



# KGC 2011

Korea Games Conference



# Destroyed Beauty:

Art Process and Production on  
Gears of War 3



# INTRODUCTION – Speaker

**Wyeth Johnson** – Lead Artist, Epic Games, Inc.

- 14 Year professional artist, 11 years in games
- Technical artist, visual FX artist, and Art Lead
- Recent titles include
  - Gears of War 1, 2, 3
  - Unreal Tournament 3



# INTRODUCTION – Company

## Epic Games, Inc



- 20th year of business
- 150 employees in NC and still hiring
- Creators of Unreal Engine 3
- Recently shipped Gears of War 3, Bulletstorm, Infinity Blade, Free tools at [UDK.com](http://UDK.com)
- External studios in Poland, Shanghai, Japan, Korea and Utah

# About Gears of War 3

- Over 3 million copies sold in the first week
- Fastest selling Xbox360 exclusive in the platform's history
- Billion Dollar Franchise
- Gears of War series has eclipsed 16 Million copies sold and averages 94% on Metacritic



# OVERVIEW

## What are we talking about?

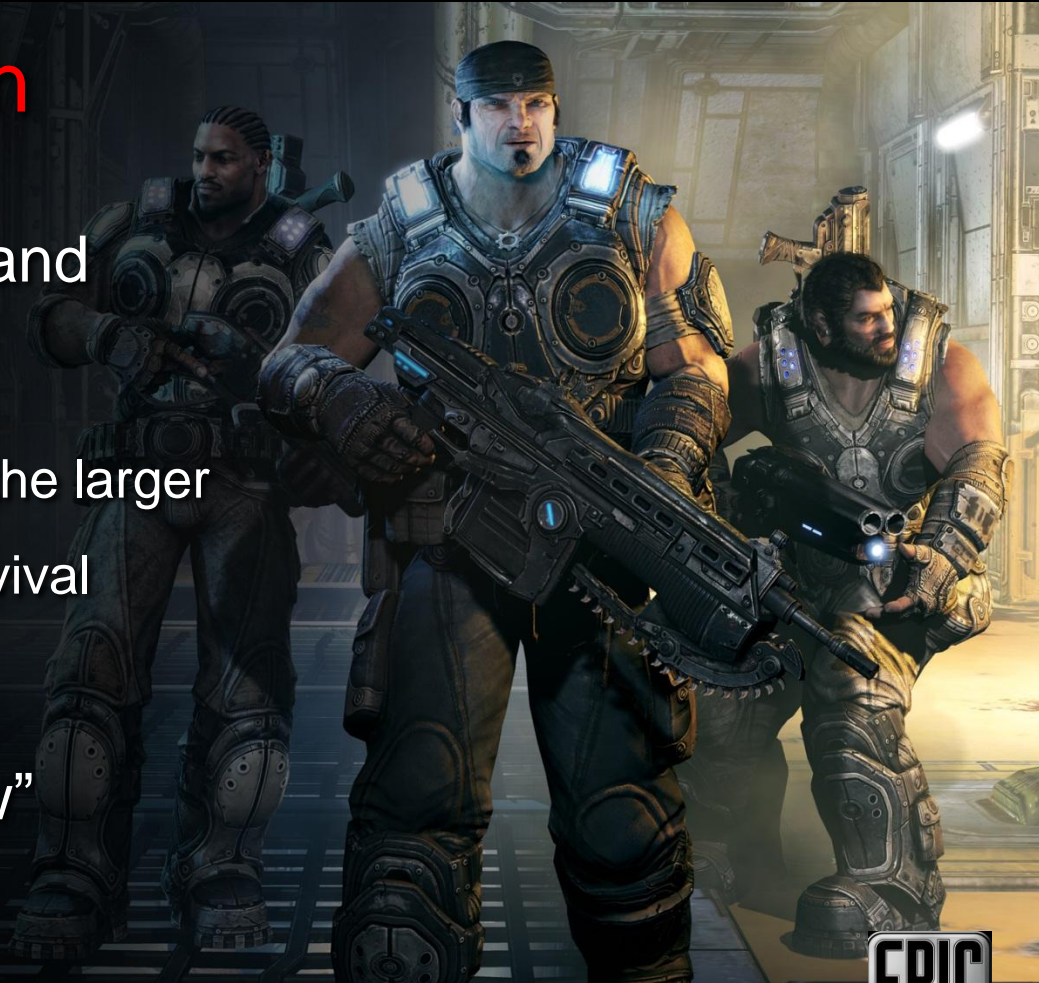
- Gears of War art direction, from Gears 1 to 3
- How technical improvements affected art production
- Some core lessons from the art team
- What was easy, what was hard, what we would change



# Raising the Visual Bar

## Gears 3 Art Direction

- Increase overall visual and emotional scope
  - Turn focus inward from the larger war to Delta Squad, survival
- Layer in more color
- “We’re all Stranded now”



# Color and Scope – Gears 1



# Color and Scope – Gears 1

## Contrasty, monochromatic palette

- Desaturated, wartorn look
- High contrast post process made for visual pop but also compensated for lack of lighting detail
- Heavy desaturation allowed for quick scene composition and use of many disparate asset sets



# Color and Scope – Gears 2



# Color and Scope – Gears 2

## Richer, saturated but narrow palette

- The scope of the war made for larger vistas, required larger visual range
- Less scene contrast, more photoreal
- Lack of Global Illumination meant we still relied on post processing to unify the scene



# Color and Scope – Gears 3



# Color and Scope – Gears 3

## Broad midtones, full color range

- Desperation pushes the story dark, needed the environments to contrast that mood
- Broad midtones, even lighting, large color range
- Unreal Lightmass global illumination provides softer lighting



# GEARS 3



# GEARS 1



# Color compliments mood

Emotional Low Point



# Color compliments mood

Emotional High Point



# Evolving the visual language

## Looking beyond color to style

- Core visual pillar of both environments and characters is “We’re all Stranded now”
- The world is dying, the game is set in the heat of summer
- Lamented, mutated army needs to have its own shape language and palette while still feeling like “Gears”.

# We're all stranded now

- Formal government is dead
- Manufacturing is dead, no new tanks, planes, ships
- Everything is scrounged, scavenged, and repaired from parts at hand

IMAGES STILL  
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**We're all stranded now**

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# Lambent color and Silhouette

- New, Identifiable Silhouette
- New color, Yellow, doesn't fight with Locust (red) or COG (blue)
- Needs an 'at a glance' recognition with glowy spots and custom sounds/effects

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# Lambent color and Silhouette



# Lambent color and Silhouette



# Heat of Summer

- Clean, bright, outdoor environments posed new challenges for our lighting
- Character visibility is a larger issue as lighting becomes more realistic

IMAGES STILL  
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# Heat of Summer

**IMAGES STILL  
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# Speaking of Lighting...

## Lighting changed completely between Gears 2 and 3

- All new Global Illumination solver, Unreal Lightmass
- Texture brightness became a huge issue
- Had to change our texturing process to account for GI

IMAGES STILL  
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# Speaking of Lighting...

