

Organic bench

In this tutorial I'm going to demonstrate mainly the Loft tool.

People often confuse, or not familiar with the differences between the Loft tool and the lofting options of the NURBS tool.

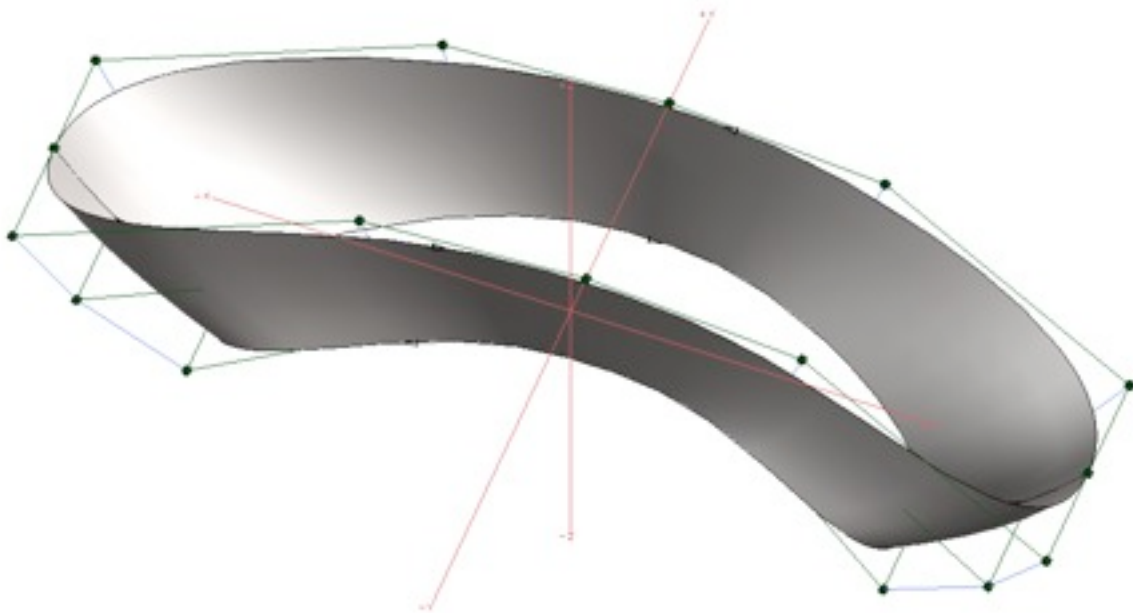
Unlike the NURBS tool that will create a controlled NURBS object the loft tool will create a plain object.

Also the Loft tool is much more tolerant to profiles from different sources and different number of points.

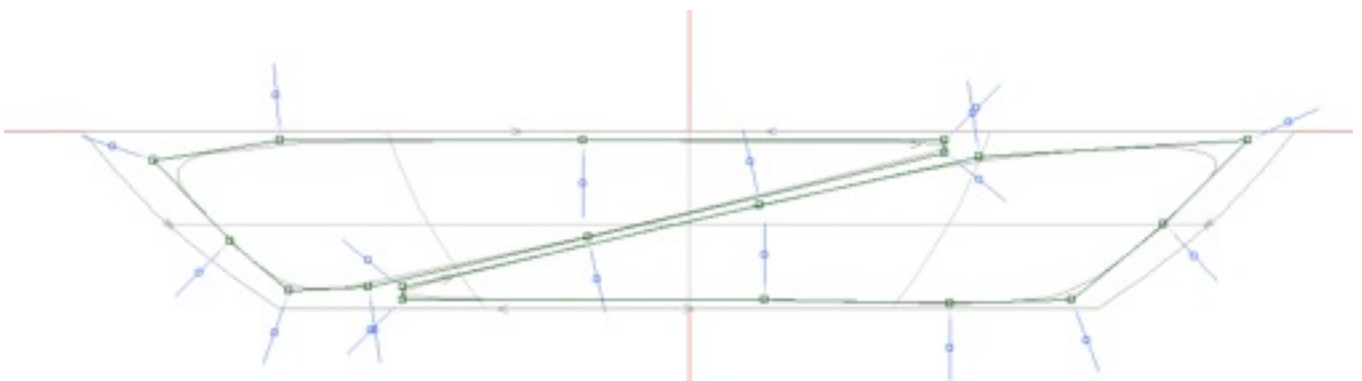
1- First I'll construct Two nurbs surfaces.

