National College Of Art & Design

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Ceramics

Alternative Firing, A Metaphor For Change

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Introduction

Experimentation with the firing of ceramic work has increased in recent decades. This is a symptom of the change in the nature of ceramic production, its new- found status as an expressive sculptural medium and a reaction against the impersonal aesthetic of industrially produced objects.

Ceramic artists are rediscovering the magic of transforming clay into ceramic...not unlike our prehistoric ancestors by re-learning to achieve much from very little. Sawdust firing, pit-firing, bonfire firing for example are all relatively basic technologies which allow a high degree of improvisation and control in the firing process. This ultimately gives more satisfaction as a result of personal involvement in each stage of the realisation of a ceramic object.

I am using the phrase 'alternative firing' as a blanket term for the new developments in ceramic firing technology. In this I refer to works which have involved processes that differ from the normal use of a kiln for bisque and glaze firing. Other terms in use in current literature such as 'smoke firing' or sawdust firing' do not cover the full extent of the genre referring only to specific techniques. Perryman (1995) uses the term 'primitive firing', which she explains does not imply coarse or unrefined. There is a difficulty with using this term as it refers to the traditional work of developing countries and implies that their technology is inferior to ours. Their working methods have been sustained for generations as it has satisfied their needs and should be respected as such. 'Primitive firing' also implies that our current alternative firing is replicating traditional work of developing countries. Perryman discusses 'primitive firing' in the historical context of ancient societies. While alternative firing may use the work of ancient societies as a reference it has not been the reason for its existence. This thesis proposes to place alternative firing within the more relevant historical contexts of the status and development of clay as a medium for pottery, and later sculpture, during the last two centuries.

How and when did a craft medium change its course and begin to re-define itself in a new way, as sculpture and with different firing skills? Karin Hessinberg, in her book *Sawdust Firing* (1994), suggests 1960s U.S.A. as the origins of sawdust firing. I would

like to propose that the evolution began sometime before this in England in the socialist writings of William Morris (1834-1896) which was a reaction against the destruction of traditional craft by the increasingly industrialised and urbanised society. Morris and others promoted a return to handcraft, which caused a regeneration of traditional skills and inspired the beginnings of the Studio Pottery movement. One of the stronger voices in this movement was Bernard Leach (1887-1979) who brought his knowledge of Japanese, Chinese and English traditions in pottery together in his influential *A Potter's Book* (1940). This text was an effort to promote appreciation of historical models to inspire standards in new ceramic work. Leach made eclecticism from other cultures a resource not just for surface pattern but for spiritual and conceptual inspiration. The regard for ceramics in Japan and their partnering of Zen Buddhism with the creative process was a catalyst for the new wave expressionism in American ceramics in the 1950s and 1960s. This expressionism challenged previous conceptions of the nature, purpose and finish of ceramic work. By the 1970s, galleries in England were exhibiting sawdust-fired work and journals such as *Ceramic Review* regularly publish items on ceramists' experiences with 'alternative' firing techniques.

In our position at the end of the twentieth century we have seen a rapid evolution in the nature of sculptural art away from the object and towards a more philosophical approach to the expression of ideas and concepts. Ceramic sculpture, if it is to be respected as a valid form of sculpture by the contemporary art world needs to be strong in exemplifying its power for expressing ideas through objectifying them skilfully with this versatile craft based medium.

Alternative firing techniques, which have little or no need for costly equipment or a high degree of expertise are an invaluable introduction to the nature of natural materials and processes for primary and secondary school students. It encourages their ability to control and experiment with them in a creative and intuitive way.

Much of the current literature on alternative firing has been organised by virtue of the techniques involved, smoke firing, sawdust firing, raku etc. Perryman states her criterion for inclusion in her book on sawdust firing as, "pots whose surface has been turned either fully or partly black through this process of reduction" (Perryman, 1995, p.6)

This thesis instead, proposes to situate alternative firing within a context for the purposes of understanding it's current use, its origins, and future potential. Chapter one discusses the reasons why contemporary ceramists are using alternative firing and this is illustrated with a selection of representative work. In chapters two and three I will analyse the contributory effects of the Arts and Crafts movement and the Studio Pottery movement on the subsequent development of clay as a medium for sculpture, in 1950s America. Chapter three will also look at the work of the American ceramists, Peter Voulkos and Paul Soldner, and how their work affected the development of alternative firing, while also being the foundation for contemporary ceramic sculpture. The final chapter discusses the future of alternative firing, how it has benefited by the contemporary modes of ideas transmission of ceramic festivals such as the biennial International Potter's Festival in Aberystwyth, Wales. Finally I will propose alternative firing as a resource for education in schools and third level institutions which will stimulate creativity in students, while being inexpensive with negligible fuel or equipment costs.

Alternative firing has yet to be developed in Ireland. In the last year there has been some sawdust fired work exhibited at The Bridge Gallery, The Crafts Council gallery, and The Cill Rialaig Gallery (all in Dublin). These ceramists are only beginning to use these techniques and lack the sophistication or assurance, which comes with time, practice and knowledge. I have therefore looked to ceramists from outside Ireland and from a variety of nationalities, to show the full potential of the techniques of alternative firing.

Chapter One

The craft of ceramics has evolved at a fast pace with the continuing emergence of ceramic sculpture in the 1990s. Peter Dormer has described it as a 'young art ' which, has yet to establish its values and criteria (Dormer, 1994, p.200). It's quite clear what it is not though- ceramists have been freed from the expectation to make objects that are functional (in the domestic sense), permanent or even familiar. With new sculptural aims, ceramists are rediscovering the potentials of the medium for self-expression, tactile qualities and its ability to make statements. Freedom from the functional also means freedom from the technical baggage of high-fired dishwasher proof glazes. Experimentation is exciting and contagious and pyromaniac ceramists are having fun with firing. They have stripped down to very basic equipment and have achieved some spectacular results.

Alternative firing is both an attitude and an aesthetic. Ceramic artists strive to promote the unexpected random markings of the firing process on their work while exercising a degree of very personal hands-on control over the process. It is understandable that ceramic artists who work in such a tactile way would want to carry this through in the finishing process. A high fired piece goes into an unimaginable heat, up to 1260 Celsius, which is alien to human experience. In contrast sawdust firing, pit firing, bonfire firing and raku all involve direct participation and handling of the work through all stages to determine the finished look.

The aesthetic look of a ceramic work, which has been through any of the above processes, is the major driving force behind its maker's choice of firing technique. This 'look' is a quality of finish, which enhances, rather than interferes with the clay, its composition and how it has been handled. The serendipitous effects of the firings are encouraged and after much trial and error, situations can be orchestrated to give sought after results. The palette is as endless as nature's palette. The beauty of the markings and colours is that they are in harmony with the organic clay material, bonding intuitively with each other like a rock formation, a landscape or skyscape.

The desire to use alternative firing is in part a reaction against the homogeneity of mass-produced objects. "To be a common thing in a common space is not an expression" (Giacometti quoted in Houston, 1991, p.20) Mass produced objects may exemplify the

ideals of their designers, but can never show the 'hand' of the factory employee who made them. These objects satisfy the functional needs of the consumer, so it is not necessary to use a hand thrown cup, it is just more expensive to buy one. Therefore objects produced by hand are satisfying something else other than merely function. Hand made ceramic continues to be invested with metaphoric meanings, its obvious connection with the elements suggests "Nature humanised: matter bearing witness to its own transformation by means of a thousand tiny fingerprints" (Houston, 1991, p.12)

To some, it is also a sign of status and purchasing power to be able to afford hand-made utilitarian objects, and doing so makes a statement by identifying with the craft and its associated lifestyle choices. There is also an idea that hand-made objects are intrinsically better than mass produced ones. This stems from the ideals of the anti-industrialists in the 19th century -Pugin, Ruskin and Morris- who felt that the joy of the worker happily creating hand made pieces, is evident in the results and therefore more satisfying for the consumers. It is true that a lot more love, care and energy have gone into their manufacture and each successful piece carries the personality of its maker.

It is this individuality that ceramic artists want to capture in their work by taking it through a character building firing. Pieces which have been through alternative firing methods are very much 'one-offs'. In fact the same result can never be achieved twice. People really cherish individual pieces, each one like a different person with its own character. In a world where identical produce is for sale in every country, adventure is killed by sameness. This accentuates the preciousness of work that is a testament to the time spent by the maker. For us, time is equated with money, embodying latent production potential. Few people are willing to invest time into learning a craft skill which will not have the same financial rewards as other professions. We are taught that successful people are wealthy people. Learning a craft skill is far richer in rewards that the uninitiated can see. It's a lifestyle decision in which you follow the rhythms of the material, a symbiotic relationship which brings you through an unending journey of discovery. The serendipitous results of alternative firings are a rich part of this relationship, it allows makers to become closer to the medium and the elemental processes involved. It provides a deeper understanding of the materials and their potential. It is a constant working challenge, a partnership with the clay and fire.

Jane Perryman in her book *Smoke Fired Pottery*, 1995, suggests that the development of alternative firing has occurred partly in reaction against the increasing sophistication surrounding kiln technology. I disagree, as people involved in craft have an aptitude for, and a desire to learn skills. The development of kiln/ceramic technology does not happen in a vacuum.

Technology has been thought to take skills and control away from individuals, which is in conflict with the power which crafts people possess over their work by virtue of their skill. (Dormer, 1997, p.102) Reasserting control over technology means understanding how it works, using it as a medium by pushing its strengths and exploring its weaknesses. This is the root of many ceramists obsession with technical information. It is their desire to understand all that could influence their work. Alternative firing, in fact shows an increased interest in process and a more interactive relationship with technology at its purest and most fundamental.

Alternative firing is an option often used by ceramists who dislike glazing. Glazing involves literally covering the clay surface with a layer of glass, which can hide the true clay texture. Technically, glazes are very difficult to formulate and can lead to heartache as losses are high especially with larger pieces. They involve a lot of preparation in a laboratory-type situation, and are expensive and a hazard to health in their dry state.

Once glazes were adopted in Europe, leaving a work deliberately unglazed was not an option until the middle of this century. Clay was synonymous with function and a glaze made your work incredibly strong and waterproof. At another level the difficulty of glazing was seen as a real tour-de-force of a skilled craftsman. But this century clay changed hands from the craftsman to the ceramic artist and function was no longer the issue. Clay as a language was now the preoccupation, and, learning to speak the language of clay revealed a subtlety and expressive quality that would be smothered by a glaze.

