

FOREVER MORE THAN ONCE

by

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David William Peters

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ABSTRACT

My perpetual instinct is to return to the earliest principle of ceramics, the forming and heating of clay. For me this means clay mined directly from the earth and heat produced from burning wood. This is simple in idea, but not in application. Natural materials and their transformations are inexplicably complex. I welcome this character, for with chaos comes serendipity. I create conditions that I judge likely to cause the desirable to happen, and employ various types of technology to do so. My skill is to pay attention, to discover, to harvest the beautiful, and absorb the disappointment.

Materials, design, and the kiln are the primary aspects of my practice. Their role in the production of my work has been the focus of my research during my time at MSU. They are manifest specifically, through the use of local materials, computer aided design, and a new kiln design. I began using local materials in 2007 and much of what I have done with them here has driven the philosophical evolution of my practice. CAD has generated a new understanding of my relationship to form and my conception of myself as a designer, craftsman, and artists. The immense challenge of the kiln design and construction has tested my intellect and resolve. In its completion, the kiln has been the most rewarding component of my graduate research. Through the development of these three areas of my practice, I have gained a powerful combination of tools to carry my work forward and will discuss the role of each here.

Material

Contemporary ceramics as a whole relies entirely on industry for its materials. This development is a very new one within the art form since historically ceramic production was located near the raw natural materials needed for production. The type of work being made was shaped by the geology of the area just as much as the intentions of the people and cultures that produced it. Today materials of any kind, from any location are available to artists. Such convenience and its effects on the art form have hardly been consciously understood. It is true that early arts and crafts movements of Europe, Asia, and North America were reacting to the industrialization in the production of ceramics. While these movements looked to pre industrial works of art and craft for inspiration,

they quickly began using industrially processed materials in the production of their work. One might think this is odd considering the fervent distrust of factory production and standardization present in craft at that time. However, much of the knowhow needed to find one's own materials and use them was lost in the industrial revolution itself. The attributes of industrial materials helped to overcome this loss. They are easy to get, typically cheap, and usually very reliable. Having a hugely positive effect on the art form, industrial materials allowed artists to focus more on ideas and less on the technical problems. It permitted the unprecedented flowering and diversification of ceramic art that we see today. Of course, this does not mean that all technical problems have been overcome. Any contemporary ceramic artist today will tell you the art form is far from free of disappointment, and I believe it is this risk that keeps the art form vital. Yet today, artists have more choice in which areas of their practice they wish to invite risk, and where they want and need more control.

In his insightful book, "The Nature and Art of Workmanship," David Pye defines ways of making that are useful when discussing risk within ceramics.¹ He suggests that there are two opposite modes of production. The first is the "workmanship of certainty" in which "jigs" or tools of various kinds are utilized to control every aspect of production. The second is the "workmanship of risk" in which the quality of the outcome is dependent on the skill and knowhow of the craftsman at each stage. The way of certainty is reliable, consistent, and produces things that are of little variability in quality and

¹ Pye, D. *The Nature and Art of Workmanship*. London: Cambridge University Press, 1968. pp. 7-10

appearance. The way of risk is the opposite. Within contemporary ceramics the former has been the mode of industry, while the latter has generally been that of the artist.

Within the last six decades, artists have adapted more and more from industrial methods of production, those of the workmanship of certainty. These include the use of forming methods such as mold making and casting, rapid prototyping, ram pressing, and extruding. However the most pervasive adaptation of the workmanship of certainty for contemporary ceramic artists has been in materials.