They can be created by simple NURBS loose loft or by using derivatives such as those creates by the sweep tool.

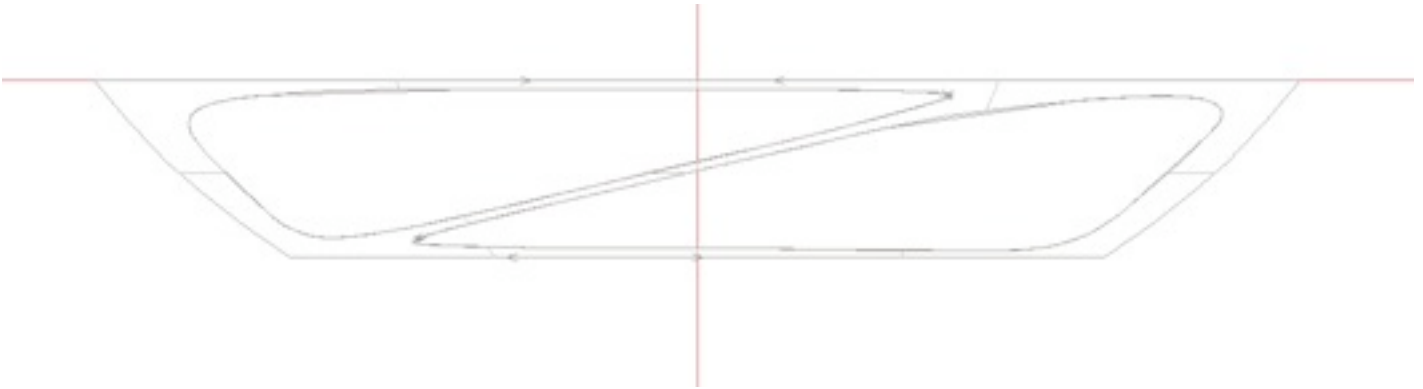
2- Stitch the Two surfaces.



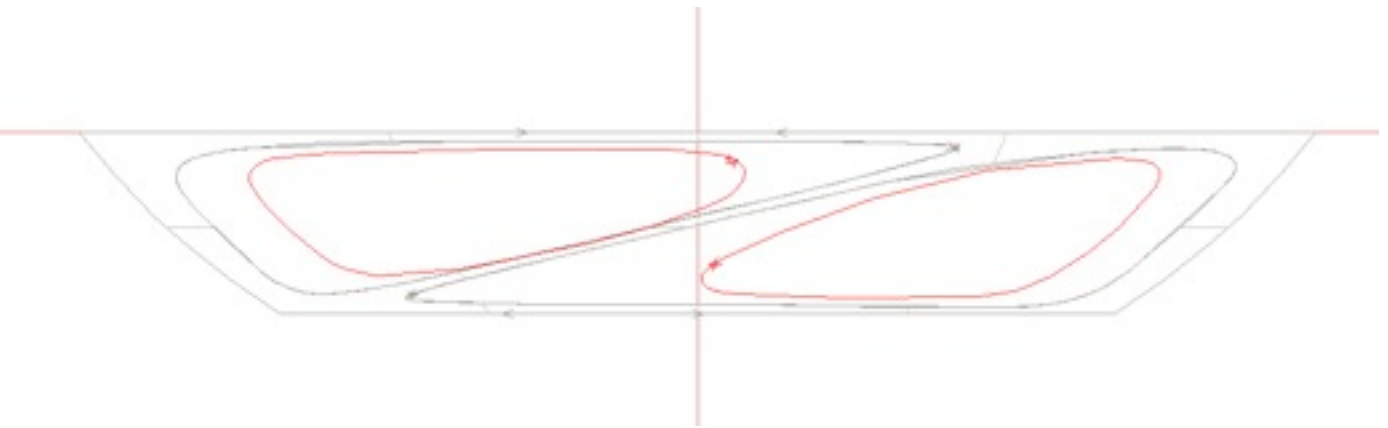
2- In front view construct Two closed splines.



