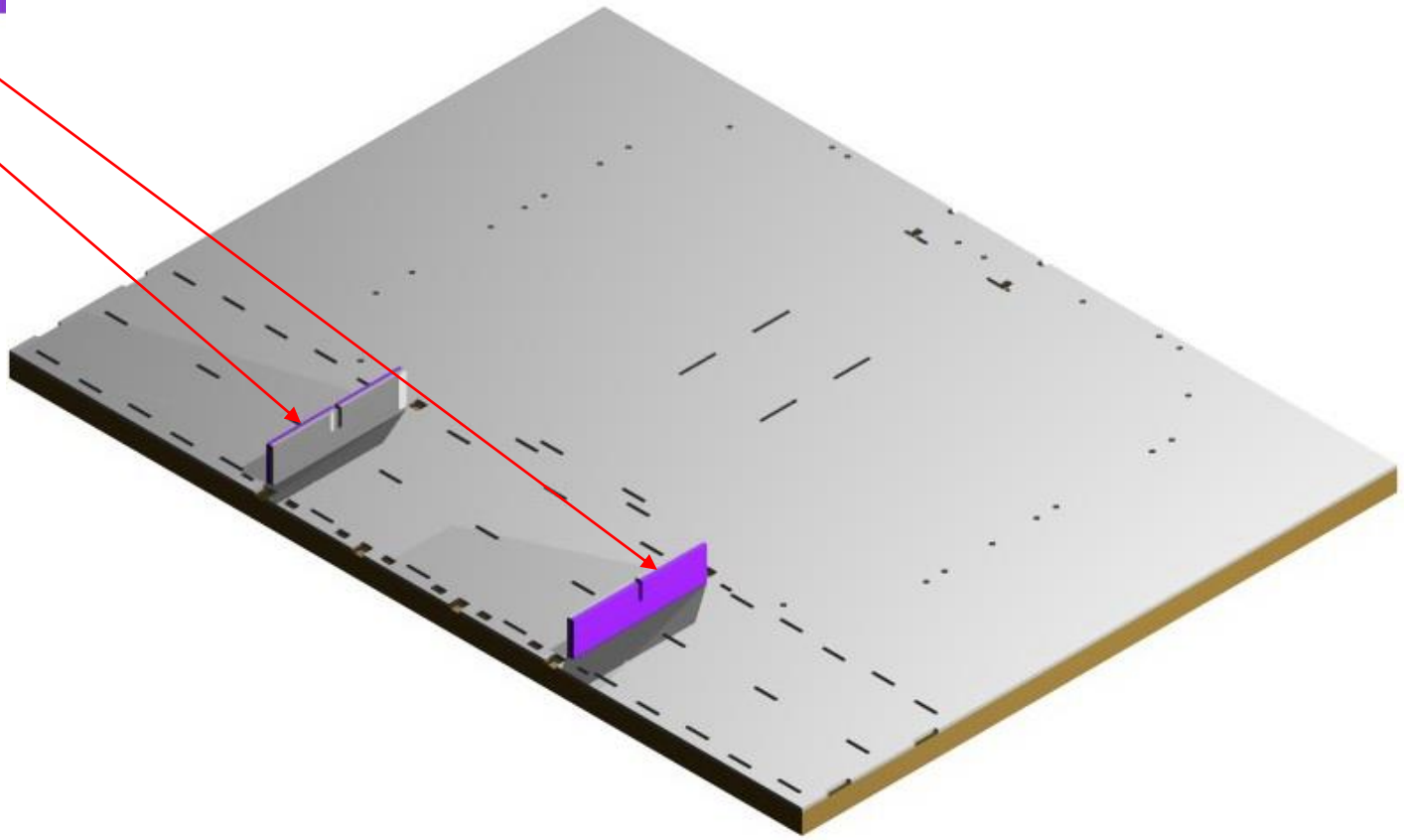
The principle used here is common throughout the Instructions.

The 3 leg spreader is fitted to the base and can only be located in one place as there are 3 tabs on the base of the part. It does have a 2 legged friend that will be fitted next to it on the outside (see the next slide). The slot in the top accepts the centre spine, which is fitted later.

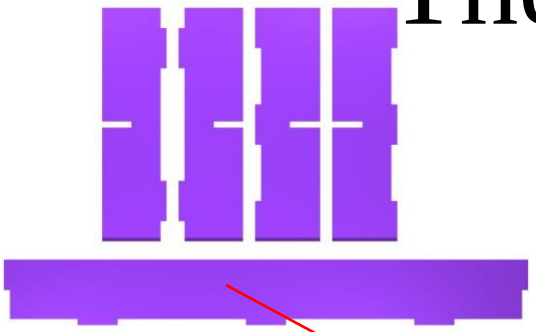
The Silo Base - Step 2



The 2 leg spreader is fitted to the base and is located to the outside of the previous 3 leg spreader. The slots are to accommodate the road ramp centre spline, and the the ramp splines at each end.

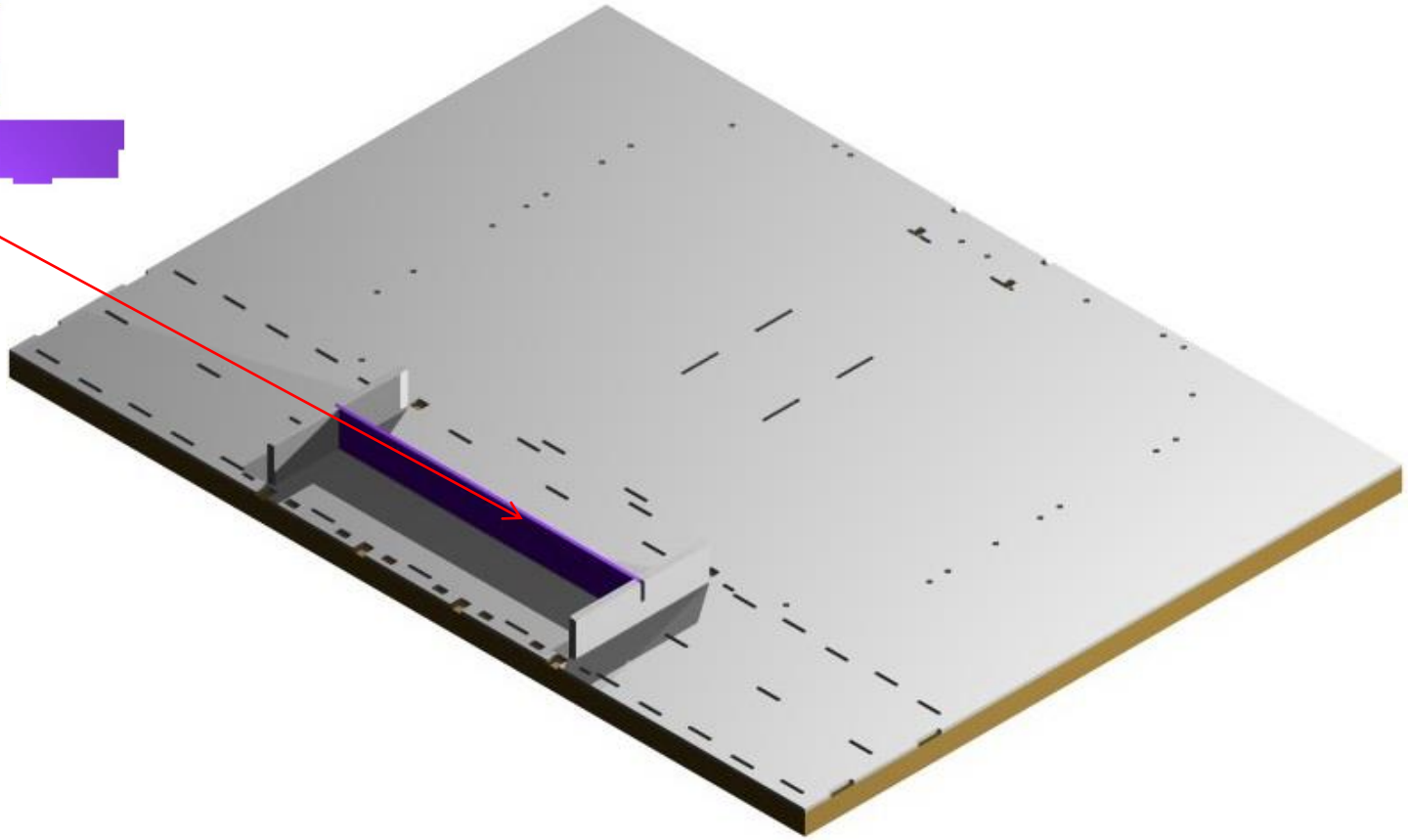


The Silo Base - Step 3



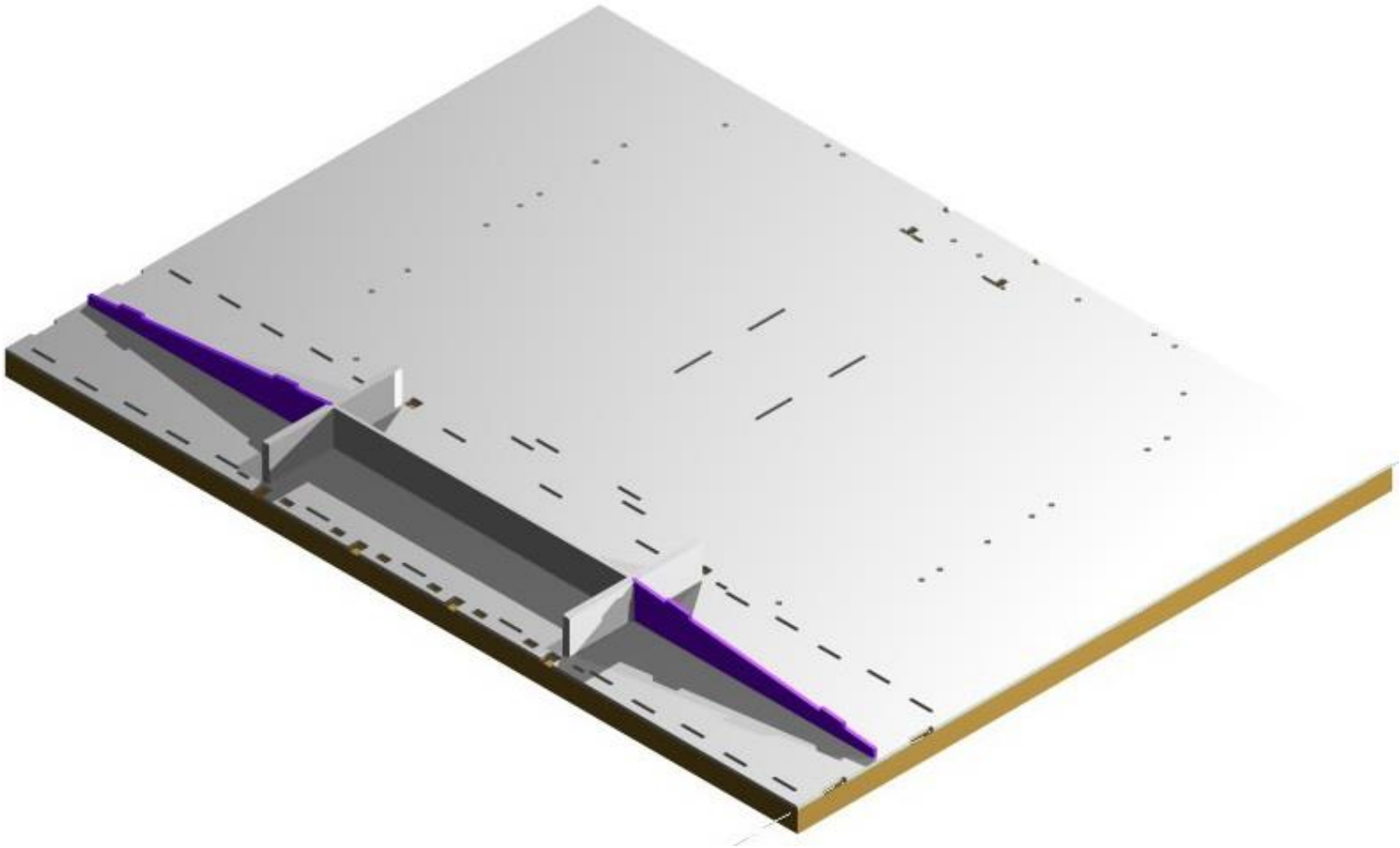
The centre spline locks the spreaders together, making the structure rigid. It does not go into the outer spreaders as the ramp spines will slot into them.

Please dry fit the parts before finally gluing them into place.

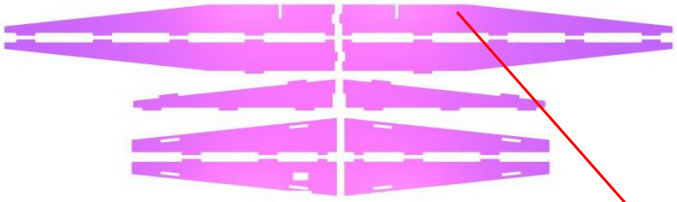


The Silo Base - Step 4

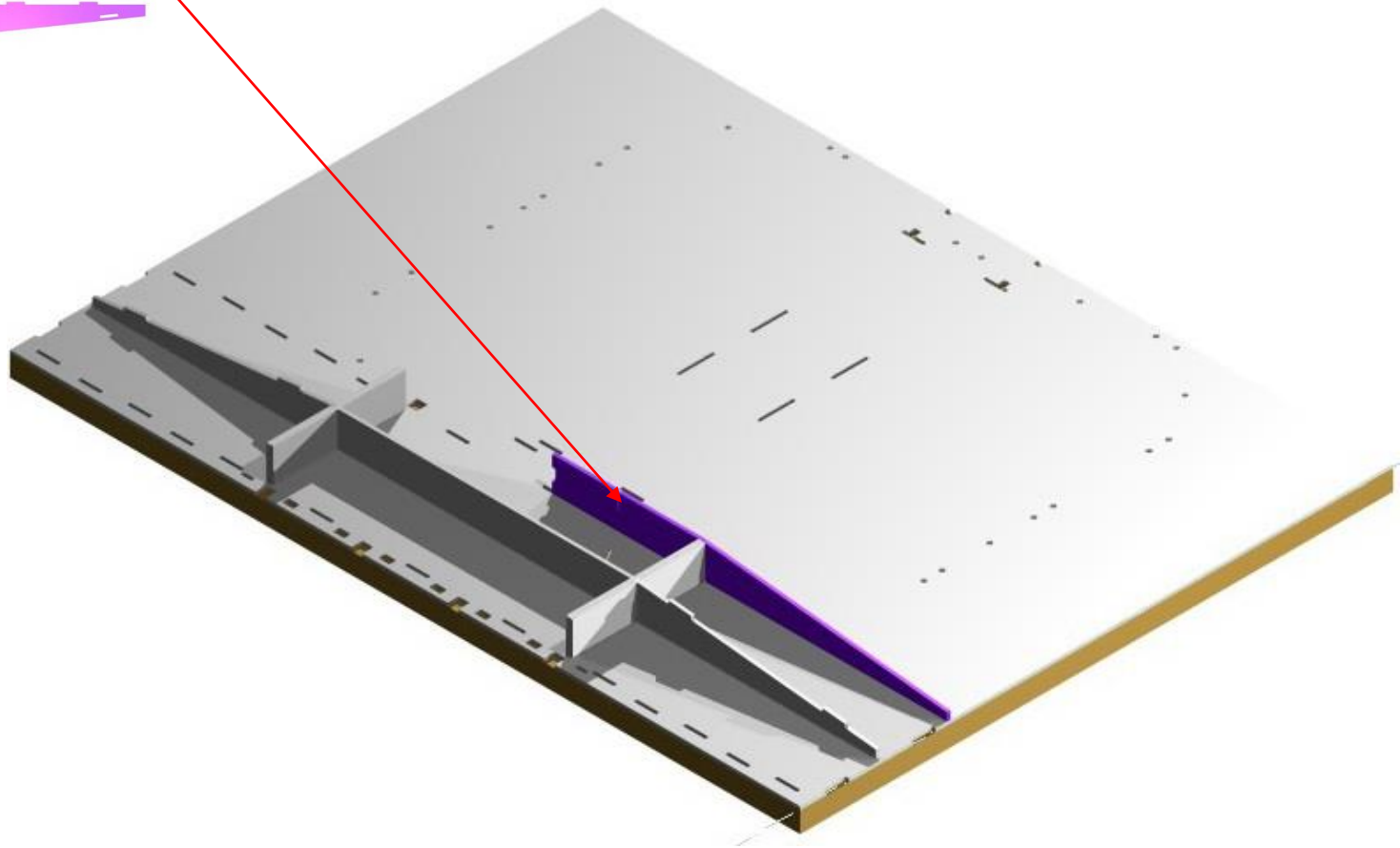
These parts are mirrored and should fit either end. The ramp spines support the ramp (fitted later) and lock the road spreaders squarely into place. Ensure that all parts go into the base all the way and are not restricted by contact cement or any other impediment.



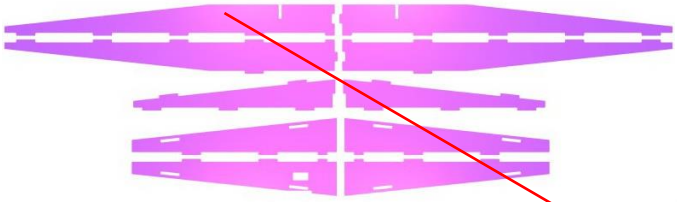
The Silo Base - Step 5



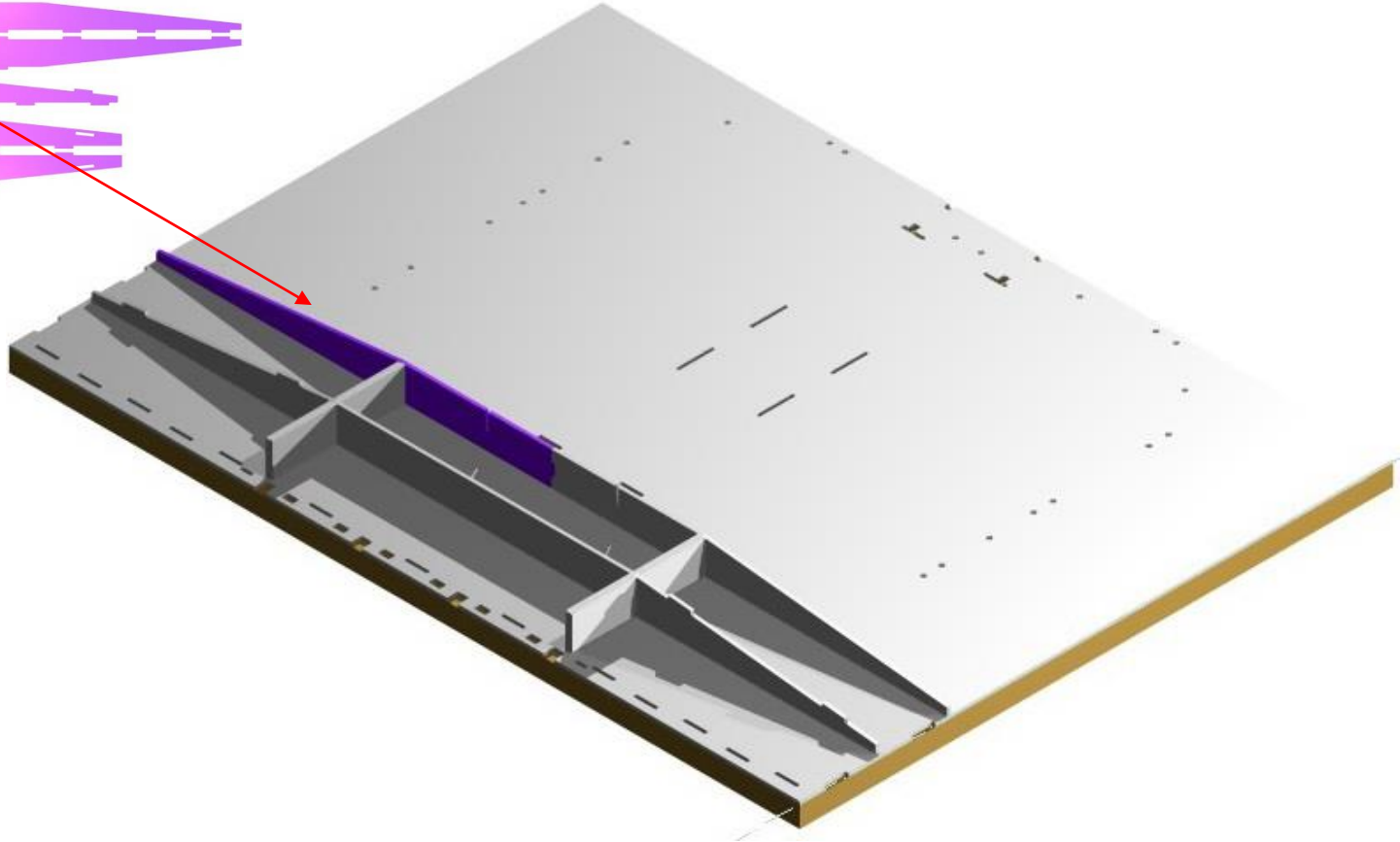
The inner road supports are made up from 2 pieces that fit neatly together, using tabs. These two inner pieces have slots not tabs. These accommodate small strengthening parts fitted later.



The Silo Base - Step 6

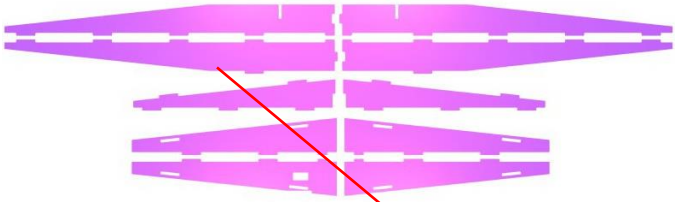


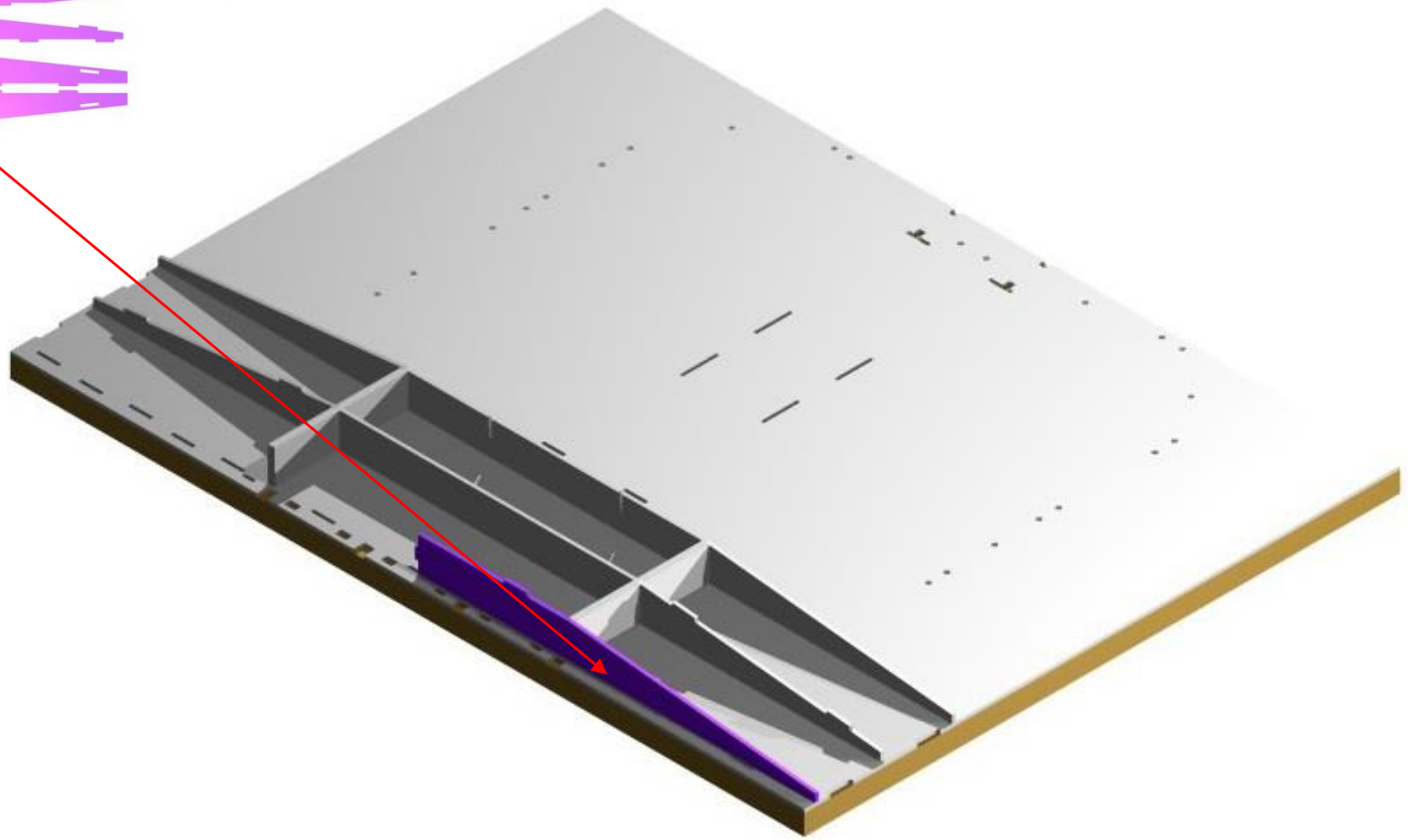
The inner road supports have slots at the top to differentiate them from the outer road supports. Again test fit all parts prior to gluing, and file any slots and tabs to fit if necessary.



In some cases, the acrylic tabs and slots may be a little tight, if this is the case with your kit, just file them, or use some wet and dry paper, to make them fit.

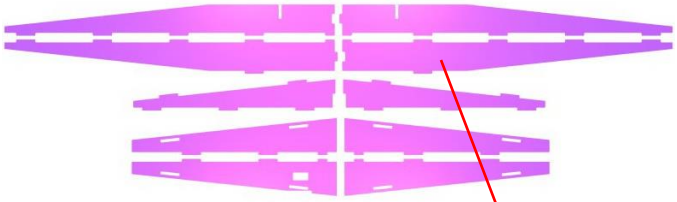
The Silo Base - Step 7



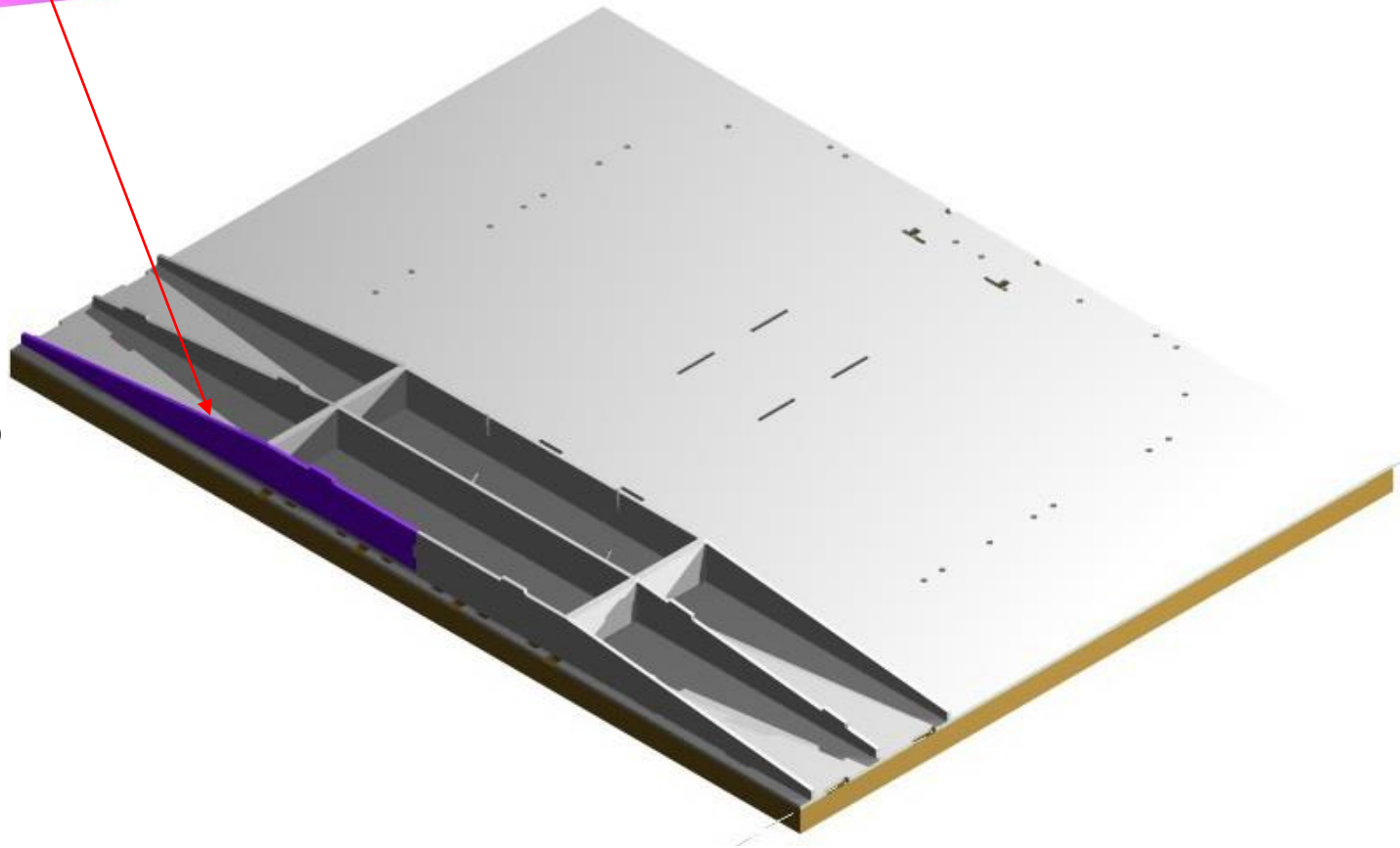


The outer rear road supports have tabs on top to help locate the rear road centre piece.

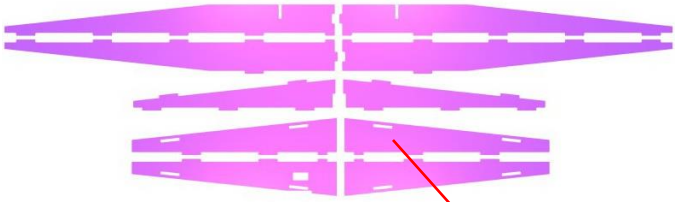
The Silo Base - Step 8



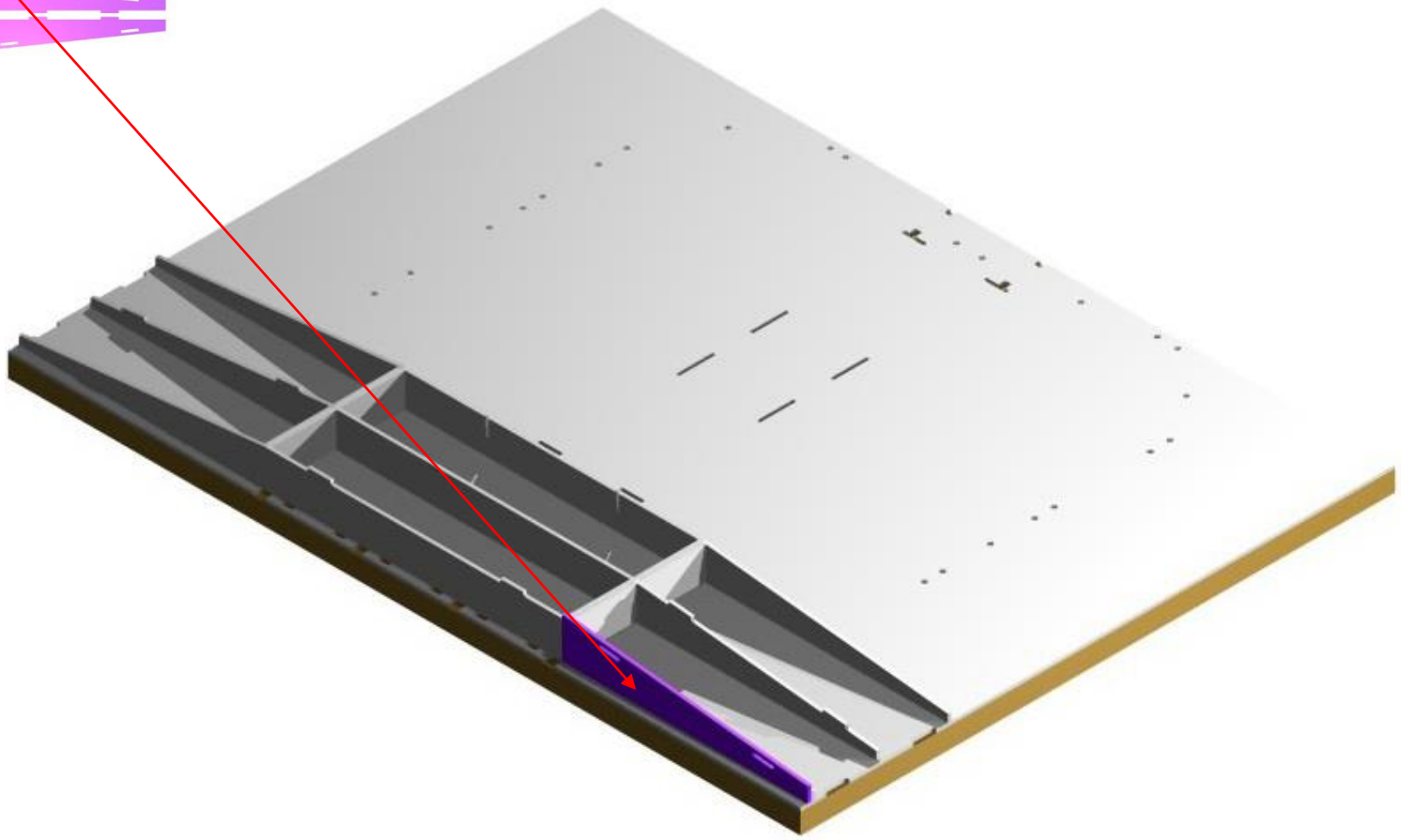
The 2nd outer wagon shed road support, is located in place. The rear road in located into the top tab of the part later in the process.



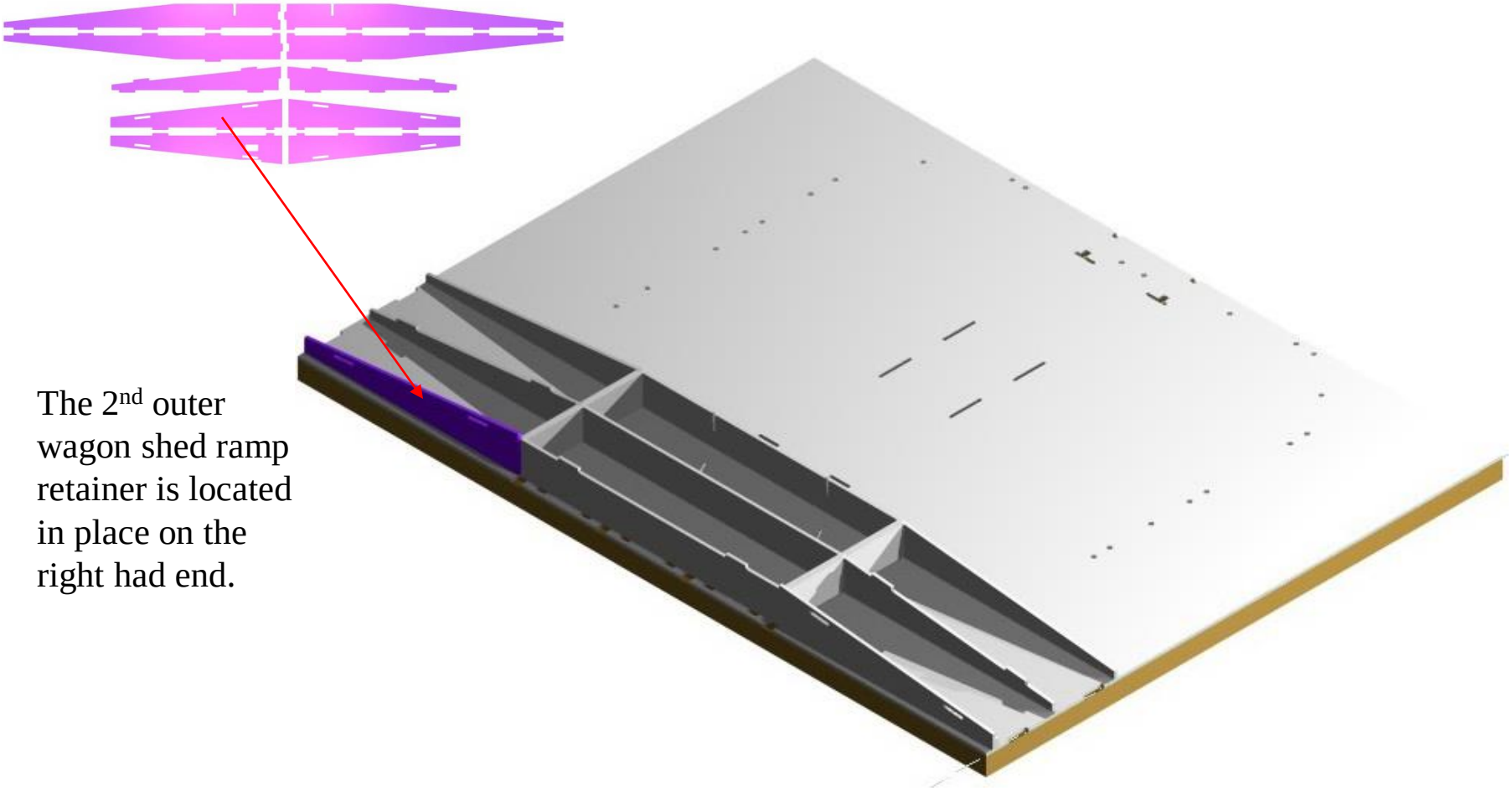
The Silo Base - Step 9



The outer wagon shed ramp retainer is located in place on the left had end.

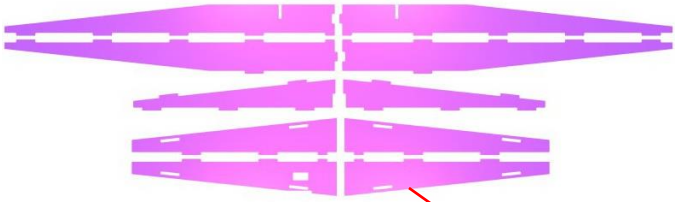


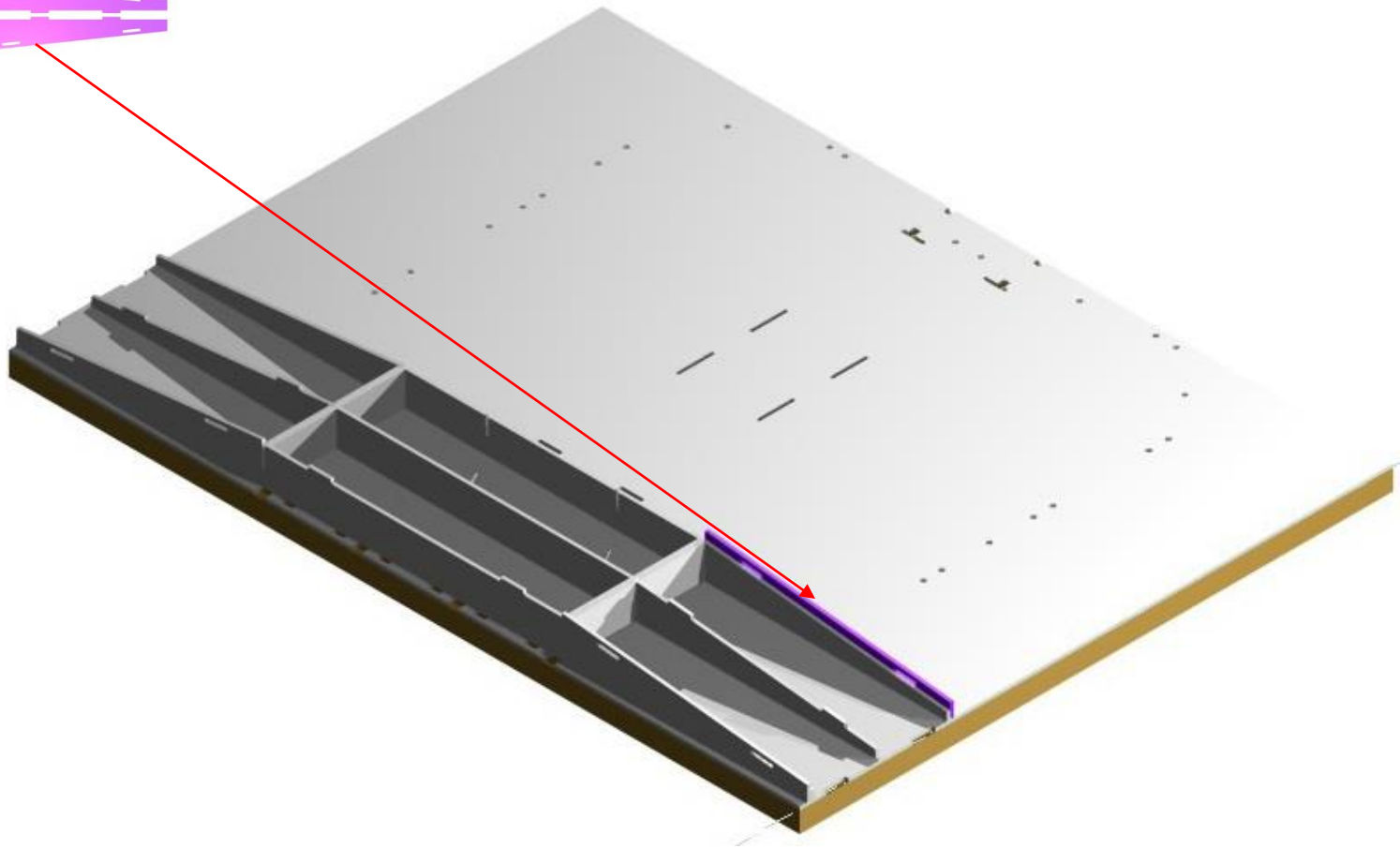
The Silo Base - Step 10



The 2nd outer wagon shed ramp retainer is located in place on the right had end.

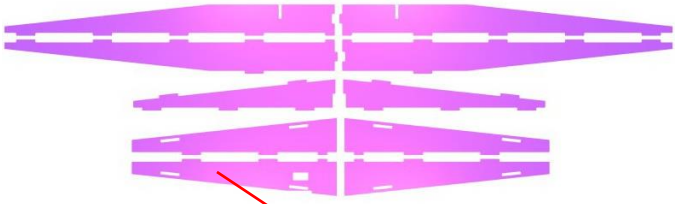
The Silo Base - Step 11

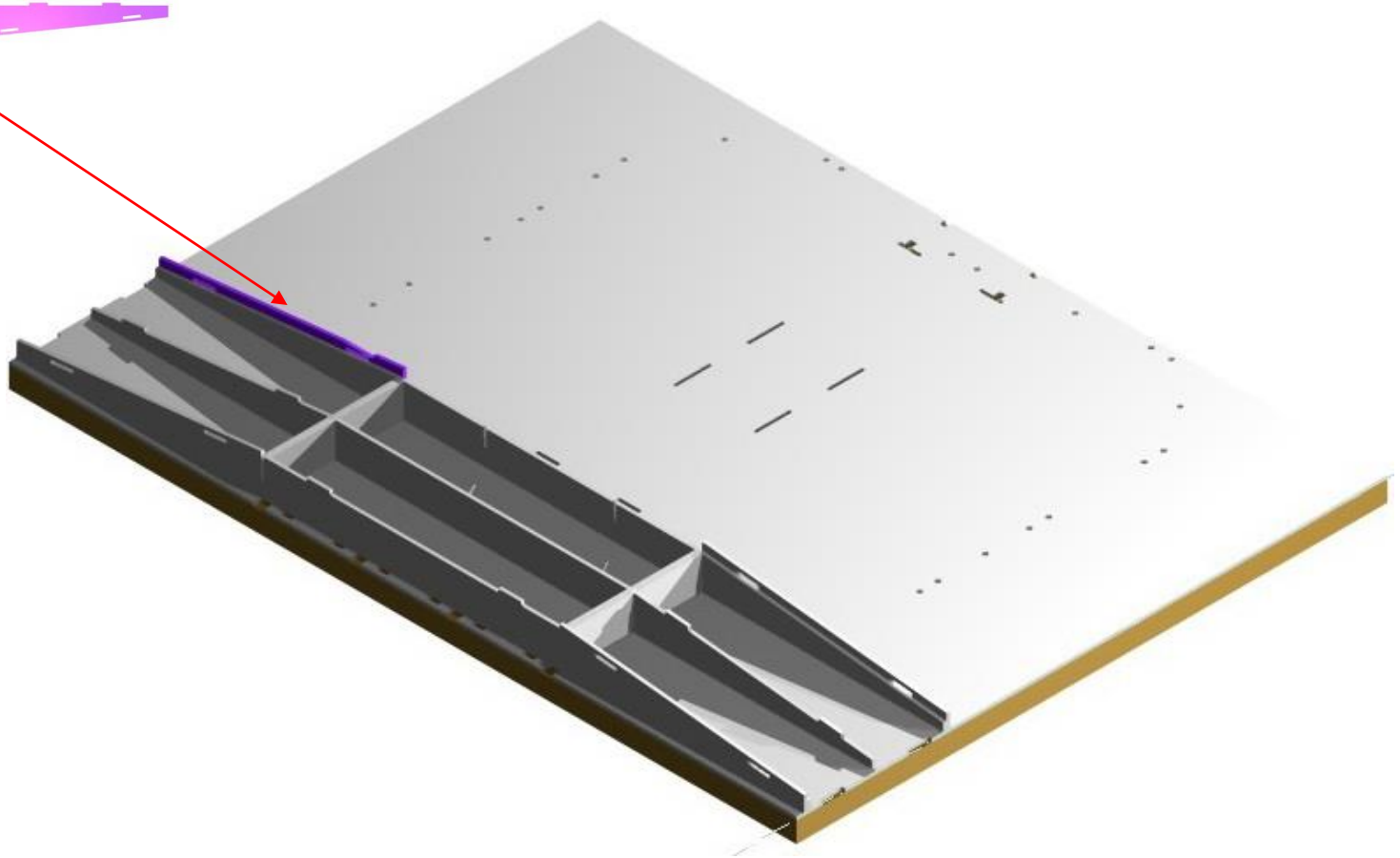




The inner wagon shed ramp retainer is located in place on the left had end.

