- **Project**

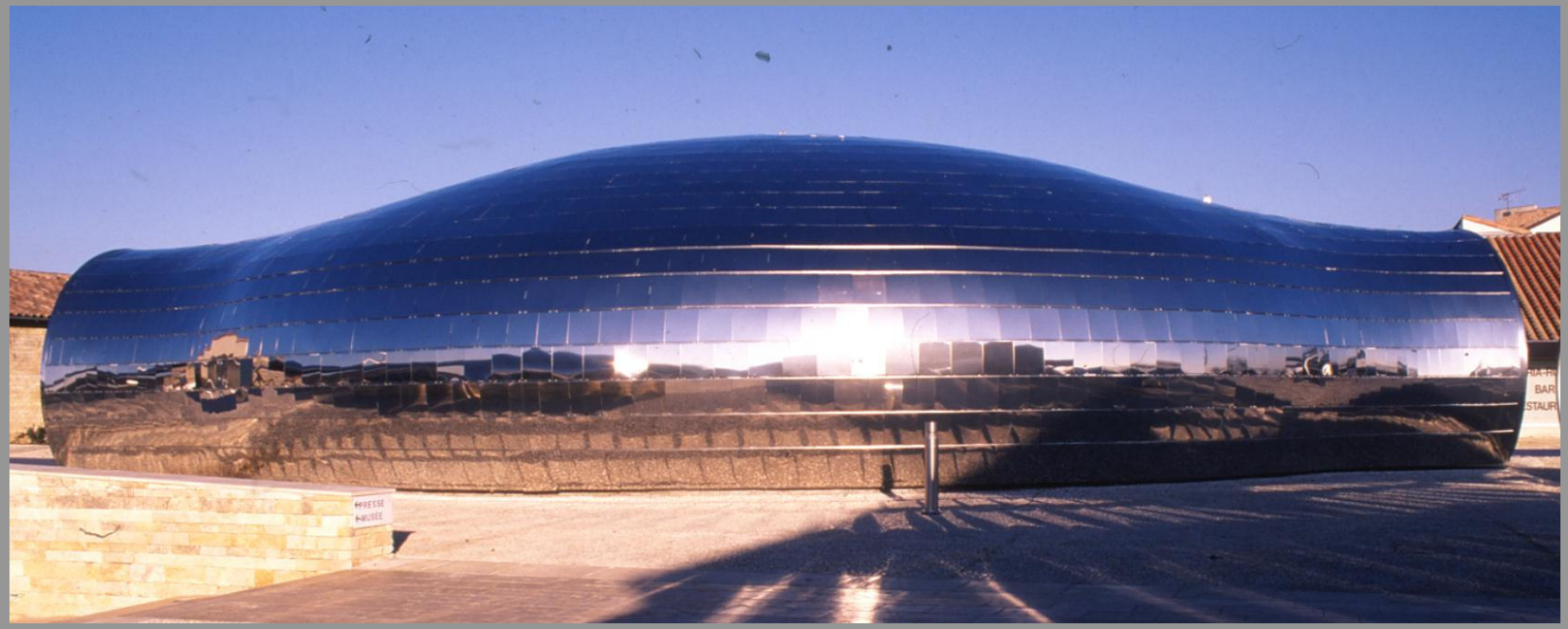
Les Ruralies, 2007, France - Design Process : Marc Malinowsky

- **Objective**

Compare two morphogenesis approaches

- **Introduction**
- **I – Presentation of the project**
- **II – Skin design : classical approach**
- **III – Skin design : pForm approach**
- **Conclusion**

- **General views**



- **General views**

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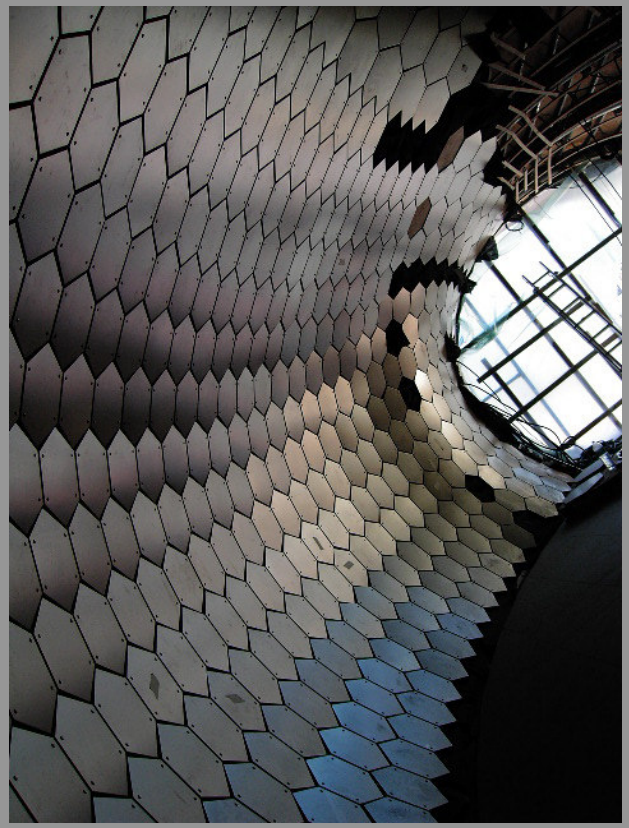
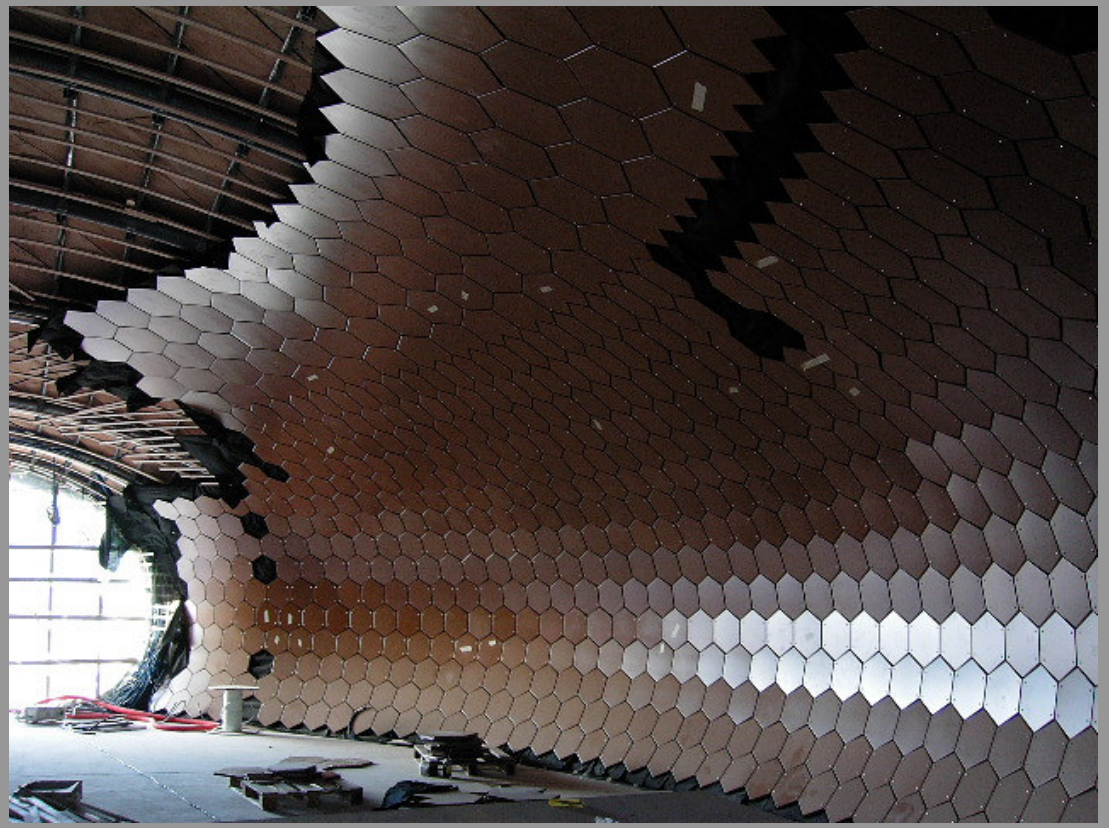