3- Use those splines to trim (Trim with line) the stitched surface.

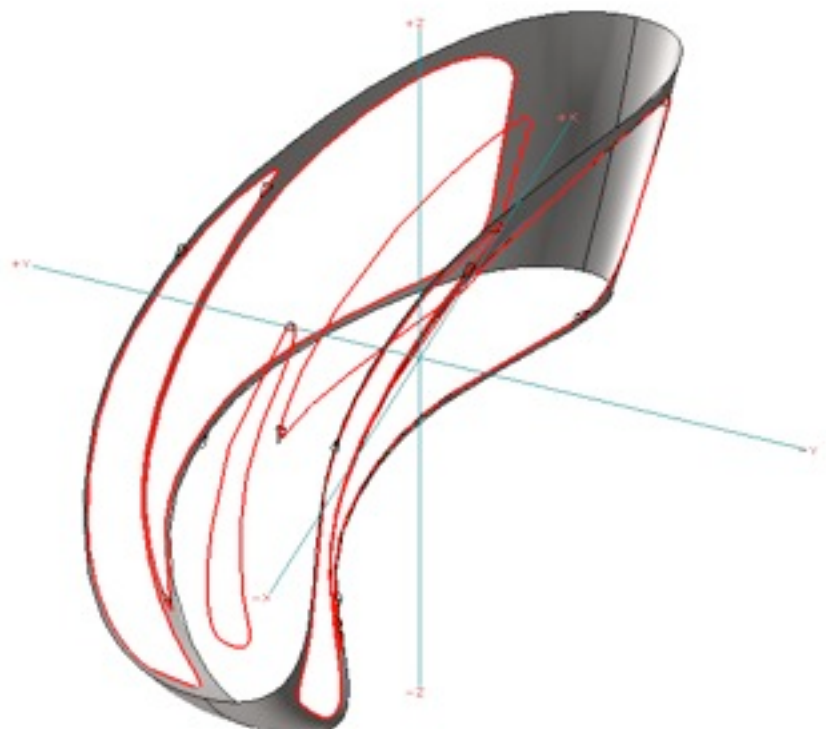


4- Construct Two more splines.



5- In top view place the splines from section 4 in the center of the bench and edit the controls of the spline, so the shape of them from this view, will more or less, follow the curvature of the bench.