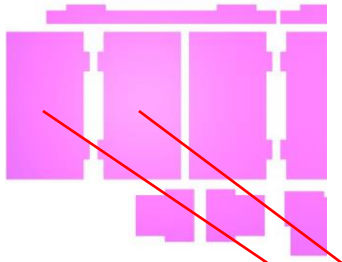
The Silo Base - Step 12

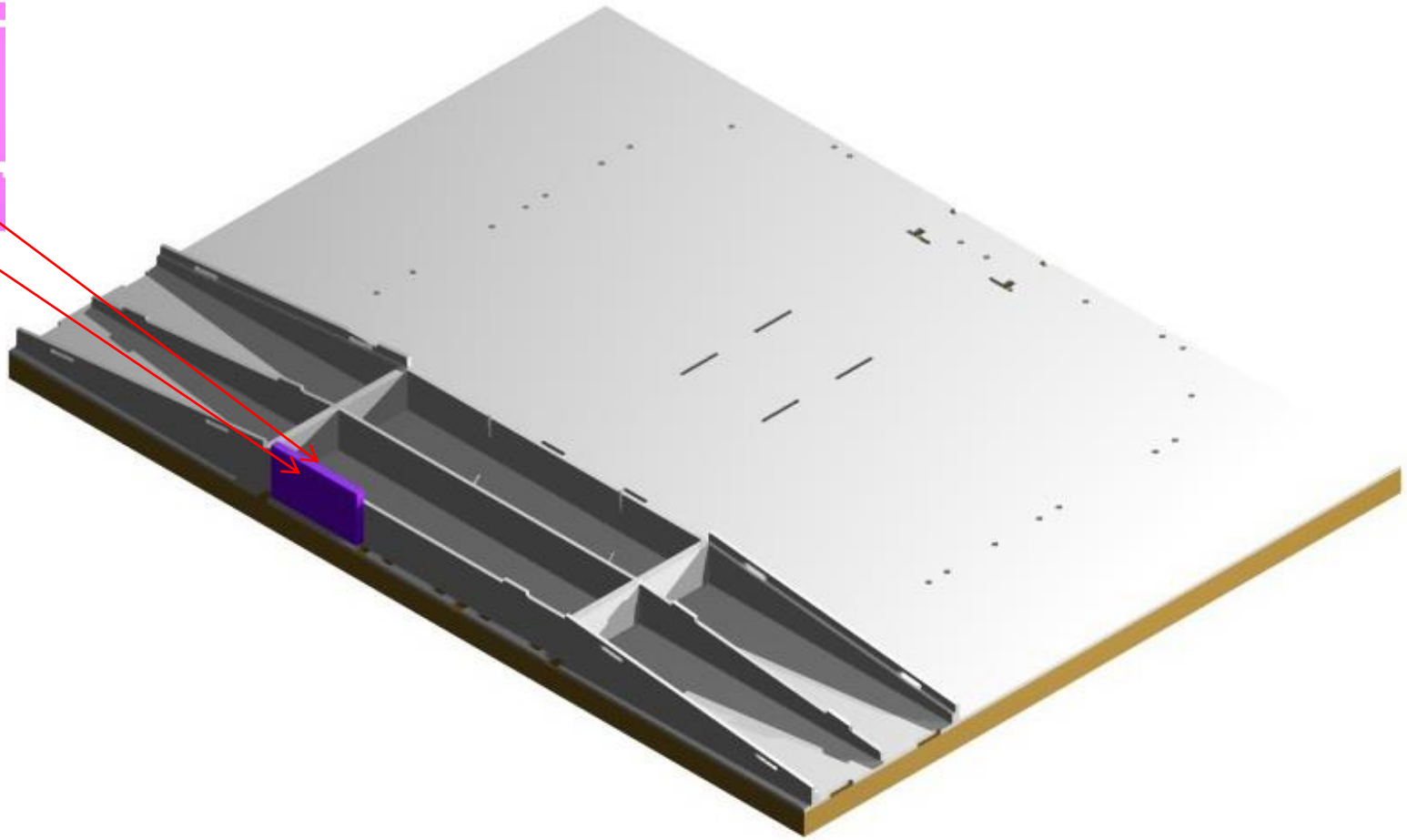




The wagon shed ramp retainer on the right inner is the one that also accommodates the steps and is slightly different to the other 3 retainers.

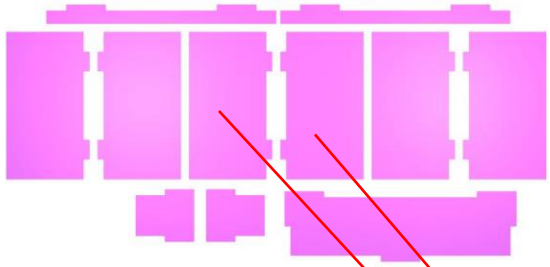
The Silo Base - Step 13



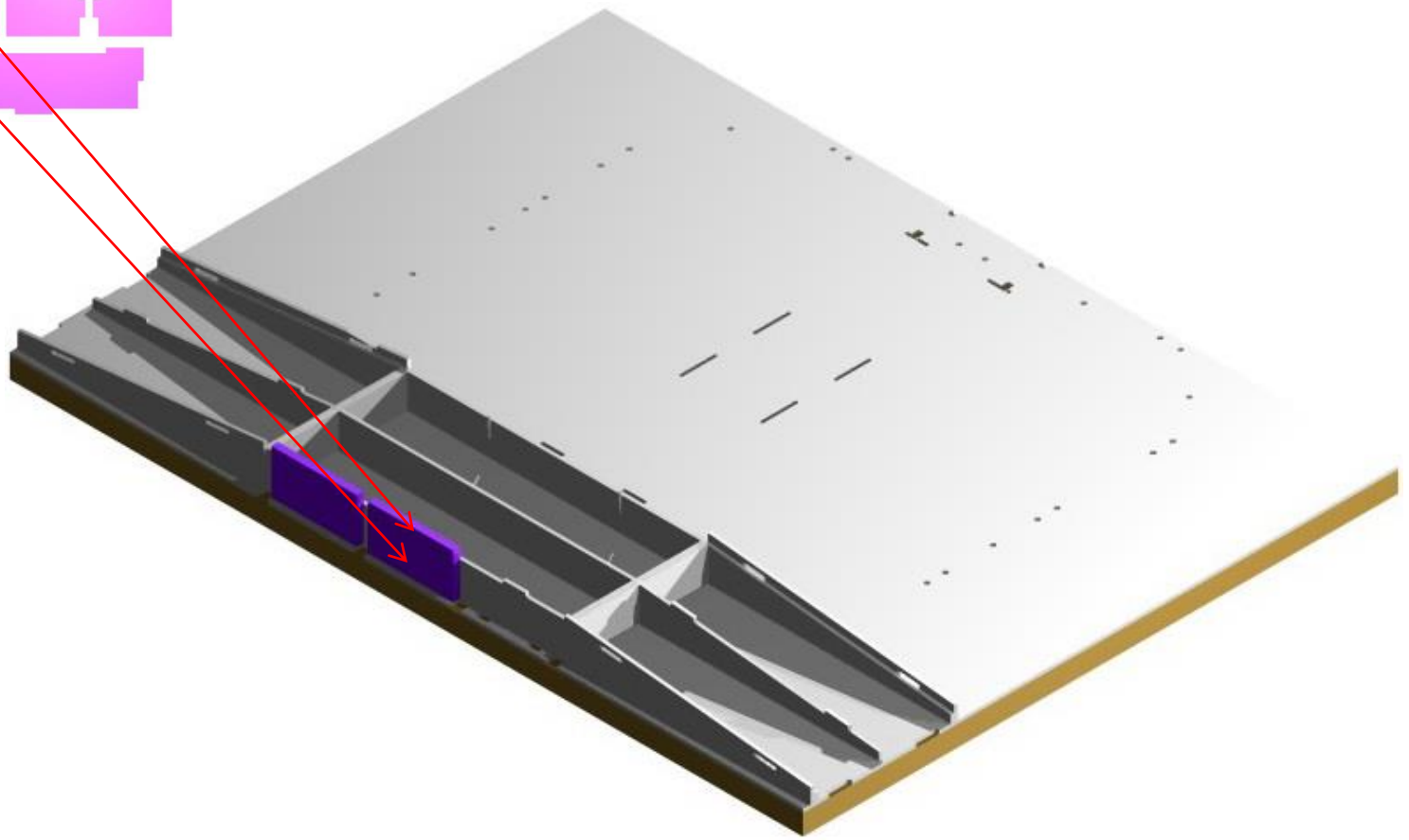


The outer footing spacers are made up from 2 pieces, laminated together to fill the voids between the outer footings, use the footings as a guide to their final location.

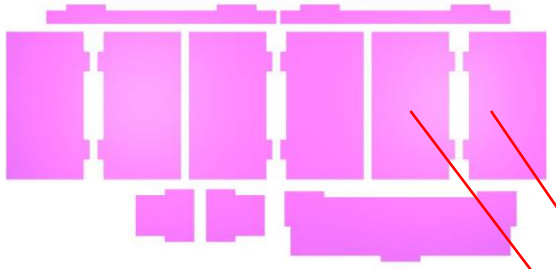
The Silo Base - Step 14



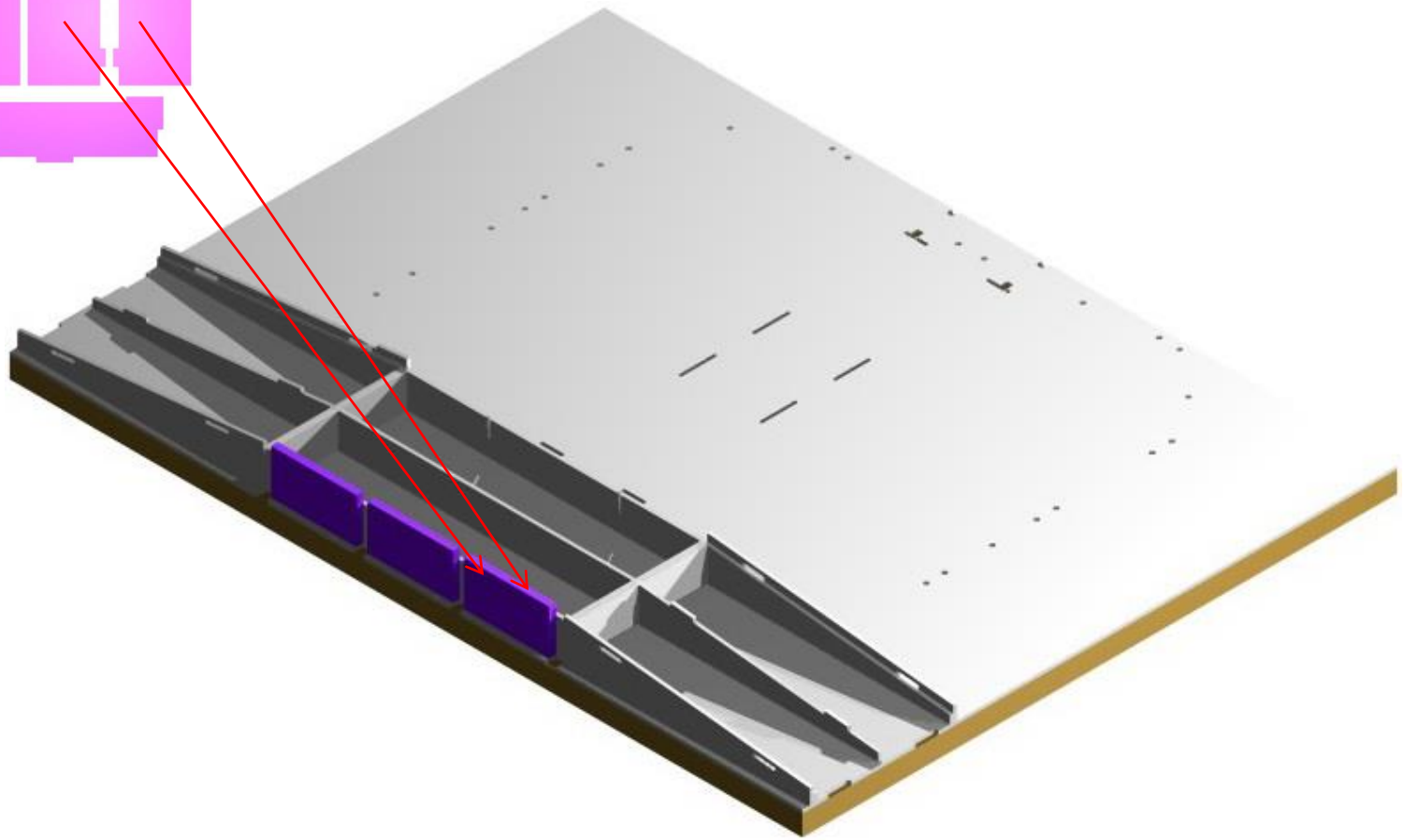
The second set of spacers are fitted, and it would be a good idea to ensure that the footings fit in place without being too tight.



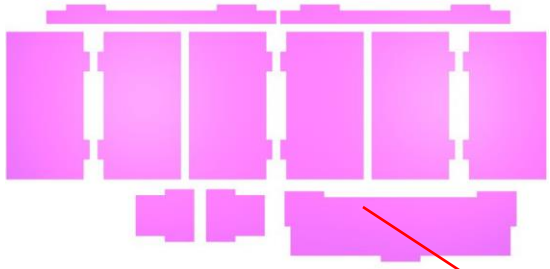
The Silo Base - Step 15



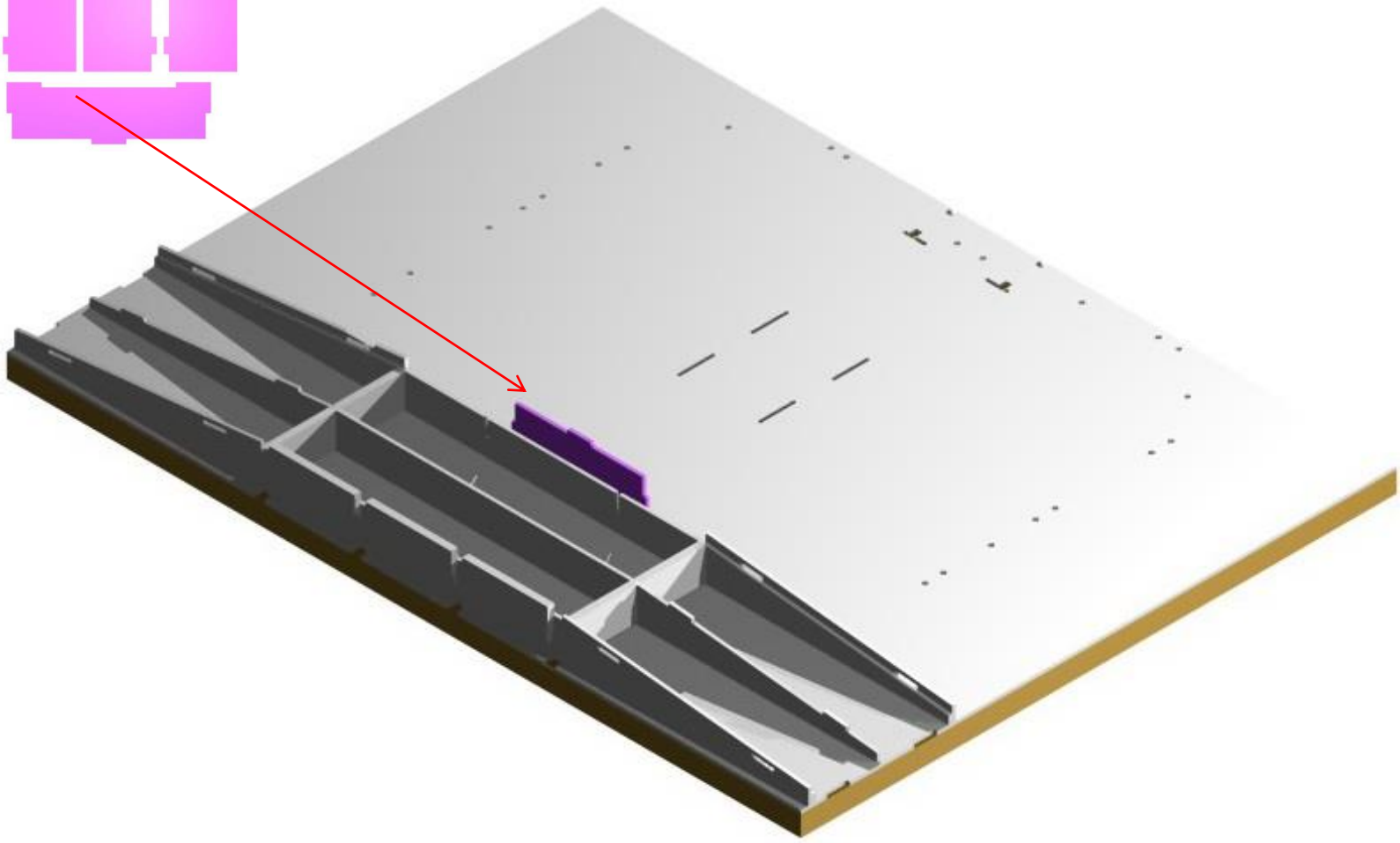
The final 2 spacers are fitted into place and again it is worth the trouble of ensuring that the footings fit into place without being excessively tight before gluing the spacers in place.



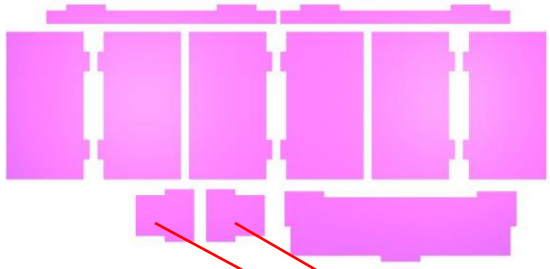
The Silo Base - Step 16



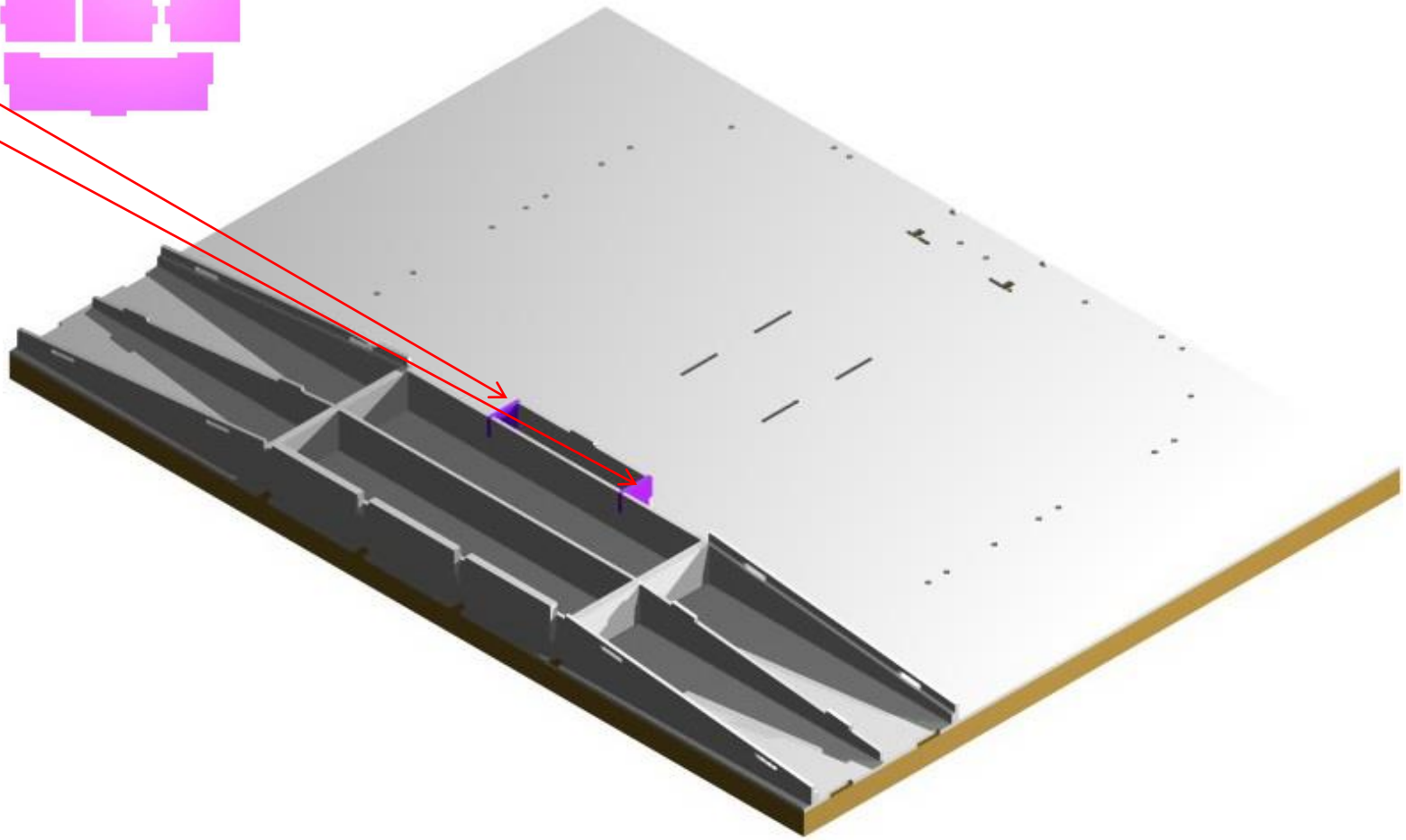
The inner wagon shed road support goes into place next.



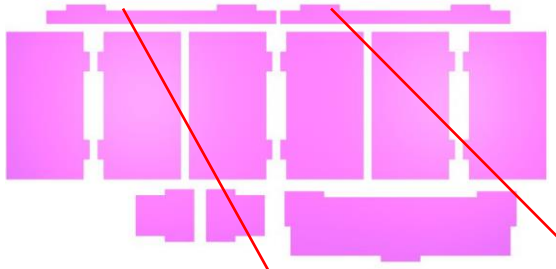
The Silo Base - Step 17

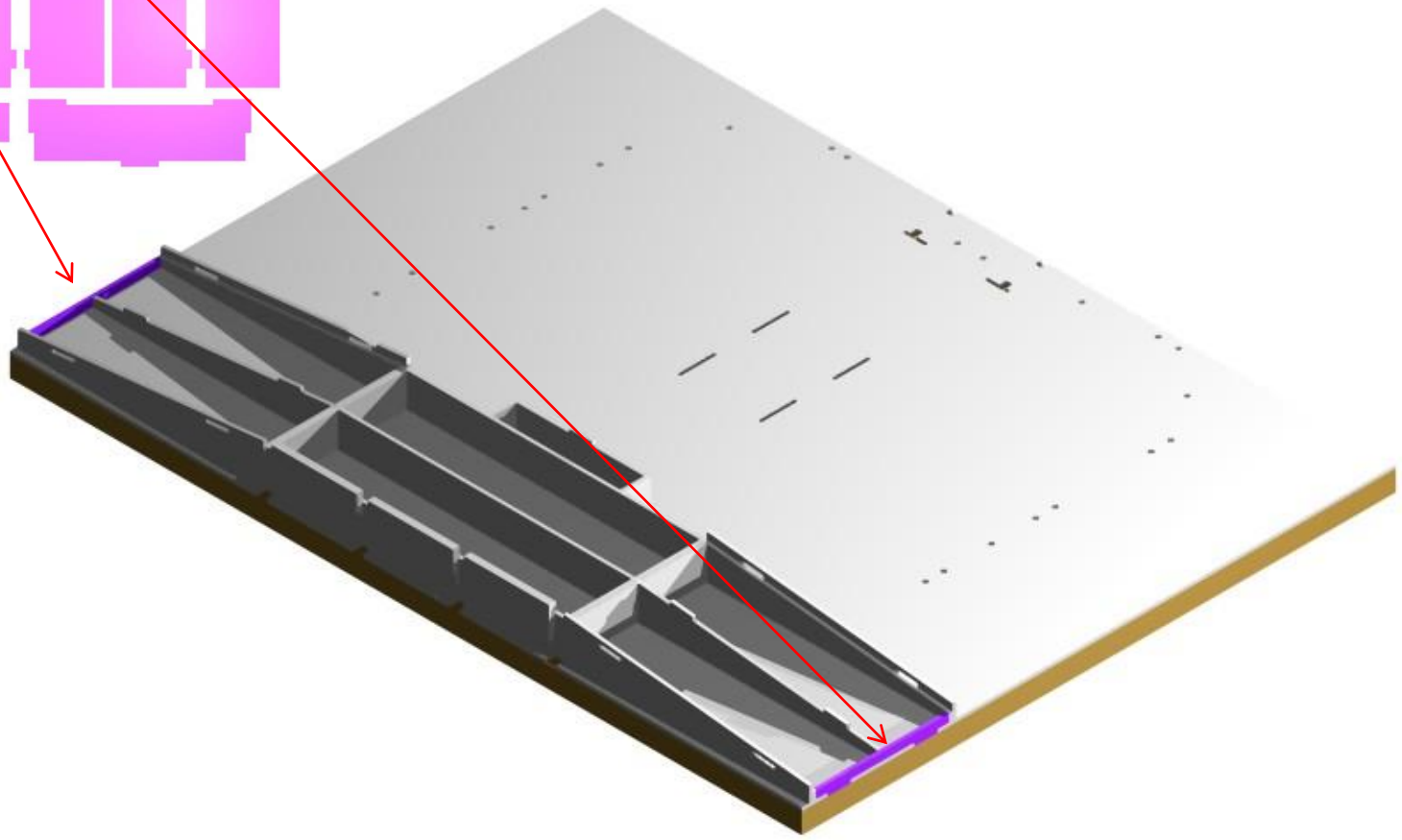


The inner wagon shed support is strengthen by means of 2 other supports, which tie it all together, tabbing into the inner rear wagon shed road support.



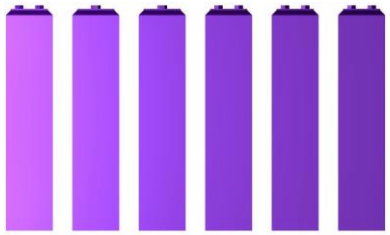
The Silo Base - Step 18



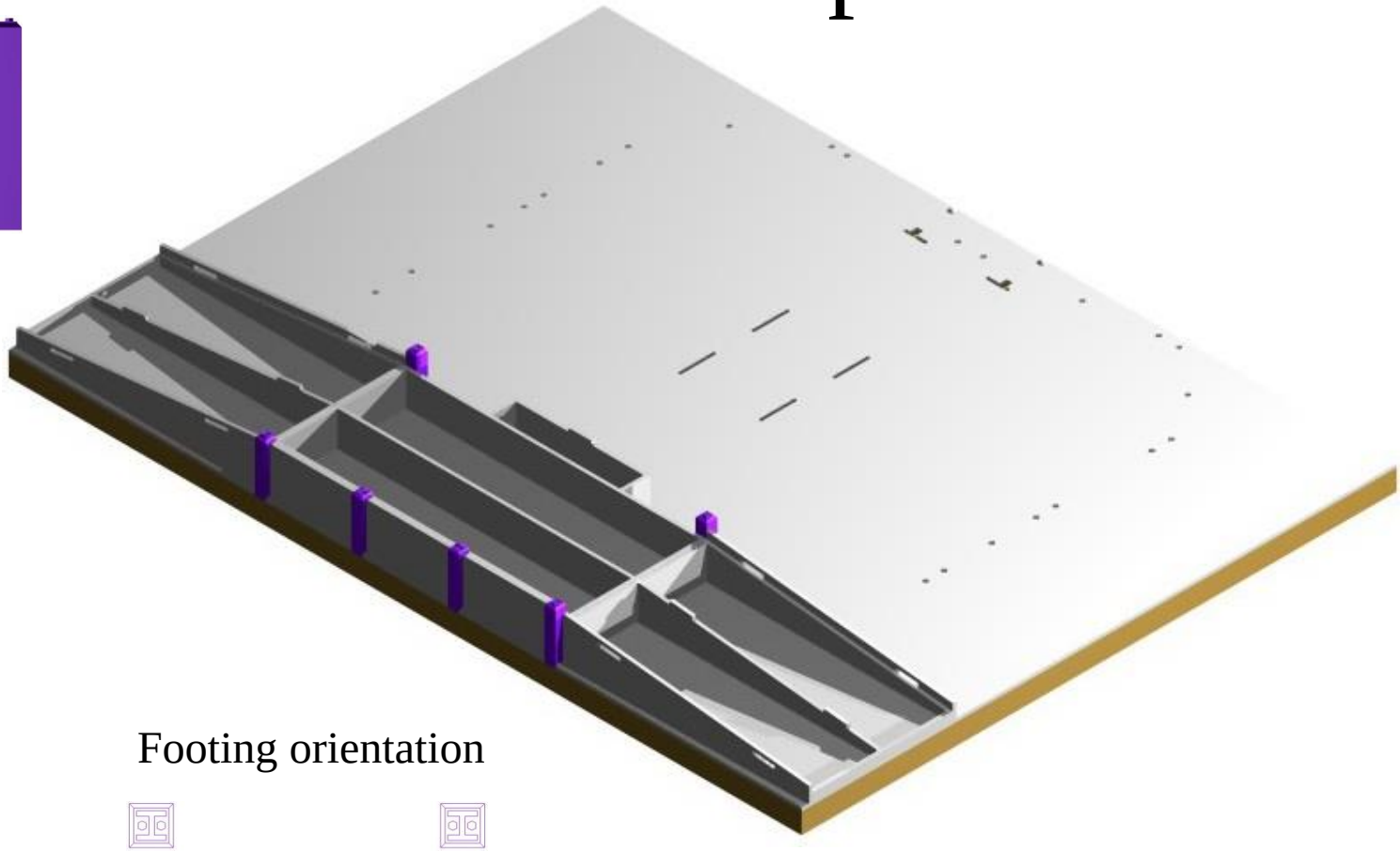


The end walls finish of the ends of the wagon shed road and allow a surface for the rear ramps to be glued.

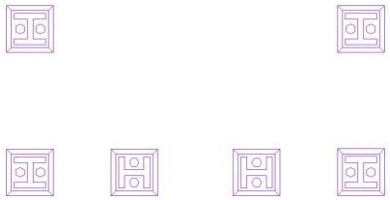
The Silo Base - Step 19



The 6 footings are fitted next. These 3D printed footings, have been made to allow these parts to be the correct dimension without the modellers having to cut and fill the parts. The 4 outer corner footings are set in the same orientation while the 2 center footings are at 90 degrees to the others, as per the diagram to the right

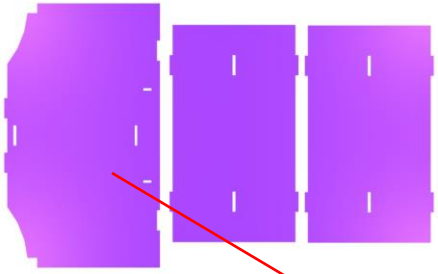


Footing orientation

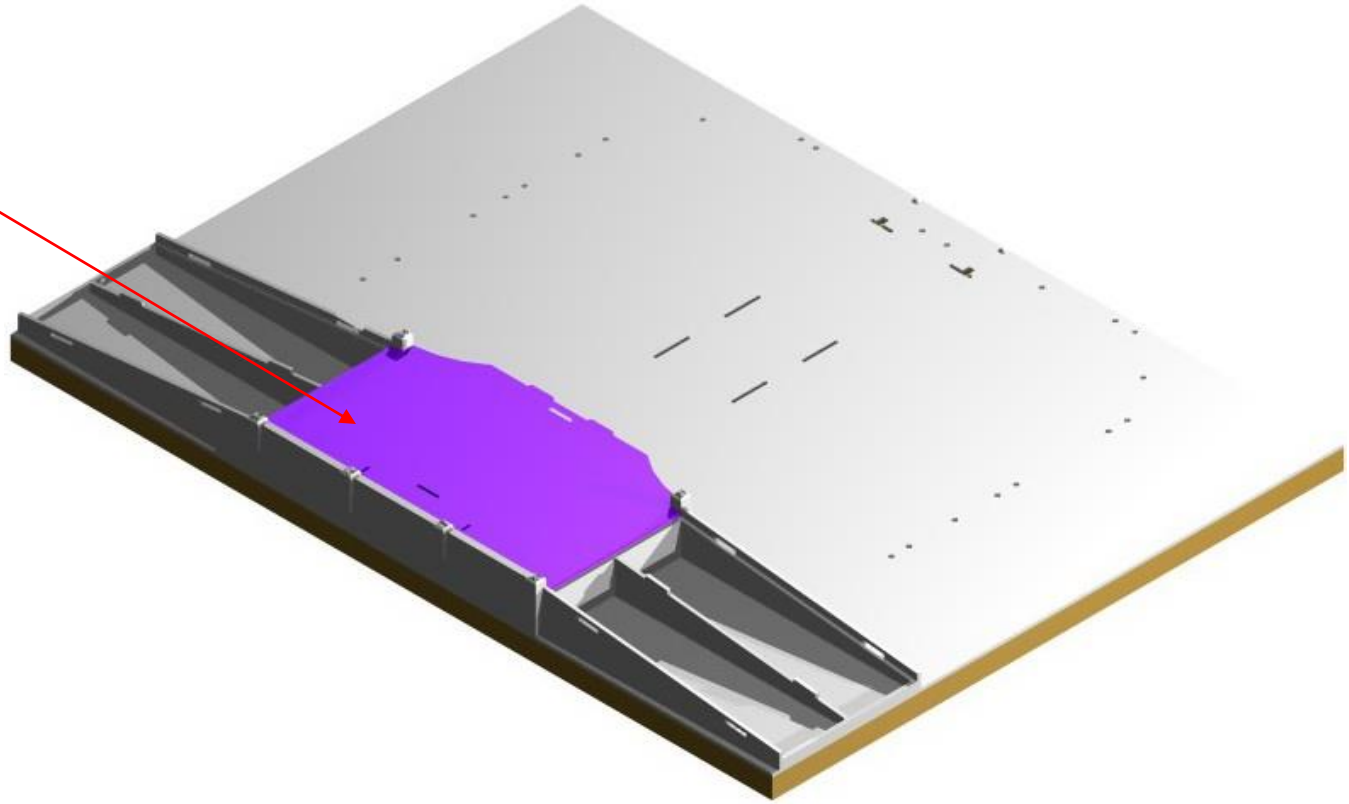


The footings have the same pattern as the 50 mm piece of H4 brass supplied in the kit. Clean out the footing tops, using a pick tool or small drill. Use the H4 section to gauge the fit, into the top of the footings, as the wagon shed frame is made from this material. The H4 needs to fit into the footings easily.

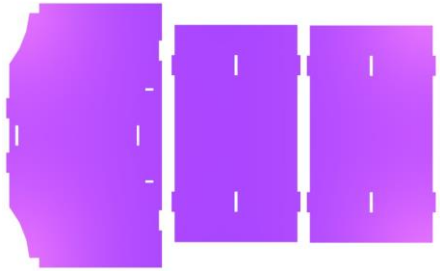
The Silo Base - Step 20



The rear road centre is dry fitted next. It will need to be adjusted to fit against the substructure, by filing at a later time.

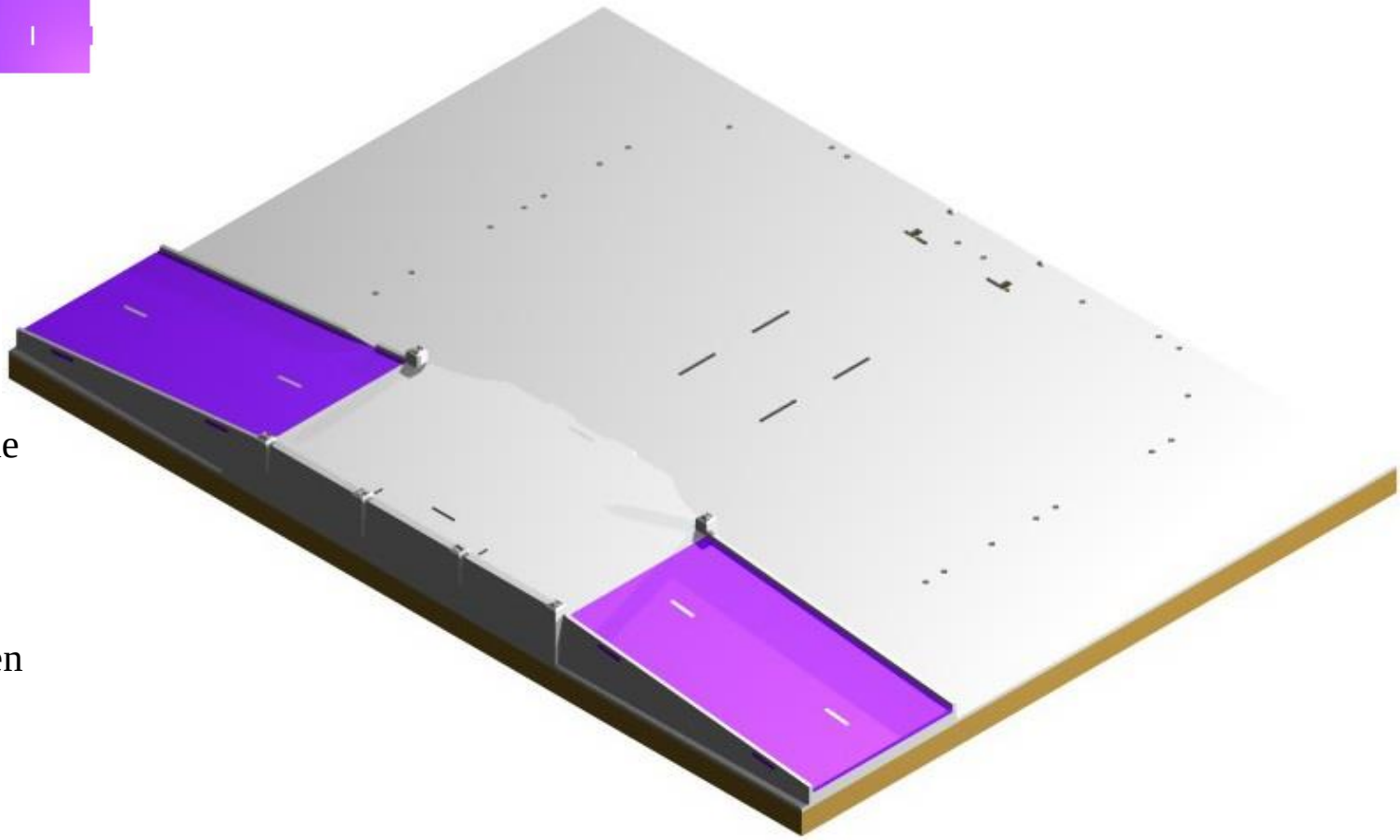


The Silo Base - Step 21



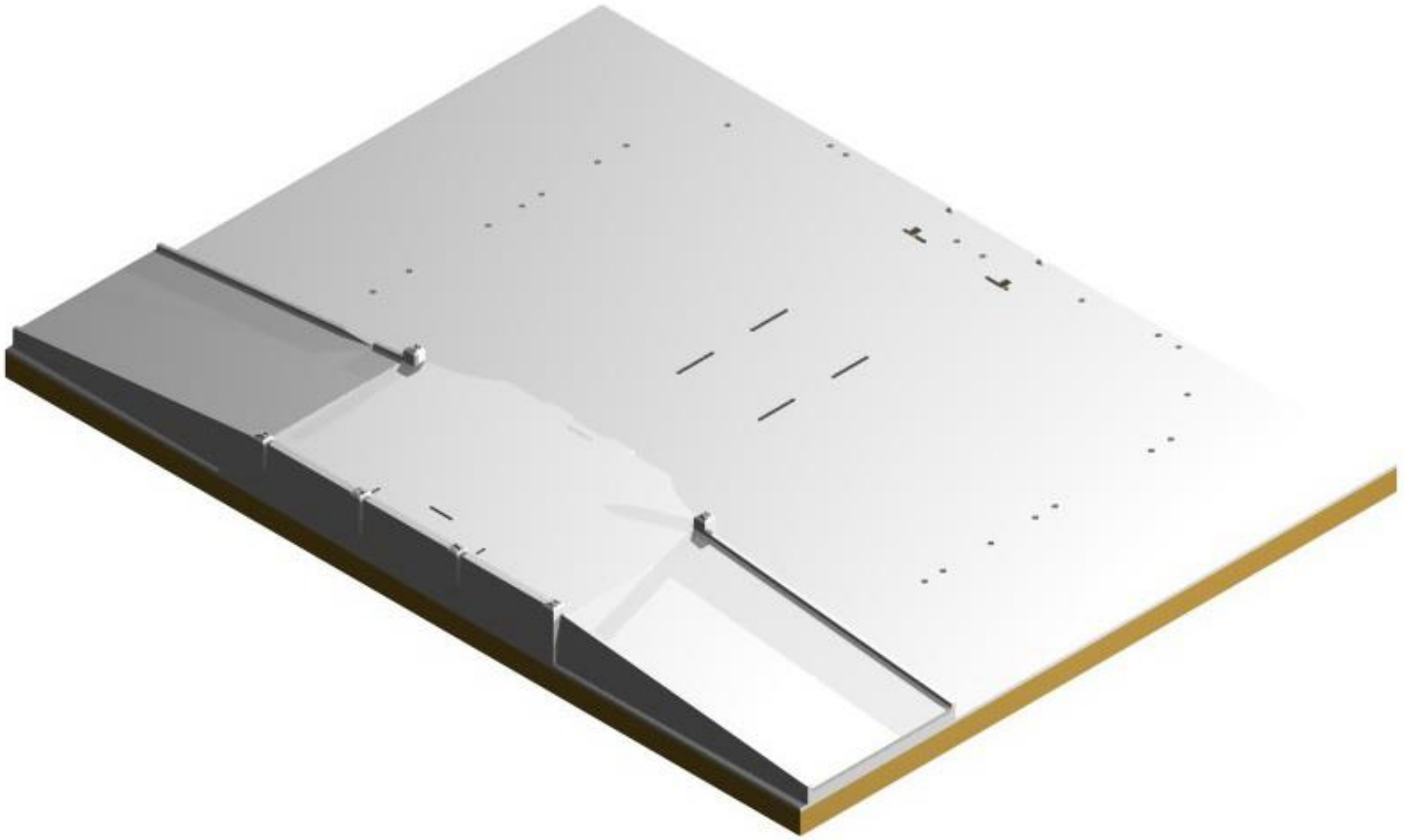
The rear road ramps are fitted to the ramp supports, into the tabs on both side whilst also, fitting into the ramp spline tabs.

Focus on placing the ramps on the spline first and then fitting the side supports into the ramps, then run glue into all the joints, when happy with the fit.



The Silo Base - Step 22

The finished base, ready to have the drainage system added to it

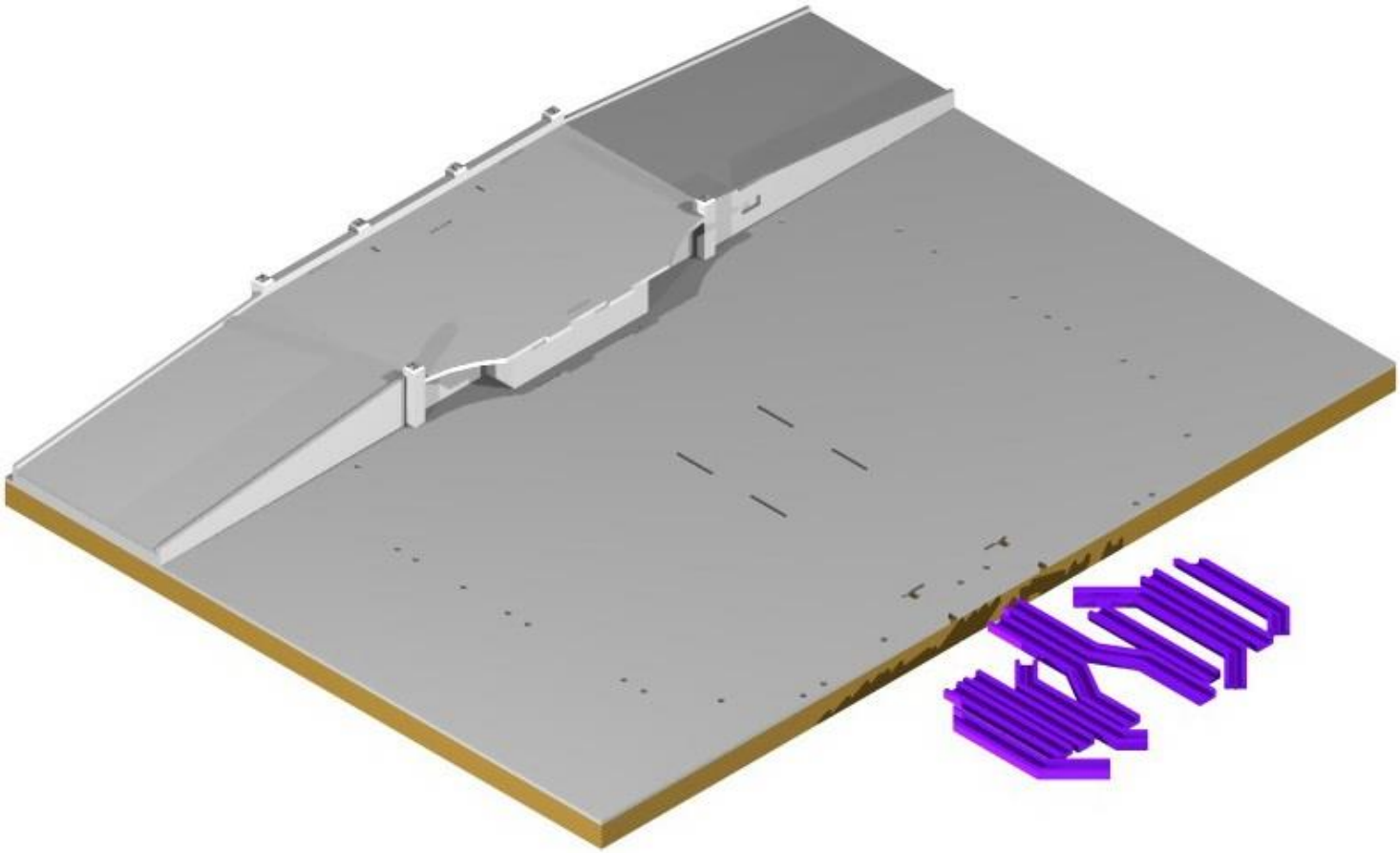


Changes to original

- The original kit provided a very simple but not very detailed drainage system. This has been modified in this version of all the silo kits.
- The drainage system is made up of 3D parts that are located into the silo base and butted together and glued into place. They are then filled with putty on the joints. And sanded smooth.
- The parts need to be removed from the plastic sprue and the sprue trimmed so that the small 2 mm x 2 mm squares fit neatly into the square holes cut into the base.
- Once in position the parts are glued into place, and laser cut acrylic parts are used to fill the gap both inside and outside the drains. 2 Thicknesses of acrylic are required for this operation.
- Use Supaglue for this operation, as the DCM will not glue the 3D parts.
- Use masking tape to hold the parts in place while the glue dries.

