


# Documentation

Freeform Modeling Workshop





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# Ideation

## Topic Selection

We selected the *Freeform Modeling Workshop* from a list of various workshops of the Hochschule für Gestaltung Schwäbisch Gmünd:

Print Workshop

Wood Workshop

Metal Workshop

Rapid-Prototyping/3D Workshop

Photo-/Video Studio

\* Freeform Modeling-/Clay Workshop

Prototyping Lab

Media Lab

Hackerspace

Aquarium

The Freeform Modeling Workshop, which is taught and overlooked by Prof. Volkmar Meyer-Schönbohm, consists within it the clay workshop, the gypsum workshop and the ceramics workshop. Out of these three, we decided to focus on the clay and gypsum workshops for documentation and brochure making.

## Brainstorming

Our primary research for the freeform modeling workshop revealed the various materials, tools, texture of processes of clay and gypsum. With some basic knowledge of the fundamentals of freeform modelling, we were ready to delve deeper into building upon that knowledge and finding additional themes and concepts for the brochure.



# Ideation

## Brainstorming

The group agreed upon the idea of having a common theme to the brochure in order to communicate more than just the technical knowledge and information in the brochure. Numerous themes and topics were explored.

A selection of the explored topics:

Calmness and tranquility:

Meditative experience:

Space and time:

New media vs old media:

Hands on creating:

Evolution of form:

Creation and destruction:

learning to let go:



# Research

## Interviews

Several interviews were conducted in order to get the objective and subjective information out of the people working in the freeform modeling workshop

### Volkmar's interview

#### *Interview Topic*

Introduction to the workshop

#### *Interview Format*

audio recording

#### *Interview Duration*

21.3 mins

In an introductory interview of Volkmar, he showed us around the workshop and explained to us the various aspects and process of clay and gypsum.

### Student Interviews

#### *Number of Students*

3

#### *Interview Topic*

Meditative experience of clay and gypsum

#### *Interview Format*

Audio recording

#### *Interview Duration*

46 mins

#### *Student 1*

"Clay is a magic medium where it has the ability to grasp feelings that may seem intangible. It is earthy & primal and brings us back to our inner child where we can play and be more spontaneous. When we couple this with learning and practicing new found skills mindfulness meditation, we can discover a deeper sense of wellbeing"

#### *Student 2*

"Here, you can enjoy time for yourself and unwind whilst releasing feelings, creativity, thoughts and hopes into the responsiveness of clay. You'll also learn and become skilled in mindfulness so you can easily connect to the calm"

#### *Student 3*

"It's very meditative. It turns off a higher level of thinking. You have to let go and give in to the unpredictability of it. You can go in with an idea of what you want to make, and the clay doesn't want to do that."



# Content

## Topic Research

Our content research drew from various sources, including our user interviews, personal experience working in the clay workshop, and a large collection of texts given to us by Volkmar. We synthesized these various sources into a cohesive text for our handbook.ww



## Clay-Modelling

### INDUSTRIEPLASTLIN

Unter der Bezeichnung "Knetmasse" (Clay) versteht man ein aus Ton bestehendes Material, das in einem speziellen an der Luft nicht trocknenden Modellierkasten (Modellierkasten) zu einem bestimmten Zweck (z.B. als Modell) geformt werden kann. In dieser Linie wird CLAY in der Automobilindustrie bei der Formgebung von Karosserieteilen und Interieurmodellen eingesetzt. Während der Herstellung werden dem Modellierkasten verschiedene Zusätze (z.B. Pigmente, Füllstoffe, etc.) hinzugefügt, um die Farbe und die Textur des Modells zu steuern. Das Material ist leicht zu verarbeiten und ermöglicht eine hohe Genauigkeit bei der Formgebung.

Die Bezeichnung "Clay" steht für verschiedene Arten von Tonmaterialien, die in der Automobilindustrie verwendet werden. Je nach Anwendung kann das Material aus verschiedenen Tonarten (z.B. Kaolin, Feldspat, etc.) bestehen. Die Eigenschaften des Materials (z.B. Farbe, Textur, etc.) werden durch die Zusammensetzung des Modells bestimmt. Die Bezeichnung "Clay" steht für verschiedene Arten von Tonmaterialien, die in der Automobilindustrie verwendet werden. Je nach Anwendung kann das Material aus verschiedenen Tonarten (z.B. Kaolin, Feldspat, etc.) bestehen. Die Eigenschaften des Materials (z.B. Farbe, Textur, etc.) werden durch die Zusammensetzung des Modells bestimmt.

Optimalerweise sollte das Material in einem geschlossenen Zustand (z.B. in einem Modellierkasten) aufbewahrt werden, um die Feuchtigkeit zu erhalten. Die Feuchtigkeit ist wichtig, um das Material zu formen und zu bearbeiten. Die Feuchtigkeit ist wichtig, um das Material zu formen und zu bearbeiten. Die Feuchtigkeit ist wichtig, um das Material zu formen und zu bearbeiten.

Die CLAY-Modellierung ist ein wichtiger Bestandteil der Automobilindustrie. Sie ermöglicht die Herstellung von Modellen, die die Formgebung von Karosserieteilen und Interieurmodellen darstellen. Die CLAY-Modellierung ist ein wichtiger Bestandteil der Automobilindustrie. Sie ermöglicht die Herstellung von Modellen, die die Formgebung von Karosserieteilen und Interieurmodellen darstellen.

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Als Finish können die Modelle lackiert oder mit einer speziellen Folie (Dynamolack) beschichtet werden. Das Finish ist wichtig, um das Modell zu schützen und es zu verfeinern. Das Finish ist wichtig, um das Modell zu schützen und es zu verfeinern.