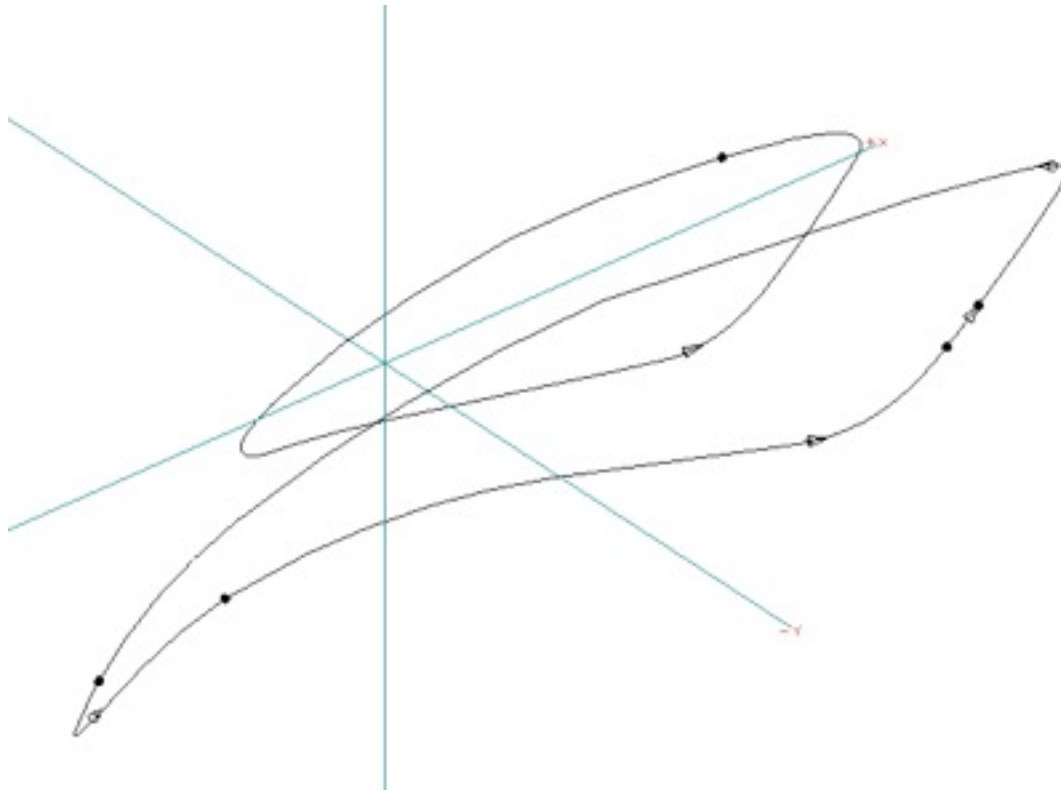
6- Use the 2D surface tool (boundary of surface object) to extract the marked boundaries from the trimmed object.



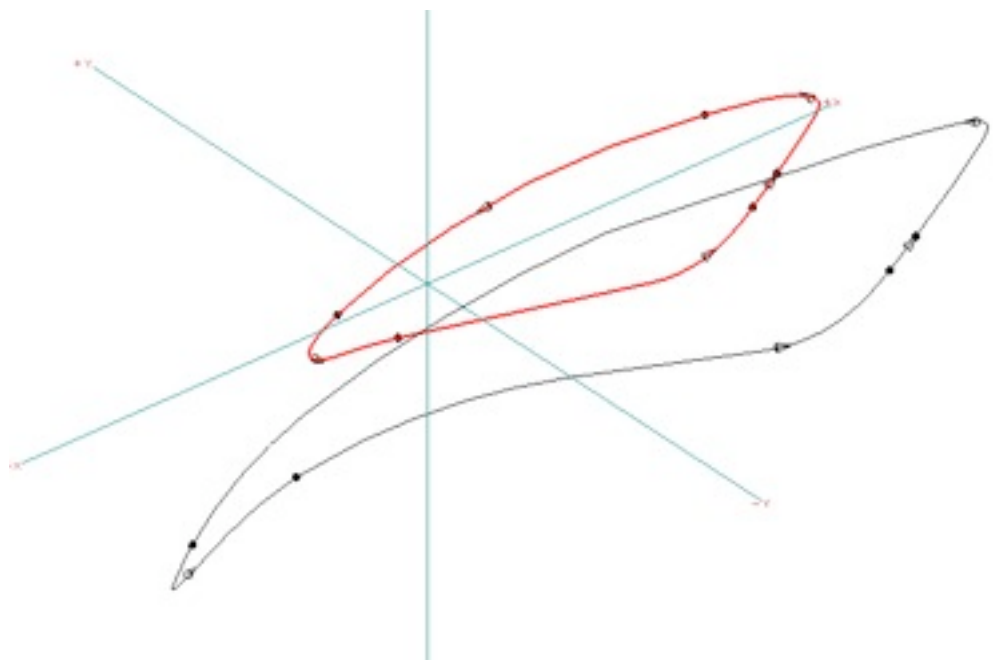
7- Now I'm going to use the extracted closed wires and the splines to construct the cavities in the bench. To do so I'll use the Loft tool.