- **Arches (primary structure)**

  composed by 3 arcs of circle (2 radius of curvature)

  same diameter 193.7m - variable thickness

- **Secondary structure**

  arcs of circles

- **Connections**

  a single node allowing 3 rotations

- **First skin**

  2 layers of wood plates

- **First skin**

  2 layers of wood plates

- **Waterproofness**

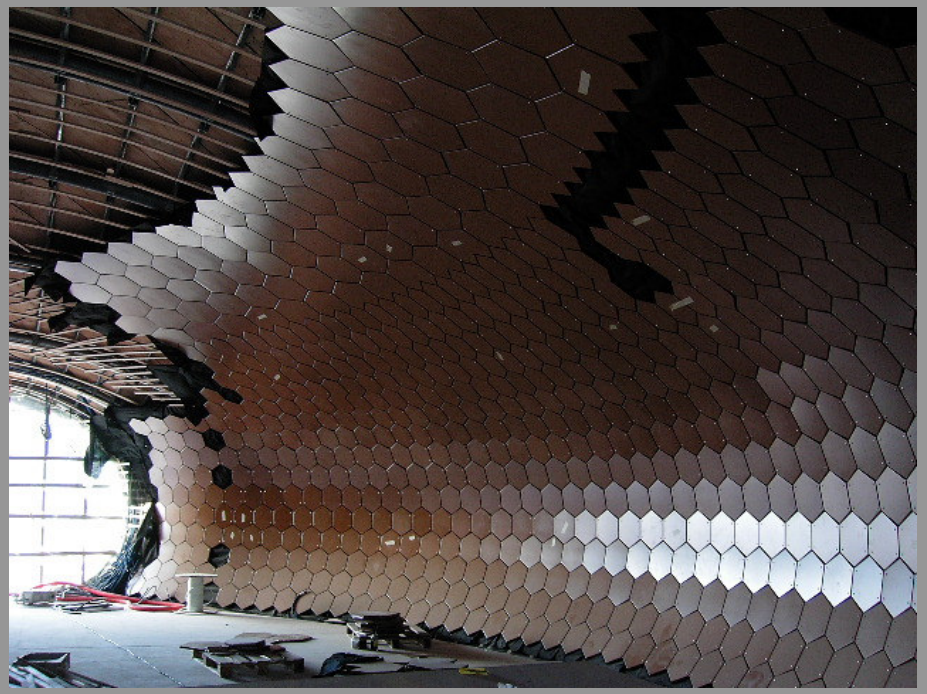
  classical solution

