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Rochester Institute of Technology

A Thesis Submitted to the Faculty of The College of Imaging Arts and
Sciences School for American Crafts In Candidacy for the Degree of
Master of Fine Arts

Folding Space

By: Karen Mahardy

4/25/2013

Abstract

I am interested in the place where an object is in a state of becoming and contains action, as if movement were frozen in time. I believe that an object can have both two-dimensional and three-dimensional qualities within it that cause perception to be manipulated.

What our perception tells us when it is challenged, and the lines between two-dimensional and three-dimensional space are blurred, offers an opportunity for the viewer to be still, contemplate, and appreciate a moment away from the mundane. I intended to create a body of work that explored this and asks the viewer to pay attention to the quietest of detail and become aware of the dramatic beauty that only the attentive can see. Specifically, I planned to explore perception, the transition and evolution of form, landscape and metaphor.

My aesthetic is influenced by various approaches to twentieth century western design. Architecture, fashion, and furniture design have all played a role in the development of my edited style, particularly designers such as: Frank Lloyd Wright, Greene and Greene, Alexander McQueen, Cristobal Balenciaga and Ray and Charles Eames. Additionally, Japanese paper folding and landscape have influenced my process and the content of my work.

I chose to use glass to execute this work for its properties such as transparency, elasticity, ranges of colors, patterns and the common perception that the material is difficult to manipulate.

This work utilized a process of glass sculpting which is unusual and allowed me to hand manipulate flat panels of glass in the kiln, while hot, to create angular, visually deceptive work. This process epitomizes precarious control. Working in this non-traditional way was exciting because it is taking a usually passive process, slumping, and interacting with the material while it is elastic inside the kiln, where people do not traditionally engage. I tested the limits of the material and through this, I experienced the wonder of discovery as the material revealed possibilities and new directions.

Discussion of Sources and Research

Our background and experiences leave a mark on us like a brushstroke on a canvas. As we go through life, we grow and change as these marks accumulate just as a painting takes shape at the hand of a master. I was a quiet girl who grew up with the dramatic beauty of the Pacific Northwest of the United States just outside her doorstep, but inside that door the environment I lived in was in complete contrast to that of the outside world. It was the 1970's and avocado Formica, plastic plants and burnt orange and brown plaid carpet ruled the day. It was an environment that lacked depth of soul or evidence of quality craftsmanship. I spent my childhood either outdoors or inside designing and sewing my own clothing. In retrospect, I see that these environments planted a seed within me.

When I was working on my undergraduate degree I studied Japanese history and culture and was exposed to the traditional Japanese aesthetic. These principals forever shaped my own aesthetic and acutely edited eye. The principals that have been most influential to me are:

Mono no aware – the impermanence of things. One appreciates the beauty of the cherry tree about to bloom or the ground strewn with fallen petals as much as a tree in perfect bloom (Graham Parkes).

Wabi – simple austere beauty. In the Japanese tea ceremony, implements that are less than perfect, showing the hand of the craftsperson, or damaged then repaired are

considered the most beautiful and the emptiness and simplicity of the environment is held in high regard (Graham Parkes).

Sabi – rustic patina, “The concept *sabi* carries not only the meaning ‘aged’—in the sense of ‘ripe with experience and insight’ as well as ‘infused with the patina that lends old things their beauty’—but also that of tranquility, aloneness, deep solitude.” (Graham Parkes)

Kanso – Simplicity or elimination of clutter, “Things are expressed in a plain, simple, natural manner. We think not in terms of decoration but in terms of clarity, a kind that may be achieved through omission or exclusion of the non-essential.” (Presentation Zen)

Fukinsei – The use of asymmetry or irregularity as a way of controlling balance in a composition. (Presentation Zen)

Shibui – “Beautiful by being understated, or by being precisely what it was meant to be and not elaborated on.” (Presentation Zen) “The balance of simplicity and complexity to ensure that one does not tire of a shibui object but constantly finds new meanings and enriched beauty that cause its aesthetic value to grow over the years.” (Wikipedia)

Ma – Negative space, “A consciousness of place, not in the sense of an enclosed three-dimensional entity, but rather the simultaneous awareness of form and non-form deriving from an intensification of vision.” (Wikipedia)

After I finished my undergraduate degree I helped a friend of mine with the restoration of his turn-of-the-century craftsman bungalow in Portland, Oregon and became familiar

with this architectural style for the first time. I was taken with the clean lines, some of Japanese influence, the incorporation of the natural world into the interior spaces through the use of material and light, appreciation for the craftsmanship of a time since past, and the evidence of age and use. I felt this home had the soul that the home I grew up in lacked. For the first time I felt that the interior space I was occupying was as beautiful as the landscape outside and in harmony with nature.