Von den Modellen können auch verschiedene Teile (z.B. Karosserieteile, Interieurteile, etc.) hergestellt werden. Diese Teile können dann in der Automobilindustrie verwendet werden. Von den Modellen können auch verschiedene Teile (z.B. Karosserieteile, Interieurteile, etc.) hergestellt werden. Diese Teile können dann in der Automobilindustrie verwendet werden.

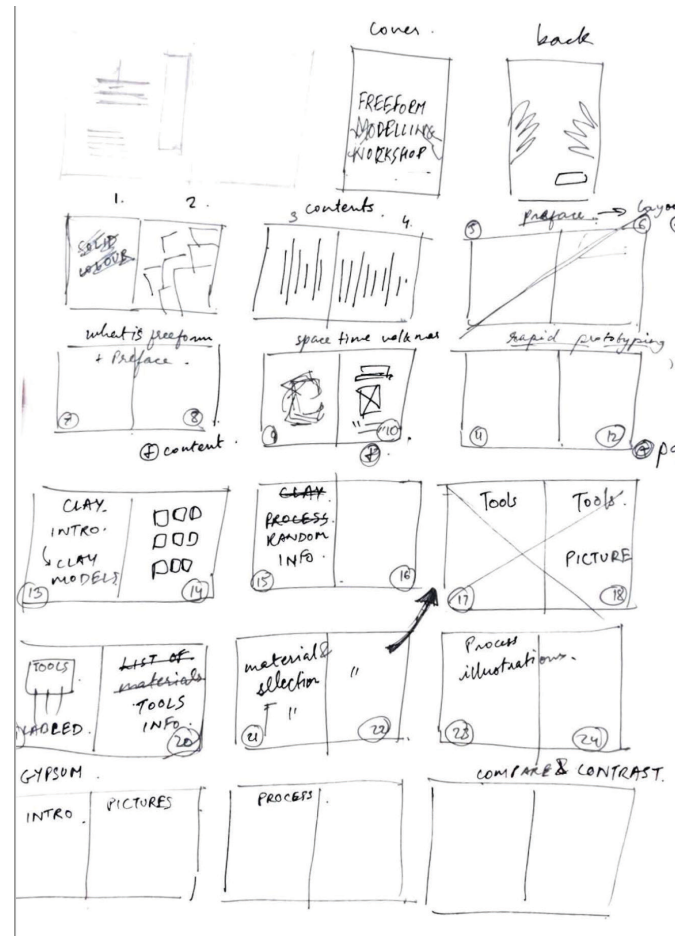
Hochschule für Gestaltung Schwabach-Grund  
Volkmar Meyer-Schönlehn



# Content

## Page Hierarchy

- Cover page
- Inner Jacket
- Preface
- Space, Time, Volkmar
- Freeform modeling in general.
- Rapid Prototyping
- Clay
  - a. List of Materials
  - b. Advantages & Disadvantages
  - c. Tools
  - d. How To Make A Clay Model?
- Gypsum
  - a. Advantages & Disadvantages
  - b. How To Make A Gypsum Model?
  - c. Scraps and Models
- Meditative Experience
- Acknowledgements