Basically you can use the profiles as they are. But some modifications will help the program, to construct a cleaner geometry.

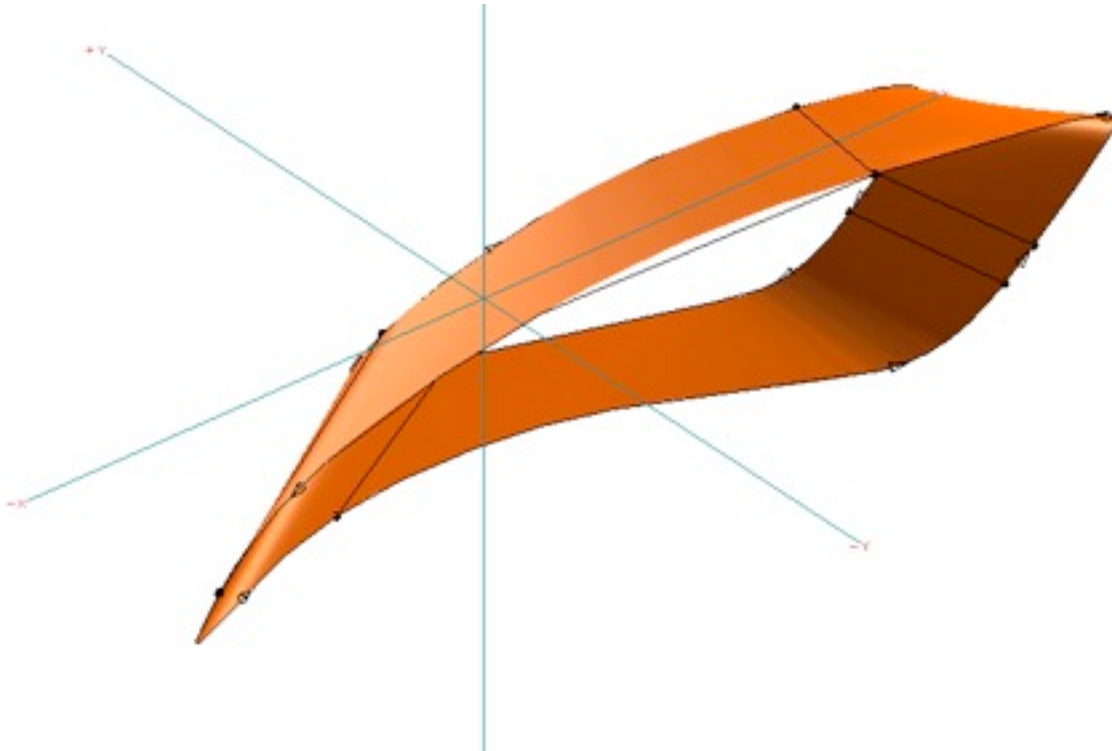
To explain this, I isolated Two profiles and made points visible.



