ASH, EMBER, FLAME

a Japanese kiln in Oxford

"Paradoxically, I may say that anagama kilns have no good points."

These are the words of FURUTANI Michio (1946-2000), a Japanese potter from Shigeraki, who spent much of his pottery career building and firing kilns, including several anagama. An anagama kiln (lit. cave kiln) is a wood-fired pottery kiln in which the firebox, which contains the fuel, is not structurally or architecturally separated from the chamber where the pots are stacked. Furutani's comment refers to the kiln's relative inefficiency, difficulty of construction and challenging firings. Moreover the anagama kiln produces results that are at times radically unpredictable. This is due mainly to the kiln design, which is archaic and intended to produce large volumes of utilitarian wares that were less concerned with highly controllable aesthetics than is contemporary ceramic art.

In particular, the location of the firebox at one end of a cave-like structure naturally results in a unidirectional blast of flame across the pots and a large difference in heat between the front and back of the kiln that must be balanced by those firing it. Surprisingly, it is in overcoming these very constraints of the kilns that the unique decorative effects of anagama-fired ceramics can be achieved. The pots produced are both unique to the kilns and unique to each particular firing and loading of any given kiln: the pots produced are the culmination of the interplay of ash, ember, flame and clay in each specific firing.

Every movement by a large team over many days of firing has a direct impact on the decorative aspects of the finished pots. Searching for one's own decorative voice within the complexity of the process is one of the factors drawing people to continue to fire these unusual and relatively rare forms of kiln. The interplay between the intentional and the serendipitous, the creative and the laborious, is a process that many find deeply rewarding and artistically fulfilling. As Furutani himself concludes:

This reason alone thoroughly covers all
of an anagama's demerits

The 24th and 25th Firings of the Oxford University Kilns Test Kiln

The pots that were displayed as part of ASH, EMBER, FLAME a Japanese Kiln in Oxford were made and fired specifically for the exhibition in the 24th and 25th firings of the Oxford University Kilns' smallest anagama-style test kiln. As a discrete initiative, this collaborative firing began with educational outreach with community groups and schools at which the participants produced pieces to be fired in the kiln, and during the process learnt something of the history and processes of making Japanese ceramics.

The pots produced for the firing were assembled in Oxford from the various schools, workshops, and colleges where they had been made. At this point, Dr Robin Wilson, Founding Director of the Oxford University Kilns Project, brought together a firing team of volunteers from among the participants who had made the pots. Most of the team had never participated or even attended a wood firing before. Part of the aim has been to introduce Japanese-inspired kilns to people who have not previously had the opportunity to experience them. The objective was to co-mingle the work of fine artists and studio potters with up-and-coming artists, students, craftspeople and school children, firing everything together in a diverse, inclusive and egalitarian way: the space inside the anagama being an equalising one.

The resulting works, though produced by individuals, are the product of the communal effort and deliberative attention of a large group of people for every moment of the four days it took to fire the kiln.

Unlike other forms of ceramics which deploy glazes and patterns applied during the making process by the potter, the effects achieved in anagama kilns are most apparent when work is fired unglazed. The pots take on distinctive decorative characteristics not only as a result of the will of the potter, but by the serendipitous interplay of ash, ember, fire and atmosphere within the kiln.

That is not to say that potters have no control over the finished pots, but it is true to say that the effects result from the interplay of the potter with the physical nature of the kiln itself and the opportunities and limitations it offers.

It is rare that pots exhibit single isolated effects: commonly a pot fired in a single-chambered anagama kiln will show a complicated interplay of multiple, overlapping patterns of flame and accumulations of melted ash that contribute to the overall aesthetically complex and pleasing result.

The decorative effects achieved on the pots were the organisational rationale behind the exhibition. The pots were grouped according to their dominant overall appearance rather than by their maker, use or form. The accompanying text, which is presented here in full, will guide you in introducing a conceptual toolkit to help identify the various features on the pots for yourself.

A side note regarding the use of Japanese language terms

When speaking about decorative kiln effects, ASH, EMBER, FLAME a Japanese kiln in Oxford followed the terminology of FURUTANI Michio (1946-2000), who wrote *Anagama: Building Kilns and Firing*, one of the most in-depth discussions of firing techniques and anagama kiln building to be published and translated in to English. By introducing a conceptual and linguistic framework it was proposed that 'reading' what has happened to the pot inside the kiln would become apparent to the visitors to the exhibition. It is important to note, however, that these Japanese terms vary from region to region across Japan, and there is no authoritative source that determines their precise use: some potters may use them when discussing pots, but other may not. Likewise, Furutani also sometimes uses Japanese words that have a technical meaning in the context of firing in an anagama kiln.

In Part II of this accompanying exhibition guide these decorative effects are introduced as a point of reference and as a starting point for understanding the complex and subtle effects that can be achieved decoratively in an anagama-style kiln. Part I consists of the remaining text from the exhibition which helps contextualise the project. It is worth noting that the terms singled out in this exhibition were not intended as an exhaustive list of all of the decorative effects that can be achieved in an anagama. There a great many more in use than could be reasonably presented as part of the exhibition, but nonetheless the effects introduced in Part II of this exhibition guide are a substantial and functionally useful starting point for the discussion of pots fired in anagama-styled kilns.

Part I

the project

ASH, EMBER, FLAME
a Japanese Kiln in Oxford

History of Anagama Kilns

Some of the earliest pots made in Japan in the Jomon (10000-300BC) and Yayoi (300BC-AD300AD) periods are believed to have been fired on the ground or in a shallow pit with plants and trees. This open fired pottery production is known as *Haji* pottery or *Haji* ware and continued until medieval times. Fired in this way, it is believed that the early potters could not achieve temperatures more than approximately 600-900°c, a temperature at which clay remains relatively brittle and weak.