Clay, one of the most mysterious of minerals, harbors a great potential for risk. Industrial methods for ceramic production are only efficient if this risk is mitigated so it has developed many ingenious ways to maximize consistency and reliability within the materials it employs. Clays are mined, milled, refined, and blended on a massive scale to produce large amounts of consistent products. This not only means that the clay is designed for maximum performance, but is also easy to get. Convenience, reliability, and affordability have democratized contemporary ceramic art, allowing almost anyone with access to a kiln the ability to make something out of clay. With such access has come a huge flowering of ideas and modes of expression that are more diverse than ceramics has ever seen. Yet artists' reliance on industrial materials has become so widespread and unquestioned that it has become the default. Therefore, the contemporary ceramic artist's ability to choose risk over certainty in regard to materials has become limited. We have become distanced from the source of our material, and have lost the knowhow required to access and use them in their raw state.

The distance has become so large that many artists only think about them in terms of how to make their ideas happen. For many facets of contemporary ceramics this may not pose any problems. But for areas of the field such as wood fired ceramics I believe that this has had a detrimental effect. Wood fired effects are a direct product of the interaction of clay and wood ash at very high temperatures, so the quality of the clay itself is extremely influential in determining the result. Our clays today are milled, blended and standardized for the needs of industry, not artists. Such refining and blending process removes or pulverizes particles of minerals that can cause imperfections and even failures. Yet these impurities also impart interesting textures and colors, and when they are removed or blended together it often muddies the individual characteristics of clays found in nature. It is precisely these properties that produce unique results when fired with wood, but since our practice today is so reliant on industry many wood fire artists don't have a way to access alternative materials, or are not even conscious that such materials exist.

Most of them use the same materials as everyone else to make their clay bodies, largely borrowing from each other's recipes, if not using the same one. Every so often someone comes up with a new one that has a slight nuance when wood fired. Quickly it becomes widely used, being distributed via the generous sharing of information characteristic of the field. One can create some unique results by careful firing, but if all are using the same clays and clay bodies, the surfaces will basically look the same, especially to the uninitiated. To many, wood fired ceramics has become repetitive. Even the forms seem to be constantly repeated with only slight variations. It is to the point that

we even have tongue and cheek phrases such as, “round and brown,” or “brown is the new black.” No doubt much of this is due to the fact that the philosophical ideals of Mingei are still highly influential to many wood fire artists. In this framework, repetition and “no-mindedness” is credited with the emergence of masterpieces.² This philosophy is problematic in my mind even though it is very seductive. Such views of the simple craftsman making in a state of peaceful bliss were created in the minds of colonial peoples such as the Japanese and the British. Their perception of the artists’ intentions was colored by their own prejudices and ignorance. They were, after all the colonial power speaking of the people they had conquered.³ In an attempt to honor the craftsman of a subdued culture they created a romantic visions that reflect more on the desires of the visionary and less on the human reality of the makers themselves. Too much is assumed to be true, and the reality of the ancient potter is better understood through archeology and careful scholarly study. For me, such critical and intellectual rigor honors the artist more than any romantic projection.

Unrefined clay, clay not altered by industry for a predetermined purpose, offers a revitalizing perspective to me as a wood fire artist because it allows me to understand the artists of the past in a new light. In opening up a new way to think about historical ware that is rooted in a less romanticized perspective, it provides me with opportunities to discover new ways of using the materials and wood fire process. The chemical/mineralogical makeup of indigenous clays and their working properties are

² Yanagi, S. *The Unknown Craftsman*. Tokyo: Kodansha International Ltd. 1989.

³ Kikuchi, Y. *Mingei Theory and Japanese Modernization: Cultural Nationalism and Oriental Orientalism*. London and New York: RoutledgeCurzon, 2004.

generally fixed and can only be marginally altered. Since these characteristics are a given, they invariably create limitations as to what can be made from them, but these characteristics also offer other effects which cannot happen any other way. The results they produce, whether desirable or not, provide new experiences I can react to. It is a powerful understanding for many makers who are somewhat disconnected from the source of their raw materials and the joys and challenges that come with them. In using local materials, I feel that I have been able to access a dimension of the workmanship of risk within material itself, and in that way have become responsible to decide what is worth pursuing from the ground up. Such a change in the mindset of the artist is eloquently described by Michael Cardew in his book, *Pioneer Pottery* in which he wrote:

“...Pioneering is not a matter of geography but of the heart. It does not necessarily mean doing something where it has never been done before but rather finding things out for yourself from first principles...It is simply the perennial instinct to return to the source, not only of clays and glaze materials but also of inspiration the potter’s invisible raw material.”⁴

So, while certain types of control and freedom are lost, a different type of self-determination is gained. For me, it is one that is rooted in the natural beauty and potential of the material and process itself. In effect I am consciously choosing a different set of limitations and latitudes in which to make my work.