Dark Textures Don't Bounce Light due to differences in Gamma vs. Linear Space



# Speaking of Lighting...

Gamma vs. Linear example Image and stats



# Speaking of Lighting...

Average Pixel  
Brightness  
46

Average Pixel  
Brightness  
150

Only Bounces 2%  
Of Incoming Light!

Bounces 31%  
Of Incoming Light



Old Texture



New Texture





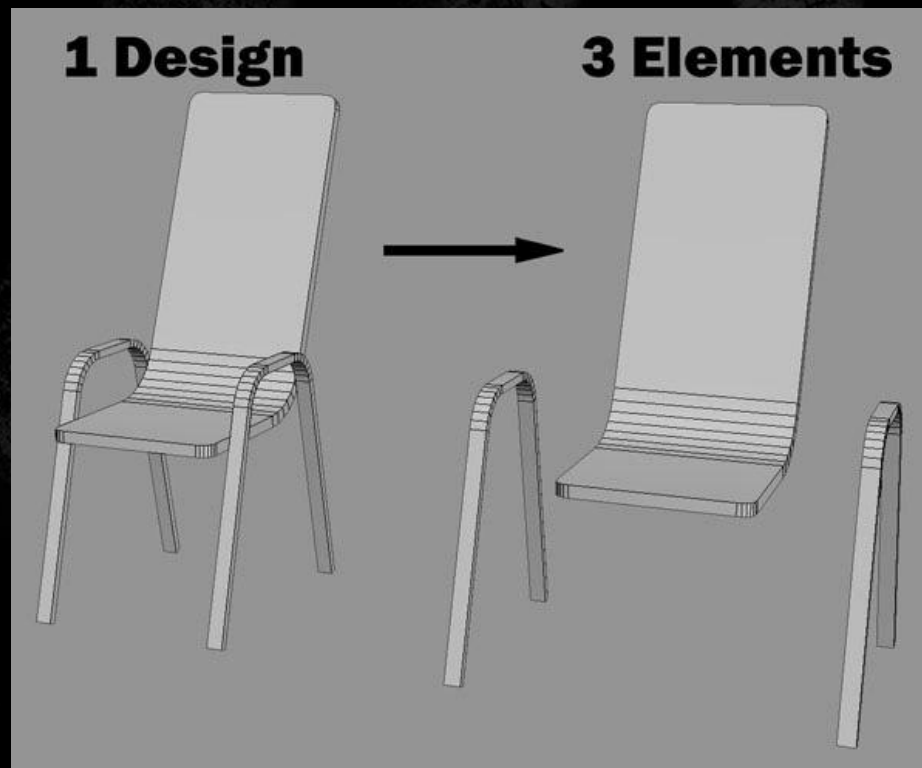
# Environments beyond lighting

## How else do we raise the environmental bar?

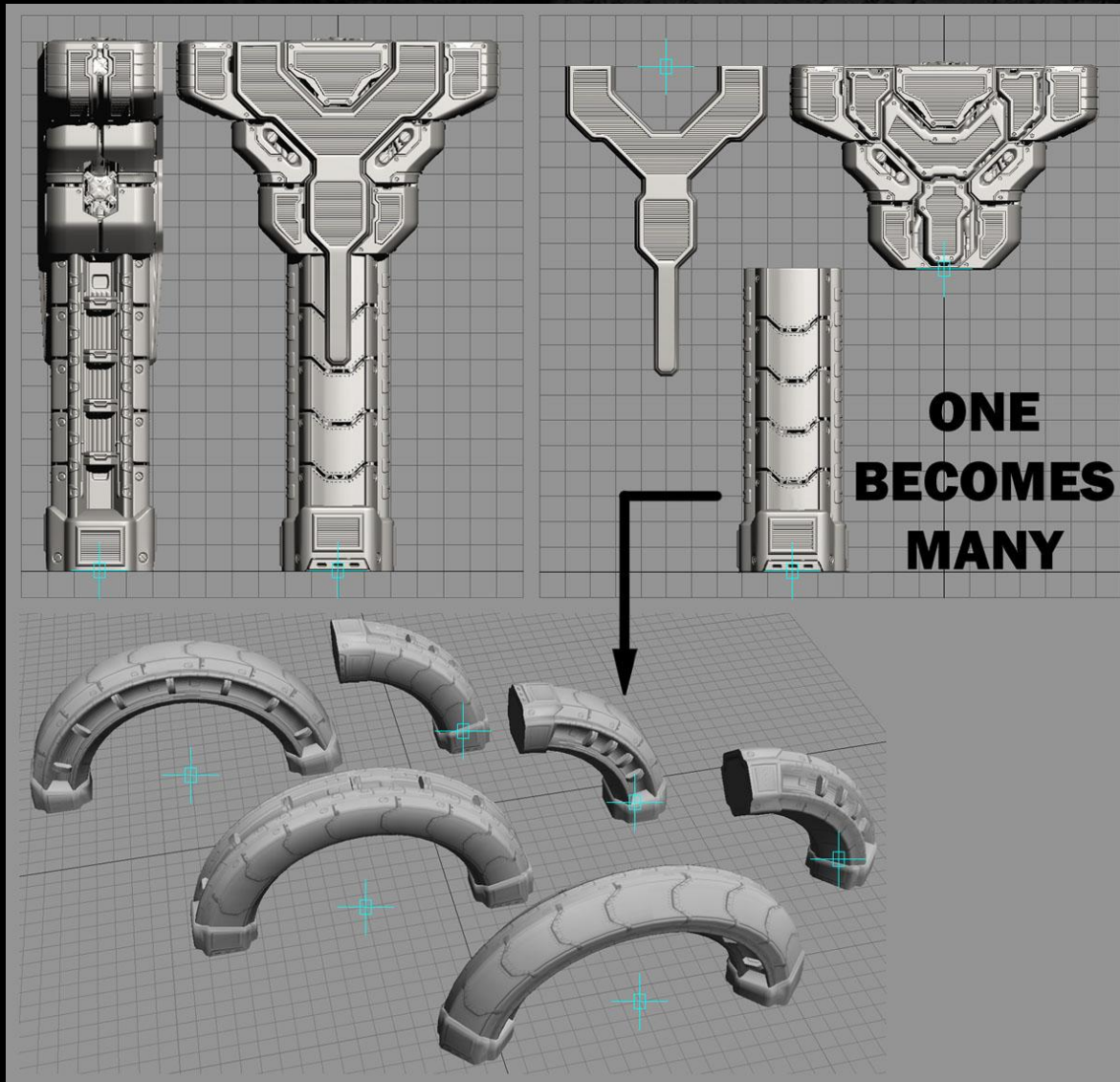
- We want higher texture resolutions AND greater variety
- Save memory on “infrastructure” so you can spend it on “hero pieces”
- Modular environment construction became extremely important