It is said that anagama kilns which enabled high-fired pottery known as *Sue* (su-eh) pottery were brought to Japan by the fifth century from Korea. These first anagama were fully underground - dug into the slope of a hill at an incline, with an opening at the end. A fire would be created at the mouth of these structures, and the resulting heat would solidify the clay-soil forming a cave-like structure in which pottery could be fired to high temperatures from 1100 to 1250°C. Anagama kilns went through some design refinements to improve their efficiency and one such development was the introduction of a pillar called bunen-chu near the fire box. This pillar was for dividing the surge of flame and for increasing the size of kilns, with the result that pottery production could be expanded. Toward the end of 15th century, underground and semi-underground anagama were replaced with above-ground and semi-above-ground anagama kilns called oogama (big kiln) in the Mino, Seto and Bizen areas of Japan. With a high ceiling, multiple bunen-chu pillars and a wall for flame to climb up to the ceiling, pots could be stacked high in the kiln and production on an even greater scale became possible. At the end of 16th century, Korean craftsmen introduced Renboshiki-noborigama (multi-chambered climbing kilns) and by the end of the Edo period anagama kilns in their earliest form had fallen out of use in favour of these newly introduced kilns.

From the 1920s onward, some potters began investigating the ruins of medieval anagama kilns and succeeded in recreating one. ARAKAWA Toyozo in Miho region in the 1930s, ISEZAKI Jun with his brother Mitsuru in the Bizen region of Okayama in 1969 and FURUTANI Michio in the Shigaraki region in 1970 are such examples.

Noborigama, anagama, and their effects on the pots they produce

It is helpful when imagining how anagama kilns function, to compare them to another type of kiln more frequently used in Japan to fire pottery: the noborigama. Noborigama (lit: climbing kiln) are multi chamber kilns, which similarly to anagama kilns are built on a slope. Large noborigama may contain as many as 15 connected chambers, and each successive chamber recycles the heat of the preceding one making them extremely efficient when compared to anagama kilns. Given their efficiency and capacity, some regions only fire their noborigama kilns once or twice a year. The main, and most significant from a decorative point of view, difference between an anagama and a noborigama is that a noborigama's entire first chamber is the fire box, which is separated from where the pots are loaded: the pots are instead loaded in the second, third, fourth and so on chambers. So, for example, a four-chamber noborigama would have three chambers for loading pots, and one chamber where the fire is built. That said, given the sheer scale of noborigama kilns, they must also be fed fuel in the successive chambers in order to reach the required temperature: a technique known as 'side stoking', where wood is thrown into the kiln from holes in the side of the chambers connected to the firebox.

The upshot of this is that the temperature in the chamber(s) which contain the pots does not fall drastically when the firebox is opened to load wood during the firing. By contrast, in an anagama, opening the firebox causes an immediate temperature change inside the chamber containing the work, and as such the temperature stability is uneven and irregular. Temperature stability and predictability are two very important features when it comes to producing glazed ceramic ware. If a glaze is fired to the incorrect maturity, then a range of undesirable defects can occur. The stability and the comparative simplicity of raising the temperature when using a noborigama meant that potters in Japan producing glazed work began to transition to the use of noborigama starting in the Edo period (1603-1886), with the resulting decline in anagama-fired ceramics.

noborigama at Yomitan-son, Okinawa

Hibuse

The decorative effects that can be achieved in anagama kilns can be attained in certain positions in noborigama kilns. Where the chambers connect, and where they are stoked from, a line of unglazed pots is placed to protect the pots behind from the ash and flame produced by the fuel wood. Ash, ember and flame, which have a decorative function on un-glazed ware, often cause unwanted effects on glazed ware. For that reason, broadly speaking, glazed ware is better fired in a noborigama. The line of pots used to shield the work from blast of the flame will pick up flame decorative effects similar to what pots in an anagama obtain: the very effects explained in this guide. Collectively, when fired in a noborigama, these effects are called hibuse.

Glazed ware in an anagama

Though most of the pots in the exhibition were unglazed, it is possible to fire glazed ware inside an anagama kiln. One such way is to make use of a saggar. A saggar is a sealed large ceramic container which protects the pot placed inside from the ash, ember and flame present inside the kiln, whilst still allowing the heat to mature the glaze.

One of the pots on display in the exhibition was by British potter Robin Walden, which was placed inside a saggar and fired in the 25th firing of the anagama. The glazed pot provided a sharp contrast to others in the exhibition, and highlights the versatility of firing in an anagama kiln.

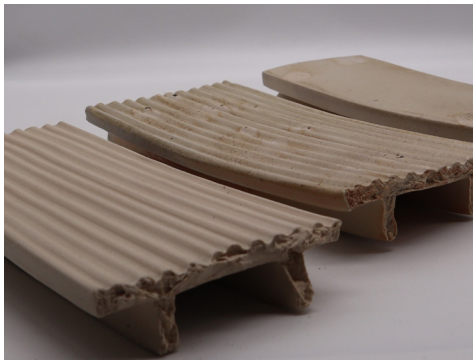
The Environmental Impact of Wood Firing

Firing an anagama kiln of the size fired in Oxford requires between 5 and 8 cubic metres of wood depending on the load and firing style, which means there is an immediate environmental cost in the felling of wood and the carbon emissions involved in burning it. However, the wood used to fuel the kiln in Oxford is a by-product of the University Research Woodland's active forest management plan, which includes replacing non-native softwoods with natural deciduous hardwoods and thinning stands of hardwood to allow remaining trees to achieve their full growth potential. Burning waste wood on site without any need to transport it, is one way in which the environmental impact of wood firing can be addressed. Another is to fire the kiln in as efficient a manner as possible, and to maximise the heat that is retained in the kiln itself rather than expelled through the chimney.