Gabrielle Koch uses sawdust-firing techniques with her smooth round coil built forms. She burnishes her pots with oxide-coloured slips and after a bisque firing, smokes them in a metal dustbin or oil drum. (see Hessinberg 1994, p20 for more detailed information on Koch's techniques). The result combines both the tactile warmth of burnished clay and the visual warmth of her smoked slips, a reference to the direct contact between clay and burning fuel (plate 1).

Certain forms are more suited to sawdust firing, the most responsive to good smoke markings being round, burnished forms. The New Zealand ceramist Ray Rogers saw pit firing at a low fire happening in California in 1980 and was the first to introduce the technique to New Zealand and Australia. Rogers uses coral and mushroom forms to inspire his thrown pieces so he felt that pit firing would suit his work (plate 2). "Each piece has been resolved in order to retain harmony with the vagaries of fire" (Aberystwyth Arts Centre catalogue, 1997, p.15).

Rogers, at his home in Sydney, has excavated a large pit (6 metres long, 1.5m wide, 1.5m deep), and places his work on a bed of sawdust using copper carbonate, salt and seaweed to flash the pieces with a range of natural colours. Wood is piled in above the work to the mouth of the pit and the wood set alight. The pit opening is then covered over with corrugated metal sheets and left to fire for four hours and twenty-four hours to cool. (see Perryman, 1995, p.60-62, for step by step guide to Rogers's pit firing) If a piece is not successful it can be bisque fired to burn out the carbon markings and then pit fired again. Even though some of his pots are quite large, Rogers' fires several months work at a time, which could be up to two hundred pots.

Australian potter Barry Hayes began pit firing in "a reaction against the tedium of glazing" (Hayes, 1989, p.31) and because the work sold well he was able to continue with an average of one hundred firings each year, which is extremely intensive. Hayes's pit is similar in style to that of Ray Rogers though much smaller. His work has taken its inspiration from African, New Guinea and Chinese pots, which are simple and the forms have evolved to suit pit firing (plate 3). He holds the view that "there is a strong tradition in pottery, an unbroken chain that links us to the earliest potters. Pots that are made today, although influenced by the past, will influence pots of the future." (Hayes quoted in Perryman, 1995, p.65)

It is revealing to look at potters in developing countries for their technical expertise in firing which has survived through many generations. Learning about their methods throws light on our own prehistoric ancestors. Ian Barber from Dublin has studied the Bronze Age pottery of Ireland and makes replicas for the National Museum gift shop. Bronze Age potters probably used a type of pit kiln and Barber has reconstructed the firing process by lining the pit with a platform of wooden logs covered with branches.

(O Dulaing, 1992, pp.11-12) The pots were laid in next and covered with flat pieces of clay to protect them. The fire was started using branches and straw. The clay, which had been dug close to the site, was a deep red colour after the firing. While the above firing was an archaeological reconstruction; for his museum 'replicas', Barber needs to raku fire, as pots which are completely black, are more saleable in the museum context. (Interview with Barber, 21 / 9 / 97) Barber has noticed that consumers who are not familiar with the varied surface of a pit fired pot seem to consider lighter coloured areas as a blemish. (It shows the area caught between oxidation and reducing fuel. See the work of John Leach in Hessinberg, 1994, p.57)

Traditionally potters needed to create a hot fire to vitrify the clay for use, but today the experimental firing, which is mainly decorative, takes place at low temperatures after the work has been bisqued in a modern gas or electric kiln. Some ceramists are combining the two by creating a controlled atmosphere within a gas or wood-firing kiln. The French ceramic artist Pierre Bayle makes stunning work by combining elements from different traditions. As he could not afford a high firing gas kiln, Bayle began by experimenting with wood firing. With a dislike for glazes, he said "minerals leave me cold- for that reason I never make glazes. Glass cuts, it is rigid. It lacks life. I never managed to be moved by it despite its icy beauty" (Perryman, 1995, p.6). He found a solution by looking instead to Greek black and red pottery and then developed his own version of their terra sigillata (meaning sealed earth), which is a levigated iron-rich slip. He applies it very thinly in solution with sodium carbonate, which acts as a flux. Bayle first fires the work in oxidation to 1000 celsius in the wood kiln followed by a reduction firing with combustibles such as sawdust, roots and pine needles. Reduction firing brings out a startling range of colours in terra sigillata, which is enhanced by the wood-burning atmosphere (plate 4).

In Eastern countries individual pieces are sealed in ceramic boxes called saggars to protect them from flame damage in the kiln. These saggars can provide very interesting controlled spaces within a kiln. The American ceramist Ruth Allan fires her porcelain pieces with volatile materials in a saggar to produce semi-controlled effects. (See Hessinberg, 1994, p.49-50 for diagram) The saggar is constructed from bricks and stiff kiln wash. She uses metals, copper carbonate, salt (1.5kg per firing), wire, steel wool, masking tape and sawdust to achieve the rich variety of surface. The saggar is fired to 875 celsius in a gas kiln, a lower temperature than the normal 950 celsius bisque (plate 5).

(Electric kilns cannot be used to contain salts as they damage the elements.) In my own experience aluminium (kitchen) foil can also be used to contain work with combustibles.

Sebastian Blackie of West Surrey College of Art and Design, England has successfully fired clay by constructing a disposable kiln from paper and wood. He has written that he "wanted to develop a viable way, in our largely urban environment, for more of us to experience the drama of firing without the dependency on complex and costly technology"(Blackie, 1991, p.13).

Shiny magazine paper has a high clay content (china clay), and is resilient in a firing. Blackie built up a mound of wood around the raw clay pieces and coated the outside with ten layers of slip dipped paper. The whole construction was built on a flat metal frame that was lowered gradually onto a fire to prevent thermal shock to the clay. The firing could last several hours depending on the volume of wood and he estimates that a temperature of 900 celsius is normal and that 1260 celsius would be possible if there was more fuel. At a time when recycling needs to become a reality this offers some great potential for harnessing our household waste to provide free and effective fuel. As with all types of alternative firing, the entire contents of the compost heap can be used to fuel the firings or colour the work. With reference to his paper kiln Blackie is "convinced that this...has tremendous potential not least as a tool to fire the imagination!" (Blackie, 1989, p.34).

Plate 1. Gabrielle Koch, *Wide-mouth pot*, diameter 48cm. Coiled T-material with burnished iron terra sigillata slips, bisqued and smoke fired in sawdust. (Koch, 1995)

Plate 2. Ray Rogers, *Two vessels*. Wheel thrown, lightly burnished, bisqued and then pit fired with seaweed, salt, copper carbonate and sawdust. (Aberystwyth Arts Centre, 1997, cover illust.)

Plate 3. Barry Hayes, *Pit fired vessel* with salt fumed colours. (Hessinberg, 1994, p.46)

Plate 4. Pierre Bayle, *Bouquet of Poppy Seed-head*. Thrown and hand built, terra sigillata slip and wood fired. (Hessinberg, 1994, p.42)

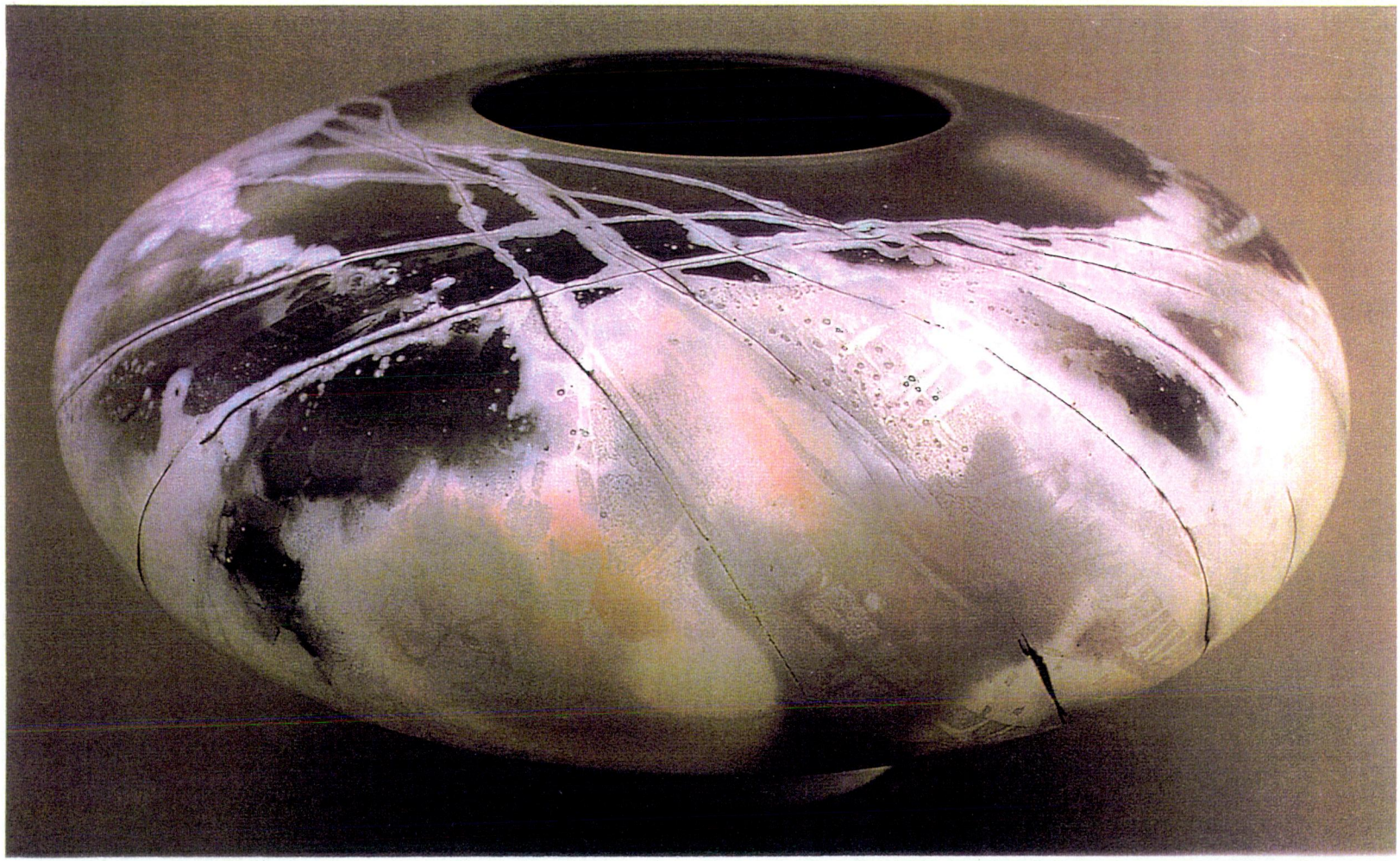

Plate 5. Ruth Allan, *Bound Earth*, width 42cm. Thrown and gas fired in a saggar with volatile materials. (Hessinberg, 1994, p.48)

Chapter two

What made a traditional craft change its course from being the raw material for domestic ware to a medium for sculptural expression? The history of ceramic has never been completely static in Europe. Clay had been regarded as a common material and a poor relation to silver tableware, until Josiah Wedgwood in the 18th century increased its status by making it fashionable to own ceramic ware and decorative urns. He used clay to imitate the finish of other more expensive materials, such as marble, and promoted the trend for neo-classical designs and motifs in interior design. Wedgwood is usually regarded as the highpoint of industrial ware production in the 18th century. The demand for status symbol pieces grew. The middle classes desired to emulate their wealthy counterparts, which led to an increase in factory-produced ceramic wares. These were differentiated by their applied decoration rather than by their form.