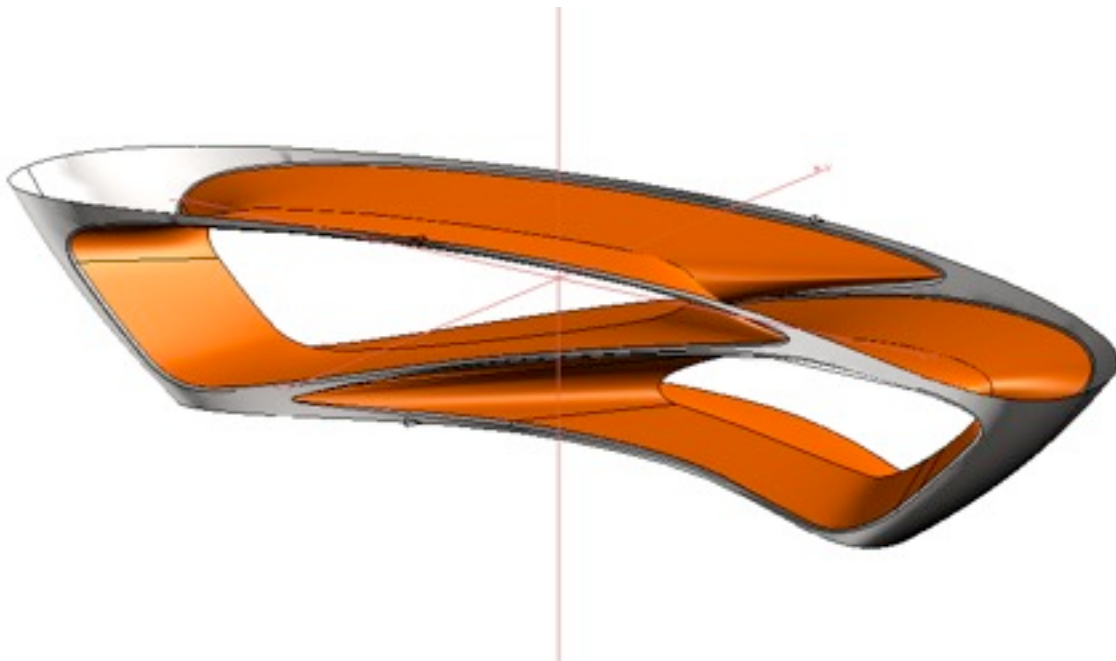
8- As you can see in the image above, the extracted closed wire and the spline, don't share the same number of points. So to help the loft tool I'll add some points to the spline, using the insert point tool. It doesn't have to be accurate and even the number of points doesn't have to be exactly the same.



9- Now use the Loft tool to create a surface from the profiles.