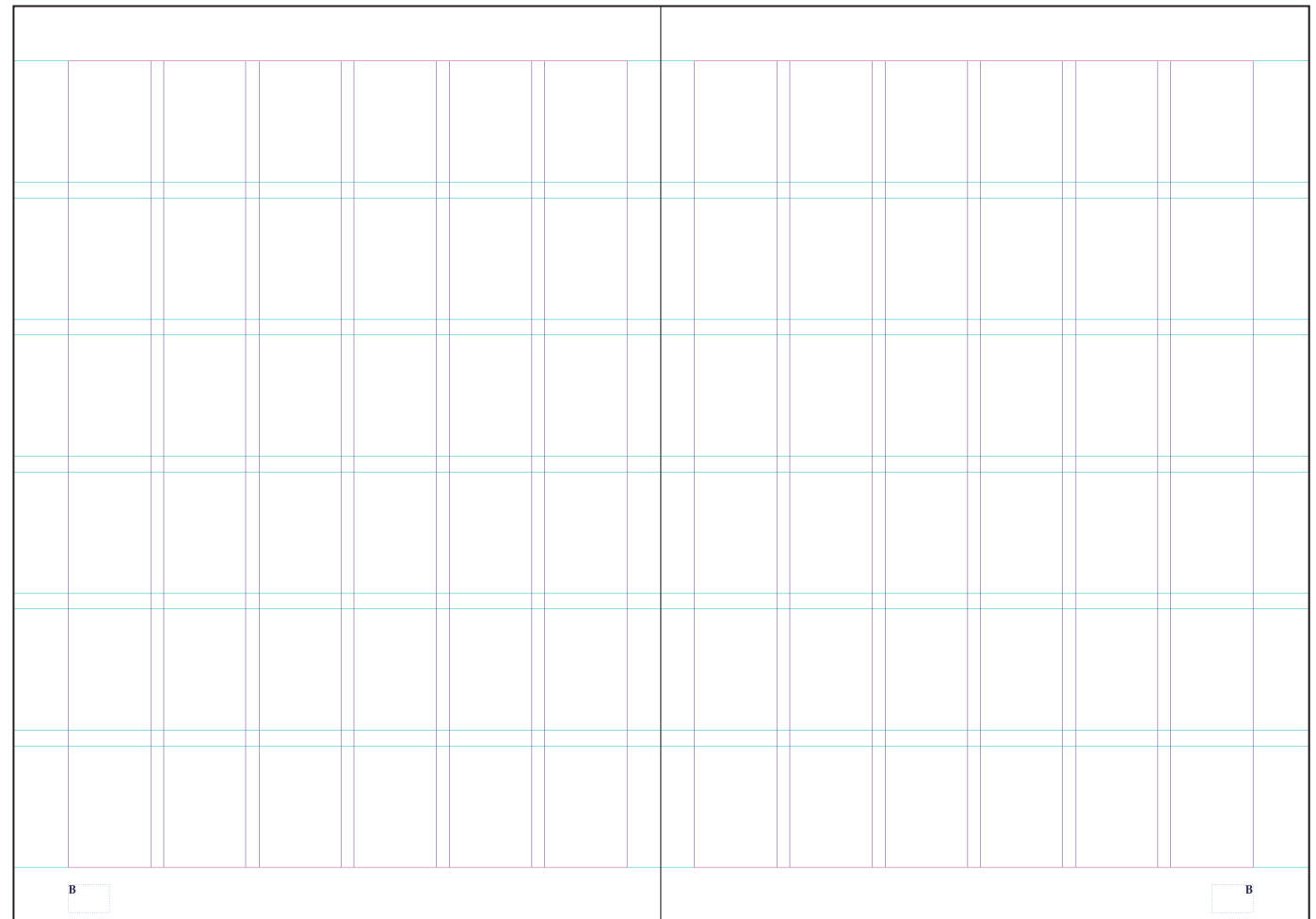


# Typography

## Grid and Layout

The size of the page is A4 with measures of 210 × 297 millimeters. The margins are set at 12.7 mm on all sides. The size of the margins gives the content a general shape, which is a rectangle, in this case.

We used a 6x6 modular grid to organize the text comfortably and in a manner that is easy to read. Since modular grids have equal size modules, this made it easier for us to “break the rules” and use the various spatial zones in different ways. The gutters are equally spaced at 4.7 mm in order to maintain a visual balance.



# Typography

## Typefaces

### GT Sectra

GT Sectra is a serif typeface combining the calligraphic influence of the broad nib pen with the sharpness of the scalpel. This sharpness defines its contemporary look. Since clay and gypsum are both subtractive media, that are usually shaped with the help of a chisel, we decided to go with a font that exudes a sharp and chiseled vibe for out headings.

# Lorem Ipsum

GT Sectra Display Regular (60 pt and above. Not to be used with pastel or dull color)

# Dolor Sit Amet

GT Sectra Fine Bold (30 pt to 59 pt. Can be used over 59 pt if in a pastel or dull color)

# Typography

## Typefaces

### Palatino

Palatino is elegant and smooth, with delicate, straight lines, as well as fun swooshes (such as in the lowercase “g,” “a,” and uppercase “Q”) that carry traces of the personal feel of handwriting. Perfect for longer passages of text, Palatino is a typeface that is most commonly used in books and journals.

Despite the rise of digital tools and rapid prototyping, it has never been more important for designers to make things with their hands. Comfort with three dimensions as a sketch and development tool enhances a designer’s sensitivity to form tremendously, and helps them understand how products are made in the real world. If you can build it, you’re halfway to knowing how it could be manufactured. Building models by hand is fundamental to Industrial Design—it’s what makes our profession a craft. Spending time with CAD makes you a better modeler, but spending time with a physical model makes you a better designer. It allows you to see your design in the real world, in a way that simply superimposing a rendering into an environment cannot replicate. The practice of validating ideas through physical prototyping, whether it be quick and dirty paper mock-ups or high fidelity Clay models, is slowly dying. There needs to be a resurgence of prototyping within the modern work-flow of industrial designers. A slight shift in proportions can make a world of difference in how someone perceives the appearance, function, and value of a product. The automotive industry is a great example of how shifting proportions can lead to very different emotive values within form.

Palatino Linotype Regular (10 pt , for body text)  
Leading: 12 pt

*“ It enables us to intuitively create a form that appeals to people’s hearts and mind.”*

Palatino Linotype Italic (24 pt , for Pull out quotes)  
Leading: 25 pt

**Shape the model (roughly) with your hands**

Palatino Linotype Bold (24 pt , for Pull out quotes)  
Leading: 28 pt

# Typography Spacing

The spacing changes depending on the content of the spread. Nevertheless there are a few fixed ways in which we have arranged the text and created a suitable hierarchy

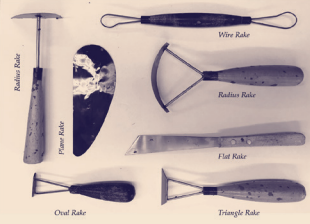
## Clay Modeling

*“It enables us to intuitively create a form that appeals to people’s hearts and mind.”*

There are many different types of clay. There is the clay that children play with, terracotta clay, the clay mixed with oil used for ceramic modeling, and the industrial clay (ID clay) used for plastic design development. Either oil, ear or industrial clay is used for our modeling. Among modeling clay are numerous oil clay and even ear. Both are soft and have a high moisture content, are elastic and can be handled at room temperature (the high temperature, the easier to handle). ID clay are also soft, but they are hard as soon as they are dried, and also become soft and malleable when heated. There are various types of ID clay for different applications, but quality also have a common factor: they give the designer freedom and convenience to incorporate changes, pack easily, and provide a good finished appearance. It is particularly important that the clay is so soft that it can be shaped at relatively low temperatures. In large, the most suitable used clay is one called F20. This is a Chatter clay with high quality and coloring.

Working in clay gives modelers and designers a sense of relief, dignity but for the design that simply cannot be achieved by any other medium and is ideal for testing our optical impressions. Later, these soft ID Clay models can be turned into clay (ID clay) and mounted into 3D production design for production. Clay used advantage of clay is it can be modeled and painted in beautiful, beautiful colors. This is the reason why many 3D modelers use when creating concept car air by automobile design development.