# Modular Environment Art

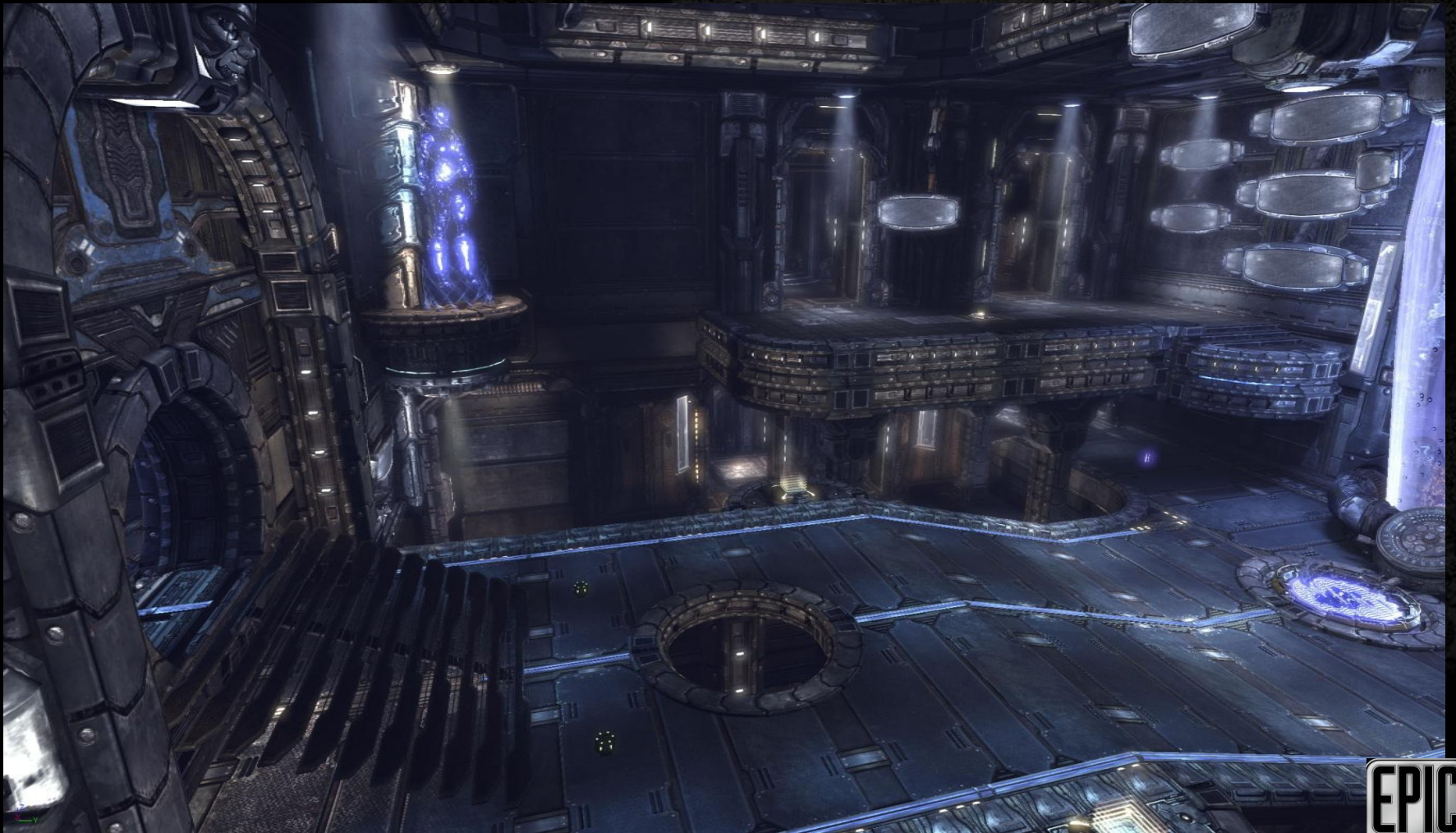
- Spot patterns of repetition between assets
- Assemble low polygon variants that share textures