II - Skin design : classical approach

- **Issue**

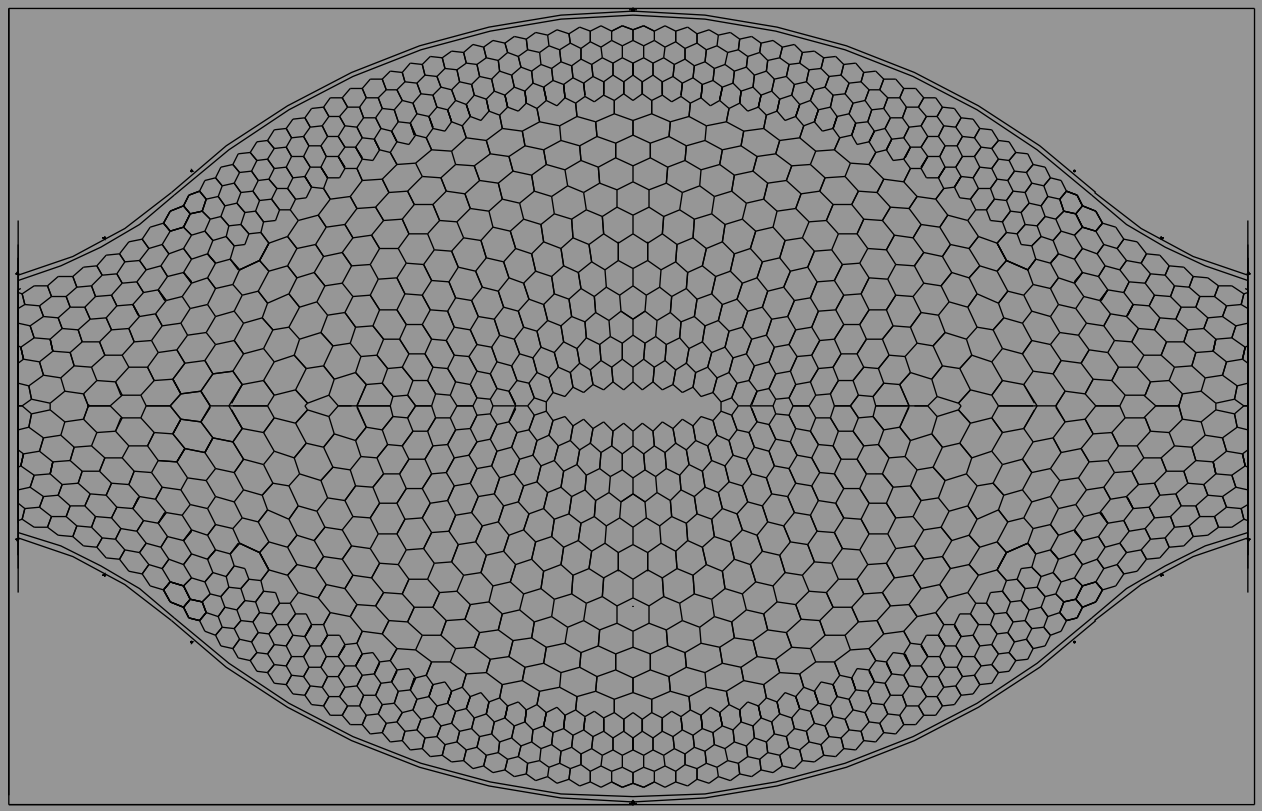
How to design the inside skin made of hexagons ?

…with only a compass as unique tool…



- **Geometry built with a compass as unique tool**

  Proposition # 1



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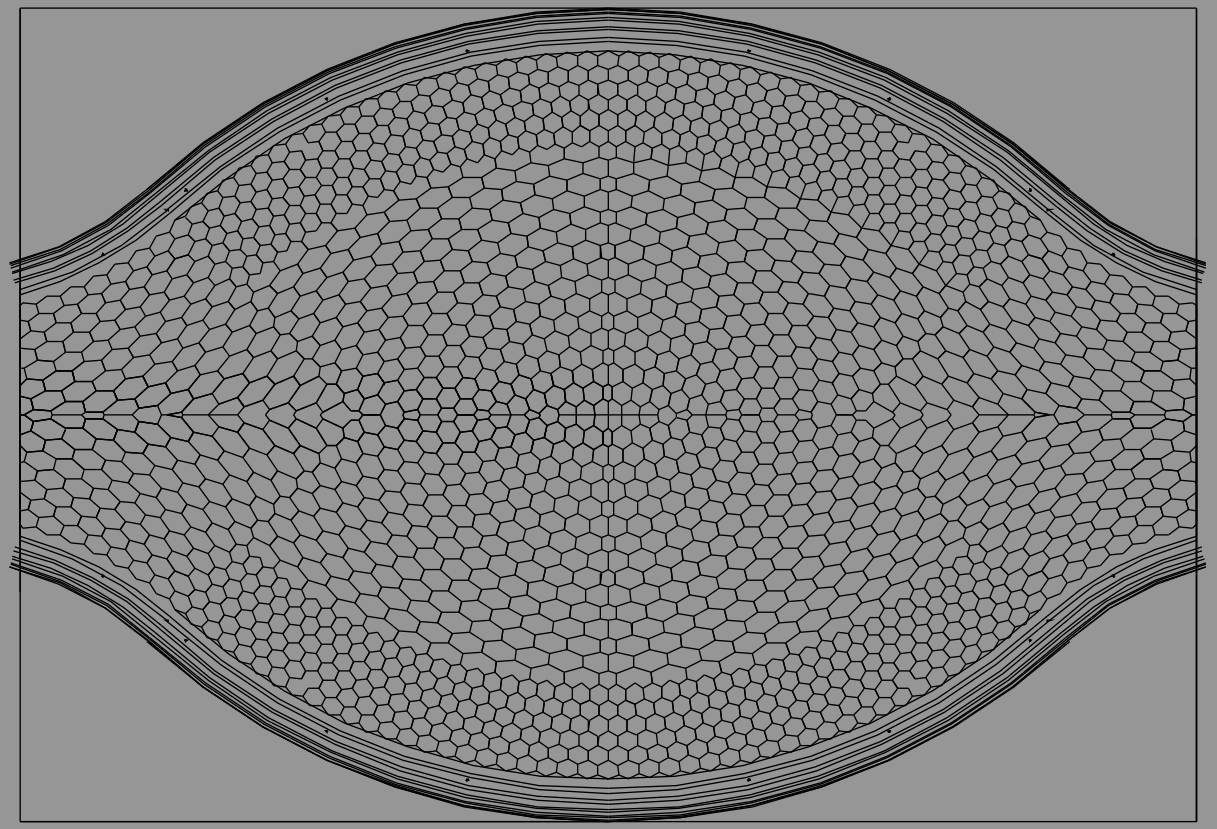
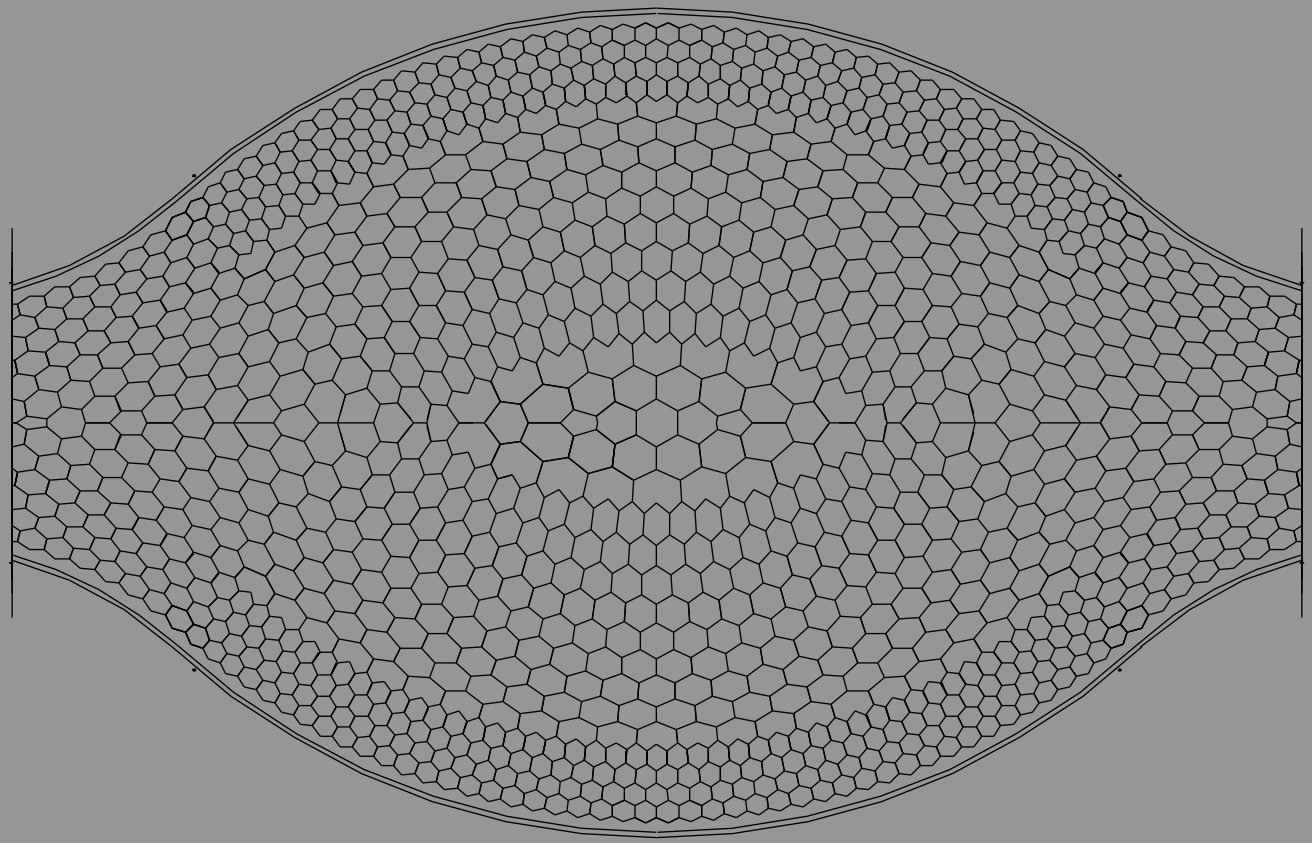
  Proposition # 2



