

Cathedral Brasilia Part 2



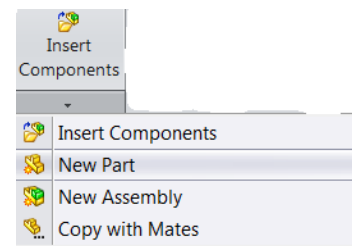
Introduction:

This lesson completes the modelling of the Cathedral Brasilia. The focus here is on modelling the Roof.



Learning Intentions:

This lesson will focus on **In-Context Assembly Modelling** in SolidWorks – creating the Roof as a part within an assembly.



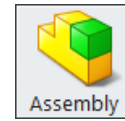
Prerequisite knowledge:

Knowledge of the following commands are required in this lesson: **Sketching, Revolved Boss/Base, Assemblies**

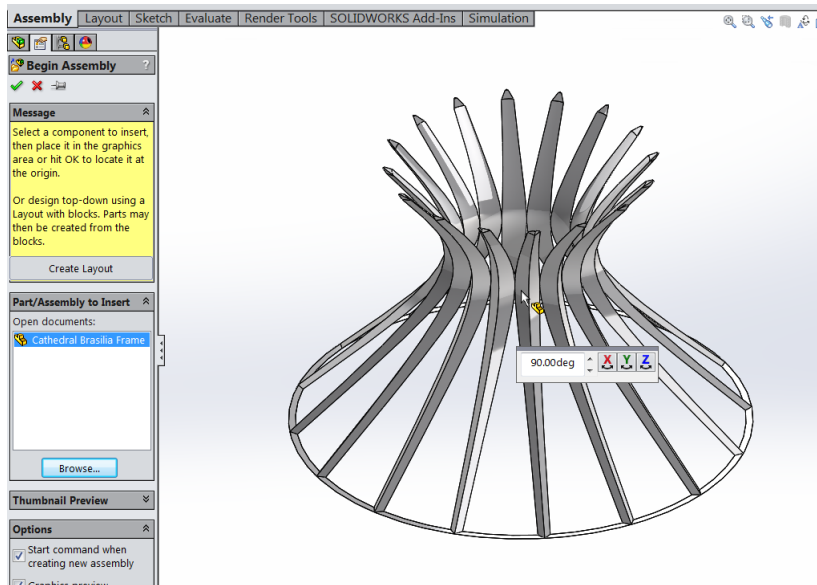
¹ <https://upload.wikimedia.org/wikipedia/commons/8/8c/Brasilia_Cathedral_by_Adonai_Rocha.png>

New Assembly

Create a new assembly. Insert **Cathedral Brasilia Frame** part. Click on green tick to accept default position



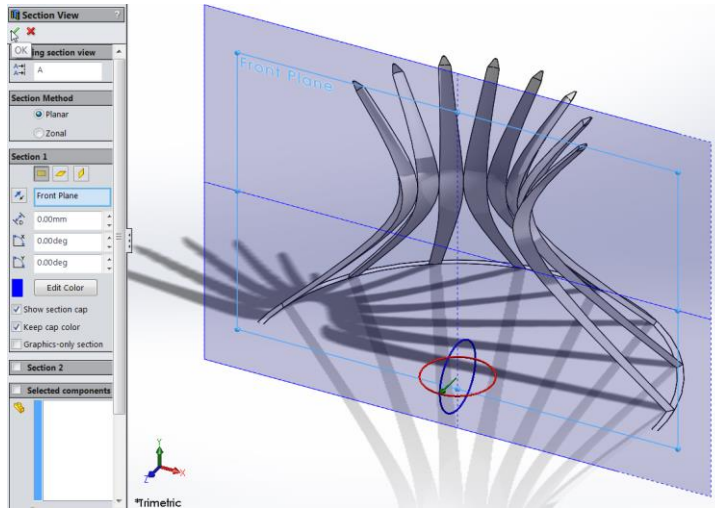
Note you can rotate the component on insertion, however this is not necessary in this instance.



Save as **Cathedral Brasilia Assembly** in folder used for part 1 exercise. Change units to **MMGS** as before

Section View

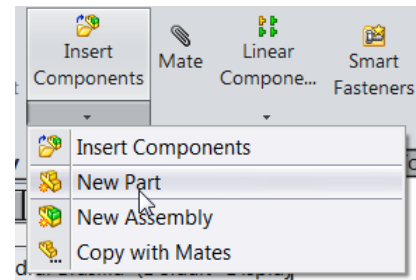
Use the section view command to look at frame using the front plane as section 1



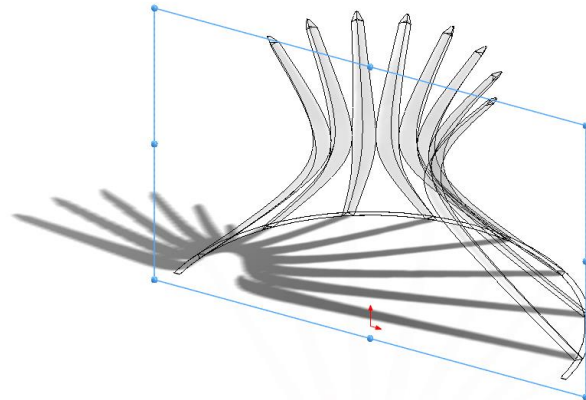
New Part

Select **Insert Components, New Part**.