# Modular Environment Art



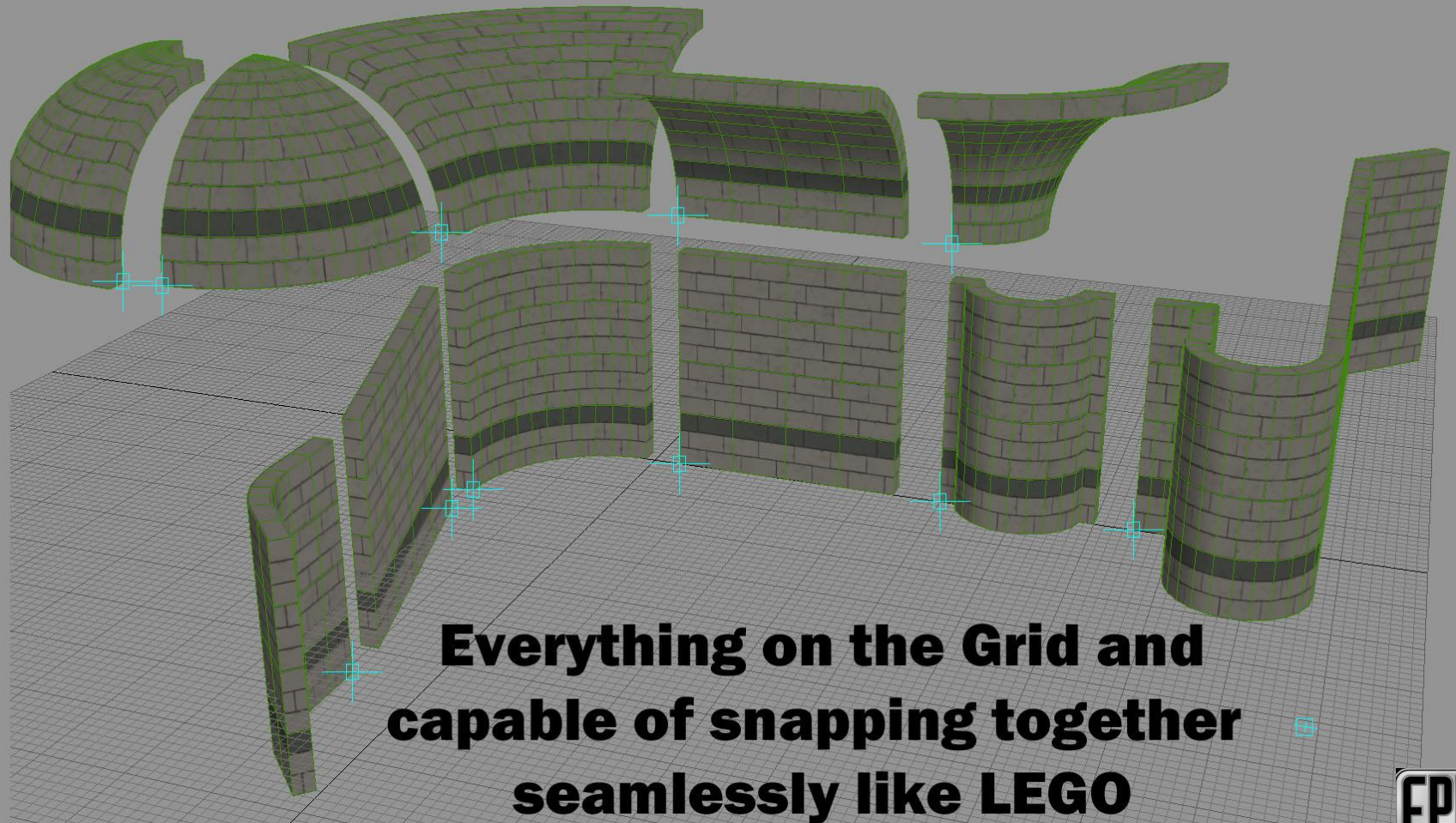
# Modular Environment Art



# Modular Environment Art

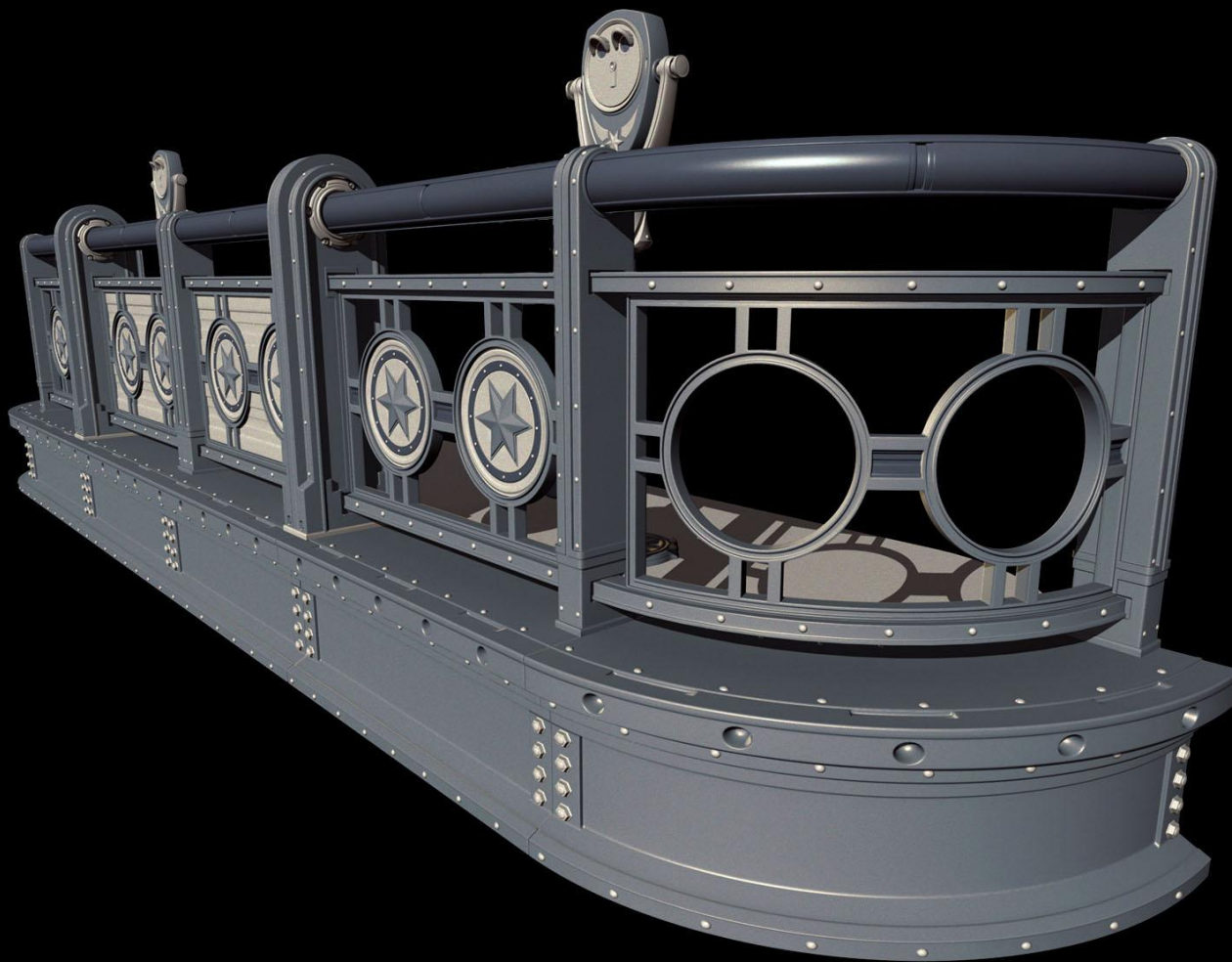


# Modular Environment Art

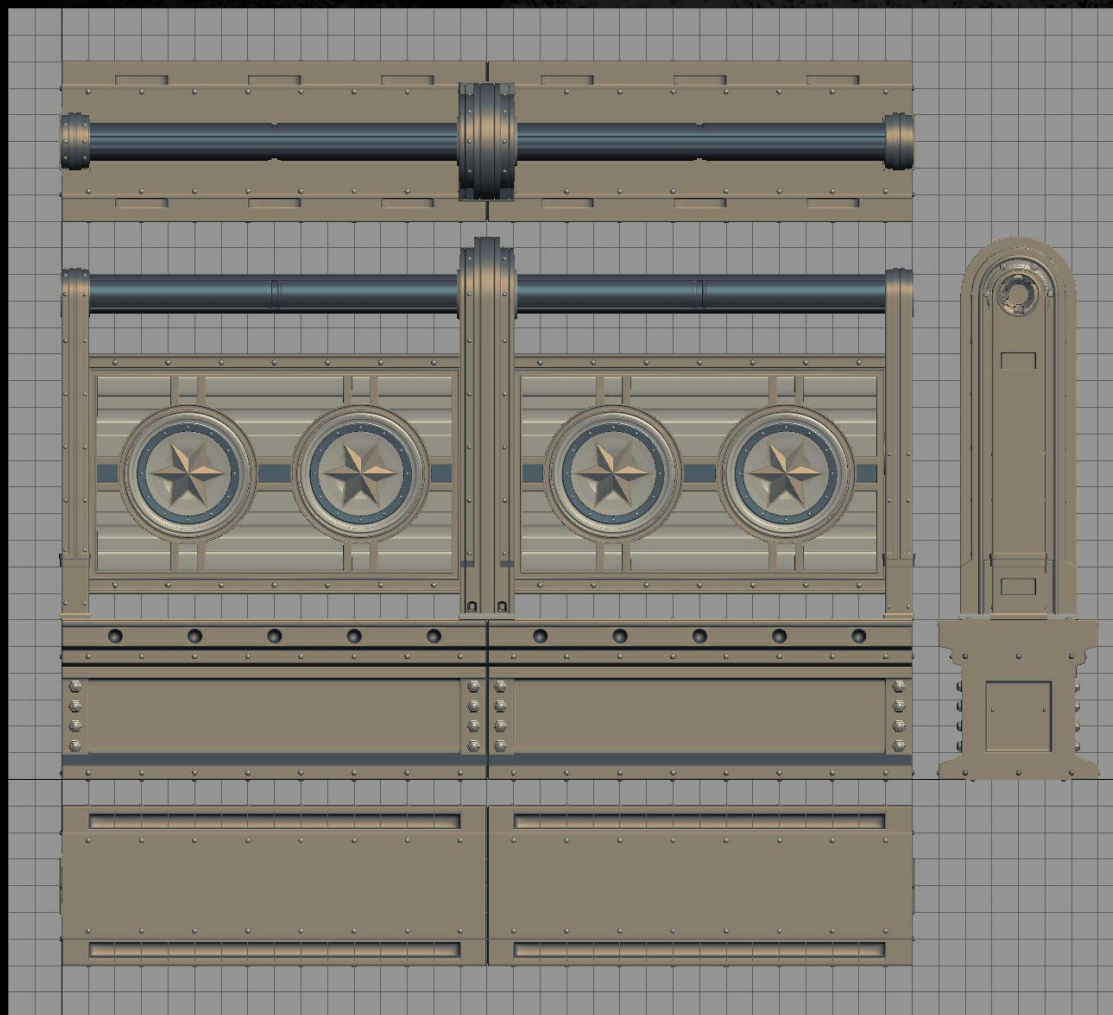