- **Geometry built with a compass as unique tool**

  Proposition # 3



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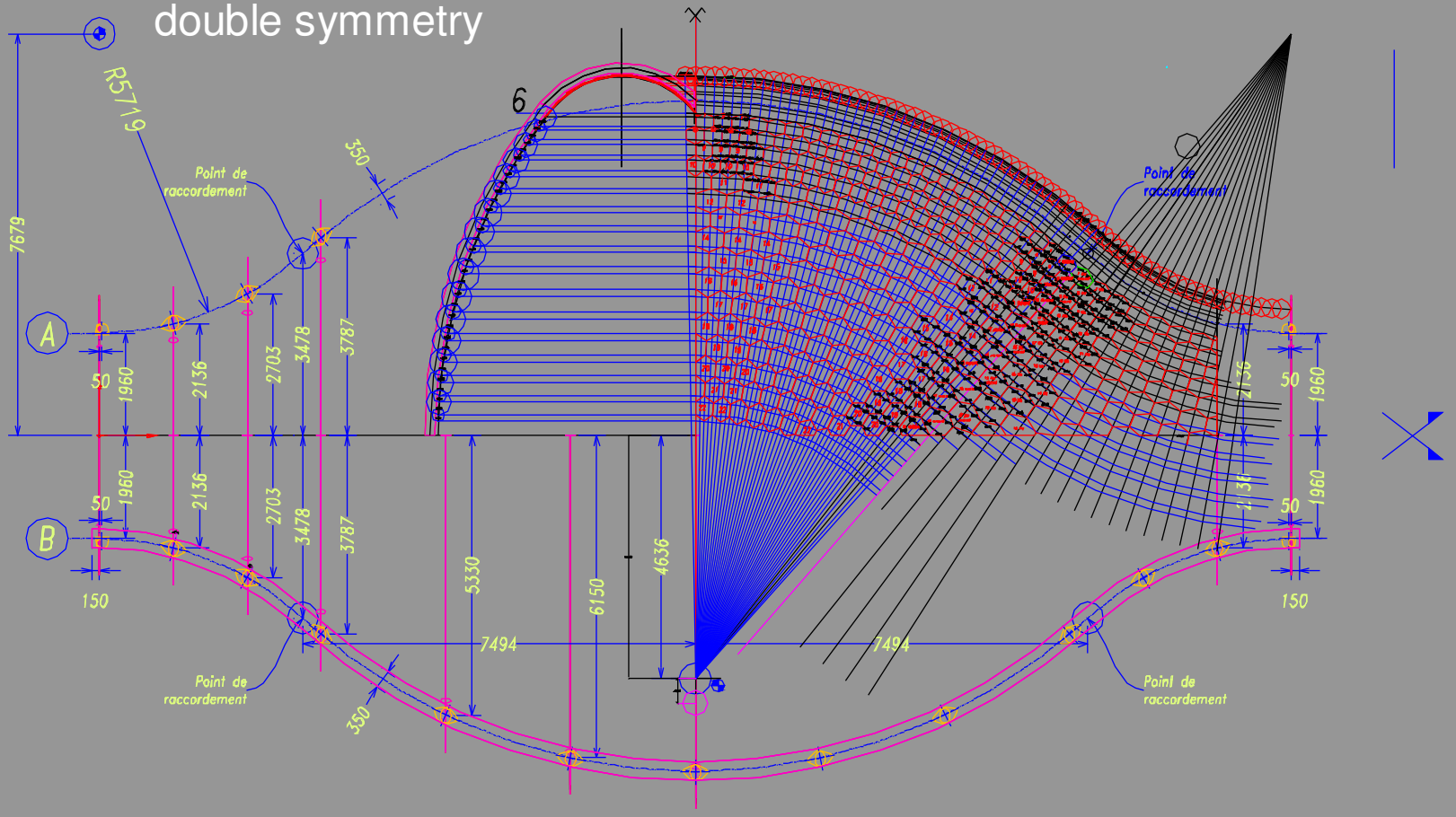