Design

I believe that the most critical skill in wood firing is in setting up the conditions that are likely to make the desirable to happen. Every aspect of the process contributes to

⁴ Cardew, M. *Pioneer Pottery*. London and Harlow: Logmans Green and Co, Ltd. 1969, p. IV

the overall outcome and must be considered. Therefore, I feel that it is important to design the entire process thoughtfully and progressively, making decisions and modifying it in order for it generate more of the kind of work I want to make. These choices are reconsidered cyclically as the rhythm of the ceramics process repeats with every firing. Feedback from the results informs and changes the process from drastically to minutely every time, so the results from every firing are different. The dialog between my intention and results through process has expanded into all aspects of my practice and led me to rethink my approach to the designing of the forms themselves. The most productive of my experiments in this respect has been in utilizing computer aided design.

I am drawn to forms that have a sense of refinement, mass, and strength. These forms tend to contrast the chaotic wood fired surfaces instead working directly with them. I do not attempt to create sensuous profiles that echo the marks of flame paths. Instead I make forms that almost ignore the mark of the flame instead of mimic it. The surfaces then read more as natural decay and encrustations on a form than the willful decoration of it. Much of this sensibility was developed within the early crucibles and mortar and pestles that I made, but was struggling to find ways to use it in other forms. I believe this was due to the fact that I was using traditional pottery techniques such as throwing and coil building to generate new ideas. I was so familiar with them that I was slipping into older forms and ideas without even realizing it. I decided to experiment with Google Sketch Up just to see what I could do with the program and found that it was not particularly powerful, but I was generating some interesting ideas. I decided that a more complex program was needed and taught myself how to use Rhino. With this program I

can develop new forms and ideas very rapidly. Each idea can be scaled and modified virtually instead of making each edition out of labor intensive clay, thus saving a lot of time.

I experimented with some techniques for rapid prototyping as well. The most successful of these forms is probably the pentagon cup. However, I have found translating the virtual designs to reality via rapid prototyping to be somewhat cumbersome. Not only is it not necessarily any faster than doing it by hand, I also discovered that the forms do not always translate well into reality. After all, one of pottery's most unique and powerful attributes is that it is felt as well as seen. For me to create something that feels good, I believe I need to touch it as I make it. Therefore, I have been approaching CAD as a three dimensional sketch book where my ideas can develop, and then I use traditional techniques to make them. In this way there is constructive feedback between the two instead of each performing the entire process in isolation. I am coming up with new and interesting forms virtually, and that sensibility is carried over into the pots, but I'm not relying on this technology alone to create the actual forms.

The most interesting application for CAD I have discovered is that I can load my kiln virtually beforehand. I can either measure and build existing pots into the computer and organize the load that way, or I can virtually load the entire kiln and then make the pots to scale accordingly. Either way will work, but the later provides more interesting opportunities. Since each firing requires a lot of time and effort, maximizing the amount of work I can get into each one is important. Every potter does this to some degree or

another and usually develops their stacking style over many firings. Virtual loading is not particularly a quick process, but as a tool for visualization it is extremely powerful. For example, I increased the amount of large work I could get in the kiln by sixty percent with my first attempt using the virtual loading process. I also was able to stack the kiln in a way that maximized the ash accumulation throughout the kiln and control the path of the flame in a way that made the kiln fire more even. Information from the results of each firing can also be easily recorded such as which forms and clays turned out the best in each area and repeated while less successful combinations can be avoided. Information from each firing can be systematically applied to the next, meaning that in each firing I can hopefully decrease loss to a greater degree than if I was to rely on memory alone. Such progressive development could potentially save me hundreds of hours.