**Everything on the Grid and  
capable of snapping together  
seamlessly like LEGO**

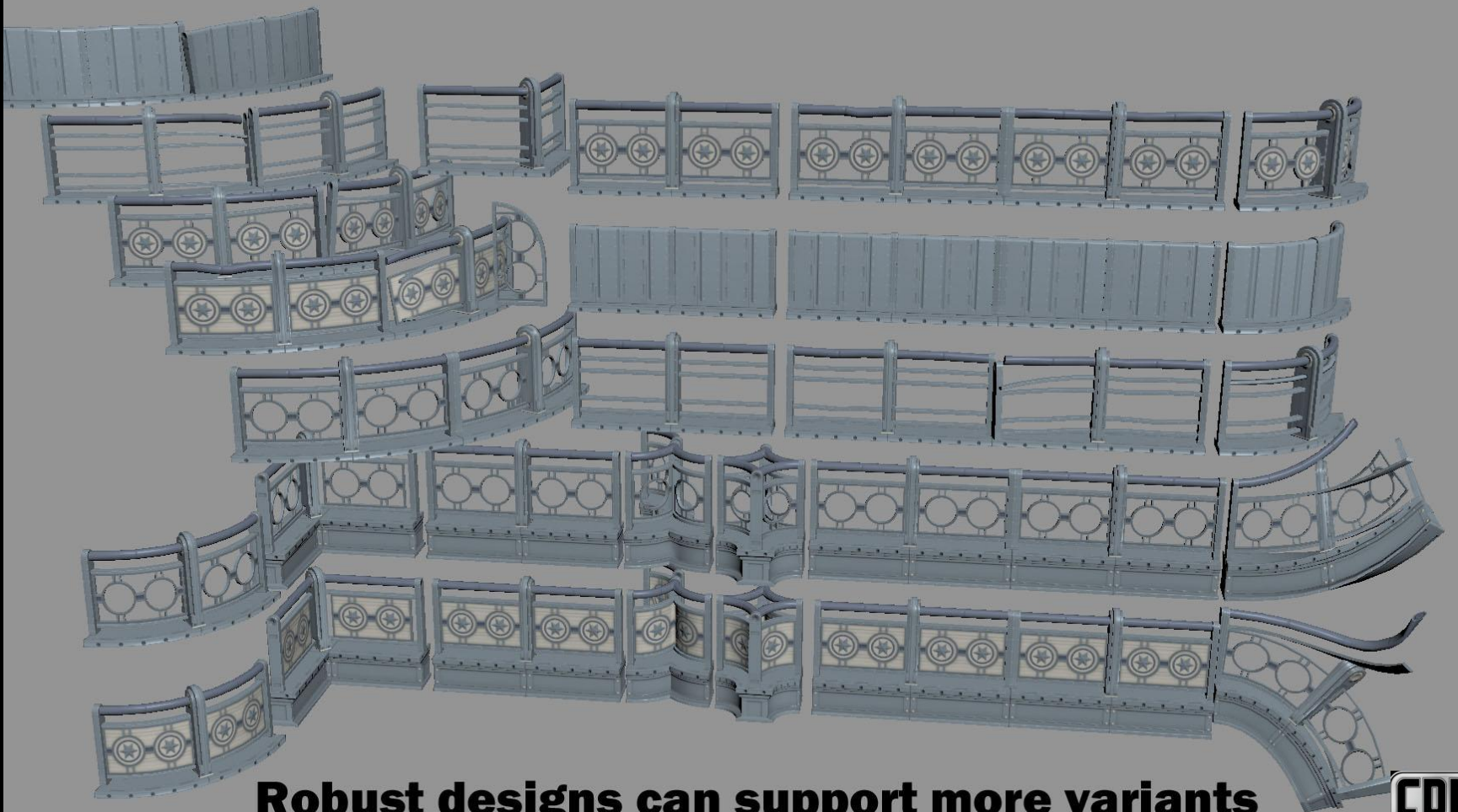
# Modular Environment Art



# Modular Environment Art



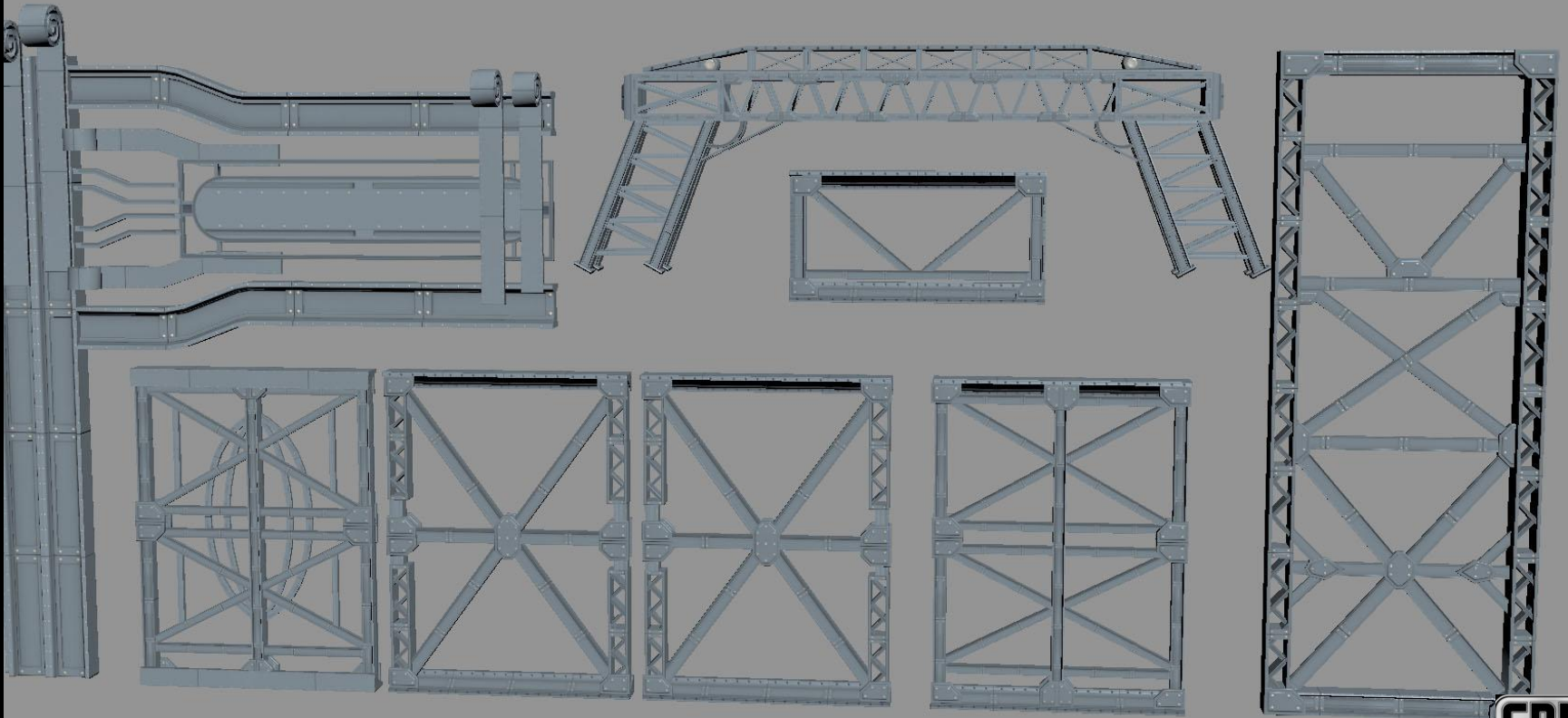