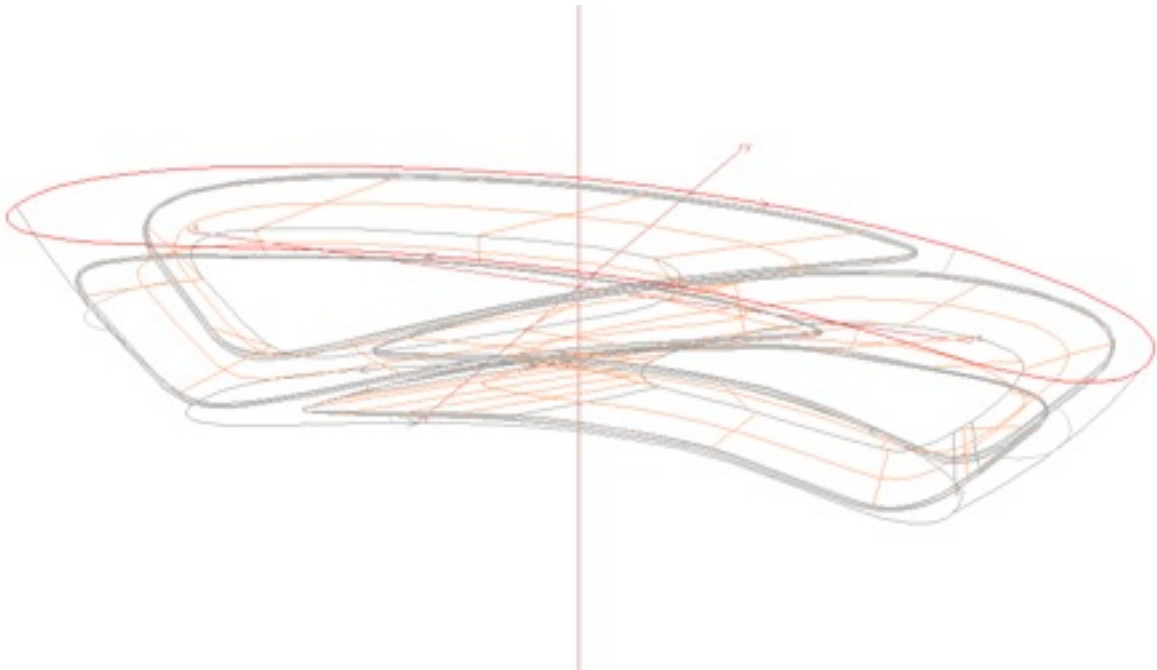


10- Repeat those steps Three more time with the remaining pairs of profiles to create the cavities geometry. Remember that the each center profile is used for the creation of Two surfaces, that share a common boundary.



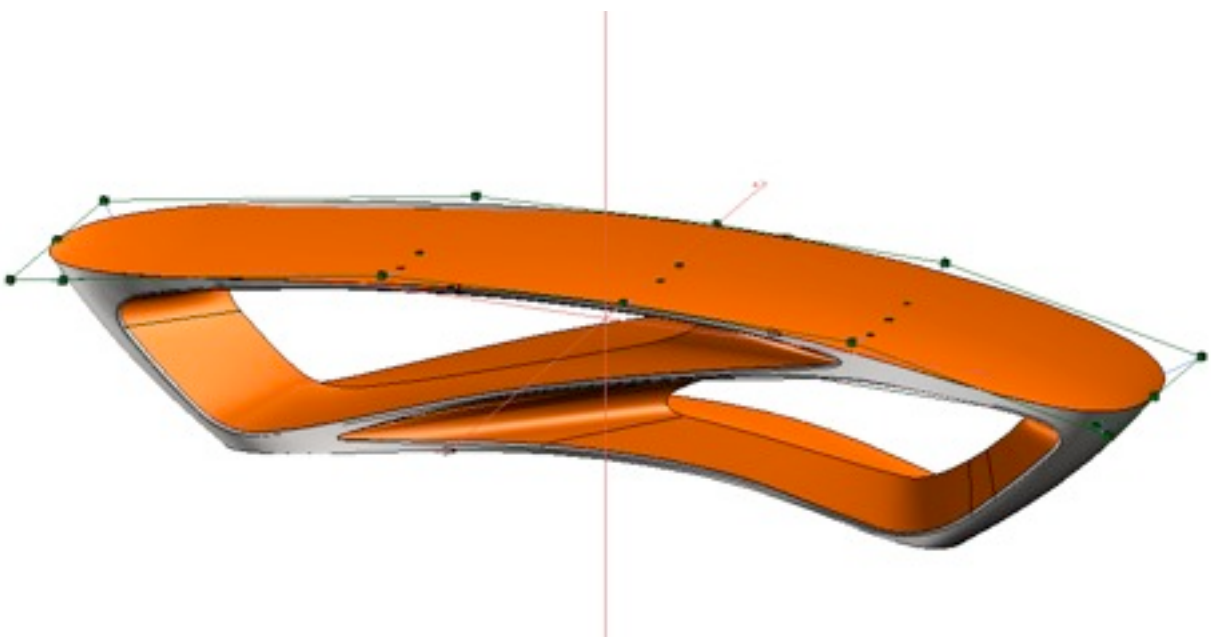
11- Stitch all surfaces (you can stitch later to)

12-Again use the 2D surface tool (each selected entity) to extract the marked segments from the trimmed object (Topological level=segment, in keep mode).



13- Use the NURBS tool (by boundary curves) to create the top surface of the bench.

14- Reconstruct that surface (reconstruct nurbs tool) to add another control line to the depth of the surface, by changing the depth degree from 1 to 2.



15- Use the edit controls tool to adjust the shape of the surface.

16- Stitch that surface to the rest of the bench.

17- Using the cRounding tool (or any other rounding tool) round the edges of the bench (assuming you're constructing in real dimensions I applied 10 mm rounding)



That's it.
Good luck.
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