Using CAD also prompts the asking of new and interesting questions about the work as well; especially what it might mean to combine the simple yet sensitive technology of ancient humans with the incredibly powerful technology of today. It also has the potential to change the way my work is perceived. Wood fired ceramics has become stagnant and irrelevant to many today. I feel that an inspired use of this technology has the potential to spark new interest into what is possible with this ancient process today. It may be a possible avenue for some into the work that normally would not give it a second thought. I also think it communicates that I am not just trying to create a sense of romanticism or “authenticity” but that I am sincere in the choices I make and want generate discovery and produce intended results, not just melt wood ash on pottery.

The Kiln

“It was only when I lived alone that I became master of my own hearth.”

Gaston Bachelard, *The Psychoanalysis of Fire*⁵

The most important decision I have made in terms of designing my process outside the use of local material has been the one to design and build a wood kiln of my own. Like many of my decisions the motivation to do so was intuitive. I followed a hunch that there was something to be learned and discovered by doing so. While I had a sense that I was on the right track and was confident, I did not know for sure if would be something that I would find important enough to do again in the future. In doing so I have learned what I value in a wood kiln for my own work instead of constantly adapting to someone else’s design that has the attributes that they value for their work. Much like my experience with local materials, I learned more about myself in the process, and in the end feel that I have become master of my own hearth. I began with what I knew, the two most popular kiln designs used in America today, the Anagama and the Train kiln. Each of these designs has their own particular strengths and weaknesses and I sought to design a kiln that combines the best traits of each.

The Anagama was and still is the most popular style kiln used for wood firing worldwide. These are large single chamber kilns that resemble the body of a whale. They tend to be gentler on larger work due to the swelling midsection which causes the flame to expand and slow down as it passes around the ware. The ash accumulation tends to take a long time due to the fact that the coal bed is below the work, and fly ash

⁵ Bachelard, G. *The Psychoanalysis of Fire*. Boston, Beacon Press. 1964, p. 6

has to be lifted and carried by the draft of the kiln in order to land on work. Wood is stoked directly on the coal bed which lies on the floor of the kiln. Stokes must be smaller and performed less often in order to keep the coal bed alive; meaning a kiln of this design must be fired for a very long period of time. They produce a lot of variation throughout the kiln, offering the artist many options to use different clays and multiple combinations of form and surface within one firing.

Train Kilns tend to damage larger work due to their straight sided ware chambers. Any large piece restricts the flame as it moves through the kiln. By compressing the air flow, the flame's velocity increases and creates a large differentiation in temperature within a relatively small space. In such cases, a large jar could be as much as 300 degrees F hotter on one side than the other. If this happens at a critical stage it will severely crack the work. However, Train Kilns are among the easiest firing wood kilns. They utilize an oversized firebox where wood is elevated by metal grate bars. Here the fuel is exposed to more air as it combusts, thus burning the wood more efficiently. Wood can be stoked more often and since the burning wood is located above the ware the ash falls onto the work accumulating much faster. Because of this, small Train Kilns can be fired in as little as twenty four hours with excellent results. They, like Anagamas, produce variation as well but not to the same degree and ash tends to collect primarily only on the part of the ware facing the fire box.

