



MA4349 - Autodesk® SketchBook® Designer through the Phases of Design

David Bentley – College for Creative Studies

MA4349

Learning Objectives

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

- Understand how Sketchbook Designer supports all the phases of design
- Use Sketchbook Designer as a tool for idea generation
- Use the vector tools to create clean, final line-work
- Render final images using visual communication techniques. Focus on shading, tight cut-lines and textures

About the Speaker

David Bentley, illustrator, modeler, animator, and 3D visualization artist. He is currently an assistant professor at the College for Creative Studies, in the Entertainment Arts Dept. David graduated with a BFA in Industrial Design from the Brigham Young University in 1997. He then worked as a Creative Designer at General Motors Design. Three years later, David left GM to consult for Alias/wavefront at Chrysler Design where he worked with designers to enhance workflows and solve problems. He left DCX to work at Lear as a Senior designer on the GT40 Ford production program as well as the advanced design studio. In 2003, he joined Alias as an Application Engineer for design and entertainment software, and was a part of Autodesk following their acquisition of Alias, for 2 years as the Solutions Engineer for Global Accounts, specializing in Conceptual Design from 2D to 3D to Visualization, using Sketchbook Pro, Mudbox, Alias Studio, and Maya. David is a freelance illustrator, designer, and trainer at Bentley Design, living in Michigan with his wife and four children. David's keeps a blog online at <http://www.dbcharacters.blogspot.com/> bentley,design@yahoo.com

Phases of Design:

Phase 1: Research

Proper research includes; understanding your target audience knowing any packaging constraints and engineering data image, look and style gathering researching what else is out there and how they are successful creating a matrix of where market opportunities might be.



Many times it requires hands on use of a product and or analyzing the use of the product by watching focus groups. Putting the key information together into a style guide for reference.

Sketchbook can be a resource in research as you take notes over design direction

Phase 2: Conceptualization/Ideation

Freedom to explore in many directions. A scatter gun approach. Try out ideas without constraints of technology and packaging. What if scenarios. Focus on silhouettes, functionality and character. Simplicity and focus.

Sketchbook simplicity comes in because there is no searching for tools. When a designer stops sketching to select and search through menus he/she can lose the “moment”. Layers and symmetry are key tools.

Phase 3: Refinement of ideas and concepts

Take favorite concepts and make them believable. Do they work over a package? Is this inherently too expensive to manufacture? Clean up the drawings and add details.

While these drawings are still loose they should be nice as these will most likely be shown to a client. Clean line-work.

Tools in Sketchbook that help with quality; Lines, ellipses, curve snapping, perspective grids and sketching over 3D/images

Phase 4: Concept Execution.

*Once the client has bought off on a direction. Final renderings of the product are needed. Generally package views over engineering criteria are expected. Without proper drawings both rendered out and in views, your beautiful design **WILL** likely be changed by engineers who are looking not at the proportions and style of the product but at the manufacturability, safety constraints, and costs associated with it.*

Sketchbook can aid to create multiple views with grid lines and perspective warp. Also, the vector curve functionality is a great way to have precise linework.

Phase 5: Presentation, Beauty and/or Descriptive renderings.

Wonderful designs can be changed when the vision is not set. Presentation renderings help to sell decision makers on designs. You still need to sell the design whether your client is a design manager, engineering dept., executive team or marketing dept.

Visual Communication rendering process:

- 1 Initial sketch layer over package or sketch with proper perspective.
- 2 Diffuse layer. (Base coat paint. Flat Lambert style paint)



- 3 Highlight layer. (shininess)
- 4 Cut lines and details layer. Texture feature brushes, and guide lines.
- 5 Reflection layer. (environment reflections)
- 6 Texture layer. (grunge or carbon fiber)
- 7 Glossy layer. Clear coat paint. (white lens flares)

Phase 6: Communication with engineers and sculptors.

Notes over the design model or engineering screen-shots to describe the design visually. A drawing with notes is worth a 1000 emails. Drawings over packages are to scale as well as not being cheated.