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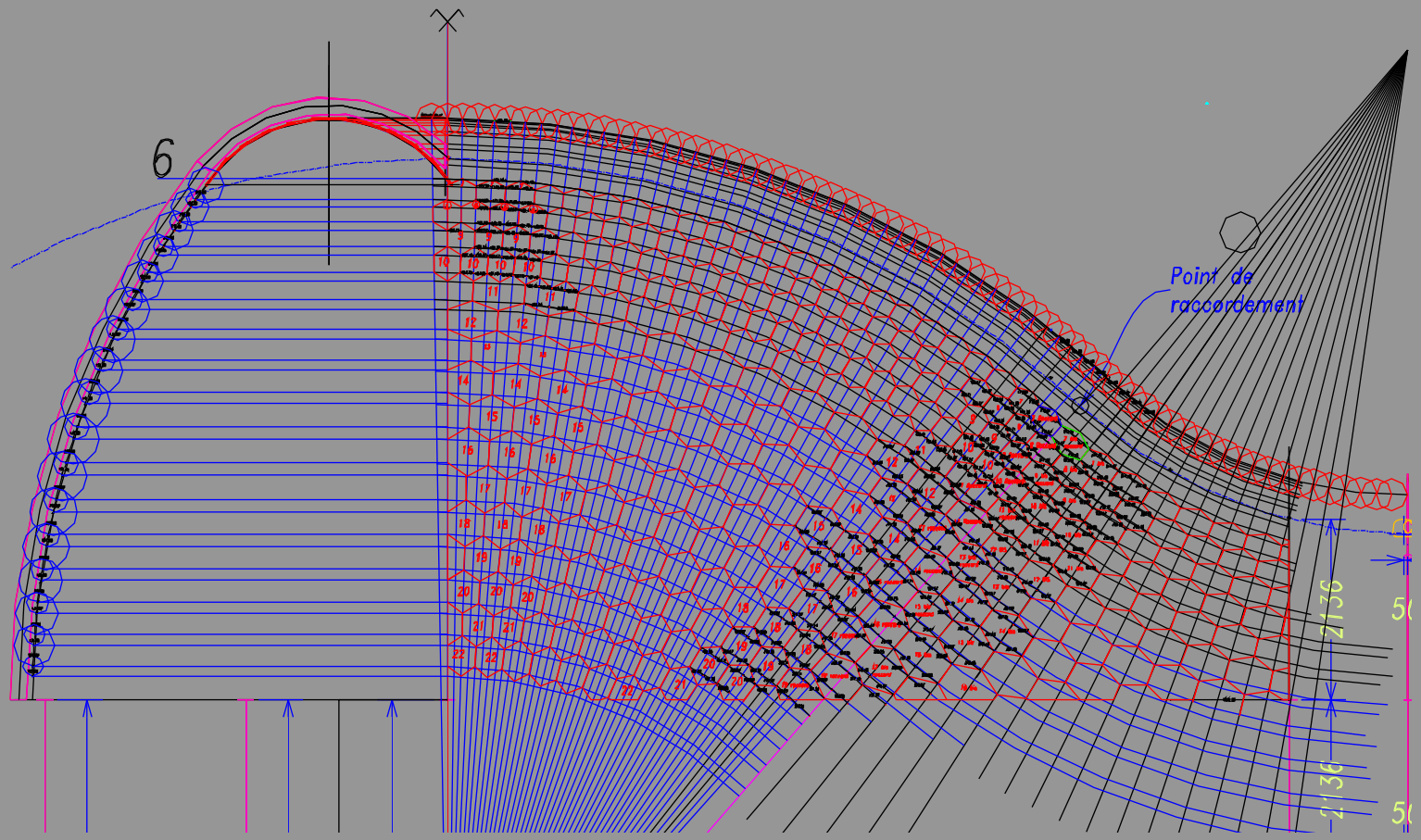
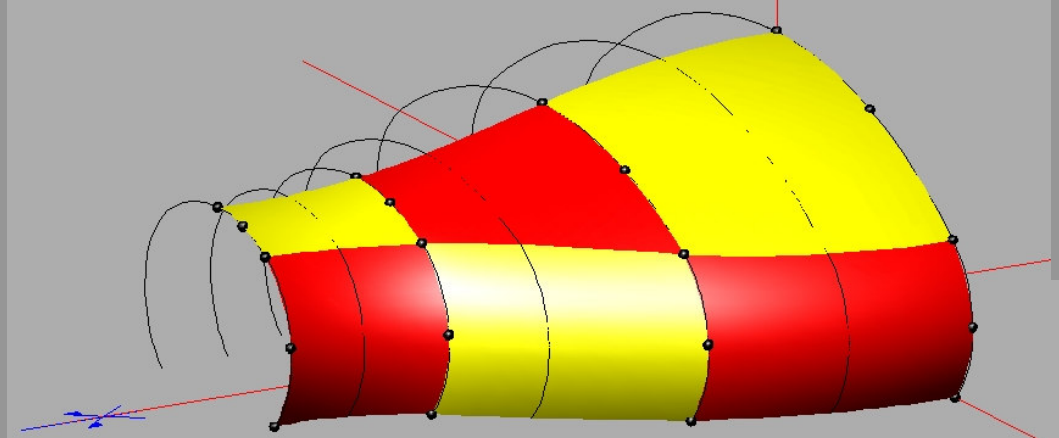