Since I began making crucibles, my desire to make larger work has grown due to the fact that larger objects open more surface area to the atmosphere of the wood kiln. Such surface area provides for a wider range of effects to be developed within one piece. They

capitalize on the drama of the process in ways that smaller work simply cannot. Making larger work has been extremely difficult for me because I have primarily fired my work in Train Kilns. For this design, the local clays of Montana can be very difficult to work with. Many are very high in coarse-grained rock which helps the drying process, but also makes them overly weak and as a result they cannot withstand the shrinkage that occurs during drying and firing. Some of the local clays are extremely fine grained. While this makes them very strong it increases the amount of shrinkage which also makes them and prone to cracking and warping. Blending the two can improve the chances for success but does not remove the problem totally, and this can muddy the unique fired characteristics of each. With this in mind, I designed a kiln that would be as gentle as possible on large work made from these problematic clays, even during in a shorter firing.

After selecting the properties from the Anagama and Train Kiln that I desired, I hybridized the two into an entirely new design. I selected the large swelling ware chamber of the Anagama for its characteristic of gentle heating and the wide range of surface variation it generates. Both of these effects are perfect for the materials I am using, and the large ware I want to create. I chose the oversized elevated fire box of the train kiln for ease in firing, the ability to burn large amounts of wood rapidly, and its production of large amounts of ash in a short period of time. While it will take many more firings to prove the design, the two kilns seem to have melded well. The desired characteristics of each persisted while the problematic ones were minimized and no major

structural problems have arisen after four firings. With each firing I am becoming more aware of the real potential of this design.

This hybrid kiln can be controlled very easily with temperature gains averaging one degree F a minute and this is easily maintained. Being ideal for firing large work, the swelling midsection seems to soften this gentle increase even more. When at a high enough temperature where there is little risk of cracking work I can increase temperature very rapidly, as much as 200 degrees F an hour or more. While maintaining temperature and collecting surface, this kiln can burn as much as thirty five cubic feet of wood every twenty minutes. Even green and wet cottonwood is burned with little to no problem. The surfaces produced in this kiln are therefore developed quite rapidly, the entire firing process averages about forty to fifty five hours. Since much of this time is devoted to the gentle heating of large work, it could be significantly reduced if smaller work is being fired.

Beyond being enjoyable to fire, this kiln produces a wide variety of unique surfaces. The front section is extremely violent. The ceramic work here is exposed to direct heat of the coal bed and is usually coated with large amounts of ash. It is ideal for work that can capitalize on the drama and withstand the intensity. Here I place medium sized sculptural vessels made from rough refractory clays. The top and center of the kiln tends to receive light fly ash lifted and sifted by the draft of the kiln. In this region the ash is very fine grained and collects on the shoulders and rims of pots. Softer than the front, the variations in color and texture have more gradation and less abrupt change. Ideal for large vessels with shoulders, the results are also suitable for medium grained moderately

refractory clays. The floor throughout is exposed directly to coal bed and here the work tends to be drier in texture. Surfaces here are built primarily by direct contact with burning wood instead of the draft of the kiln. I put sturdy sculptural vessels made from rough clay that fire at lower temperatures in this area. Finally, the back is exposed less to ash and more the vapor of the burning wood than the rest of the kiln. Here the kiln produces glossy surfaces and marks of fast moving flame, an effect that is well suited to more functional work made from smooth tight clays that fire at lower temperatures. Overall this variation is ideal for my practice, allowing me to utilize the specific characteristics of each of my local clays, and explore multiple ideas in one firing.

While the size of the kiln was designed to handle larger work, I did not realize until I was done how much work it can actually fire. Depending on their size, 200-500 pots can be fired in roughly two days. Multiple people can each get a large amount of work fired for relatively little effort compared to most wood kilns. Because it is so easily controlled it can be fired comfortably with as few as three people, making it a true workhorse for those who need it. The only drawback to this design that I can see thus far is the large amount of brick needed for the oversized firebox and chimney, and that the construction of the curved walls of the ware chamber is very tedious. Considering the overall advantages of the design, these drawbacks should become more than worth it over the life of the kiln.