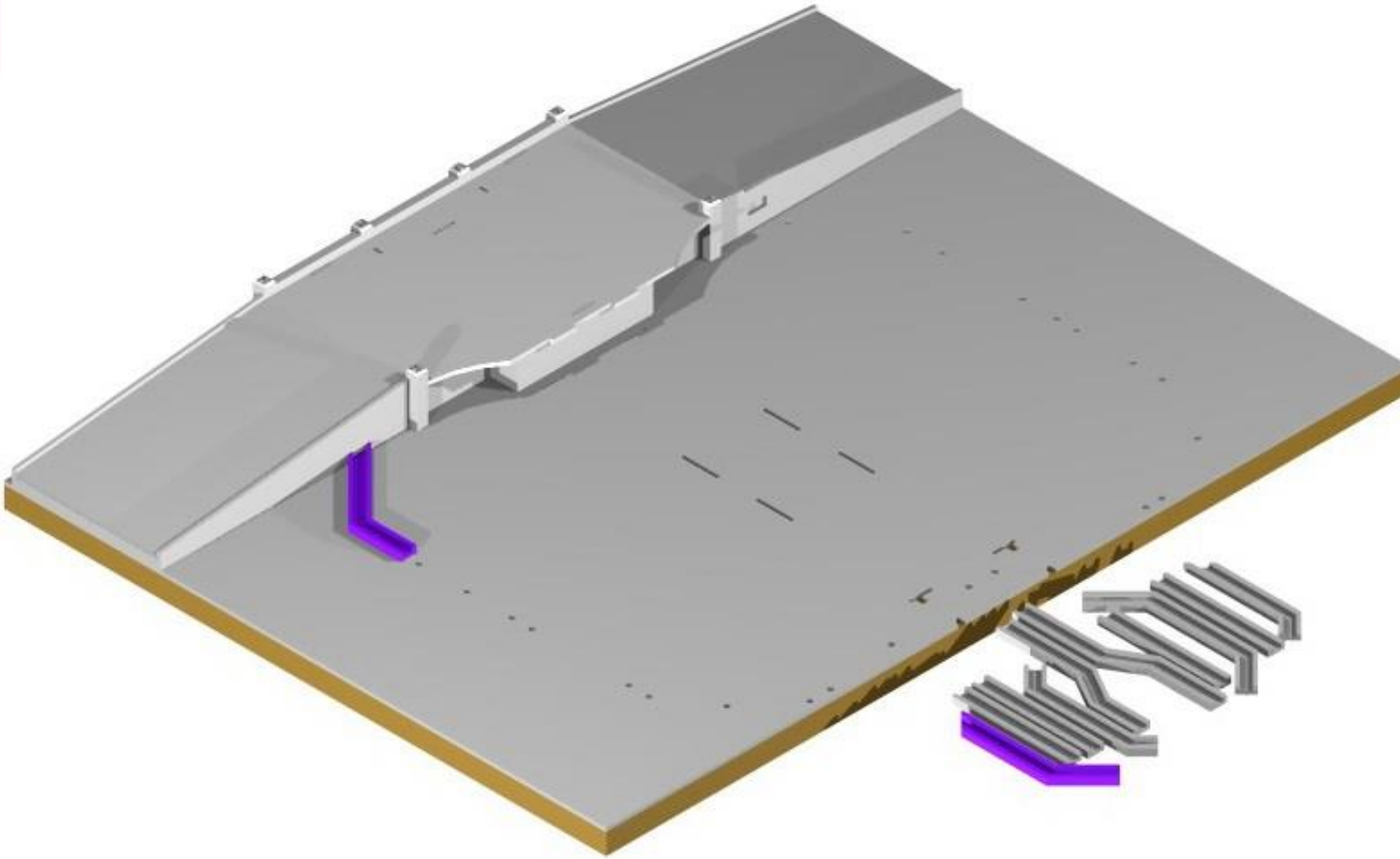
The Silo Base Drainage - 01

The drainage parts come on a sprue. They need to be removed from the sprue, and the parts trimmed to ensure a good fit onto the silo base. All parts are designed to fit in one place only.



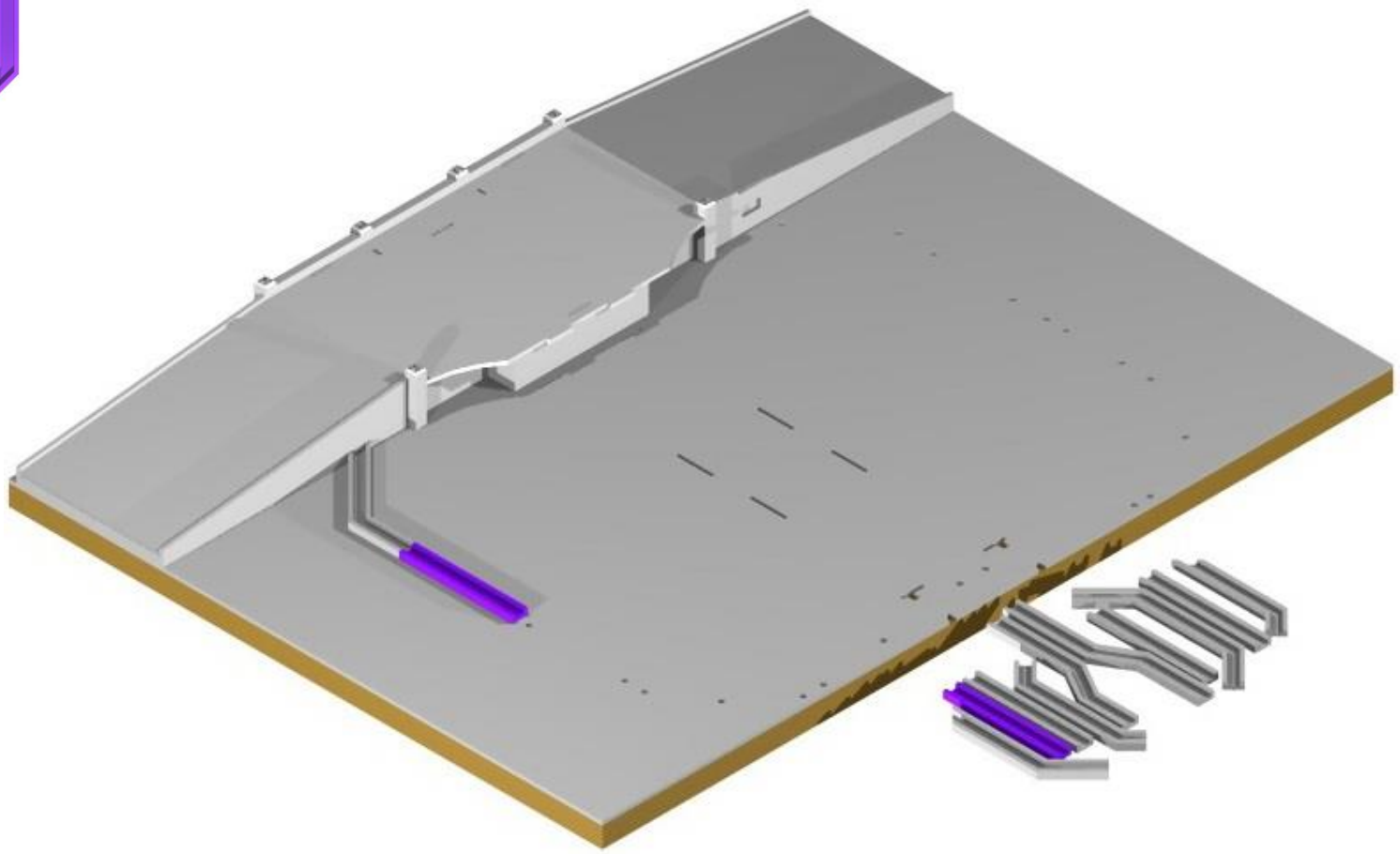
The Silo Base Drainage - 02

The parts that is purple is placed into location. They may need to be turned to fit but they will only fit in one location due to the 2 mm x 2 mm tabs on the bottom of each part.

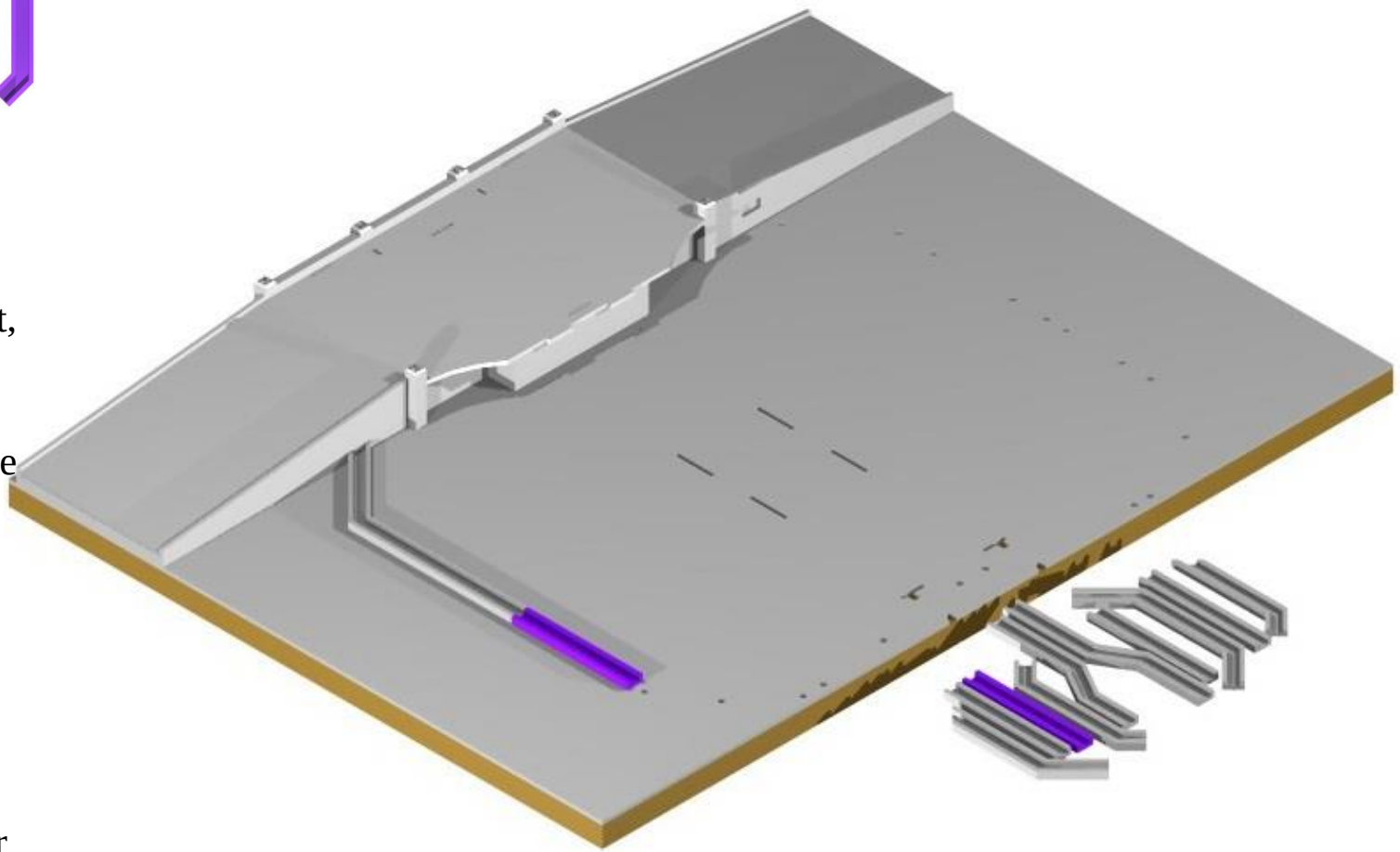


The Silo Base Drainage - 03

If any parts leave a small gap between them, body filler can be used to fill the gap and sanded smooth. The filler will usually sand away before the 3D part will.



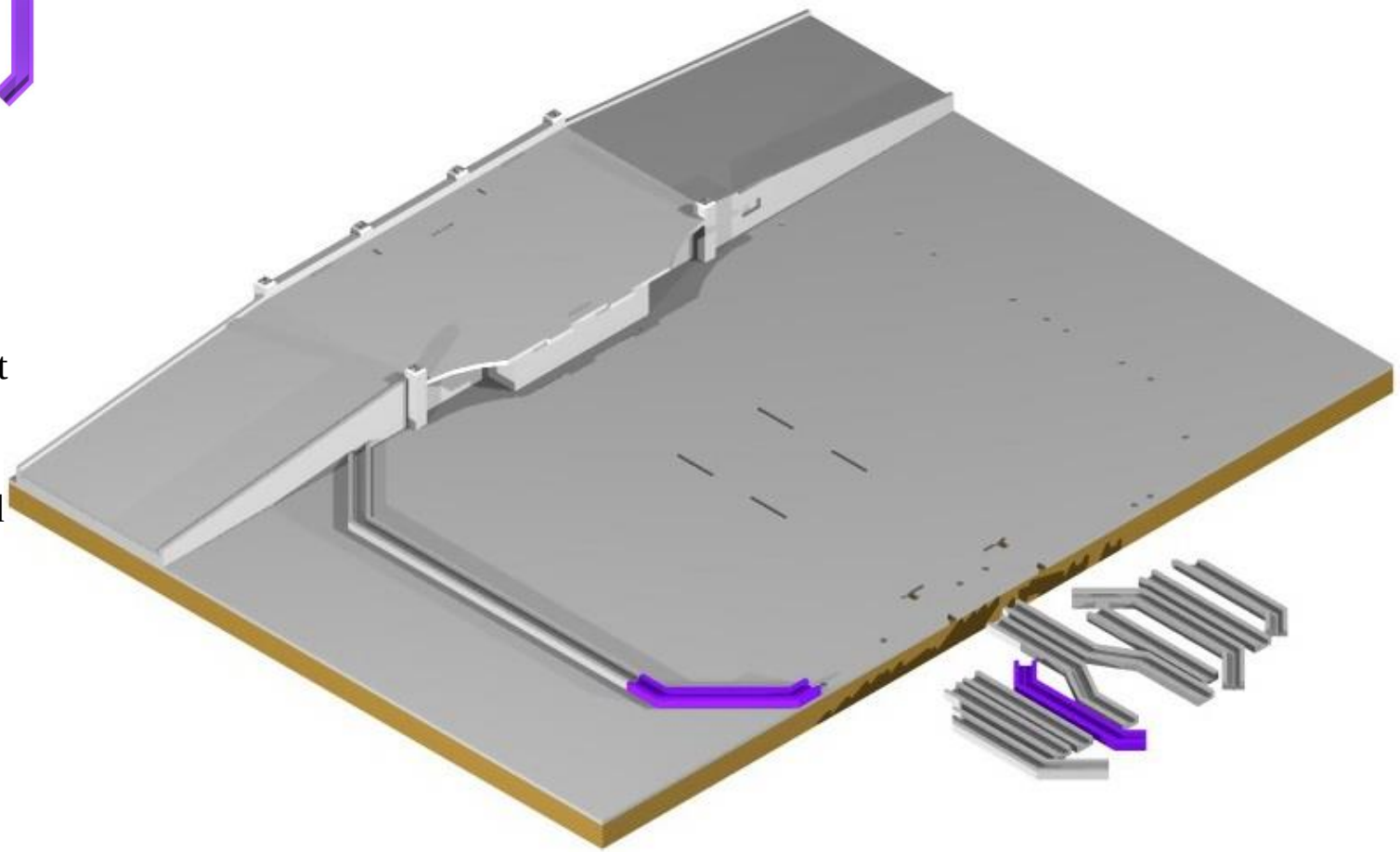
The Silo Base Drainage - 04



Orientate the parts to ensure a good fit, the parts will only fit one way. Supa Glue or Araldite are the best type of glues to be used in this situation. But make sure that there is no excess glue on the outside or the inside of the drainage parts after they have been fitted.

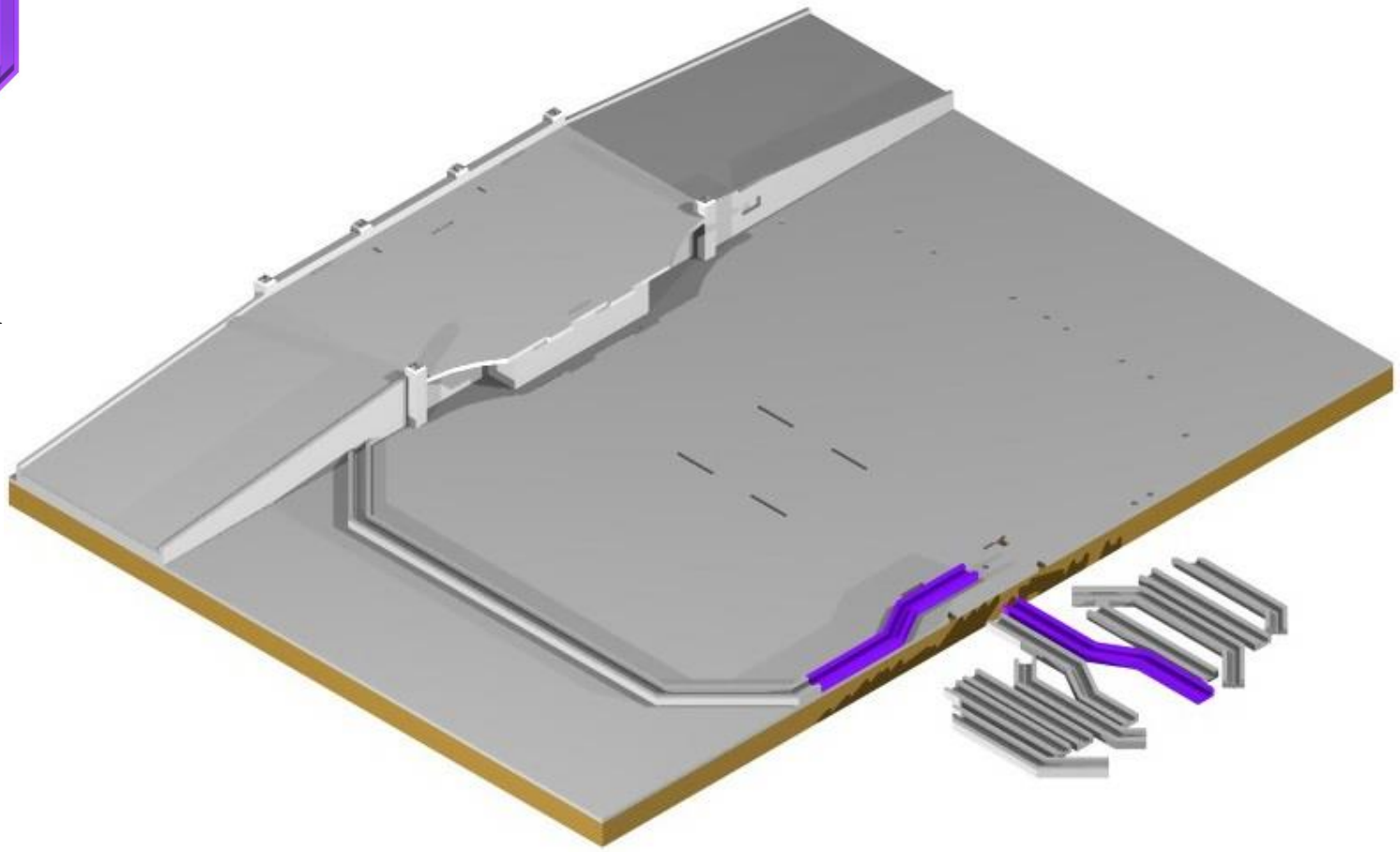
The Silo Base Drainage - 05

These parts are specifically designed to only fit one way. So if they don’t fit one way, turn them and try again.

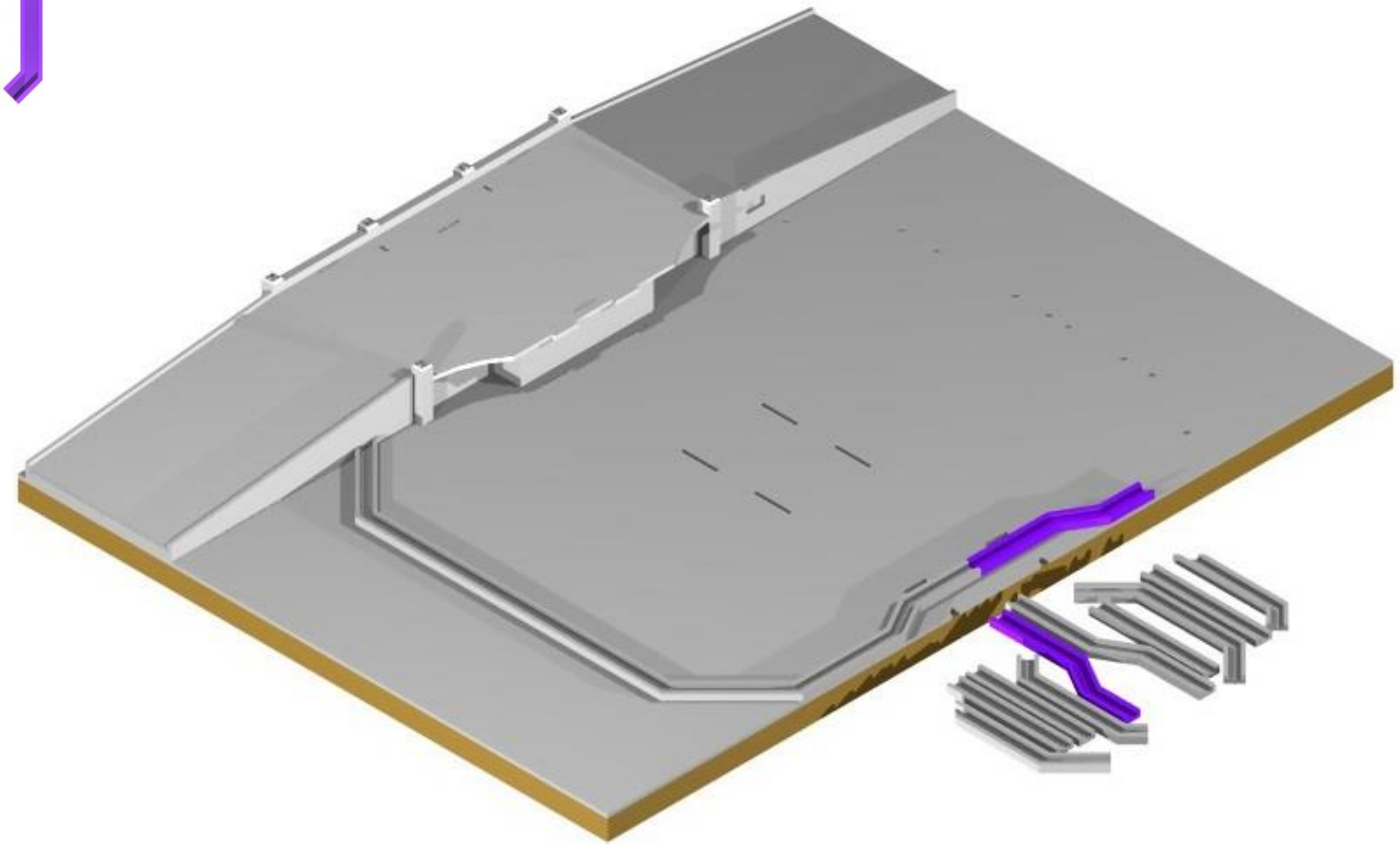


The Silo Base Drainage - 06

Keep note of the pieces that coloured purple so that you locate the correct pieces in the correct places.

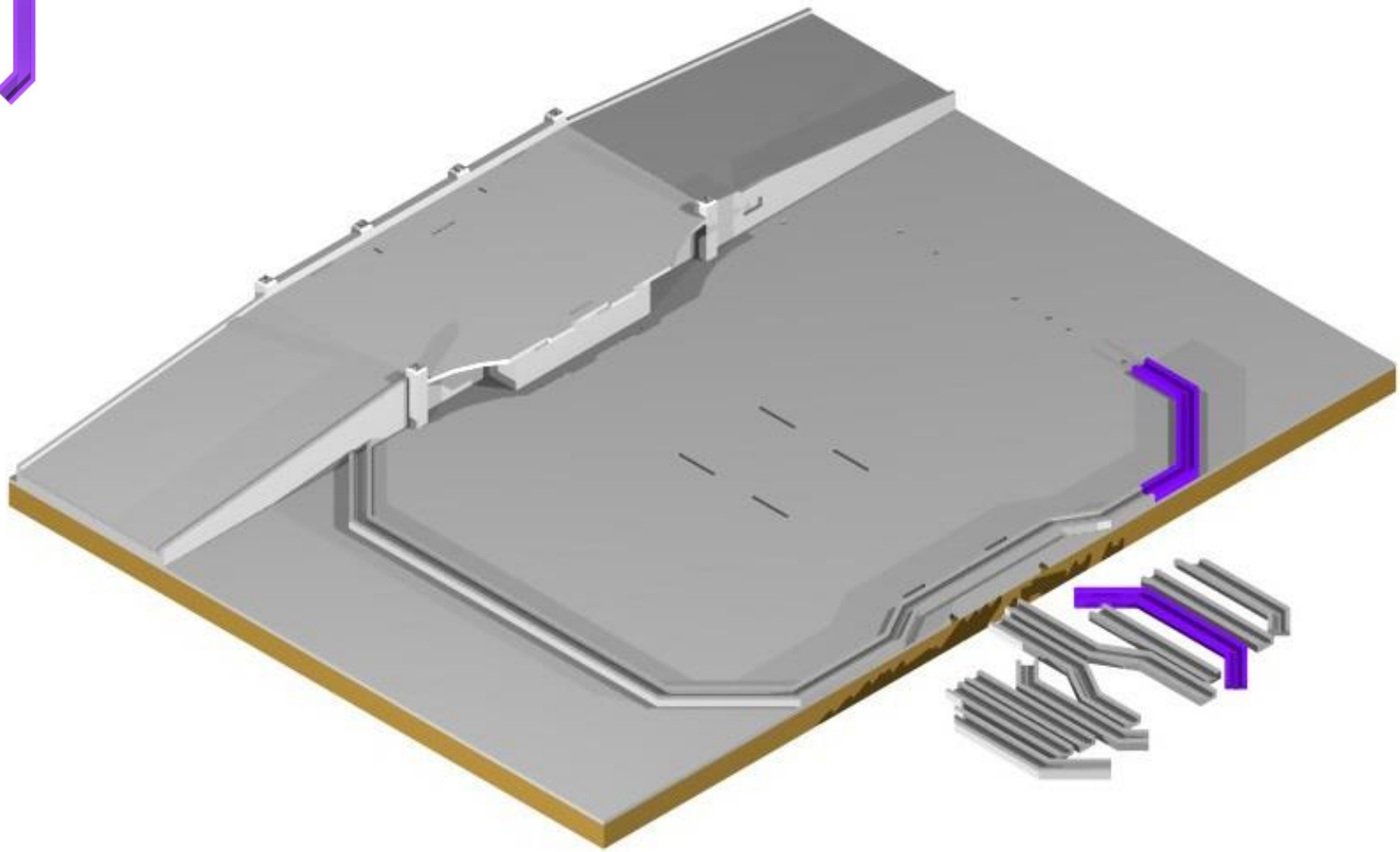


The Silo Base Drainage - 07

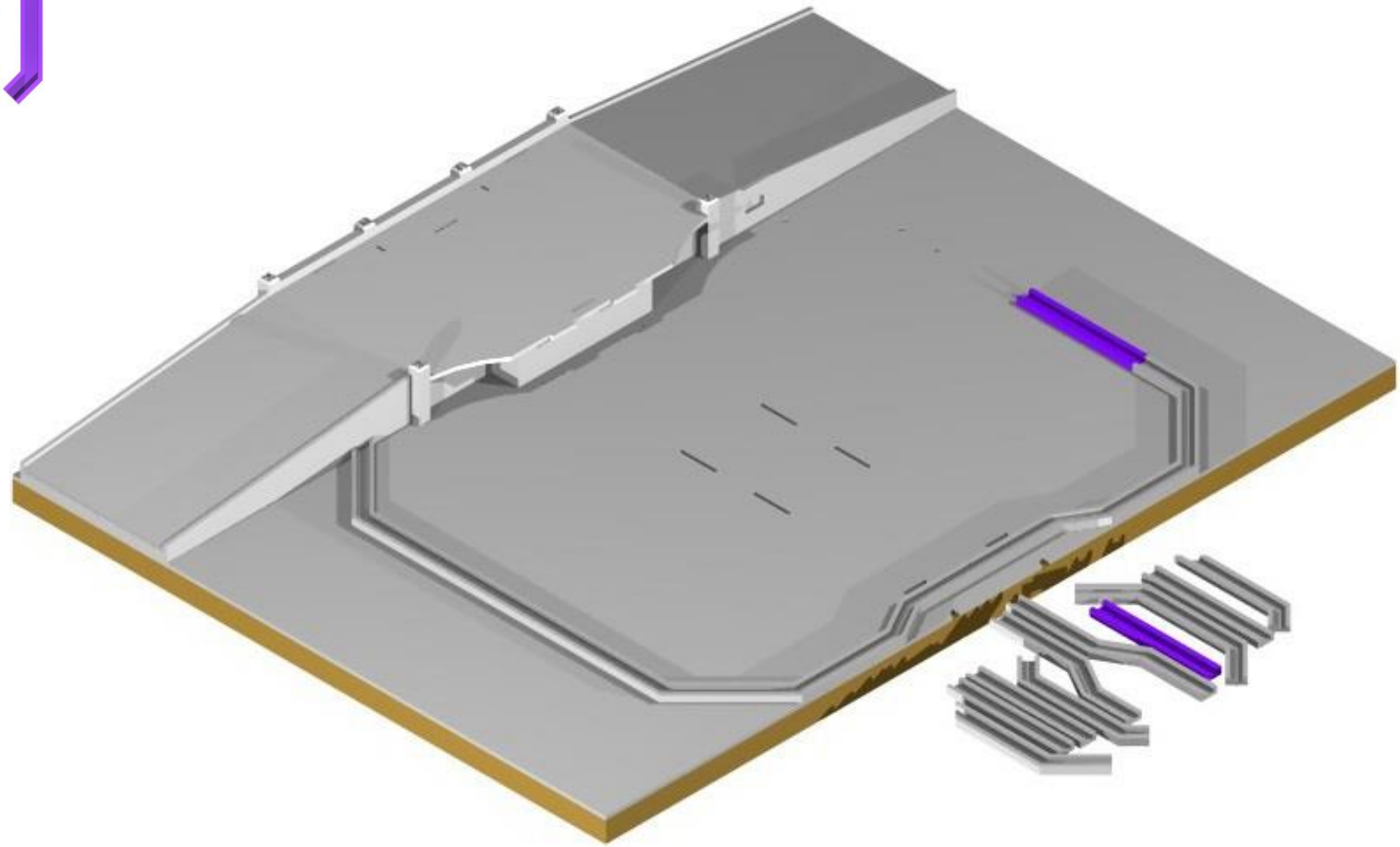


The Silo Base Drainage - 08

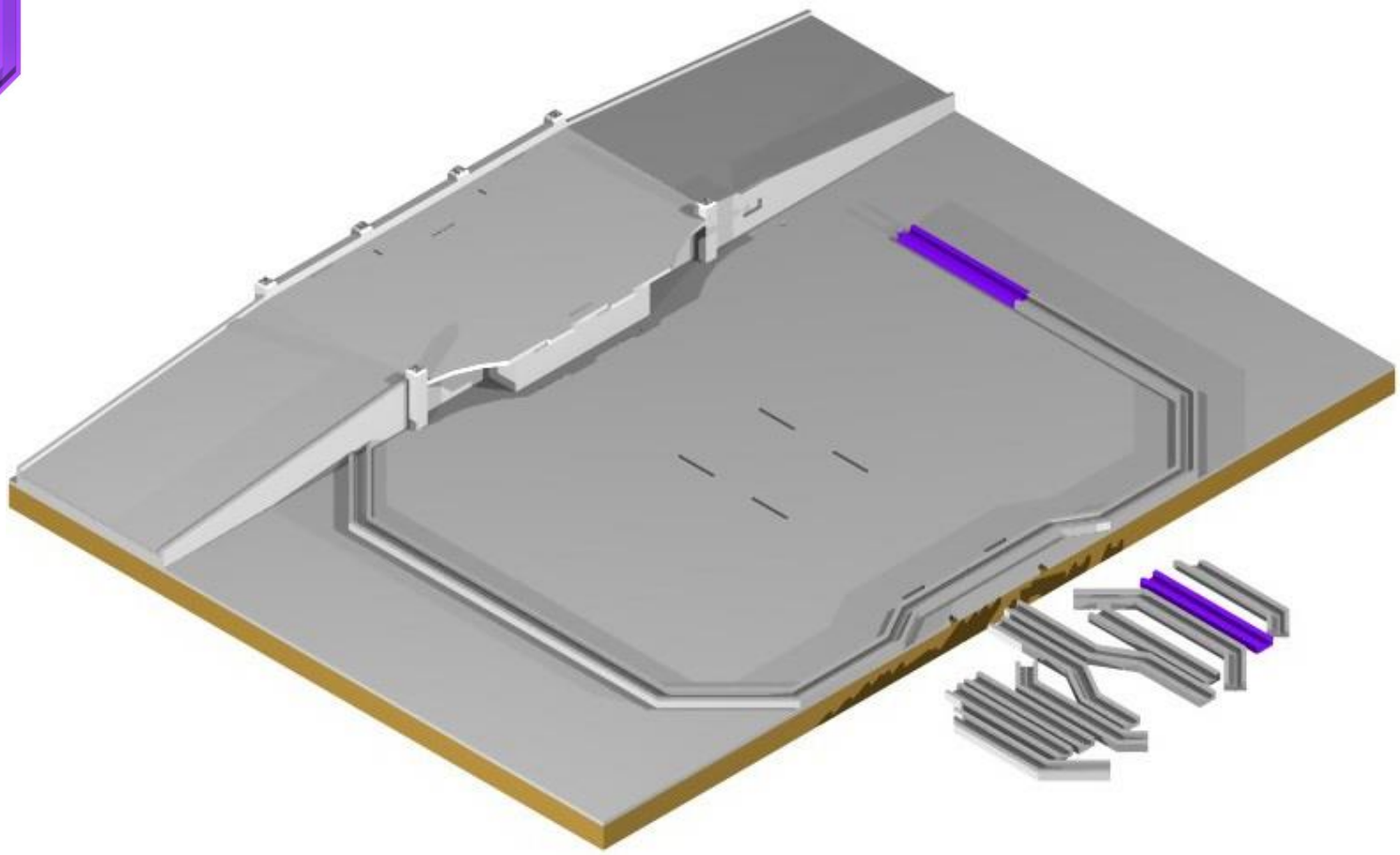
Coming into the home straight, just a few pieces to go.



The Silo Base Drainage - 09

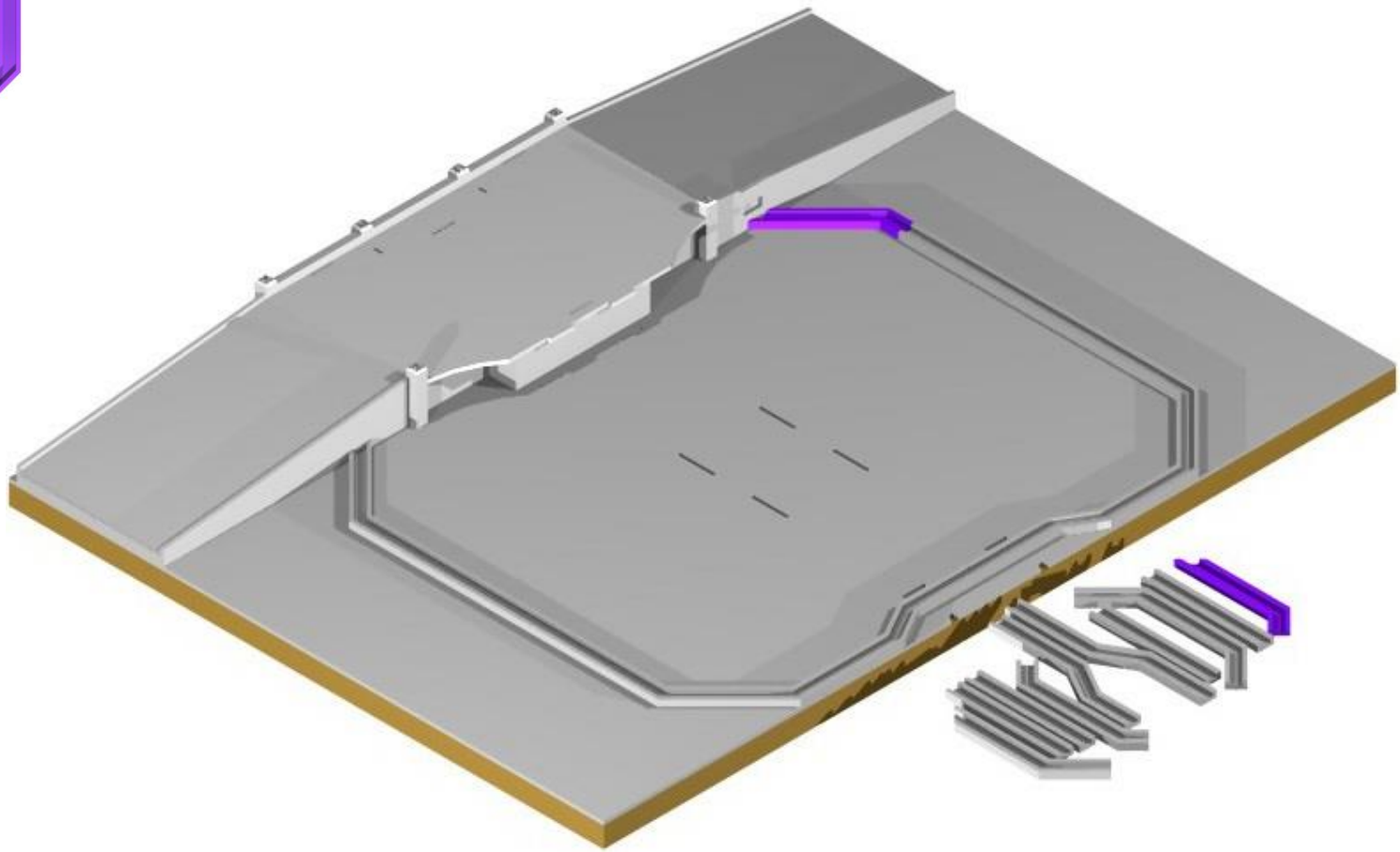


The Silo Base Drainage - 10



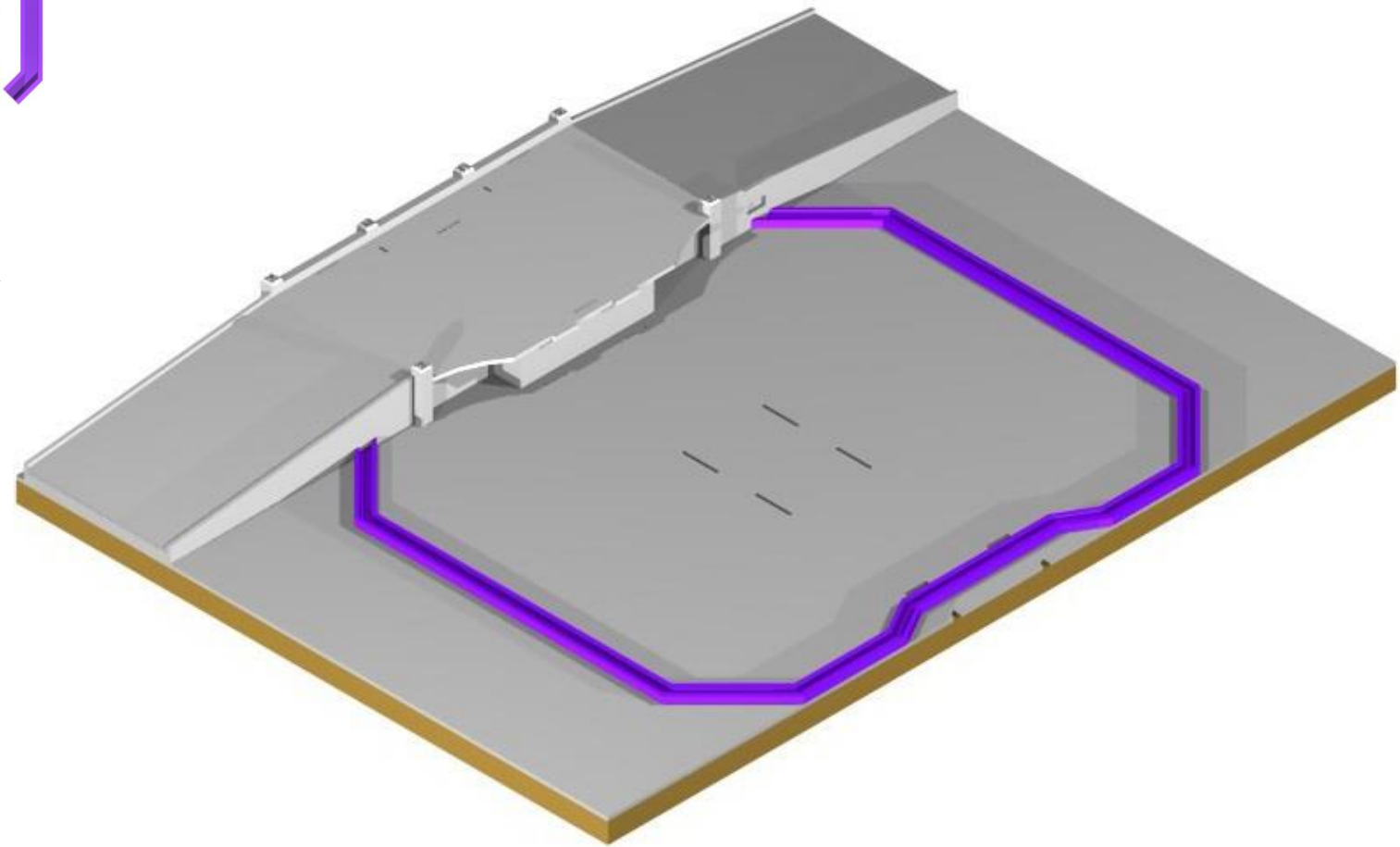
The Silo Base Drainage - 11

This is the last piece, and now you can start filling and sanding the joints. The filler will sand easily however the 3D material is very hard to sand. So you should be able to fill and sand without removing the core material.



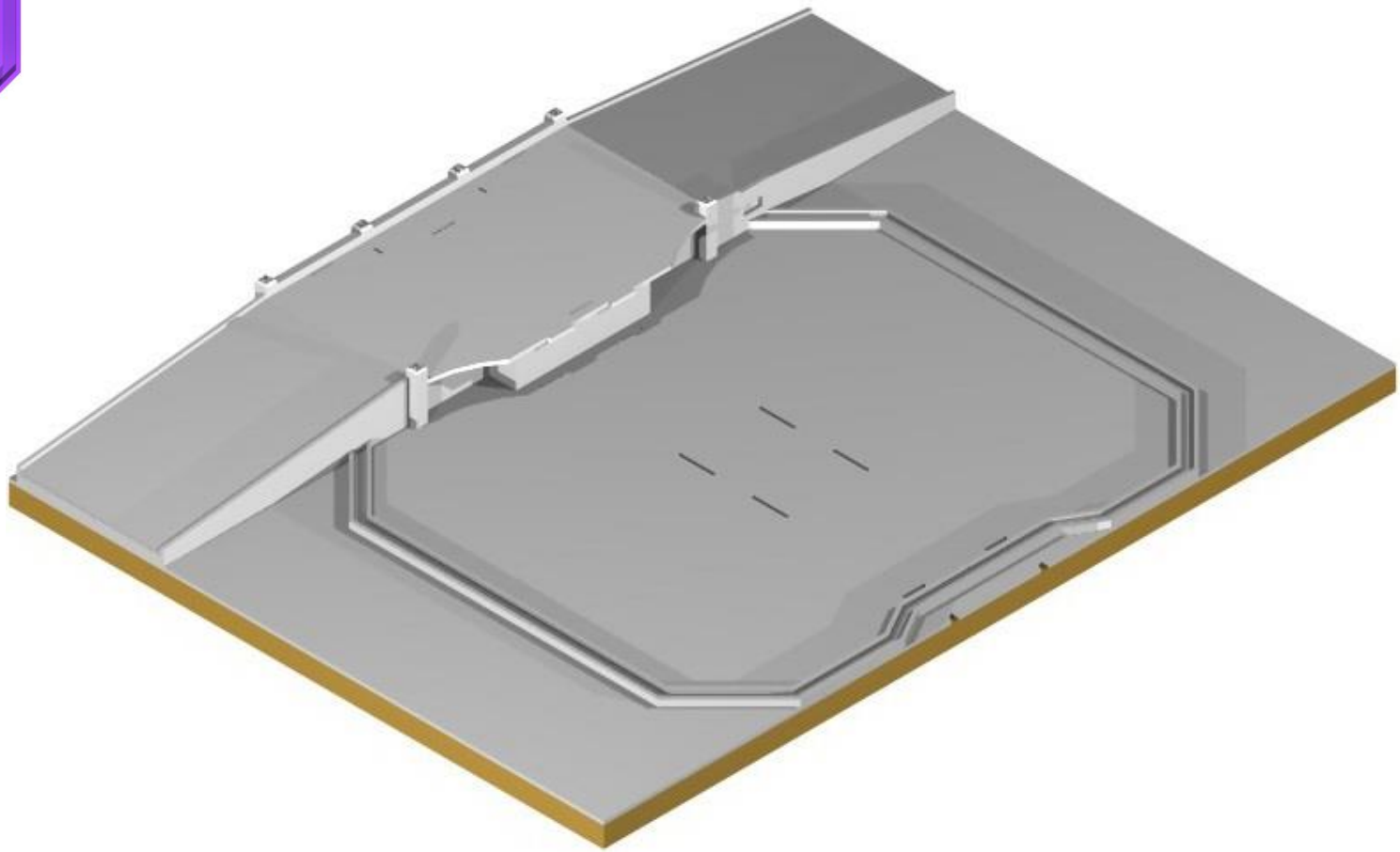
The Silo Base Drainage - 12

The finished drain in place.