Throughout the nineteenth century with cost and efficiency as the ruling factors in mass-production the standard of design and the quality of materials fell. Division of labour was more efficient but took the skill to realise finished pieces away from the worker- the change from craftsman to a mere cog in the system. In the words of John Ruskin;
" Divided into mere segments of men- broken into small fragments and crumbs of life, so that all the little piece of intelligence that is left in a man is not enough to make a pin, or a nail, but exhausts itself in making the point of a pin or the head of a nail." (Quoted in Clarke, 1964, p.283)

Ruskin (1819-1900) was among the first in England to decry the monumental changes of the Industrial Revolution. He wrote influential texts such as *The Stones of Venice* (1853) and letters that were published in newspapers under the title *Fors Clavigera*, to the workmen and labourers of Great Britain (1871- 1884). In these he talks of a socialist ideal of communes of self-sufficient craftsmen. It is fitting that in England, the birthplace of the 'Industrial Revolution', there was a backlash against the machine, which took the form of a handcraft revival. Naylor writes that "the concern of the movement was not focussed exclusively on end products but on the society that shaped them". (Naylor, 1980, p.7) Ruskin declared that happiness should be gained from joy in labour, not from financial gain, and a real change in society would evolve if people demanded the "products and results of healthy and ennobling labour" (Clarke, 1964, p.283). Ruskin's radical ideas led to his founding of the Guild of St. George, a utopian guild which involved those who

wanted to reclaim land and live a simple life while contributing 10% of their income to the cause. Needless to say it was not too successful though it still exists in an altered format today.

Other writers who helped lay the foundations of the Arts and Crafts revival were the architect A.W.N. Pugin (1812-1852), who through his self-financed book entitled *Contrasts* (1834) used medieval and Gothic sources to illustrate his vision of ideal spiritual beauty. Henry Cole (1808-1882) actively promoted improvements in design through his formation of institutions, which later became the Victoria and Albert Museum and The Royal College of Art, London. He advocated the study of the best precedents to inspire new design of beauty and utility.

William Morris (1834-1896), the most well known figure associated with the Arts and Crafts movement was inspired by Ruskin while still at college in Oxford. On reading *On The Nature of Gothic,* a chapter in *The Stones of Venice*, he declared it to be "one of the very few necessary and inevitable utterances of the century" (Harrod, 1996, p.19). Morris made his career from designing furniture, textiles and interior furnishings which were initially realised by a group of family and friends. He emphasised Ruskin's idea of joy in labour and wrote his own somewhat poetic texts from a socialist viewpoint. Morris found the economics of Marx *'Das Kapital'* (1886, English translation) too weighty and complex and so advocated a simpler approach.

" The whole system is monstrous and intolerable, and what we socialists have got to do is to work together for its complete overthrow..there shall be no masters or slaves, but where everyone will live and work jollily together as neighbours and comrades for the equal good of all. That in a nutshell, is my political economy and my social democracy."
(W. Morris quoted in Marshall, 1979, p.251)

His interpretation of the 'evil machine' did not refer to the tools which he relied on to make his own work but the machine of the governing system. Morris, with his high personal ideals of beauty set himself and his artist/ designer friends up in a succession of work utopias. Red House, Bexley Heath, Kent (designed 1859, by Webb) was Morris's first home which was designed with a feeling for gothic architecture, the English vernacular tradition and fidelity to materials. The house was a romantic vision, a place to inspire artists in their work, and it led to his first company in 1861 at Red Lion Square, London. Later projects included the writing of an epic poem called *The Earthly Paradise*

and a move to Kelmscott Manor, Gloucestershire in 1871, which inspired a novel called *News From Nowhere.* The story is set in the future of 1952 after a revolution and the industrialised landscape has been replaced with a rural paradise, where work is pleasure and there is no money.

Good materials and hand-craft did not come cheaply and Morris found it difficult to reconcile his moral standpoint with the reality that his own produce could only be afforded by the 'swinish rich' as he called them. Morris calmed his conscience by believing that a revolution was necessary to rid England of capitalists. Only then would a new art develop. Arthur Ashbee commented that "we have made of a great social movement, a narrow and tiresome little aristocracy working with great skill for the very rich" (Naylor, 1980, p.9)

The divisions between craft, art and design were blurred in the Morris enterprise. Towards the end of the 19th century there was a positive change in attitude towards the status of craft objects. In 1887 Walter Crane (1845-1915), wrote a letter to Glasgow art students advising that "the sincere designer and craftsman with his invention and skill applied to the accessories of everyday life may do more to keep alive the sense of beauty than the greatest painter that ever lived."(Crane, quoted in Lambourne, 1980, p.91)

The furniture designer A.H. Mackmurdo (1851-1942) founded the Century Guild in 1882 to elevate the status of craftsmen to artist, and that pottery for example, should take its rightful place beside painting and sculpture. (Lambourne, 1980, p.40)

The mark of the hand became a concern of craft makers later in the century. Before the era of mass production a smooth finish would have been a testament to the hours spent finishing a piece. With the advent of moulds, a smooth surface was the easiest effect to achieve and the individuality of obviously hand made work was coveted once again.

W.A.S. Benson (a designer in metal) writing in a catalogue of The Arts and Crafts Society declared that "the more ordinary wares have all the life and feeling taken out of them by mechanical finish, an abrasive process being employed to remove every sign of tool marks. The all important surface is thus obliterated." (Benson, quoted in Lambourne, 1980, p.64)

Studio potteries, groups of craftspeople making functional pottery began to make an appearance around the turn of the century. The emphasis moved away from the division of labour towards each worker making individual pieces. The earliest indications of the Studio Pottery movement are found with the Martin Brothers who worked at Southall, Middlesex from 1877-1915. A family firm, the brothers made very individual ceramics, decorative vases with an eclectic mix of sources and imaginative animal-type grotesques.

The most significant figure for the development of the studio pottery movement was Bernard Leach. Perhaps it could be said that his writings and philosophy were more influential than his actual ceramic work. Trained initially as a fine artist at the Slade School of Art, London, he is very much in the Arts and Crafts heritage of the educated middle class person discovering a vocation in a craft genre. He was born in Hong Kong and had been in Japan as a child. After college, he had a desire to return to the East, particularly Japan to learn about Eastern art and the life behind it (as he had read in the books by Lafcadio Hearn). He left for Japan in 1909 with his printing press and the intention to teach etching. He was introduced to beneficial figures of the Japanese art world who became his close friends and aided his career (most notably Soetsu Yanagi, a founder of the craft revival, (Mingei), in Japan). Japan was very eager to access as much information as possible about Western art culture and so Leach as a teacher of a foreign print technique was welcomed with open arms. This soon became a two-way flow between Eastern and Western cultures, which Leach documented through a series of books, most notably his *A Potter's Book*, published in 1940 and *East Meets West*, 1978.

Leach was introduced to the medium of clay at a raku party in an artist friends house, Tokyo in 1911. The guests were invited to decorate pots, which were then dipped in a glaze and fired quickly for an hour in a muffle kiln (a protective box inside a kiln, which has been heated with charcoal). When the glaze had melted the red-hot pieces were removed from the kiln and dramatically cooled with the ringing sound of the contracting glaze. The quickness and immediacy of the process sparked off Leach's desire to study pottery with a Japanese teacher. The influence of Leach's description of Raku and his recommendation that it be used by "the artist, the craftsman and the school" (Leach, 1940, p.31) was a profound influence on the current phenomenon of alternative firing and will be discussed later.

Leach trained with the sixth generation of Kenzan potters, though not in the usual style of a Japanese apprenticeship which takes several years, as he only spent one year with Ogata Kenzan before setting up his own workshop.

After many years of travel, including China, Leach returned to England in 1920 with his potter friend Shoji Hamada to set up a pottery at St. Ives, a large artist's colony in Cornwall. There with the help of Tsuronosuke Matsubayashi (Kyoto kiln specialist), they built the first Japanese style, wood-fired, three-chambered climbing kiln in Britain. Their work was very much in the vein of studio pottery and aimed for the galleries in London and Japan.

The English were not accustomed to the Japanese aesthetic of truth to materials, where the properties of the materials are encouraged to speak for themselves. In Japanese ceramics the kiln is expressive also and plays an active role in decorating and character building. The early Leach works did not sell so well as they were such a stark contrast to the industrially produced finish which people had grown used to. Interestingly it was an American collector, Henry Bergen, who bought much of their experimental work and introduced them to other collectors. Bergen was fascinated with the wood firings and took part in the stoking and firing which could take up to 36 hours. (Whybrow, 1996, p.12)

Leach used the raku technique to advertise the pottery studio repeating his own experience of decorating firing and taking pieces home on the same day. While he did not use raku in a serious way with his own work it was none the less the beginnings of the dissemination of the technique.

Leach invited art students to become pottery apprentices, and, over the years accommodated some 100 students, initially from England and then from further afield. In teaching Leach wanted to encourage the individual voice of the student which contrasts with the Japanese idea of the unknown craftsman.