I became interested in the work of architects Charles Sumner Greene and Henry Mather Greene as well that of Frank Lloyd Wright because of this experience, and how they incorporated Japanese aesthetic principals into their work, sometimes intentionally and sometimes not. The Gamble House in Pasadena, California is a good example of this, (Image 1 and 2), “ Seen across an emerald-green lawn, the house has the wonderful patina of old wood.... It is with good reason that the influence of Japanese forms and sensibility is often cited in this and other Greene Brothers projects of this period. Yet the influence of Japanese style is more abstract than literal, and the skill and sensitivity with which it has been assimilated into the work of the Greene’s is astonishing.” (Dushscherer and Keister) Frank Lloyd Wright is known for incorporating nature into his interiors (Burns). The Johnson Wax building is my favorite of his designs that has this quality (Image 3). “Narrow soaring columns flare dramatically at a ceiling of glass to create a space filled with gentle filtered light and a feeling that one is at the bottom of a pond filled with lily pads – like being in an underwater cathedral.” (Burns)

Around this time, I also became interested in the work of Ray and Charles Eames. To me they seemed to have designed furniture that was a canvas on which to live your life. Their work had clean lines, simple materials and the design and craftsmanship to make it both comfortable and functional. An image of one of their chair and ottoman sets, seen in their own home, resonated with me because you can see the wear of the leather on the seat, which creates a rich patina that only comes with use (Image 4). You can tell that it was loved and lived in. They also had a philosophy that spoke to my own respect for process and craftsmanship, “Learn by doing. Never delegate understanding.” (Eames and Eames)

I have had a strong interest in clothing design and construction since the time my mother first taught me how to sew when I was young. I found that as I got older I became interested in fashion designers whose work was sculptural. I like the idea of taking a two dimensional material and making it into a three-dimensional sculpture. Two designers whose work has been very influential for me are Alexander McQueen and Cristobal Balenciaga. Balenciaga is known for working with volume in his designs (Bowles) and I love the way that he created elegant, modern clothing with a great sense of proportion, and dramatic soft undulating forms out of a flat piece of fabric (Image 5, 6). Alexander McQueen was a very daring designer and his work, as a whole, is fashion as art and spectacle, full of extravagance and fantasy, (Bolton) which is very different from my work. However, his craftsmanship, structured tailoring, use of natural materials, and ability to create inspired sculptural forms is unmatched in my eyes (Image 7, 8, 9).

These things that I have discussed here were the ingredients in a mental stew that synthesized over time, and culminated into inspiration and a desire to express them through glass. I wanted to use them as a foundation for the development of a visual language that I could use to express myself. I started experimenting with ways to create draped, pleated and folded forms that were inspired by textiles. I wanted to find ways to make the glass undulate, hang and fold like a piece of fabric. Folding the glass and creating a hard angle instead of a soft bend proved to be the most challenging, and fascinating problem to solve. I started to think of paper as a material to draw inspiration from instead of fabric.

A key turning point occurred when I watched the documentary “Between the Folds” which is about how artists, mathematicians and traditional Japanese paper folders were pushing the boundaries of paper folding. I became really intrigued with one particular section where educator Paul Jackson talks about how just one fold or crease can create a very complex and beautiful shape (Gould) (Image 10, 11, 12). This resonated strongly with me because it appealed to the Japanese aesthetic that I love. After that, I was determined to find a way to make visually complex work that was created using a minimal number of folds, and only color and pattern when necessary for the work. I wanted to challenge people’s visual perception, to work between two and three dimensions, creating forms that have a sense of movement, transition and relationship. I wanted, as stated in the definition of *shibui*, “...the balance of simplicity and complexity to ensure that one does not tire of the work but constantly finds new meanings and enriched beauty that cause its aesthetic value to grow over the years.” (Wikipedia)

Critical Analysis

The process for creating this work starts with making of a paper model. Sometimes I made models with a concept in mind and sometimes I just sat and folded sheet after sheet of paper until I come across something that I liked. This was my way of “sketching”.

After I made the model I decided what I needed to add to the form in order to convey my idea. I fused sample tiles of glass to determine color, pattern, imagery, and also test different kinds of finishes and textures. I made any jigs or kiln furniture that I needed and tested folding or slumping the tiles to make sure that whatever manipulation I was planning to do to the final panel in the kiln would work with the colors and surface textures I had chosen.

After additional problem solving, I made the final panel to scale, coldworked the edges if necessary, then removed material from the panel wherever I wanted to make a fold. At this point I would refer to a model or pattern to make sure that I placed these exactly where they needed to go, taking into consideration transferring the shape from a thin piece of paper to a much thicker piece of glass.