Industrial Clay is an extremely versatile tool with many advantages for use for the modeler in addition to our modeling. Clay is still being used widely in highly developed Industrial Design product applications (i.e. prototype before, pre-series, and a series) and is used by designers and concept model making in the environment / special effects industrial design making has been used for design for thousands of years. We try something out, break it, use it, and try again. It saves the designer from the end, and lets the ideas speak for itself.



## Tools

The main purpose of a rule is to remove unwanted in an efficient manner, therefore giving you a clay form that is representative of the design required. Even if it is a very rough representation by achieving the basic form very early in the modeling process, the designer has time to consider changes that will enhance the overall look thus leading to an appealing design.

Rulers come in various forms; from large flat rulers which are used primarily on convex surfaces to curved rulers which are used on concave surfaces. They usually range in size from 2" or 3" to 12" or 18" in length with that can be of any size if custom made. The blade is normally double-sided which gives you the opportunity to file teeth into the opposite edge. The reason for this is to reduce the amount of resistance when shaping the clay surface.

## Designer & Modeler

The most important stage in the process of completing a design model is occupied by creative activity and the joint work of the modeler and the designer. There are various combinations of the two: one designer and an experienced modeler, a novice designer and a novice modeler, or it is difficult to define their respective spheres of responsibility or their relationship. Figuratively speaking, it is similar to that between a composer and an instrumentalist. A composer creates a piece of music that reflects his/her image. The instrumentalist transmits the image into the musical score into a sound that reaches the listener's auditory and still. The modeler also expresses the designer's image but in clay form and with maximum skill and sensitivity. The instrumentalist, in which modeling is carried out is based on the designer's ability to convey an idea, feelings, key-line drawings, and language.

Image is interpreted such information calls the modeler's sensitivity and technique into play. How should information be interpreted? How should it be conveyed? Creative work calling for one's sensitivity and skill that is what comes to the designer and the modeler. Just as the composer and the instrumentalist are both creators, so are the designer and the modeler. Apart from trying more attention to design than even before, then the work of the modeler is greatly changing.



## Scrap and the Model

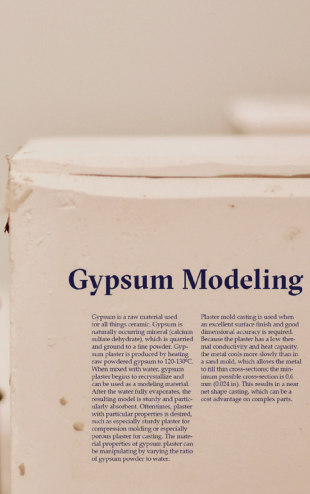
Gypsum is a raw material used for all things ceramic. Gypsum is naturally occurring mineral calcium sulfate dihydrate, which is quarried and ground to a fine powder. Gypsum plaster is produced by heating a dry powdered gypsum to 125-130°C. When mixed with water, gypsum plaster becomes malleable and can be used as a modeling material. After the water fully evaporates, the resulting model is sturdy and particularly abrasion-resistant. Orientation, plaster with particular properties is defined, such as especially sturdy plaster for compression molding or especially plastic plaster for casting. The resulting properties of gypsum plaster can be manipulated by varying the ratio of gypsum powder to water.

## Rapid Prototyping

Despite the rise of digital tools and rapid prototyping, the clay modeler has not been replaced. Clay models are still used in a variety of ways, from a quick and easy way to test a design, to a more detailed and expensive way to create a model for production. Clay models are still used in a variety of ways, from a quick and easy way to test a design, to a more detailed and expensive way to create a model for production.

Building models by hand is fundamental to Industrial Design. It is what makes our profession a craft. Building these models is a labor of love, a labor of love that gives you a sense of accomplishment and a sense of pride in your work. It is a labor of love that gives you a sense of accomplishment and a sense of pride in your work. It is a labor of love that gives you a sense of accomplishment and a sense of pride in your work.

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## Gypsum Modeling

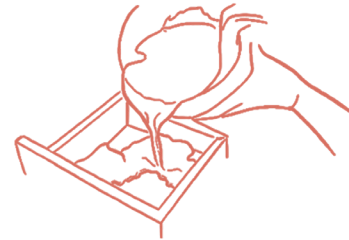
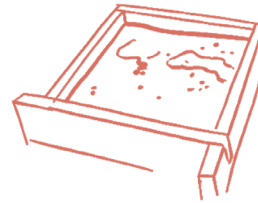
Plaster model casting is used when an excellent surface finish and good dimensional accuracy is required. Because the plaster has a low thermal conductivity and heat capacity, the model can be heated to a high temperature and cooled, which allows the model to fill the cross-section of the part in a more uniform manner. After the water fully evaporates, the resulting model is sturdy and particularly abrasion-resistant. Orientation, plaster with particular properties is defined, such as especially sturdy plaster for compression molding or especially plastic plaster for casting. The resulting properties of gypsum plaster can be manipulated by varying the ratio of gypsum powder to water.



# illustrations

## Process diagrams

The illustrations are an integral part of the brochure that have been used to showcase the processes of making a clay and gypsum model. The style of illustrations that have been used are outline illustrations that focus into a singular task of the clay and gypsum making process. These raster illustrations are stylized in a way so as to seem rough and handmade, much like the process of freeform modelling itself.



# Photography

## Session 1

Elements that form the foundation building blocks for these photographs are Texture, Shape, Form and Space. The moods of the photographs are created by both the lighting and the subject itself, which happens to be warm and intimate. Photographing clay was rather organic a process, spending more and more time in the clay lab allowed us to see the relationship between the material and the designer. This intimate bond translated into a theme in very many pictures for us, where the skin of the designer and the brown of the clay forms and melts into some really coherent images.



