

# Digital Modeling in Automotive: A Promising Career Path

**Richard Gillespie/Terry Chen**

Chief Modeler/Senior Modeler    Hyundai Design North America

[rgillespie@hatci.com](mailto:rgillespie@hatci.com) / [tchen@hatci.com](mailto:tchen@hatci.com)



# Rich Gillespie...

- First toys were cars
- Learned how to draw from CARToons Magazine
- Inspired by Porsche 928 and a few Matchbox



Engineered to defy time (and speed limits). PORSCHE

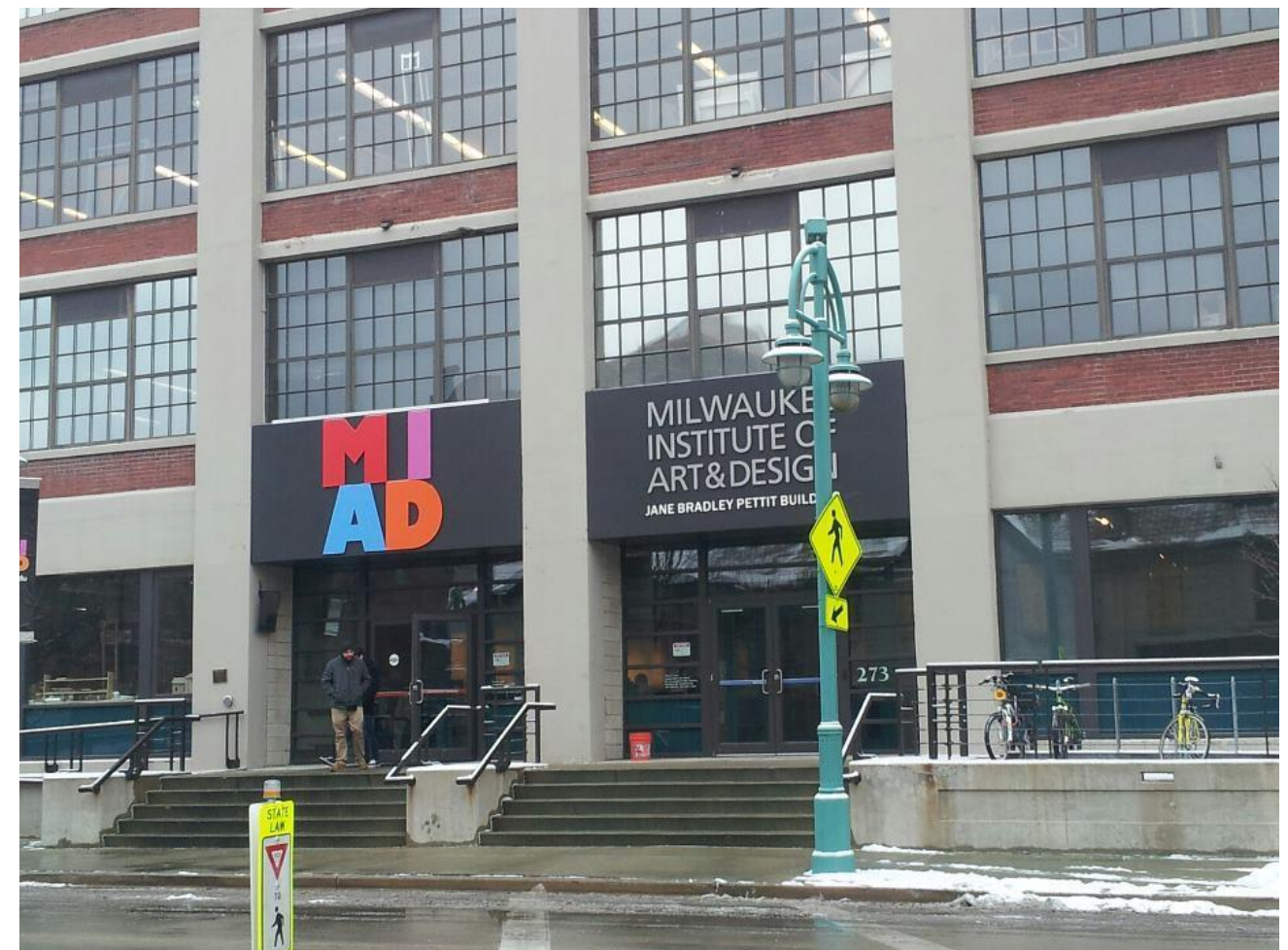


# Rich Gillespie...

- Started at Cleveland Institute of Art



.....finished at MIAD



# Rich Gillespie...

- Did Product Design for Fiskars, GE Medical, and Waterpik
- Hired by GM in 2000 (Declined Interview for Design)
- Worked for GM Advanced Design in England 2004-2007
- Hired by Hyundai Design in 2007
- Became head of HDNA CAS Modeling team in 2016



# Rich Gillespie...

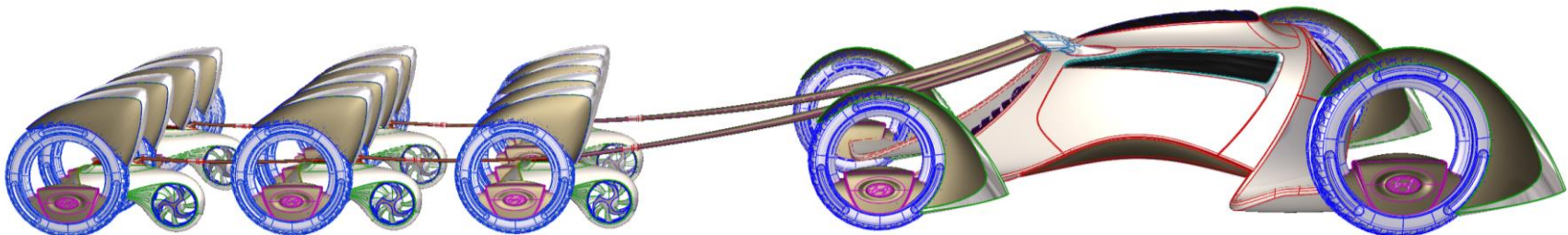


- GMC Graphyte
- Cadillac SRX
- Volt Concept Car
- Chevy Malibu Maxx
- Buick Lacrosse Interior

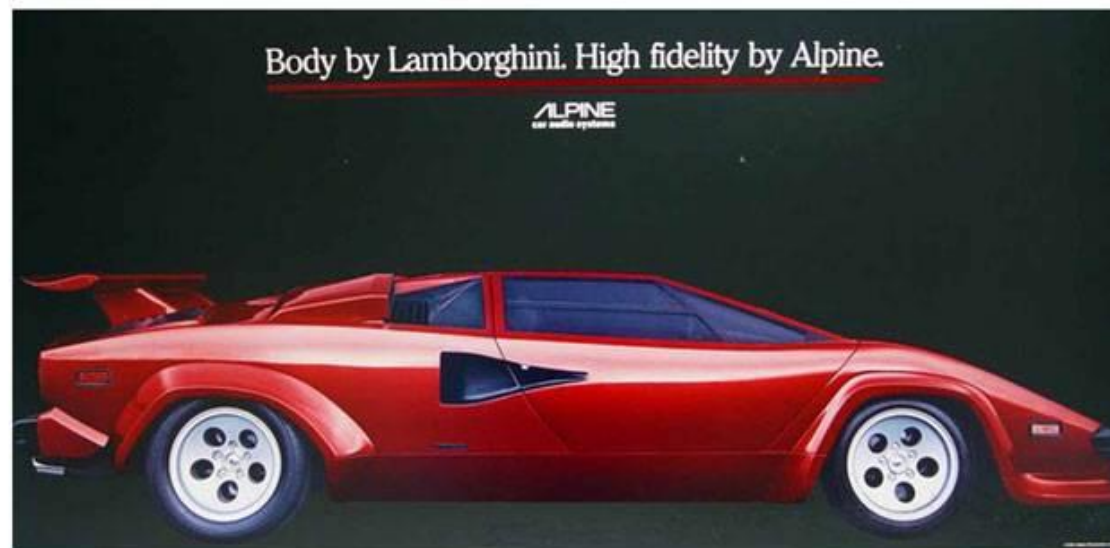


# Rich Gillespie...

- Hyundai Santa Cruz Showtruck
- HCD-14 Interior
- Hyundai Santa Fe Interior
- Hyundai Tucson Interior
- Hyundai Elantra Interior
- Hyundai Curb



# Terry Chen.....



- Always found cars fascinating. From my childhood Matchbox toy cars to transformers to the Super cars of the 80's, they had a huge influence in my future career in the car industry.





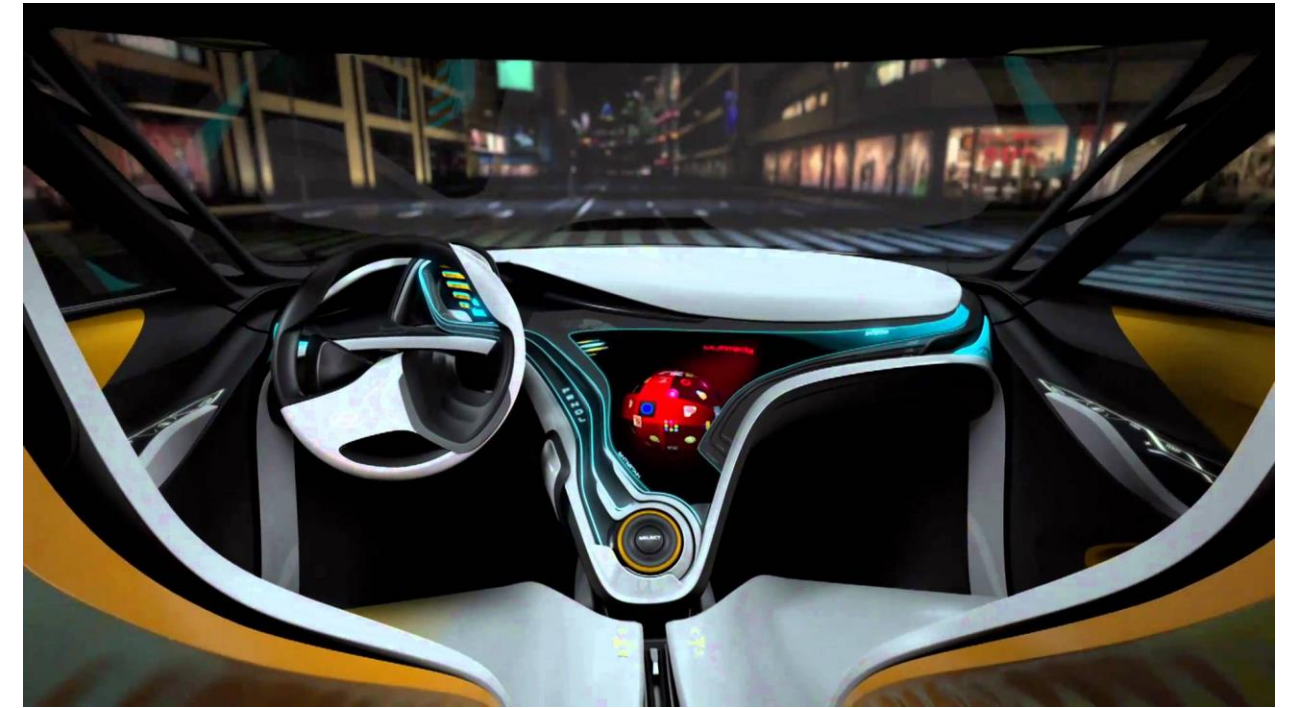
# How it all started

- Studied Transportation Design at ArtCenter College of Design.
- After graduating I was offered a position as a designer at Sea Ray in Coco Beach, Florida but I turned it down.
- GM interviewed me and I was offered a position as digital sculptor at General Motors in Warren, Michigan, I accepted.





- Vision Gran Turismo concept
- Hyundai Sonata
- Hyundai Equus/Genesis G90
- Hyundai Curb
- HCD14
- And many more.....





- Pontiac Rev concept exterior
- Pontiac G6 exterior
- GM Sequel concept exterior
- Cadillac 16 concept



# Key Learning Objectives

At the end of this class, you will be able to:

- **Understand a bit of Surfacing History**
- Understand Current Job Market
- Know the different types of Surfacing (Concept/Class B/ClassA)
- Know what Softwares are being used
- Know where to go to for self-instruction
- Understand the positives and negatives of Automotive Surfaceing
- What character traits are most helpful to this field
- Eat an apple, banana or cookie