The panel is now ready for the kiln manipulation process. To do this, I heated the panel up again in the kiln and held it at a temperature where it was hot, but not hot enough to slump, or sag. Then I had an assistant use a torch to heat the areas of the panel where the material has been removed. When these areas were hot enough, I would fold the panel, and then quickly close the lid to the kiln. The torch heating and manipulation all had to

take place before the temperature in the kiln dropped too low, causing the glass to crack. This was only a matter of seconds, so it was a very choreographed dance that my assistant and I did when we made this work.

Creating angular, folded glass forms, though challenging, proved to be an experiment that provided a rich visual vocabulary to draw upon. Through these new forms I wanted to explore themes including interior spaces, relationships, internal and external transformation, and landscape.

Growing up in the Northwestern United States gave me a deep appreciation for the beauty of the outside world. However, after a lifetime of being surrounded by snowcapped mountains, forests of emerald green and the briny smell of the ever-churning ocean, I began to take it for granted. I realized this when I moved to Rochester, New York for graduate school in the late summer of 2011. By the time I went to Lybster, Scotland in June of 2012 I was ready to see something that reminded me a little of home. Lybster was not exactly home, but the landscape had a profound effect on me. Absent of forests, the land dives like a wedge into the steel grey of the North Sea. (Image 13) In the process of taking many photographs of the horizon I realized that without any visual reference to land, the process of transforming the actual horizon into a photograph deprived the senses of depth. It appeared to be two-dimensional and the horizon became a divider between two gradients (Image 14, 15). I used the process of folding glass to return a sense of dimension to a horizon image; to show the angle of the land, the

billowing of the clouds and give the sense that the horizon is always moving away from you as a metaphor for that which is always just out of reach.

I feel that the work that I make is often a reflection of my sense of self, or myself in relationship to another. The experience I had in Scotland has forever left its mark on me in the form of a horizon line. Folding up a horizon line onto itself is something that I wanted to explore because I believe it is an expression of how I feel about personal progression, transformation, and my desire to reach for the unattainable. The folding and unfolding represented a transformation from feeling closed to the outside world to feeling open to change and possibility.

Work that contained pairs was important to me because I felt that it provided an opportunity to examine movement, transformation, conversation, relationship and interaction between internal and external space. Pairs of objects that appeared similar yet were slightly different in various ways were interesting and I liked creating a dialogue between those kind of objects. I felt that the way angular, folded forms contained space provided a great opportunity to talk about dualities in a visually interesting way.

Challenging the viewer's visual perception was also very important to me. Using transparent glass to create folded or bent forms that capitalized on the optics of the glass, the overlapping of pattern, and the visual flattening of form, draws the viewer in and challenges them to question what they see. I liked the idea of getting the viewer to slow down from the busy, noisy, world where they are being bombarded by quick and easy

technology. I wanted them to take a moment, be quiet and ask questions about what it is that they are seeing. I wanted them to have to take a second or third look and realize that what they were seeing was not what they thought they saw at first glance.

Finally, I was interested in creating work that conjured feelings about specific places through an abstraction of the elements to evoke a sense of movement and even energy. I wanted to try and capture the feeling of the wind as it moved across the land, or the waves as they crashed on a beach, by creating forms that were inspired by these constant forces of nature. Whether these are subtle executions or more dramatic, nature's elements offered a great deal of inspiration and opportunity to convey the feeling of specific places that have been important to me.

Conclusion

My thesis exhibition entitled, “Folding Space”, is about all the things I have mentioned above – relationship, landscape and challenging perception. However, after going through the process of making each piece, I have come to believe that it is best described as slight variation of the definition of Ma I cited above. “A consciousness of space, not in the sense of an enclosed three-dimensional entity, but rather the simultaneous awareness of form and non-form deriving from an intensification of awareness.” (Wikipedia)

There are eight pieces in my thesis exhibition. They are as follows:

1. “Shift” (Image 16) This piece, which utilized glass and projection, is based on my early experiments with the folding process. I chose to capitalize on the transparency of the glass to cast shadows on the wall that project a distorted image of the glass, causing the actual glass to disappear and the shadow to become the focal point. The distorted projection is meant to challenge perception and also engage the viewer in the process of manipulation of the material that happens in the kiln.
2. “Spinnaker” (Image 17) Growing up on a lake Sammamish in Washington State, I saw spinnaker sails every day. They were part of the landscape that surrounded me, (Image 18). This piece referenced the shape and design of that type of sail as well as the movement of a sailboat across the water. I chose to use transparent glass and stripes to guide the viewer’s eye around the form and create an

opportunity for the viewer to perceive the piece differently as they moved around it.