I am very proud of my first kiln and I am very excited that this design works so well for its intended purpose. As a tool for the firing of my work it is ideal. After four firings I can safely say that it is my favorite kiln to fire. This combined with the rich complexity

of surface that it produces makes it a design that would serve me well over a long time. I am planning to build a kiln of my own as soon as it is possible and will be using this design as the foundation. Finally, I am interested in what other wood fire artist think of this kiln, if it is a design that has potential to become popular and possibly offer something new to the field of wood fired ceramics.

In conclusion, each of these explorations has yielded many discoveries. In no way have I learned all there is to be learned from them. Indeed, I have just scratched the surface. The research and use of local materials alone could last me many lifetimes. Computer aided design is so versatile and powerful I am sure I will continue to interface with it in multiple varied ways. As successful as the kiln has been so far I look forward to seeing what will come of it in the future. I feel that all of my research combined produces a vital combination of discovery and challenge. With this combination I can produce varied and interesting work for my entire career.

Works Cited

Pye, D. *The Nature and Art of Workmanship*. London: Cambridge University Press, 1968. pp. 7-10

Yanagi, S. *The Unknown Craftsman*. Tokyo: Kodansha International Ltd. 1989.

Kikuchi, Y. *Mingei Theory and Japanese Modernization: Cultural Nationalism and Oriental Orientalism*. London and New York: RoutledgeCurzon, 2004.

Cardew, M. *Pioneer Pottery*. London and Harlow: Logmans Green and Co, Ltd. 1969, p. IV