Somewhat in the mood of the Utopian commune, the Dartington venture, was set up in 1927 by Leonard and Dorothy Elmhirst. Influenced by the Indian poet Rabindranath Tagore they set out to use their wealth to provide a space for artists, crafts people, musicians and dancers living and working together in beautiful surroundings. Leach

quotes Tagore as advising that "the practical work of craftsmen must always be carried out in partnership with the divine spirit of madness - beauty - with the inspiration of some ideal perfection." (Leach, 1978, p.162)

Dartington also provided support for small craft enterprises. Leach identified to the Elmhirsts, the need for amalgamation of science, machinery, organisation, distribution and capital, which would not normally be there for a potter working in isolation. He suggested that this be fostered at Dartington to provide the future generations with "the knowledge of a century", which "could be gathered around the new craftsmen- the factory to him instead of him to the factory" (Leach, 1978, p.163)

Leach, spent two periods in his career teaching pottery there. He became a friend of the painter Mark Tobey, who introduced him to the teachings of a Persian Prophet, Baha'u'llah. The message of the Baha'i reinforced Leach's commitment to the interchange of ideas between East and West.

"A new life is, in this age, stirring within all the peoples of the earth.....the well being of mankind, its peace and security, are unattainable unless and until its unity is firmly established." Baha'u'llah (Leach, 1978, p.164)

Furthering this ideal of world unity a conference of pottery and textiles was held at Dartington, with one hundred and ten delegates from different countries. There were lectures, demonstrations, films and an exhibition of twenty-five years of English studio pottery, which subsequently toured Britain. The conference was successful and lead to an invitation to America for Leach, thus carrying the message of East and West fusion across the Atlantic.

Chapter three

In 1952 Hamada, Leach and Yanagi toured America. The three men together brought a strong message to the American ceramists, that of the partnership of craft, tradition and philosophy. Leach felt that the Americans lacked a pottery heritage with no standard to follow. After the journey his impressions were such that

> The new perception which came was a sense of thankfulness that I had been born in an old culture. For the first time I realised how much unconscious support it gives to the modern craftsman. The sap still flows from a tap- root deep in the soil of the past, guiding the sense of form, pattern and colour below the level of intellectualisation. Americans have the disadvantage of having many roots, but no tap- root, which is the equivalent of no root at all. For that reason Americans have a freedom of choice greater than ours, an openness and a more insatiable hunger. Two world wars have thrust upon her global authority and responsibility.
> (Leach, 1978, pp.237-241)

In fact this was to be the strong point of American ceramics. It was as a result of their lack of a historical heritage in ceramics which allowed them the freedom to make a fresh statement. Any borrowings from another culture are open to misinterpretation, which is not a bad thing, as it leads to new insight. This new insight came with the work of Peter Voulkos (b.1924) who revolutionised wheel thrown clay, freeing it from the constraints of tradition and function. Voulkos trained in ceramics in California and set up a studio where he made functional ware for a number of years. He met the Leach party in 1952 and brought Hamada on a drive through the mountains in winter so that he may do some watercolour sketches. Whilst painting, the water froze on the page and Hamada welcomed the effects, impressing Voulkos with his positive use of the accidental.
(Slivka, 1995, p.37)

Voulkos's work changed as he responded to the post of founder and director of the ceramics department at the Los Angeles County Art Institute (Otis) in 1954. Starting with nothing, Voulkos and his first student Paul Soldner (b.1921) improvised by designing and making the equipment. The fresh start allowed a freedom of work where the medium was challenged in a dynamic atmosphere. John Mason, a thrower and friend of Voulkos has

said of this time that Voulkos "was very conscious of the fact that he was teaching in an art school and of wanting to do something within that environment"(Slivka, 1995, p.42) He also makes the point that due to the industrialisation of ceramics much of the craft knowledge had been lost and that this was a period of rediscovery, though the aim was not to go back to a past but to position ceramics within the world of sculpture. (Slivka, 1995, p.41)

Voulkos looked to the contemporary abstract expressionist movement in painting and was familiar with the work of painters, Jackson Pollock, Willem de Kooning, Frans Kline, Clifford Still and Mark Rothko. Pollock's work is particularly relevant to Voulkos as both artists were concerned with process. The energy which an artist brings to their work is captured by the marks made by his/her physical movements. Pollock worked on a large scale, laying the canvas on the ground so that he could be literally in the work. He called his work 'action painting', the rhythmic spattering of paint preserving a woven pattern of the painter's movement. Voulkos excelled at wheel thrown clay, which is in itself a very physically involving technique. In the tradition of pottery the clay was tamed on the wheel by the potters technique. Voulkos entered into a partnership with the material, encouraging its natural reactions, listening and learning to the way it behaves at different working stages. His work was gestural, about the clay and the marks that could be made on it. Voulkos instinctively preferred to work on a large scale, defying previous notions of the limitations of the pottery wheel. To work on the scale of your own body allows a physical intimacy. The painter, Rothko, said of his large canvasses, "I want to be very intimate and human. To paint a small picture is to place yourself outside your experience-However, you paint the larger picture, you are in it." (Hughes, 1980, p.320).

Voulkos, who had the ability to throw considerable amounts of clay, began to join large elements together reaching seven feet in height with the monumental piece Gallas Rock, 1960 (Plate 6). The piece consists of one hundred thrown elements and is two tonnes in weight. Gallas Rock, with its severed ends of cylinders and loosely paddled box forms is reminiscent of some decaying machinery, a strangely beautiful ghost with rock like permanence.

Voulkos treated the surfaces of his work in a painterly way. He worked with them as a three dimensional canvas, using brush strokes of slip, oxides and paint to exaggerate or conflict with the planes. Throughout his career a consistent theme has been a reworking

of a plate like form which he uses as a surface for drawing into the clay, incising, cracking, punching holes, experimenting (Plate7). Jim Melchert wrote in *Craft Horizons* magazine, 1968, "They're purely hand products. There is a casualness about them, even an abandon, that's transparent to the spirit behind them. To me, the beauties are the plates. They seem the most transparent and consequently the toughest."(Slivka, 1995, p.55)

Much of the spirit behind Voulkos work came from his interest in Zen philosophy. Voulkos had learnt something of it from Hamada who illustrated along with Leach the relationship between Zen and pottery in Japanese ceramics. The ideals of Zen have stimulated much of the development of alternative firing though this association is not acknowledged much now as Zen theory is well known and used in western ceramic culture.

Zen is a form of Buddhism, which originated in India, spread to China in the second century and to Japan in the sixth. As it moved it fused with native religions and took on a distinctive character. In Japan Zen became 'one' with the arts and crafts and dictated the taste and aesthetics. The object of Zen is to reach an awareness of the true self, to reach at the substance, spirit, the essence. (Herrmann, 1988, p.17) In Japan (up to this century) Zen philosophy was an integral part of the arts and crafts, which were known as Do, meaning way. A Zen statement "wondrous practice is original enlightenment", means that through working, enlightenment can be reached, which endows crafts such as pottery with a special reverence. Whilst there were many different pottery style in Japan, which reflected the regional geological variations, there was a unity of ideals from the practice of Zen.

These are the guidelines for pottery as detailed by Hisamatsu.

1. No rule (irregular, asymmetrical)
2. No complexity (sparse, simple)
3. No rank (seasoned, mature, austerely sublime)
4. No mind (natural, unstrained, Sabi)
5. No bottom (subtly profound, implying rather than nakedly expressing)
6. No hindrance (free of attachments to things and of expectations of others or of oneself)
7. No stirring (inwardly oriented, tranquil)

(Beittel, 1989, p.11)

Zen pottery meant, earth honest, process honest, fire honest, honesty of being itself. (Beittel, 1989,p.3)

A specific feature of Japanese ceramics was the attitude to firing. Many months work were fired together in tunnel kilns called anagama. The firing was seen as a character building process for the pots, and scars, scorch marks, ash glazes were encouraged by prolonged firing or deliberate stacking scenarios (Plate 8).

The acceptance of the 'accidental' was seen by American ceramists as the leit- motif of Japanese pottery and perhaps it was not always understood the skill which it took to make the kiln speak. In the Otis studio in the fifties students called their beginners work 'Zens' and when a kiln firing went wrong it was known as a Zen experience. Voulkos has admitted that his early interest in Zen was superficial but later it became more meaningful to his work. (Tsujimoto, 1995, p.111) For Voulkos, Zen was a process of unlearning, to achieve a non-forced expression. Hamada said that it took himself ten years to learn the wheel and then ten years to forget it. This does not mean literally to forget the technique, but to become so at one with the process that it becomes intuitive and that you do not have to be conscious that you are throwing, your muscles react automatically to the clay. Being constantly aware of the technique can mean it becomes an end in itself. A Japanese potter is expected to develop spirit along with skill, "to obtain a certain thing, you have to become a certain person". (Wilson, 1995, p.22)

Voulkos became influential through his teaching, which was in a manner similar to the Japanese way of teaching by example. He worked along side the students in the studio and also as his popularity increased he gave public demonstrations. It was because of his philosophy of 'no rules- no absolutes' that his students were not afraid to experiment and make 'mistakes'. Paul Soldner discovered the Western version of the raku technique quite accidentally. Soldner had read Leach's description of Japanese raku (as detailed in chapter two), and thought it would be a useful demonstration technique for an arts festival. Instead of allowing the pots to cool naturally he dipped them in water, but of course they cracked due to thermal shock. Later he tried again but rolled the pots in some leaves, which resulted in subtle smoke markings! Soldner then tried using different post firing materials and developed a stronger clay body to withstand the extremes of temperature. Four years later Soldner entered three of his raku type vessels into the 1964

National Ceramic Exhibition, Syracuse, and won first prize, giving recognition and legitimacy to the alternative process.

He continued experimenting with different ways of smoke marking his work. He extensively used a technique whereby he painted a piece using oxides, fired it and then smoked it allowing a certain amount of air to reach the piece. This caused a halo like effect around his brush strokes, white around coloured oxides and yellow around black oxide (Plate 9). During the 1970's he discovered a method of flashing his work with salt vapours while bisque firing. He placed salt in front of the burner's flame or directly on the work, which caused orange and peach coloured flashings. He used this vapour in combination with slips and terra sigillata, which is responsive to colour markings. Soldner who has spent his career experimenting and widening the knowledge of ceramics has said

"I like to discover what is happening with clay. I'm more comfortable not knowing what to expect than with knowing. To allow yourself to be playful, to be at ease with the asymmetrical is difficult but necessary. Complete control, is in conflict with the creative act, with personal, inventive decision- making." (Levin, 1991, p.21)

At this point, it is good to reflect on Leach's ideas of a standard of historical and cultural precedent. I think that it has been damaging to follow tradition too closely. Times change and art should reflect the concerns of its time. In Irish ceramics we have been constrained by a craft tradition which makes it difficult to find a place for clay sculpture. The public is not aware of clay's potential as a sculptural medium, and their education has been censored by a conservative art establishment. It took 'young' countries such as America and Australia, which have no predominant cultural origins to break free from the constraints of tradition and seek to rediscover the medium of clay.