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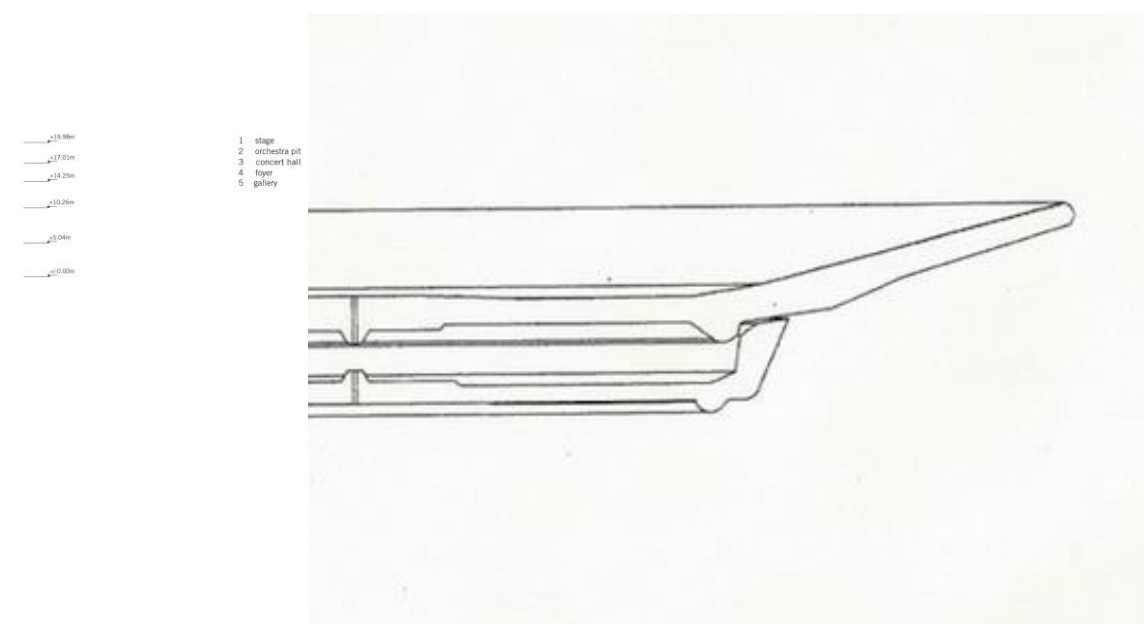
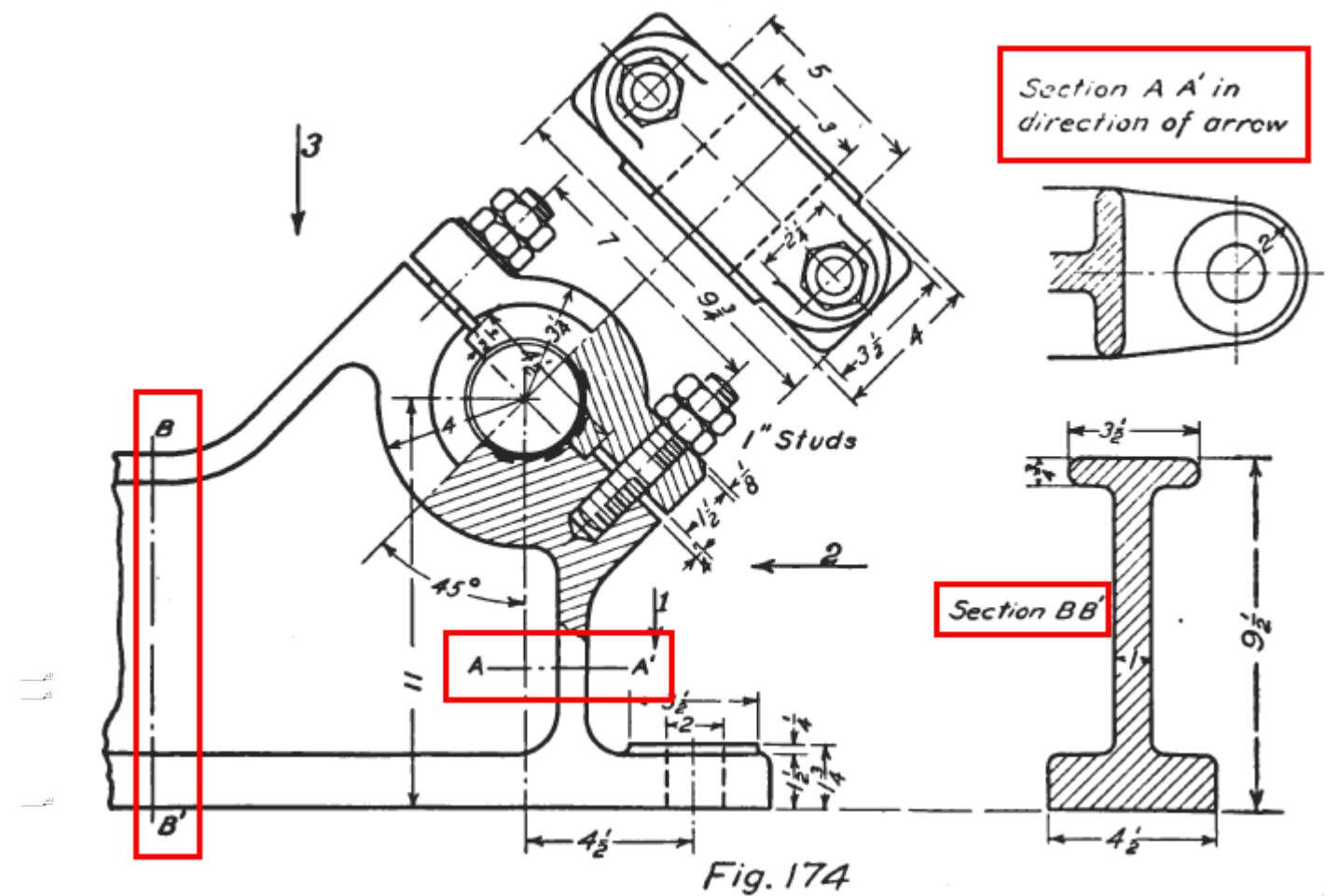
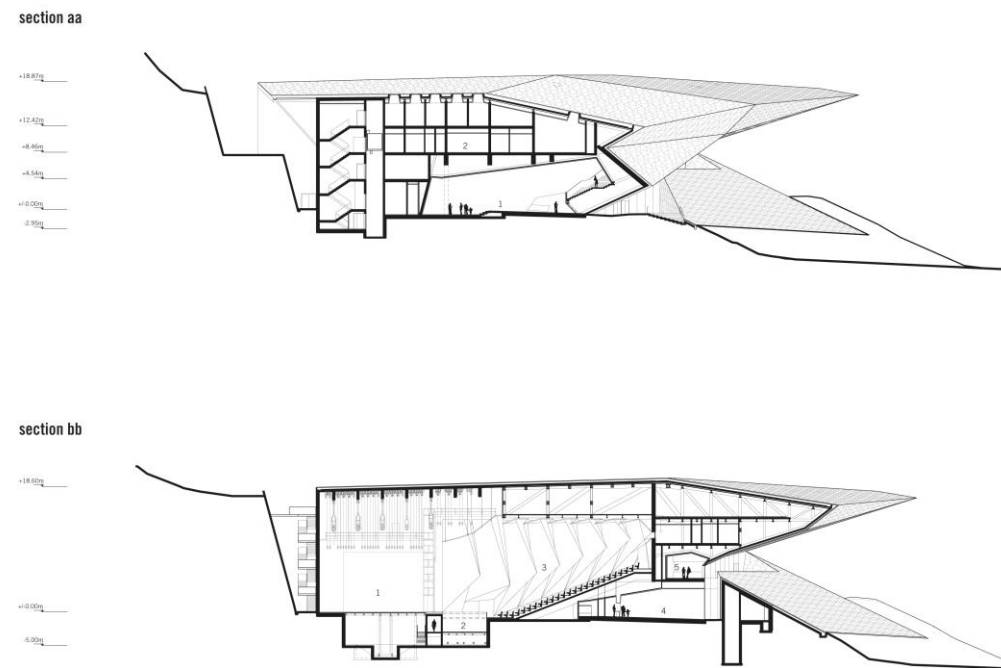


“The composer opens the cage door for the arithmetic, the draftsman gives geometry its freedom.”

—Jean Cocteau

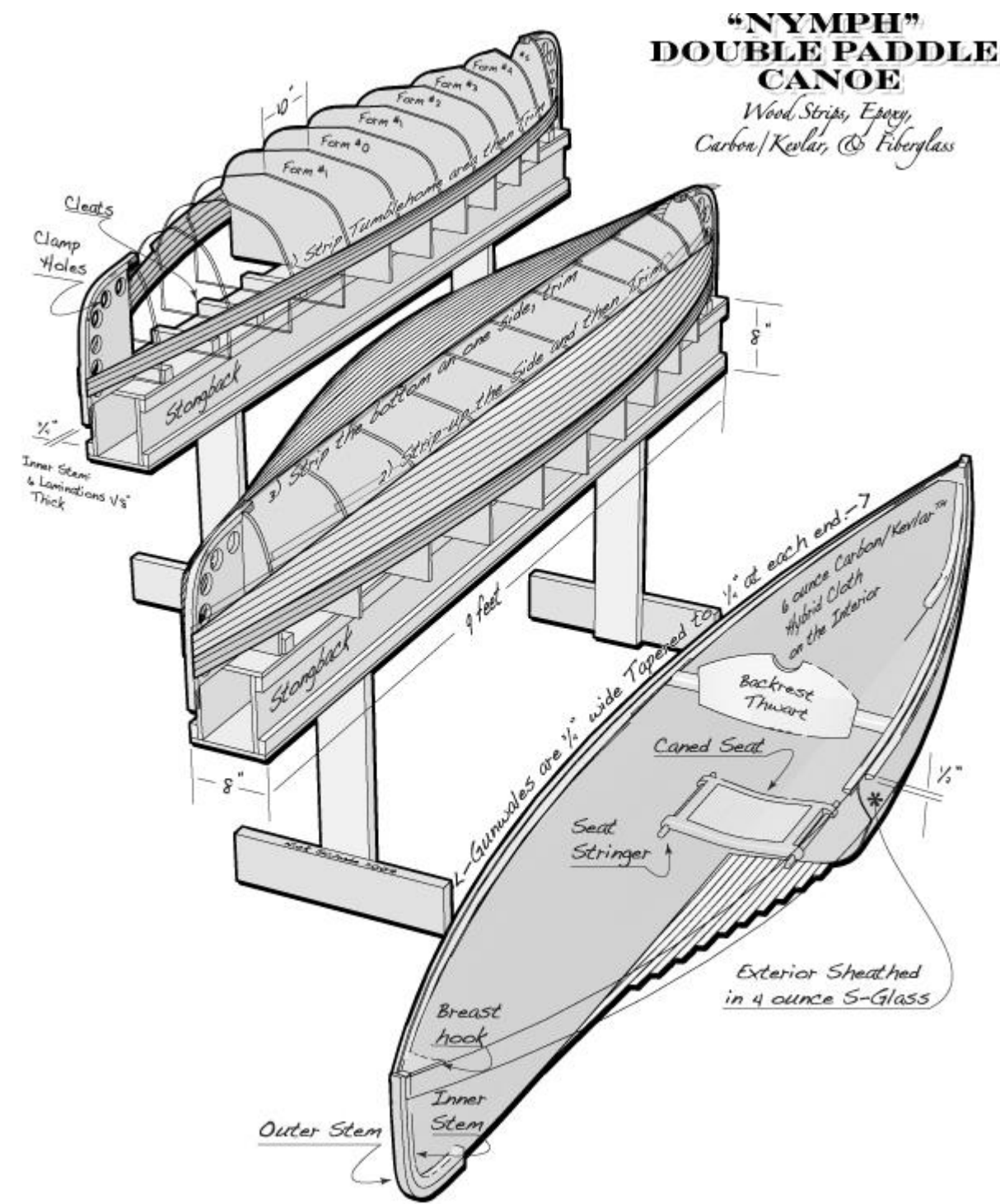
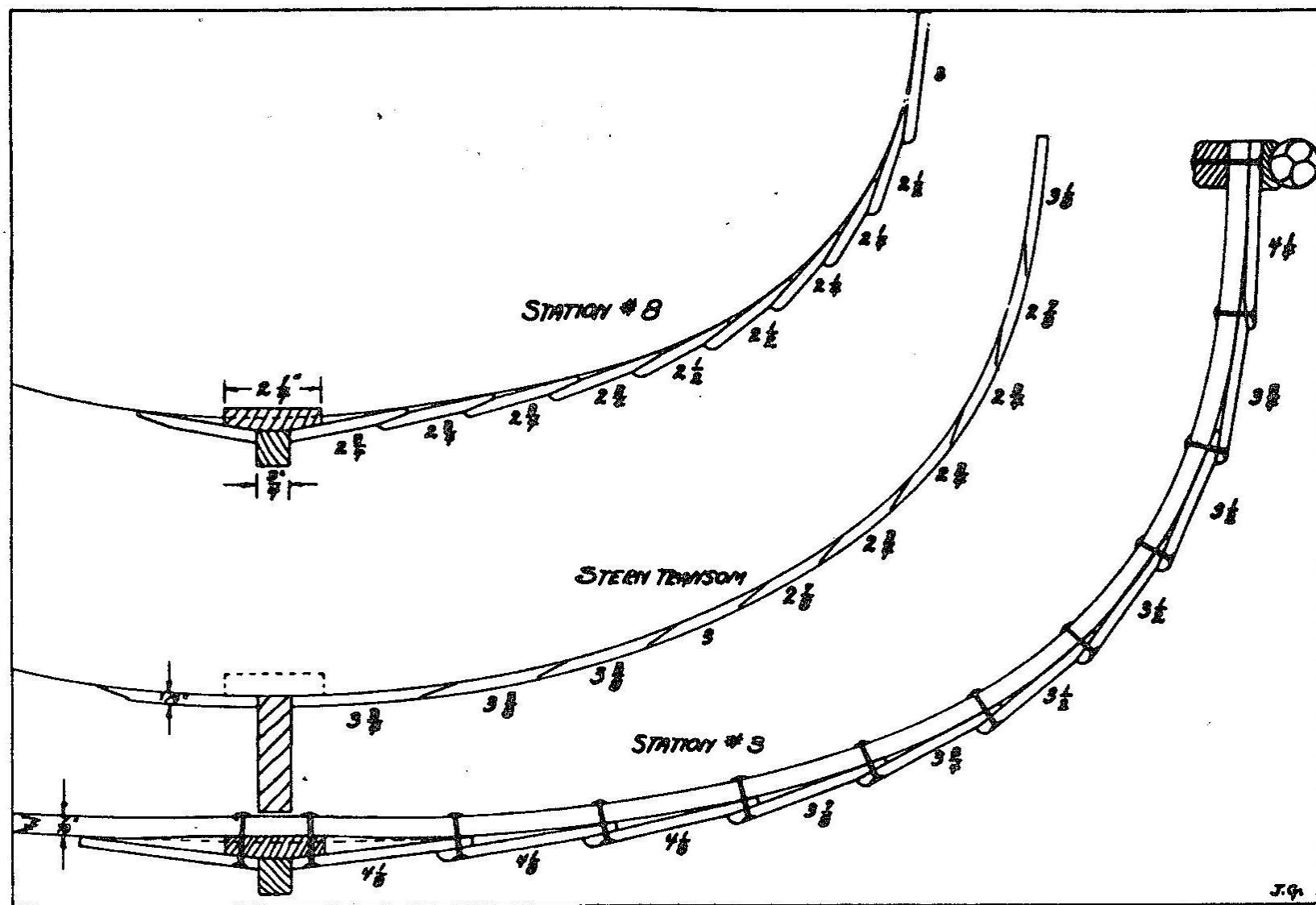
# A bit of Surfacing History