# Modular Environment Art



**Robust designs can support more variants**

# Modular Environment Art

**Efficient UVW layout can support unplanned designs**



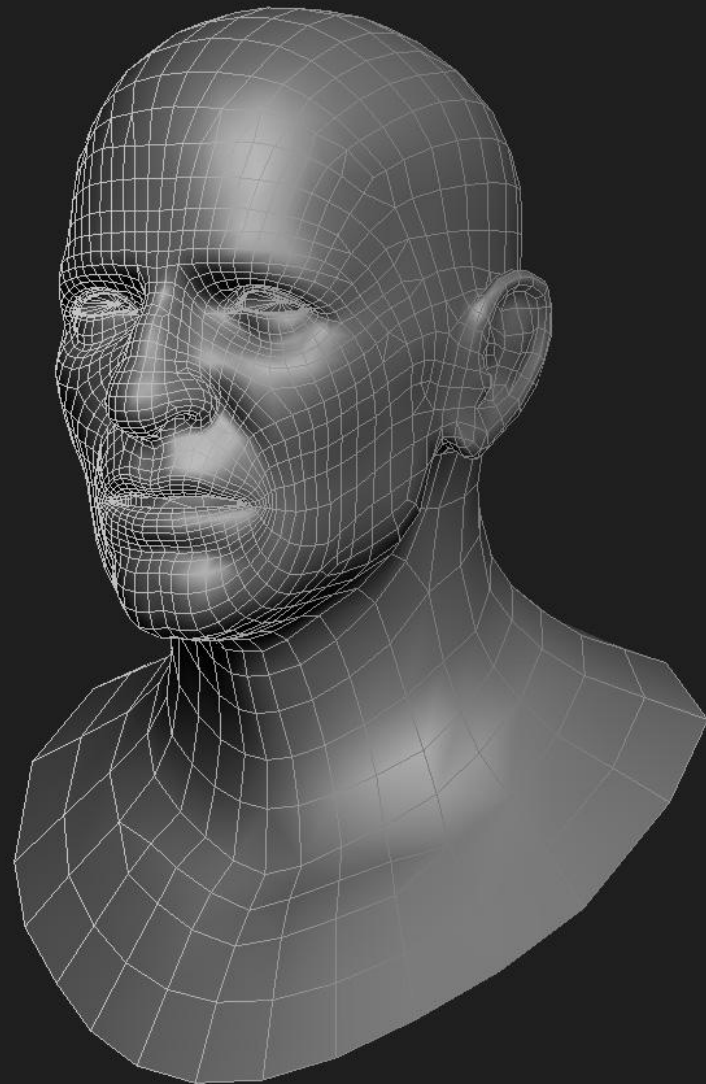
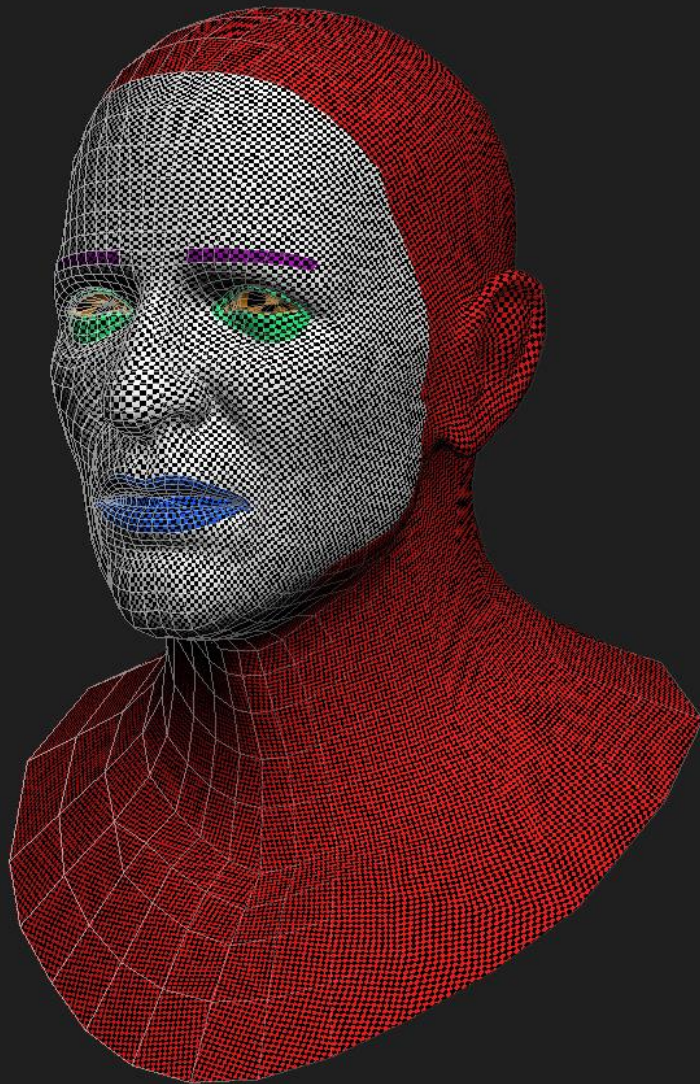
# Modular Environment Art