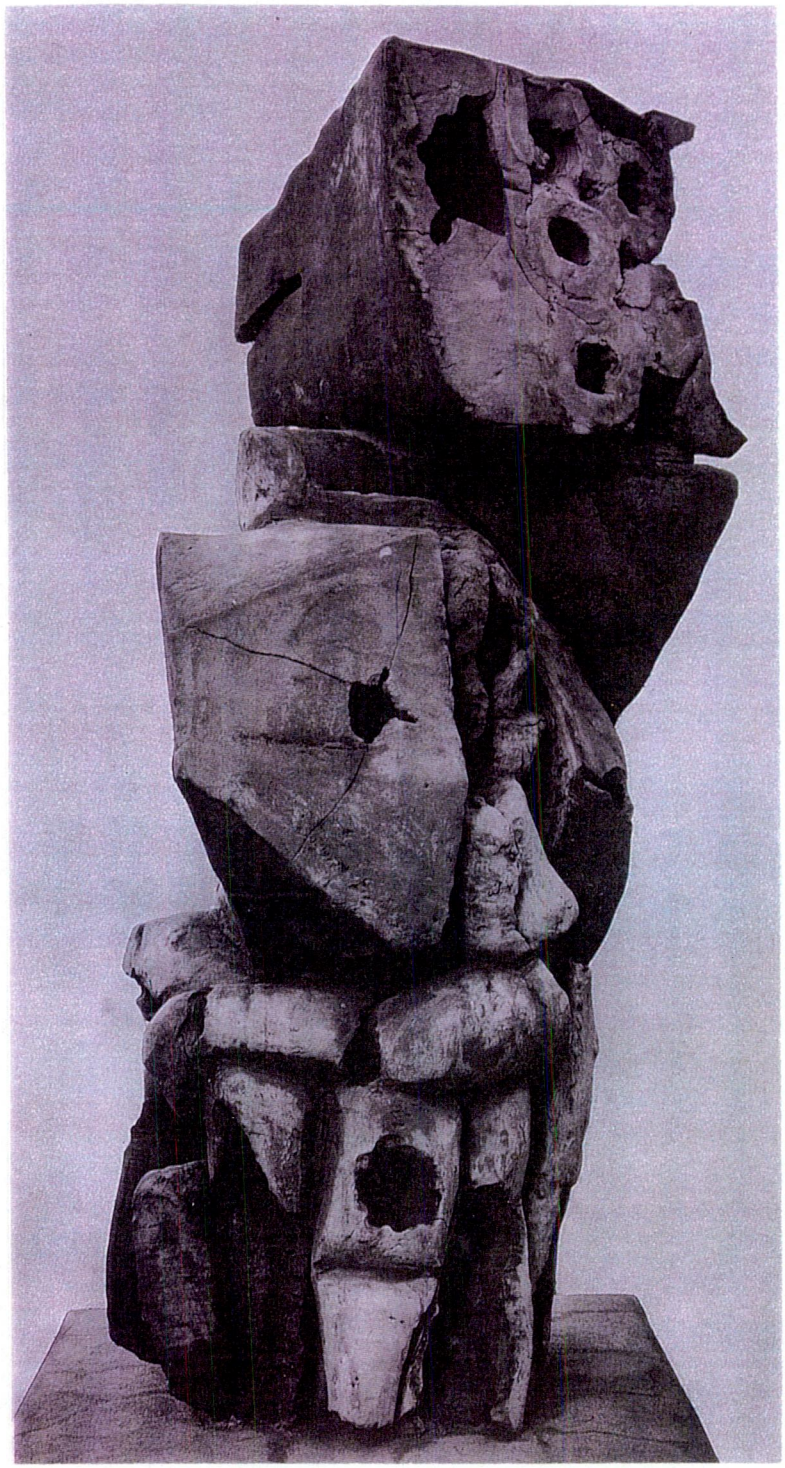

Plate 6. Peter Voulkos, *Gallas Rock*, 1960, 213.4*94*68cm. Stone ware with slip and glaze, gas fired. (Slivka, 1995, p.126)

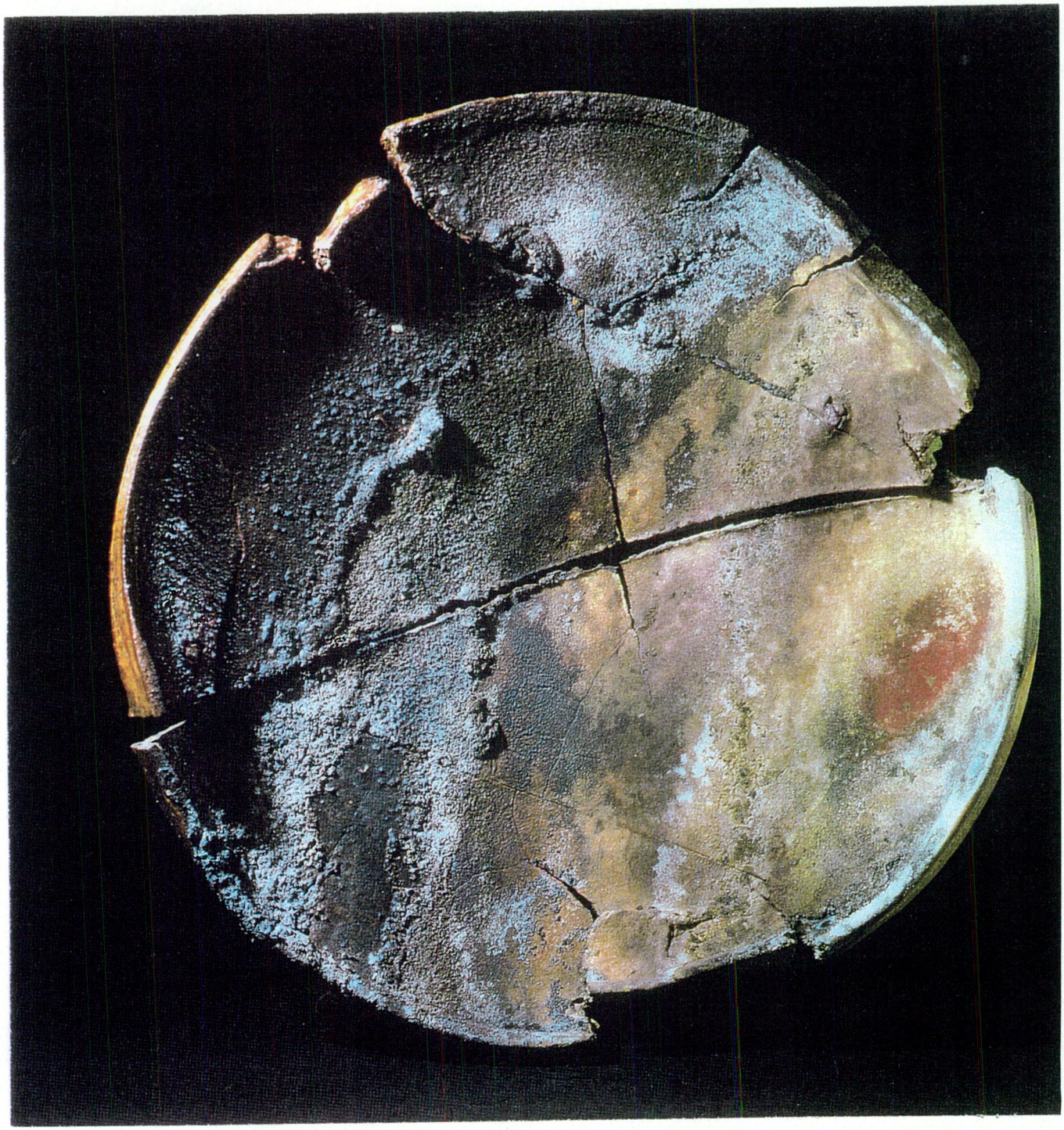

Plate 7. Peter Voulkos, *Untitled Plate*, 1981, 3.2*58.4cm. Stone ware, wood fired. (Slivka, 1995)

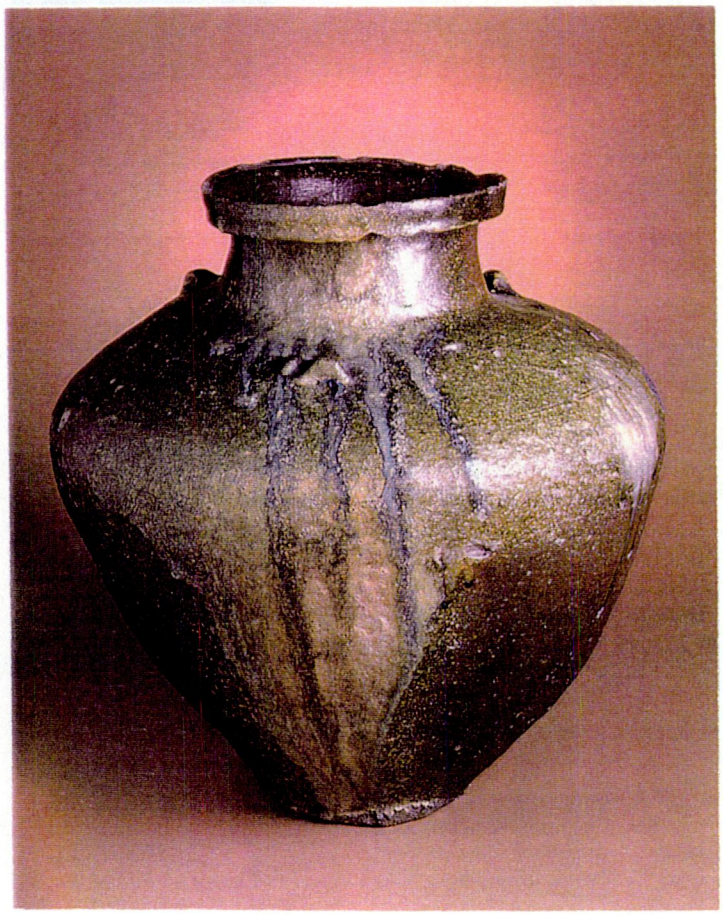

Plate 8. Tokoname ware, 14th c, Japan. *Storage jar*, ht.45cm*dia.45.3cm. Made from local clay of the Aichi Prefecture with large quartz content, anagama fired with glaze formed by the melting of wood ash. (Wilson, 1995, p.32)

Plate 9. Paul Soldner, *Bottle*, 1974, 54*19cm. Wheel thrown and altered raku clay, white slip, iron and copper oxide brushwork, post fire smoking. (Davis Mac Naughton, 1991, p.73)

Chapter Four

The future of alternative firing is assured for a number of reasons, many of which have been mentioned by example in the first chapter, but a significant reason is the way in which craft knowledge is acquired now and the ease of demonstrating and practising alternative firing.