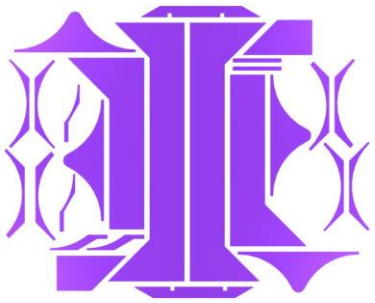


The Silo Base Drainage - 13

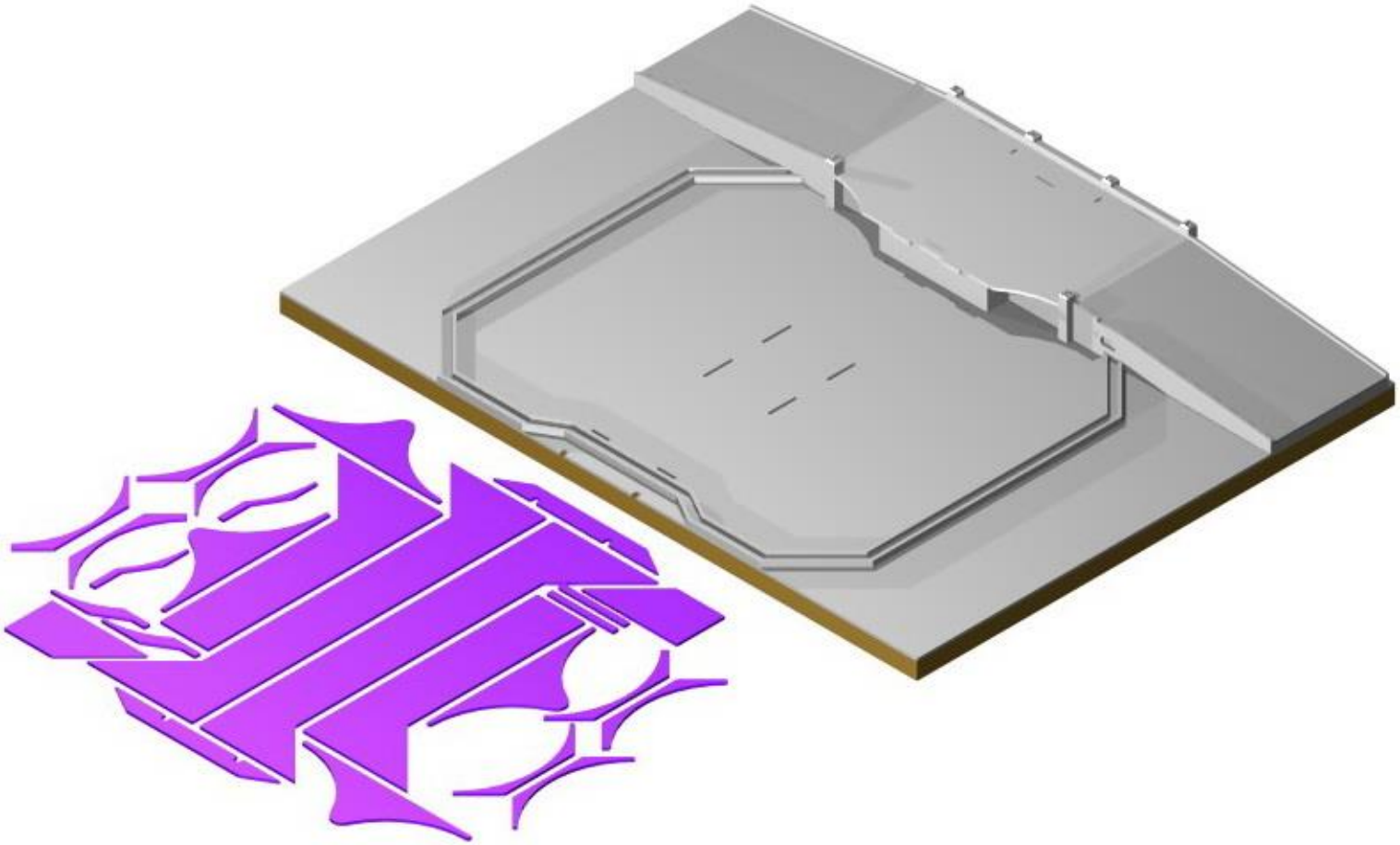
When finished we can now move on to the filling of the gap between the drain and the silo bins, as well as outside the drain.



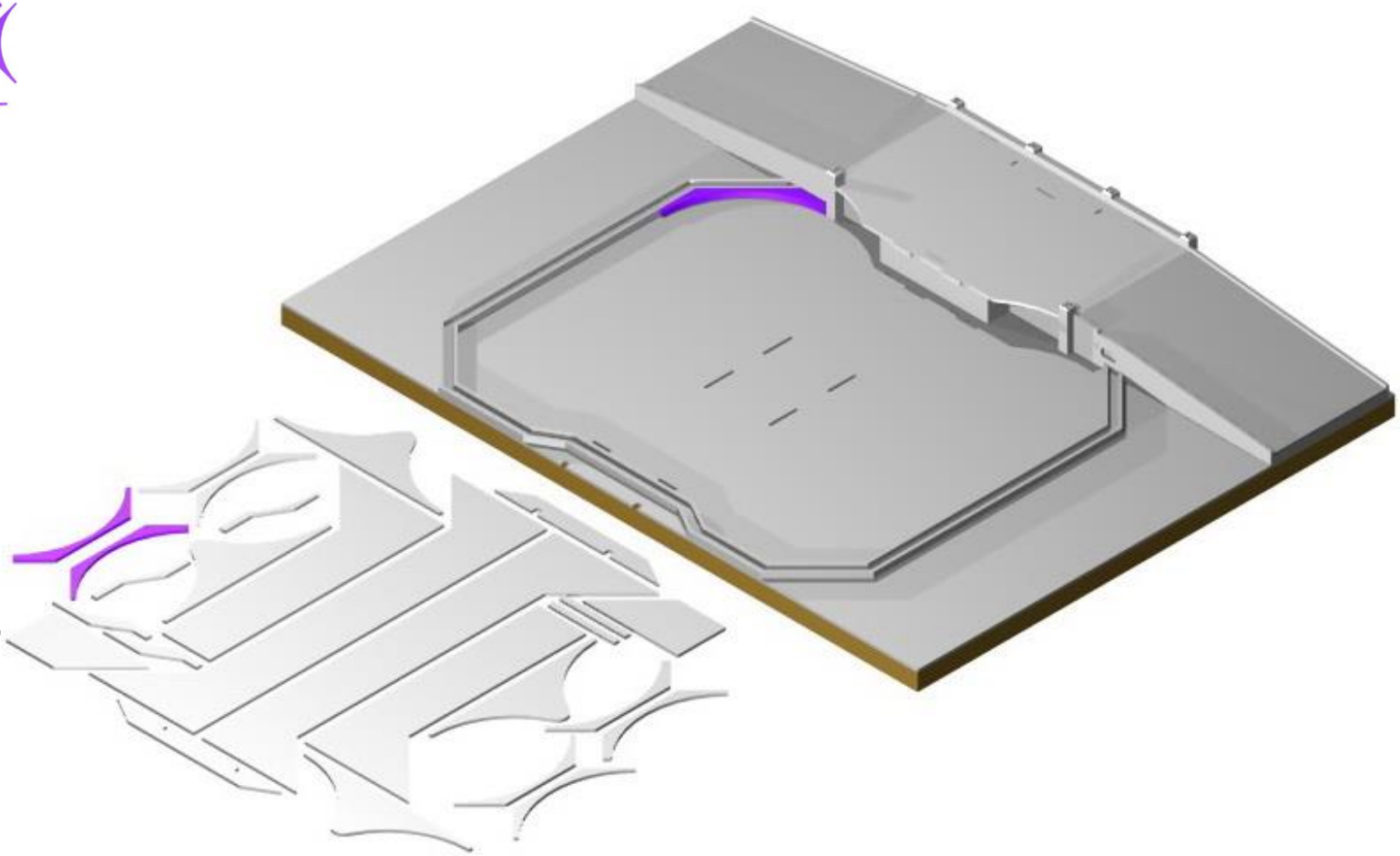
The Silo Base Fill In’s - 01



These parts form the basis for filling the gap between the drain and the bin walls. There are also some that fit to the outside of the drains as well.



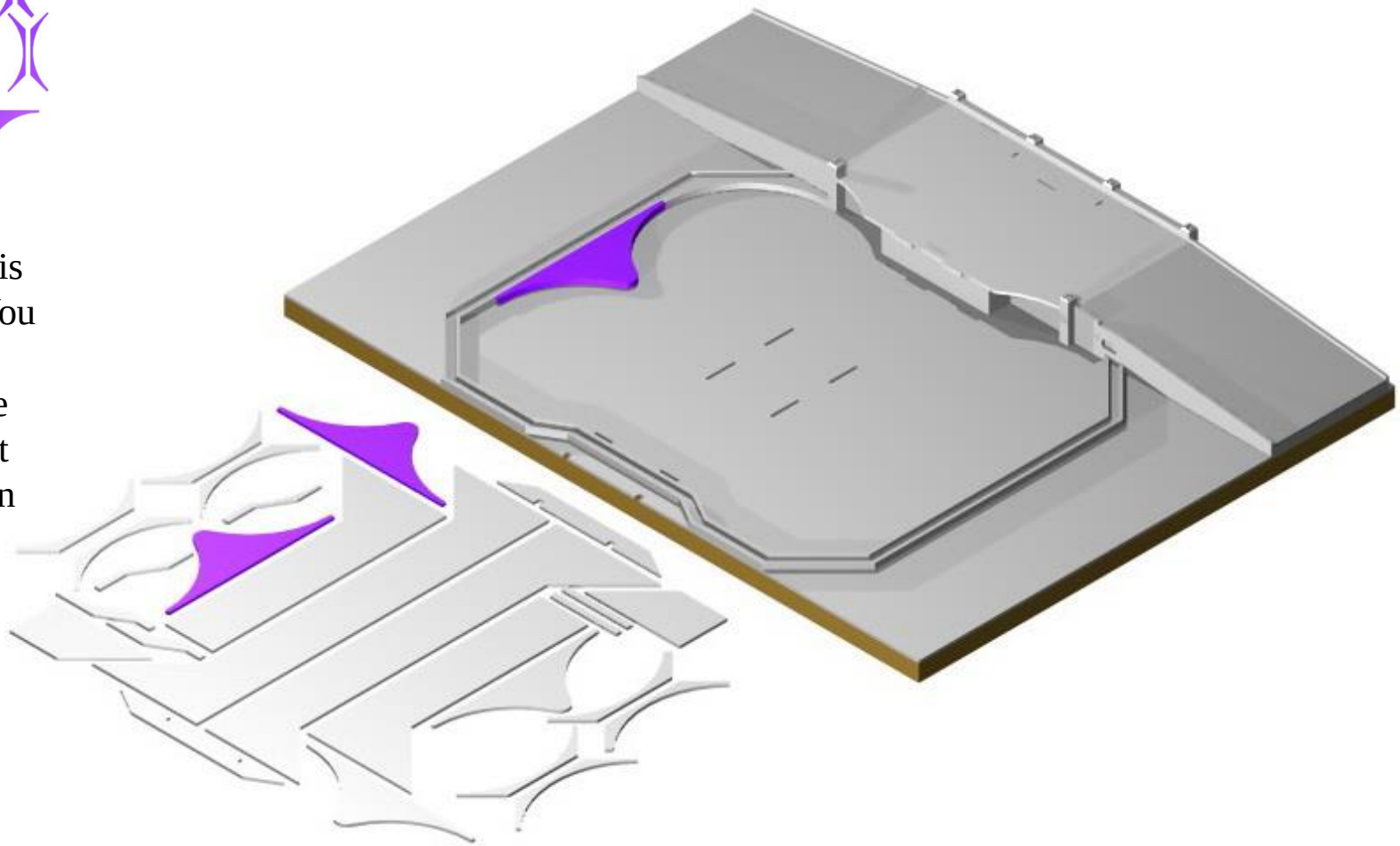
The Silo Base Fill In’s - 02



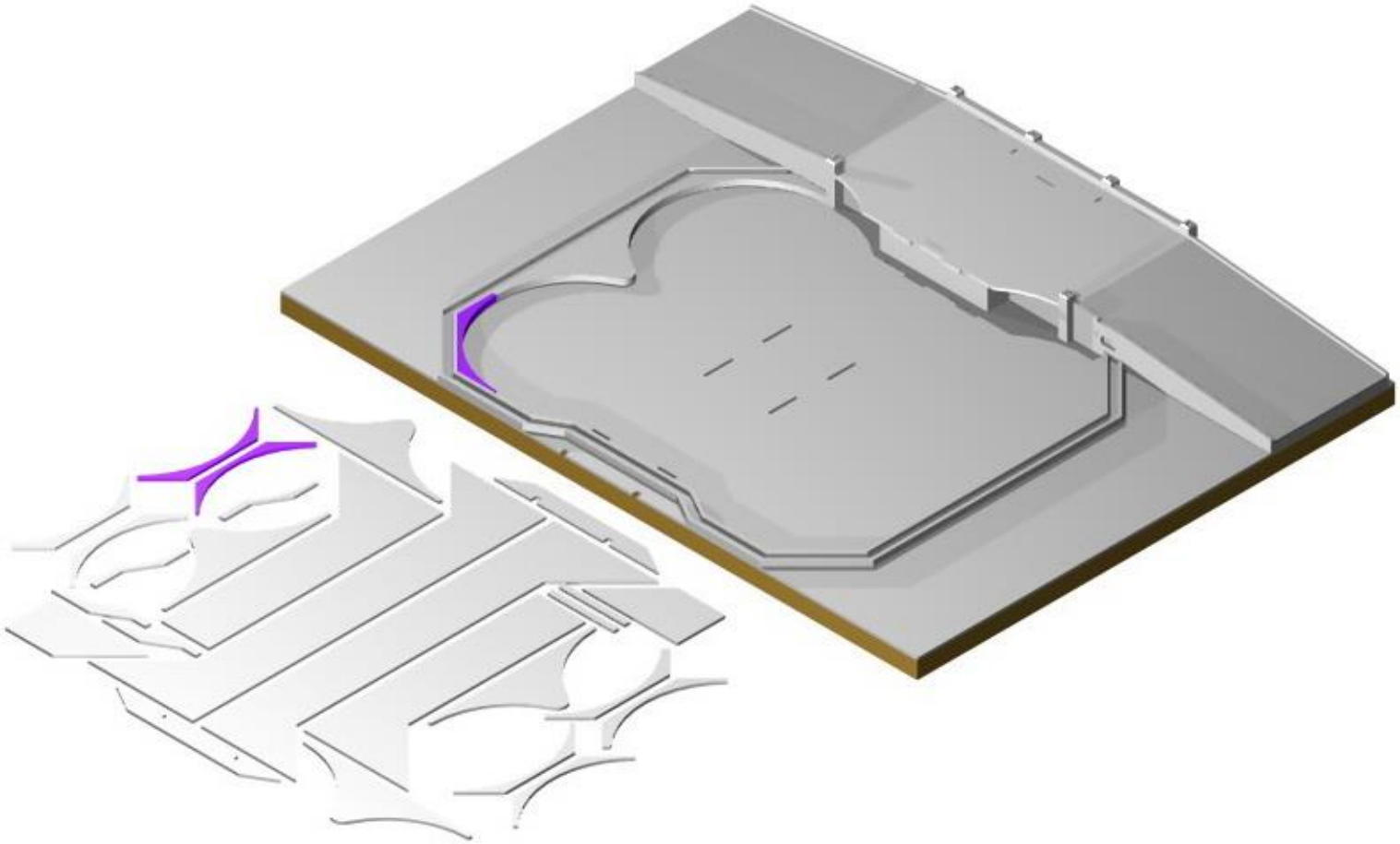
These parts ONLY REQUIRE FITTING, at this stage as they will be test fitted and trimmed after the silo bins are located. DO NOT GLUE into place at this stage. However they can be laminated into there respective parts and labelled so that they can be fitted later.

The Silo Base Fill In’s - 03

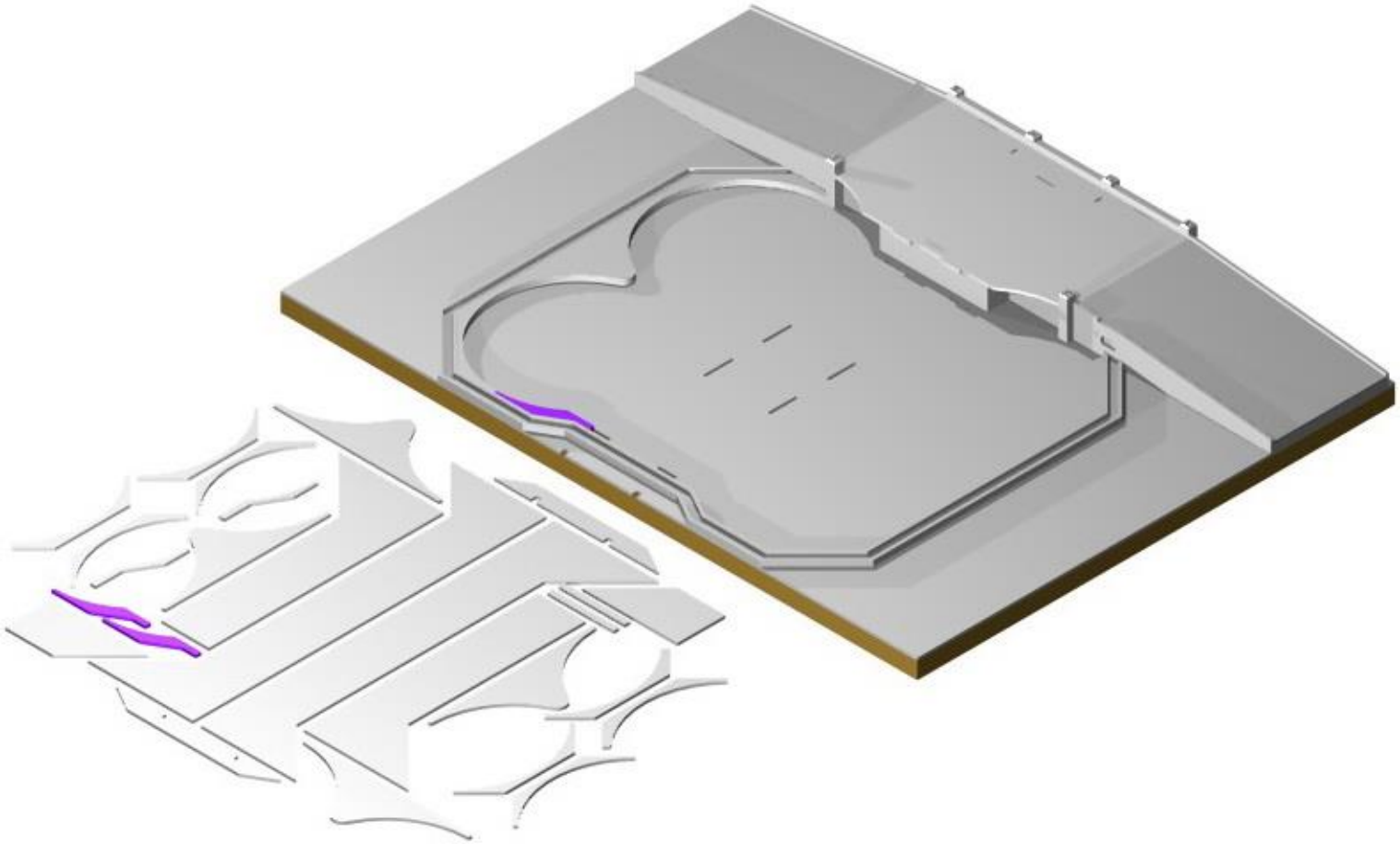
The best glue for acrylic to acrylic is an acrylic glue. You can use Di Chloride Methane (DCM). But use it sparingly, as it can be dangerous if used in a small space.



The Silo Base Fill In’s - 04

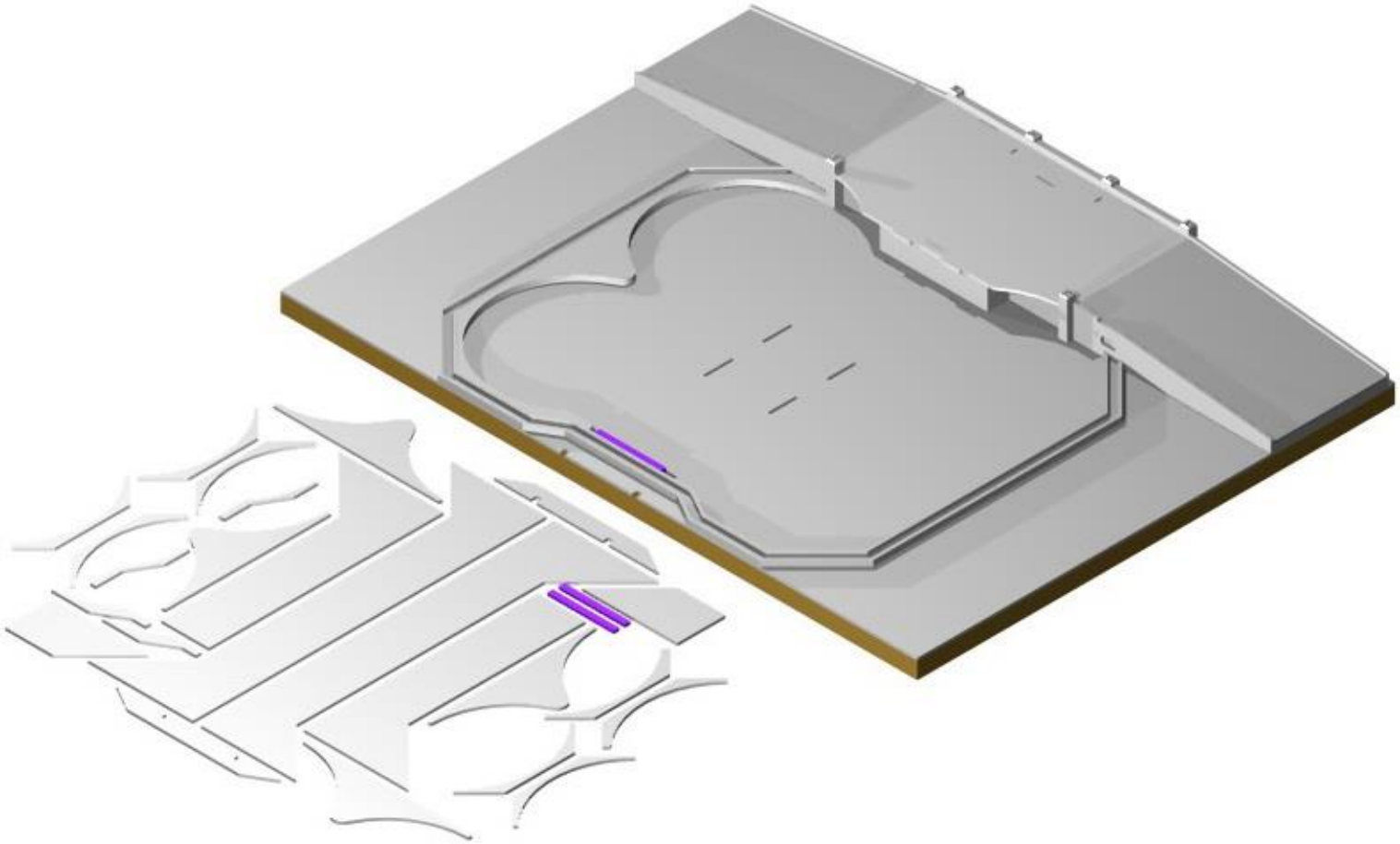


The Silo Base Fill In’s - 05

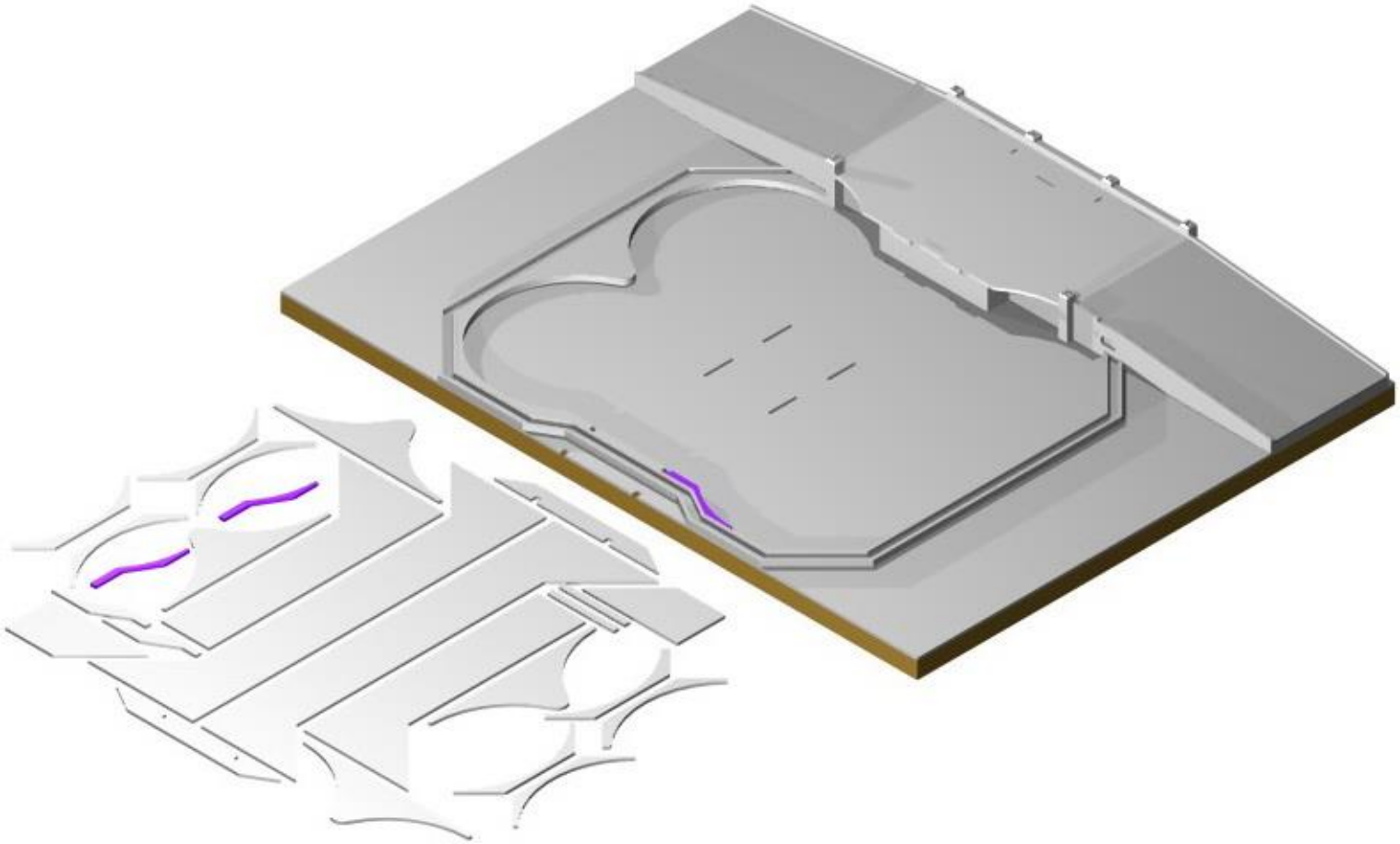


The Silo Base Fill In’s - 06

These parts fit between the out loading platform footings.

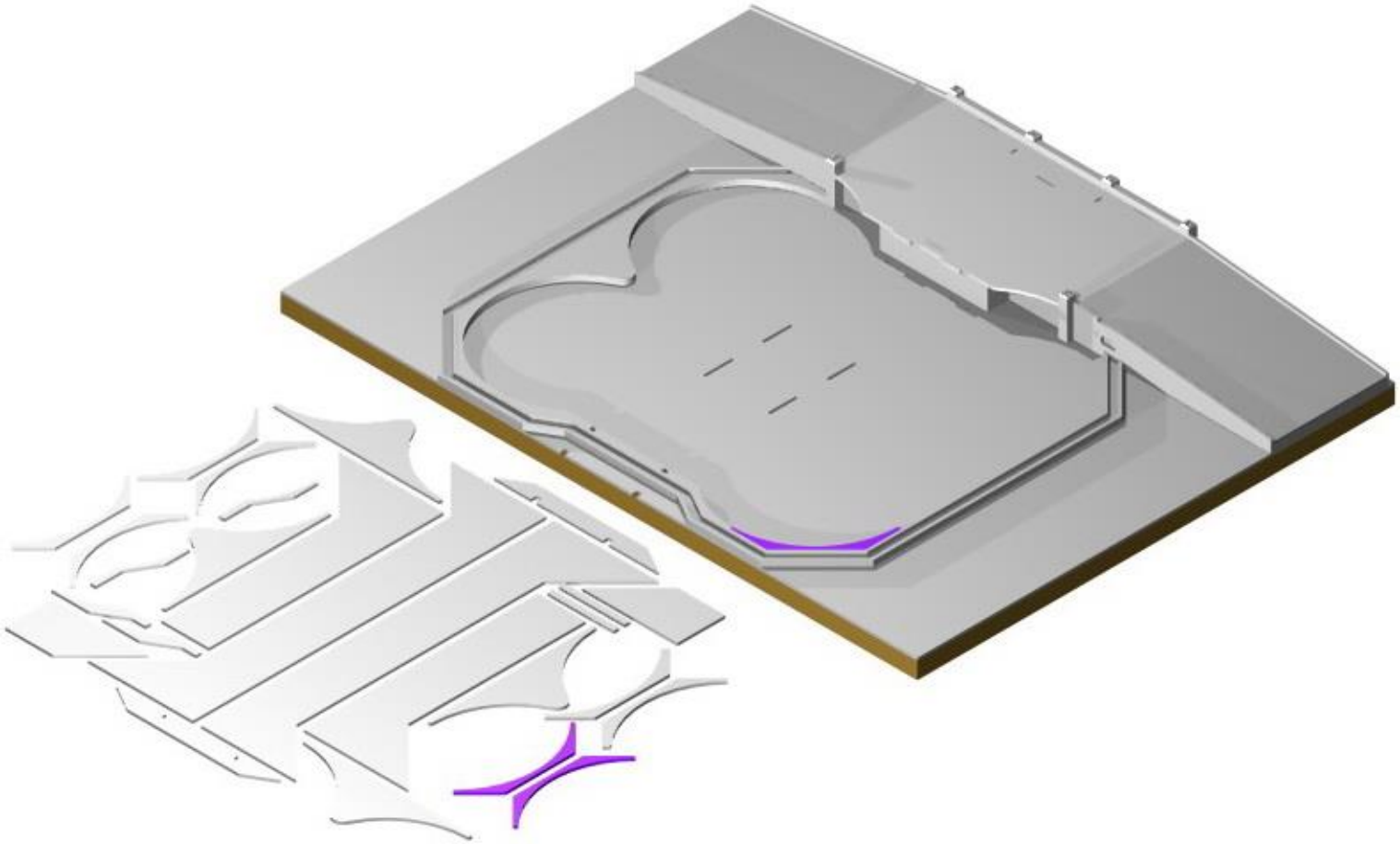


The Silo Base Fill In’s - 07



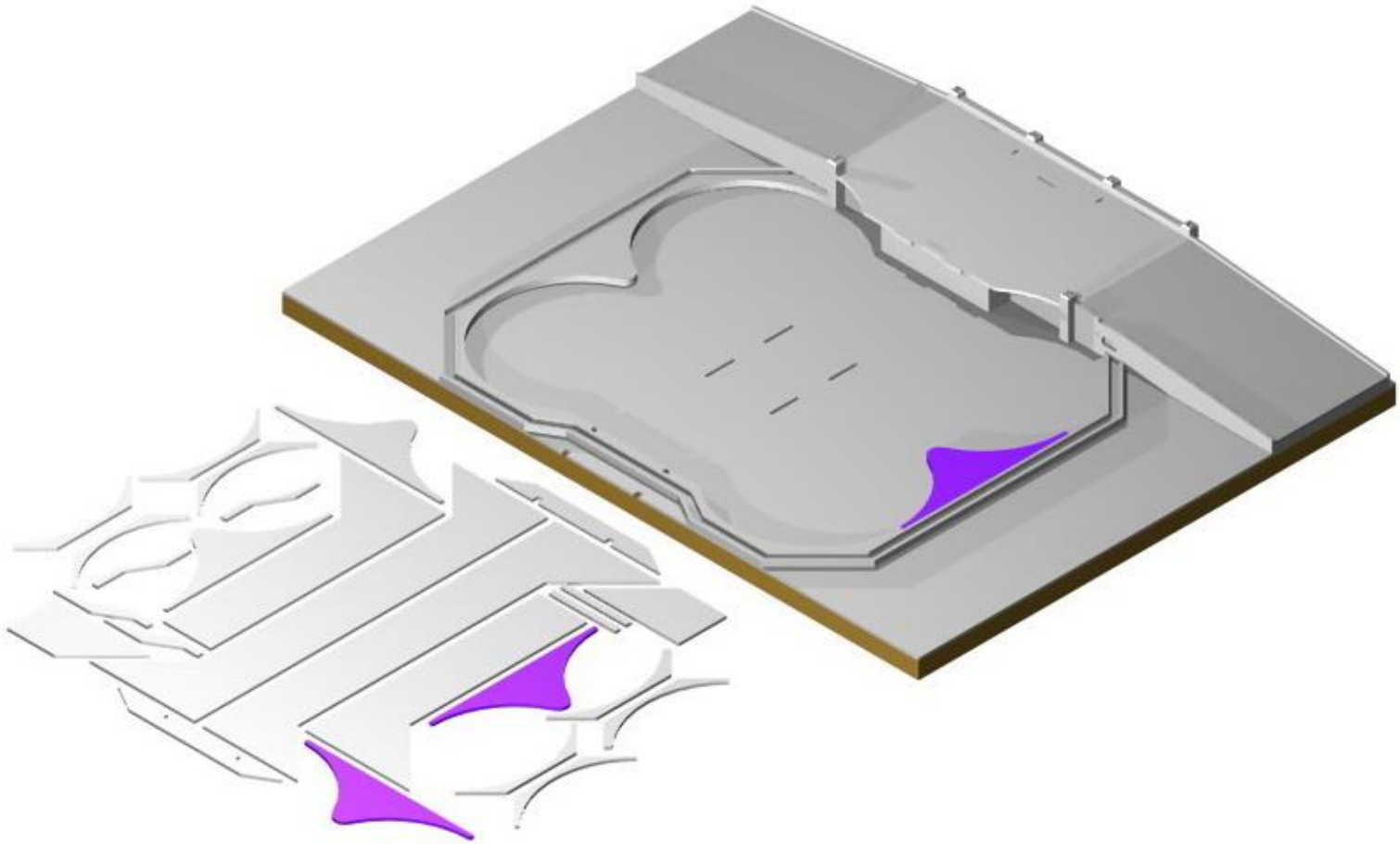
The Silo Base Fill In’s - 08

Test fit the parts to ensure that they butt up to each other neatly.

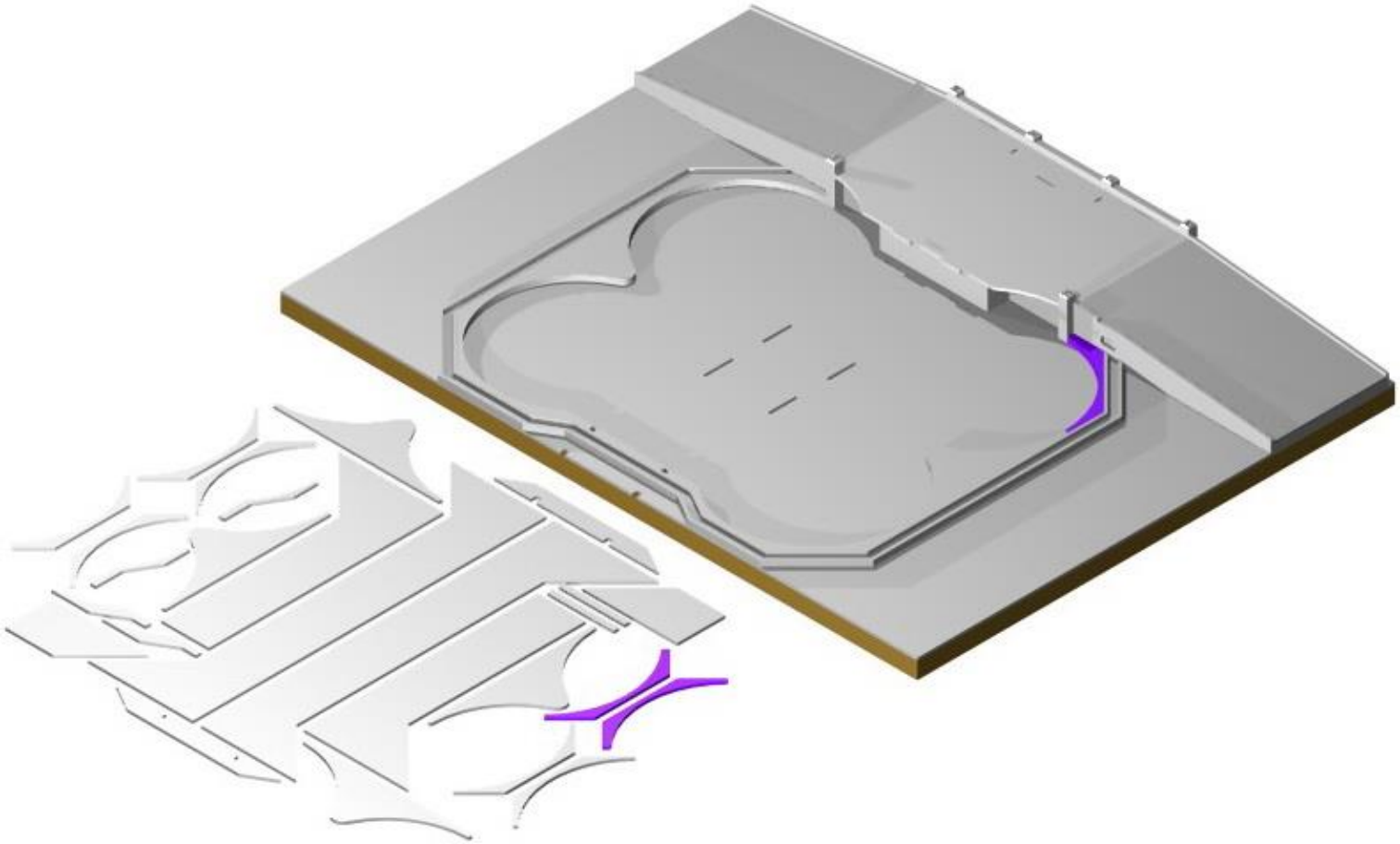


The Silo Base Fill In’s - 09

These parts will require trimming after the Silo Bins have been located in place. They can be laminated together but do not glue at this stage.

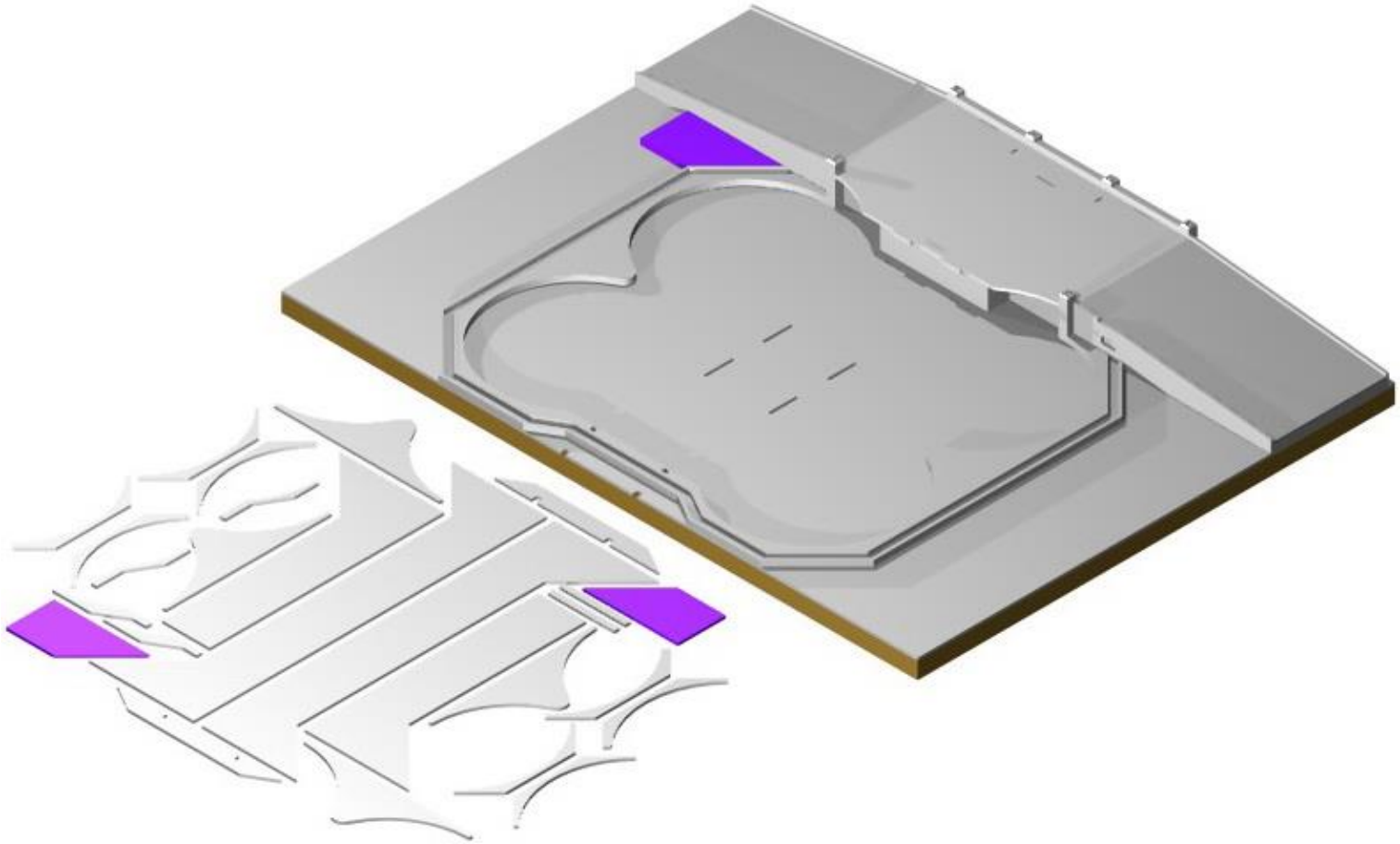


The Silo Base Fill In’s - 10



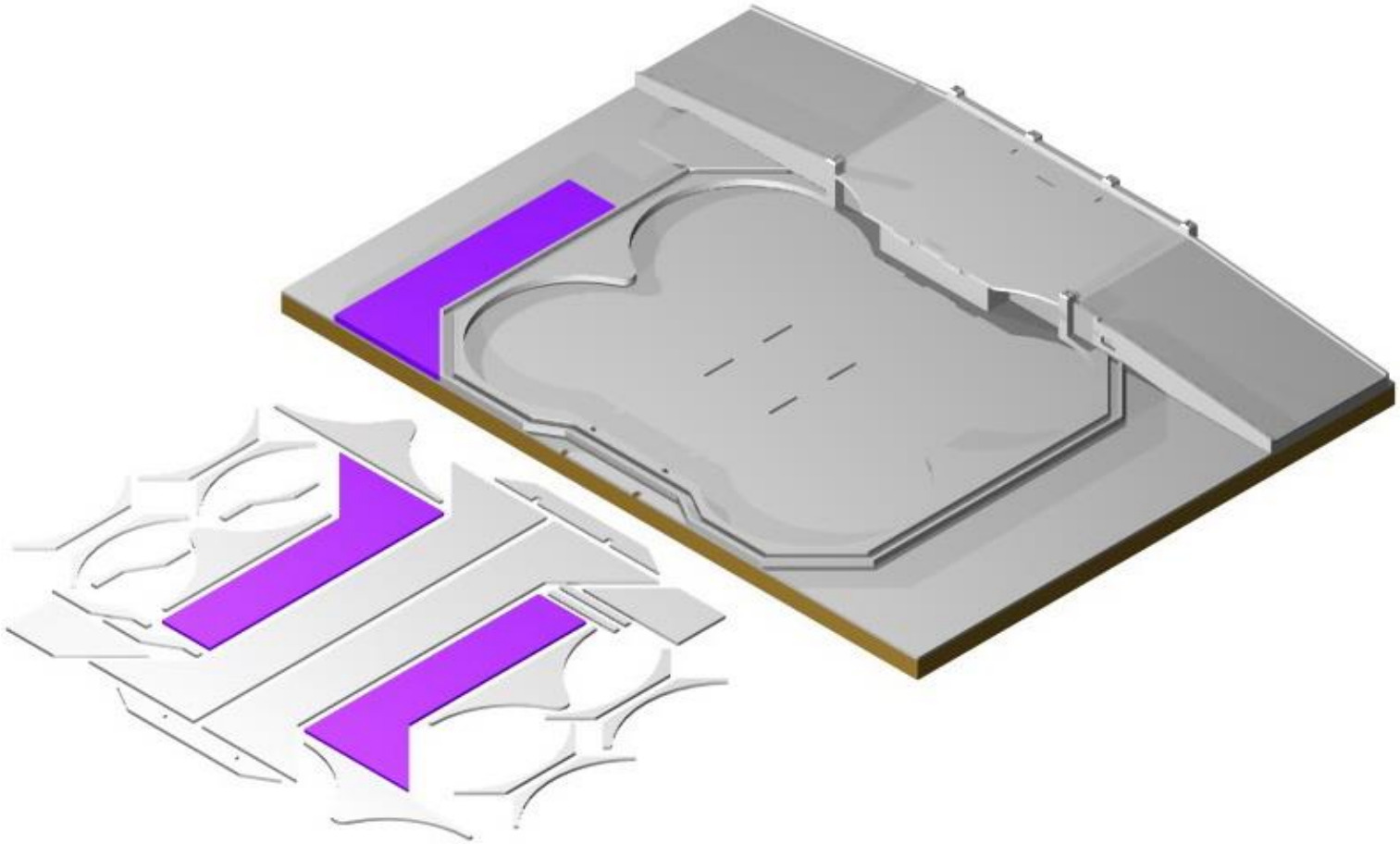
The Silo Base Fill In’s - 11

This is the start of the outside parts that make up the concrete area of the silo.



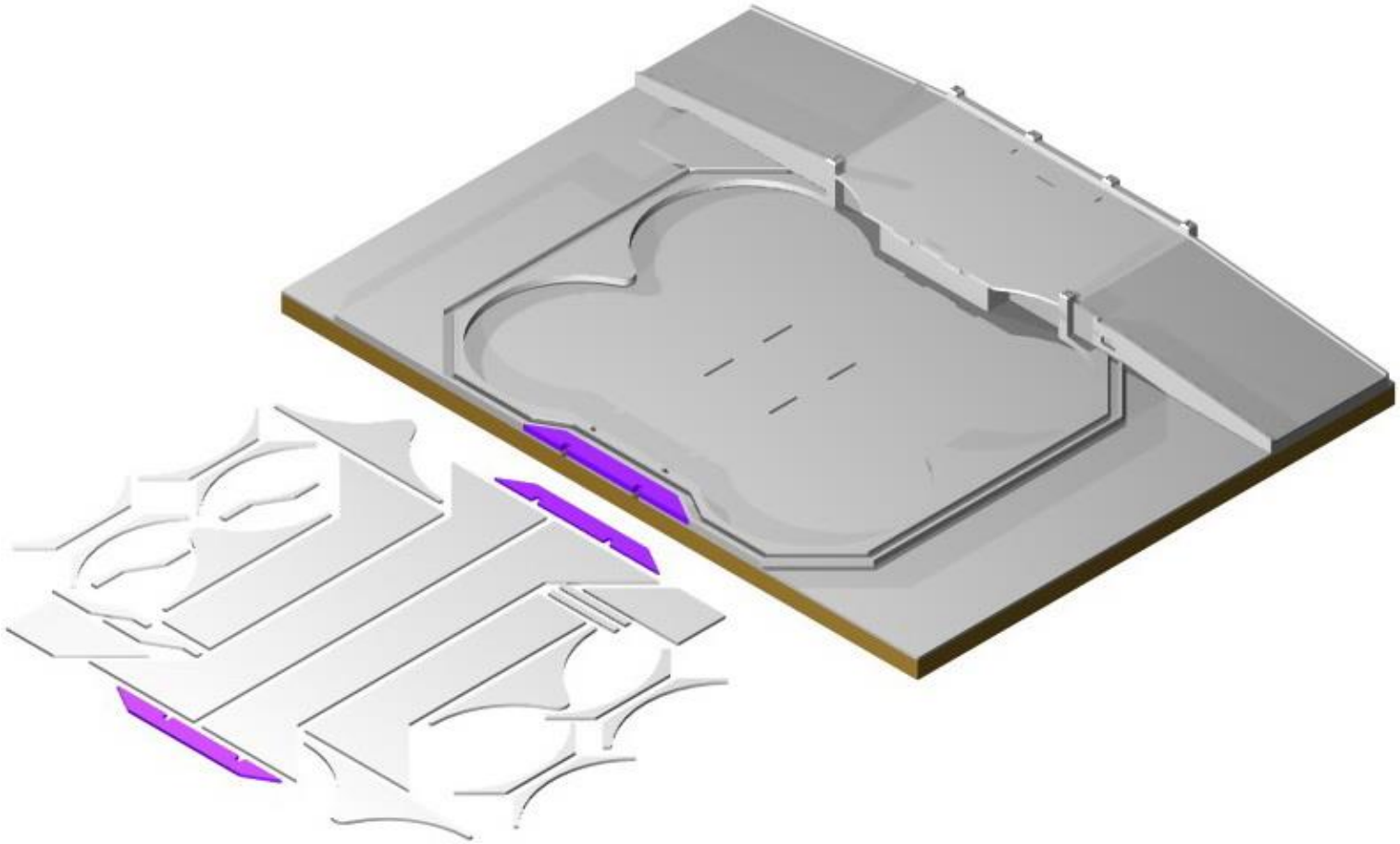
The Silo Base Fill In’s - 12

The gap that is left allows the Spoil Bin to be located in position.