## Making Something "It's All about Sections"



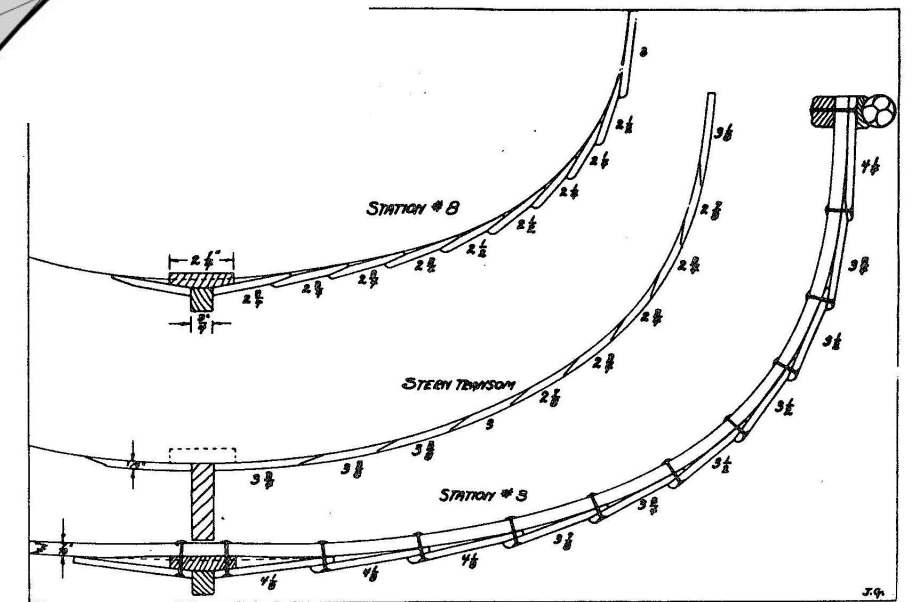
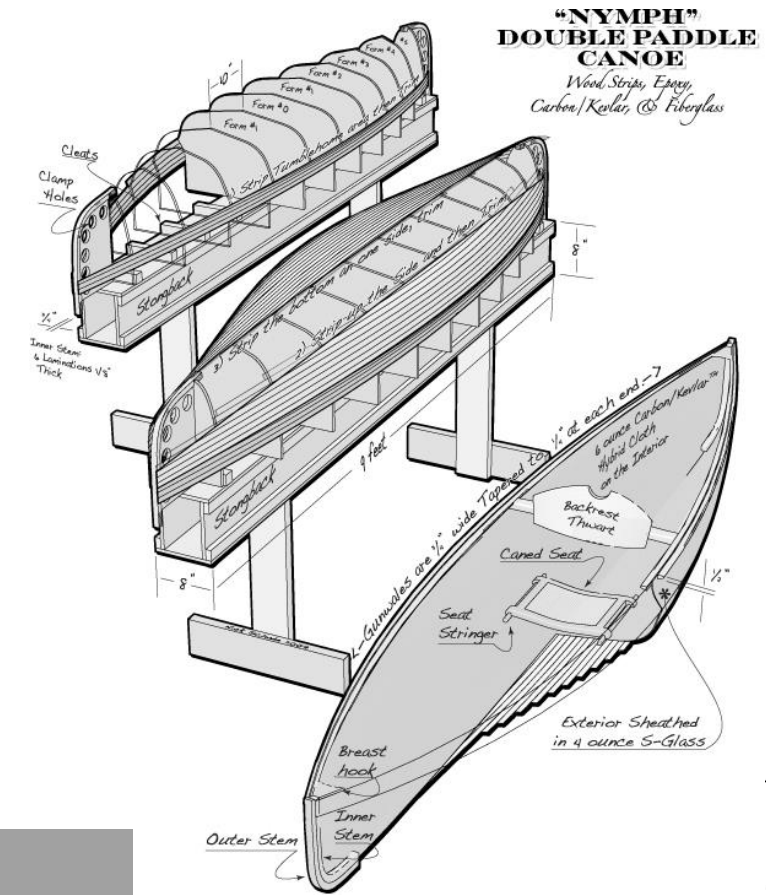
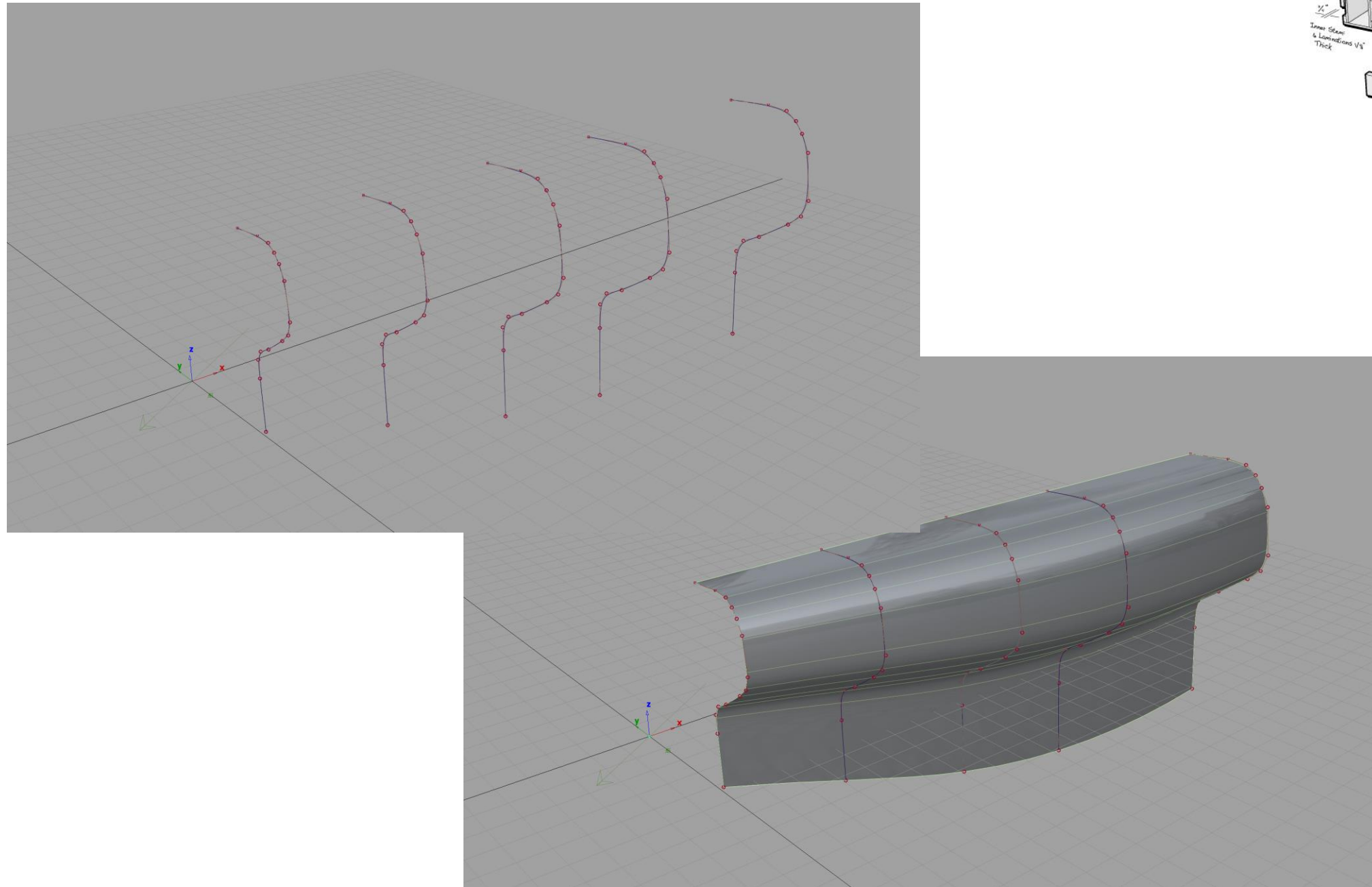
# A bit of Surfacing History

## Splines for Boat Building



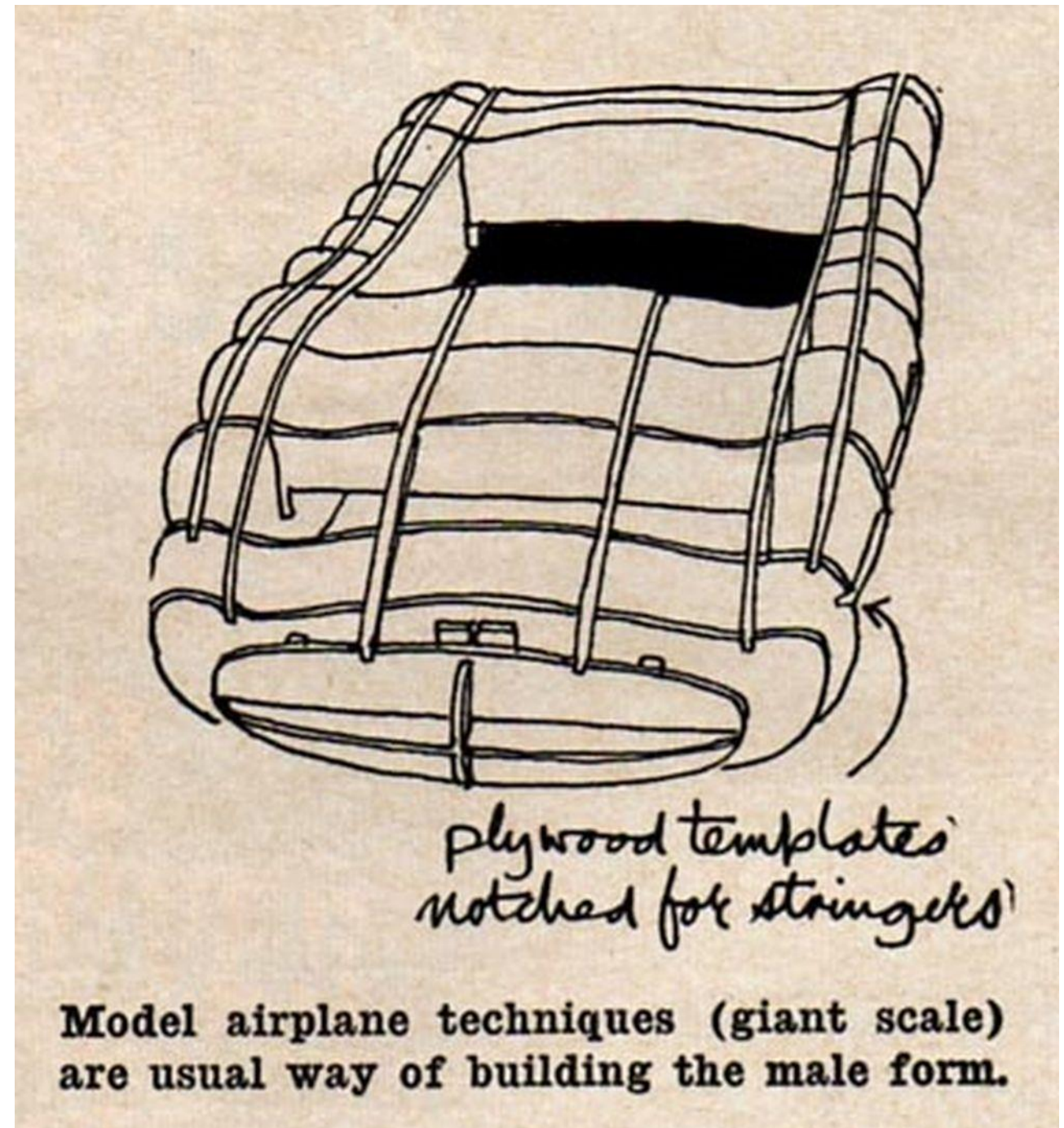
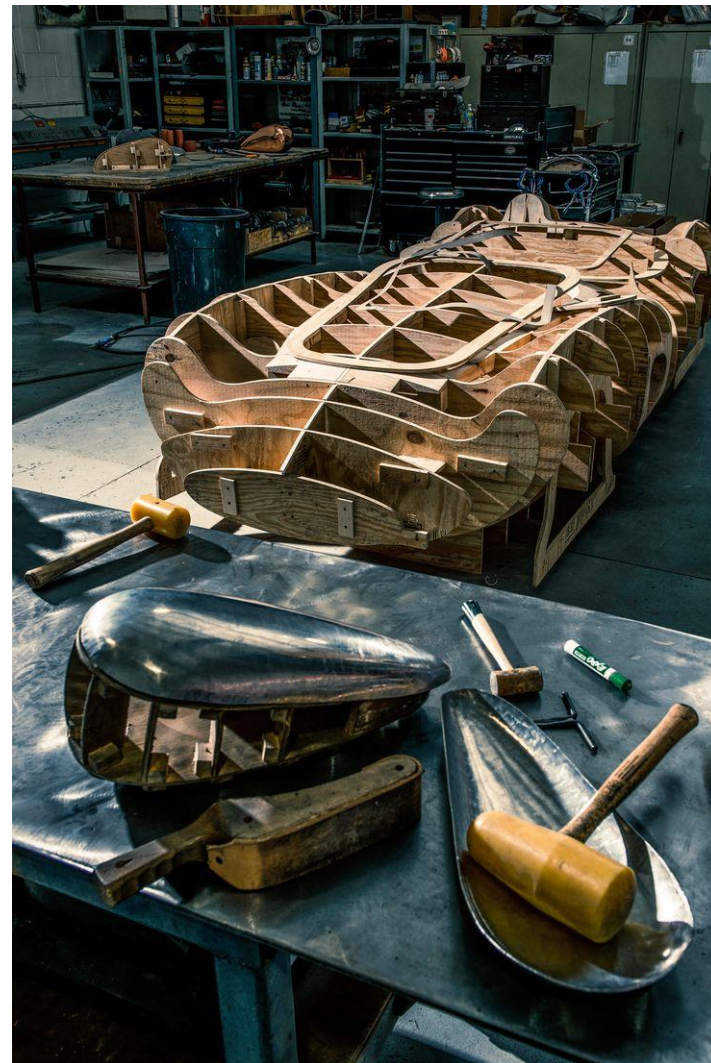
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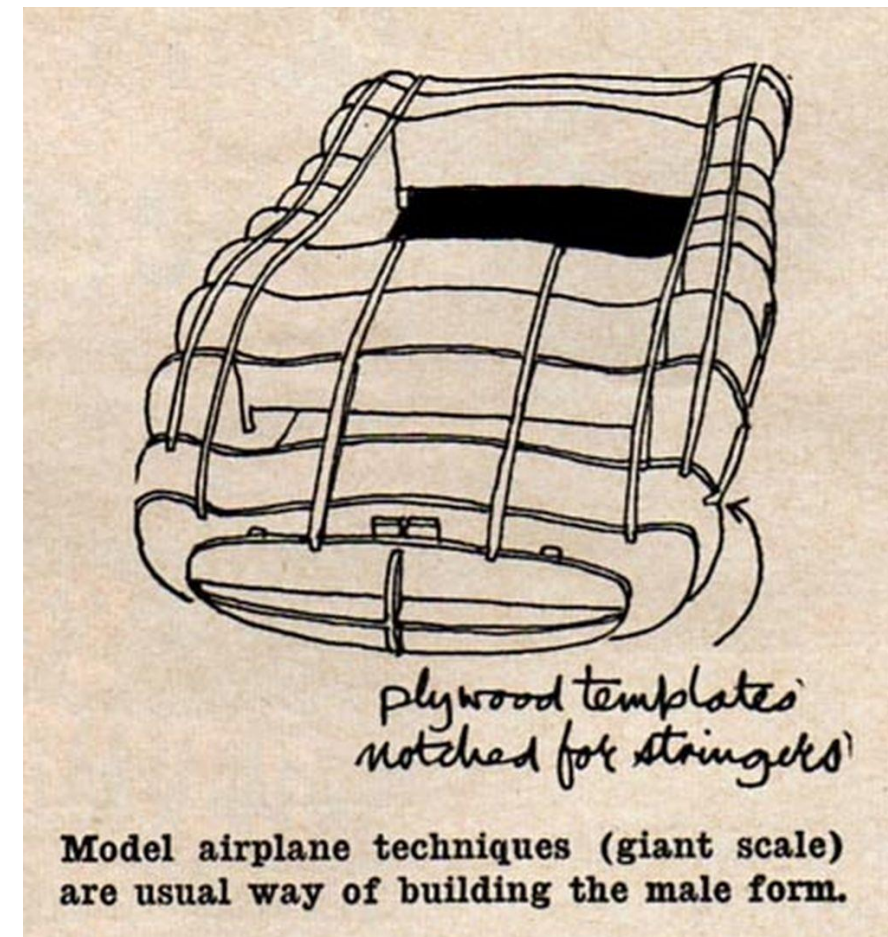
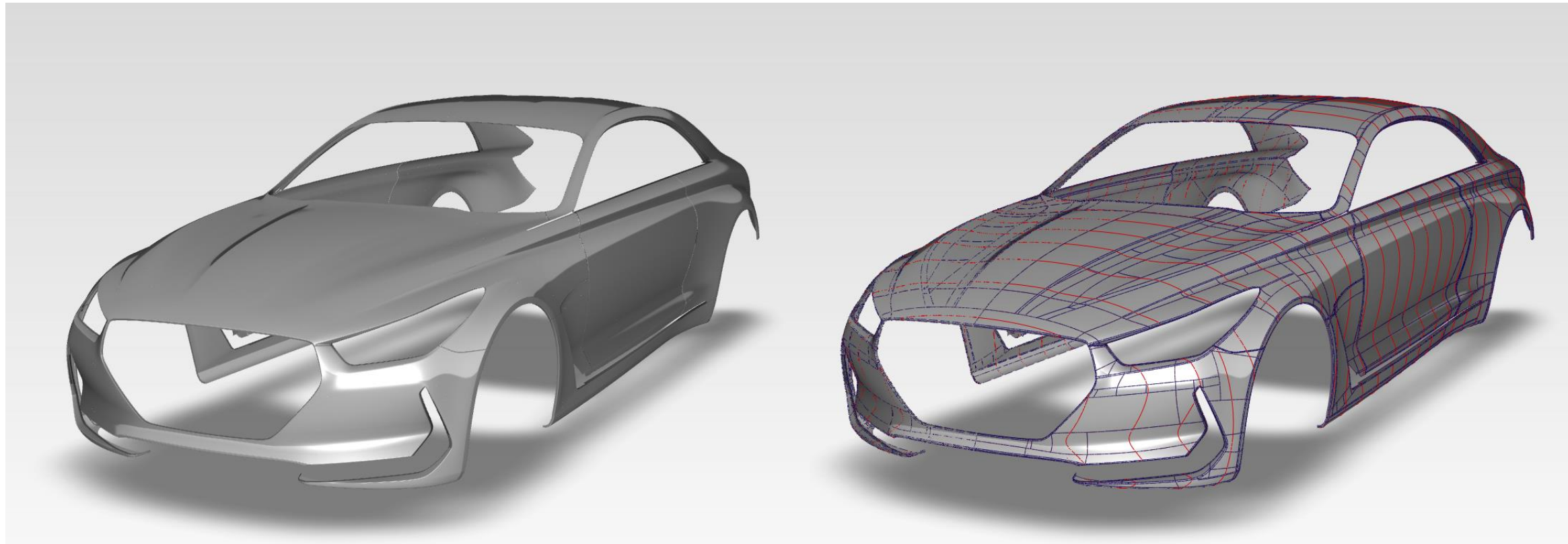
## Turn the Boat Upside Down