In the traditional way, all the clay techniques you needed had been taught by a 'master'. This of course was the best and most relevant way to learn the skill of producing repeat work such as functional pottery. With the advent of the studio pottery movement the traditional craftsman was supplanted by the college educated artist. Leach's *A Potters Book* was timely, and filled the void of a surrogate master to those needing guidance in this new genre. Many of our present ceramists were inspired to make the medium their own after reading Leach's 'bible' and following his example some made the pilgrimage to Japan.

Now with the ease of travel, cultural exchanges are within the reach of many. As ceramic is such a tactile interactive medium it is best to experience it in person and even better to watch or take part. 'Happenings', demonstrations and ceramic festivals are now the forum for idea exchange, and alternative firings are most suitable because of their simplicity, low cost and interactive nature. The origins of these festivals are in America in the 1950s where there was a lecture circuit to counteract the lack of published material on the subject. The circuit was also useful for self-publicity and showmanship was as important as the work. Voulkos and Soldner used many tricks to win the ever demanding audiences such as destroying work deliberately to prove a point and attempting to throw a ball of clay with string in it. Festivals have naturally evolved since then and audiences are more interested in taking part in the work and actively learning.

The lifestyle of a ceramic artist follows the rhythm of the clay and so many artists combine their studio and home together for ease of working. Ceramic festivals can be invaluable for meeting with ceramist peer and swapping of technical knowledge. Communal firings, such as can be done with pit firing, are a wonderful way to get in touch once again with the primitive charm of watching clay become ceramic- a profound happening which unites ceramists as a kind of brother-sisterhood. Ceramists who have always faced difficulties being accepted as sculptors by the fine art world need the

reassurance that they are not battling on their own. It is a very emotional experience to meet up with several hundred like-minded, like-purposed people. There is a mutual respect and kinship, which sustains your work effort long after the festival is over.

One such event was The Big Pot Conference, or 'Craic na Caoloige', organised in May 1996 by Louis Mulcahy at his pottery in Ballyferriter, Co. Kerry. (A detailed report on 'Craic' was in *Ceramics Ireland* magazine Spring, 1997, and also a video diary of the event was shown on Telifis na Gaeilge, 31/12/96) The conference brought together the largest convocation of ceramists ever assembled in Ireland. A group built a fast-fire wood kiln and Jorgen Hansen hand-built a fifteen-foot pot, which was wrapped in a ceramic fibre blanket and fired in situ. Jim Behan gave a lively account of the week in *Ceramics Ireland*:

> 'And how was it ceramically, I hear you ask. Well I remember Paolo and his seaweed bedecked ship-of-a-kiln which seemed to be producing more smoke than our 60cub.ft. dragon but which got there just the same. And I recall Bev Carbery's communally built boat kiln with its wonderfully weird appendages (every passer by was invited to contribute). And some huge wheel- thrown pots in the throwing room. It was whispered that one of them had taken 'two stout men throwing in tandem' to produce the finished piece! (Behan, 1997, p.7)

The most popular event was a large communal pit firing under the guidance of Antonio Cebas Mac Bride, a potter from Madrid, who has a passion for Bronze Age Iberian pottery. At the beginning of the week Cebas gave a talk on his work which has been influenced by Beaker pottery from 4000-5000 years ago. Participants were supplied with sandy clay and the products were air-dried for two days before the raw pit firing. After the pit was excavated the base was covered with wood which was allowed to burn down. The charred wood was then covered with a layer of turf, which acted as a kiln shelf for the work. Four fires were started from the outside of the pit and fuel was added to create a ring of fire around the work. More fuel was placed over the pots and flames rose to 30-40 feet. A layer of sieved soil was thrown over the burning mound, which sealed the 800 Celsius heat in. The pit fired through the night and was opened the next morning revealing the carbonised ceramic.

A similar festival is held every two years in Aberystwyth, Wales, organised by North and South Wales potters, called The International Potters Festival (IPF). In an address 'A Shared Obsession', given in the Czech Republic, the festival director Steve Mattison talked of the reasons for a potters festival. (Shared Obsession, 1996, www) The isolation of Wales has meant that ceramists and potters feel distant from the world art scene, coupled with the studio bound nature of ceramic work. "The pressures of the capitalist system and the market economy also allow little time for experimentation or the cross fertilisation of ideas with other artists". He feels that it is important too to have a direct contact with international artists unfiltered by the English art establishment.

Different activities happen simultaneously such as workshops, demonstrations, lectures, kiln building, firings, films, exhibitions and social events with an audience of six hundred taking part. The festival invites twelve international guests to demonstrate their working methods and to talk about their career, philosophy and techniques. The festival has run six times and has featured some of the worlds leading potters, ceramists and traditional potters. In 1997 there was an East European focus with Miroslav Paral from the Czech Republic, Anna Malika Zamorska from Poland and Sandor Kecskemeti from Hungary. There was also an exhibition of work from the International Experimental Ceramics Studio, Kecskemet, Hungary, curated by Alison Britton.

Few of the ceramic artists at the IPF fired their work in a traditional way in a kiln. I was fortunate to work at the festival and assisted Ray Rogers with his giant pit firing. Rogers was in residency at the Wysing Arts Centre (Bourne, Cambridgeshire, England) for several months and so had made a large quantity of work which he bisqued in advance. Rogers prefers to work quietly without distraction and so he stood in the pit while I handed his work down to him and fielded questions from the crowd. Questions were basic as British potters are quite unfamiliar with pit firing, though there was huge interest and many resolved to try it after the festival. The pit was loaded over several hours (see chapter one for technical details), fired through the night and was covered over with corrugated metal. By the evening of the following day the pit had sufficiently cooled and a large crowd gathered to see the unearthing (Plate 10). The thrill of discovering the random effects of the fire on his work was addictive and many of the Aberystwyth audience brought their own work to a follow up firing at Wysing Arts in August. (Correspondence with G & R Rogers, 14/8/97)

Martin Mindermann from Germany makes extremely large raku pots and demonstrated his own development of the process at the IPF (Plate 11). He built a temporary top loading ceramic fibre kiln which was heated using a propane gas torch until the metal chlorides on the work melted. Mindermann protected his hand with a chain- mail glove and pulled the red-hot bowl out of the kiln and then placed it into a sawdust-lined hole in the ground. He exposed parts of the surface to the air momentarily, which deepened the crazing of the glaze in places. He then covered the bowl with more sawdust and finally earth, which sealed the bowl in the ground in a reduction atmosphere, filling the crazing with carbon. The bowl was left over-night in situ and then washed the following day to reveal the amazing turquoise colour (Plate 12). His work has been inspired by the simple forms of Bronze Age vessels, and he often applies some gold leaf to allude to a notion of buried treasure.

Nina Hole from Denmark has developed alternative firing so that her sculpture functions as a kiln and fires itself. She likes to work on a large scale and recent work has been with the house theme. She works in collaboration with assistants, who learn the process through working and she feels that this gives each project a unique spirit as the process is as important as the product. (Ceramics Collection and Archive, 1997, www) At the 1997 festival she built a large house structure, three metres in height, using interlocking units of magma clay. It had a fire box underneath and the piece was wrapped in ceramic fibre and wood-fired. Her sculpture was subsequently raffled and is in situ in a garden in Battersea, London now. Plate 13 shows a similar piece which she and Jorgen Hansen made at Clay Sculpt Gulgong, the famous firing festival which was organised by Janet Mansfield at her home in Australia.

Maxine O' Reilly developed this idea further by making a clay installation, which was in effect a form of performance art (Plate 14). She works with her kiln-piece as it is firing, playing with the fire as if it is a musical instrument. O' Reilly built a cone shaped structure, which functioned as a chimney for the fire-box below. There were approximately thirty small openings in the cone which were plugged until the fire was a good temperature. She then poured highly flammable substances into the chimney, which caused explosions of fire from the holes. It was quite spectacular after dark to watch her work animatedly with her piece creating a kind of 'fire- work' display.