# Photography

## Session 2

Elements that form the foundation building blocks for these photographs are Texture, Shape, Form and Space. The moods of the photographs are created by both the lighting and the subject itself, which happens to be warm and intimate. Photographing clay was rather organic a process, spending more and more time in the clay lab allowed us to see the relationship between the material and the designer. This intimate bond translated into a theme in very many pictures for us, where the skin of the designer and the brown of the clay forms and melts into some really coherent images.





# Photography

## Session 3

Elements that form the foundation building blocks for these photographs are Texture, Shape, Form and Space. The moods of the photographs are created by both the lighting and the subject itself, which happens to be warm and intimate. Photographing clay was rather organic a process, spending more and more time in the clay lab allowed us to see the relationship between the material and the designer. This intimate bond translated into a theme in very many pictures for us, where the skin of the designer and the brown of the clay forms and melts into some really coherent images.





# Colors

The colours that have been used are inspired directly from the tones and hues of the materials. The clay presents a warm brown tone that has been accentuated to make the colour a pastel shade of orange #d97162. The gypsum gives us the off white colour that has been accentuated in order to make a slightly warmer shade of beige of the hexcode #f5e6d3. All the colours incline towards warmer tones in order to reflect the space of the freeform modelling workshop itself, which is warm and comforting

Orange #d97162



Beige #f5e6d3



Violet #1f1a41



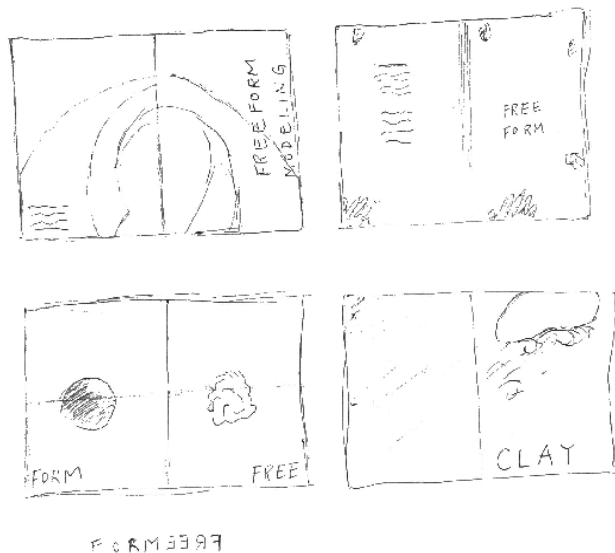
Black #ffffff



# Initial Layouts

## Sketches

COVER PAGE



- use of brown + white imagery
- "FREEFORM MODELING" is not a pretty form / word
- clay more visually striking than gypsum
- think of new title? "FORM"



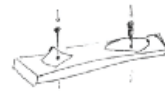
CLAY

① HOW-TO   
 — pcs or graphics?   
 — just shape transition or general clay?

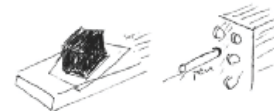
1) CUT OUT BASE SHAPE



2) DRILL SHAPES TO BEARD



3) ATTACH FOAM + POKE HOLES



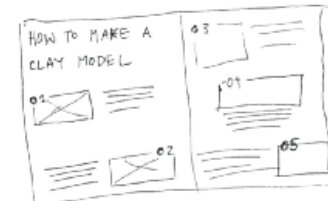
4) ATTACH WARM CLAY



5) MOLD ROUGH SHAPE



6) SCRAPE + SMOOTH



# Initial Layouts

## 1st Iterations

The initial layouts were tried at separately for each of the group members, with each person going with a different approach. Then we compared and contrasted each of the layouts, compositions and font combinations in order to figure out which one suited the theme the best and looked most elegant.

# SELF EXPRESSION

*"Freeform modeling provides a new, rich language to give voice to your inner self through sculptural form, allowing you to experiment with physical media to discover new avenues of communication with both others and yourself"*

In an intensive therapeutic environment, you are continuously invited to give verbal expression to your thoughts, feelings, perceptions, and experiences. However, words are not the right medium for all forms of expression—there are thoughts we have that are too painful, complex, or overwhelming for words to hold. Freeform modeling provides a new, rich language to give voice to your inner self through sculptural form, allowing you to experiment with physical media to discover new avenues of this.

In an intensive therapeutic environment, you are continuously invited to give verbal expression to your thoughts, feelings, perceptions, and experiences. However, words are not the right medium for all forms of expression—there are thoughts we have that are too painful, complex, or overwhelming for words to hold. Freeform modeling provides a new, rich language to give voice to your inner self through sculptural form, allowing you to experiment with physical media to discover new avenues of this.



## 12.00 Self expression and self discovery

In an intensive therapeutic environment, you are continuously invited to give verbal expression to your thoughts, feelings, perceptions, and experiences. However, words are not the right medium for all forms of expression—there are thoughts we have that are too painful, complex, or overwhelming for words to hold. Freeform modeling provides a new, rich language to give voice to your inner self through sculptural form, allowing you to experiment with physical media to discover new avenues of this.



## 13.00 Stress relief and relaxation

In an intensive therapeutic environment, you are continuously invited to give verbal expression to your thoughts, feelings, perceptions, and experiences. However, words are not the right medium for all forms of expression—there are thoughts we have that are too painful, complex, or overwhelming for words to hold. Freeform modeling provides a new, rich language to give voice to your inner self through sculptural form, allowing you to experiment with physical media to discover new avenues of communication with both others and yourself with physical media to discover new avenues of communication with both.



01 INTRODUCTION

02 INTRODUCTION

03 INTRODUCTION

04 INTRODUCTION

05 INTRODUCTION

06 INTRODUCTION

07 INTRODUCTION

08 INTRODUCTION



# Initial Layouts

## 2<sup>nd</sup> Iterations

After the initial iterations, we moved onto to the next round of iterations wherein we used pictures from the documentation itself and tried various layouts in order to once again draw out comparisons and contrast among them.