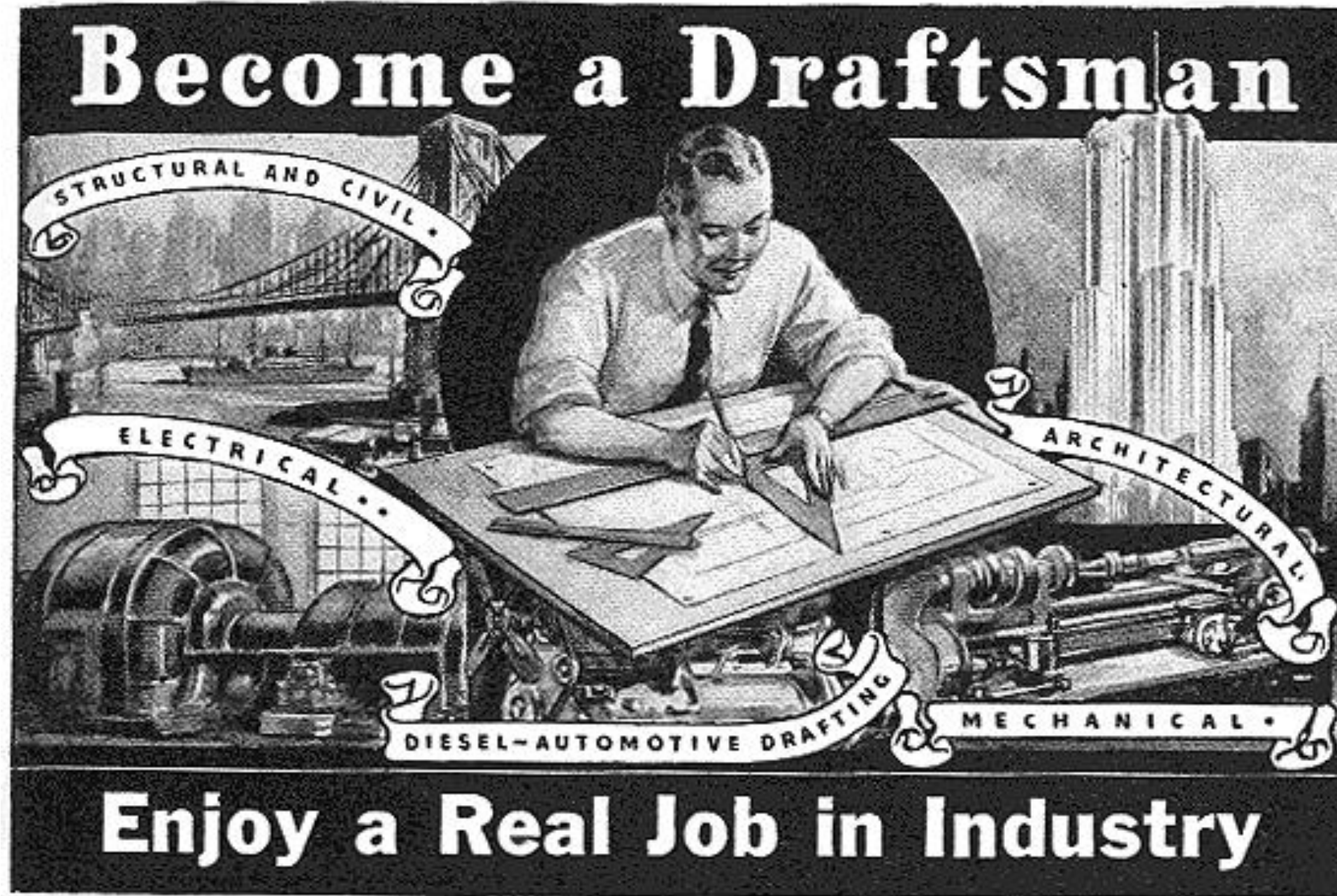


# A bit of Surfacing History

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# Understanding the Current Job Market.....



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Now Tech and Startups.....



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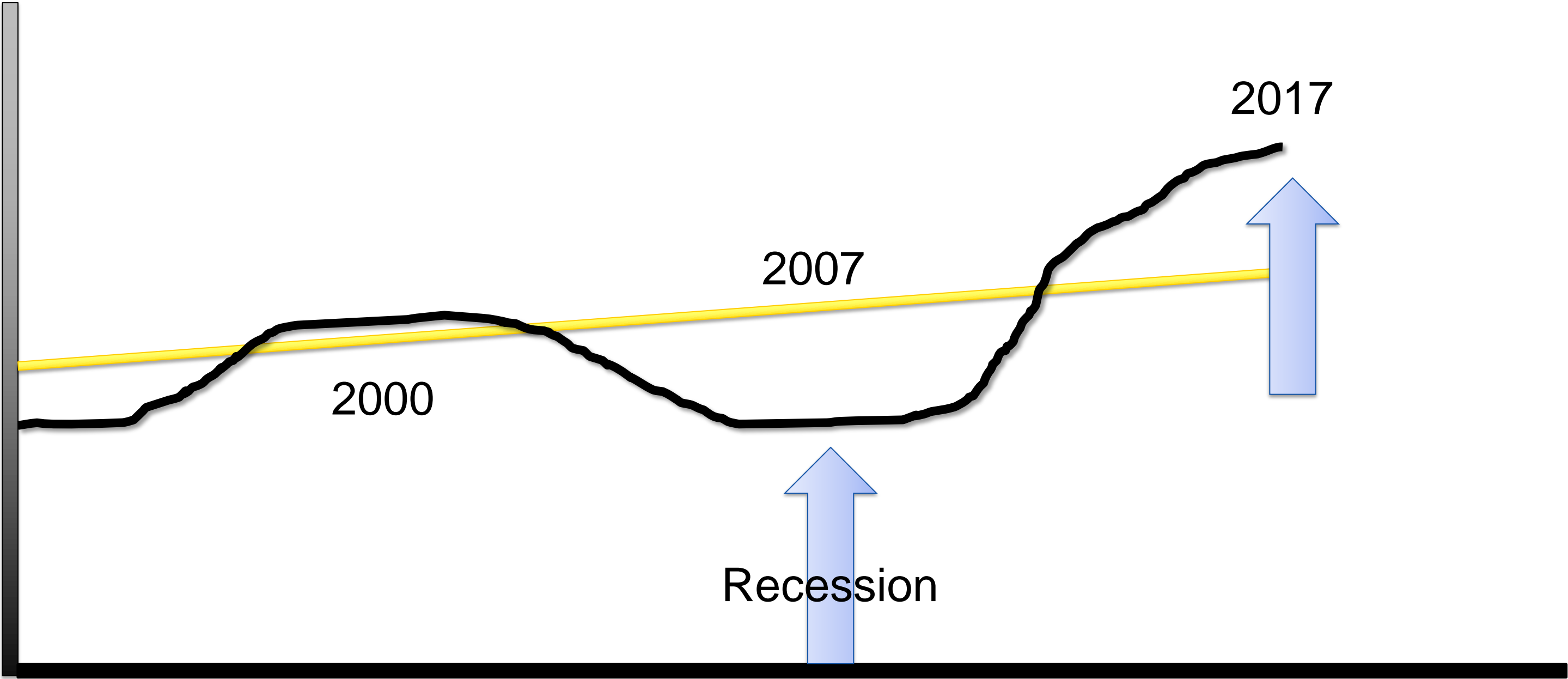
and....OEM's expansion into the  
"Eco" markets.....