The festival is important as it brings together different strands of clay work, sculpture, vessels and traditional pottery, on an equal platform, making it possible to learn form seemingly unrelated areas. Mattison has said that though we may not use all this new found knowledge it gives us a broader understanding of what ceramics is and has been historically. (Shared Obsession, 1996, www)

If alternative firing can be used to broaden the imagination of ceramists so too can it be a valuable resource in a school. Leach lamented seeing electric kilns, wheels, and ready-made clays and glazes in schools. These he said were a means to an end and students would learn far more by re-creating the potter's craft from its primitive origins. "Children and students..enjoy finding and digging their own clay, building their own kilns and making their own colours and glazes as potters used to do before the machine age."(Leach, 1940, p.27)

This idea was promoted by a contemporary of Leach, Seonaid Robertson, a primary school teacher and later in the 1960s, a lecturer at Goldsmiths Teacher Training College in London. In the late 1940s she discovered smoke firing by substituting sawdust for peat because of war- time rations. A past pupil of hers at Goldsmiths, Mary Caroline Richards, introduced her low firing methods to the American ceramist Paulus Berenson in 1968. Berenson then wrote the well-known book *Finding One's Way With Clay*, 1972, which details a Zen meditative approach to clay combined with the elemental process of smoke firing. Robertson observed that firing a kiln was satisfying a fundamental need in children. She developed simple forms of pit and clamp kilns which are illustrated in Perryman, 1995, p.115. Robertson wrote, "to take the children's work away to some remote centre and deny them the excitement and handling and finally the control of the fire themselves is to subtract one of the most important aspects of pottery."
(Perryman, 1995, p.114)

Jane Perryman, in her book *Smoke Fired Pottery*, 1995, has continued Robertson's ideas by conducting her own research into the potential of smoke firing in education. In this she studied four different types of student groups from young children in a voluntary art group, secondary school students studying A Level Art, students from a school for learning difficulties and finally third level students at Goldsmiths Art College in London. Perryman found that as smoke firing techniques are versatile they can be adapted to cater for widely varying situations. The fuel is inexpensive and minimal equipment is needed

which particularily suits voluntary groups and educational establishments with a stretched budget. Students find clay a particularily stimulating medium. A survey conducted in the secondary school, The Holy Faith De La Salle College, Skerries, Co. Dublin, has found that transition year students overwhelmingly preferred clay to other mediums, such as painting and printmaking. (Interview, T. Harte, 1998) Clay can be used to educate students about a wide range of areas, such as science, through the testing of combustion and the effects of heat on clay, environmental studies which could analyse the use of certain fuel materials and their effects on the environment, history, geography and the composition of clay and the effects of weather on firing conditions, and maths which is used in weighing out materials, estimating results and calculating results of experiments. Using alternative firing as a group project can teach important team co-operation and communication skills. The risks involved in alternative firing such as unwanted cracking etc., are a useful lesson to students, and teach them not to be so precious with their work. It also teaches them to develop their own taste, as the results of a smoke firing are not something with which most people are familiar. How do the students judge if their work has been a success? That depends on their involvement with the process and their effort to actively understand the firing technique and its effects and to make decisions influencing subsequent firings.

As clay became a medium for sculpture, art-college training became more appropriate than an apprenticeship. In NCAD technical information is not the main focus of the Ceramics course, though the course title remains 'Craft Design'. Emphasis is on idea development through drawing and the subsequent realisation of an idea in clay. In general, technical information is acquired on a need to know basis by the student. The three-year course is not long enough for a student to become proficient in a variety of techniques, glazing being a particularly difficult area to succeed in. Thus alternative firing is an ideal solution to a college situation. There are no hard and fast rules, no rights and wrongs. Students are encouraged to be innovative with the techniques, to create relevant solutions to form their personal vision. Kiln technology can be daunting, and often students are discouraged from dealing with the kilns first hand by technical staff, who are wary of damage to expensive equipment. Alternative firing leads to self-reliance. It avoids conflicts of interests which arise when sharing kilns and it avoids waiting lists and time slots which can be stressful in the run up to final exhibitions. Obviously not all alternative firing techniques can be used in every situation, but alternative firing is about using what you have in a creative way.

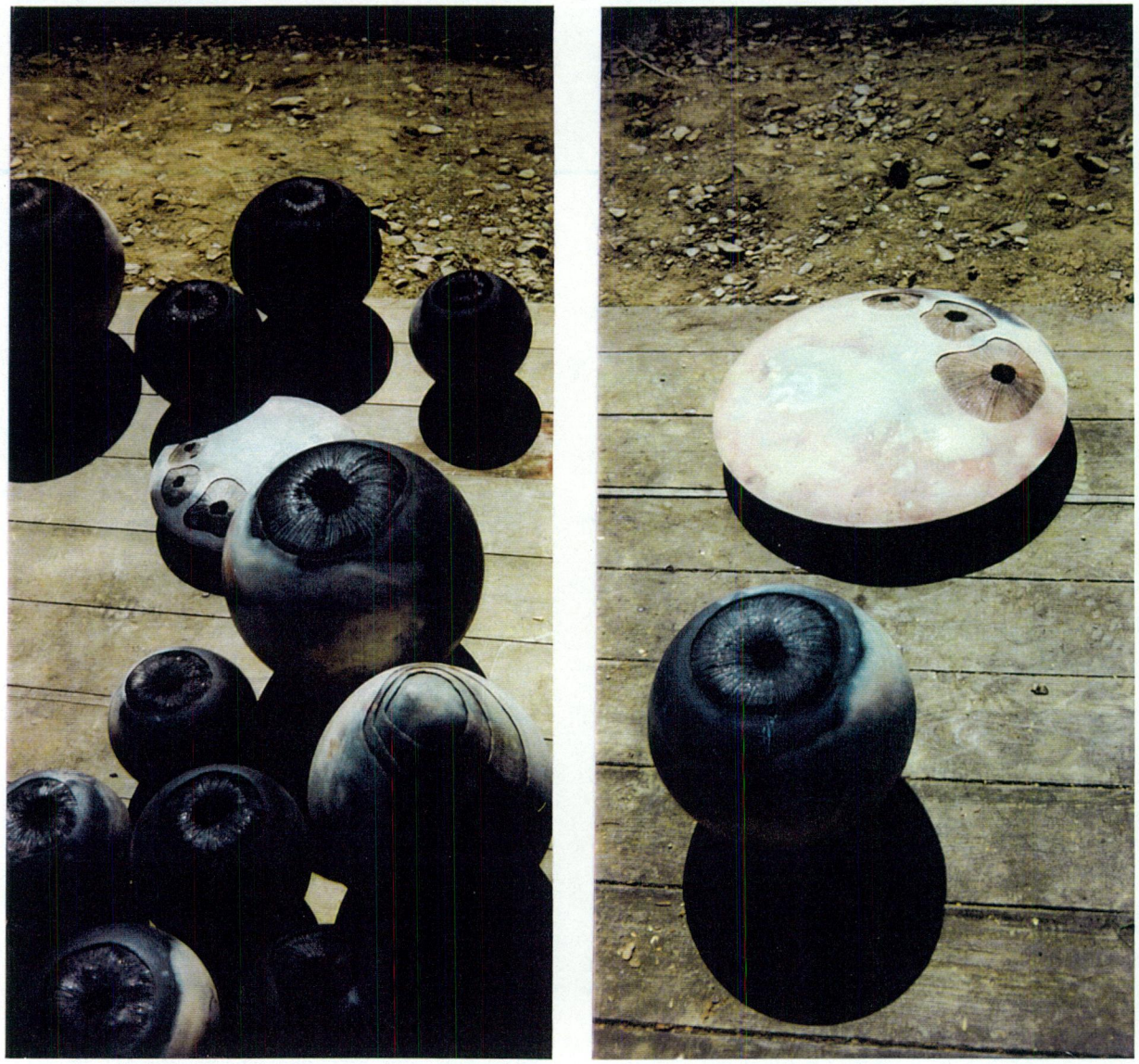

Plate 10. Ray Rogers, *Group of thrown vessels* just removed from the pitfiring at IPF 1997, Aberystwyth, Wales. (Photography, N. Harte)

Plate 11. Martin Minderman, *Raku bowl*, 1997, 12*16cm. Thrown, bisqued in electric kiln, sprayed with metal chlorides, fired in a fibre box and post fire reduction in sawdust. (Ceramics Collection and Archive, 1997, www)

Plate 12. Martin Minderman, *Sequence of the raku firing of a bowl* (plate 11) at the IPF 1997. (Ceramics Collection and Archive, 1997, www)

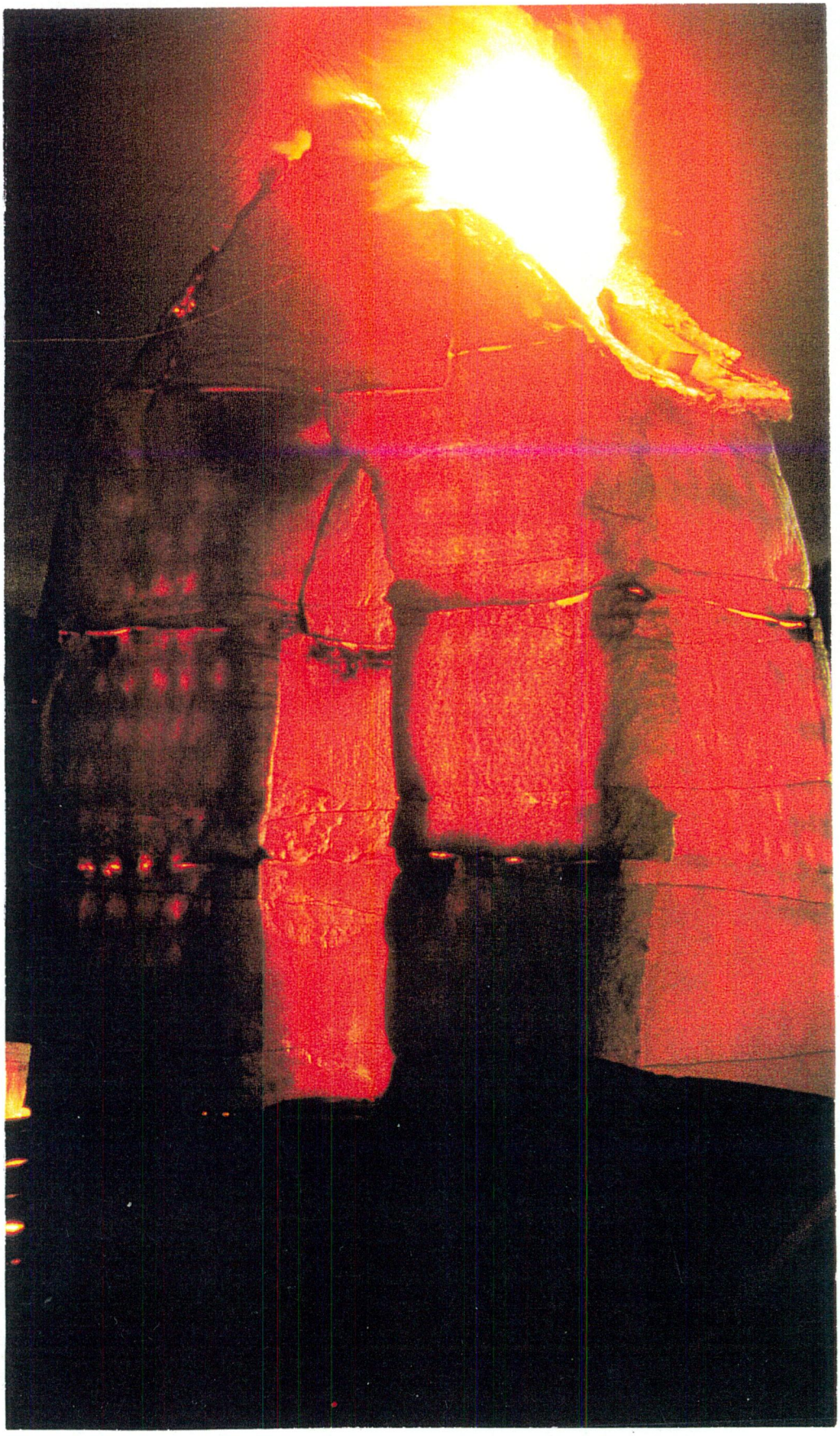

Plate 13. Nina Hole and Jorgen Hansen, *House structure*. Hand built from magma clay, wrapped in a ceramic fibre blanket and wood fired at Clay Sculpt Gulgong, Australia, (Robison, 1997, p.62)