The environmental cost of a piece of ceramics is not just the fuel to fire the kiln. Glazed ceramic ware contain a hidden environmental and social cost in the mining and distribution of the glaze materials; which include, for example, tin and cobalt.

Ceramicist and sustainable materials designer Sara Howard has been addressing the issue in research around circular industry and the replacement of virgin materials in the ceramic process.

Many of the raw materials used today for ceramic production are expected to run out over the next 30 years, based on current rates of consumption and our known resources. Additionally, the raw materials used to create ceramics, sourced via mining or quarrying, permanently damage landscapes and impact local communities. These processes consume a vast amount of water and produce monumental amounts of waste, even before ceramic production has begun.



Sara Howard's pieces are created using 100% industrial waste. By applying the principles of the circular economy, Sara has designed an industrial symbiosis around the ceramics industry, whereby the waste by-product from one manufacturer becomes the raw material in ceramic production.

In the anagama firing, a large proportion of the mined materials are eliminated from the process as most work went in to the kiln without glaze. Instead, ash which is created during the wood firing glazed and decorated the vessels.

The clay body, made from industrial waste, took on copper hues with blushes of pinks and oranges: a suprise to the artist and all involved with the firing. Another of the pieces achieved very even ashing, which melted in to a spectacular natural fly-ash glaze of a deep glass-like green.

How decorative effects can be controlled in a kiln of anagama design

Firing an anagama begins long before the flame is lit. The success or failure of a firing is largely dependent on how the pots are loaded in the kiln. The arrangement of pots inside the kiln affects the direction of the flame's path from the firebox to the chimney. The density of the pots and their careful placement affects the speed at which the temperature rises and controls the amount of ash that accumulates on each pot. When the kiln is loaded, potters create and hold in their mind's eye a notional or hoped-for flow of the flame through the kiln.

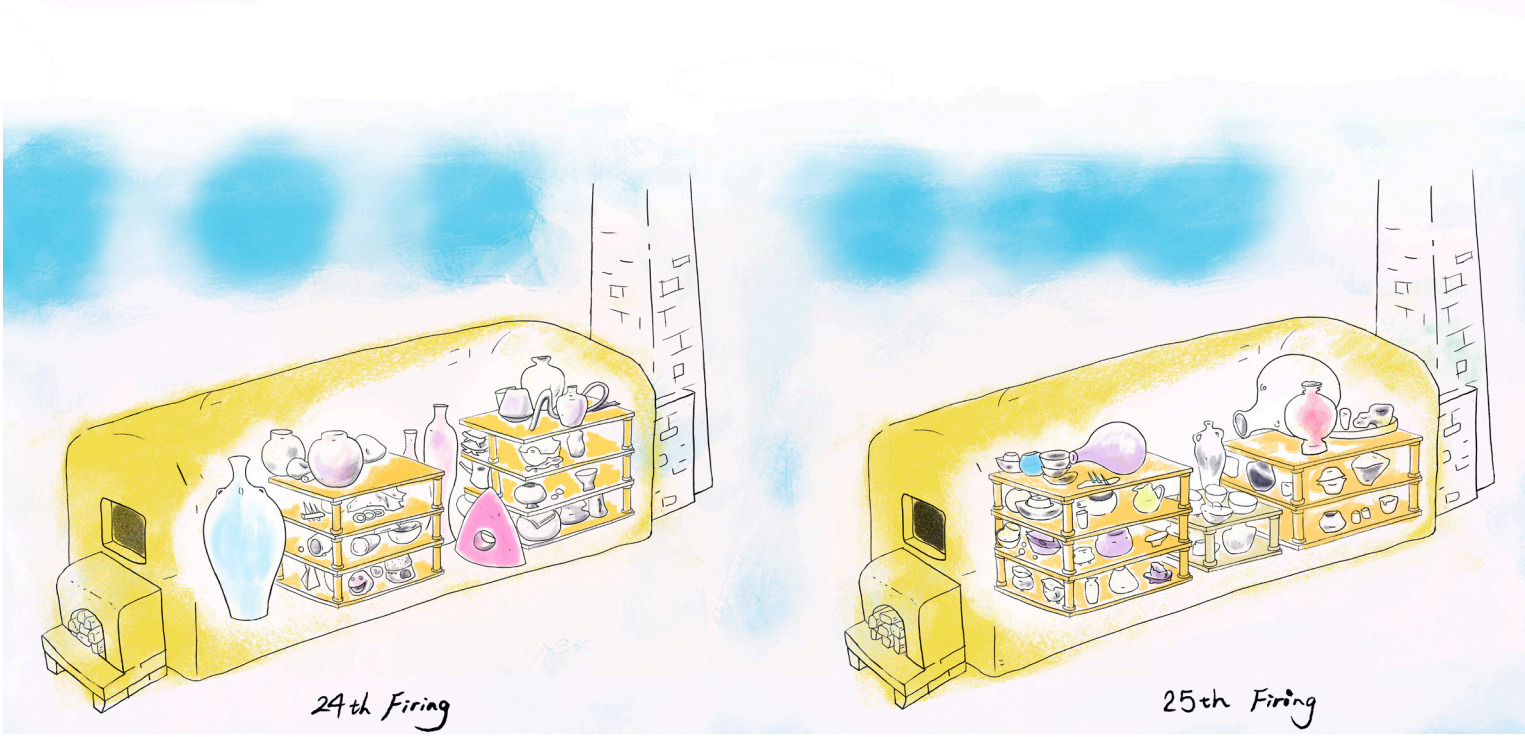
Pots can be stacked together densely to slow the movement of the flame, or spaces can be left to allow channels for the fire to run down. Each of these decisions will directly affect the decoration that appears on the pots, and so in that sense the loading of the kiln determines if the firing will be successful or not.