3. “Conversation” (Image 19) This diptych is meant to express how a form holds negative space both on the interior and the exterior. To me, these have a human quality because of the pattern in the glass that resembles a textile pattern and the relationship that is created as the two parts interact with each other, like the conversation between two people.
4. “The Thin Clear Horizon Line Left Its Mark” (Image 20) The idea for this piece came from the horizon line of the North Sea and the impression that it left on me, as well as the experience I had in Scotland. This diptych is about transformation and how one experience can produce a permanent change.
5. “Wave” (Image 21) One of my favorite beaches is Shi Shi beach on the Northwest coast of the United States (Image 22). Capturing the energy of its rolling waves was what inspired me to make this piece.
6. “The Land Drove Like An Iron Wedge Into The Sea” (Image 23) This triptych of wall panels is based on a couple of photographs I took in Lybster, Scotland (Image 13, 15) Here I wanted to give the viewer the feeling of the landscape in Lybster using dimension, showing how the land drives into the sea and the horizon line moves away from the eye under the billowing of low clouds.
7. “North Sea” (Image 24) This is another piece that was the product of my visit to Lybster. I wanted to reference the feeling of the vast expanse of the sea and the energy of the wind and waves as they hit land. (Images 14, 25)

8. “Flattened Form” (Image 26) This piece is the first of what I hope will become a new series. In my thesis work I have taken flat glass and added dimension to it using both folding and slumping techniques. Here I am experimenting with a flattened version of these folded forms. The result is a glass panel that is like a painting on a non-uniform canvas, that echoes the angles and negative space of sculpture.

There is more to explore using the techniques and material that I have been using and I am excited to continue with this work and see where it takes me. I am also interested in exploring a couple of related ideas such as creating large-scale steel sculpture based on the visual language that I have been using in my thesis work. I am interested in how the scale that can be achieved through this material, would enable me to make sculpture that not only references landscape but also interacts with and becomes part of it.

Translating folded forms into flat glass panels of non-uniform shape is another variation that I am interested in exploring. I explored adding dimension back into a flattened landscape image in my thesis work, now I am interested in taking another step and seeing what happens when folded forms are translated into two-dimensional representations of the same shape and subject matter. The implications for the future of this work are many and I look forward to continuing to experiment with new forms and push the constraints of glass to express my ideas and experiences.