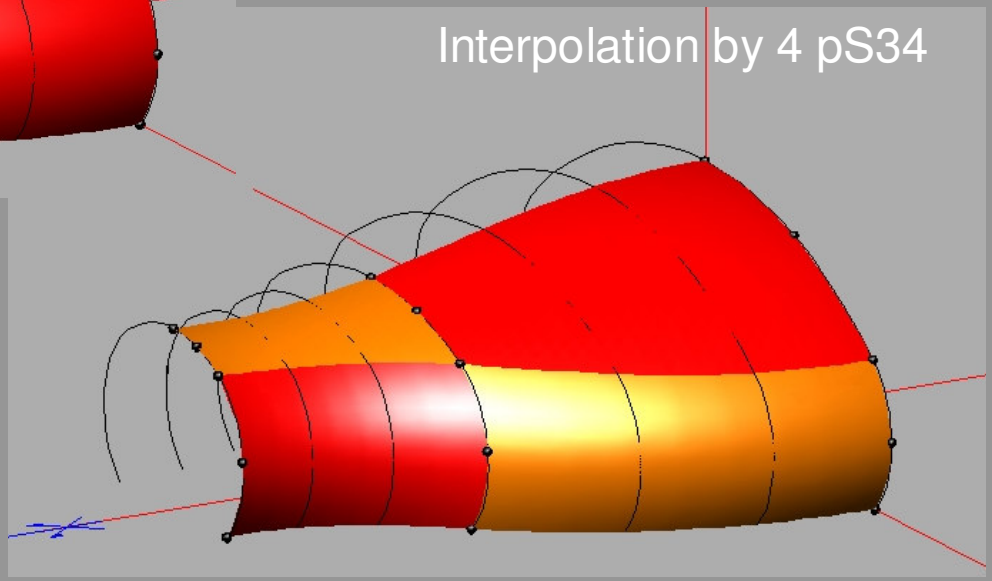
III - Skin design : pForm approach

- **Starting from the Malinowsky's shape**

Interpolation by 6 pS33

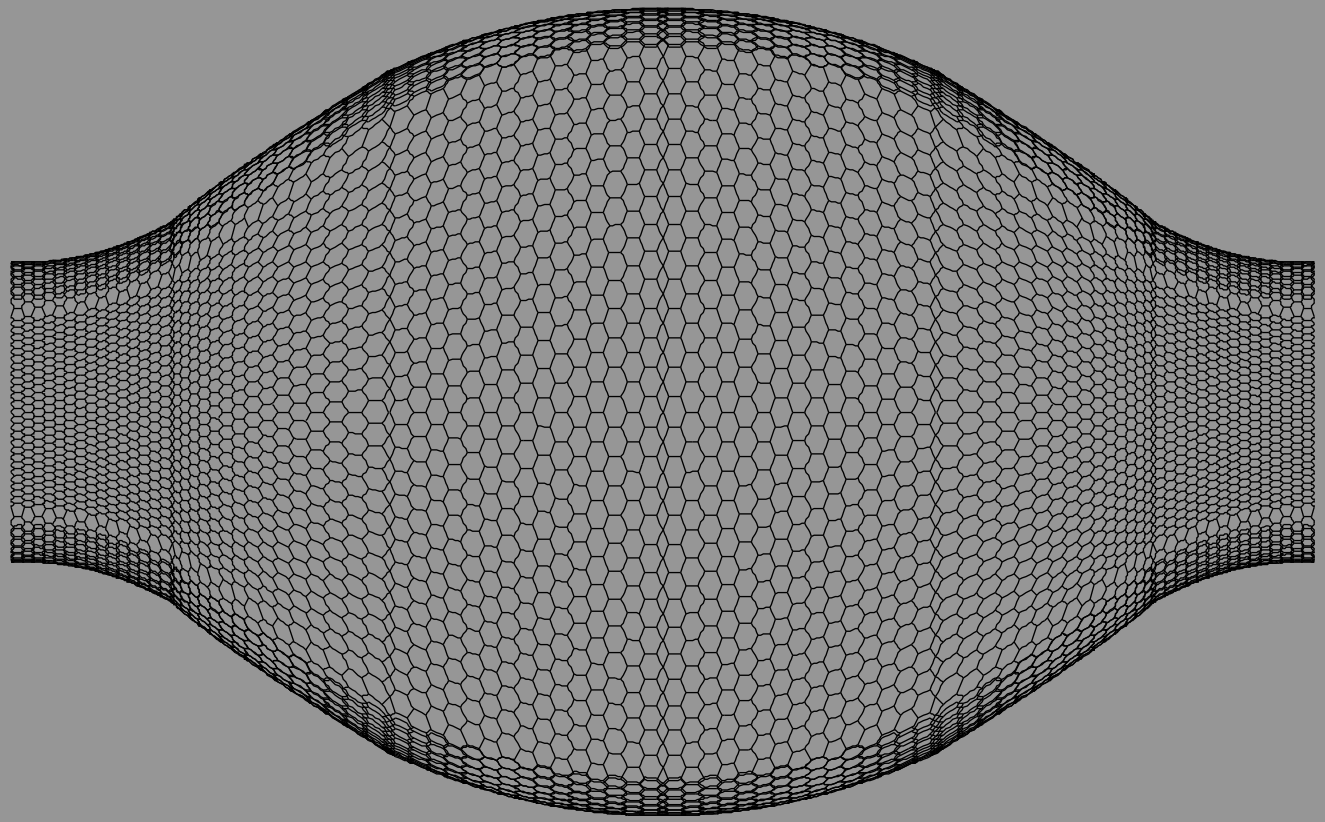


Interpolation by 4 pS34



- **Starting from the Malinowsky's shape**

Immersion of an hexagonal mesh (iSegments)