To illustrate with an extreme example: were the pots to be loaded with a large open channel running vertically down the middle of the kiln, directly from the fire box to the chimney, then the fire would rapidly travel down the channel and escape up the chimney. Most of the heat of the flame would be lost, and it would be very difficult to raise the kiln to the correct temperature.

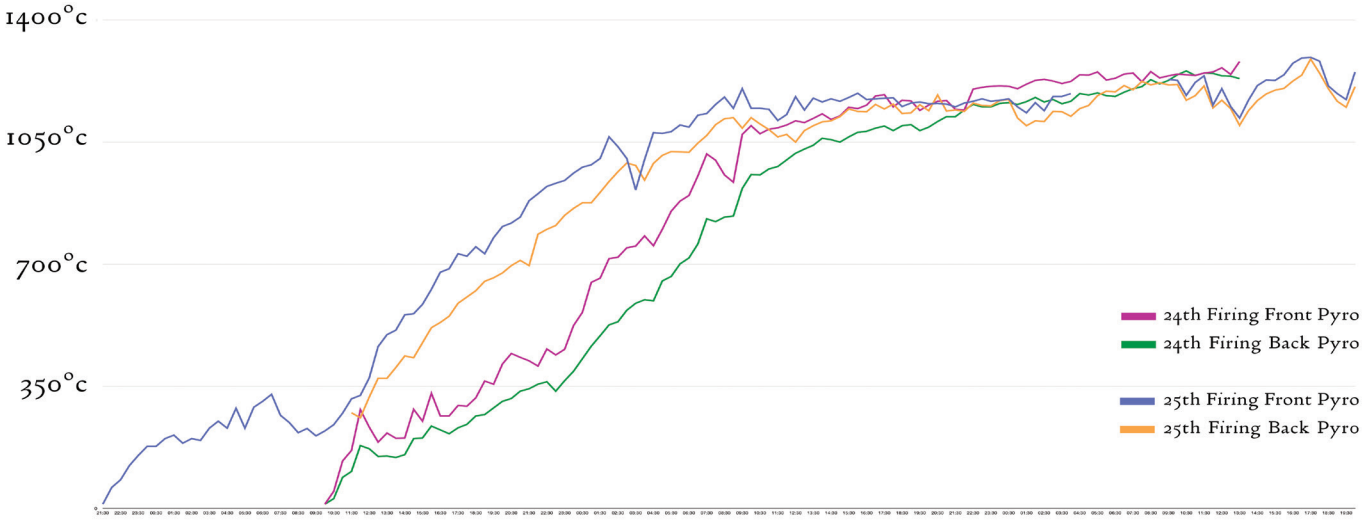
Before pots are loaded in to the kiln, any surface that will come in to contact with either the kiln shelves, other pots, or any other surface must have a highly refractory material called wadding applied in order to stop them fusing together. In the case of the firing at Oxford, the wadding used was a 50/50 mixture of fireclay and silica sand, and in most cases was easily removed from the pots once the kiln was opened.

Two firings of the same kiln

The pots in the exhibition were fired in the 24th and 25th firings of the Oxford University Kilns' test kiln. Each time the kiln was loaded in a different way, with a direct impact on the results. In the 24th firing, a middle valley was created by placing three pots on wads on the floor of the kiln. This loosened up the overall stack and allowed for a large firebox to load wood into. By comparison, the 25th firing had a middle stack of half shelves placed between the front and back stack, which not only increased the density, but reduced the size of the firebox with the result of a much more challenging firing.



In the 25th firing, the smaller firebox led to some problems for the firing team. A smaller firebox means that the ember pile builds up more rapidly due to the fuelwood being condensed into a smaller space. This resulted in some of the wood combusting without oxygen, and turning in to charcoal - which negatively affected the airflow into the kiln and prevented further temperature rises. It took 6 hours for the team to remove the charcoal and stabilise the kiln before further temperature rises became possible again. This problem was exacerbated by the fact that the pyrometer measuring the heat at the front of the kiln got damaged at 4:30 am on the final day of firing: precisely when pyrometer readings play a more direct role in timing the stoking of the kiln. This meant the firing team had to rely only on the sounds made by the kiln, the sight of the ember pile, to guide them further with the firing.



In the graph above, the pyrometer readings taken throughout the two firings are presented for comparison. The pyrometers are inserted into the interior of the kiln approximately 50 cm apart at the front and back of the chamber. It is interesting to see the drastic difference in temperature across such a short distance. It is, however, important to note that pyrometer readings provide a hint to just one of the many vital signs of how the kiln is performing, and only a clue as to when one ought to add more fuel, and what fuel to add: hard wood, or soft wood. Pyrometers record the temperature of the flame at the precise location in which they are placed, but they do not record the heat work that is taking place in the pots themselves or record the heat in different locations in the kiln.

By the time the pyrometers are showing signs of a problem taking place in the kiln, it will already often be too late to take preventative action and many hours of additional firing will be needed to correct the fault. To avoid this, the firing team must also listen to the sounds being produced by the kiln to judge the oxygen flow into the kiln, and observe the colour and brilliance of the ember bed to assess the condition of the kiln as the firing progresses, taking these clues holistically and responding as they feel appropriate. Likewise, heat work is measured using pyrometric cones, which are made of ceramic material and designed to melt once specific heat work (temperature + time) have been reached. These are placed in various locations around the kiln and monitored by the firing team over the four day firing.

On opening the kiln after the 25th firing, it became apparent that a kiln shelf had broken under the strain of the extreme heat. This broke several of the pots underneath the kiln shelf, and also knocked pots in to one another: meaning surfaces of pots that were not wadded came in to contact and fused together. This is an unavoidable risk of firing an anagama, and the exhibition displayed not just the pots that came out 'perfectly', but also displayed those which had fused or have otherwise 'failed' such that a whole picture of the process of firing an anagama kiln can be experienced.