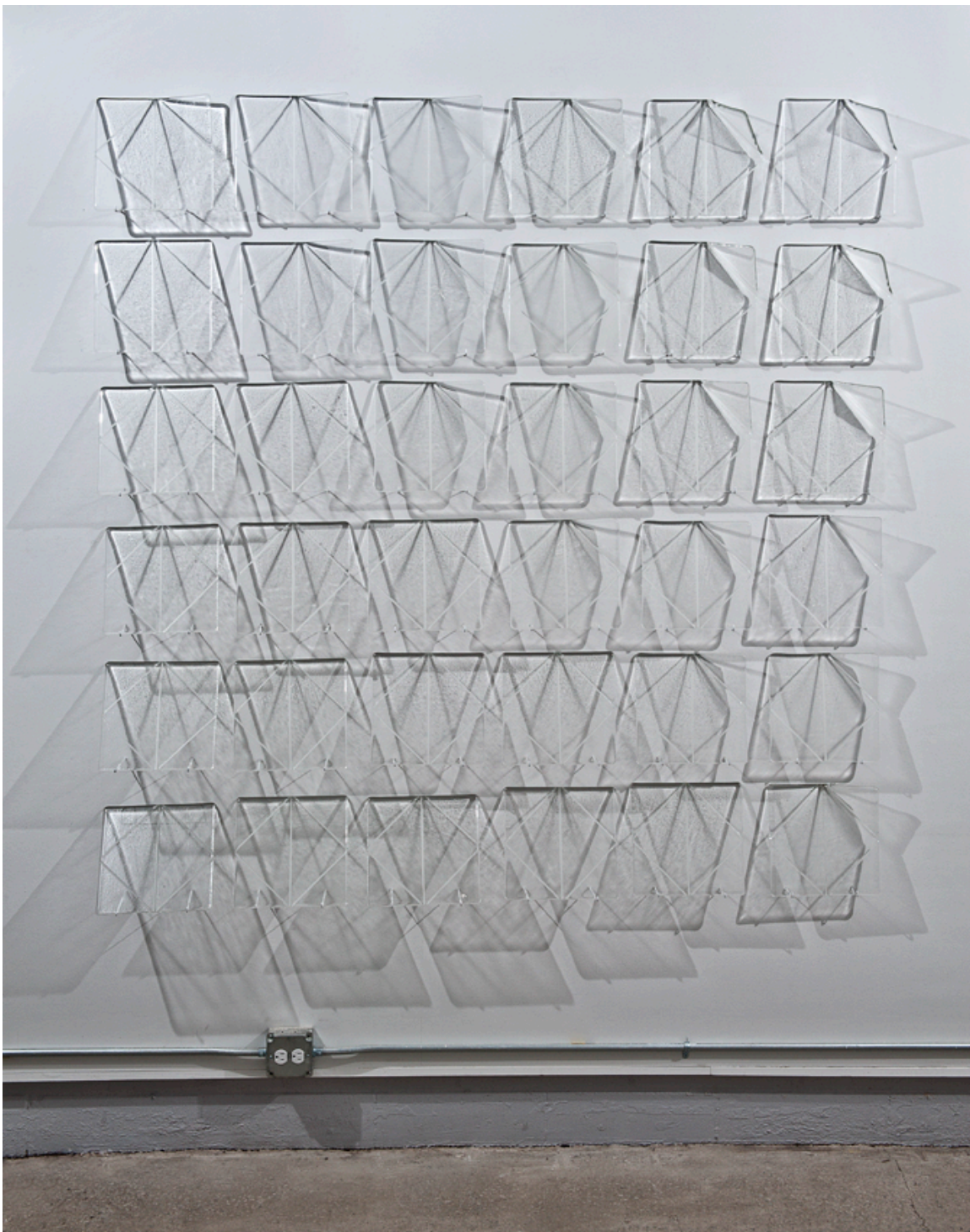
Documentation of the Work

Title: *Shift*

Media: Glass and Projection

Dimensions: 86" x 86" x 4"

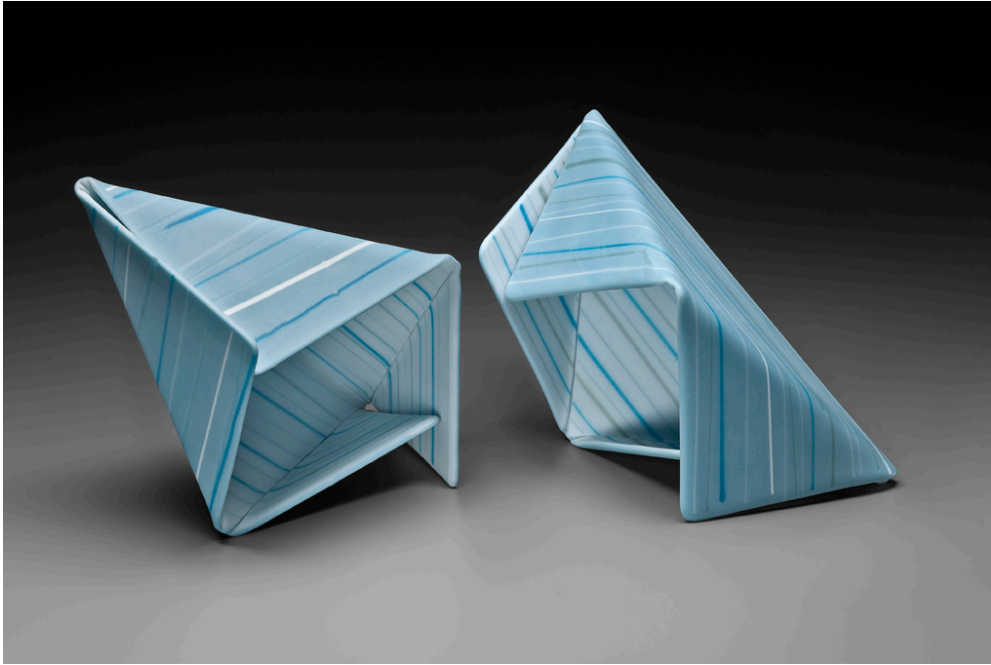
Photograph by: Geoff Tesch



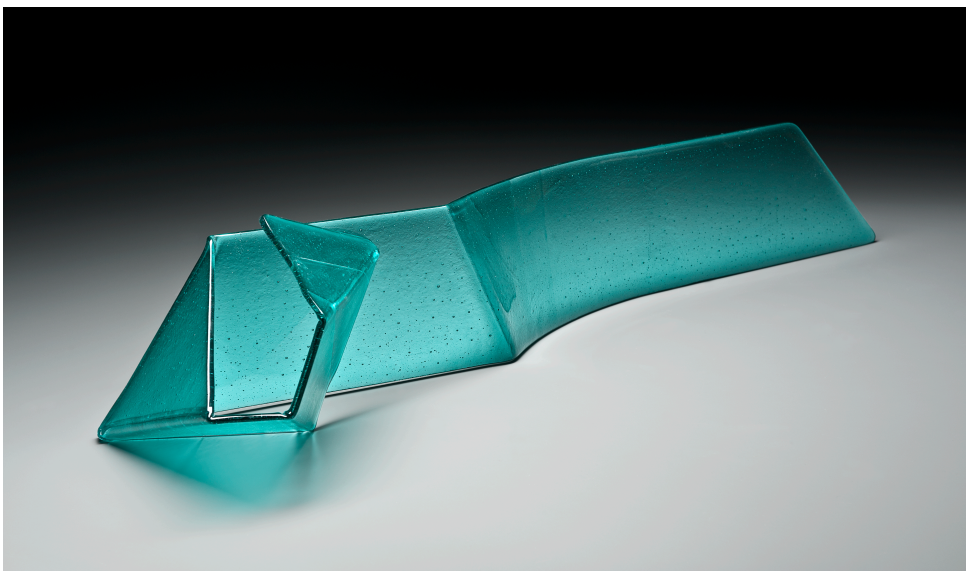
Title: *Spinnaker*
Media: Glass
Dimensions: 14" x 10" x 8"
Photograph by: Geoff Tesch