IONIQ

**BMW i.**



# Understanding the Current Job Market

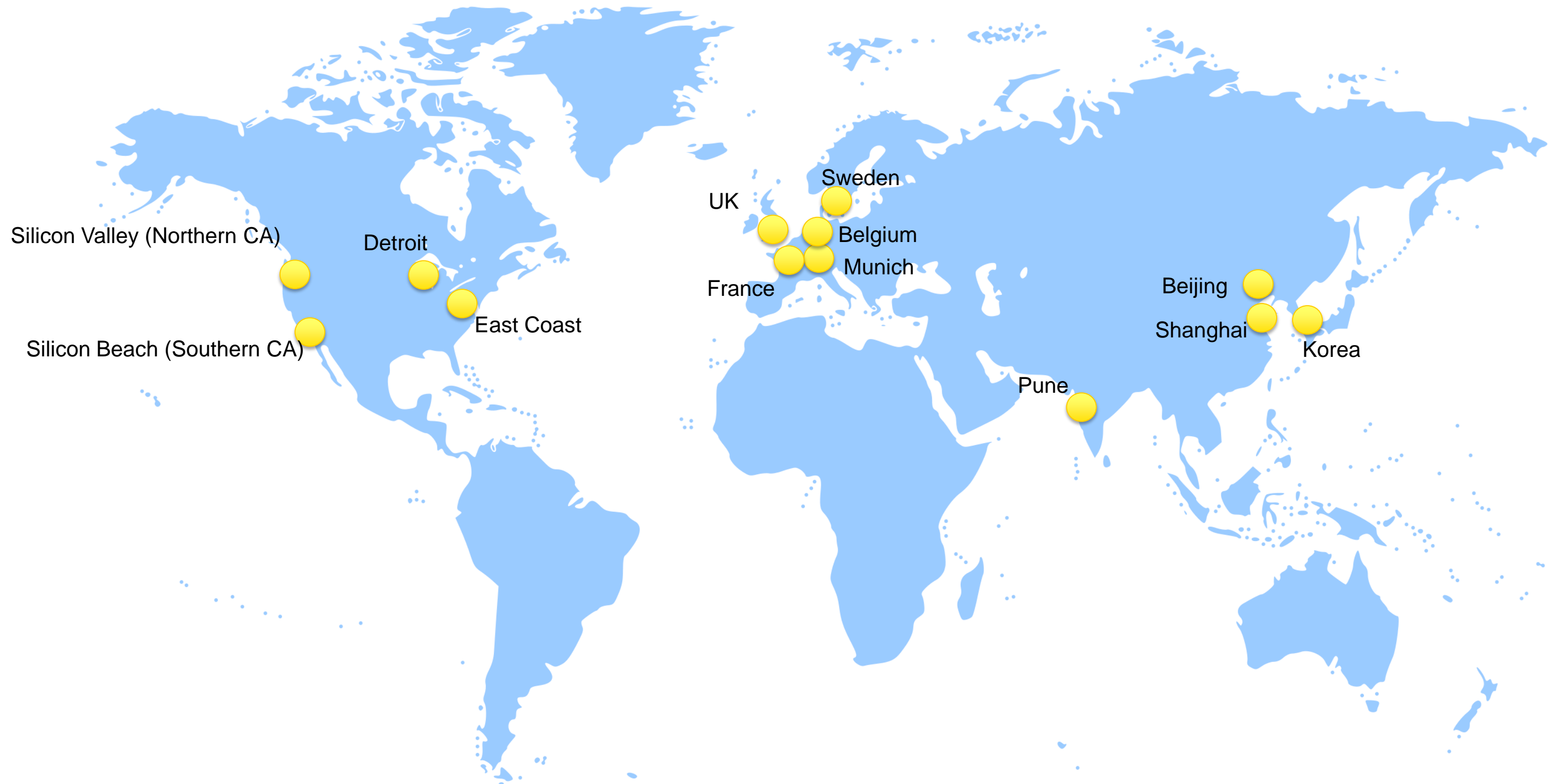


 CAS Operators

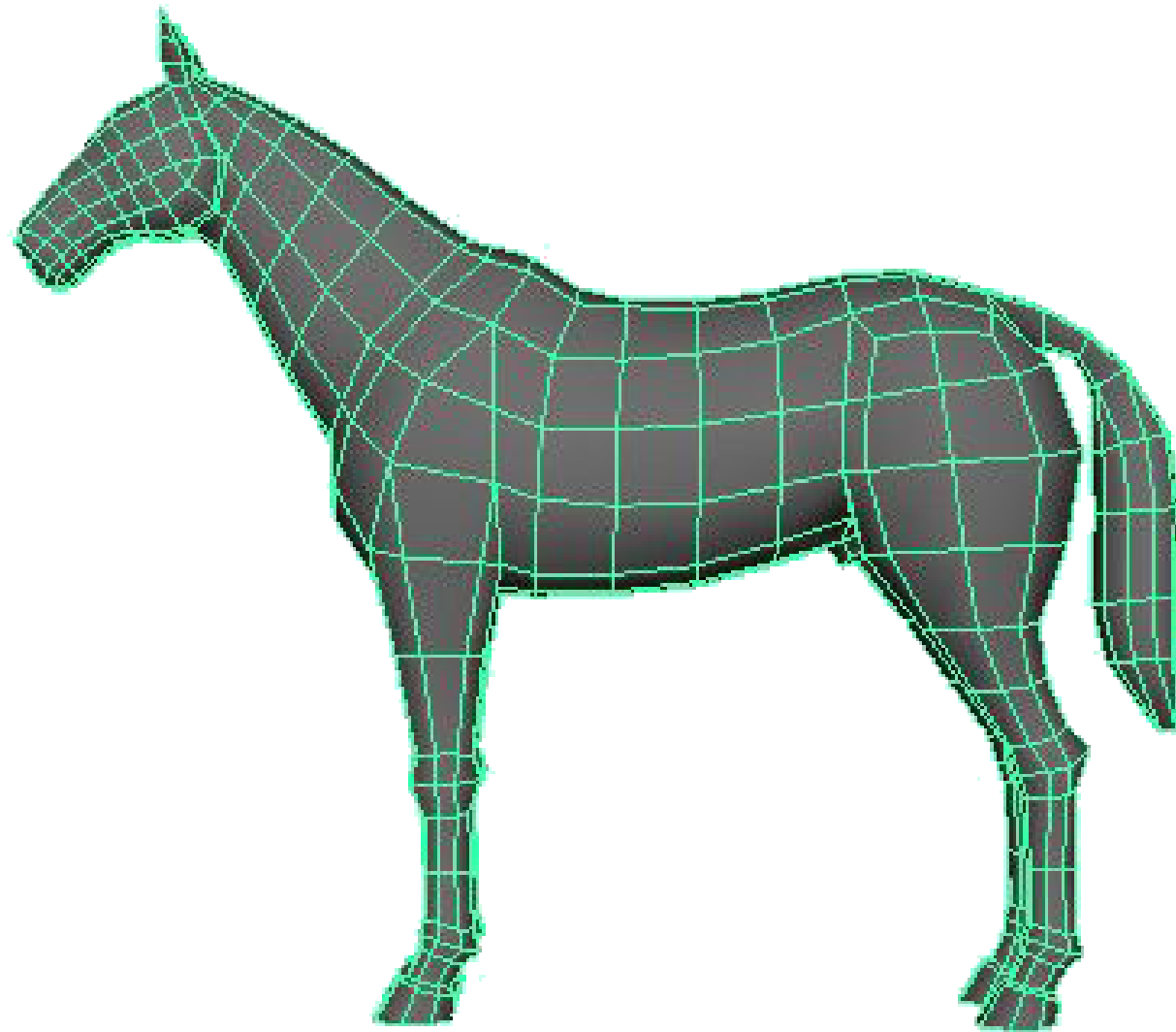
 Demand



# Geographical Map of Current CAS Hotspots.....



Industry need for quick flexible models has brought Polymodeling into the Automotive arena.



# Automotive Digital Modeling.....The Different Types of Modeling Needed for Different Stages

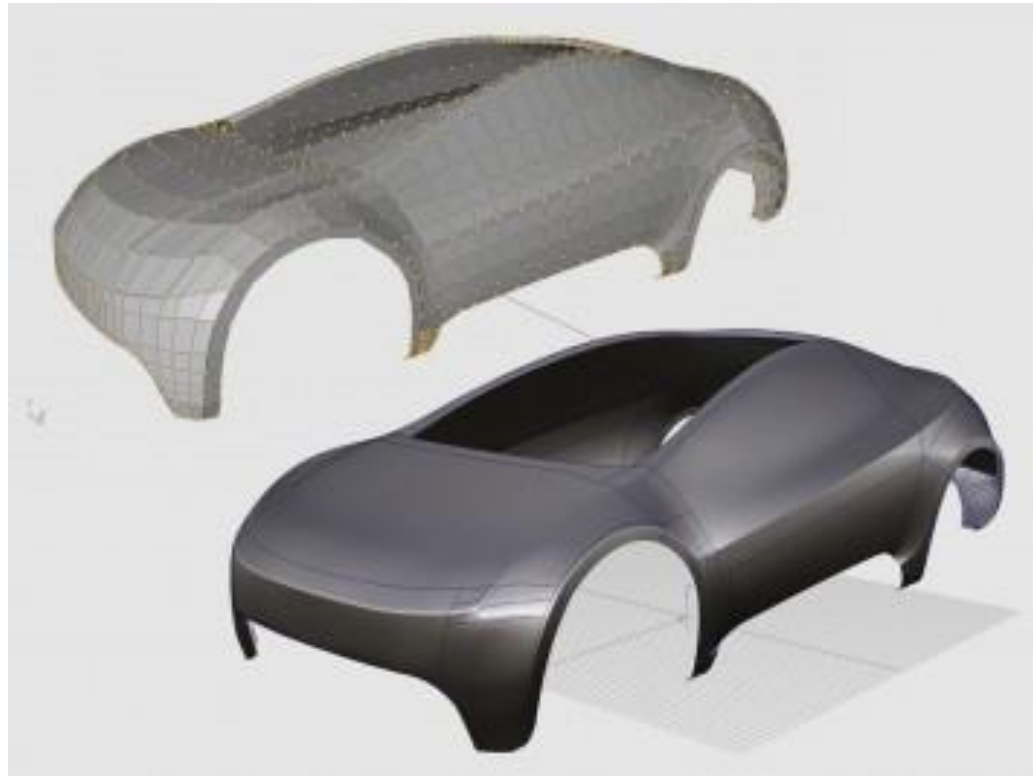
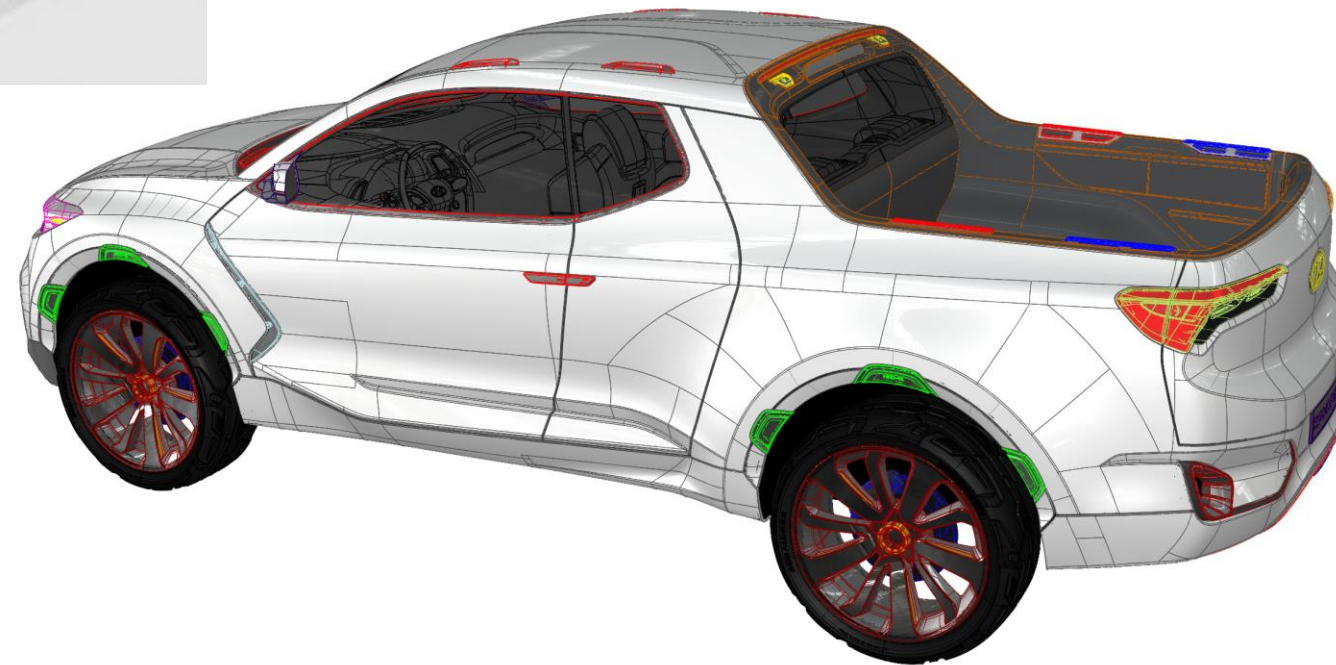
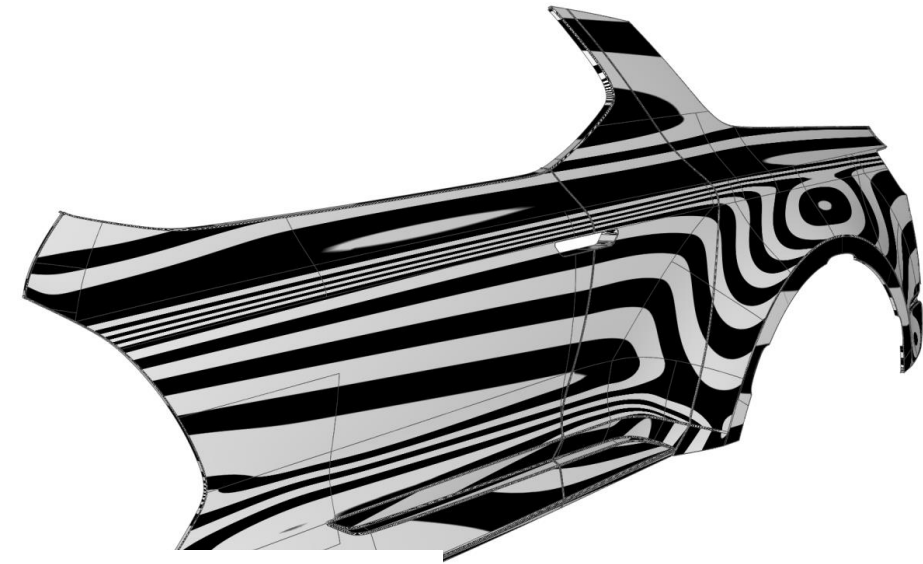
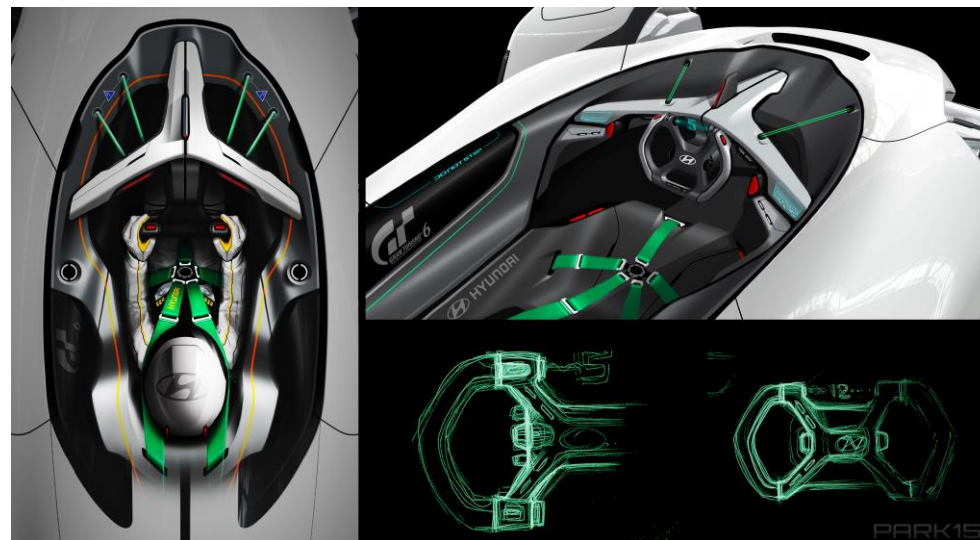
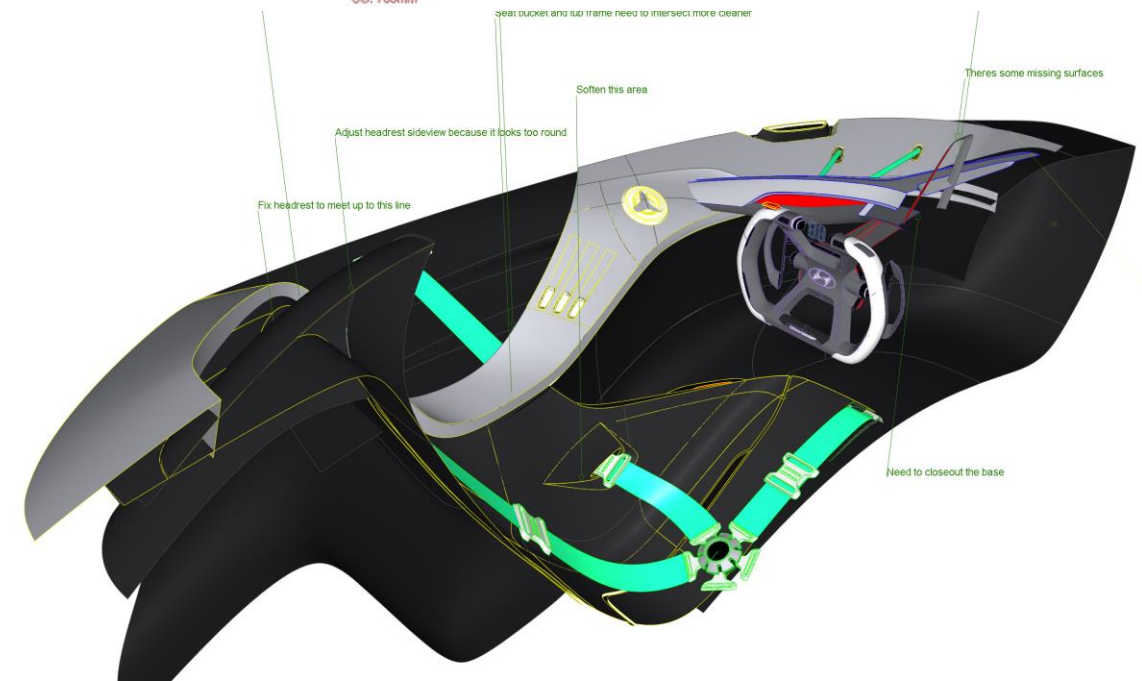
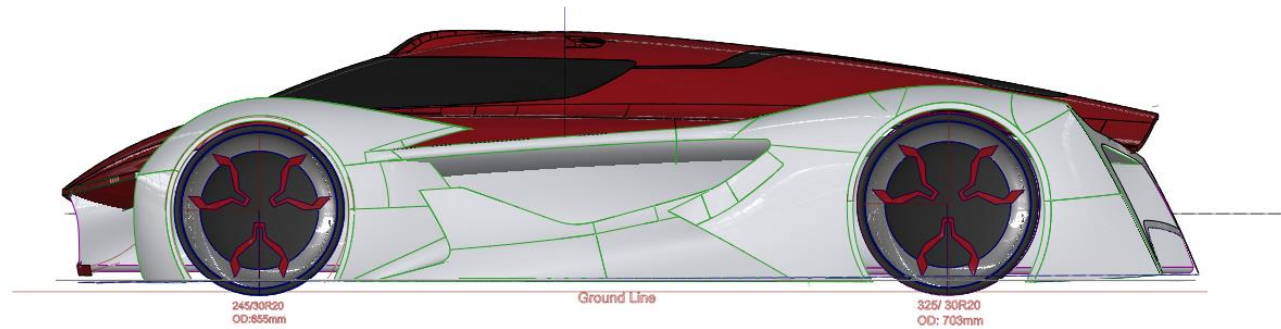
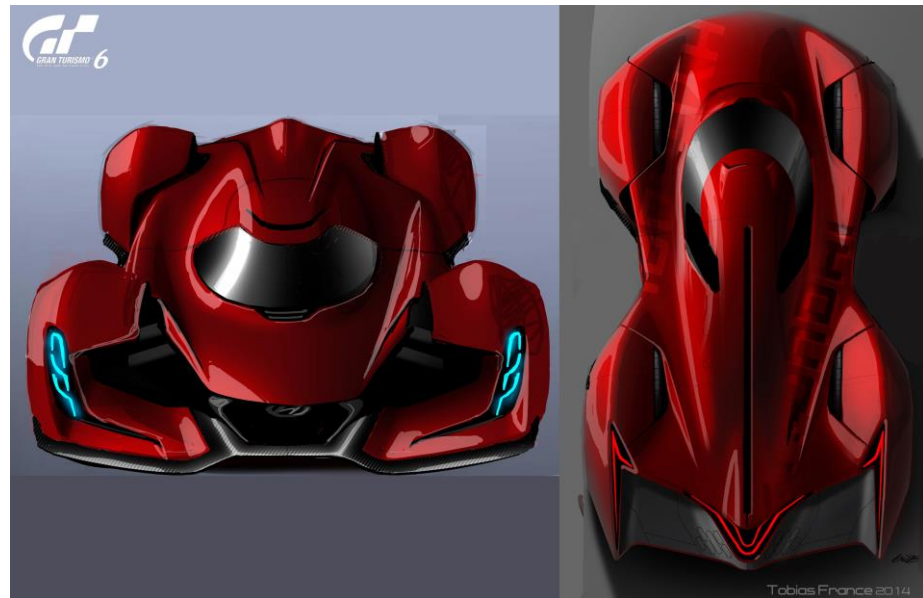