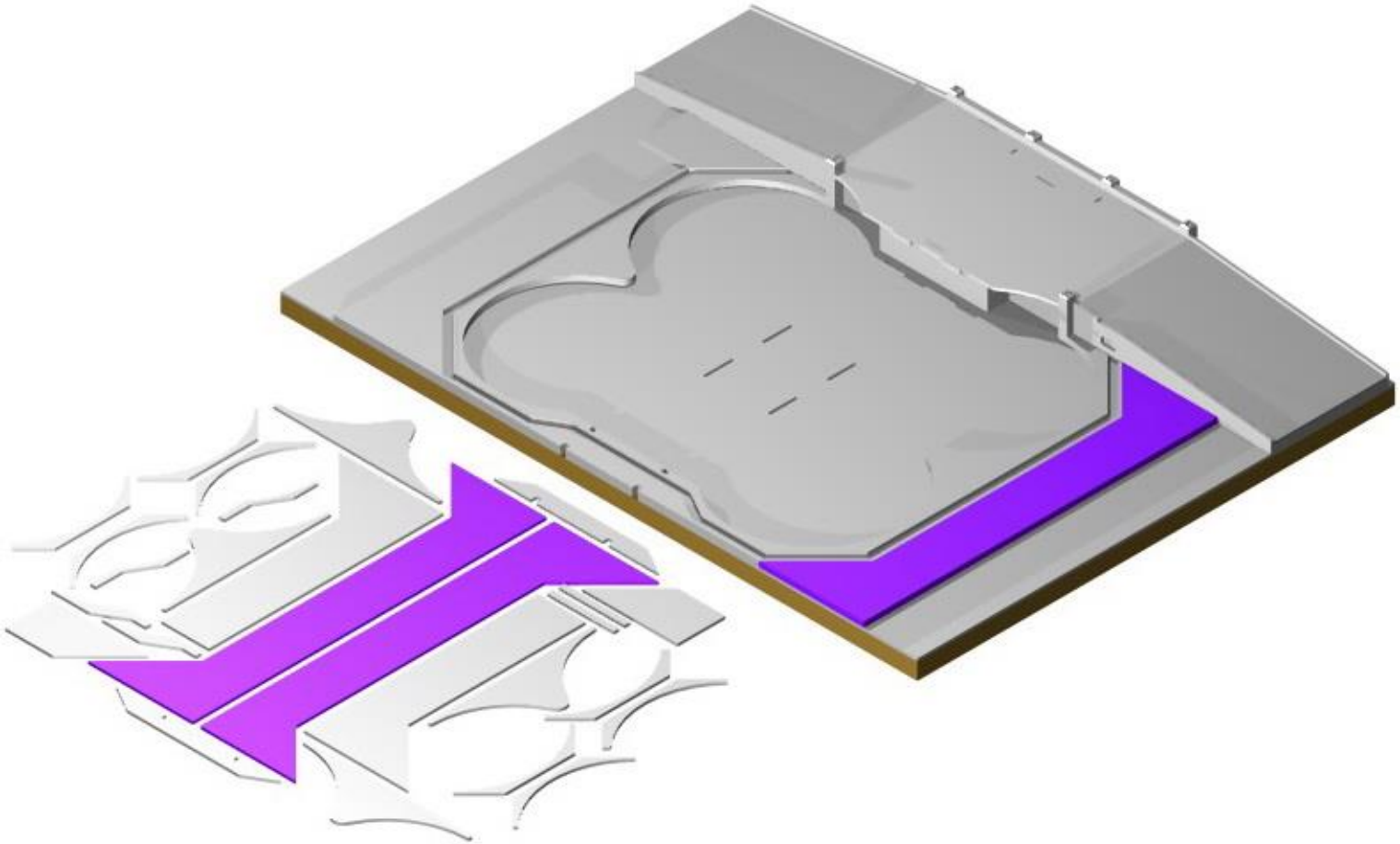
The Silo Base Fill In’s - 13

These parts fit around the footings of the out loading platform.



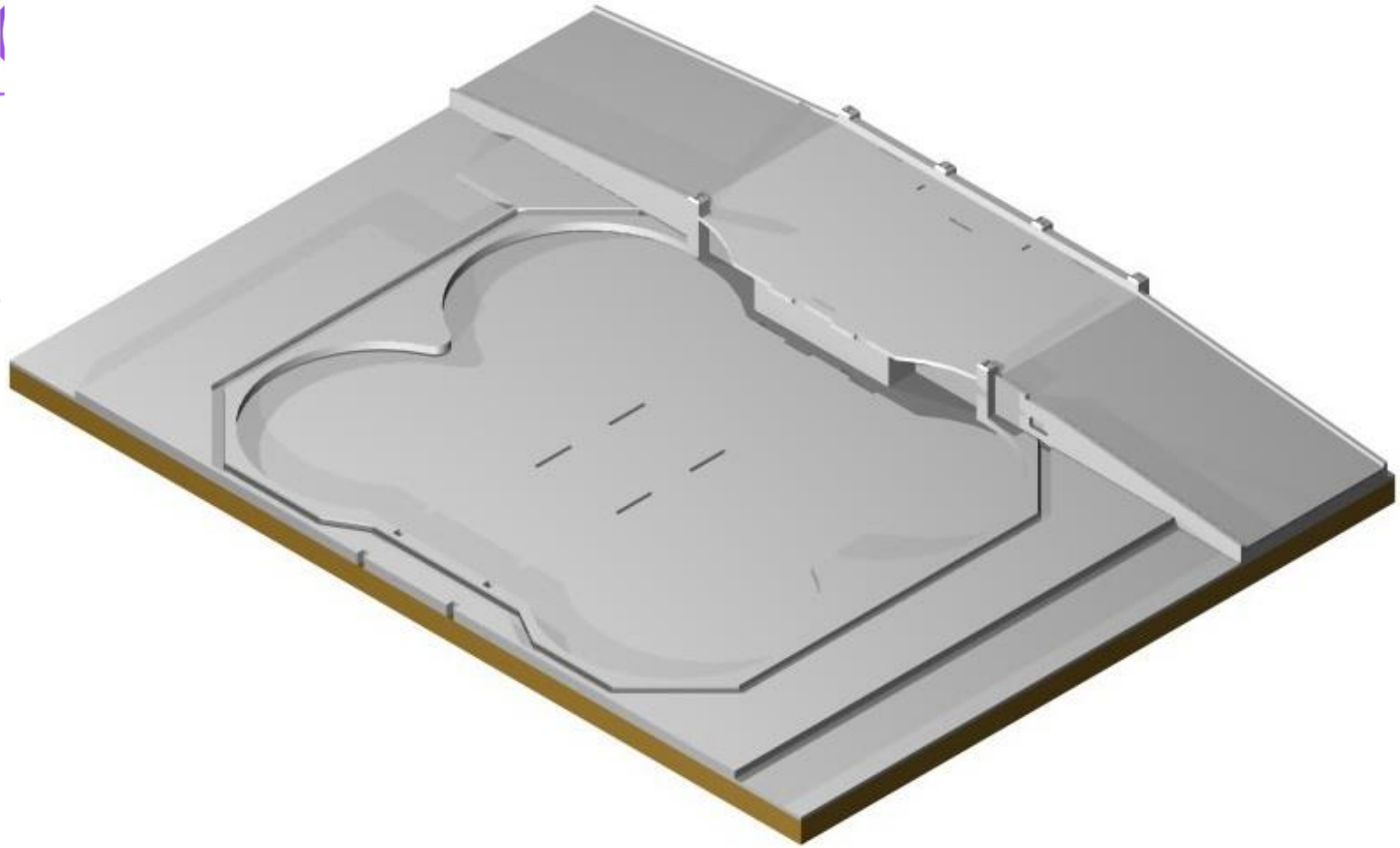
The Silo Base Fill In’s - 14

These parts are to simulate concrete, and on the outside edge there needs to grass located on the base.



The Silo Base Fill In’s - 15

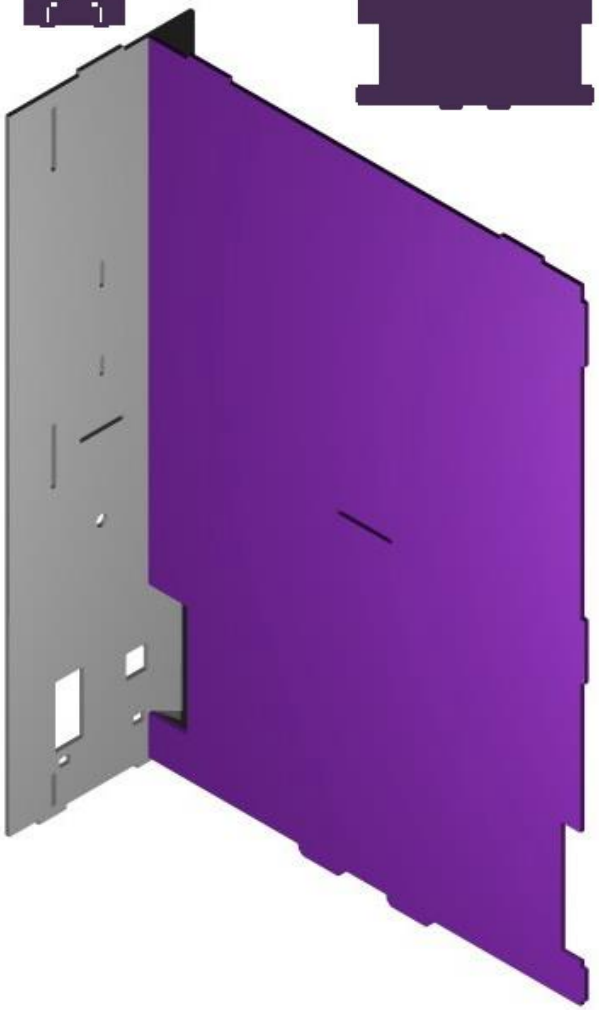
The parts can be laminated together, but please leave the gluing into location until after the silo bins have been located. The fillers can then be trimmed to fit and located and glued.



So Far, So Good!!!!!!

- Now if you have gotten 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.
- The following slides, show the method of construction of the silo sub-frame and then follow through to the construction of the roof section, that is fitted to the sub frame.

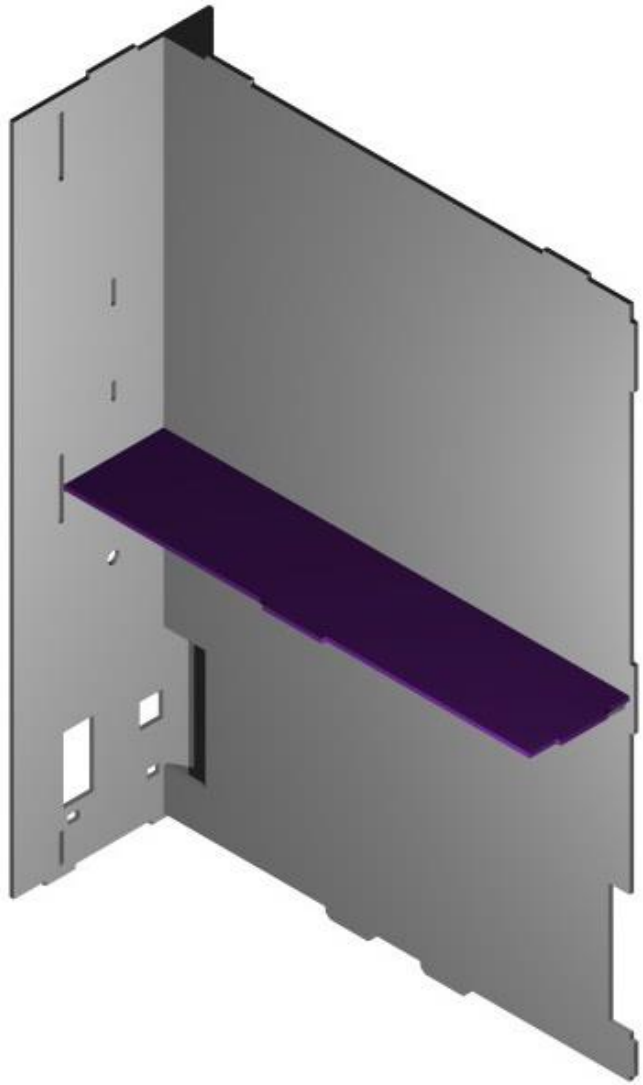
Silo Sub Frame - Step 1



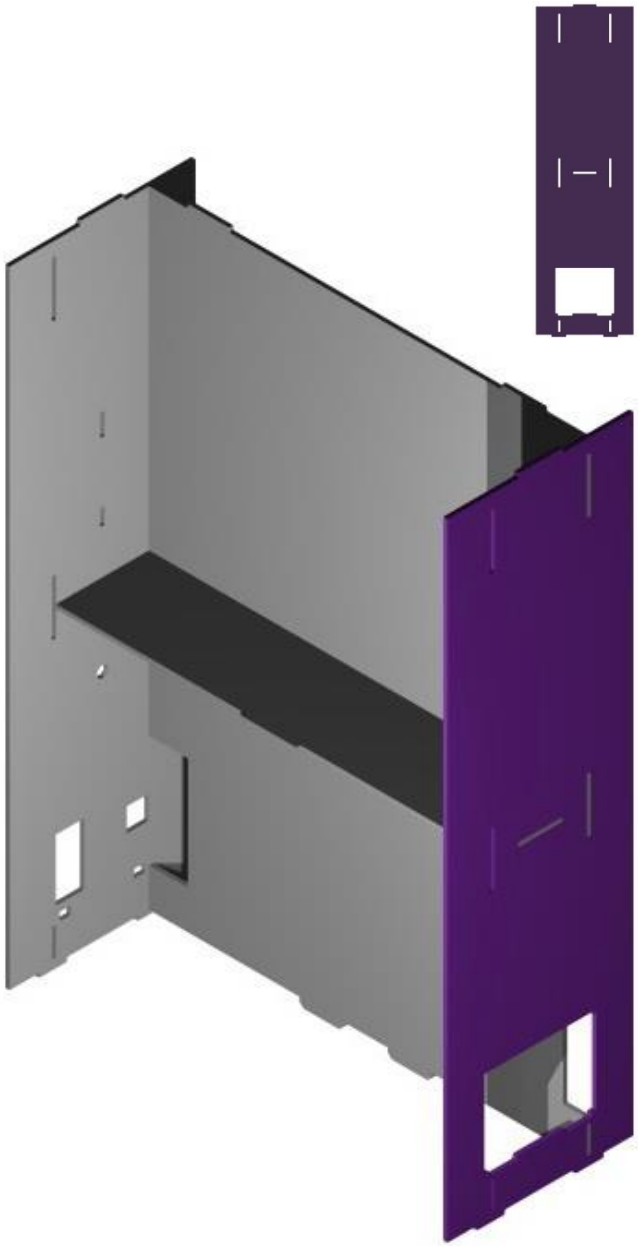
Please test fit all of the parts before gluing together. When you are happy with the fit, you can then proceed.

Note that the side panels can only be fitted one way as the bottom tabs differ in size by 2mm. Ensure that the large gap in the side panels goes to the front. However the front panel can be reversed, so be careful. The door is always to the right side of the silo (looking from the front of the silo)

Ensure that all parts sit absolutely flush, and run glue between parts allowing capillary action to work the glue into the joints, when the sub frame is complete.



Silo Sub Frame - Step 2



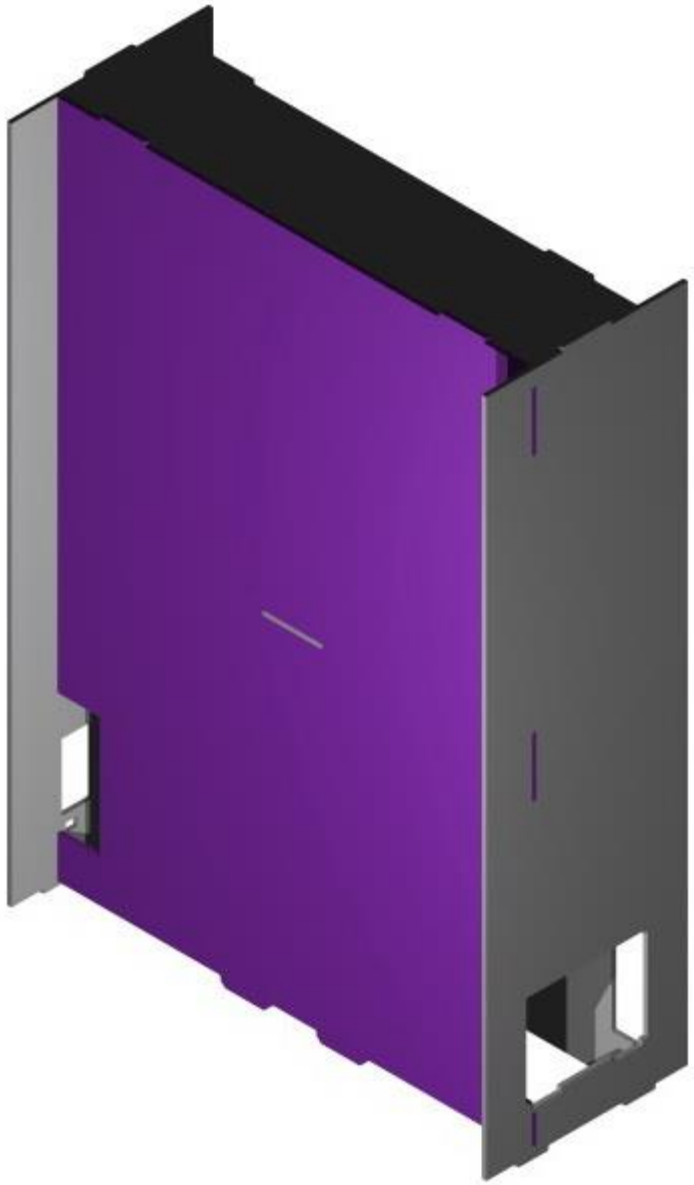
The other side panel is located and then the back panel.

When you have all of the parts in place, use elastic bands (supplied on the kit) to hold the sub frame together, and run glue between the joints.

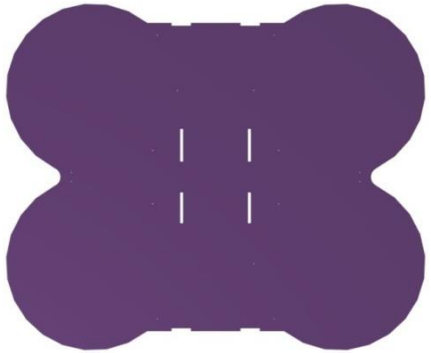
Please do not allow glue to touch the elastic bands.

Set aside to dry before proceeding.

NOTE that this completed frame has to be joined to the top and bottom plate of the substructure in the correct orientation, more about this next.



Silo Sub Frame - Step 3



IMPORTANT

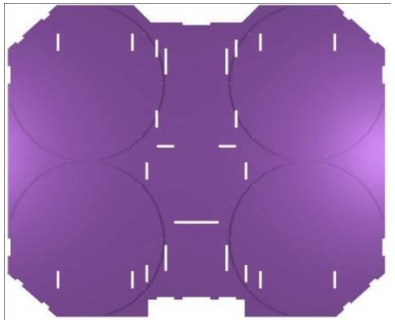
The base is fitted to the sub-frame in such a way that the door and vent opening to the front of the silo and the door is on the right of the silo looking at the silo front.

Test fit the base plate before fitting and clean up any slots and tabs accordingly.

The bottom tabs will protrude through the base of the silo to allow location of the sub-frame into the previously made base.

The base plate is mirrored and will fit either way.

Silo Sub Frame - Step 4



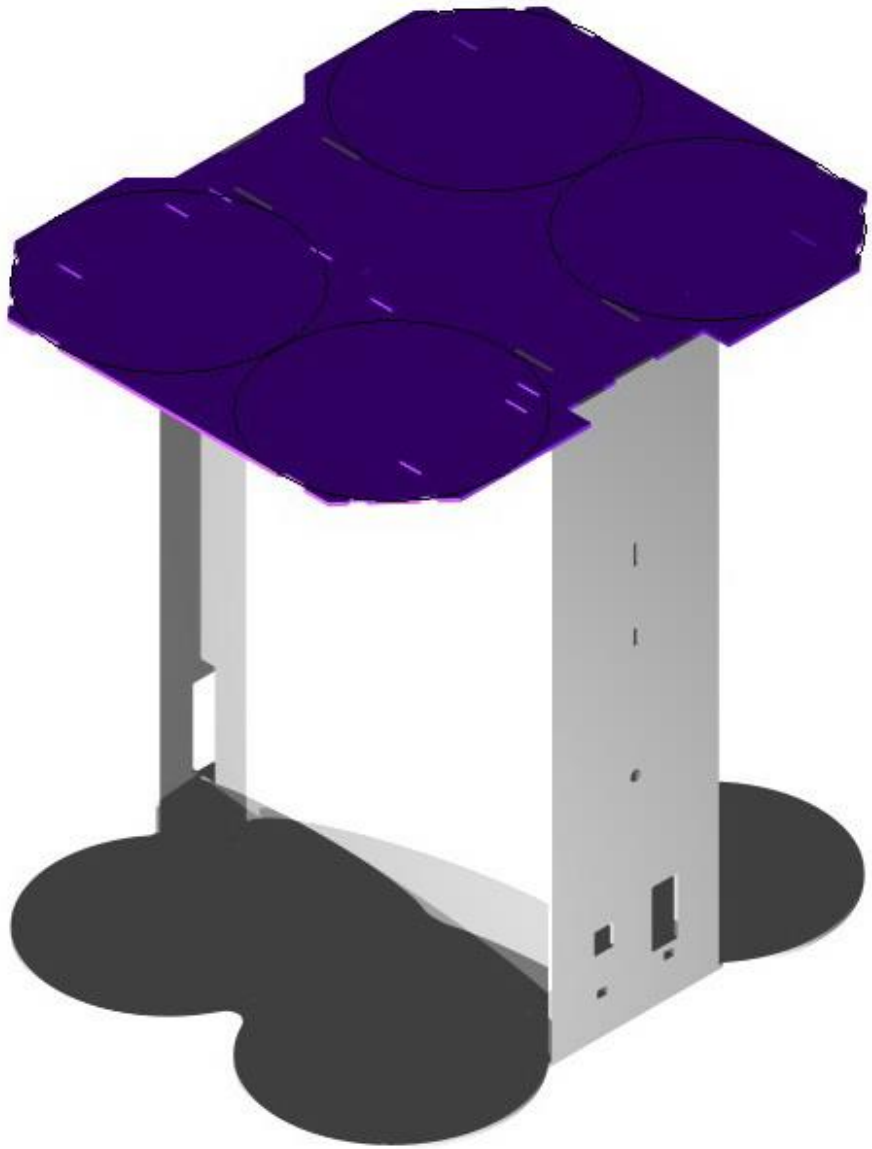
It is very important to locate the top plate in the correct orientation. The cupola fits to the substructure with the rear face of the cupola lining up with the rear face of the sub frame. The rear of the panel has 2 slots to accommodate the cupola.

Test fit the top plate before fitting and clean up any slots and tabs accordingly.

Check the fit of all the parts that will be located into the top plate before gluing it into place.

Be very careful how you handle the structure at this stage as the parts have no support at the ends, and they can be easily broken by a simple over zealous push when trying to locate a stubborn tab.

Remember to treat it carefully. If it breaks the part can be butt glued, but it then becomes a much more difficult task to complete.



Silo Sub Frame - Step 5

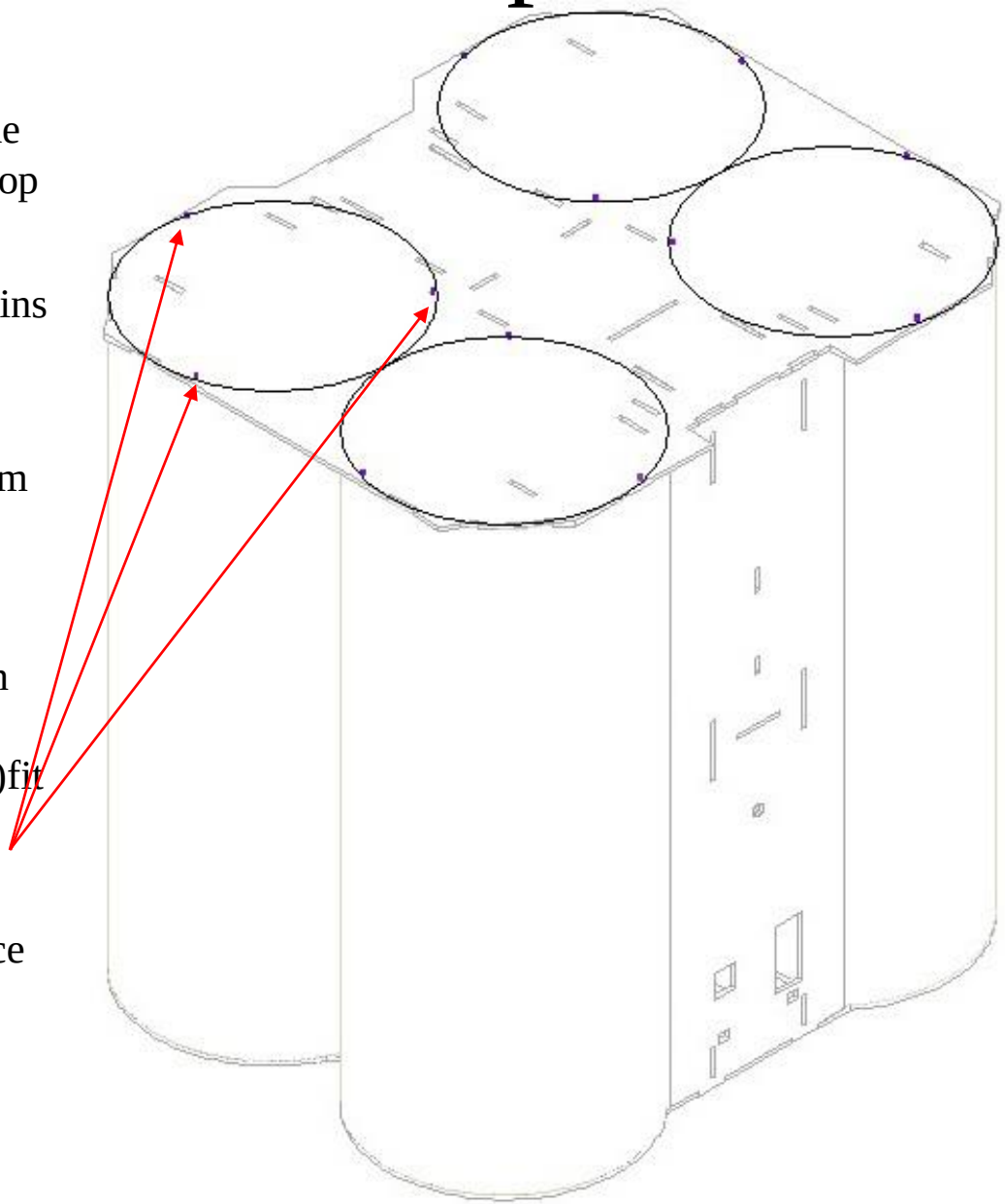
The next step is to fit the bins.

The 90 mm downpipes should fit neatly to the outer edges of the base plates. However the top plate is a little bit tricky.

The top plate has etched circles, so that the bins can be lined up and glued into the correct position.

Locate the 1.2 mm holes in the top and bottom plates (3 for each bin) and line the bins up. Working on one bin at a time locate the bins accurately so that the 1.2 mm holes lines up with the centre of the bin walls. Drill holes in the bins using the 1.2 mm drill (Supplied, so that the 8 mm lengths of brass rod (Supplied)fit through the acrylic into the bins. Repeat this process with each bin.

This also applies to the base of each bin. Once the holes are drilled, run supa glue into the holes and fit the pins. File the excess pin material so that the pins fit flush with the acrylic.

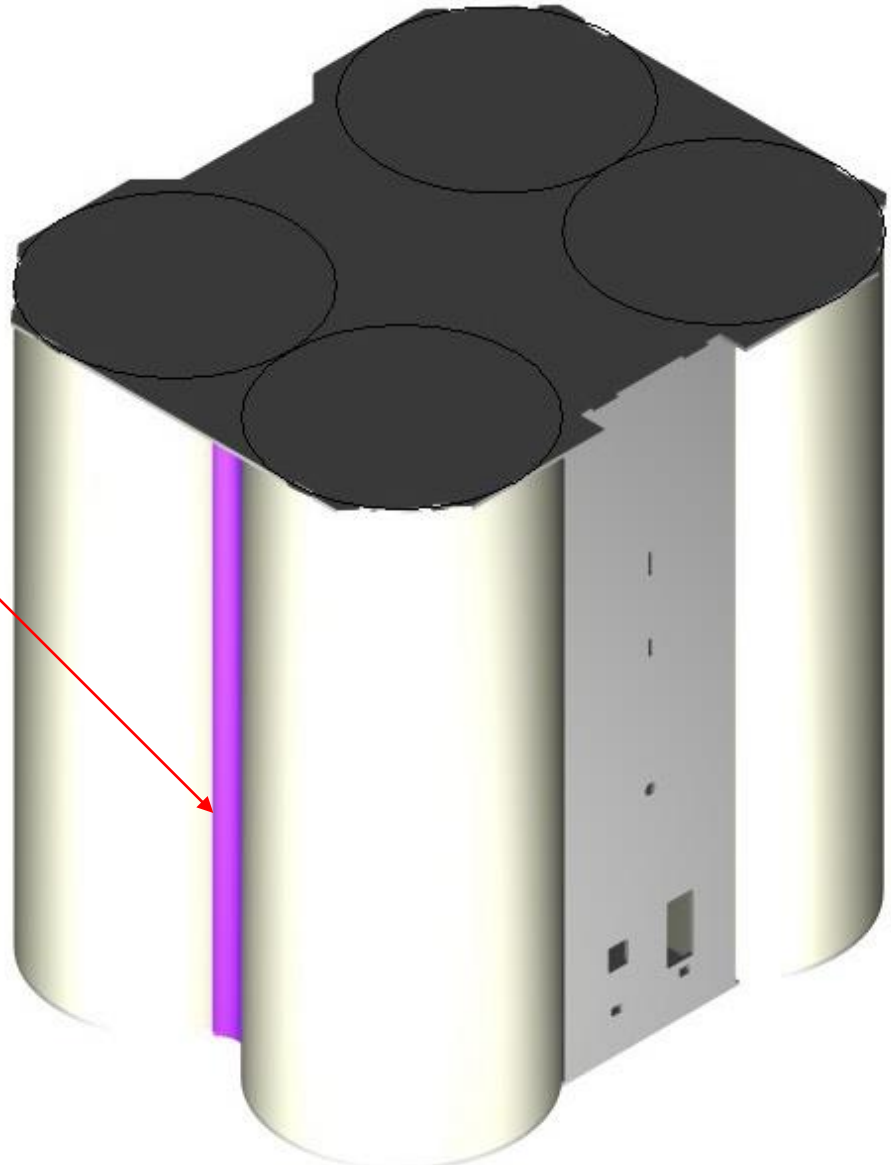


Silo Sub Frame - Step 6

The next step requires the joints between the bins, to be filled, with a 2 part auto body filler. Do not make up excess filler as it will harden very quickly, and you will then waste more than you will use.

Rough up the surface of the bins, to ensure a good surface for the filler to bond to. Using the 16 mm conduit supplied, run the filler into the joint. Scrape away the excess filler on the bins and acrylic before it goes off. It is easier to do now then when it goes hard.

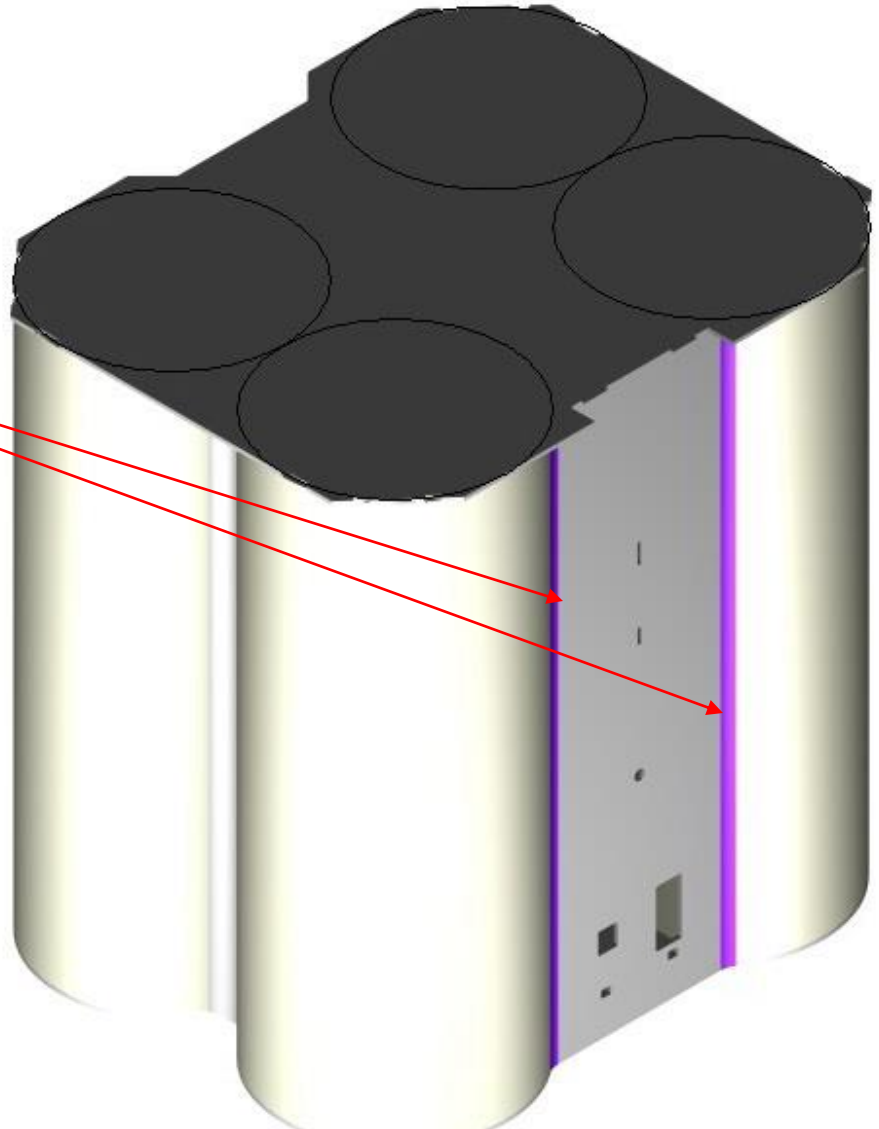
The filler will need to be sanded smooth, and then any defects filled with Tamiya putty and than sanded again. It is not until an under coat is applied that any small marks and nicks will be able to be seen, these can then be cleaned up and filled.



Silo Sub Frame - Step 7

Rough up the surface of the bins and the acrylic, to ensure a good surface for the filler to bond to. Using the 16 mm conduit supplied, run the filler into the joint. Scrape away the excess filler on the bins and acrylic before it goes off. It is easier to do now then when it goes hard.

The same applies to these joints as did to the previous joints.



Silo Sub Frame - Step 8

After the filler has dried, sand the joints to a smooth finish, and using Tamiya filler, fill any gaps, and sand again. You can also fill any of the tab joints on the front and rear of the silo, and sand then smooth as well.

Next you will need to bore a few holes in the bins to accommodate some doors and vents.
The location of the doors and vents is up to each modeller, as there is not set positions, however, the use of photos can be the best way of locating doors and vents.

Silo Sub Frame - Step 9

The location of the doors, is best done by the use of photos, and I suggest that this is the time to make the holes for the doors and vents in the conduit that have just been fitted. The reason for this is simple: after the roof is fitted, damage to the roof components, can easily occur. At the stage you are at NOW, the holes can be cut, doors test fitted (KRM S05 casting kit) and marked for later reference.

You will still need to be careful not to damage the outer edges of the top section of the sub-structure.

The photos in the next few slides will assist in the door and vent locations, it is not necessary to have the doors in the exact positions, but a general location is what is required.

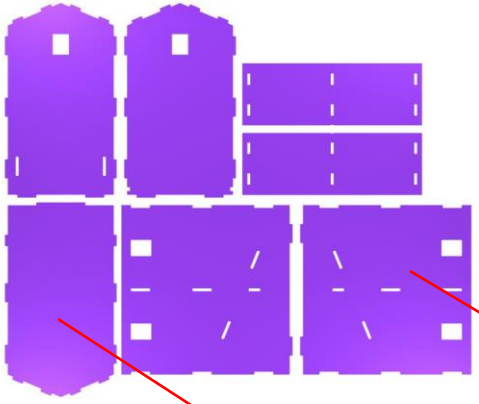
Silo Sub Frame - Step 10

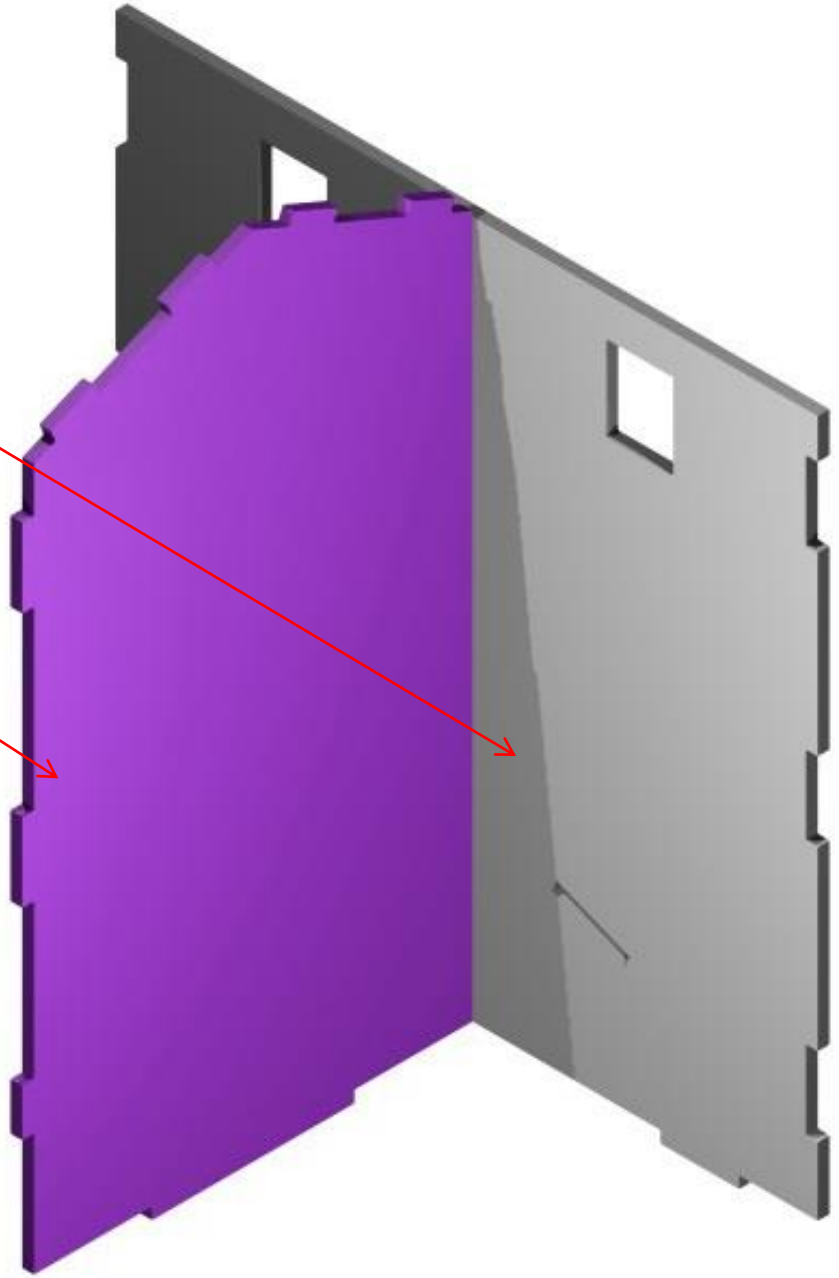
The wire vents shown in the photos will need to be scratch built. There are also special doors that some of the silos have, that can also be scratch built. The castings provided are generic, and each hole should be custom fitted with each door so as to achieve a neat fit. Luckily the 90 mm conduit has a very thin wall section, and is easily cut and filed square.

Onward, and upward

- The next step is to construct the Cupola and Bin Roof.
- A fairly straightforward process.
- So let us proceed to the Cupola and Bin Roof

Silo Cupola - Step 1



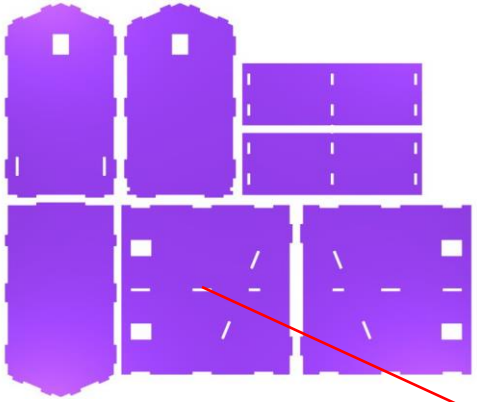


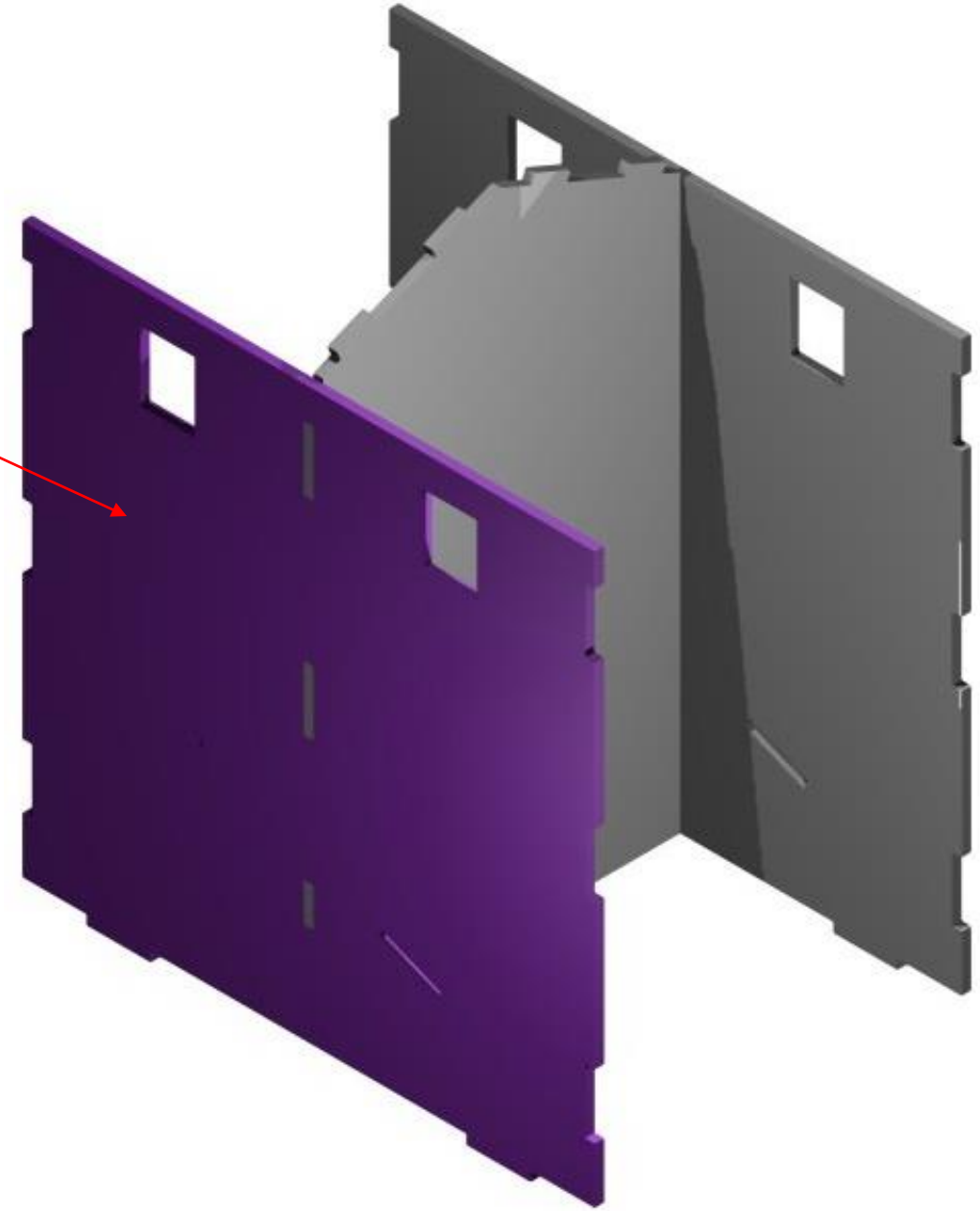
The cupola on the S027 is off-set to the rear of the silo. Refer to photos on the Memory Stick.

Both sides need to be aligned, so that the silo roof can be fitted correctly.

The cupola can only fit in one direction, so don’t worry, but ensure the sides are aligned in the same orientation.