Title: *Conversation*
Media: Glass
Dimensions: 10" x 25" x 6"
Photograph by: Geoff Tesch



Title: *Long Rolling Wave*
Media: Glass
Dimensions: 6.5" x 36" x 10"
Photograph by: Geoff Tesch



Title: *The Land Drove Like an Iron Wedge Into the Sea*

Media: Glass

Dimensions: 36" x 22" x 5"

Photograph by: Geoff Tesch



Title: *North Sea*
Media: Glass
Dimensions: 48" x 9" x 6"
Photograph by: Geoff Tesch



Title: *The Thin Clear Horizon Line Left Its Mark*
Media: Glass
Dimensions: 8" x 20" x 6"
Photograph by: Geoff Tesch



Title: *Flattened Form*
Media: Glass
Dimensions: 18" x 10"
Photograph by: Geoff Tesch



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Source Images

Image 1 – The Gamble House, Greene & Greene, 1908 (Dushscherer and Keister)



Image 2 – The Gamble House (detail), Greene & Greene, 1908 (Dushscherer and Keister)

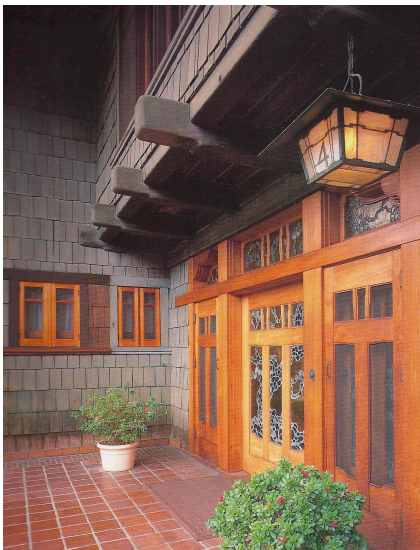


Image 3 – The Johnson Wax Building, Frank Lloyd Wright, 1939 – 1944 (Burns)



Image 4 – Eames Lounge Chair and Ottoman, Ray and Charles Eames, 1956 (Eames and Eames)



Image 5 – Draped Coat, Cristobal Balenciaga, 1950 (Bowles)

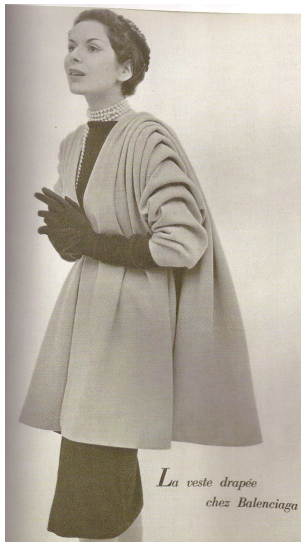


Image 6 – Black Dress with Wrap, Cristobal Balenciaga, 1967 (Bowles)



Image 7 – Dress No. 13 (back), Alexander McQueen, Spring/Summer 1999 (Bolton)



Image 8 – Dress (back), Alexander McQueen, Autumn/Winter 2010-11 (Bolton)



Image 9 – Dress, *VOSS* (front), Alexander McQueen, Spring/Summer 2001 (Bolton)



Image 10 – One Fold/Crease - A, Paul Jackson 2011 (Gould)



Image 11 – One Fold/Crease - B, Paul Jackson 2011 (Gould)

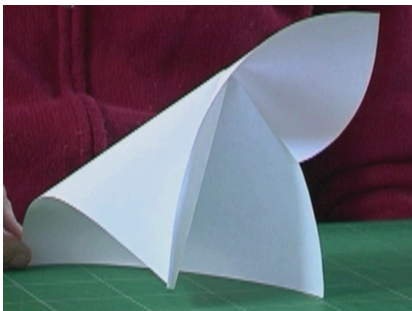


Image 12 – One Fold/Crease - C, Paul Jackson 2011 (Gould)