# What is Freeform Modeling?

**Space, Time  
& Volkmar**

*"The surface  
has to  
unfold like a  
breath."*

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# Add & Reduce Mold & Shape Scrape & Smooth



## Mastery and Self-Confidence

Freemorph modelling allows you to discover previously unrealized strengths as you gain mastery over the creative process, developing both technical skill and expressive abilities. The sense of mastery you gain as you develop your personal artistic style can be a source of invigoration, enhancing your confidence and sense of purpose at an emotionally vulnerable time in your life. In freemorph modelling, there is no competition, no right way or wrong way, but infinite possibilities for creating pieces that speak to you.



# Final Layouts

## Title Page



# Final Layouts

## Accent Pages

### Clay Modeling

There are many different types of clay. There is the clay that children play with, ceramic clay, the clay mixed with oil used for artistic modeling, and the industrial clay (ID clay) used for product design development. Either oil clay or industrial clay is used for car modeling. Among modeling clays are cinnamon oil clay and Leon clay. Both are soft have a high moisture content, are viscous and can be handled at room temperature (the high temperature, the easier to handle). ID clay are also oily, but they are hard at room temperature, and only become soft and easy to handle when heated. There are various types of ID clay for different applications, but quality clays have a uniform color, fine grain, offer little expansion and contraction due to temperature changes, pack easily, and provide a good finished appearance. It is particularly important a clay scrape well if it can be shaved off effortlessly with a rake work proceeds smoothly. In Japan, the most widely used clay is one called J325. This is a Chavonet clay with high quality and offering.

Working in clay gives modelers and designers a more tactile, fingertip feel for the design that simply cannot be replaced by any other medium and is ideal for sorting out optimal ergonomics. Later, these full 1:1 Clay models can then be scanned into 3D CAD, and converted into 3D production designs for production. One useful advantage of clay is it can be finished and painted to resemble a realistic prototype. This is the process advanced R&D studios use when creating concept cars at key automotive design shows.

Industrial Clay is an extremely versatile tool, with many wide-ranging uses for the medium. In addition to car modeling, clay is still being used widely in highly sculptural Industrial Design product applications (i.e. protective helmets, eye wear, etc.), motorcycles & bicycle design, and concept model making in the entertainment / special effects industry. Model-making has been a tool for designers for thousands of years. You try something out, tweak it, scrap it, and try again. It turns the imagined into the real, and lets the idea speak for itself.

14

*"It enables us to intuitively create a form that appeals to people's hearts and mind."*

Computers haven't changed this. No desktop design simulation, VR goggles, or even lush artistic rendering can change the value of having an actual thing in front of you to look at and touch. So it should come as no surprise that physical modeling still thrives in design studios around the world – particularly in the automotive industry. It's the primary tool that designers use to craft their vision, and by far the easiest way for production teams and execs to fully grasp and evaluate the work, both aesthetically and practically.

The big brown models sitting statically in design studios represent just a slice of the medium's overall usefulness to industrial and automobile designers. The material holds fine details without cracking or drooping, so precision molds can be made from the model. It's also surprising to see the extent to which the physical world of clay modeling and the digital design universe co-mingle. Clay can be CNC-milled (allowing for a degree of quick and repetitive precision manufacturing as the designers progress with their work) and it can be digitally scanned, allowing the changes brought on by the model to be re-integrated into the virtual design workflow.



# Final Layouts

## Process Pages

### How To Make A Plaster Model



#### Add plaster to water

Adding Water to the plaster creates an island on top. Ratio of this 'Island' to the water must be 2/3rd island, 1/3rd water. Once the island is formed, Let it sit for 5 mins.

#### Make the Island disappear

Mix the combination well so that the plaster powder is completely dissolved in the water. Check the consistency of the mixture. It shouldn't be too watery or too lumpy.

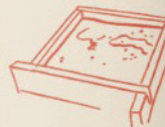


#### Stir it

Stir the mixture well so that consistency remains constant throughout the mixture. While stirring, lookout for lumps of the plaster powder that might have formed at the bottom. Find and get rid of these lumps.

#### It gets warm, and then it cools down

Mixing Gypsum with water is an exothermic reaction. One good way to find out if your mixture is settled is to analyze the temperature. The solution first gets warm and then starts to cool down. Once its cooled down, you can use this mixture to pour into the mould.



#### Put the plaster in the mould, slowly

Be very careful whilst putting the plaster in the mould. Putting it quickly may result in inconsistency of the plaster when dried. Make sure plaster is filled in every corner of the mould to get sharp edges.

#### Make the air bubbles disappear

Once you pour the plaster solution in the mould, stir it carefully so that the bubbles rise up and disappear. Bubbles are the absolute worst when it comes to sculpting the plaster once its formed. get rid of 'em



#### Remove the excess

clean the excess plaster that's overflowing the mould. The material properties of gypsum plaster can be manipulating by varying the ratio of gypsum powder to water.

#### Remove the plaster block from the mould

Larger clay models should be attached for styrofoam fixtures when modeling. Styrofoam blocks are firmly attached to a wooden or metal base and punctured with shallow holes throughout. Firmly press the clay onto the styrofoam, fully filling the holes.





# Final Layouts

## Content Page

### Rapid Prototyping

Despite the rise of digital tools and rapid prototyping, it has never been more important for designers to make things with their hands. Comfort with three dimensions as a sketch and development tool enhances a designer's sensitivity to form tremendously, and helps them understand how products are made in the real world. If you can build it, you're halfway to knowing how it could be manufactured.