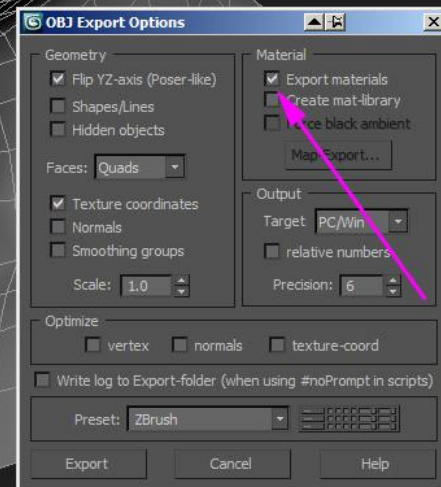
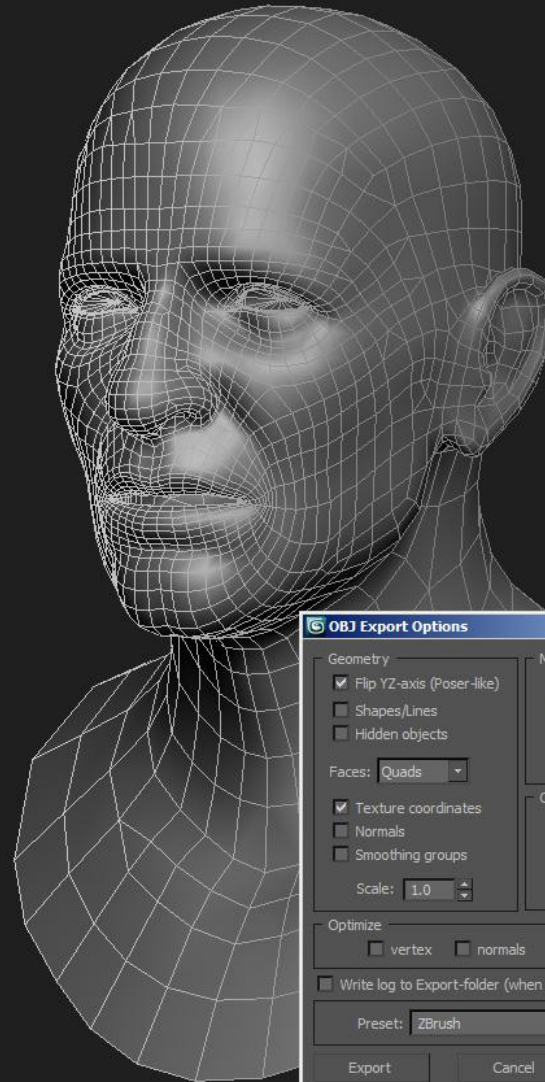
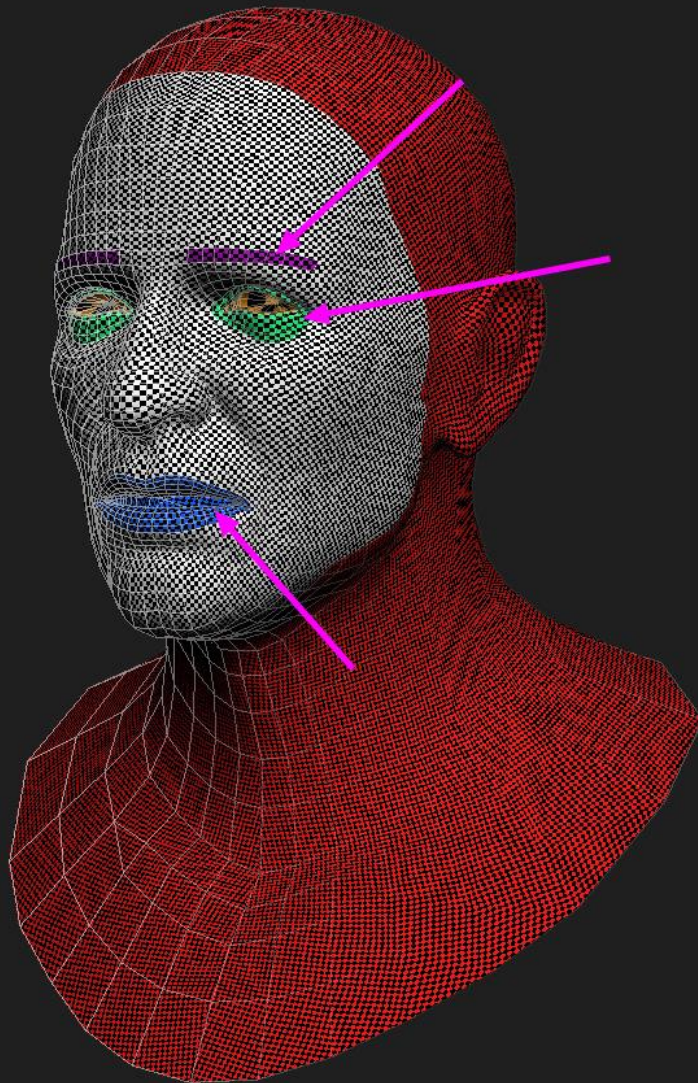
# What else can we build Modularly?

- Modular environments saved us resources and time
- Can we do a 'modular' character?
- Head geometry is a good candidate