The pieces on the right were made by Jim Gladwin and Joesph Bull. The kiln shelf breaking knocked them in to each-other and they are now inseparably fused. Yet, there is an aesthetic and architectural balance to this accidental collaboration.

Part II
Decorative Effects

自然釉
Shizen-yuu

Shizen-yuu literally means ‘natural glaze’. In the context of an anagama firing, the term is used to describe cases where a natural ash glaze has developed on pots. Ash that is stirred up during the firing process will gradually accumulate on pots in various places in the kiln. Given enough time and heat, these deposits of ash will fully melt and develop a glassy character. A further characteristic of shizen-yuu is the flowing appearance of the melted areas and is not uncommon for spectrums of colour to appear within these areas of melted ash.

The decorative effects seen on pots fired in an anagama can be considered as different stages of the natural ash glaze spectrum. Haikaburi, introduced later in this booklet, is the stage before shizen-yuu, where the ash has built up on the pot but is yet to fully melt. In the technical sense with which it is used here, shizen-yuu refers to areas on the pot in the stage after haikaburi, where the ash that has accumulated on the pot has fully melted. Sustained heat and sufficient ash build up are both necessary to achieve shizen-yuu.

In order to achieve shizen-yuu effects, heat is necessary but not sufficient to do so. If one were to vigorously rake the embers every time the kiln is stoked, a lot of ash would be produced which would build up on pots. This ash needs time at the top temperature of 1280°C to 1300°C in order to fully melt. If the person firing the kiln wishes to obtain several pots showing shizen-yuu characteristics, they need to ensure that the kiln is held at the top temperature for sufficient time, without the introduction of any fresh ash, for the ash to fully melt and obtain the effect.

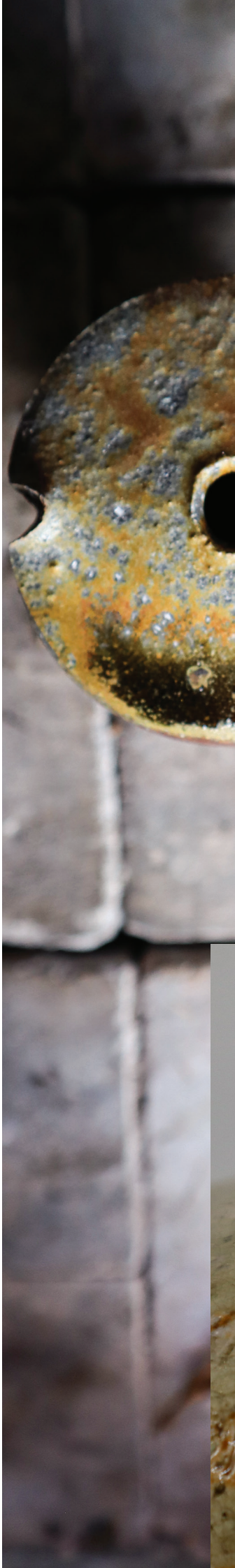
The clay used and the position in the kiln will have had a direct impact on why the effects look the way they do. In general, a lot of yellow and green can be seen on the pots where shizen-yuu has developed, and this is the result of the wood that was used for the firing: western red cedar. The minerals absorbed by the tree over its lifetime are imparted to the surface of the pots when the ash lands on them, revealing spectrums of colours that represent years of nature and history. The colours will depend in part on the kind of wood used to fuel the kiln.

灰被り
Haikaburi

Haikaburi combines the Japanese word for ash 灰, hai, with the verb 'to cover' 被り kaburi. It is one form of natural ash glazing that occurs in an anagama kiln. The fundamental characteristic of haikaburi is an overall matte or textured surface. It is most often found where ash has accumulated on a pot but has not fully melted into glossy areas of shizen-yuu. If one imagines the development of natural ash glazes as being on a spectrum, then haikaburi occurs as a precursor to shizen-yuu. In fact, given enough time and heat, areas displaying haikaburi effects will eventually melt and become shizen-yuu.

There are a number of reasons why ash that has accumulated on a pot may remain as haikaburi and not melt in to shizen-yuu, giving the potter a degree of control of the effects they are trying to reach. It would be a mistake to consider pots showing haikaburi effects to be 'not finished' simply because the ash is less melted. In fact, the variations attainable within the haikaburi spectrum inspires potters to pursue this effect actively in certain areas of the kiln.

In the 24th and 25th firings of the Oxford University Kilns anagama, the haikaburi effects often exhibited areas of matte grey-yellow. By inspecting the areas with haikaburi, it is possible to 'read' the direction the ash travelled as it landed on various positions on the pot. It is normally possible to decipher which side of the pot was facing the firebox, or which pots had been shielded from the ash by another pot. Examining the pots from all sides, as was possible in the exhibition, allowed the possibility to consider how the ash must have been flowing in the kiln to land in the way that it did. Photos make that task slightly more difficult, but not impossible. By looking at the photos contained in this exhibition guide, you can attempt to examine how the ash must have been travelling inside the kiln to land and accumulate the way that it did. By so doing, you are playing the role of the potter, who must learn to read their kiln if they are to attempt to control the effects in future firings.