Silo Cupola - Step 2



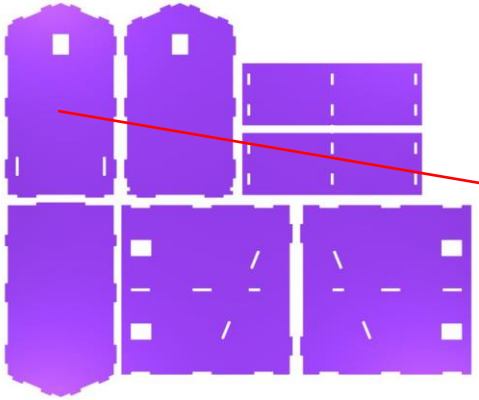


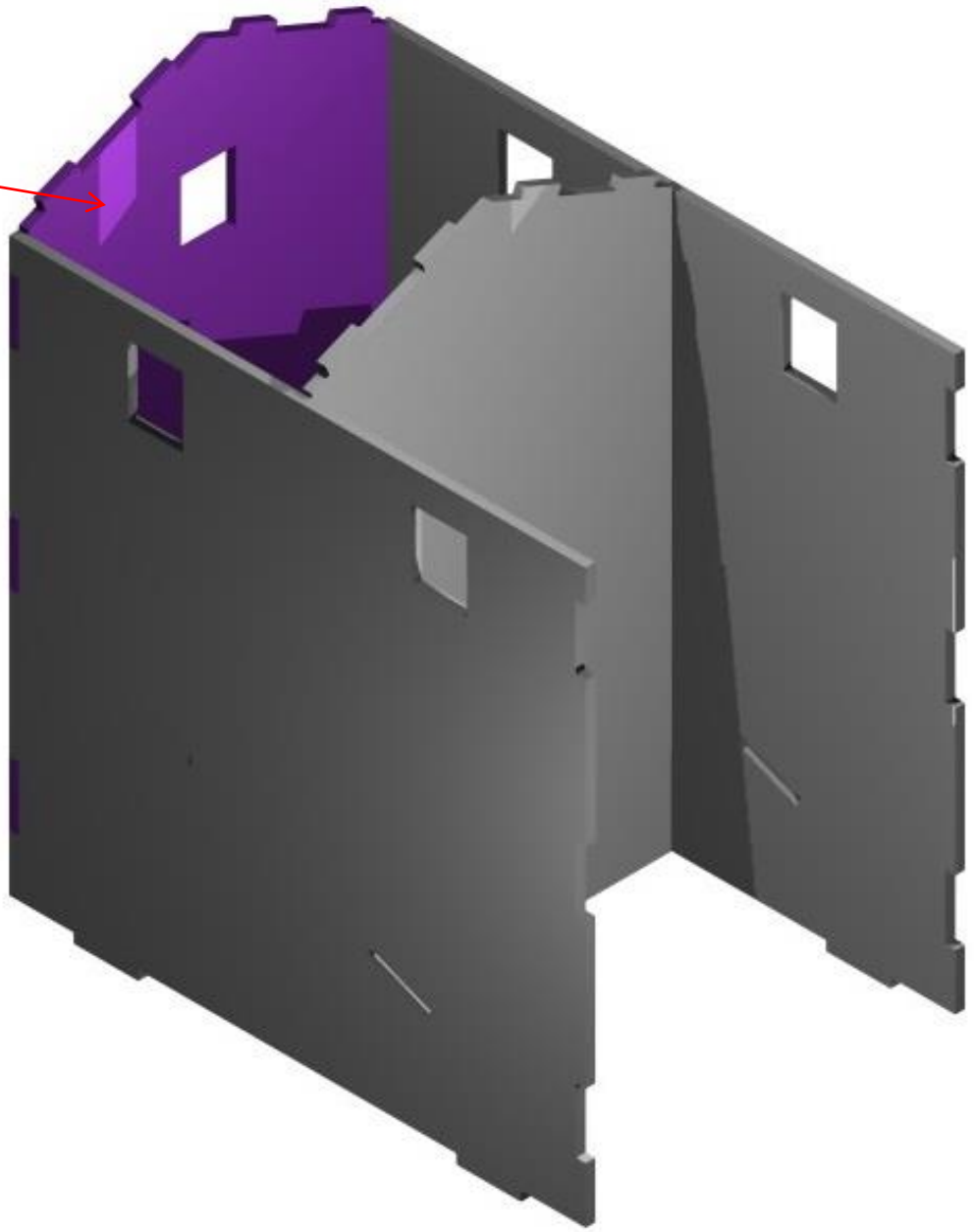
At this stage the structure is a little wobbly. But it will strengthen up in the next couple of steps.

And remember that you are only test fitting the parts at this stage.

If the parts in your kit are tight, don't force them but file them to fit easily (both the tabs and the slots). Your flat needle file will do the job.

Silo Cupola - Step 3



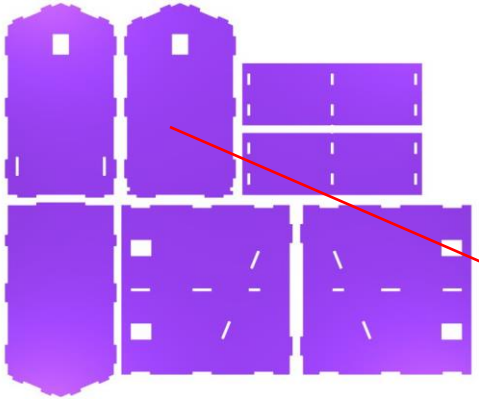


The cupola should be self squaring as the slots and tabs are a neat fit.

This end will need to sit toward the centre of the silo, as roof components fit into the tab holes. So ensure that what you have put together matches the picture.

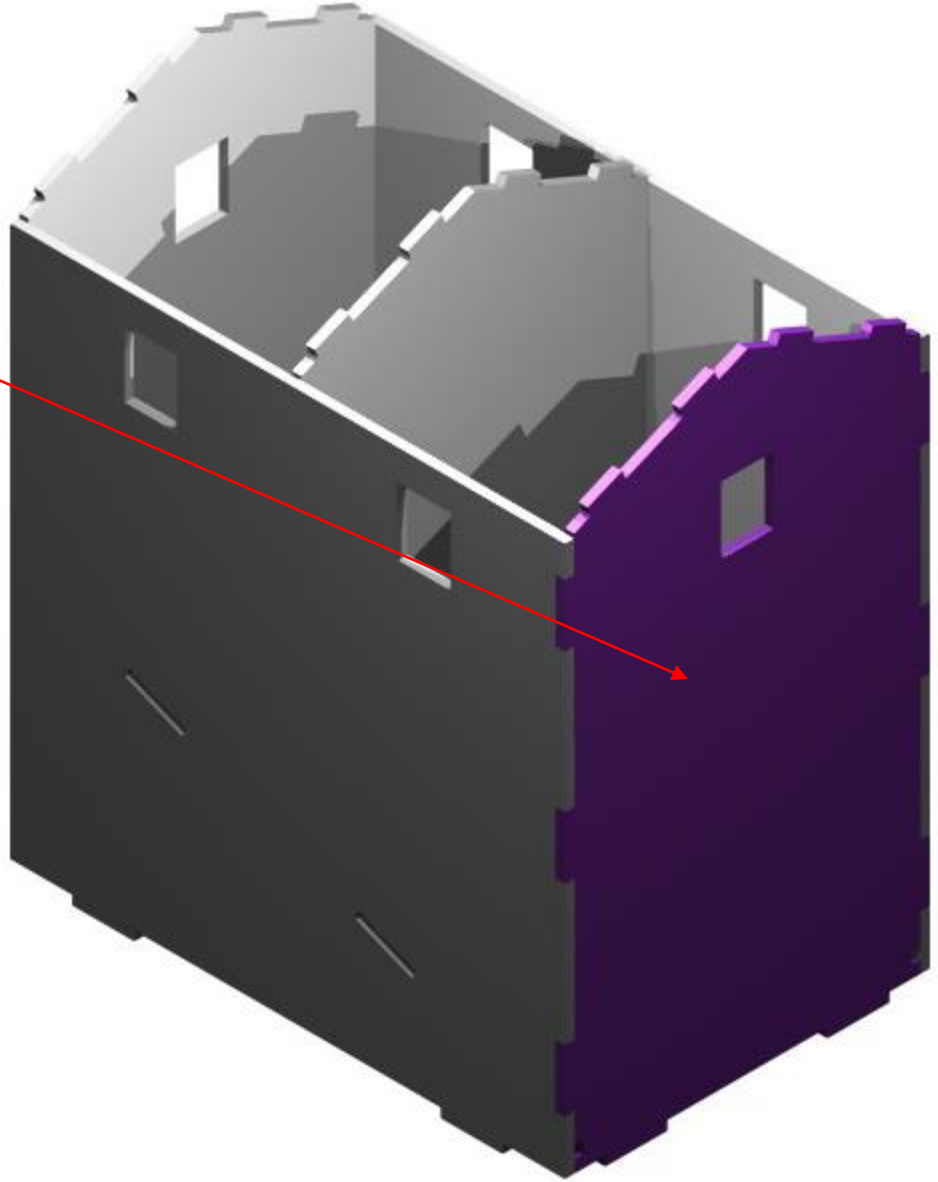
Use the elastic bands to hold the parts together while the glue is drying.

Silo Cupola - Step 4

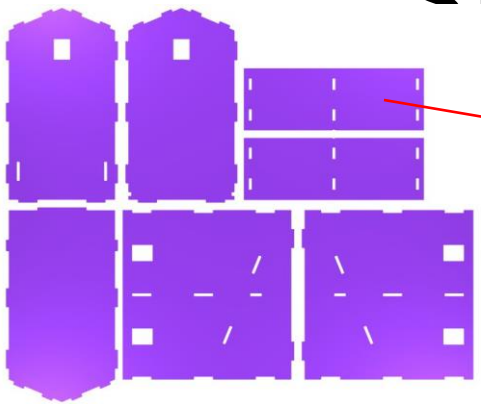


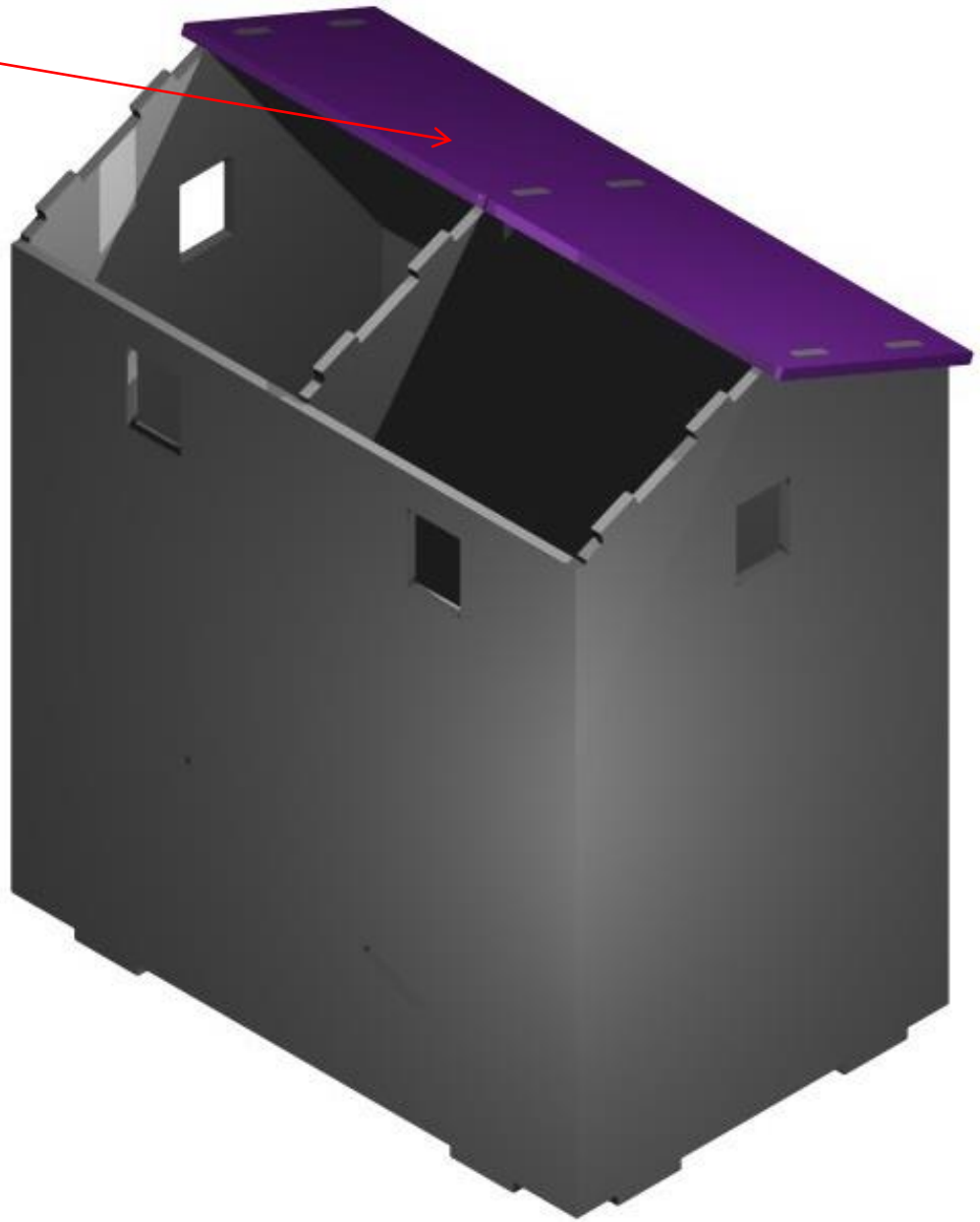
With the addition of the roof sections the building will become square and rigid.

Rubber bands can be used to hold the structure together whilst the glue dries.



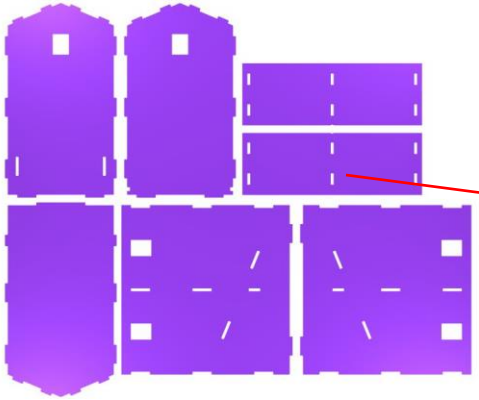
Silo Cupola - Step 5



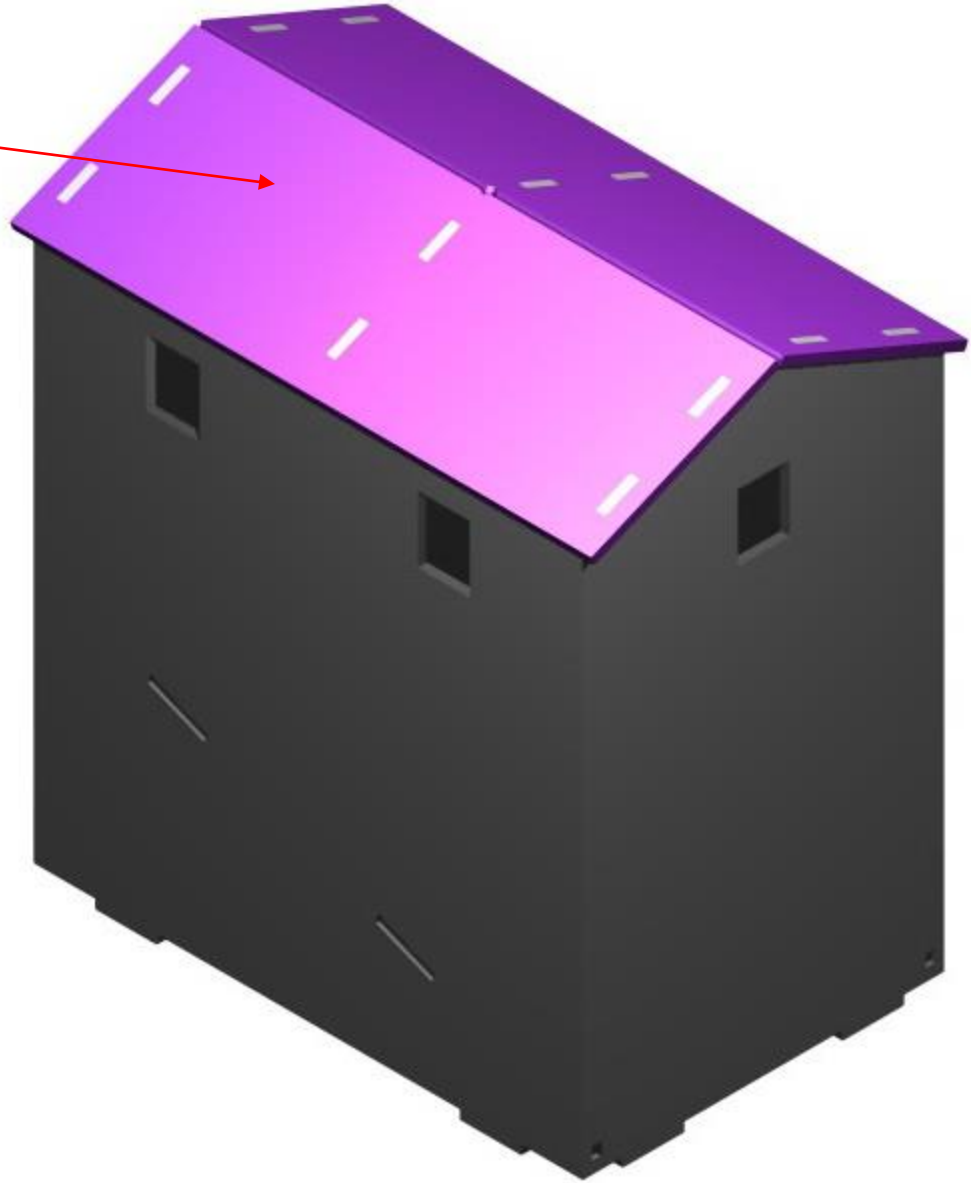


The roof sections bring the whole structure together, and square it up nicely. Please note that there is a small notch in the middle of the roof sections. These notches go to the top centre of the roof, as the roof sections are slightly offset

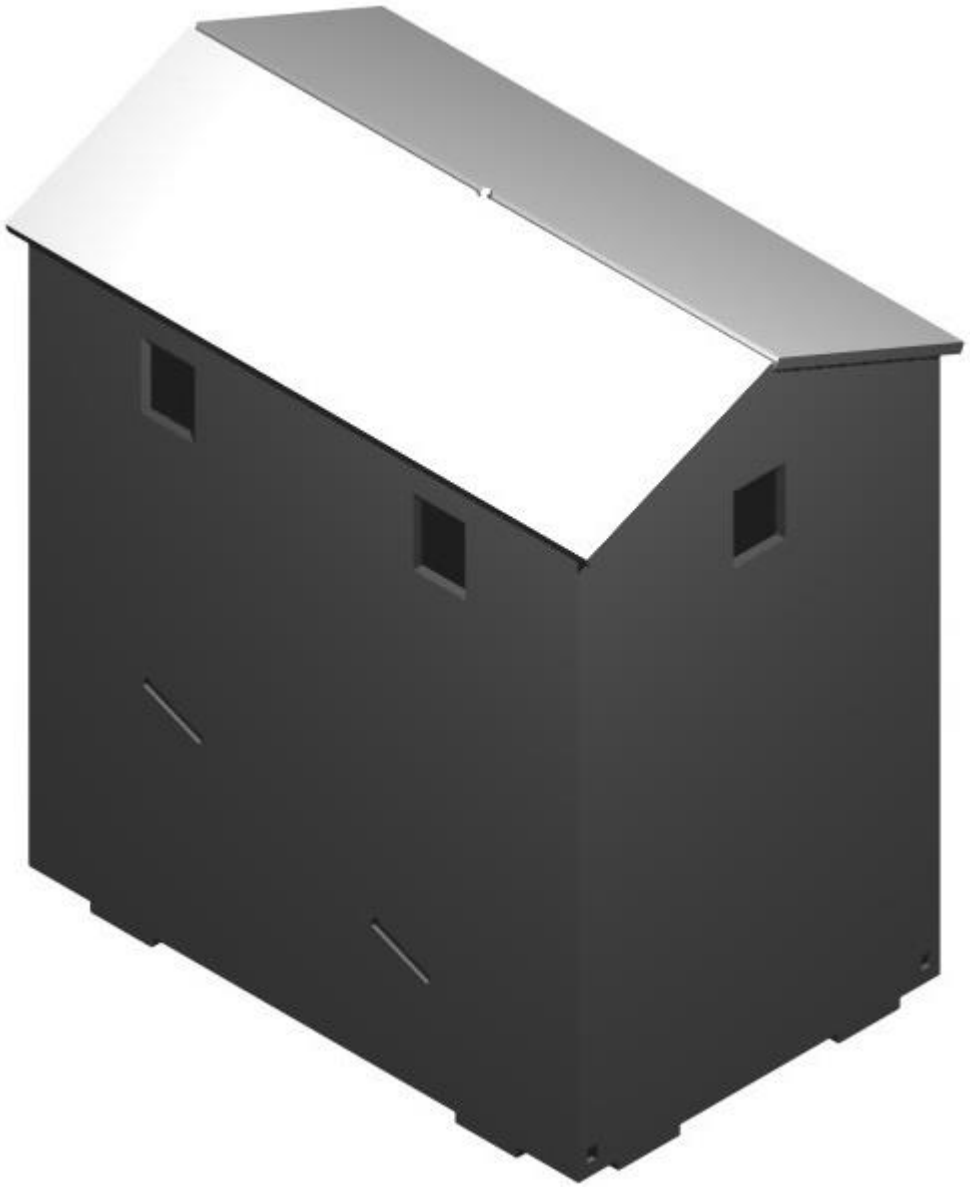
Silo Cupola - Step 6



The finished cupola ready to be added to the sub-frame.

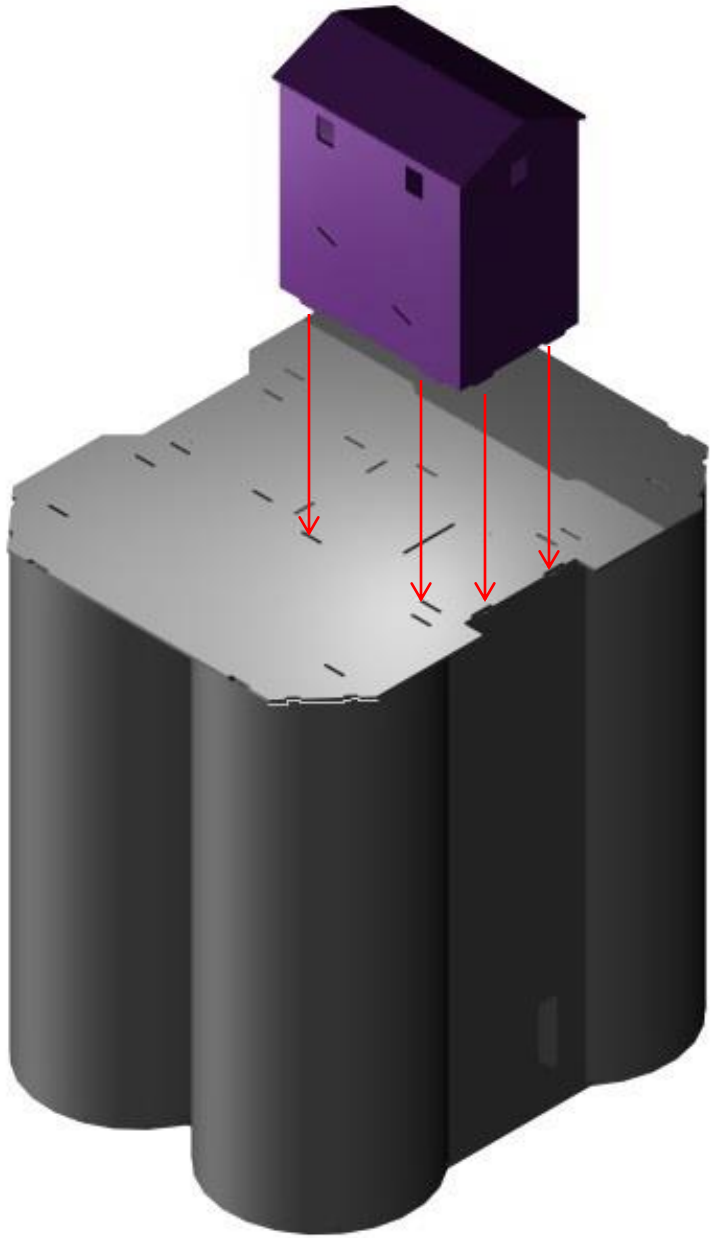


Silo Cupola



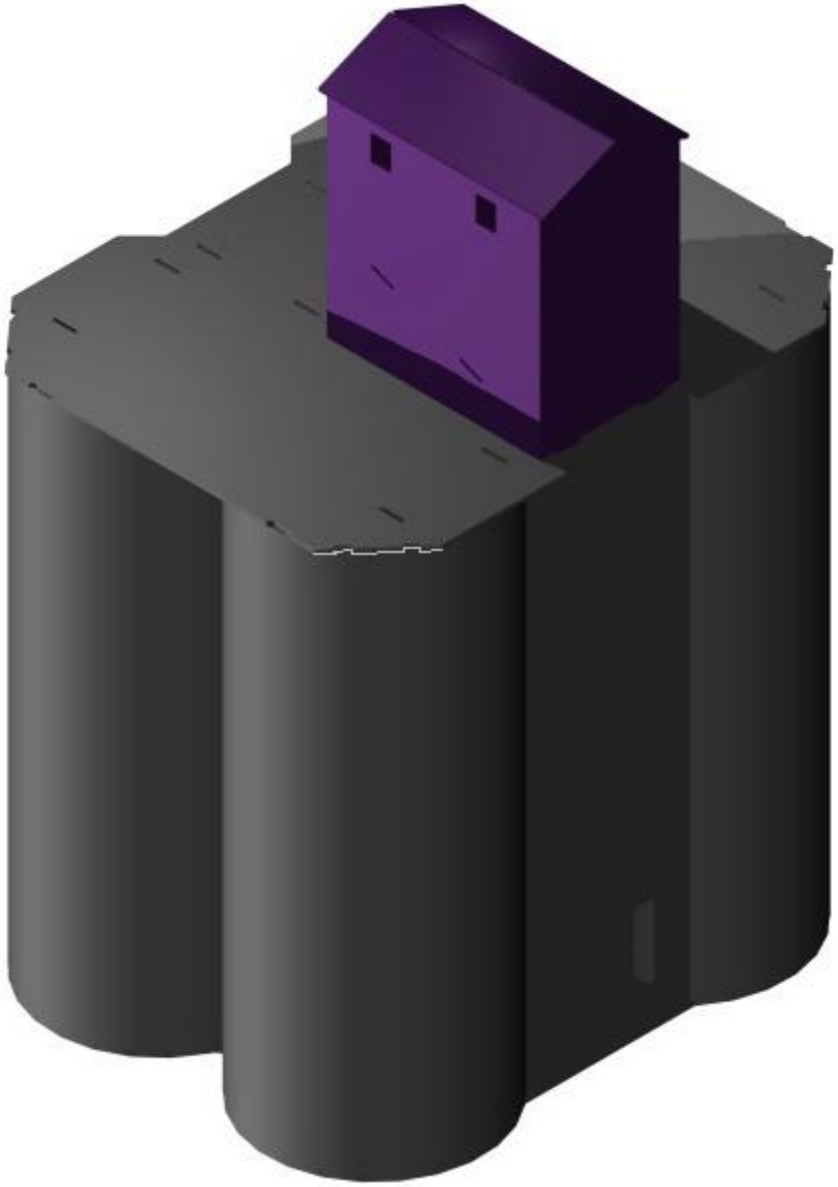
Silo Roof - Step 1

Locate the cupola into the slots in the top of the sub frame, as shown. It should be a very easy fit. File to fit if tight.

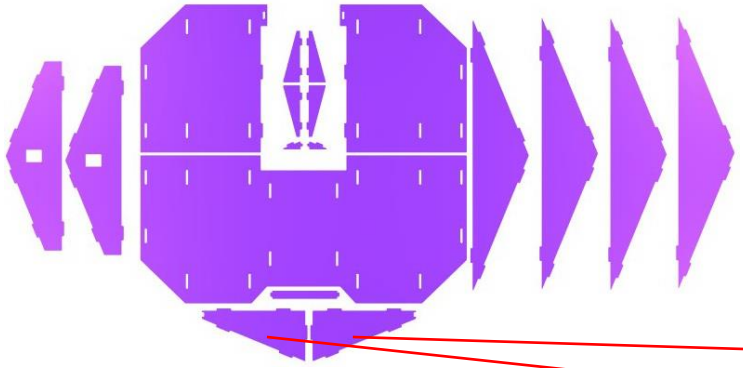


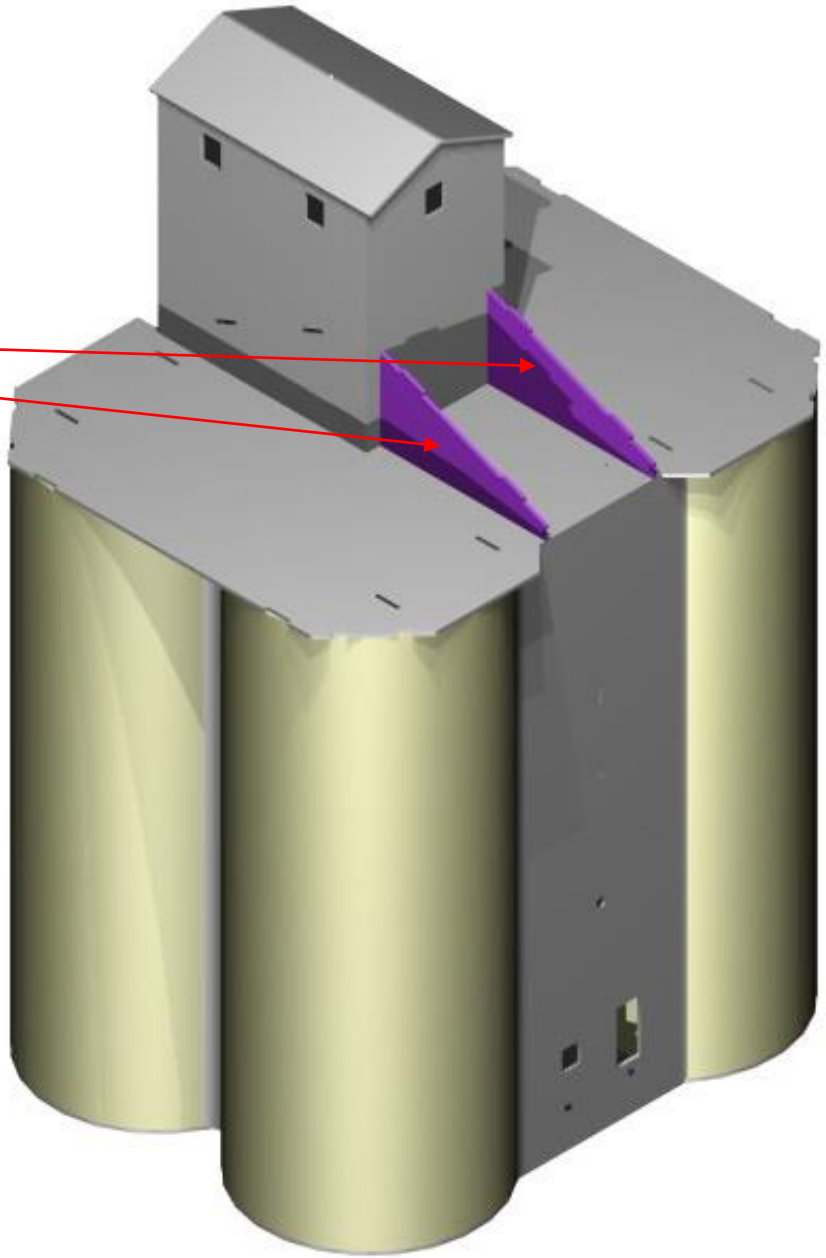
Silo Roof - Step 2

The cupola is an integral part of the roof, which we can now start to build.



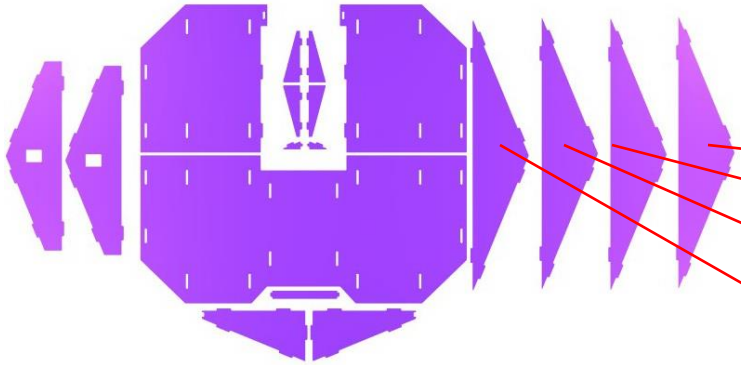
Silo Roof - Step 3

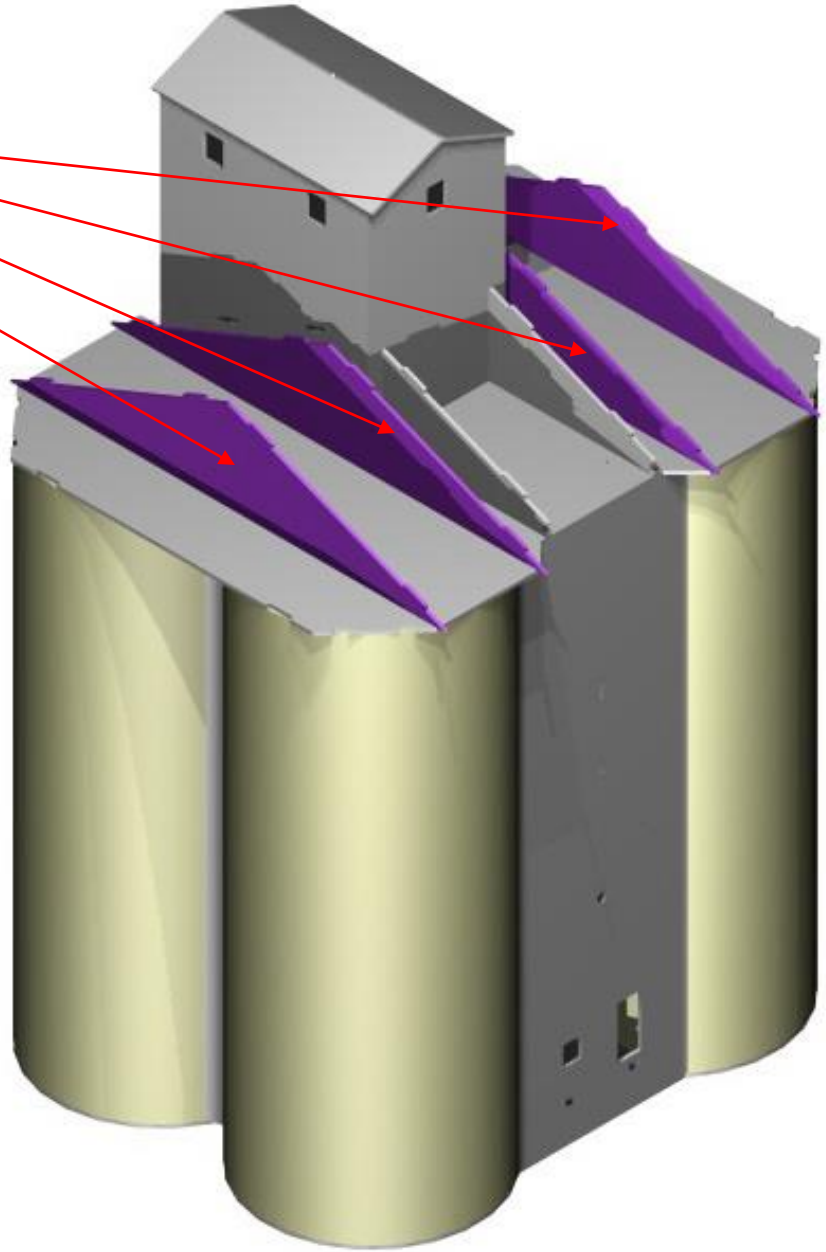




The long roof supports are located from the cupola to the edge of the bins.

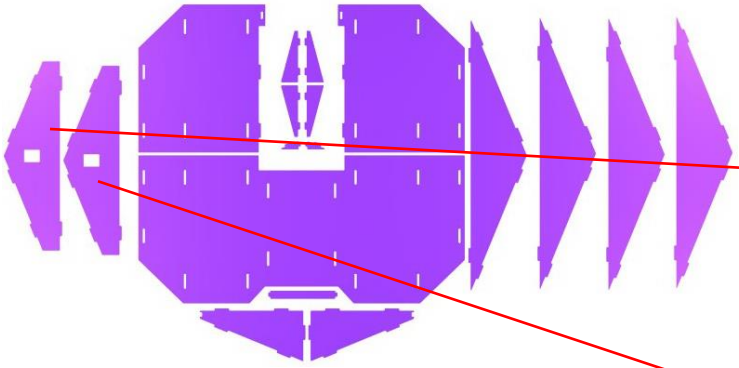
Silo Roof - Step 4

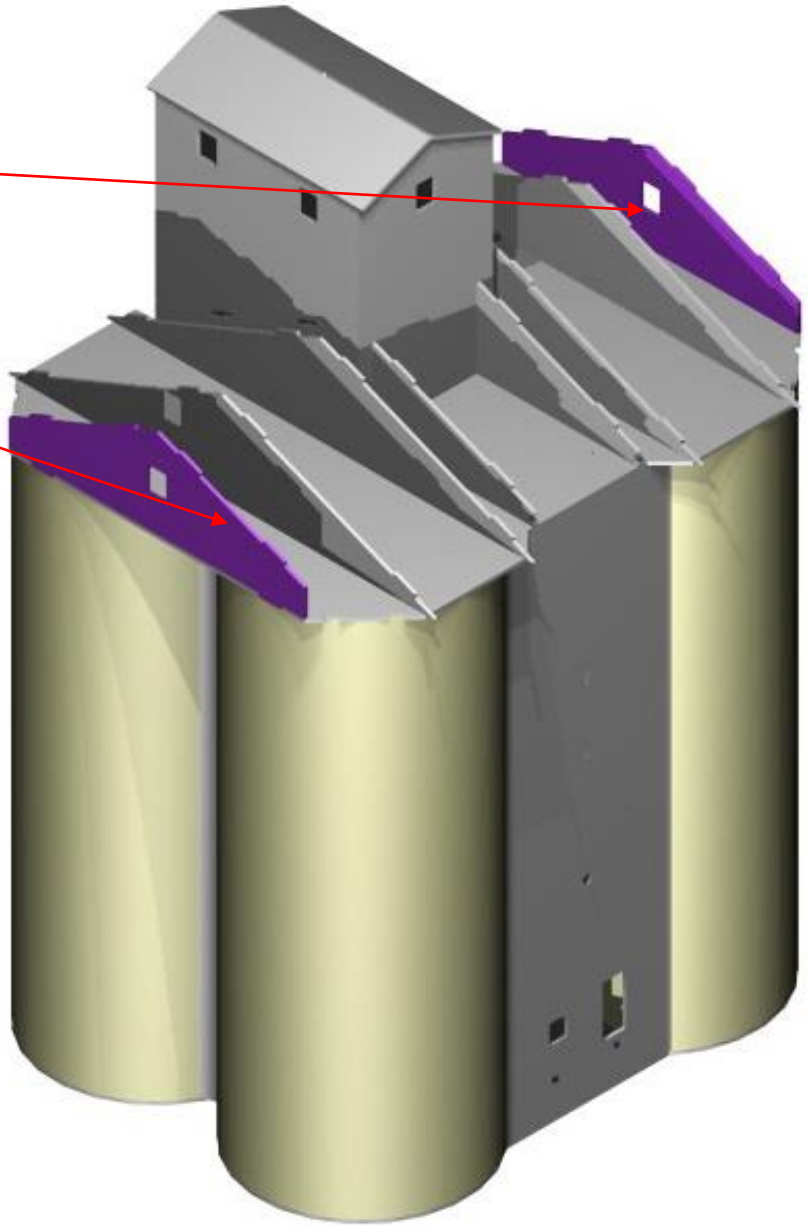




There are 4 main roof supports and while they may appear to be a little unstable when the roof goes on, they will become really solid, once the roof is in place.

Silo Roof - Step 5

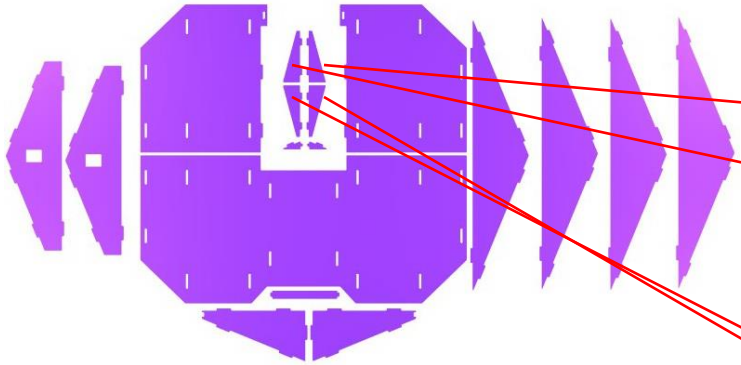




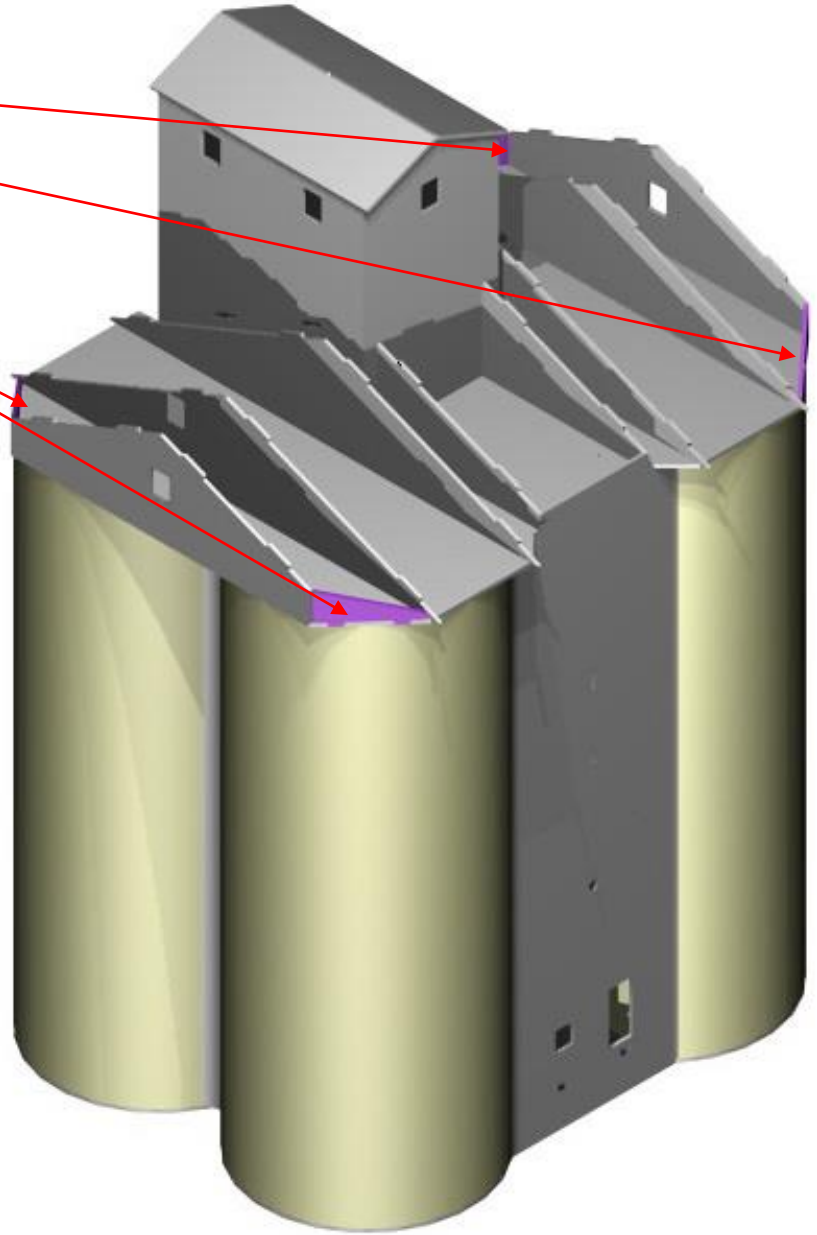
The roof ends are also a little wobbly but will stiffen up when the roof is fitted. When gluing the ends in place just hold them for 10 seconds while the glue goes of.

Alternatively, locate them in place when the roof sections are fitted.

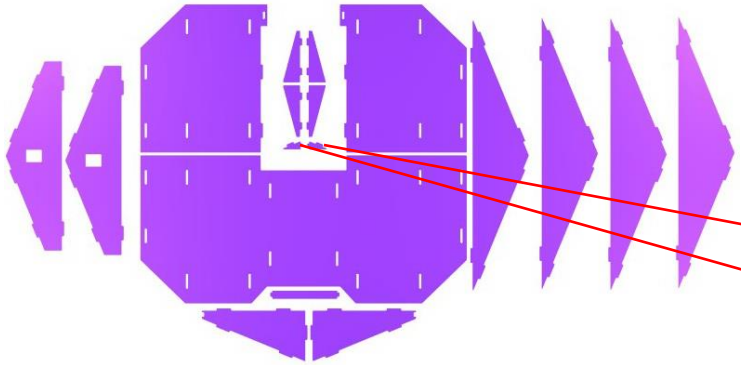
Silo Roof - Step 6

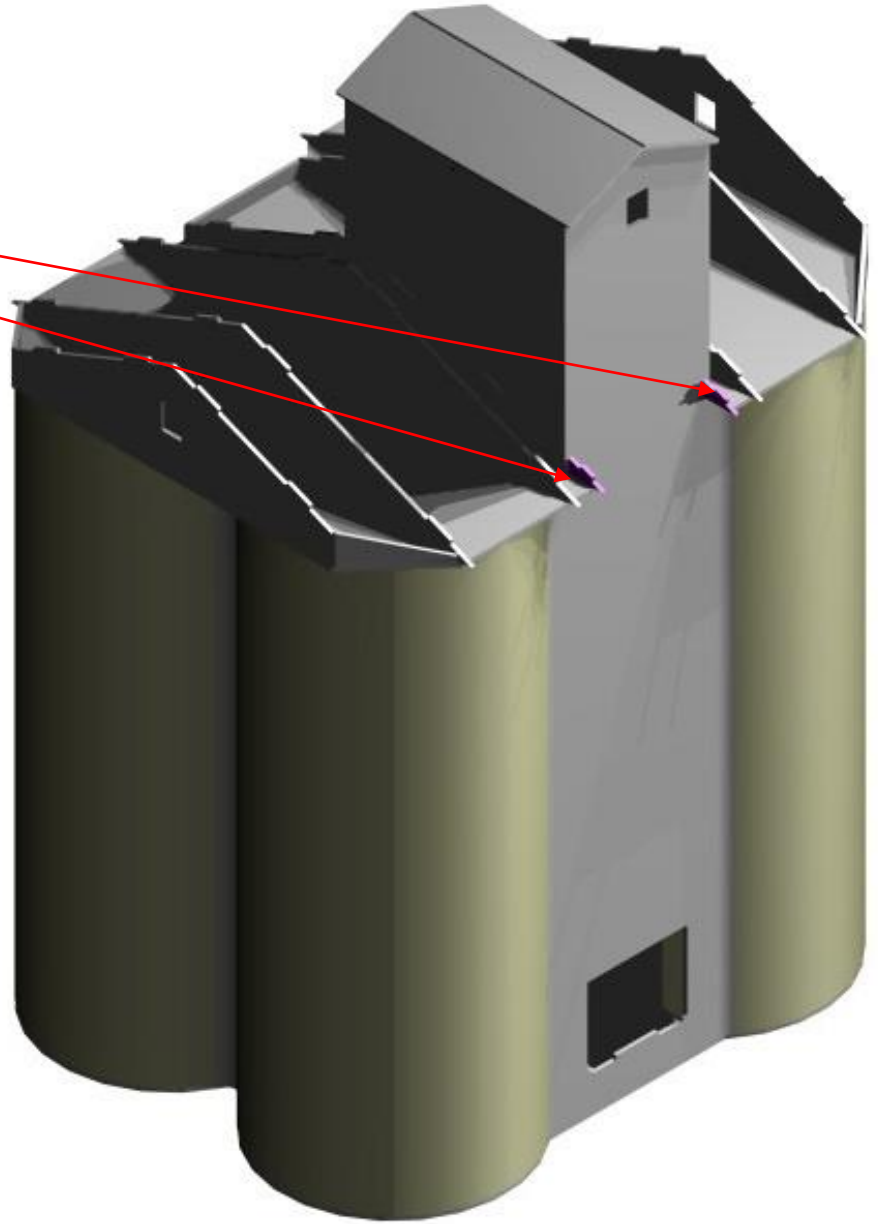


The filler parts are fitted to the corners of the roof, and may need a very small amount of filing or sanding where they fit near the roof ends.