Bachelard, G. *The Psychoanalysis of Fire*. Boston, Beacon Press. 1964, p. 6



Image 1 – Crucible



Image 2 – Crucible

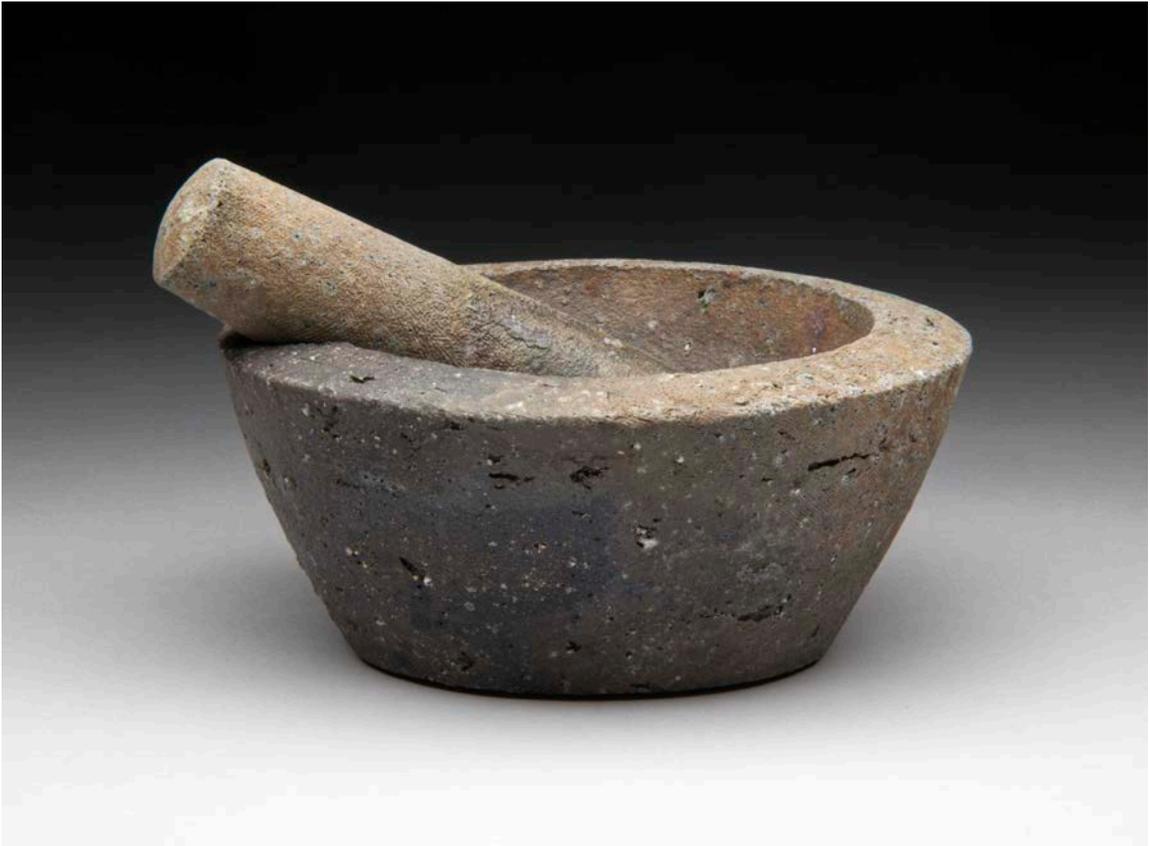


Image 3 – Mortar and Pestle

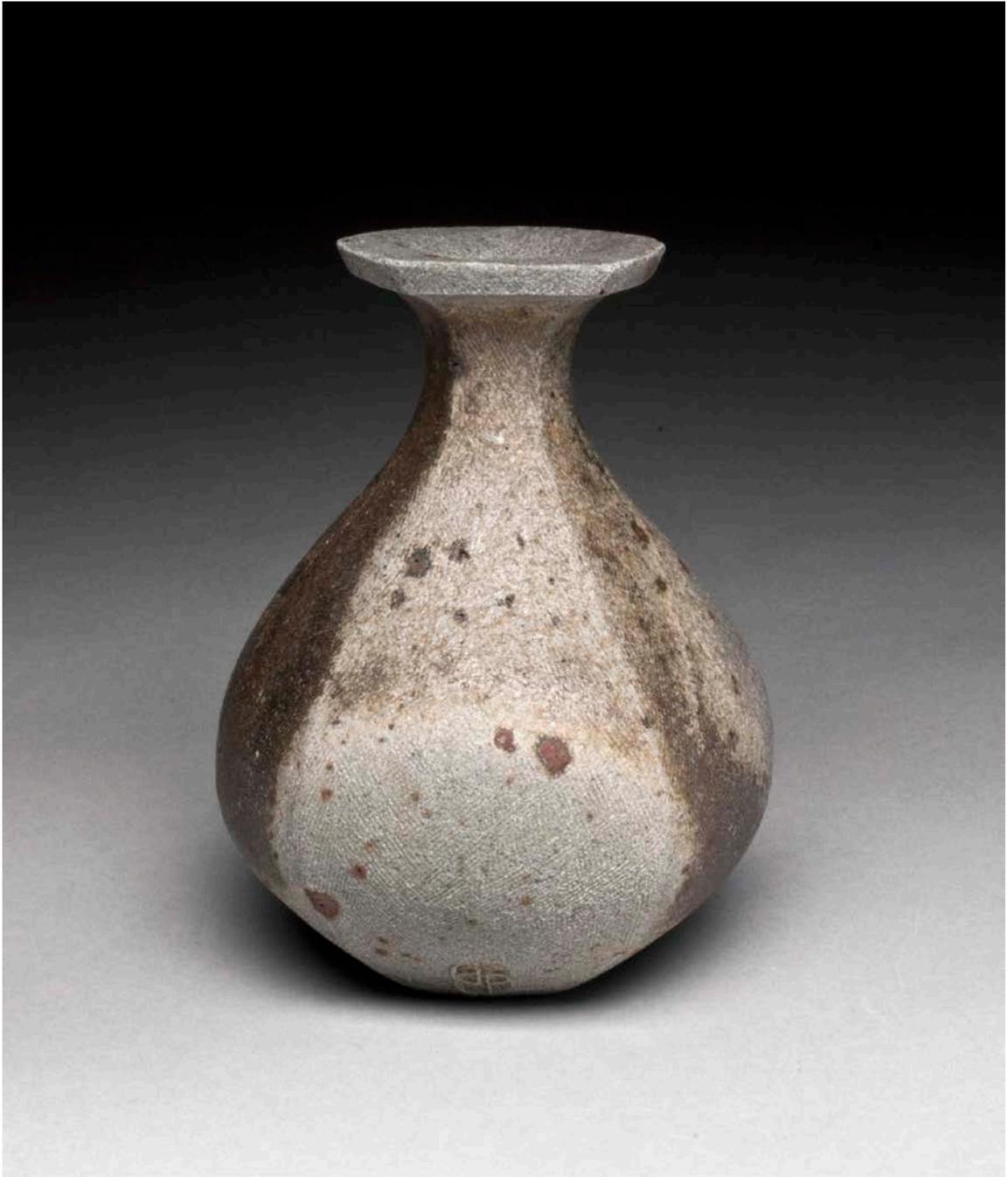


Image 4 – Bud Vase