Photo Credit James Robbins/GrabCAD



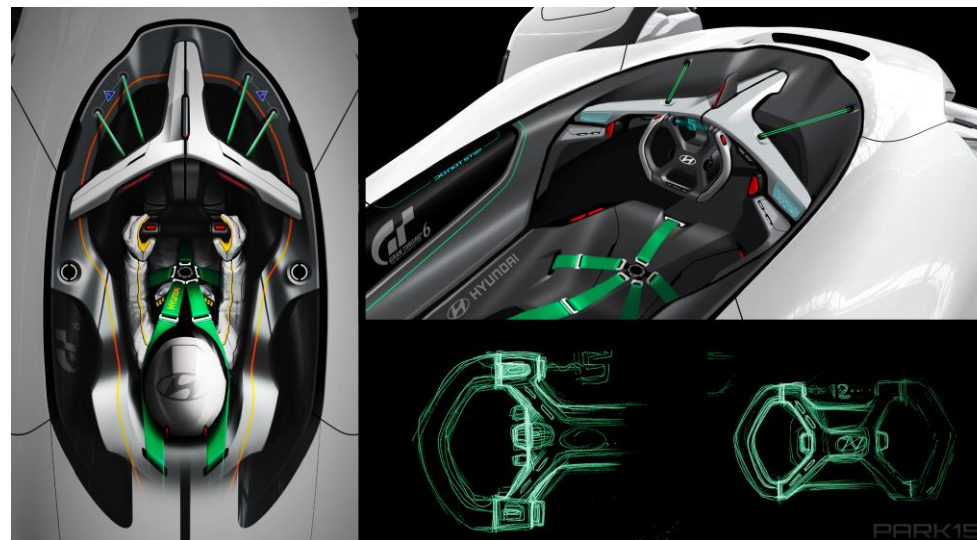
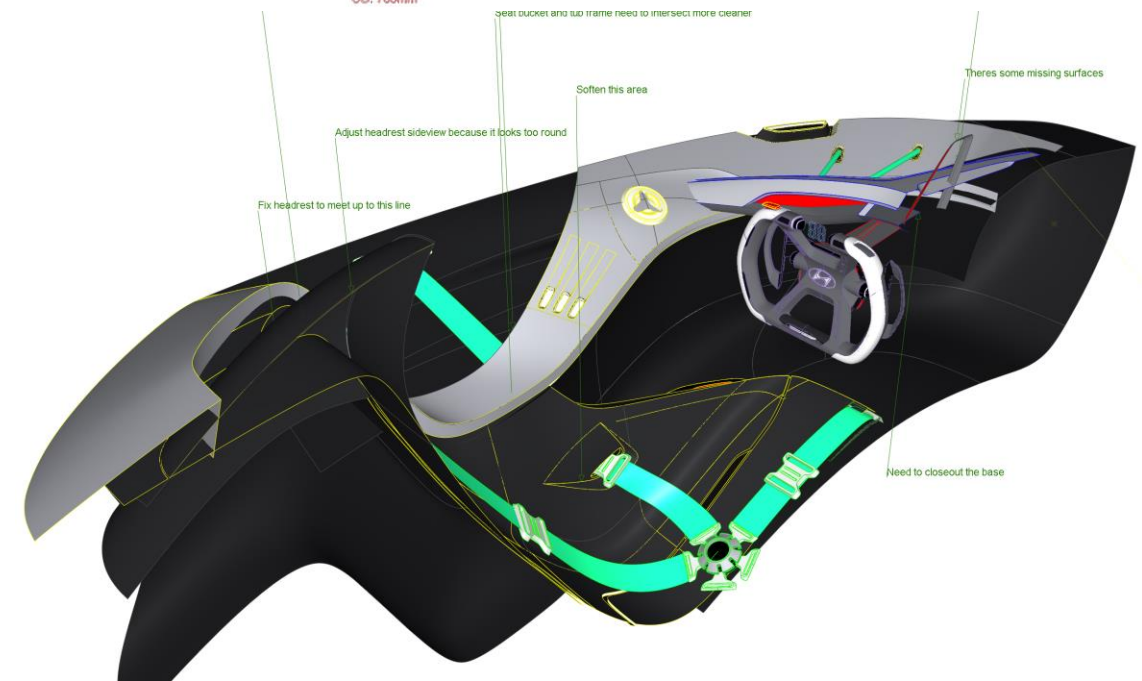
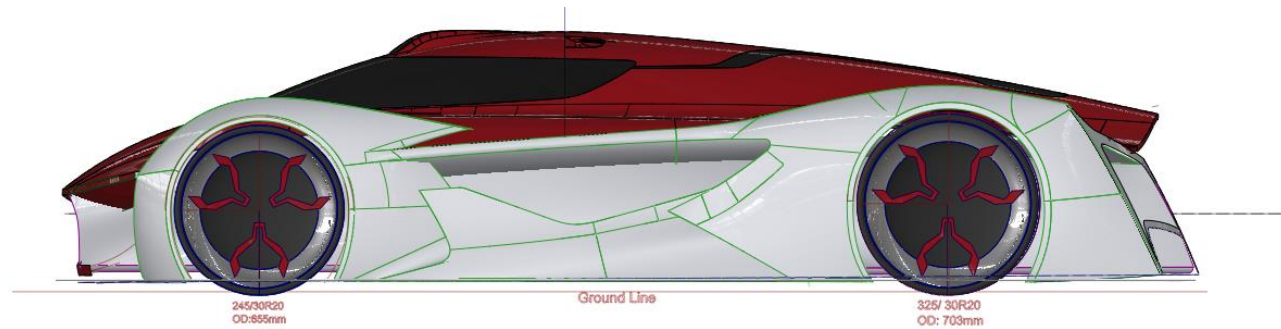
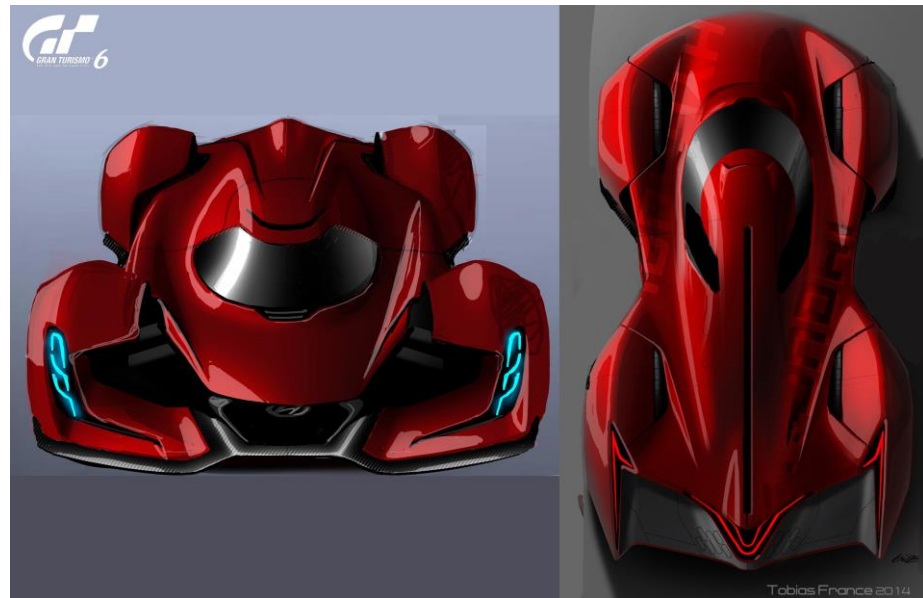
# Initial Stage: Quick Proportional Models (Fast Concept Modeling)