Building models by hand is fundamental to Industrial Design—it's what makes our profession a craft. Spending time with CAD makes you a better modeler, but spending time with a physical model makes you a better designer. It allows you to see your design in the real world, in a way that simply superimposing a rendering into an environment cannot replicate. The practice of validating ideas through physical prototyping, whether it be quick and dirty paper mock-ups or high fidelity Clay models, is slowly dying. There needs to be a resurgence of prototyping within the modern workflow of industrial designers. A slight shift in proportions can make a world of difference in how someone perceives the appearance, function, and value of a product. The automotive industry is a great example of how shifting proportions can lead to very different emotive values within form. Generally speaking, all automobiles incorporate four wheels, an engine and a trunk, a front / back windshield, and side windows and doors. The spatial relationship and scale of all these components is what defines the difference in various types of automobiles, such as SUVs, sedans and station wagons. Despite the rise of digital tools and rapid prototyping, it has never been more important for designers to make things with their hands. Comfort with three dimensions as a sketch and development tool enhances a designer's sensitivity to form tremendously, and helps them understand how products are made in the real world. If you can build it, you're halfway to knowing how it could be manufactured.

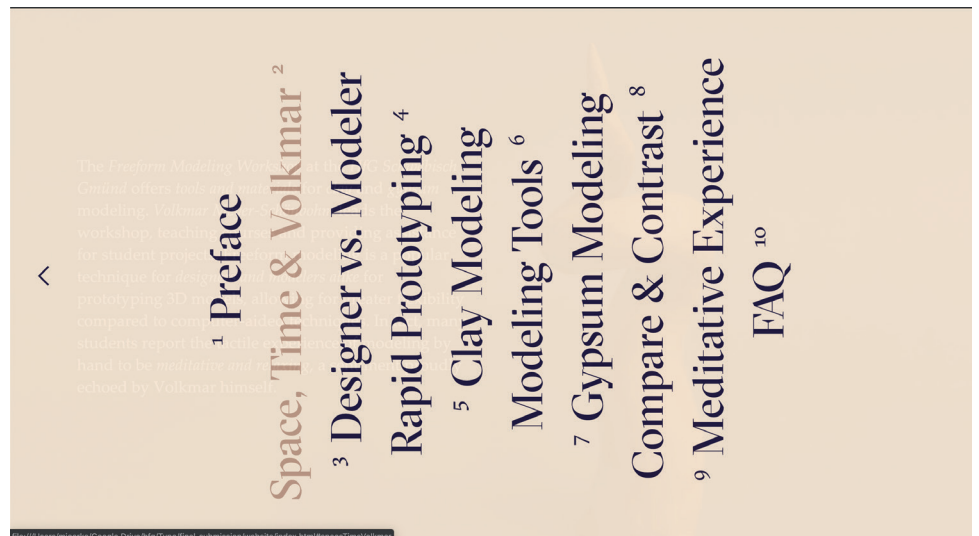
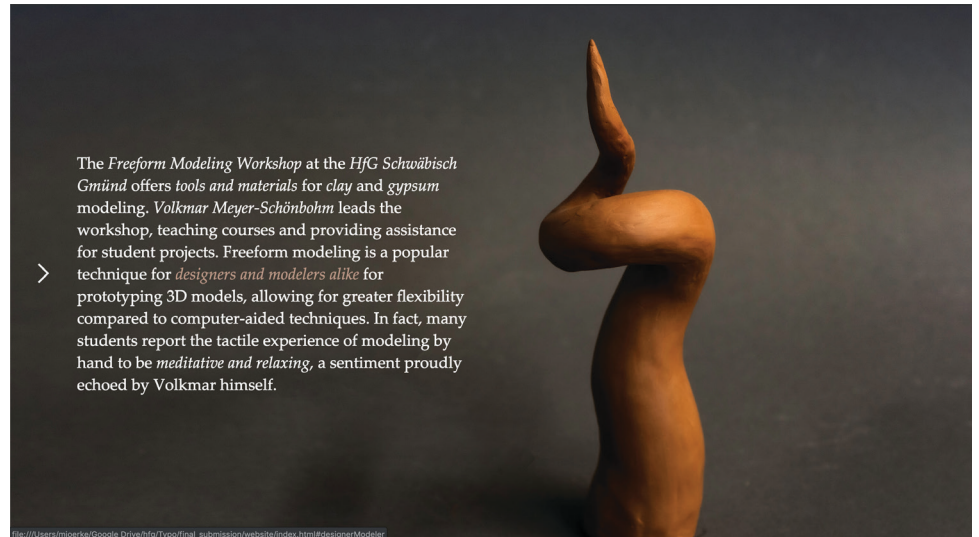
Building models by hand is fundamental to Industrial Design—it's what makes our profession a craft. Spending time with CAD makes you a better modeler, but spending time with a physical model makes you a better designer. It allows you to see your design in the real world, in a way that simply superimposing a rendering into an environment cannot replicate. The practice of validating ideas through physical prototyping, whether it be quick and dirty paper mock-ups or high fidelity Clay models, is slowly dying. There needs to be a resurgence of prototyping within the modern workflow of industrial designers. A slight shift in proportions can make a world of difference in how someone perceives the appearance, function, and value of a product. The automotive industry is a great example of how shifting proportions can lead to very different emotive values within form. Generally speaking, all automobiles incorporate four wheels, an engine and a trunk, a front / back windshield, and side windows and doors. The spatial relationship and scale of all these components is what defines the difference in various types of automobiles, such as SUVs, sedans and station wagons.



# Website

The website design adapts the brochure's design language to a digital, interactive context. The homepage features an introduction text with italicized, inline links to the individual pages. An arrow on the left invites the user to explore the slide-out navigation menu.