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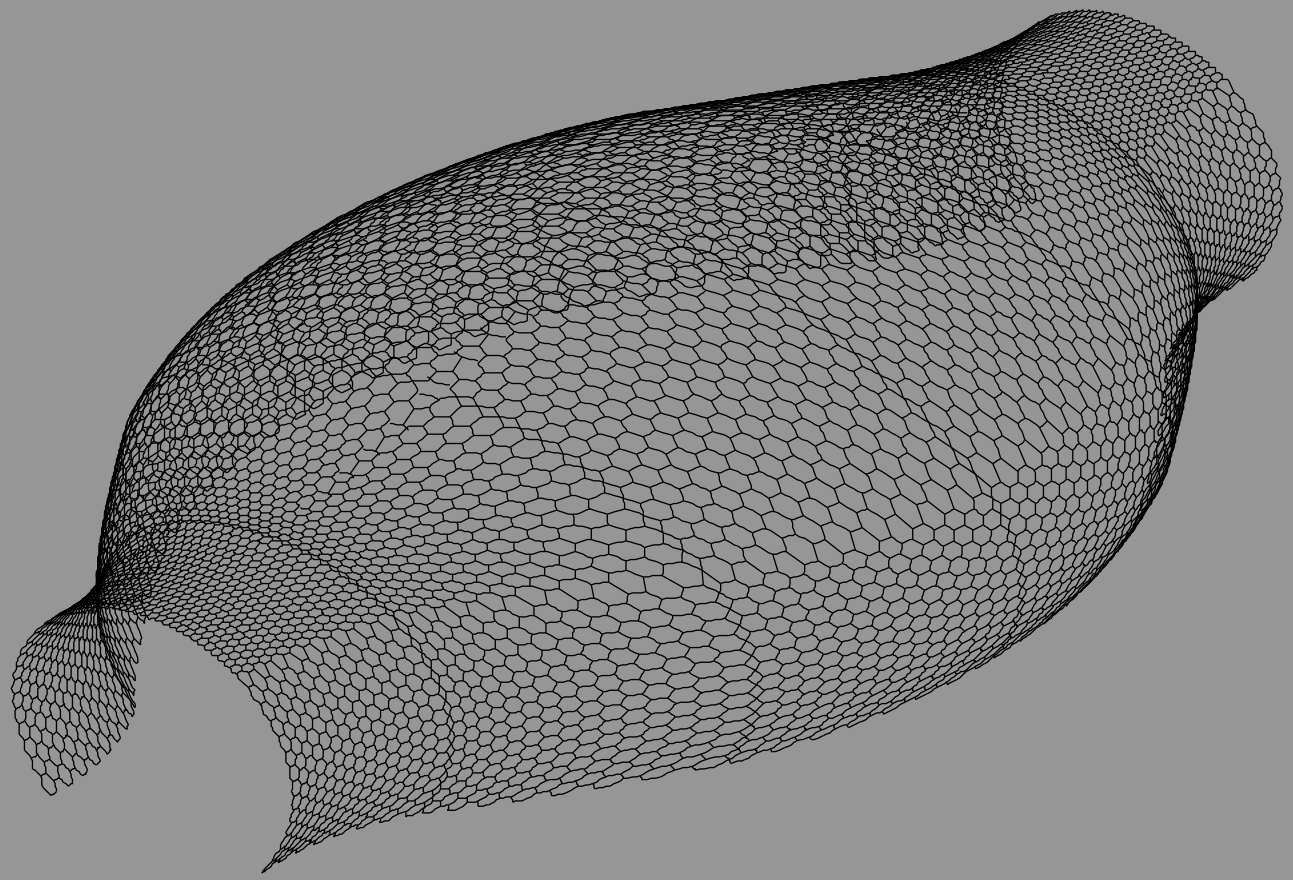
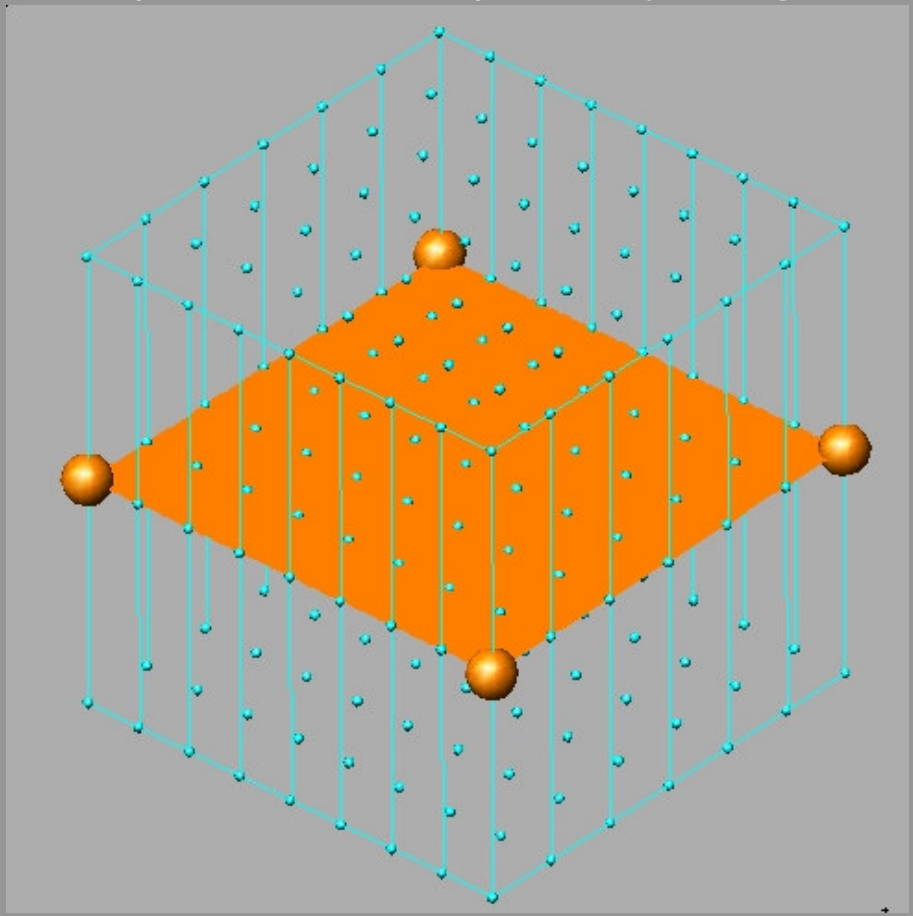


- **Dive into the full pForm approach !**

Immersion of a simple surface composed by 2 segments (4 control points) in a “cube”