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2. Flexible enough for quick changes



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2. Flexible enough for quick changes
3. With VR, studios are transitioning from clay scales to digital

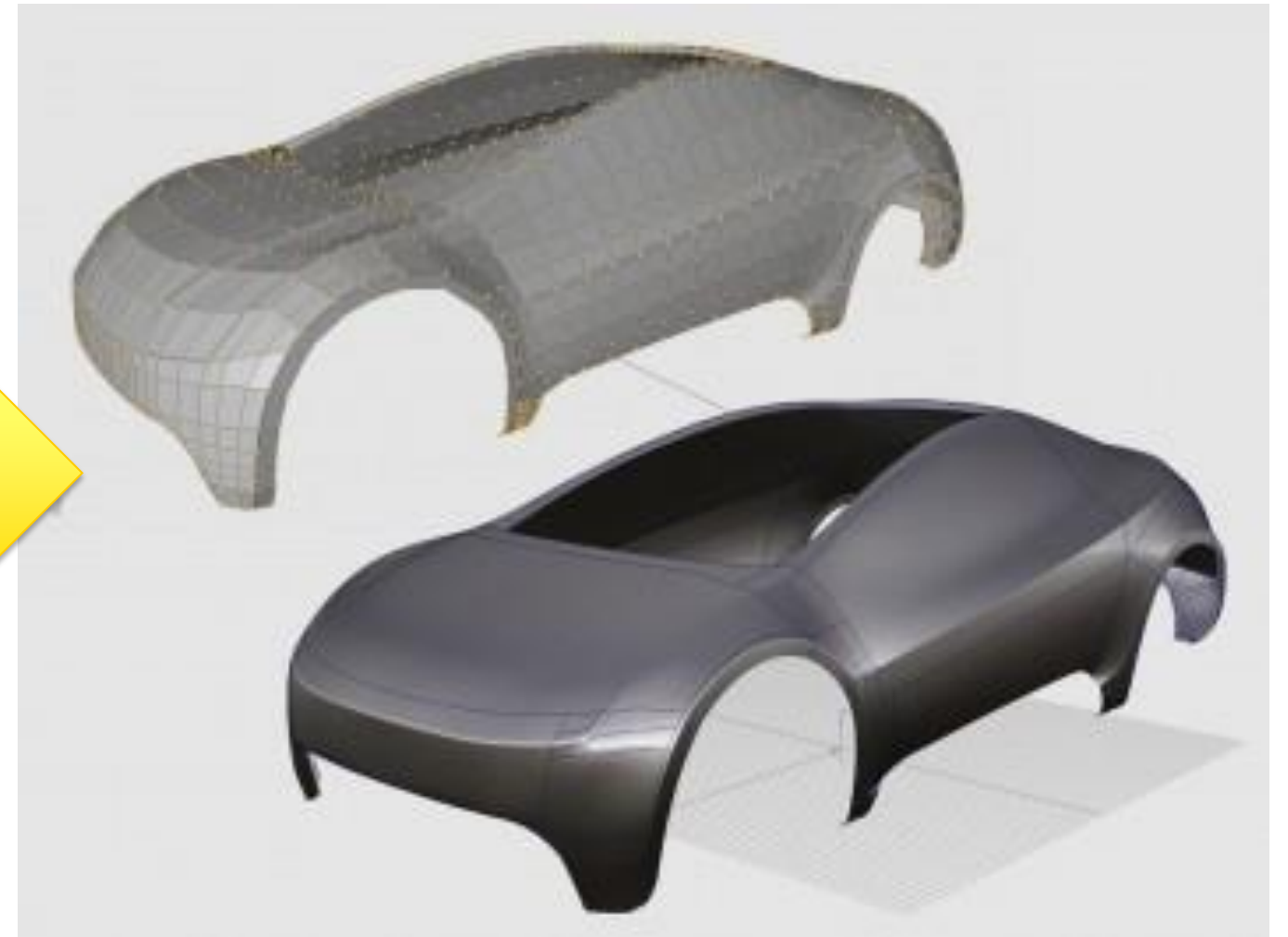
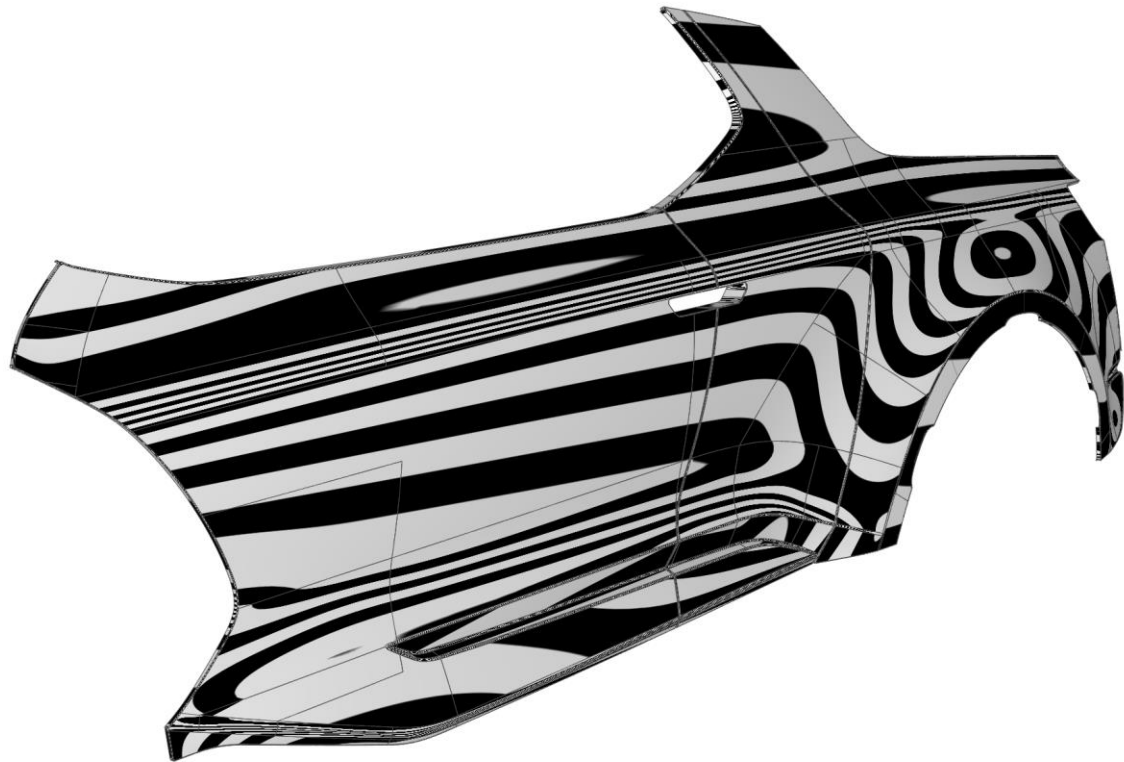


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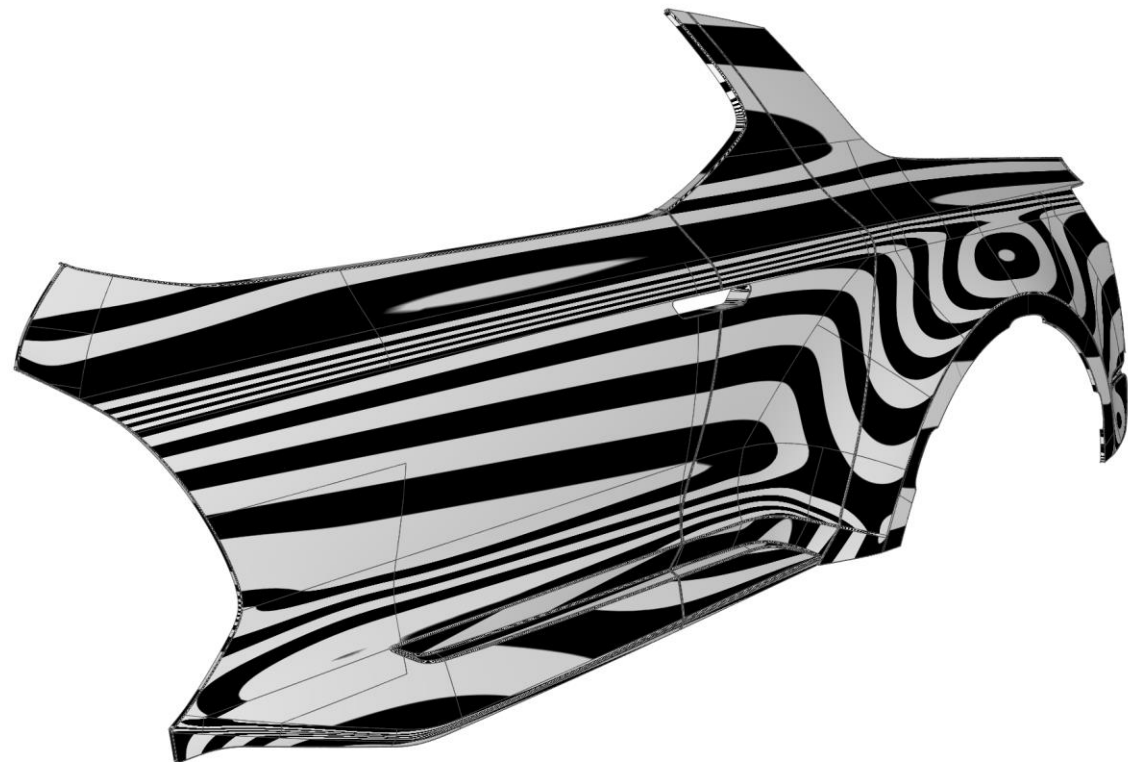
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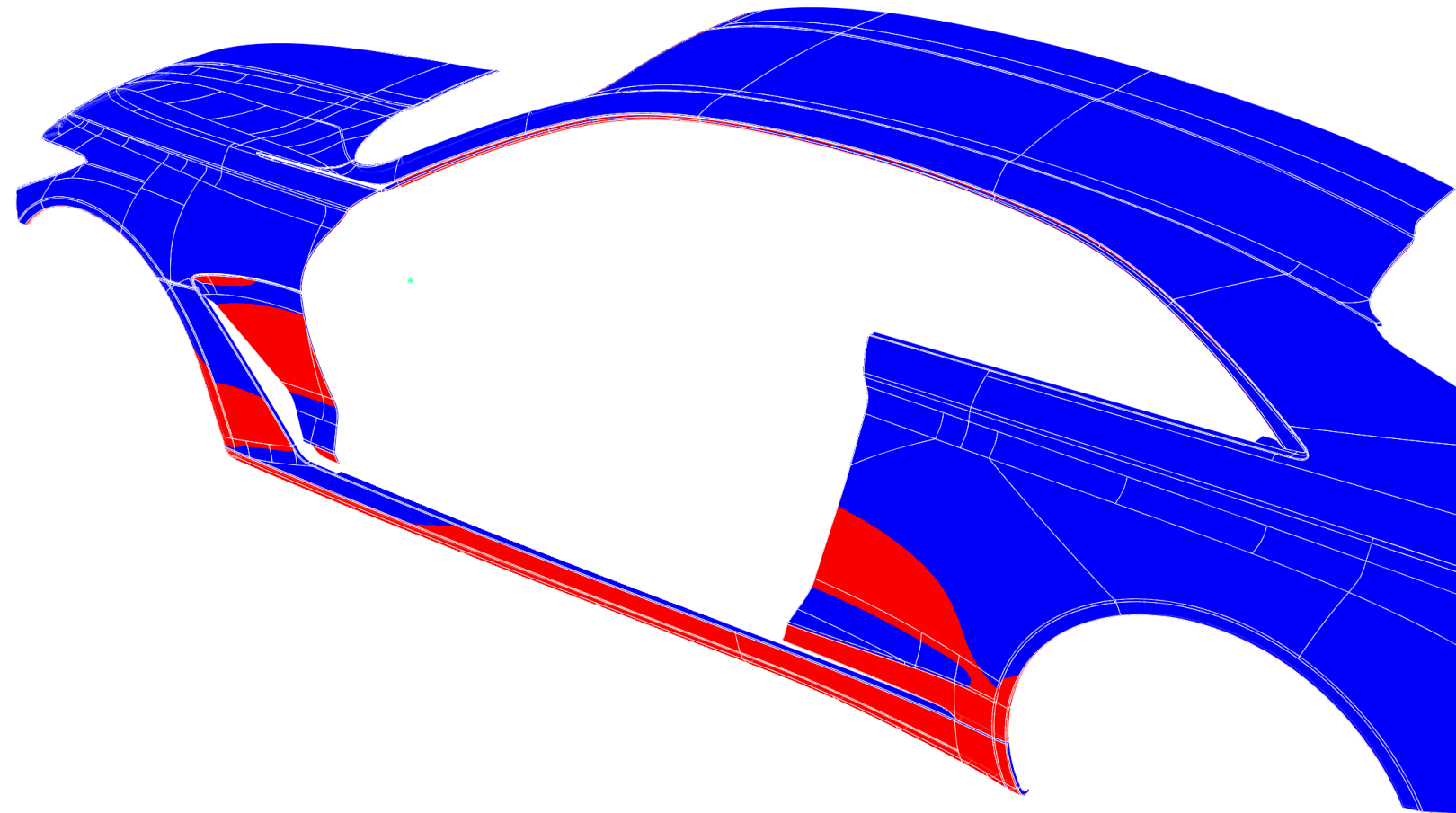
## Second Stage: Mostly NURBS, but can contain Polymodeling

1. Not production level, but comprehends some production considerations.
2. Highlights have been refined, but may contain small imperfections
3. Can be fabricated to look real