Sketchbook Designer as a Conceptualization/Ideation tool

Symmetry bi-linear and radial

Lasso tool for Silhouetting

*Thinking in terms of **silhouettes** allows you to focus on proportions and memorable character.*

*The building blocks of **shape** tell a lot about what the character of the design is.*

Edgy shapes can represent high tech or low budget and a dangerous character. Positional G0

Round shapes can represent safe friendly designs or purpose built. Primitives with fillets. G1

Flowing forms and shapes can represent nature, high quality design. Curvature G2

Years ago Gray Holland at an AU class mixed surface types to show a matrix of product characteristics.

Cadillac is mostly G0

Jeep is mostly G1

Alpha Romeo is mostly G3

Lamborghini is a mix of G0 precision and G3 natural flow



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Apple computers are mixing G1 with just a touch of G3 for a quality you can see and feel.

Warping shapes and images

Simple multi-handled tools give us the options to focus on design and proportions instead of hopping in and out of image manipulation tools.

Mix the warping tools with the symmetry layers and get something extraordinary.

Vector Layers

Line creation control

Line editing abilities

Capabilities and uses of vector curves

Final line work

Shapes for fills

Masking

Guide-lines

Visual Communication renderings using Sketchbook Designer. IE nice renderings:

Initial sketch layer over package or sketch with proper perspective.

Diffuse layer. (Base coat paint. Flat Lambert style paint)

Highlight layer. (shininess)

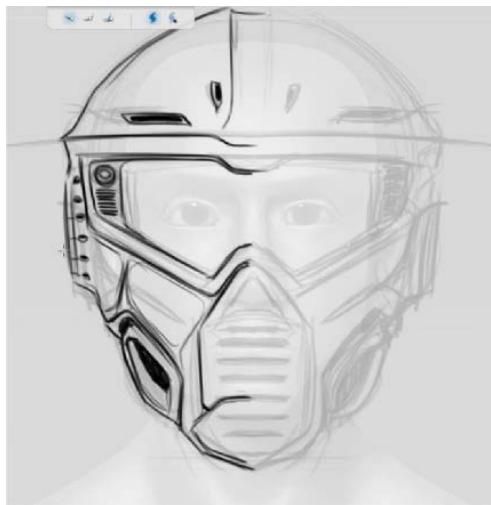
Cut lines and details layer. Texture feature brushes, and guide lines.

Reflection layer. (environment reflections)/ Glossy layer. Clear coat paint.

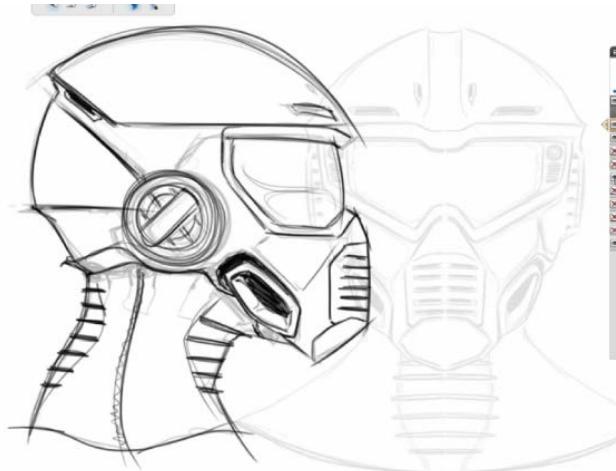
Texture layer. (grunge or carbon fiber)