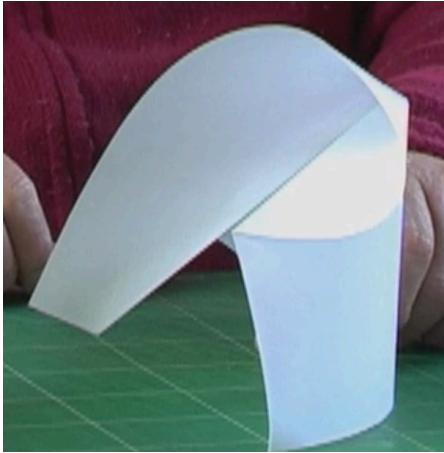


Image 13 – Lybster, Scotland 2012 (Personal Photograph)



Image 14 – Photograph of the North Sea, Lybster, Scotland, 2012 (Personal Photograph)



Image 15 – Sunset in Lybster, 2012 (Personal Photograph)



Image 16 – “Shift” (Photography: Geoff Tesch)

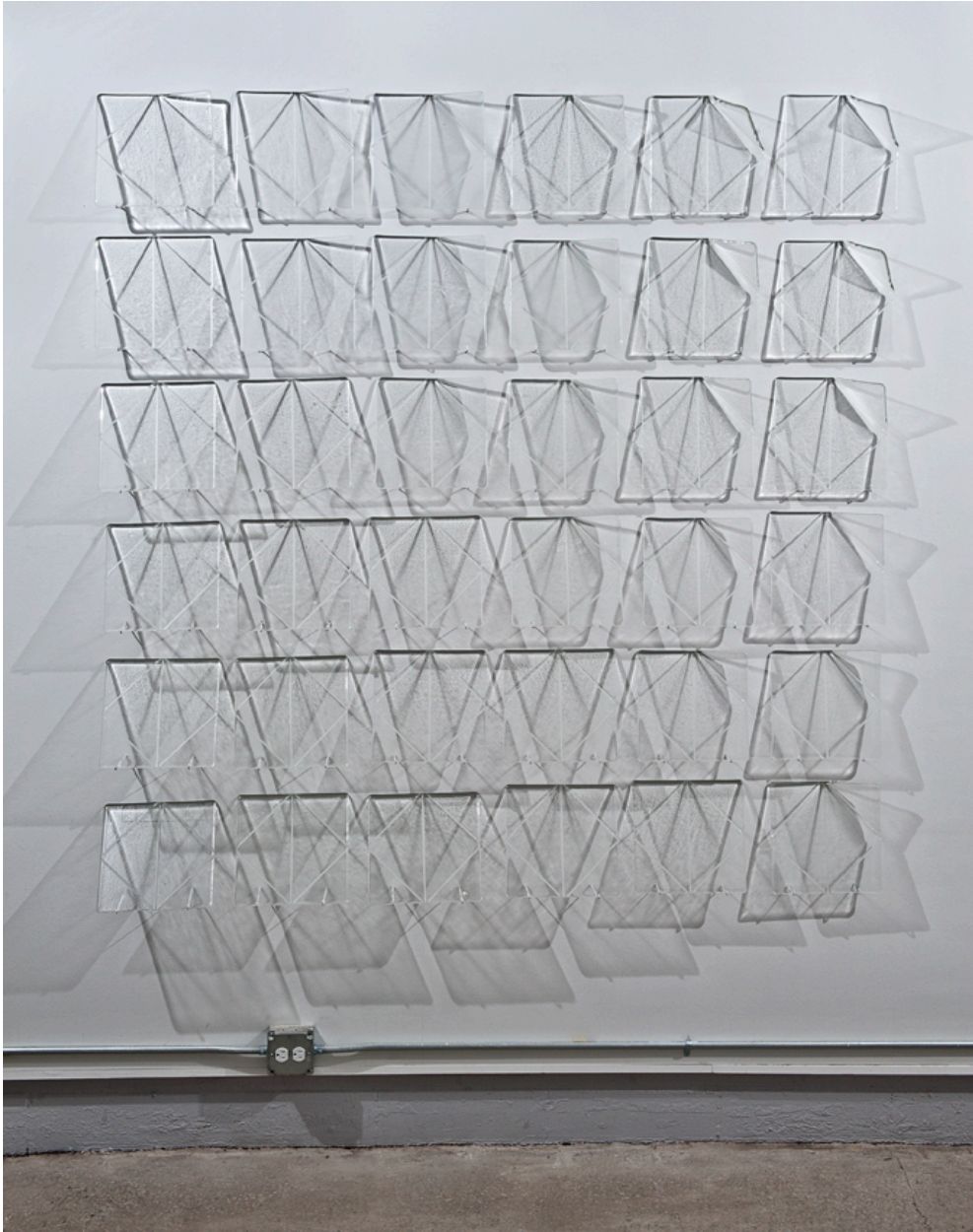


Image 17 – “Spinnaker” (Photography: Geoff Tesch)