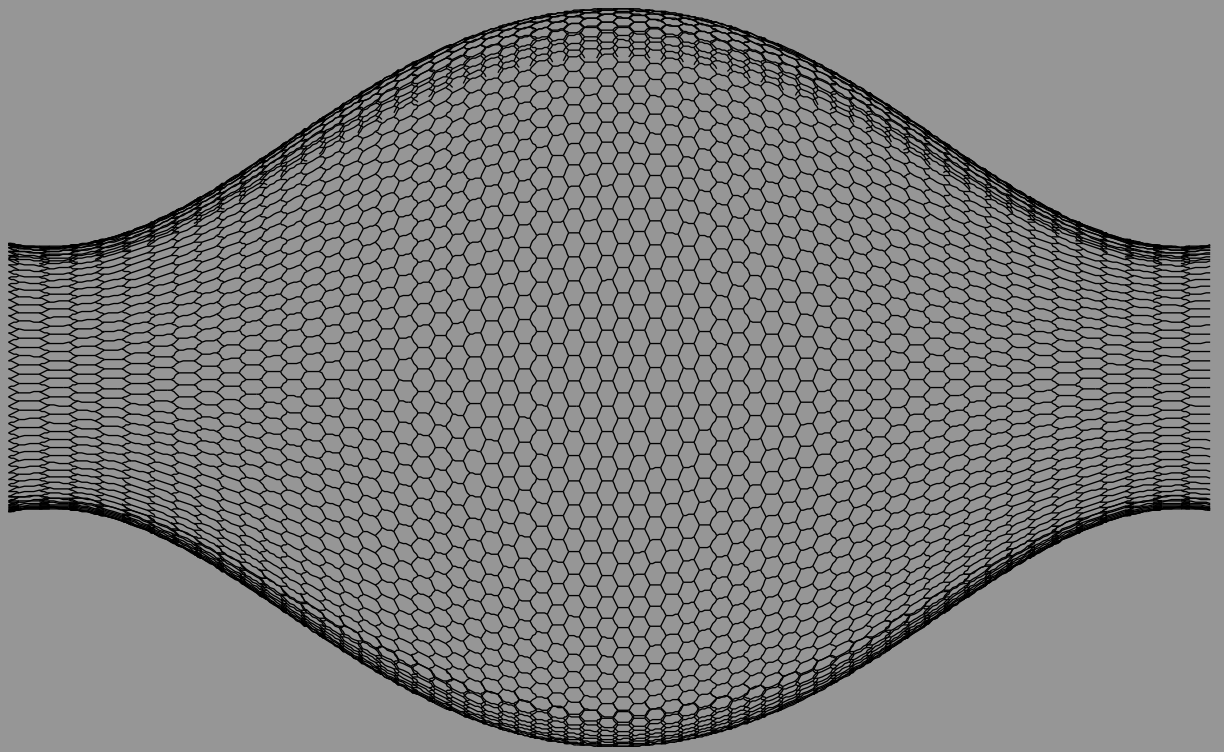


- **Dive into the full pForm approach !**

Morphogenesis

- **Dive into the full pForm approach !**

Mesh possibility



- **Dive into the full pForm approach !**

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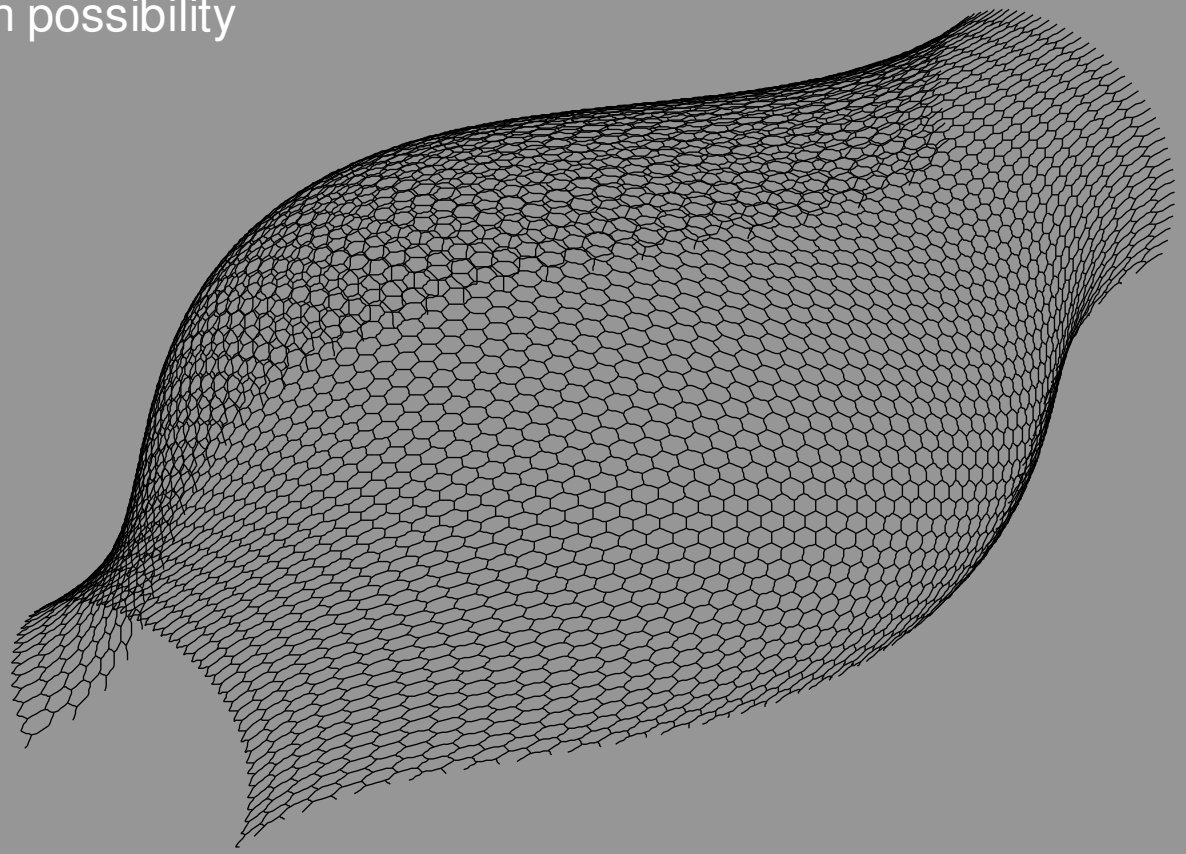

- **Discussion**

Classical geometrical approach

Long design process

Shape limited by one tool (circle) …and symmetry

Mesh limited

pForm approach

“Time saving”

Wide range of different shapes

Wide range of different meshes

Let’s go !