Silo Roof - Step 7

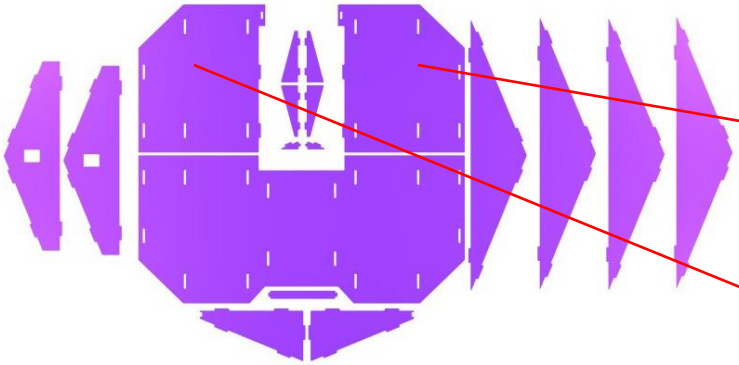


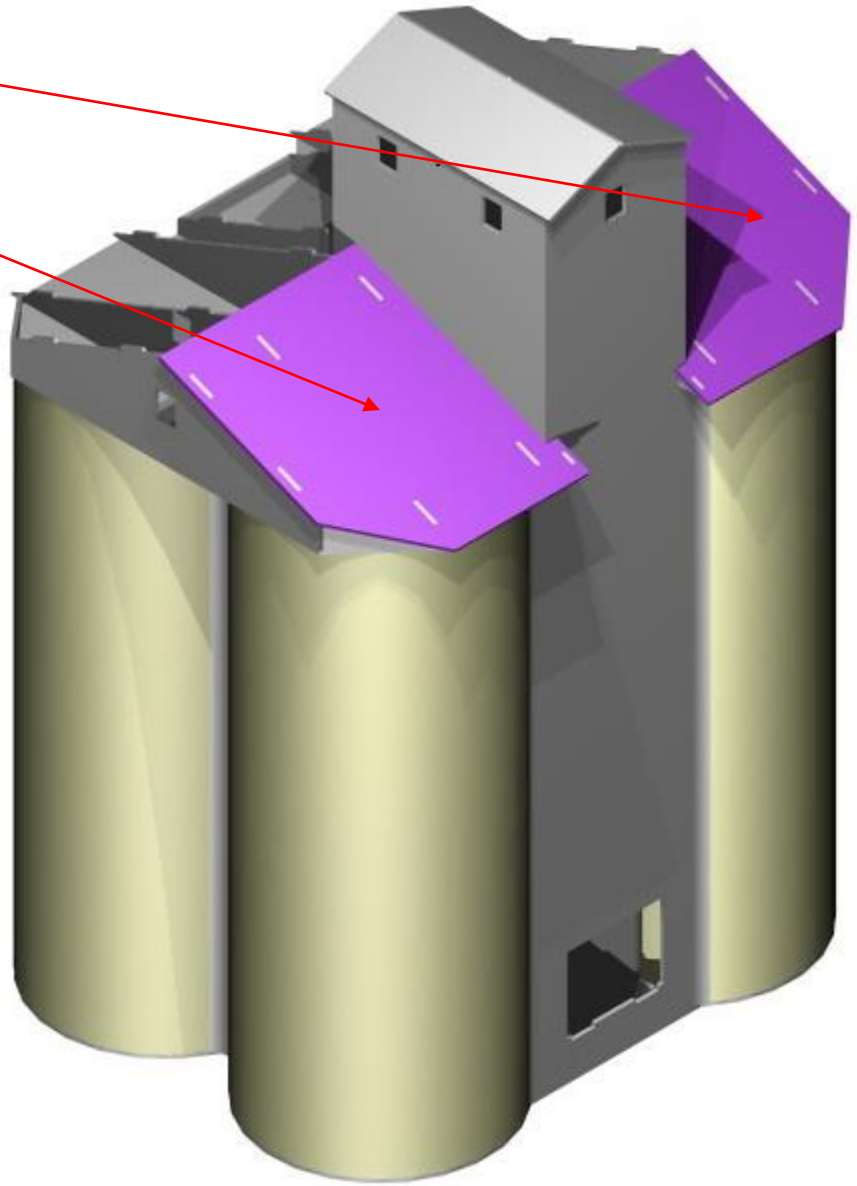


The small inner supports are located next.

They are also strengthened by the location of the roof, so locate them and hold for 10 seconds whilst the glue dries. Or fit them when fitting the roof sections.

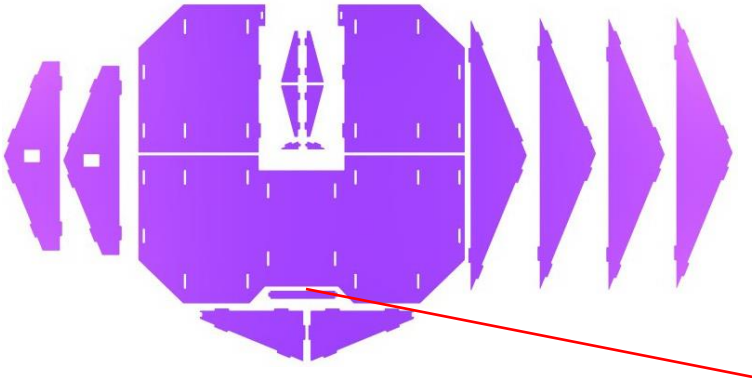
Silo Roof - Step 8

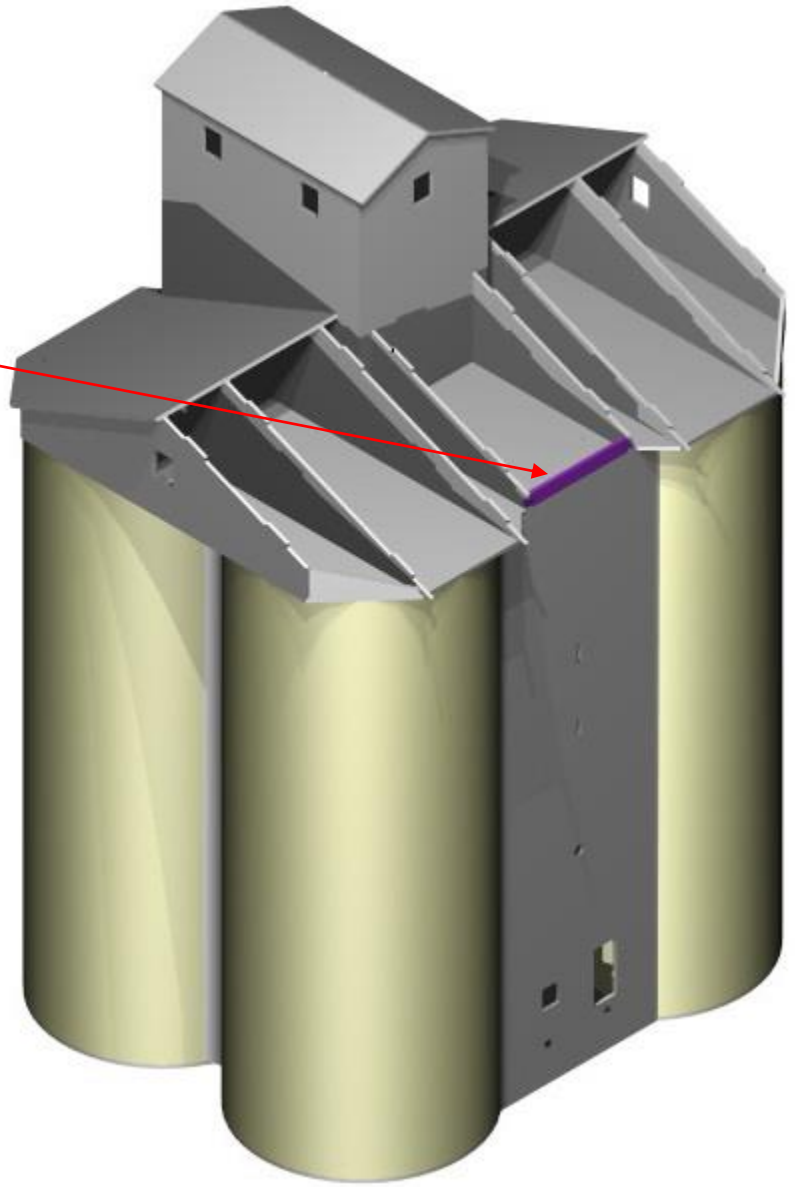




The short roof sections are fitted next. Notice how these parts make the structure very rigid, as they also fit into slots in the cupola.

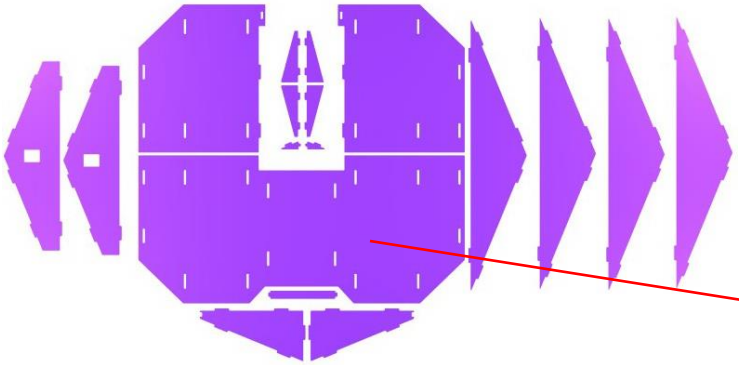
Silo Roof - Step 9



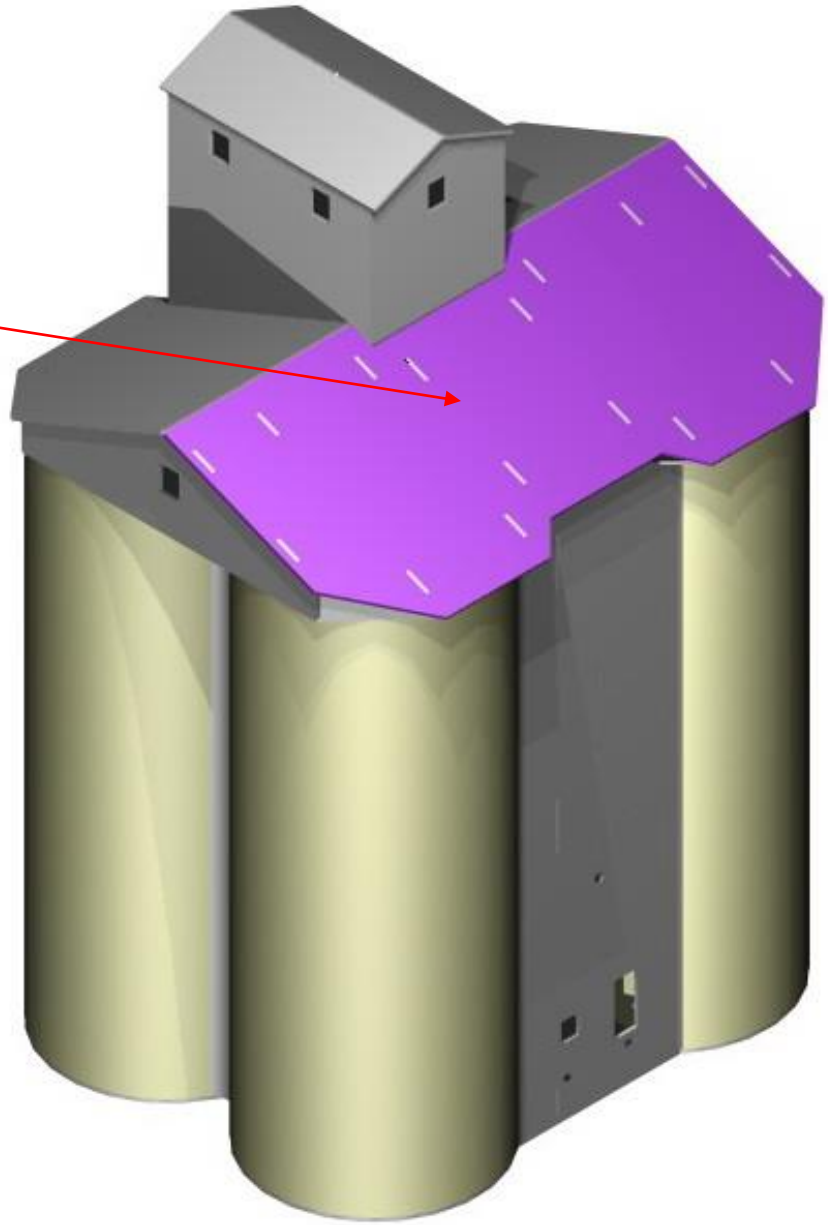


Before the large roof is fitted, the filler section is fitted above the front face of the silo. It will go in in either position, so ensure that it fits so that the roof does not sit proud. If this parts sits to high, just turn it over and run glue into the joints.

Silo Roof - Step 9

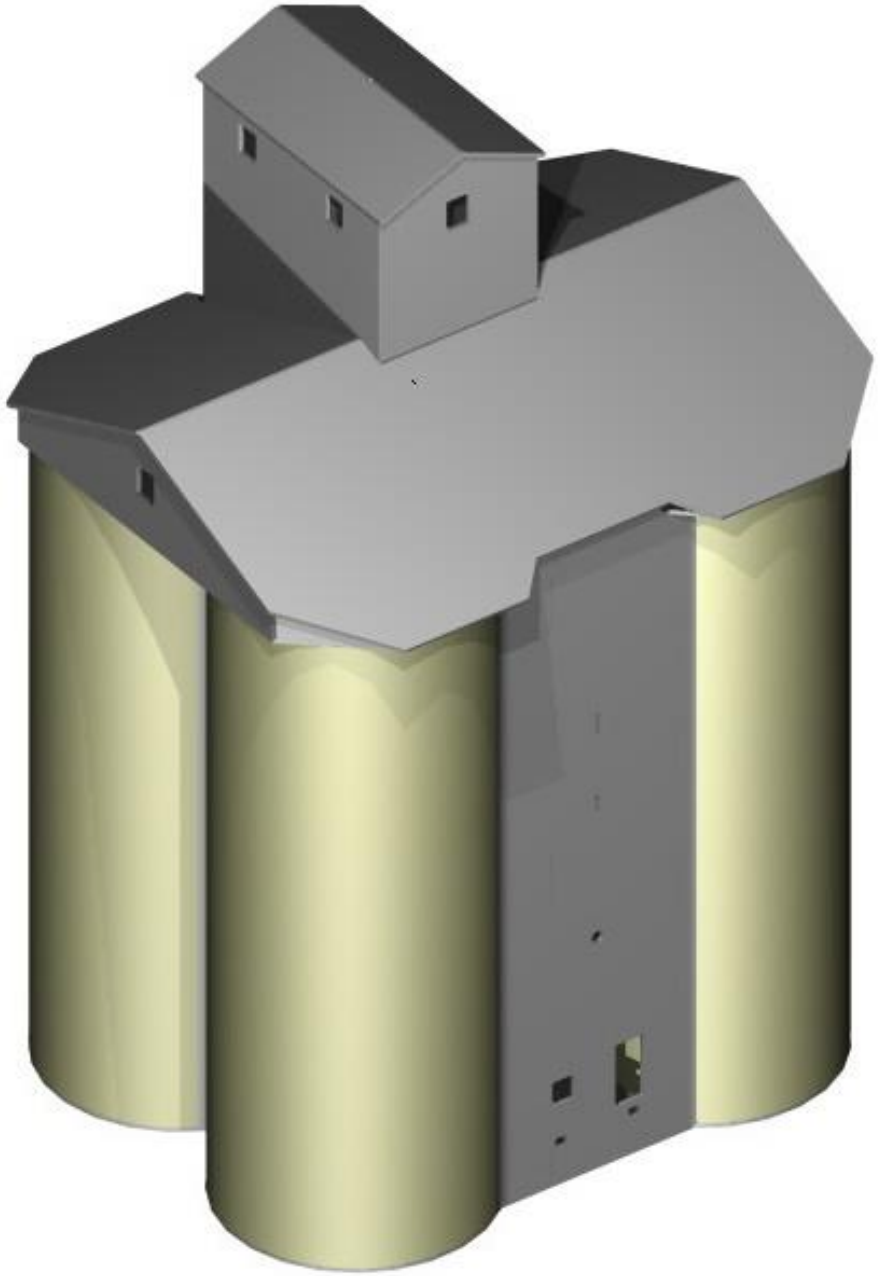


Finally the large roof is fitted, and this then finalises the roof , making it ready for cladding, fascia, guttering and downpipes.



Silo Roof - Step 10

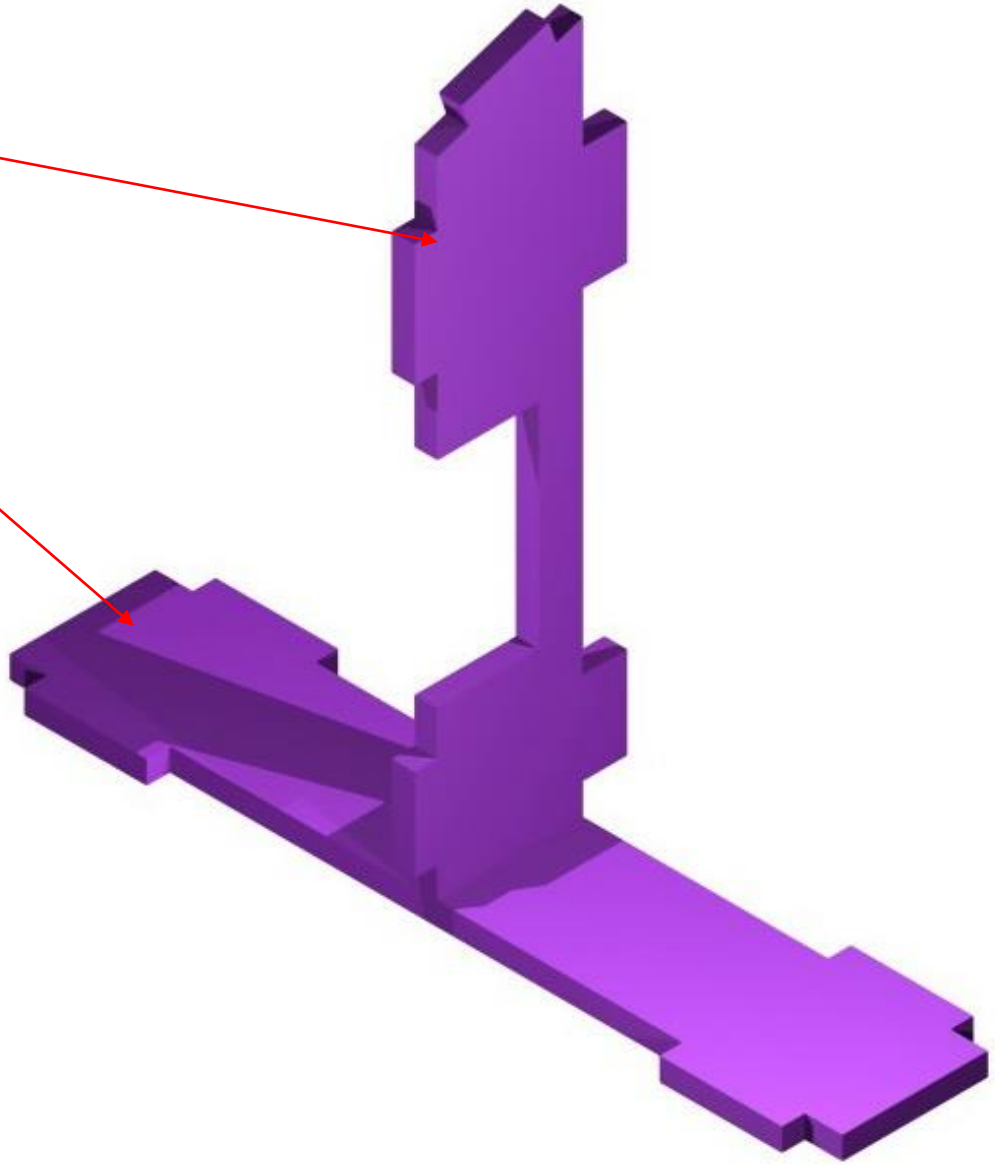
The finished silo sub frame, ready to have fascia, gutters and cladding applied. Now the fun starts. But before we look at that there are a couple of other tasks to undertake.



Another Step Down – Nearly Done

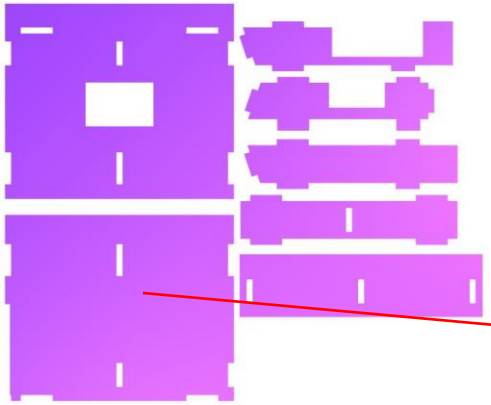
- The main 3 sub-assemblies are now built. Now we can concentrate on the smaller sub-assemblies.
- These smaller assemblies are very easily fitted to the main assemblies at a later time.
- Firstly the Annex, then the Spoil Bin.
- The Outloading Platform and Front Steps are now provided in this kit as a 3D Prototype, which saves the modellers the chore of gluing them together, they simply fit into holes provided in the model.
- The Annex is located on the front of the silo and slots are provided where it is to fit.
- So lets get the smaller assemblies put together.

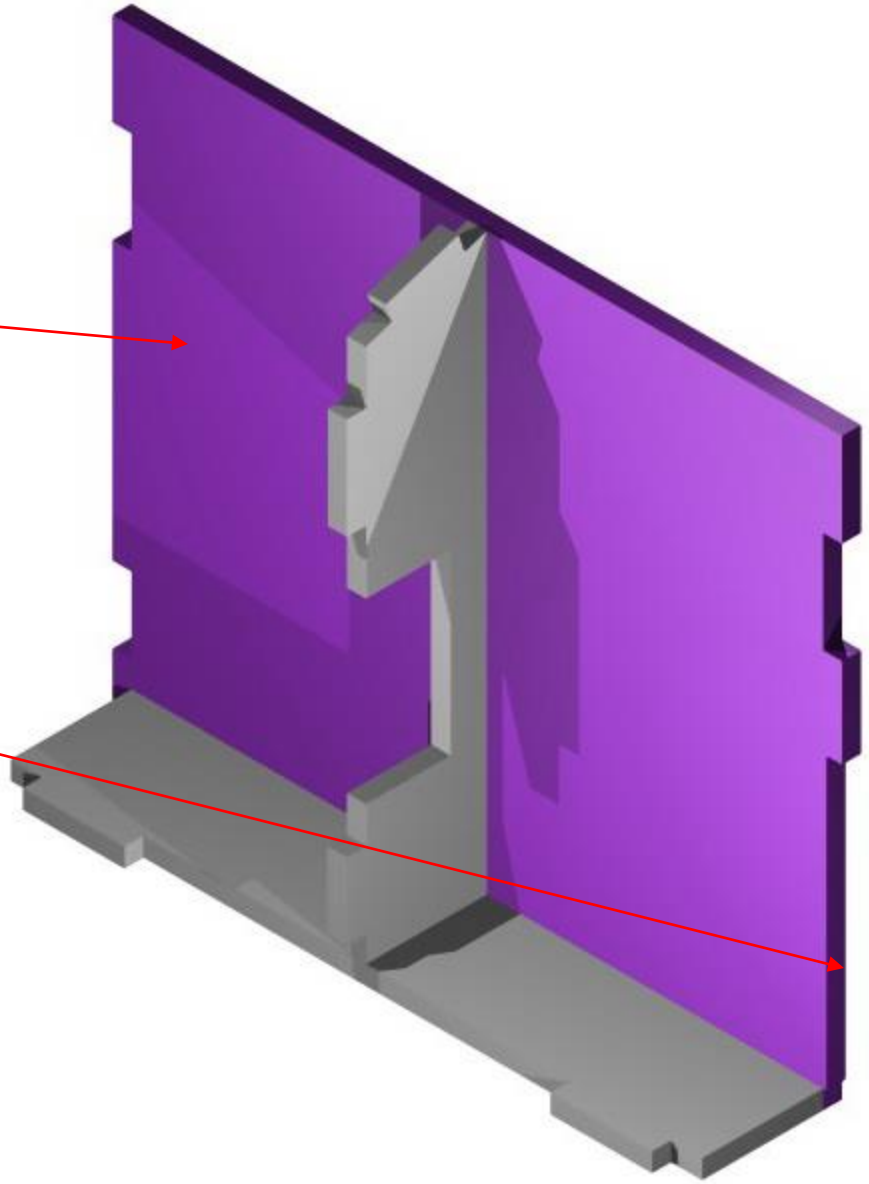
Silo Annex - Step 1



These pieces are the start to the annex, which is the small building located at the front middle of the silo.

Silo Annex - Step 2

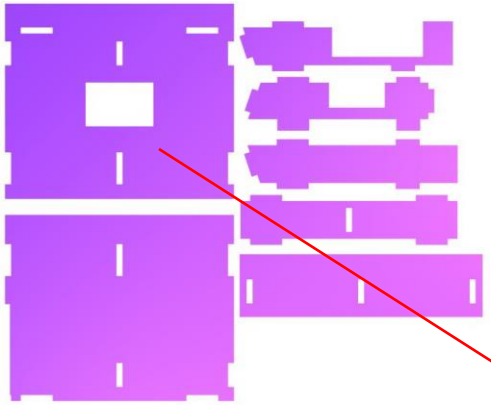




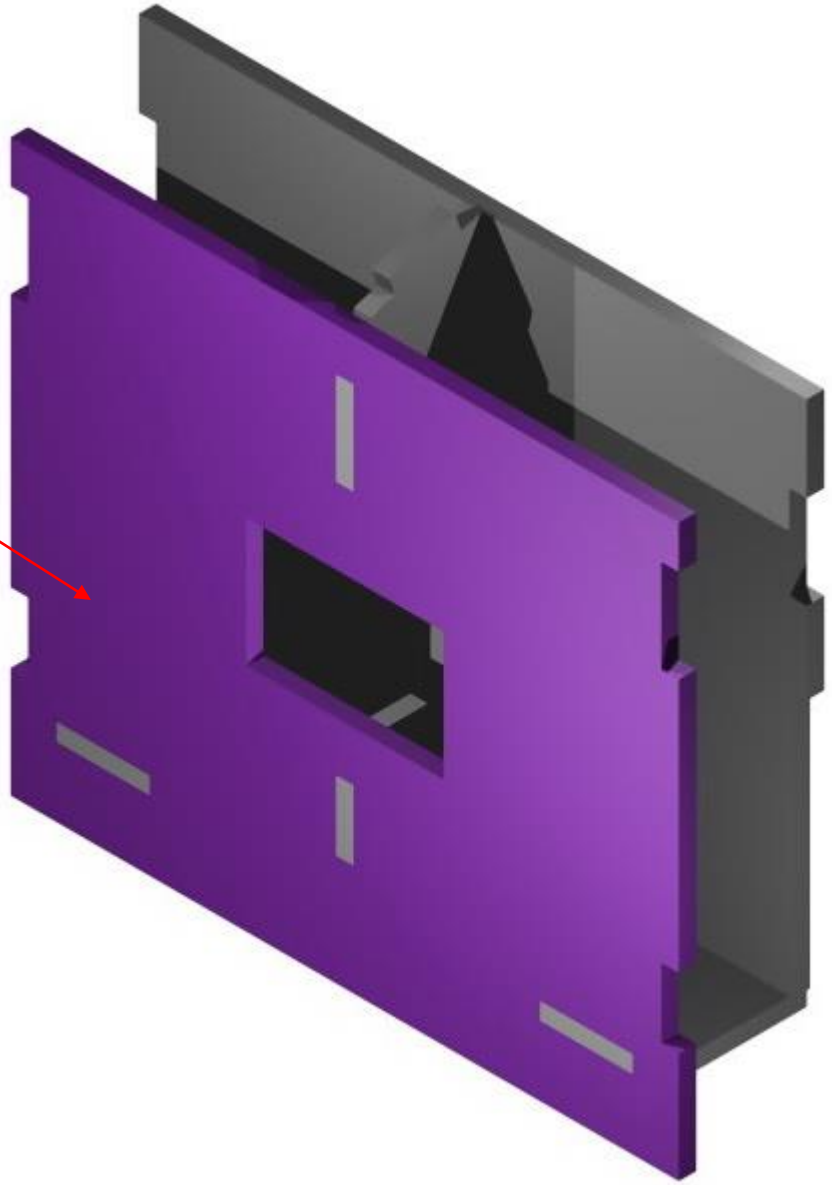
Locate the rear panel to the centre and floor, ensure that the panel is placed with the large void to the bottom right end of the annex.

This accommodates the annex door.

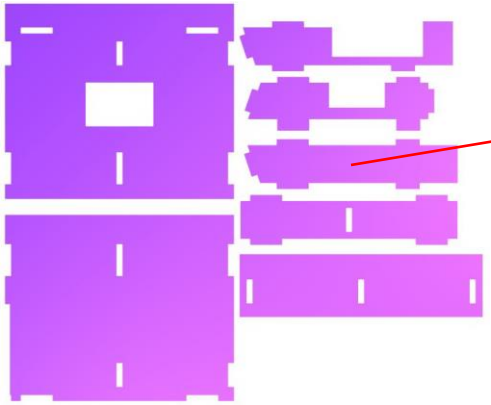
Silo Annex - Step 3

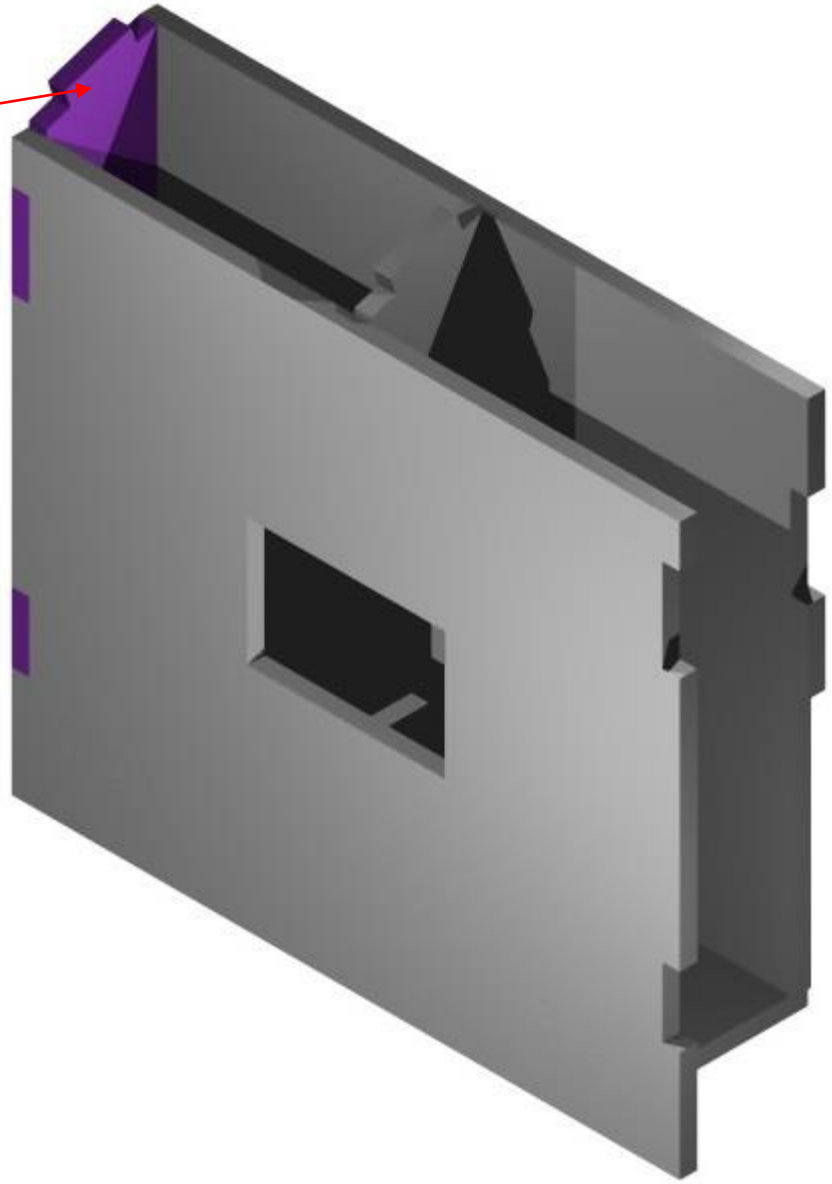


The front panel is located next. The part is symmetrical, so it will fit either way.



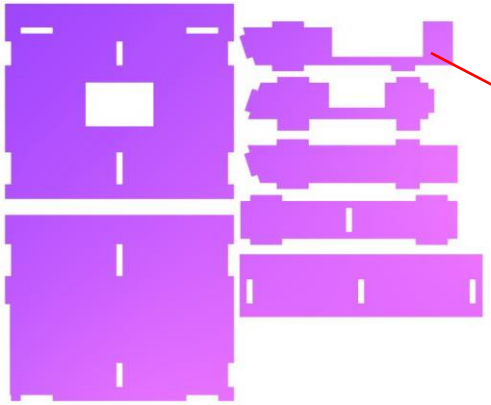
Silo Annex - Step 4

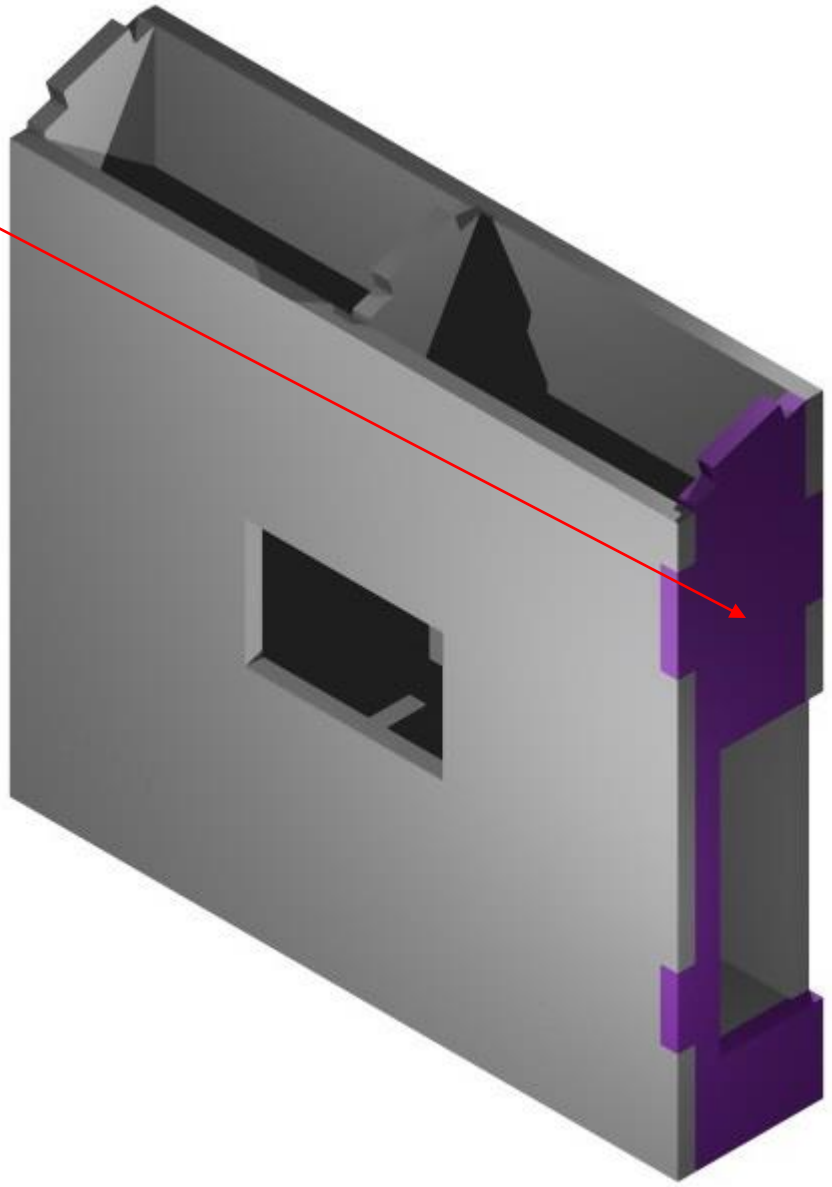




The left side panel will square the annex and please locate the part so the top slopes to the front. While this might sound silly, I have managed to build one with the roof sloping to the rear. (DOH)

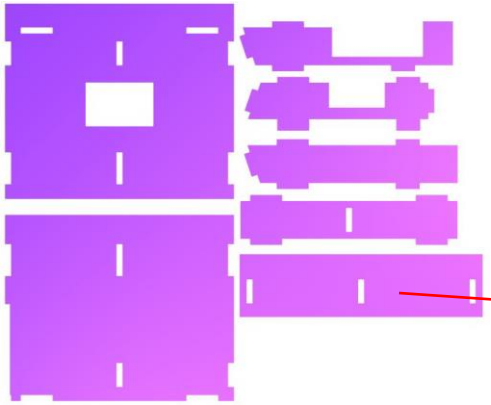
Silo Annex - Step 5

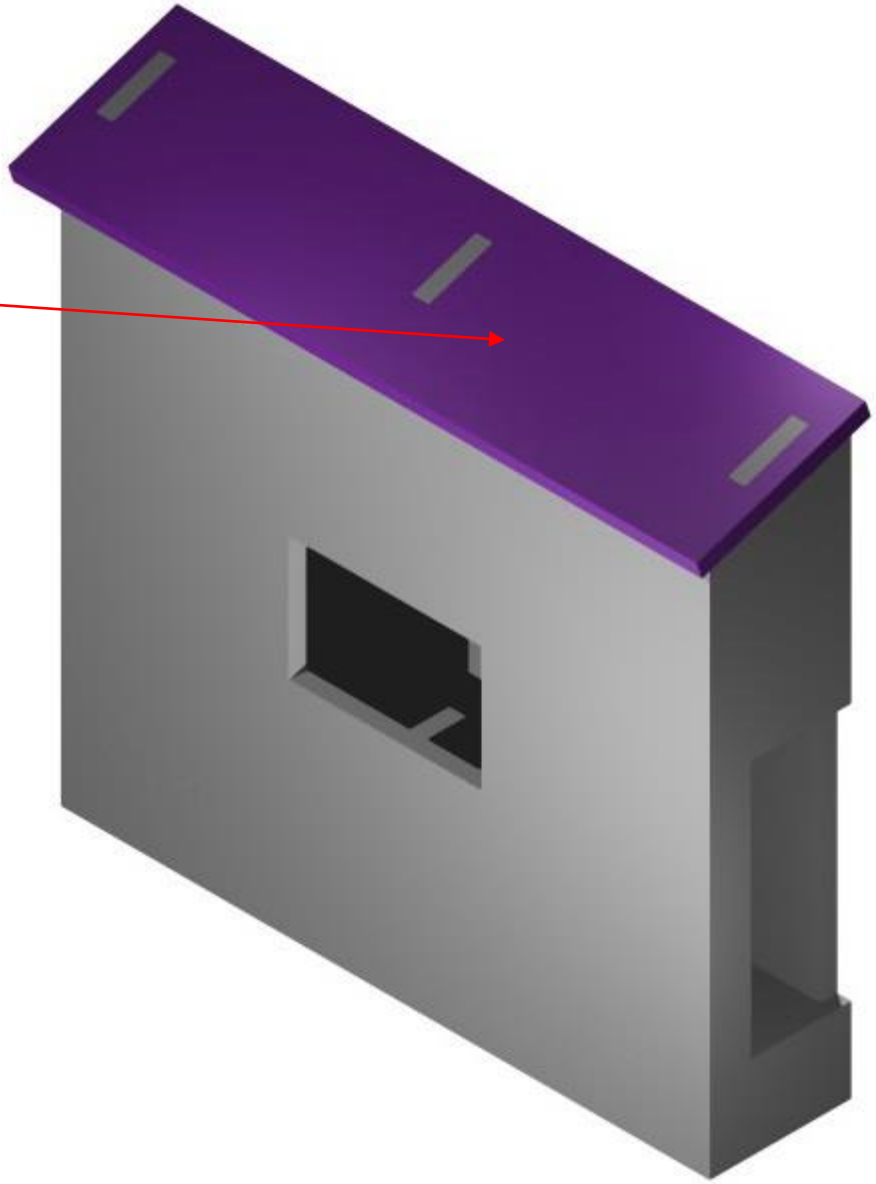




The right end panel of the annex is very fragile and care needs to be taken so as not to fracture or brake the panel.

Silo Annex - Step 6

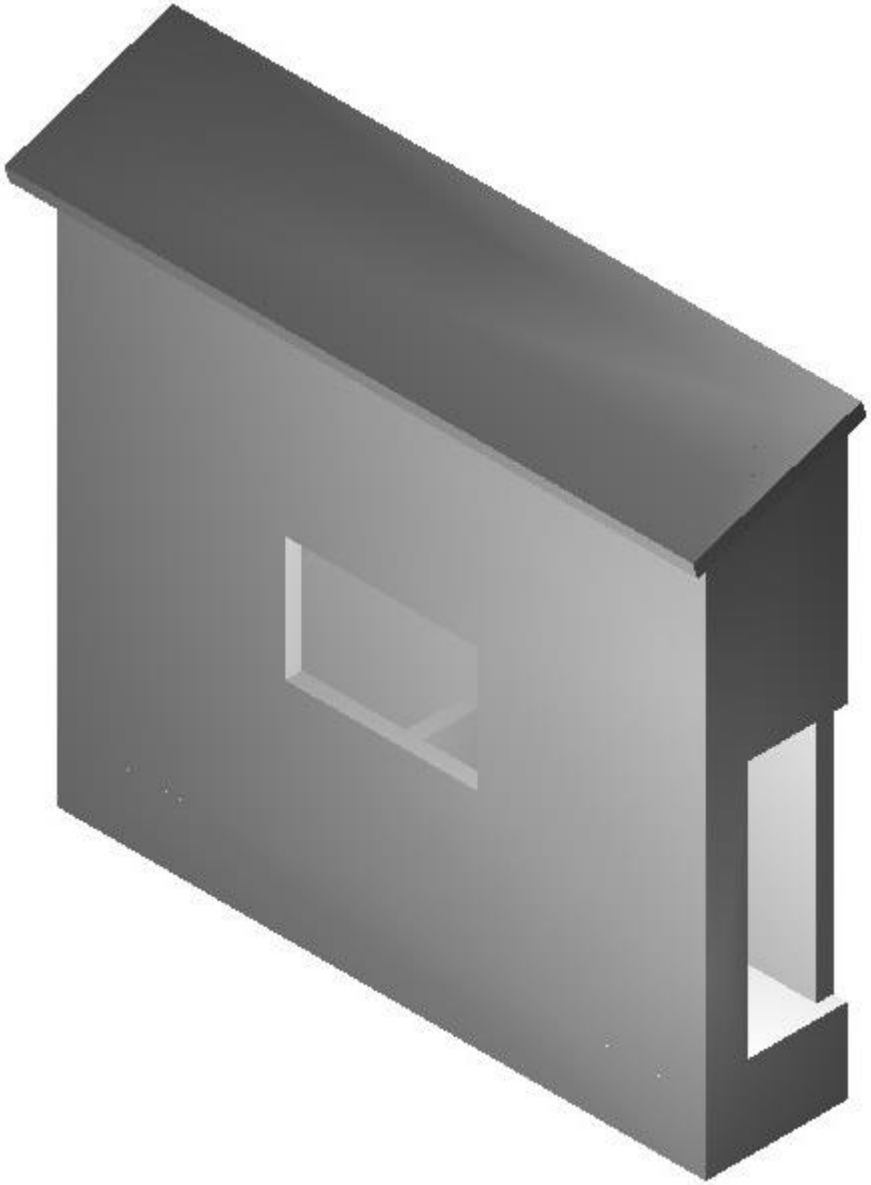




The roof squares up the annex, and is the final panel to be glued in place. Please note that the tabs protrude through the back of the annex, so that the annex can be fitted to the front of the silo.

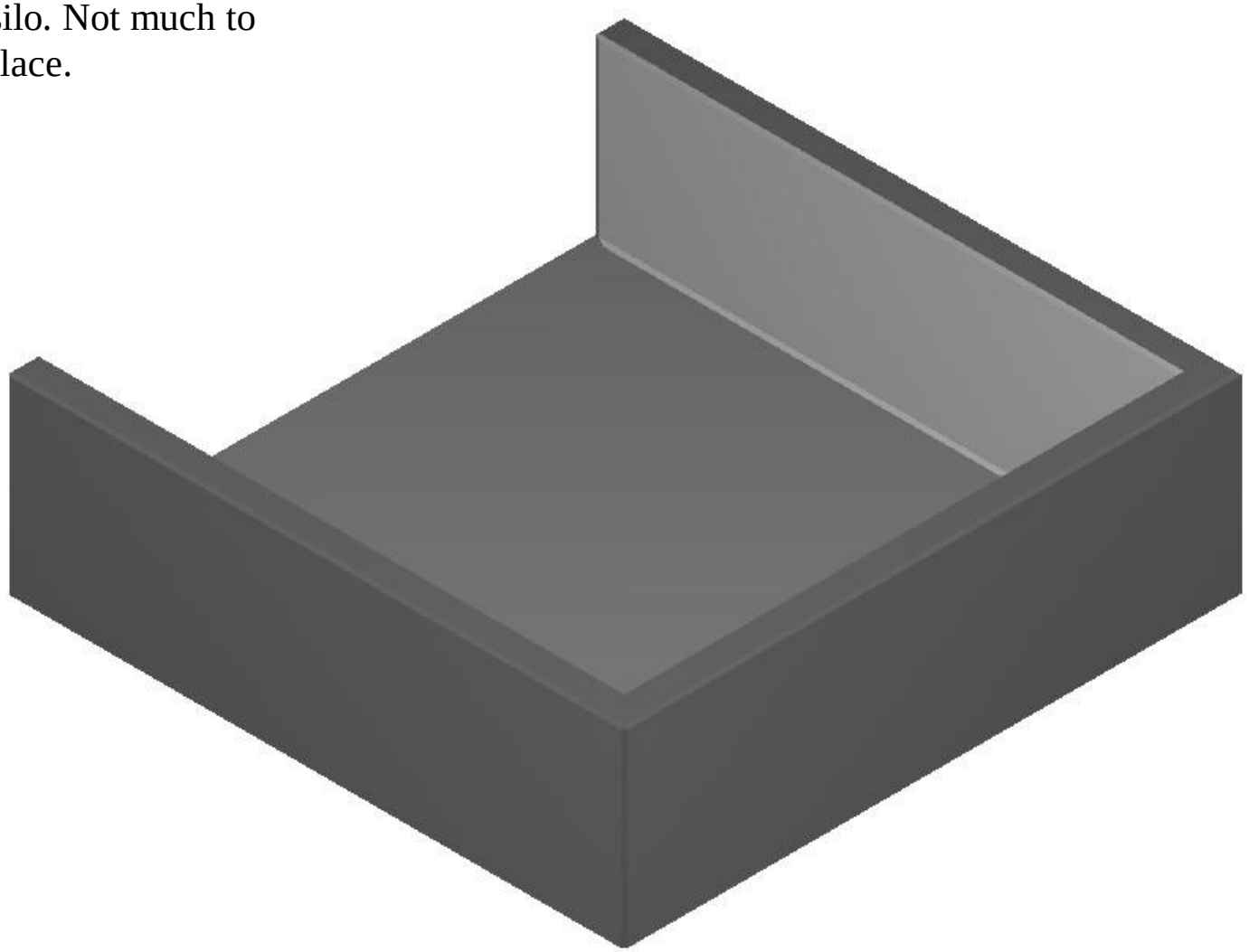
Silo Annex - Step 7

The annex, ready for fascia, gutter and cladding. RSJs can also be located under the floor of the cladding, as per the original silo articles. Photos on the Memory Stick give a better indication of the annex support.