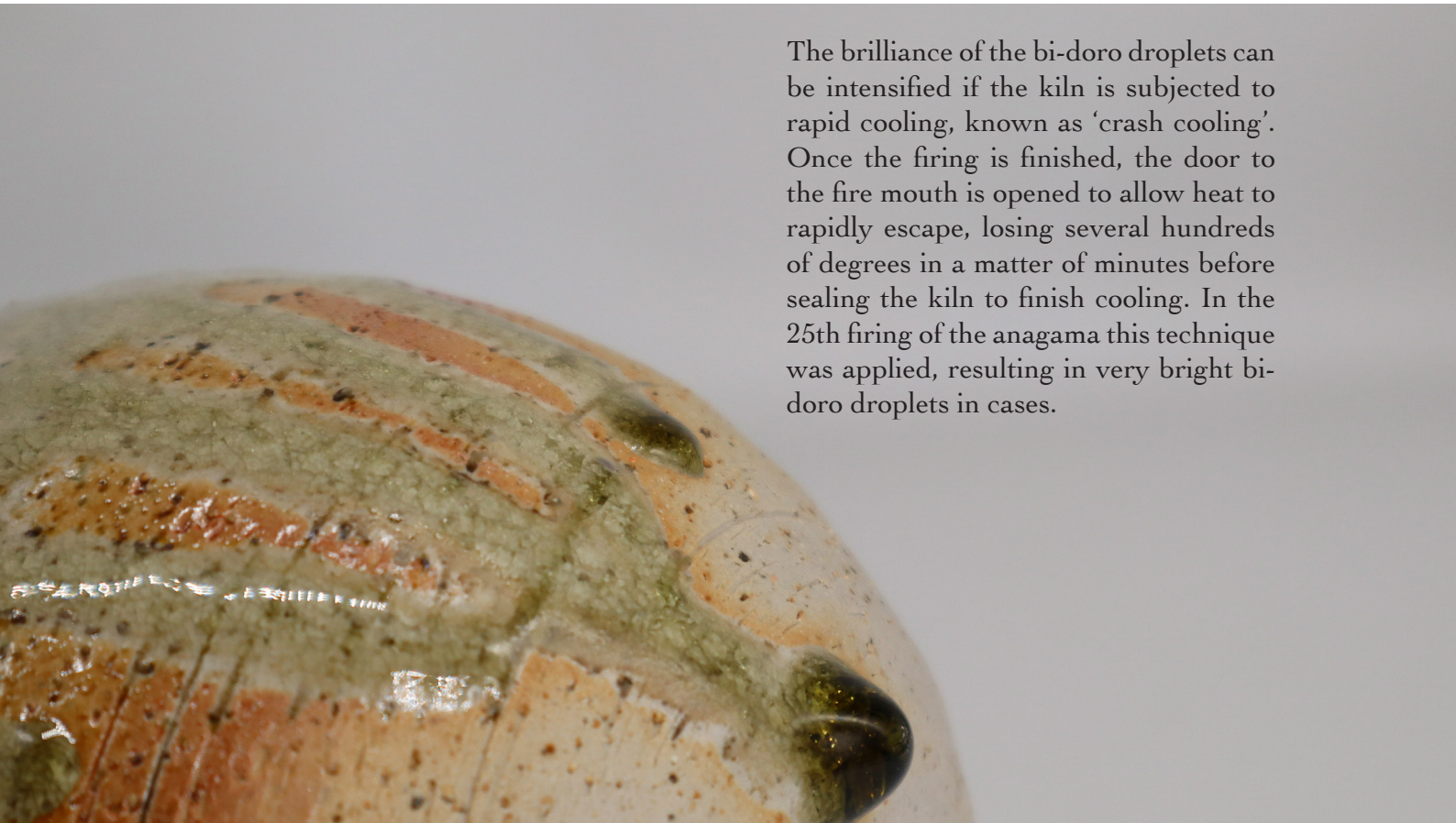
ビードロ

Bi-doro

Bi-doro is written using the Japanese language's script for words of foreign origin, katakana. In this case, the foreign word which is the origin of bi-doro is the Portuguese word for glass: 'vidro'. Bi-doro refers to the streams of shizen-yuu which have run down the side of a pot and terminate in a shiny bead of glass-like droplets.

Bi-doro can run large distances across the surface of a pot, and so sometimes appear in areas that otherwise exhibit little to no ashing. Likewise, due to their ability to run long distances, bi-doro can cause difficulties if they run off the pot and adhere to the kiln itself. This is one of the reasons that before pots are loaded in to an anagama, they are placed on wadding. There are numerous ways you can wad a pot for wood firing. In the 24th and 25th firings, a compound of silica sand and fire clay was used which is highly refractory but breaks away easily from the pot once fired, though not always. In some cases, wadding must be removed using power tools with the risk of damaging the pot. Shells can also be used, for both aesthetic and practical reasons: shells are made from calcium compounds which will become calcined from the extreme heat of the firing. Once calcined, shells that are exposed to moist air will simply crumble away in to dust, making removing wadding clean and practical.

The glassy droplets of bi-doro can contain incredible depth, at times showing characteristics of opals or other precious stones, where the build up of ash has taken place over a long period of time and there are layers of mature molten ash piled on top of itself. At times, a bi-doro drip may look out of place on a pot, and so a well balanced, well positioned droplet of bi-doro is a very desirable effect, but one which the potter has only limited control over.



The brilliance of the bi-doro droplets can be intensified if the kiln is subjected to rapid cooling, known as 'crash cooling'. Once the firing is finished, the door to the fire mouth is opened to allow heat to rapidly escape, losing several hundreds of degrees in a matter of minutes before sealing the kiln to finish cooling. In the 25th firing of the anagama this technique was applied, resulting in very bright bi-doro droplets in cases.

火色
Hi-iro

Hi-iro, literally 'fire colour' is often referred to with the romantic rendering 'flame painting' in English. The effect refers to the changes in colour visible on the clay body in areas where the flame has passed by or come into contact with the pot. The areas often exhibit dramatic movement and colour changes, especially on lighter coloured clay bodies. Pots that the potter intends to exhibit hi-iro effects often need to be protected from accumulating ash, as any that lands on the pot will cover the subtle changes in colour caused by interaction between the clay body and the flame.