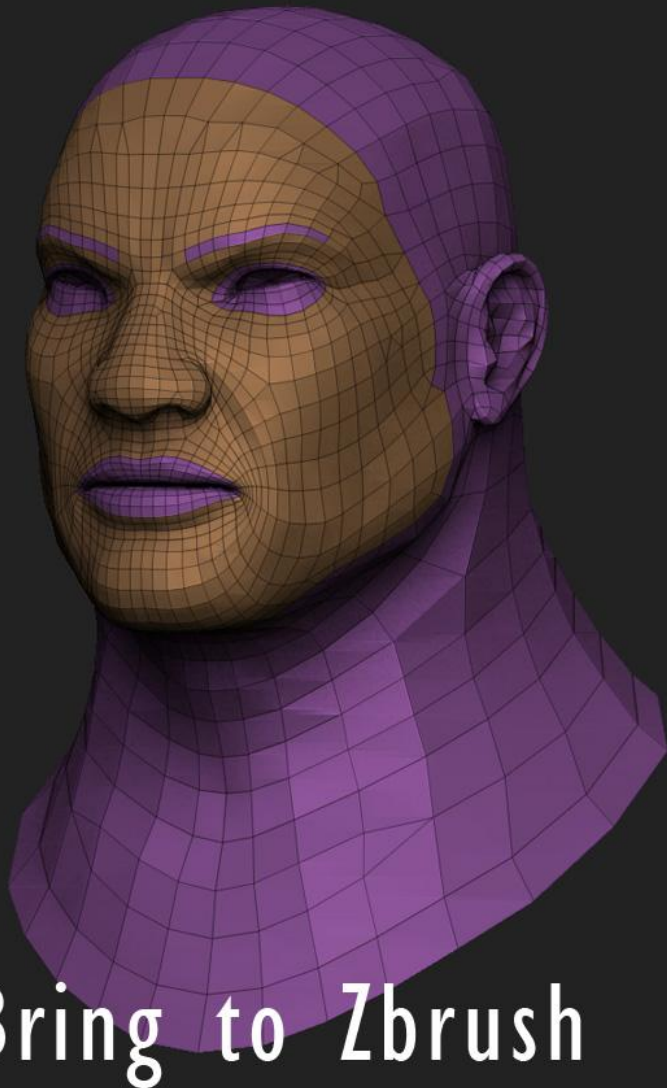
# Universal Head Geometry



# Universal Head Geometry



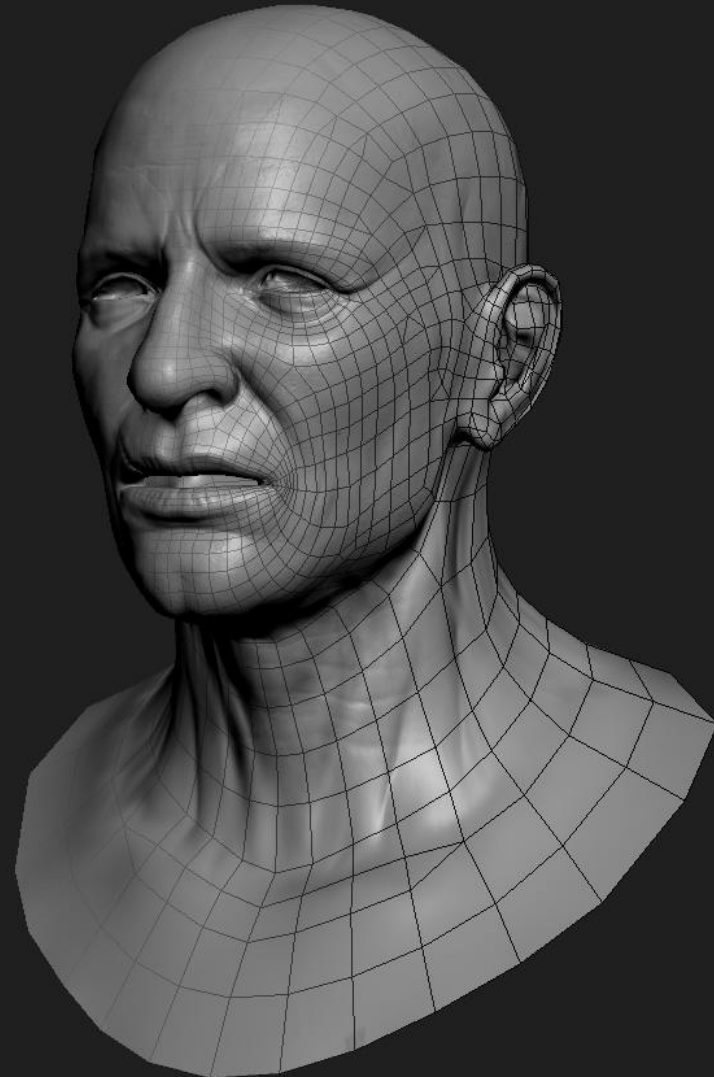
# Universal Head Geometry



Bring to Zbrush



# Universal Head Geometry



Back To Max

# Universal Head Benefits

- Rigging a new head used to take up to two days
- After universal head, it takes an hour
- Huge time savings AND the animators know they get a consistent head layout to animate to



# Any problems?

- Lots of good time saving techniques saved us cycles
- What about the problems?
- What would we have done differently?

# Any problems?

## What works for character artists doesn't always work for environments

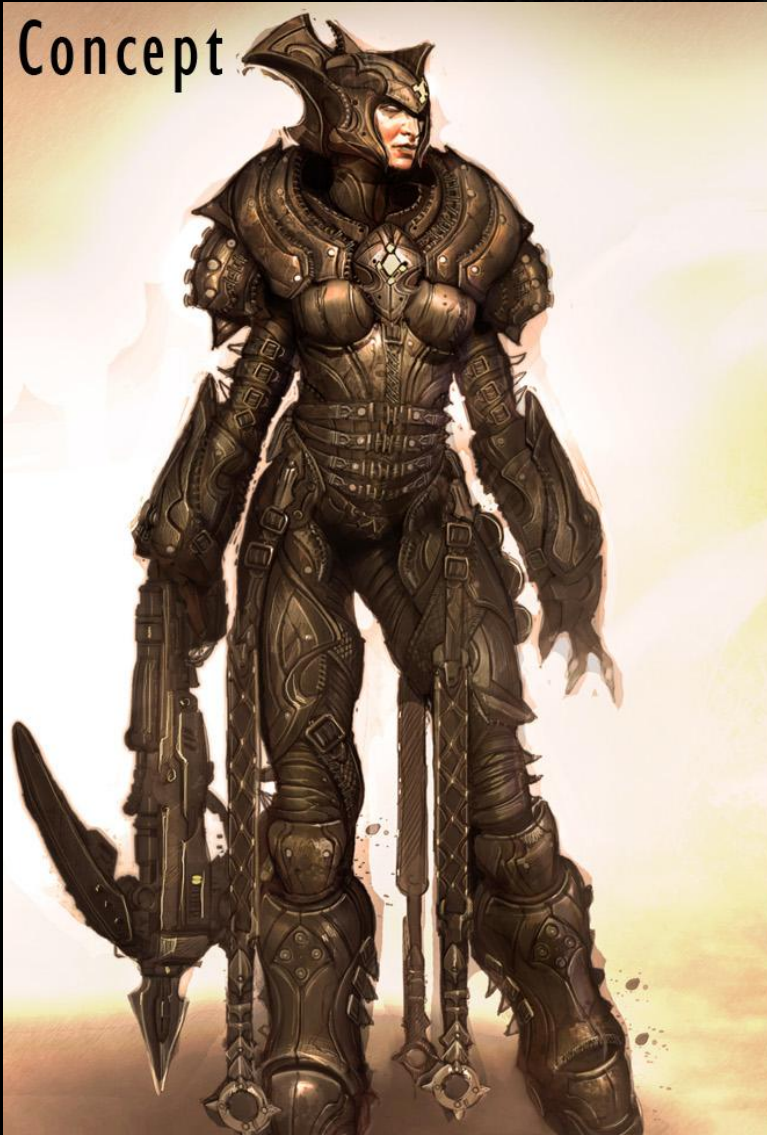
- Our character team has a lot of freedom to experiment and play after the concept is done
- We tried giving the environment team that same freedom

# Any Problems?



# Any Problems?

Concept



In Engine



# Any Problems?

- We only drew one final concept per character
- No back or side views
- Allowed for quick iteration and concept speed
- Character artists could handle having to 'invent' the extra details they needed

# Any Problems?



# Any Problems?

- The scope of environments is too big to force an artist to “fill in the blanks”
- It’s stressful and draining to have to invent all the details for yourself
- Even if time is tight, we learned that clarity is better than speed

# Any Problems?



# Summary Slide 1



# Summary Slide 2



# Summary Slide 3



Questions?