Select **Front Plane** as sketch plane. Note the existing part changes transparency and a new Part is created within the design tree.

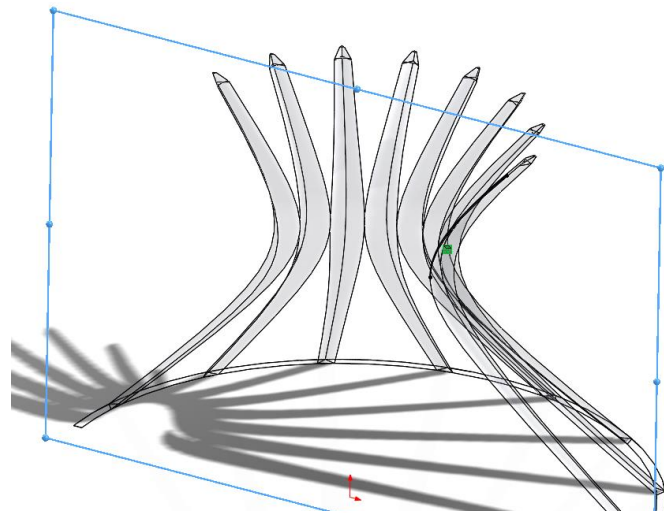


This is an in-context part indicated by the name: **Part1^Cathedral Brasilia Assembly**. The top hat symbol “^” indicates the part has been created in-context, within the assembly.



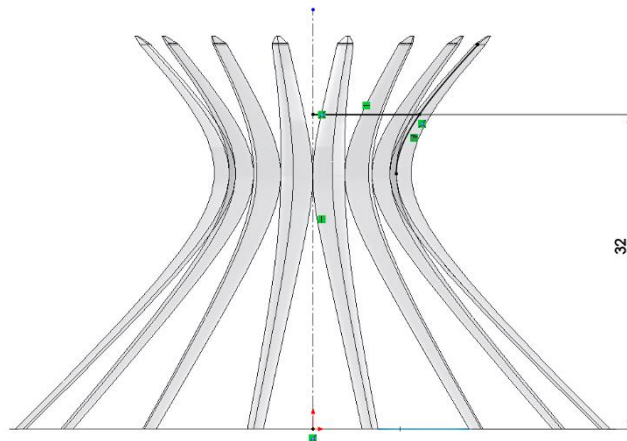
Convert Entities

Select outer edge of frame as shown and **convert entities**

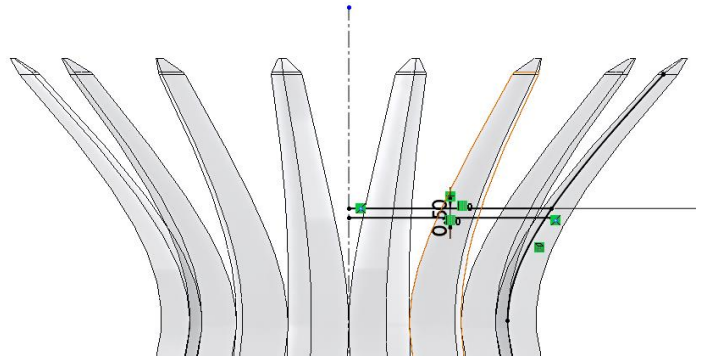


Sketch Roof

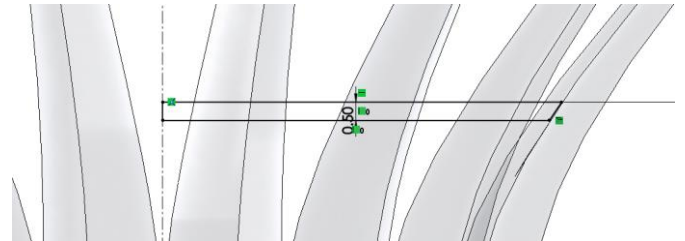
Draw centre line. Draw top line for roof, from centre to side, **32M** above base.