In a small kiln such as the test kiln at the Oxford University Kilns, in which all of the pots in this exhibition were fired, the positions in which hi-iro are attainable are limited as the ash is condensed in a relatively small chamber.

焦げ
Koge

In an anagama, the firebox is not architecturally separated from the loading chamber. The practical implications of this is that some pots will be placed very close to, or in some cases even inside, the firebox. In that position, koge effects can be achieved. The term koge can be translated as 'burnt' or 'charred', and pots with this effect characteristically display areas with dark charcoal qualities. The reason for this is that as the kiln is fired, and more wood is placed in the kiln, a pile of embers slowly begins to accumulate inside the firebox. This ember pile will begin to cover the pots placed inside or next to the firebox; entirely covering all or part of the pot. In the case of pots that are covered only partially, areas of koge can be seen on the lower half of the pot, with the interplay of other effects visible on the half that was not buried in the ember pile.

Counterintuitively, the temperature of the section of the pot buried inside the ember pile is in fact lower than the unburied portion of the pot. It may be natural to suppose that the ember pile and the source of heat is the hottest area of the kiln, and that is true for the early stages of firing. However, in the later stages of the firing, a critical mass of heat being re-radiated from the pots inside the kiln causes the overall kiln temperature to rise. This same phenomenon is responsible for the gradual closing of the gap in temperature between the front and back of the kiln, with the result that (in a successful firing) all pots in the kiln are fired to maturity at their top temperature.

引出
Hikidashi

Hikidashi is the name given to a technique whereby a piece is removed from the kiln at a very high temperature, somewhere between 1000°c and 1280°c and subjected to rapid cooling. The technique requires planning as the pot that you intend to remove in this way must be placed near an opening of the kiln, to make it possible to reach it when the kiln is incredibly hot. This can either be done by opening the firebox itself, or by opening one of the side stoking holes. An iron rod is placed inside he kiln and used to pull out a red-hot pot.

Once removed, the potter has several options that each affect the decorative results on the hikidashi pot: sometimes, water is placed inside the pot which will immediately begin to boil, in other cases the pot is dunked into sawdust or allowed to air cool naturally.

Presented here is one of Amanda Chambers' pots from the series 'Tane' (seed). This was hooked out of the kiln when it was reading around 1100 on the pyrometers and placed inside a bucket of sawdust, which immediately combusted upon contact with the red-hot pot. The result was that the red iron oxide in the clay converted to black iron oxide, which is why these pots are known as 引き出し黒 hikidashi-guro: lit. 'black pots that have been pulled out'. Sometimes, hikidashi-guro is used to describe pots that have a jet black glaze applied to them, perhaps in reference to their visual similarity to hikidashi pots. The metallic blackness gives an otherworldly presence to the hikidashi pot, and presents a sharp contrast to the earthy reds of the other sculptures

窯変

Yōhen

Literally 'kiln change', yōhen captures the most ethereal category of pots that can be achieved in an anagama. It refers to times when unexpected changes have taken place in the kiln; which could be changes in colour, texture or both. These unexpected changes can occur when ash has melted to an intermediate point between shizen-yuu and haikaburi, resulting in unique or unexpected characteristics. Or perhaps, the placement of an adjacent pot redirects the flame flow inside the kiln, causing unique and unexpected colours. Given their unexpected nature, these pots are arguably the most difficult to reproduce, and yet yōhen pots often display some of the most interesting combinations of effects caused by the interplay of ash, ember and flame.

In a literal sense, a lot of 'unexpected' changes took place with the work fired for ASH, EMBER, FLAME: a Japanese Kiln in Oxford. In part, this was because of the nature of the project itself. The participants, most of whom had never used a wood-fired kiln, produced work not knowing what to expect and as such every pot was 'unexpected'. However, that alone does not qualify them as yōhen. Likewise, the decisions on where to place the pots was made by the volunteers on the firing team. So in that way, it is only in a loose sense that any of the results were 'expected' at all. There was a gap in the information between the intentions of the artists, and the intentions of those firing the kiln, and as such the pots that were exhibited represented a unique collaborative effort that is rarely seen in the firing of anagama kilns, which are usually fired by the small number of artists with work in the kiln. The result of this approach to the firing was that an element of randomness was introduced, which accounts for the extreme variety that was seen across the pots that were on display as part of the exhibition, a representation of which has been captured in this guide.

History of Oxford University Kilns

The kilns site at Oxford was conceived in 2014 by its founding Director, the anthropologist Dr Robin Wilson of Keble College, Oxford. By stages the Kilns Project emerged from a collaboration with the retired former-Director of the British artisan pottery at Whichford, and the 5th Living National Treasure of Bizen, Okayama Prefecture, ISEZAKI Jun, who was the first Project Patron. Sir Christopher Ball, former Warden of Keble College became the Honorary President, and two full-sized single-chambered anagama kilns were built along Japanese lines for the purpose of wood-firing ceramics.

The largest kiln was built with bricks imported from Bizen for the purpose and constructed by the Bizen kiln-builder TAKIKAWA Takuma to the exact dimensions of his own anagama. The second kiln was built to traditional dimensions on a ground plan determined by fieldwork at the long-ruined Muromachi Era kilns in the hills above Bizen by a team of local Oxfordshire volunteers who were mostly potters.

Having fired the two large kilns successfully, the project experienced a surprisingly large institutional and public demand for more firings and for more opportunities from within and without the University to participate.

To accommodate this, and because Oxford University has a desire to promote a broad engagement with research and to encourage outreach and training opportunities, a third, much smaller test kiln was built using a grant from the Daiwa Foundation combined with public donations and support in kind from the University of Oxford. The third kiln was used to fire the pots for this exhibition, and was also built by TAKIKAWA Takuma who returned to Oxford in October 2017 as Artist-in-Residence.