Image 5 – Five Sided Cup



Image 6 – Hybrid Wood Kiln

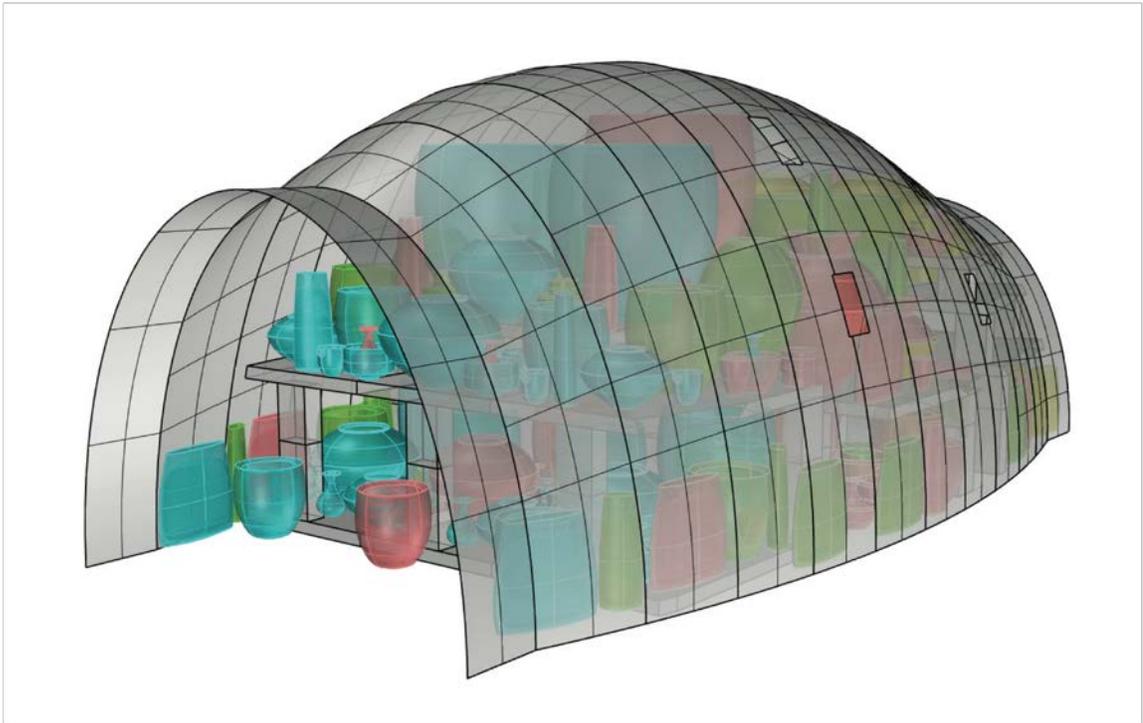


Image 7 – Virtual Loading Model



Image 8 – Installation View



Image 9 – Installation View



Image 10 – Installation View



Image 11- Installation View