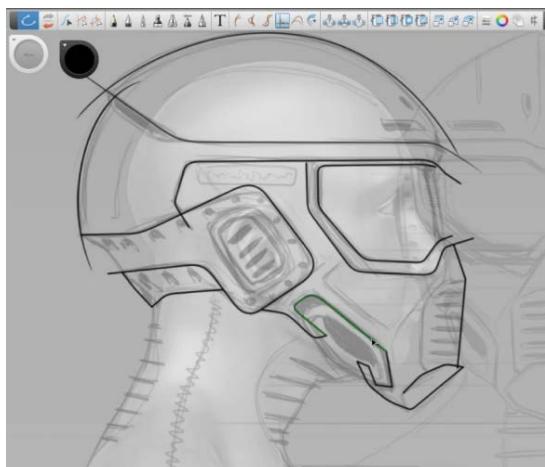
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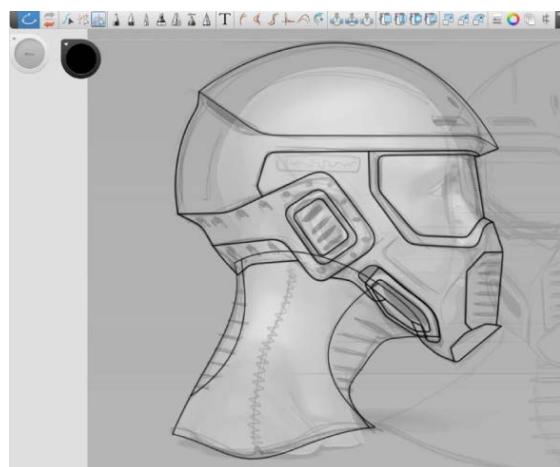
Refine the idea



Multiple views/layers



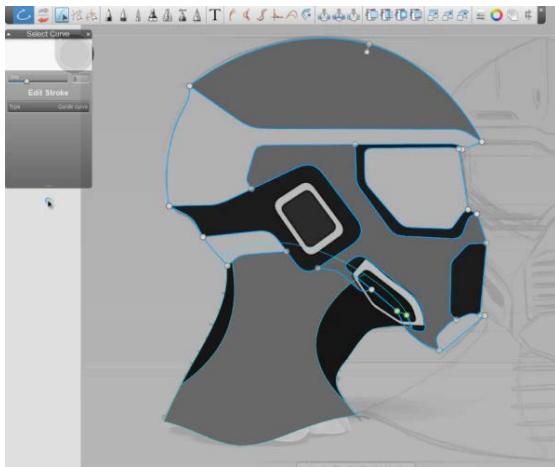
Vector curves to clean up the linework



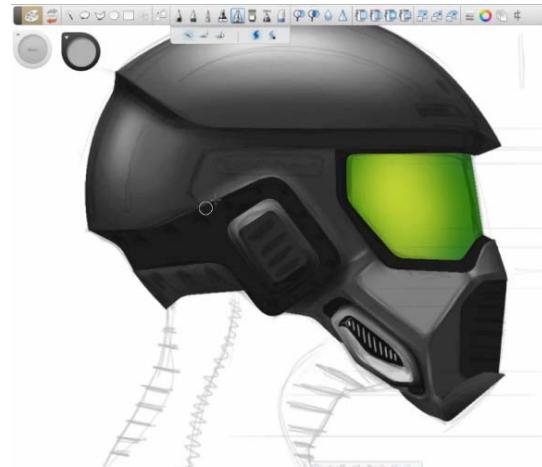
Edited curves



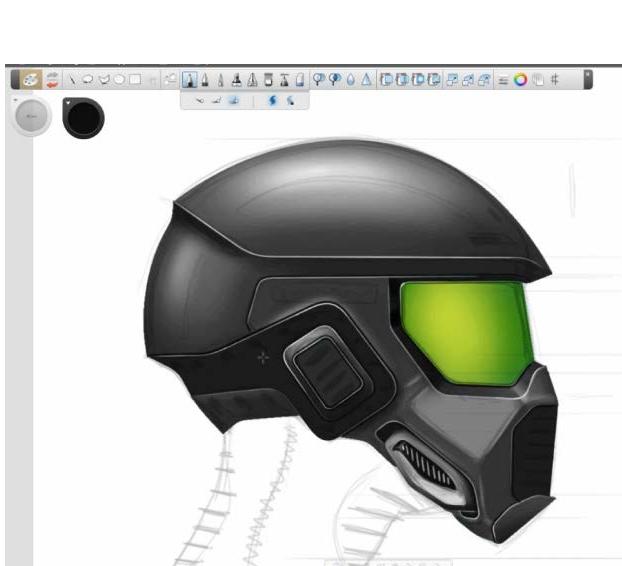
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Fill the layers and create layer masks



Paint in highlights and shadows



Vector curves as guidecurves for pencil strokes



Texture asset brushes for details

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Textures overlayed and reflections added as new layers with layer adjustments



Final presentation render.....

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