Being smaller than the other two anagama at Oxford, the test kiln exhibits all the characteristics of process and product associated with the larger kilns but takes less time, resources, and finances to fire. The test kiln also enables more regularly firings, and the ability to train more teams, so more people can be included than the larger kilns which rely more heavily on a single firing leader and less on the skills of the team. The two large kilns remain in use, and funding is currently being sought to fire one of the two large anagama in 2022 with a combined international group.

BISILA NOHA, 2021
haikaburi, shizen-yuu
24th firing

ELIZABETH JACKSON, 2021
haikaburi
24th firing

EMMA BOWEN, 2021
koge
25th firing

EMILY STAPLETON, 2021
haikaburi, shizen-yuu
24th firing

MATTHEW WINGROVE, 2021
hi-iro
24th firing

JESSICA ADAMS, 2021
koge
24th firing

ERVIN CIRIKOVIC, 2021
shizen-yuu
25th firing

HARRIET COLERIDGE, 2021
applied shino glaze, shizen-yuu, koge, hi-iro
25th firing

Credits
Firing team over the 24th and 25th Firings

FIRING LEADER:
Dr Robin Wilson (Director, Oxford University Kilns & Institute of Social & Cultural Anthropology, University of Oxford)

Supported by:
Joseph Bull (Ashglazed Ceramics, Wootton Pottery, Oxfordshire)

FIRING TEAM
Roua Ali (student, Camberwell, University of the Arts, London)
Deon Bailey (Sundragon Community Pottery)
Becky Belcher (Community Leader, Sundragon Community Pottery, Birmingham)
Sharon Bertram (Lecturer & Outreach Coordinator, Camberwell, University of the Arts, London)
Rafael Borja (Ceramics Tutor & Technician, City of Oxford College)
Harriet Coleridge (Ewelme Pottery, Oxfordshire)
Brigit Connolly (Royal College of Art and City Lit)
Rosie Fairfax-Cholmeley (The Wytham Studio, University of Oxford)
Callum Forbes (Embassy of Japan, cpf_ceramics)
Austin Gannon (Sundragon Community Pottery, Birmingham)
Jim Gladwin (Lecturer, and Head of Ceramics, City Lit)
Nessa Grimes (Fireformed and ceramics teacher, Birmingham)
Ali Hewson (Ali Hewson Studio, Norfolk)
Annie Hudson (Oxford University Kilns)
Graeme Hughes (Ceramics & Print Tutor, Ruskin School of Fine Art)
Rachel Kurdynowska (Easton Pottery, Norfolk)
Tanya Lee (student, Archaeology Department, University of Oxford)
Melody Li (student, Archaeology Department, University of Oxford)
Amanda Millis (PhD
Ethan Powell (Ceramics Technician, St Edward's School)
Yu Qianhui (Animation & Illustration)

Participating potters

Aaron Angell Troy Town Pottery
Akiko Hirai
Akiko Matsuda
Ali Hewson
Amanda Chambers
Amanda Millis
Annie Hudson Oxford University Kilns
Antonio Fois Culford Studio
Austin Gannon Sundragon
Becky Belcher Sundragon
Ben Sutton
Bisila Noha Culford Studio
Brigit Pohl Clay College
Callum Forbes Embassy of Japan
Carrie Leech City Lit
Caroline Burstein Sundragon
Charles Horsfield City Lit
Ceri Eilliston
Charlotte Kluge Clay College
Claude Aussage Terra Incognita
Clare Ruck City Lit
Clover Lee Wimbledon Art Studios
Dean Hollowood City Lit
Deon Bailey Sundragon
Ed Hill
Edward Davies
Elin Hughes
Elizabeth Jackson Culford Studio
Ella Porter Culford Studio
Ellie Thomason Clay College
Emily Stapleton Culford Studio
Emma Bowen Sundragon
Erika Mikazuki
Ervin Cirikovic Clay College
Ethan Powell
Eugene Chung Culford Studio
Fiona Gould City Lit
Fran Savage Clay College
Francis Lloyd Jones
Graeme Hughes The Ruskin School of Art
Guy Jenkins City Lit
Hamish Symonds
Harriet Coleridge Ewelme Pottery
Iain Shield Shield Studio Pottery
Jack Hewetson Wimbledon Art Studios
Kira Catani Clay College
Jessica Adams Sundragon
Jessica Mason Clay College
Jim Gladwin City Lit, Department of Ceramics
Jose Carvalho
Joseph Bull
Joseph Gabriel Culford Studio
Julie Zeldin City Lit
Kamlesh Patel Sundragon
Kat Henkel Sundragon
Katherine Hess Sundragon
Katie Robbins Sundragon
Kirsty Andrew City Lit
Lisa Hammond
Malcolm Dickson City Lit
Manon Valés
Matthew Wingrove Sundragon
Michaella Smart
Mudgang Pottery Members
Nata Kasprzycka Clay College
Natalie Edwards
Natalie Smith
Ned Davies
Neil Hotchin Sundragon
Nessa Grimes Fire Formed
Parminder Sambhi Sundragon
Peter Sparrey
Raby Alfadi City Lit
Rachel Kurdynowska
Rafael Borja City of Oxford College, Ceramics
Robin Walden
Robin Wilson Oxford University Kilns
Roots and Shoots
Roua Ali Camberwell School of Art
Parminder Sambhi Sundragon
Sara Howard
Sharon Bertram Camberwell School of Art
Sue Jupp City Lit
Sylvie Joly Handmade in Chiswick
Tabatha Bailey Sundragon
Tana West Culford Studio
Tabitha Weddell Mudgang Pottery
TORCH:
School Workshop in Oxford
Will Kew Sundraon
Yoshie Prideux Handmade in Chiswick
Zahed Taj-Eddin Culford Studio