Offset top roof line **0.5M** below to create bottom roof line. Trim all excess lines

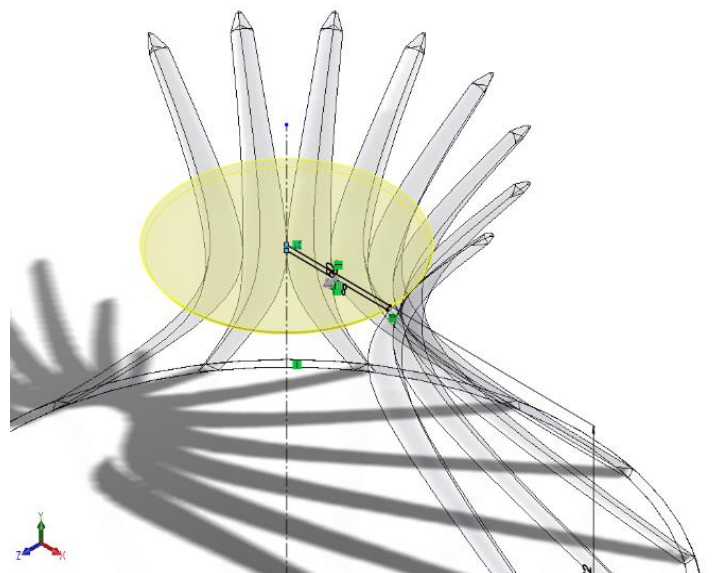


Close sketch with line at centre.



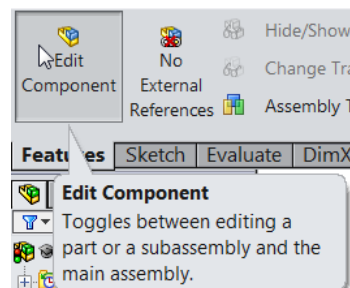
Revolve Boss/Base

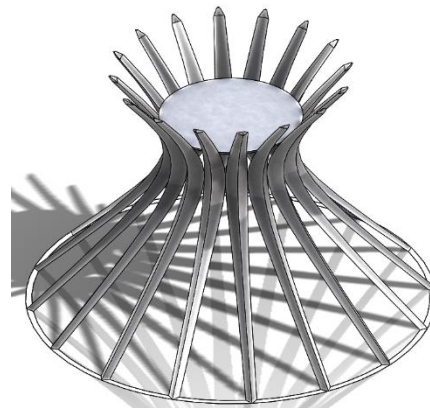
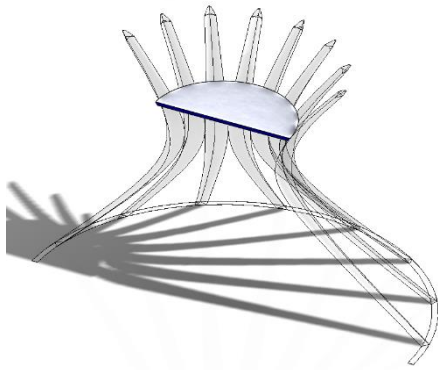
Using centre line as axis and sketch as contour revolve the roof to create the feature



Select the **Edit Component** command to exit the part.

Turn off **section view** to see completed roof part



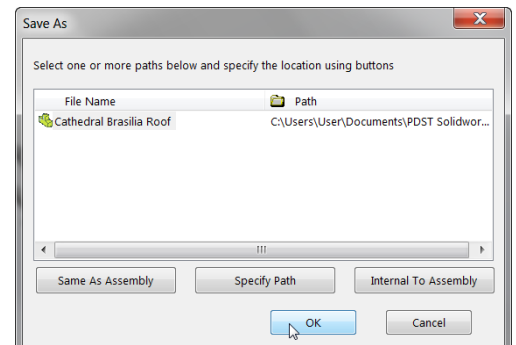
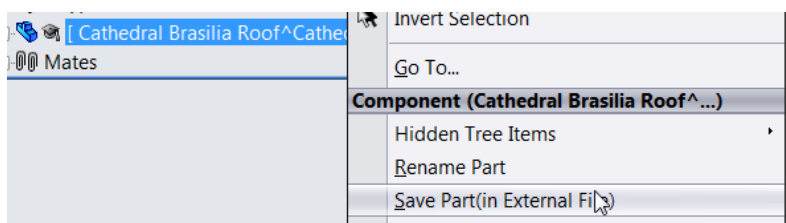
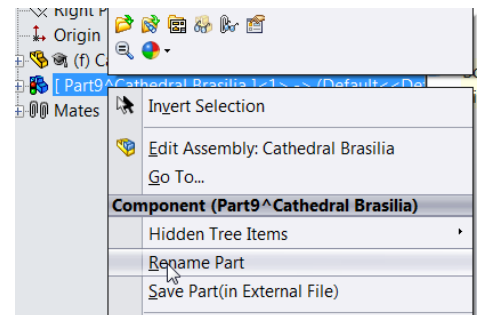


Rename Part as roof and save externally

The part is currently saved internally in the assembly, indicated by the symbol “^” in its name.

Right click on part and select **Rename Part**. Rename as “**Cathedral Brasilia Roof**”

Save roof as an external part file by right clicking and select **Save Part (in External File)**. The part will automatically save in the folder used for assembly unless otherwise specified.



The roof has now been saved as a separate part and can be opened as normal.



Note: The part name is now **Cathedral Brasilia Roof**. The top hat symbol “^” is no longer in the name as the part is now saved externally