The navigation menu is a digital adaptation of the brochure's table of contents. The table of contents page, perhaps the most striking page in the brochure, is permanently accessible in the website adaptation. It is initially hidden, but slides out to reveal the individual pages. The website version makes each heading interactive, with functional links to the individual pages.

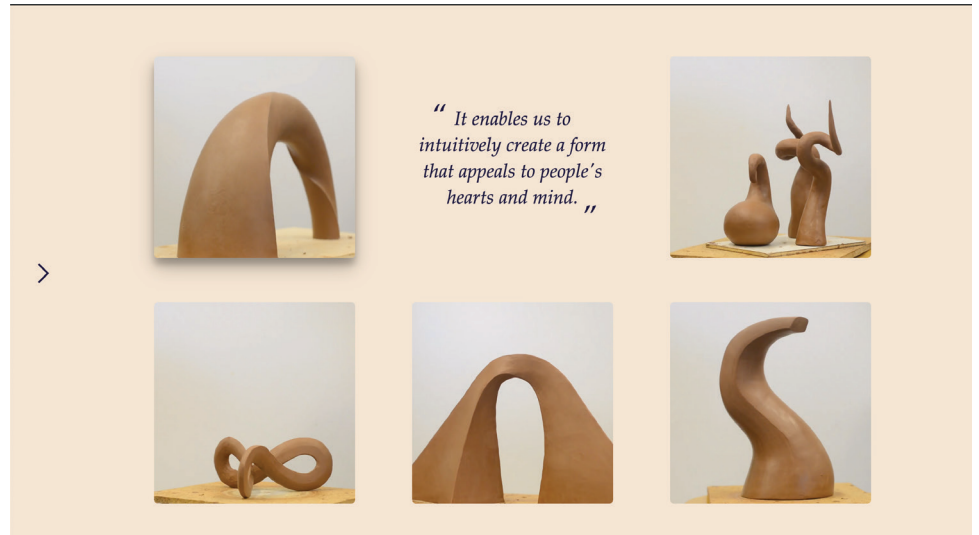




# Website

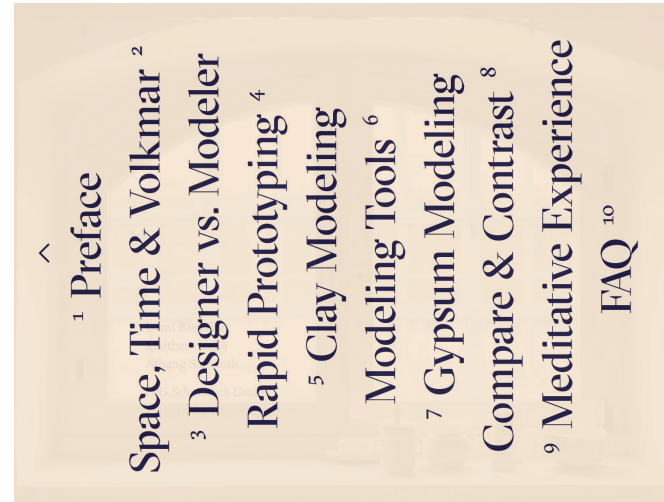
The main content navigation utilizes the javascript library fullpage.js to create full-height scrollable page sections, as opposed to the default continuous-scroll static page. This interaction forces the user to stop and consider the content of the page instead of impulsively scrolling to the bottom, echoing the meditative themes of the workshop. Content is formatted on a 3-column grid using a flexbox layout.

The clay modeling section features a grid of clay models from the workshop that begin to rotate on hover. A drop-show appears on hover to communicate that the elements are interactive.

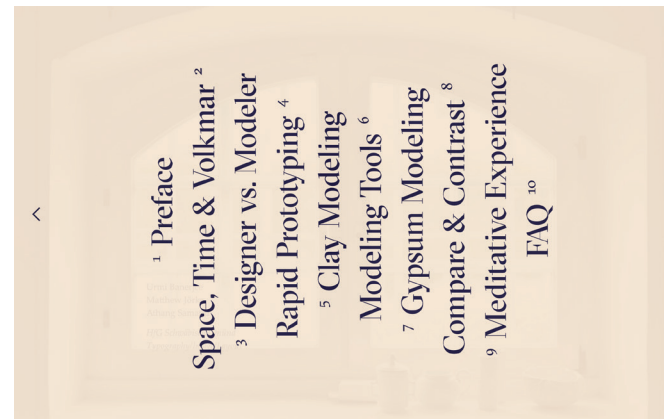


# Website

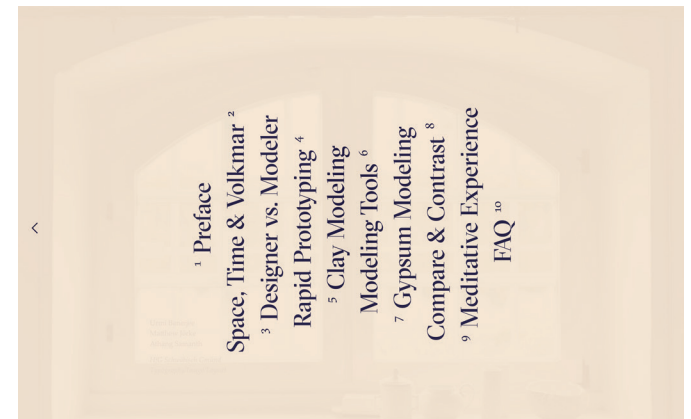
The website is intended for a laptop/tablet viewing context and is moderately responsive within these screen sizes. Exploring mobile device or desktop layouts would have been interesting to design, but given time constraints, we focused on the most general use case.



iPad (10")



Macbook (13")



Macbook (15")