Image 18 – Example of Spinnaker Sails (Chinook 34 Sailboat)



Image 19 – “Conversation” (Photography: Geoff Tesch)

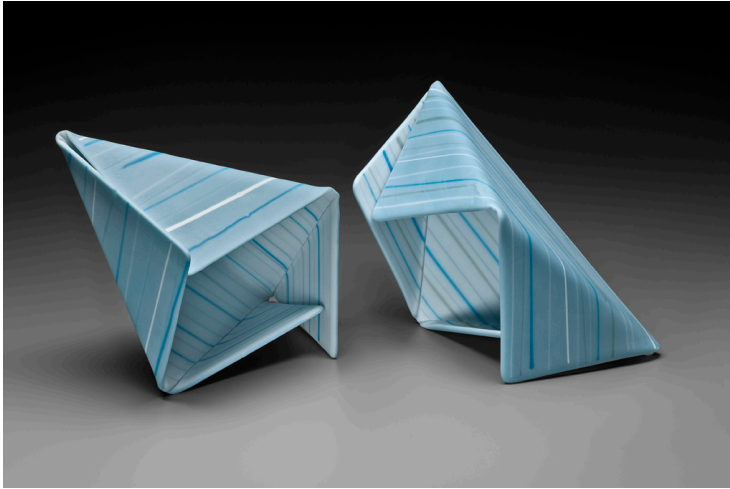


Image 20 – “The Thin Clear Horizon Line Left Its Mark” (Photography: Geoff Tesch)



Image 21 – “Wave” (Photography: Geoff Tesch)

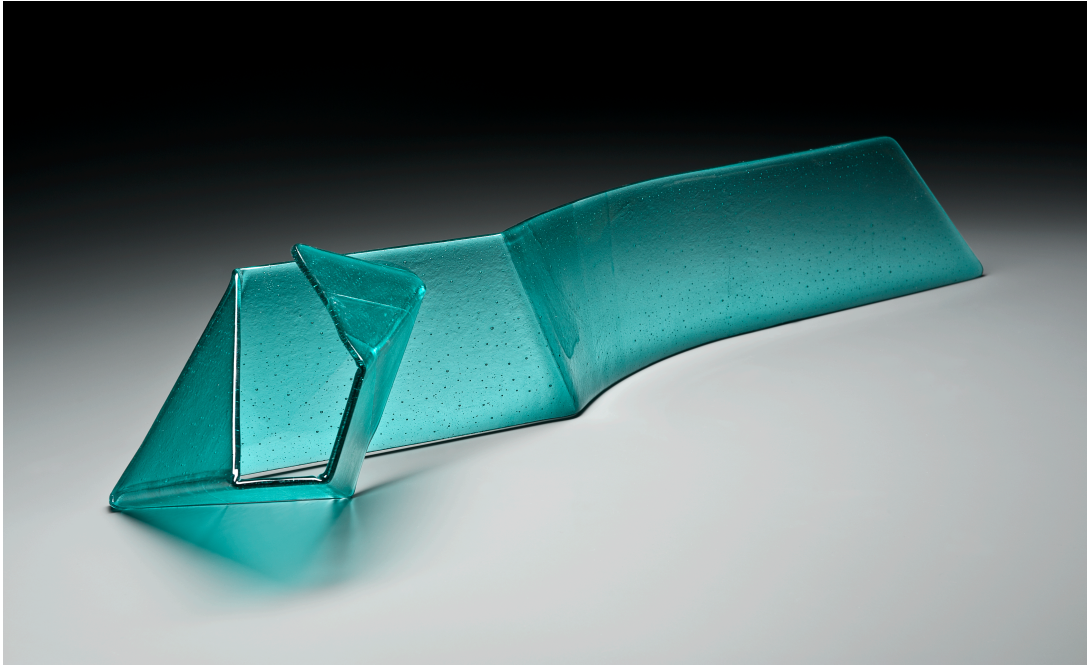


Image 22 – Waves at Shi Shi Beach, Northwest Washington Coast, U.S.A. (Olympic Peninsula Washington State)



Image 23 – “The Land Drove Like An Iron Wedge Into The Sea” (Photography: Geoff Tesch)



Image 24 – “North Sea Breaking Land” (Photography: Geoff Tesch)



Image 25 – The North Sea breaking land in Lybster, Scotland (Personal Photograph)



Image 26 – “Flattened Form” (Photography: Geoff Tesch)



Thesis Committee Final Approvals

Chief Advisor: Michael Rogers

Signature

Date

Associate Advisor: Robin Cass

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Date

Associate Advisor: Elizabeth Kronfield

Signature

Date

Chairperson: Robin Cass

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