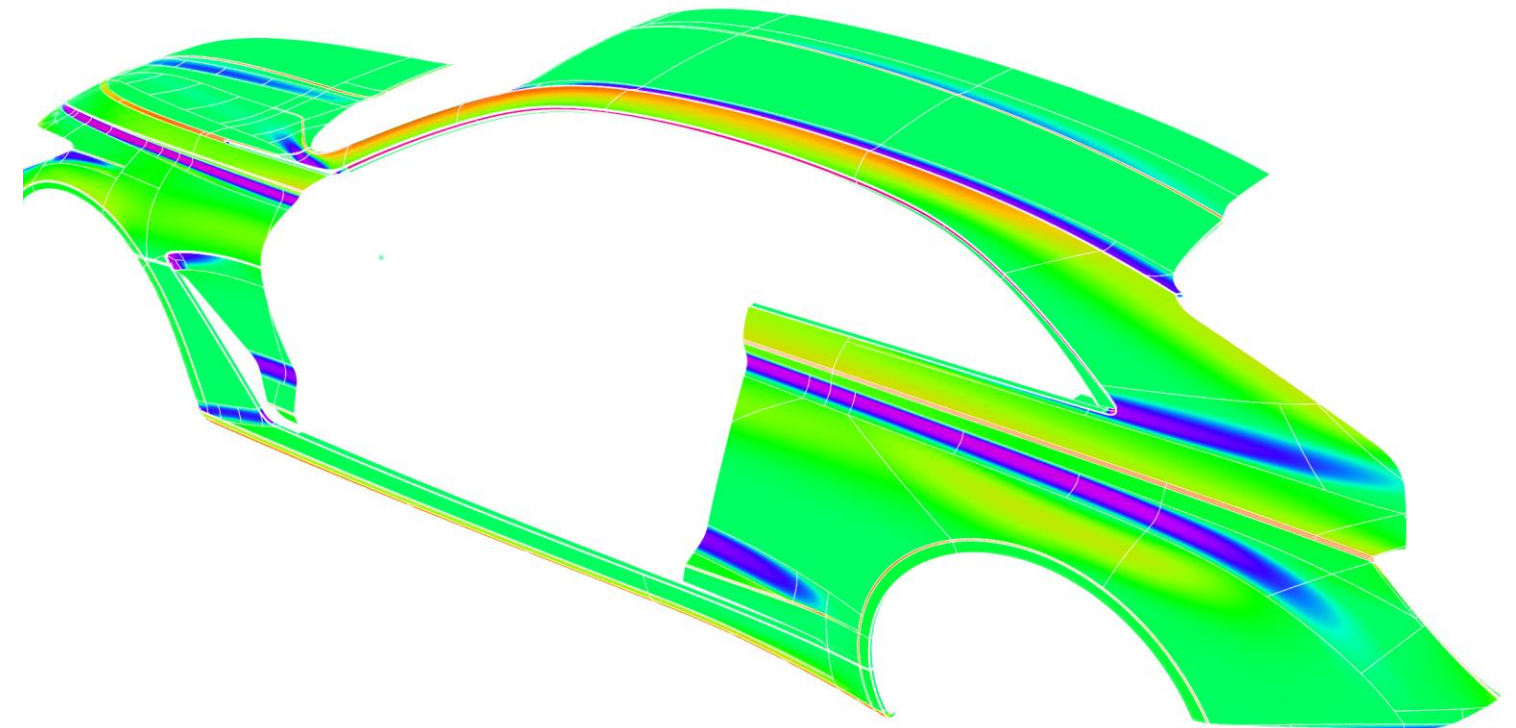
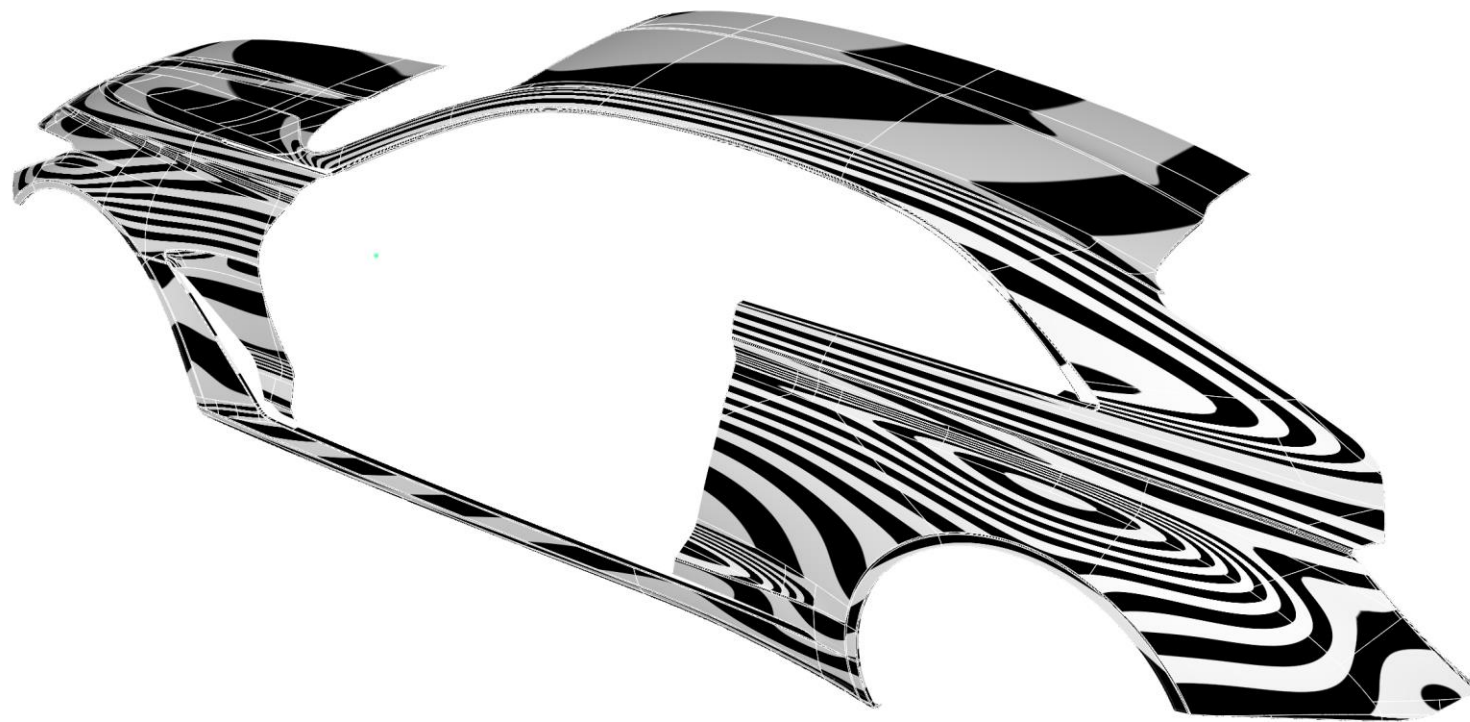
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1. Comprehends manufacturing requirements (draft angles, material thickness, etc.)



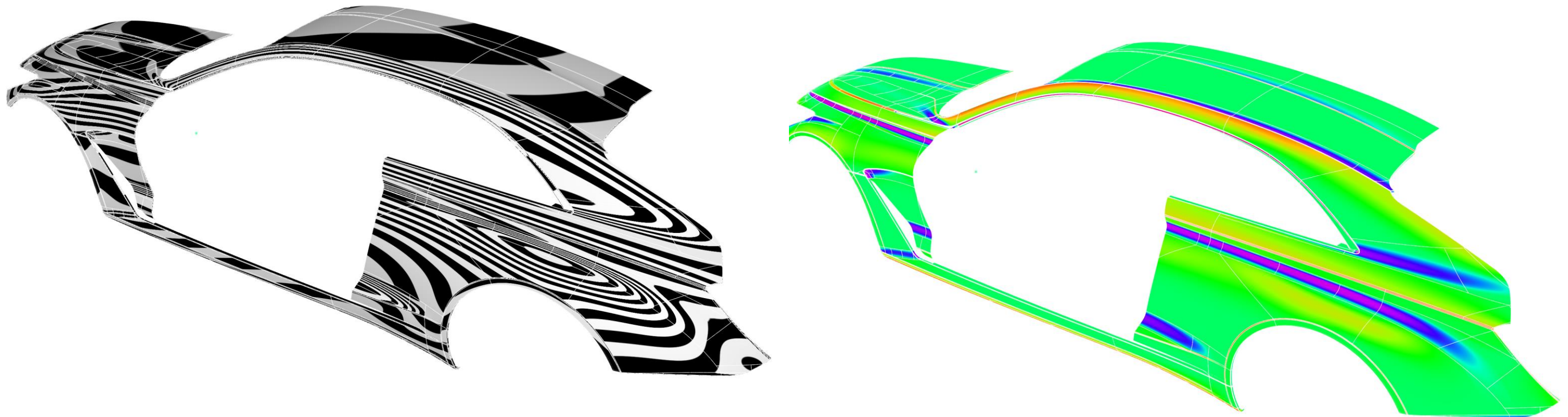
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2. G2 – G3 Curvature
3. Requires weeks to months vs. days



# Personality Types for each Stage of Modeling....

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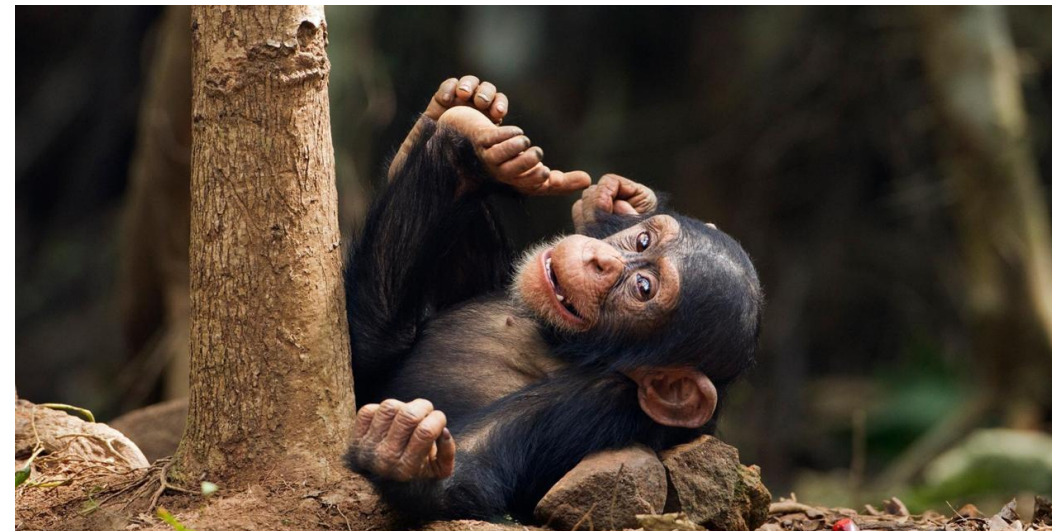
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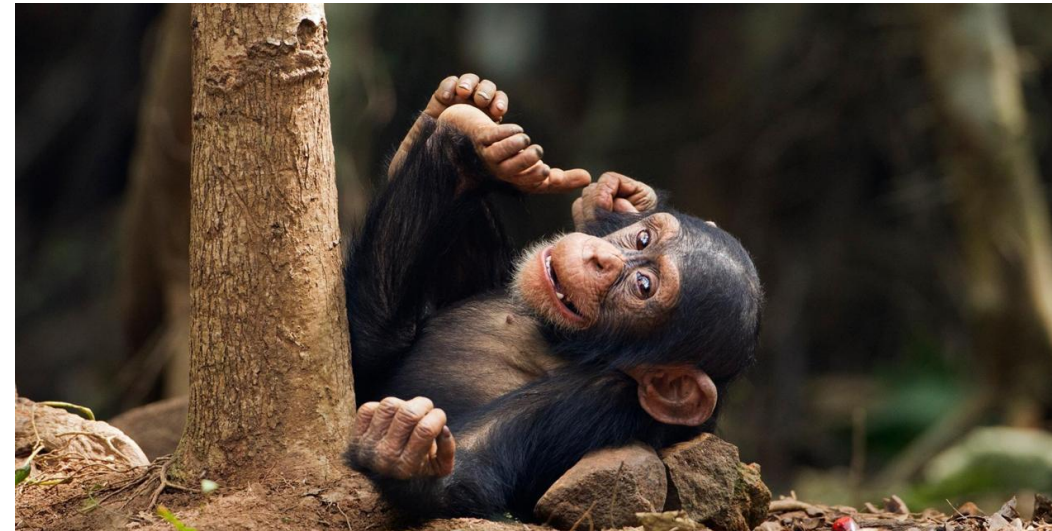
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# Personality Types for each Stage of Modeling....

## Second Stage: Mixed... Short Attention Span with Intermittent Periods of Focus



# Personality Types for each Stage of Modeling....

Third Stage – Class A: The “Craftsman”, Headphones on, driven by perfection.



# Choosing Automotive Modeling instead of being the Designer

## Pros

- **Less Politics**
- Allows for “Non-Creative” time (Execution)
- Designers are often open to your suggestions
- Overall you end up designing a lot
- Many positions pay OT
- Pay is good due to demand
- Not confined to exteriors or interiors

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# Where to go for Instruction?.....

## Some Art Schools:

Art Center College of Design  
Center for Creative Studies Detroit  
Cleveland Institute of Art  
San Francisco Academy of Art  
Milwaukee Institute of Art and Design  
Pforzheim  
ISD Rubika France/India

<http://www.carbodydesign.com/directory/car-design/car-design-schools/>

# Where to go for Instruction?.....

Some Online Resources:

Alias Guy:

<https://www.youtube.com/channel/UCxZQTccE-TPhM93rp-Li4IA>

CarbodyDesign

<http://www.carbodydesign.com/tutorials/3d/autodesk-alias-tutorials/>

Autodesk Online Training:

<http://au.autodesk.com/au-online/classes-on-demand/>

Q & A...

# Where does your passion provide a value to others?.....



VISION\_GT\_VIDEO\_WITH\_SOUND.mov

# How did I do?

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**



# More Questions? Visit the AU Answer Bar

- Seek answers to all of your technical product questions by visiting the [Answer Bar](#).
- Open daily from **8am-6pm Tuesday** and **Wednesday**; **8am-4:30pm Thursday**.
- Located outside **Hall C, Level 2**.
- Meet Autodesk developers, testers, & support engineers ready to help with your most challenging technical questions.