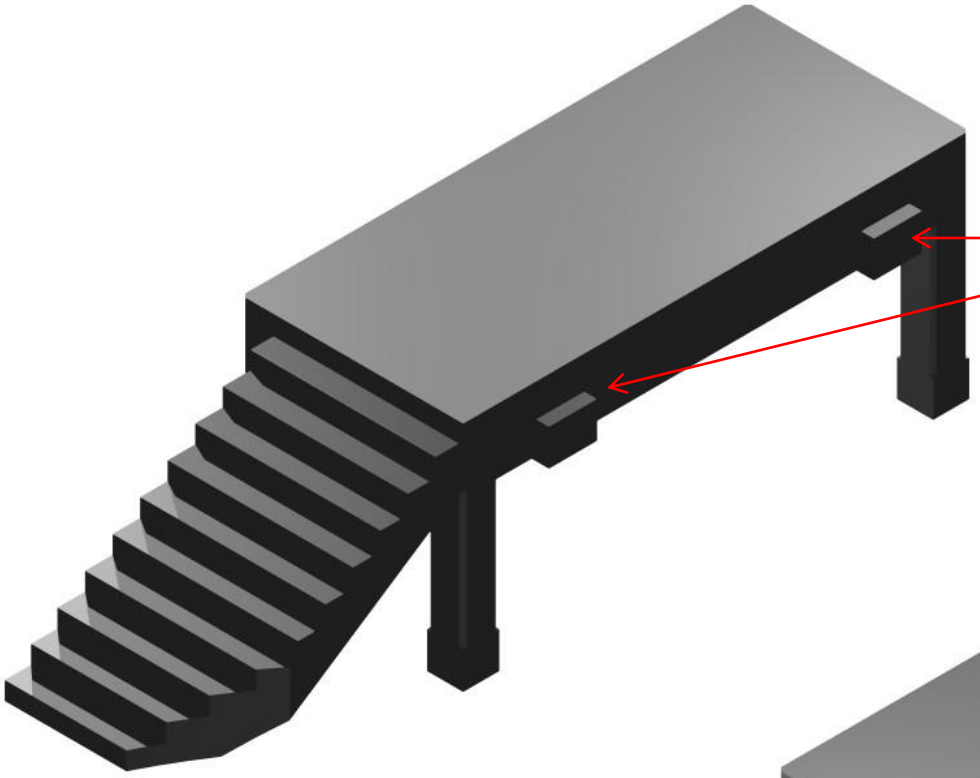


Silo Spoil Bin - Step 1

The Spoil Bin is 3d and fits in the void on the left side of the silo. Not much to do here but glue it in place.

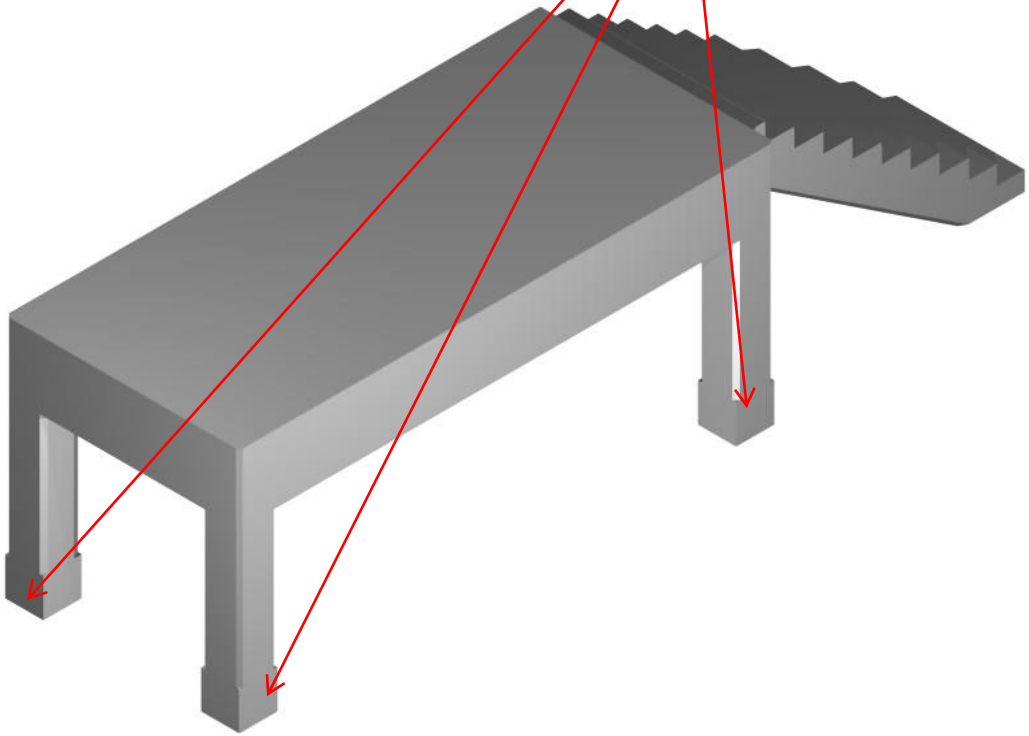


Out loading Platform

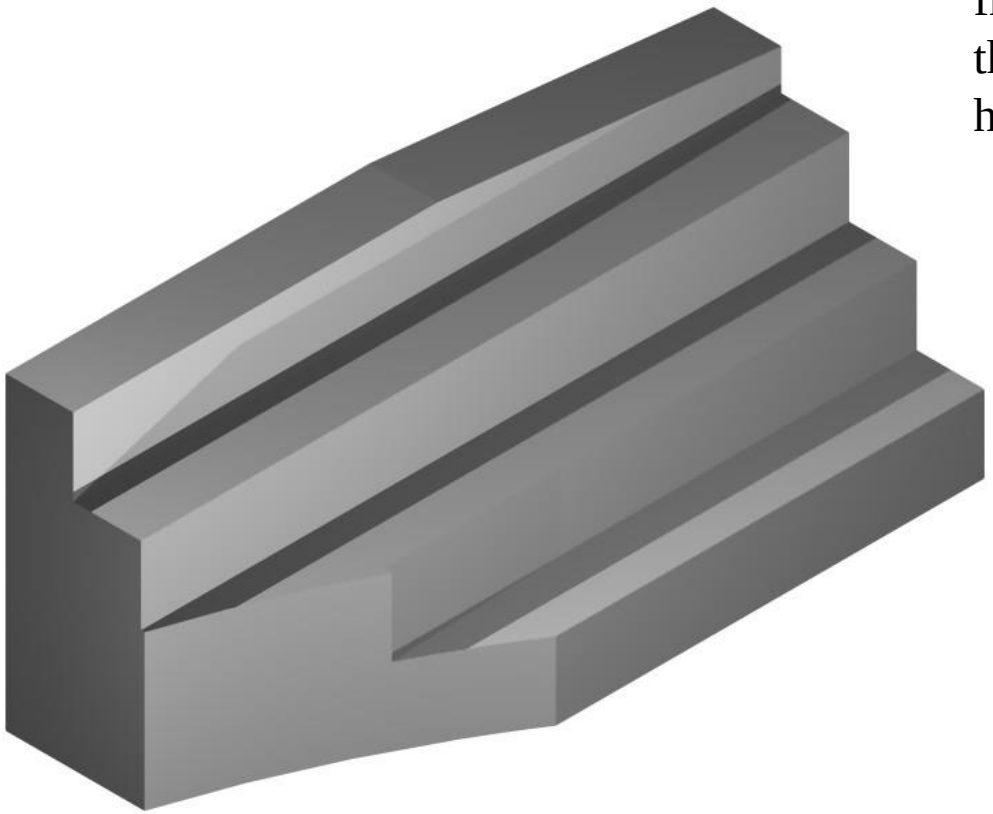


The tabs shown here allow the Outloading Platform to tab into the front wall of the silo.

The feet fit into the base of the silo



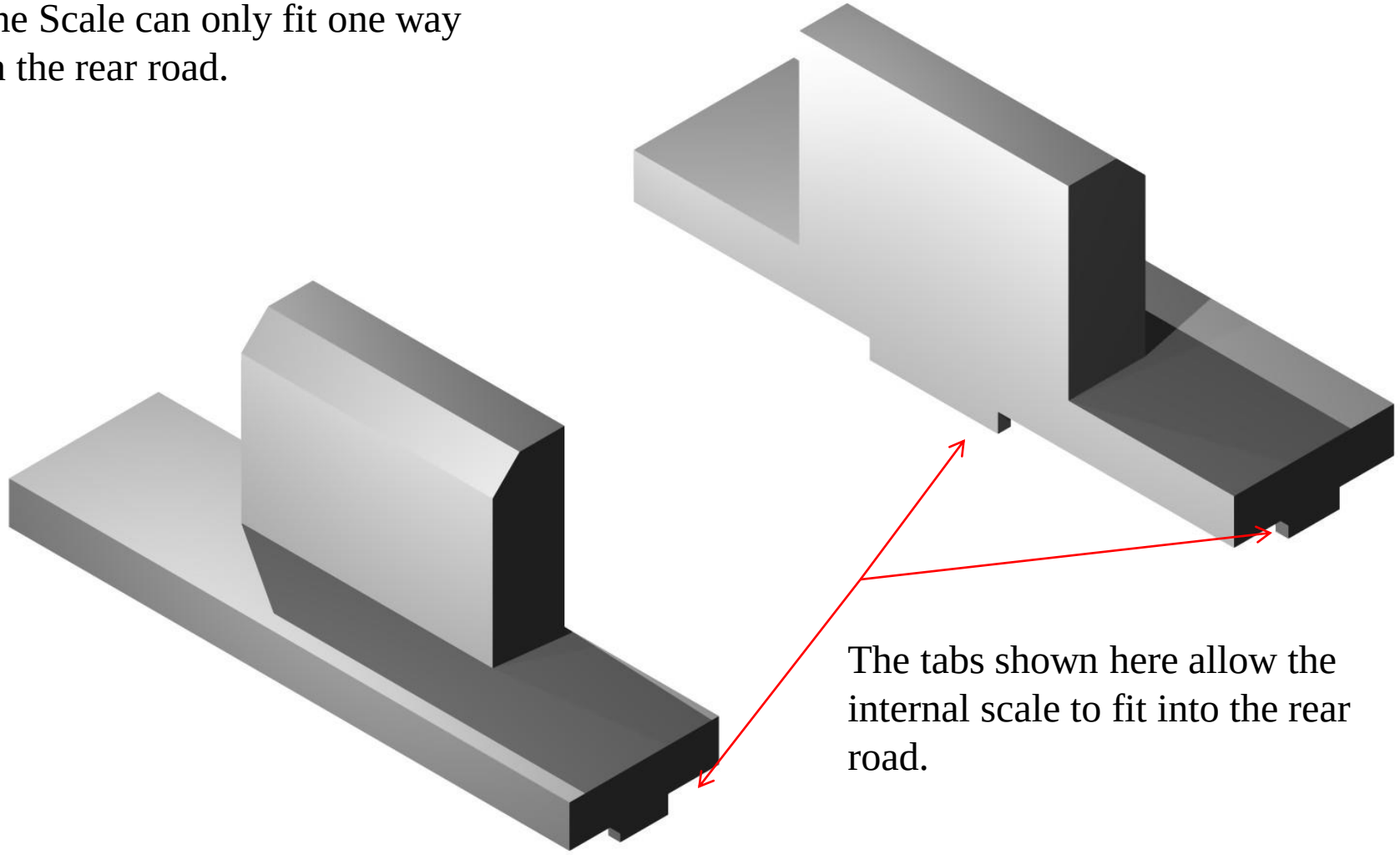
Rear Steps



The Rear Steps are fitted on the right side of the silo just to the front of the rear road. The tab at the rear of the steps fits into the hole in the front of the rear road

Internal Scale

The Scale can only fit one way on the rear road.



The tabs shown here allow the internal scale to fit into the rear road.

Fitting The Sub Assemblies Step 1

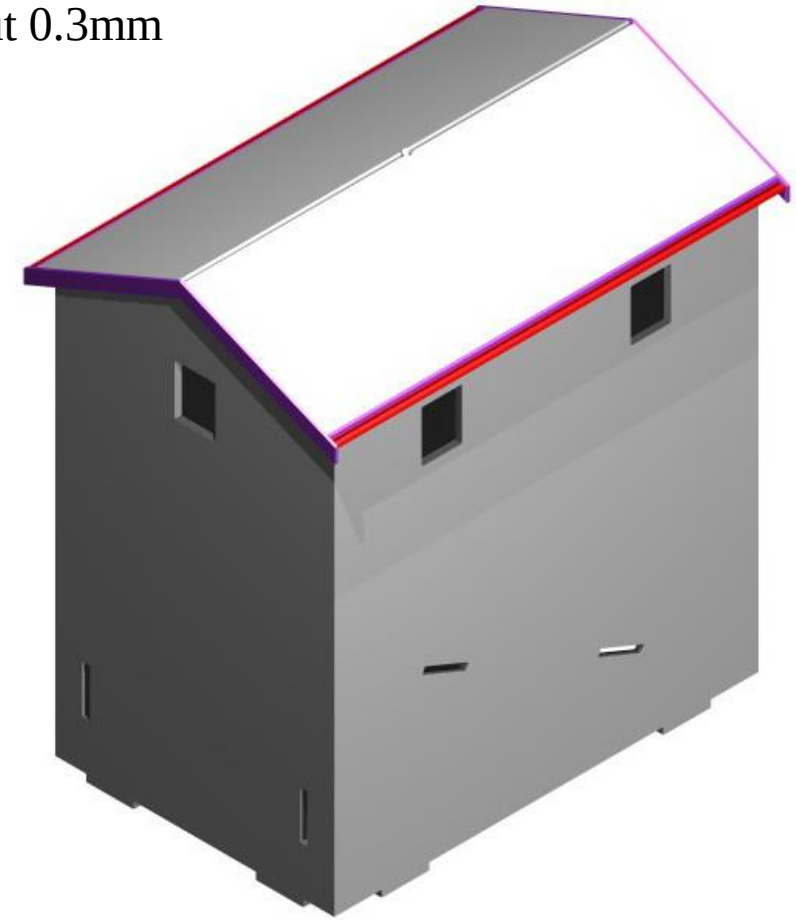
The sub-frame needs to have a fair amount of work done to it before it is located in place on the silo base.

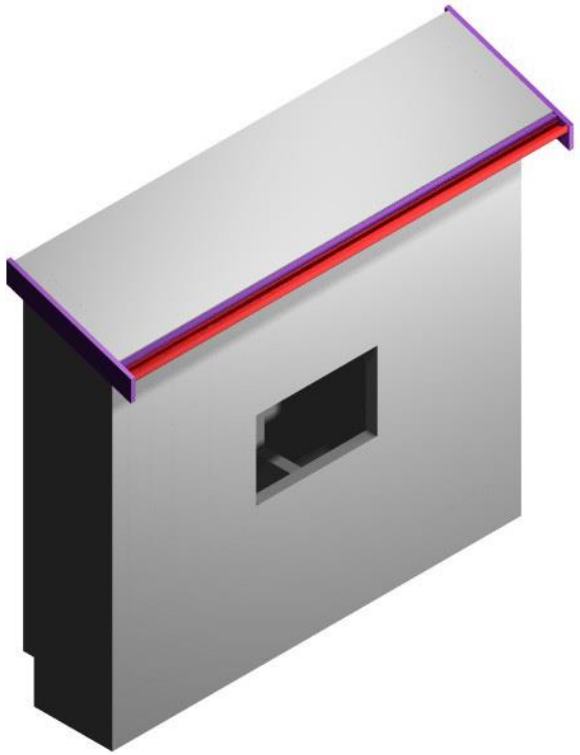
A list of jobs and some basic descriptions are provided below. All tasks need to be done with the assistance of photos of the silo you are modelling or using the photos within the instruction Memory Stick

- Place the fascia/barge boards around the edge of the roof acrylic (Scale 2x10 Evergreen HO styrene strip - 8210). File a small edge on the acrylic parallel to the bins, so that a larger surface area is provided for gluing. Trim all the excess protrusions from the barge boards and fascia. (This applies to the cupola roof, bin roof and annex roof)
- Next the gutter needs to be fitted to the silo. I use Evergreen styrene 1.5mm Channel (261- 1 packet should be more than enough) if you want to give the gutter a little more detail you can sand the outer edge so that it has a slight radius (Optional). You will need to trim the joints where the channel comes together. The gutter needs to be located so that the corrugated iron (Campbell's Aluminium) sits just into the gutter.
- The corrugated iron can be glued to the roof using gel grip. It is you decision weather you cut the aluminium in strips or fit it in long lengths. It is much easier to fit in long strips, but my preference is to cut the aluminium in various lengths in scale . 12ft sections of this material is the most economical.

Fitting The Sub Assemblies Step 2

The **purple** pieces are the 2 x 10 styrene (HO Scale) and the **red** is the 1.5mm channel. At the ends of the bargeboards leave a little overhang of about 0.3mm

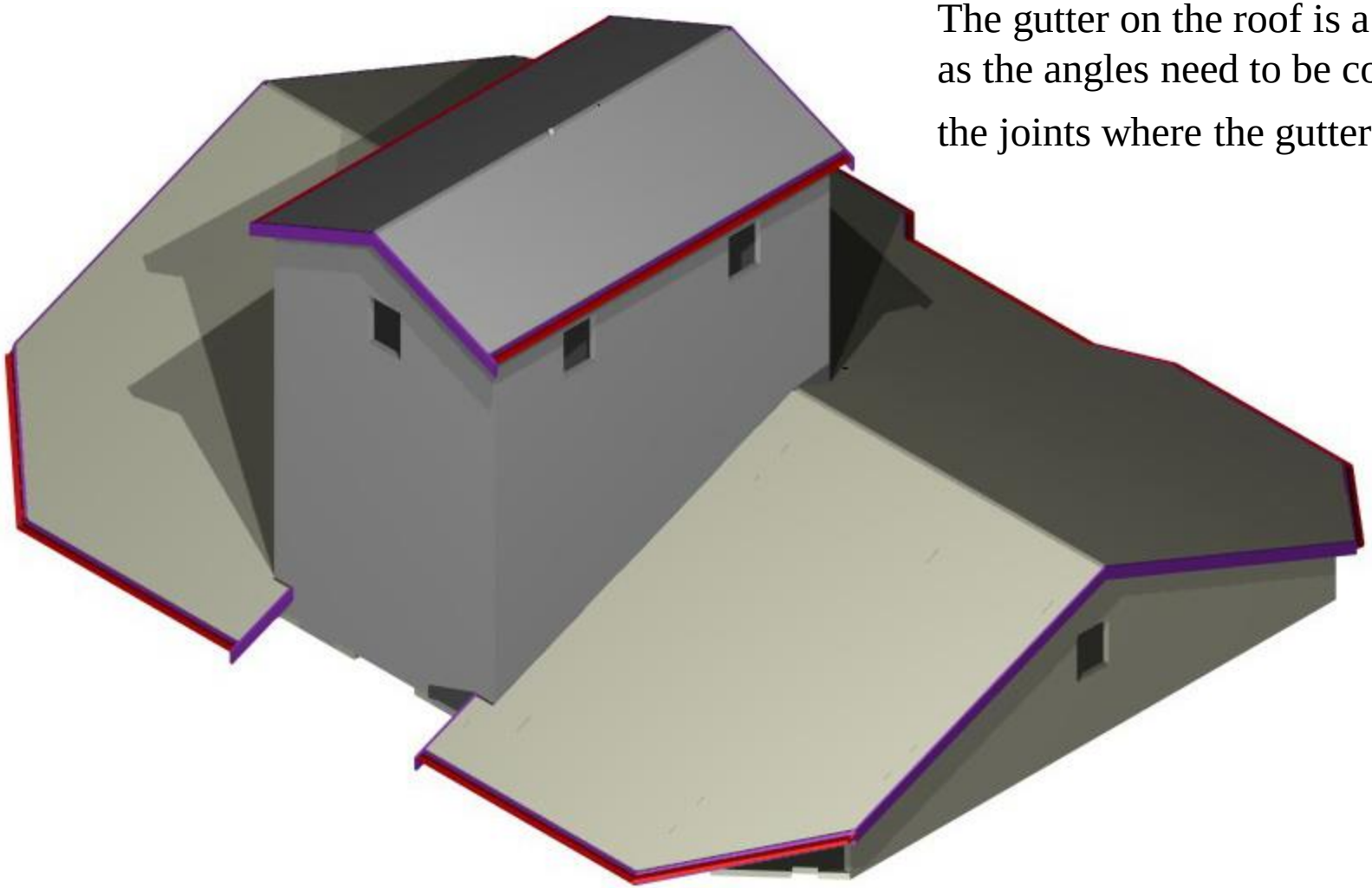




Fitting The Sub Assemblies Step 3

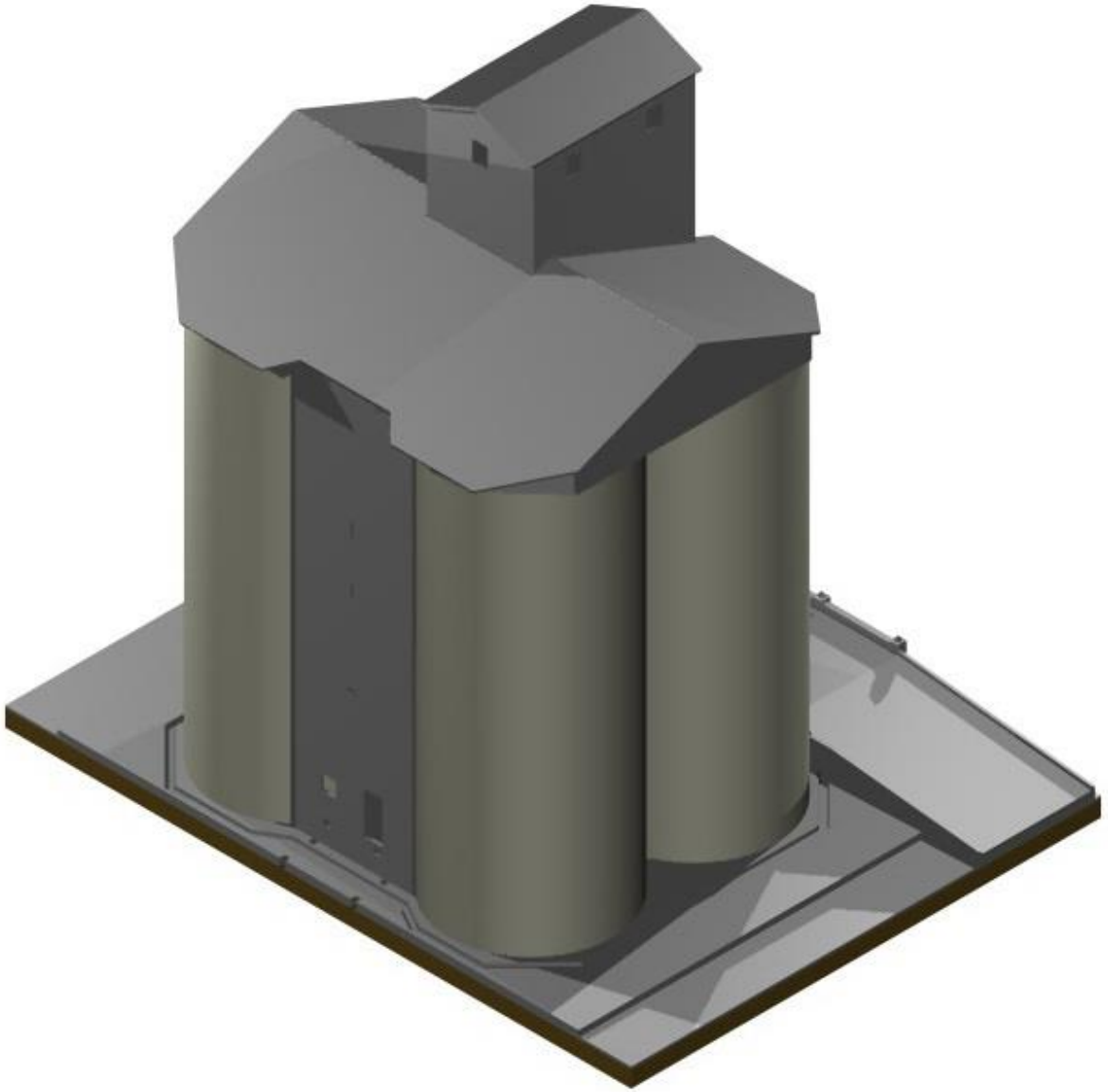
The Fascia and Guttering can be done once the basic structure is finished.

The gutter on the roof is a little tricky as the angles need to be compound at the joints where the gutters rise



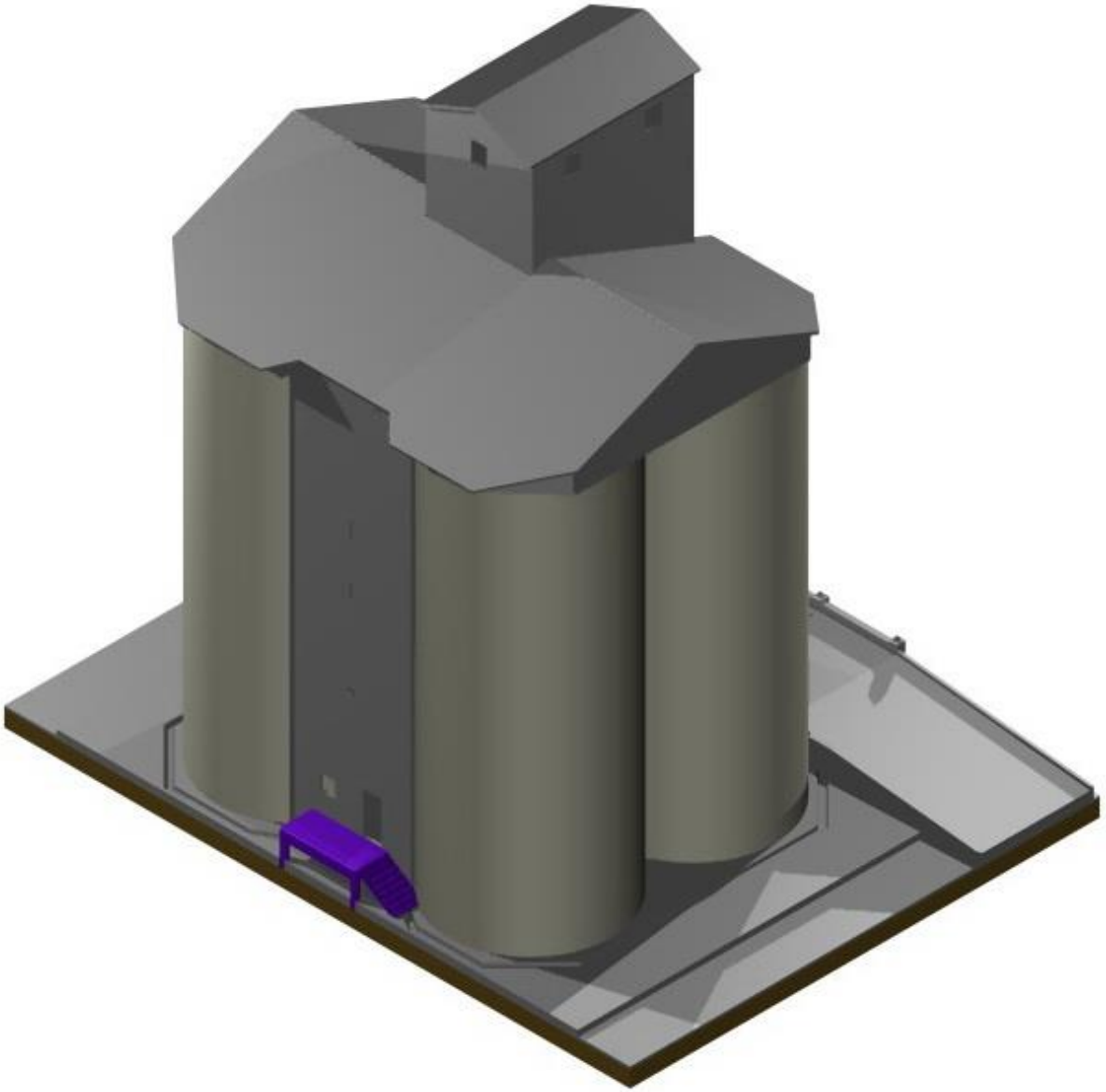
Fitting The Sub Assemblies Step 4

Locate the finished sub-frame in place, using the extended tabs on the base of the sub-frame to locate the frame into the base, these tabs may need filing to allow easy fitting. At the same time the rear road needs to tab into the rear of the silo. The mid rear road my need adjustment to allow a good fit. Simply file and test fit until it fits in place without being forced.



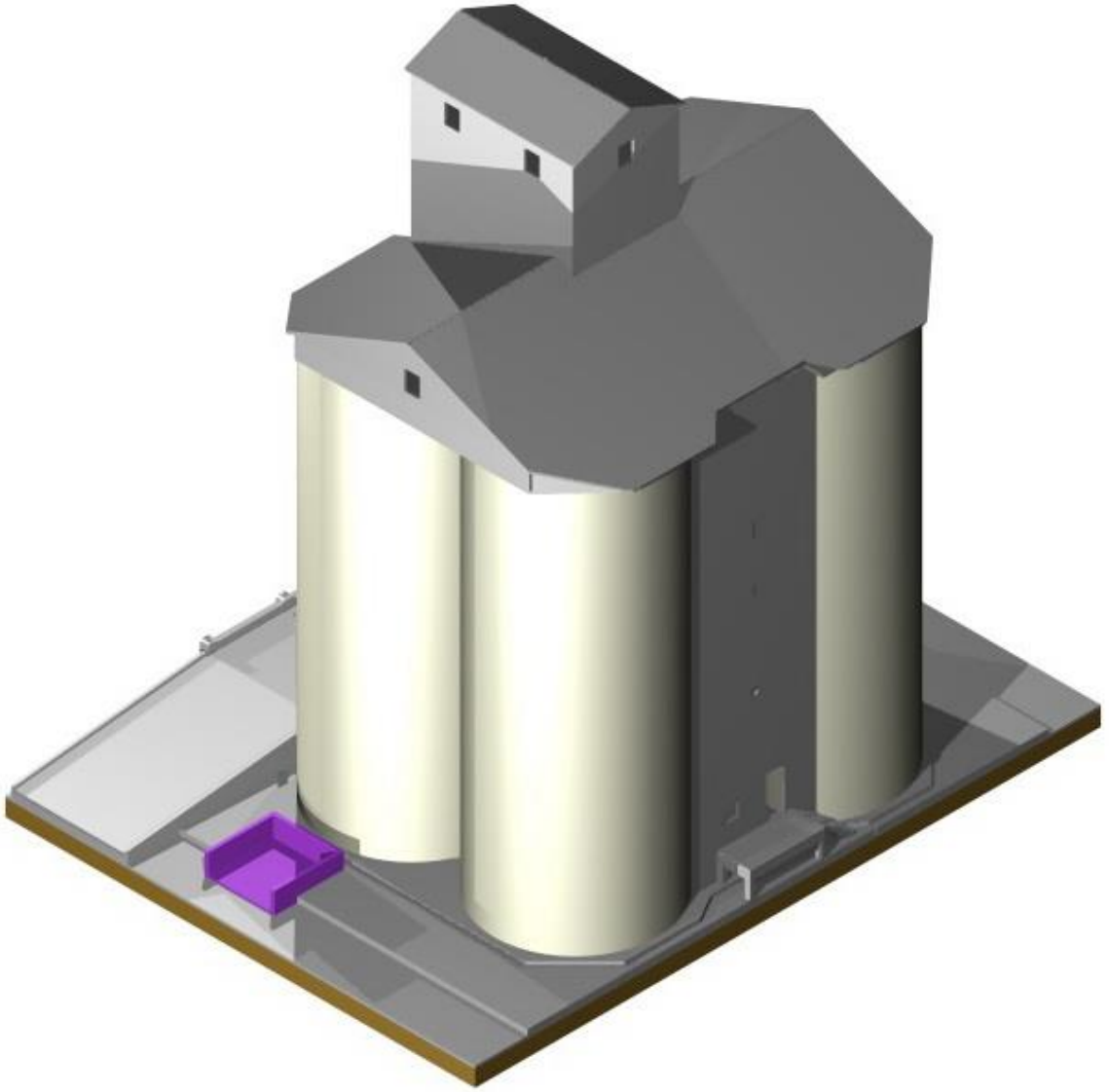
Fitting The Sub Assemblies Step 5

The out loading platform fits the front face of the silo and filler is used to make the rear of the platform sit flush against the front silo wall.



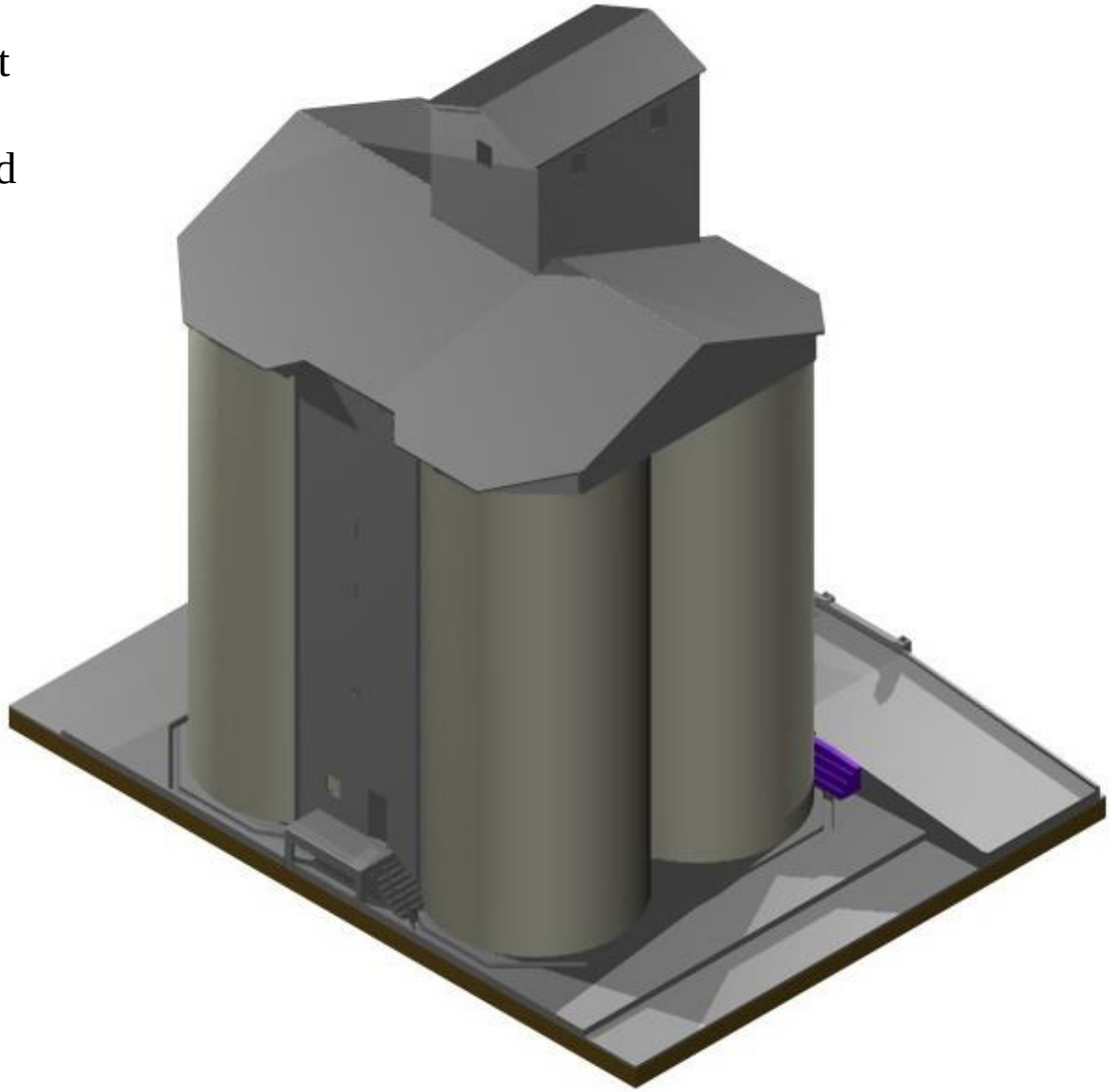
Fitting The Sub Assemblies Step 6

The spoil bin can be fitted against the rear road ramp edge and flush against the edge of the silo base.



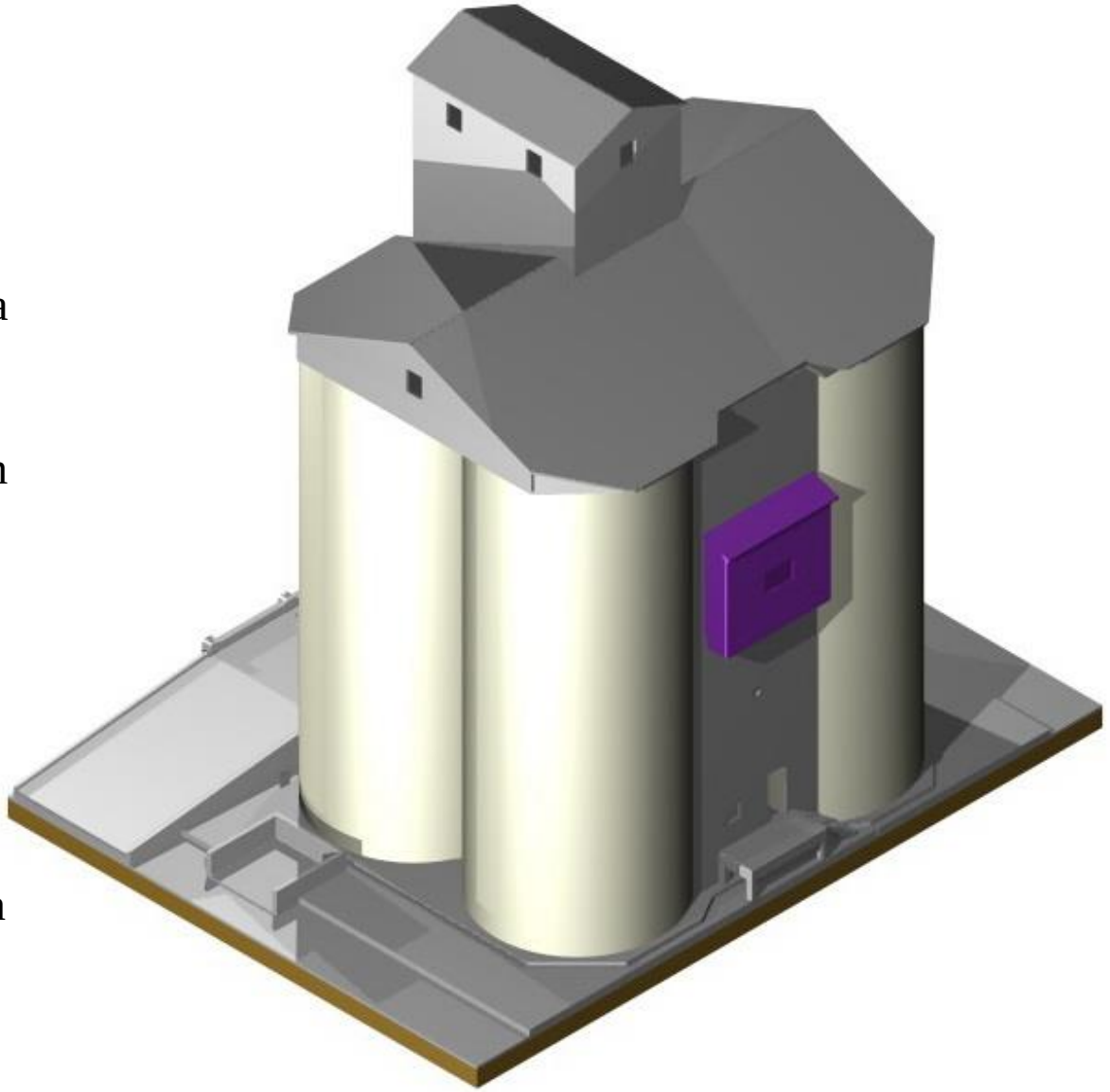
Fitting The Sub Assemblies Step 7

The rear steps fit in next and are located at the rear right of the silo, and fit into the hole in the rear road retainer.



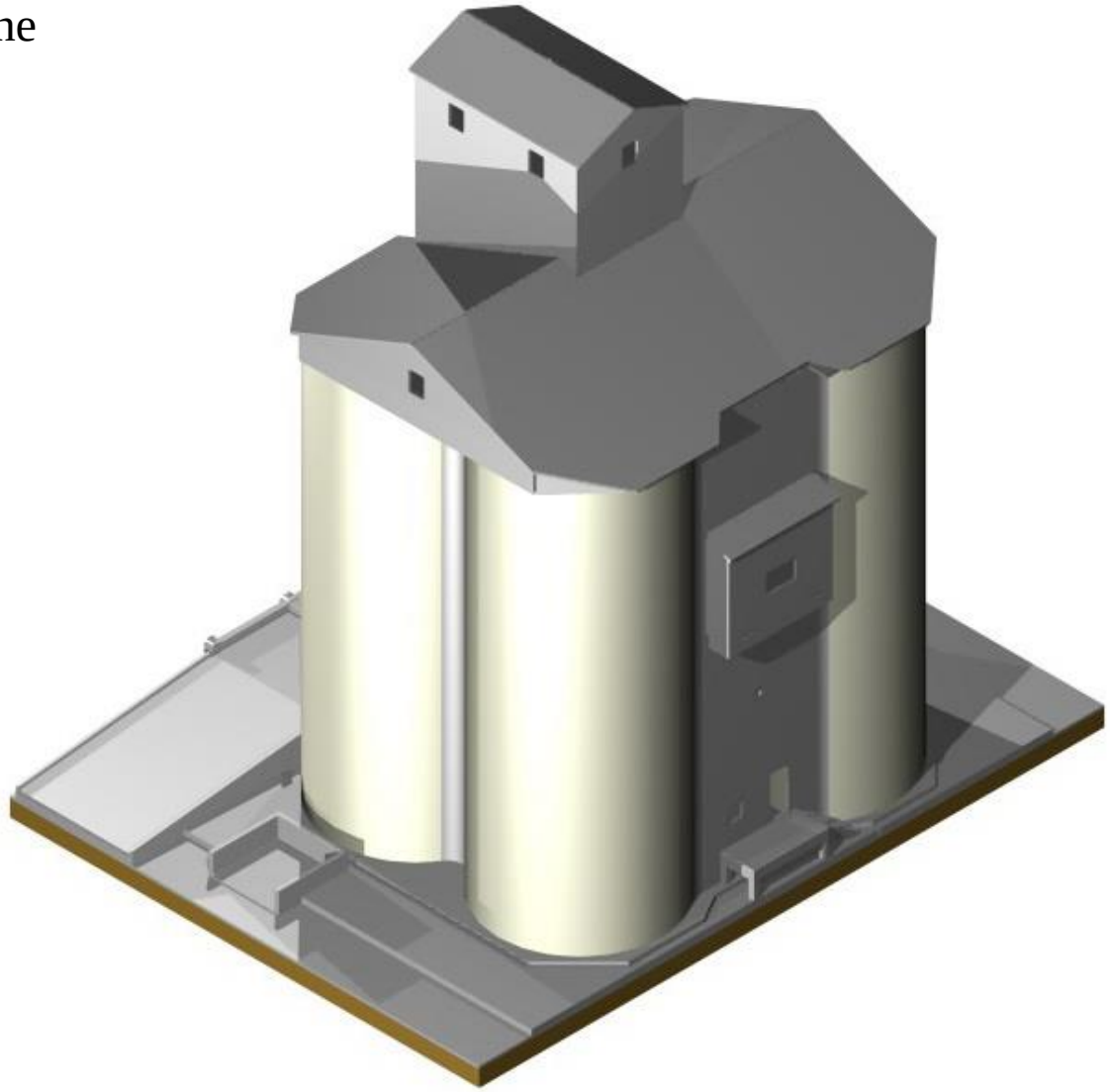
Fitting The Sub Assemblies Step 8

The annex is located through the use of the extended tabs to the front wall of the silo. Do not glue the annex to the silo but try to make the annex a firm fit. To assist in this process it may be necessary to drill 2 x 1mm holes through the annex into the silo wall and locate and secure 1mm wire through the annex into the silo wall to act as locating pins.
The brass pins will be covered by the cladding on the annex wall



Fitting The Sub Assemblies Step 9

The finished silo structure with all of the acrylic components attached.



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 Cast Parts Kit.
- These kits available on the KRM website.
- 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 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

- 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). These have been test fitted previously.
- 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.
- 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.
- 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". 0r so it just sits into the gutter.
- 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.
- Down 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. Remember that when fitting flashing that it goes under the top layer of cladding and over the bottom layer of cladding
- 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 outloading platform can be modified with a pipe safety barrier if required
- The front steps can be glued to the outloading 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.
- The Pulley and Winch are supplied with the KRM S04 Etched Brass Components.

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 prototyped footings are available to locate the wagon shed feet into; these footings will accept Special Shapes part number H4 (1/8” x 1/8” H), allowing the shed to be located and removed if necessary
- 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
- Styrene Section
  - Evergreen Styrene
- Paint
  - Floquil Paints
- Corrugated Aluminium
  - Model Railroad Craftsman
  - The Railcar
- Local Suppliers
  - Casula Hobbies
  - Berg's Hobbies