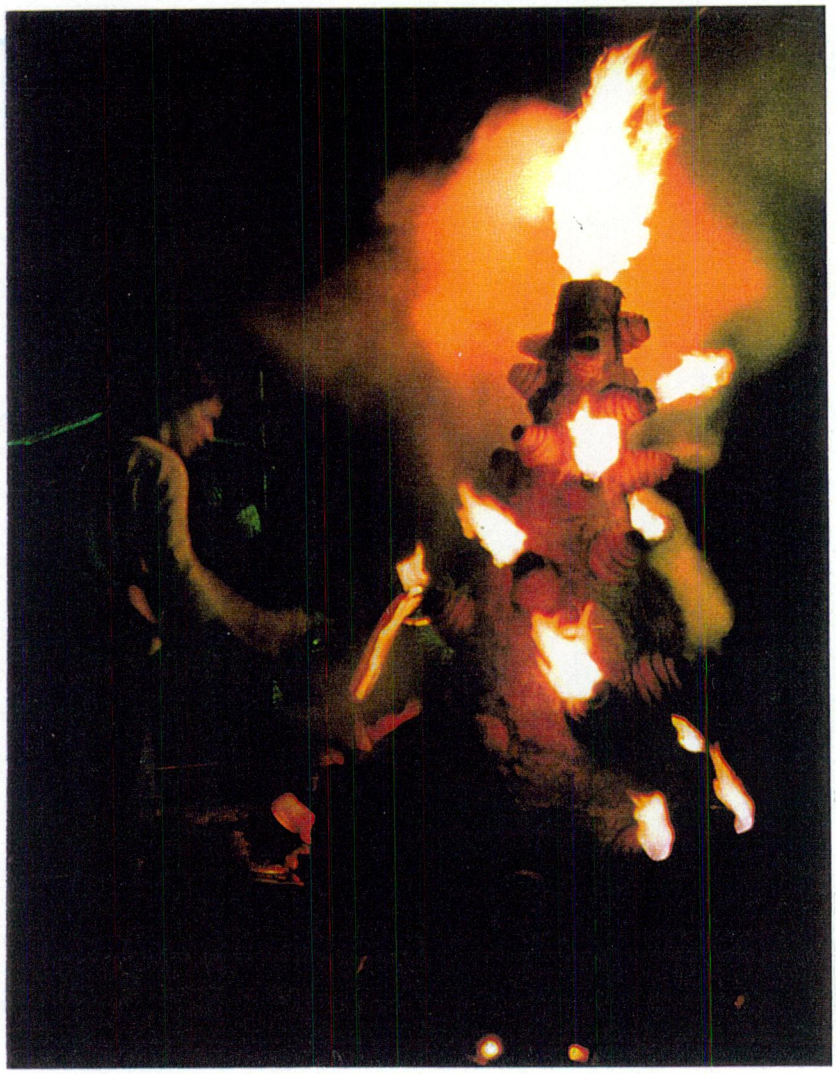

Plate 14. Maxine O' Reilly, *Fire Performance Piece*. Coil built earthenware and woodfired at the IPF 1997. (Ceramics Collection and Archive, 1997, www)

Conclusion

Previous writing regarding alternative firings has been segregated according to technical information. Therefore I have coined the phrase 'alternative firing' to cover the expansive nature of the subject and to recognise it as a specific genre with its own ideology. It is a significant development for ceramics and reflects the current position of ceramic as a medium for sculpture. It has both advanced, and been symptomatic of this change.

Alternative firing is a movement, and has arisen from contributory factors such as the discovery of clay for abstract sculptural expression and the realisation of the beauty of 'naked' clay, initially explored in the work of Peter Voulkos. The freedom from expectation to make permanent, functional or recognisable objects, and, contemporary ceramist's desire to create an personal statement in reaction to mass production have also been factors. Phrases in current use, such as 'primitive firing', suggest that alternative firing is emulating the work of developing countries and at the same time implies that both are regressive. Alternative firers are not a Luddite group fleeing from contemporary technology. My choice of the word, alternative, is to suggest that these working methods are optional and not in opposition to the expected use of a kiln. Many of the ceramists mentioned in the text, such as Ruth Allan, are using contemporary technology, but in an unexpected way. It is only when you truly understand your equipment that you can begin to use it creatively.

Alternative firers are interested in more information about process, not less. They enjoy the physical interaction with the process- be it building their own kiln, stoking a pit firing or plunging a red-hot raku piece into sawdust. These ceramists learn more about the character and possibilities of materials through this experimentation and hands on work.

Contextually I have viewed the phenomenon of alternative firing as part of the development of the use of clay, as a medium for sculpture. To find the origins of the clay sculpture movement, I followed the changes in the use and status of clay through the last two centuries. In chapter two I looked to the Arts and Crafts movement in England which occurred as a result of the socialist and anti industrialist writings of Ruskin, Morris and others. Their anti industrial stance influenced a revival in traditional hand-craft techniques and promoted the status of objects showing the mark of the individual hand. This movement was a formal influence on the subsequent Studio Pottery movement

championed by Leach, where a new niche was created with the production of art pottery pieces to be sold through a gallery. Leach, through his writings spread his knowledge of Japanese ceramics introducing the west to a different attitude to clay. Japanese potters were guided by the teachings of Zen Buddhism which influenced the style of pottery produced, leading them to use the kiln and the firing to build the character of their work. This greatly inspired mid century American ceramists who used their interpretation of Zen teaching in combination with influence from the process-based work of their contemporaries in abstract painting, such as Pollock. Peter Voulkos, teaching at the Los Angeles County Art Institute in 1954, sought to use clay as a sculptural medium and defied tradition by using the throwing wheel to produce abstract sculpture which were about the process involved. Initially he used simple colouring techniques as the forms and the marks made were of primary importance and later used the Japanese anagama kiln. His openness and disregard for rules encouraged his students to experiment, notably Paul Soldner who discovered the raku technique which uses post firing reduction, thus opening the way for experimental firing.

Alternative firing has spread through the popularity of ceramic festivals and workshops. Because it can be inexpensive using little equipment and waste materials for fuel, it is very suitable for temporary situations. Ceramist's who often work in isolation with financial constraints on their time, benefit from the idea exchange at these festivals. Festivals have also influenced the direction of alternative firing as some ceramists are now using the forum of a festival to produce installation work and performance art using clay and fire.

Alternative firing is an invaluable teaching resource to schools and third level colleges. Firings can be adapted to suit different capabilities and resources. It encourages student's creativity and frees them from preciousness with their work. It calls for decision making based on the results of experiments and demands judgement improving their sense of discrimination. It is important, especially in Ireland, to encourage the teaching of ceramics in schools. These students are our future, and it is necessary that we create a context for ceramics in Ireland to ensure that there will be a positive environment in which to advance ceramic sculpture and alternative firing.

BIBLIOGRAPHY

Primary Research

Correspondence

ROGERS, Glen & Ray, Letter to Niamh Harte, August 14th, 1997.

Interviews

HARTE, Niamh, Interview with Ian Barber at the National Museum of Ireland, Kildare St., Dublin 2, September 21st, 1997.

HARTE, Niamh, Interview and work with Ray Rogers at The International Potters Festival, Aberystwyth, Wales, July 4th -6th, 1997.

HARTE, Niamh, Interview with Terry Harte at The Holy Faith De La Salle College, Skerries, Co. Dublin, January 27th, 1998.

Secondary Research

Books

BEITTEL, Kenneth P., Zen and the Art of Pottery, N.Y., Weatherhill, 1989.

BERENSON, Paulus, Finding Ones Way With Clay, N.Y., Simon and Schuster, 1972.

BYERS, Ian, The Complete Potter, Raku, London, B.T. Batsford, 1990.

CLARK, Garth, American Potters, N.Y., Watson- Guptill, 1981.

CLARKE, Kenneth, Ruskin Today, Suffolk, Penguin Books, 1964.

DORMER, Peter, The Art Of The Maker, London, Thames and Hudson,1994.

DORMER, Peter (ed), The Culture Of Craft, Manchester, Manchester University Press, 1997.

DORMER, Peter, The New Ceramics- Trends And Traditions, London,Thames and Hudson, 1994.

DREXLER LYNN, Martha, Clay Today- Contemporary Ceramists and Their Work, Los Angeles, Los Angeles County Museum, 1990.

HERRMANN, Christa- Maria, The Way Of Raku, Cornwall, Patten Press, 1988.

HESSINBERG, Karin, The Complete Potter, Sawdust Firing, London, Batsford, 1994.

HUGHES, Robert, The Shock of the New, London, BBC, 1980.

KOCH, Gabrielle, Gabrielle Koch, Somerset, Marston House 1995.

LAMBOURNE, Lionel, Utopian Craftsmen, London, Astragal Books, 1980.

LEACH, Bernard, Beyond East And West, Memoirs, Portraits and essays, London, Faber & Faber, 1978.

LEACH, Bernard, A Potter's Book, London, Faber & Faber, 1940.

MANSFIELD, Janet, A Collectors Guide To Australian Ceramics, N.S.W., Craftsman House, 1988.

MARSHALL, Roderick, William Morris And His Earthly Paradises, N.Y., George Braziller Inc., 1979.

NAYLOR, Gillian, The Arts and Crafts Movement, London, Studio Vista, 1980.

OLSEN, Frederick, The Kiln Book, Pennsylvania, Chilton Book Company, 1973.

PERRYMAN, Jane, Smoke Fired Pottery, London, A&C Black, 1995.

PIRSIG, Robert, Zen And The Art Of Motercycle Maintenance, London,Vintage, 1974.

RADO, Paul, An Introduction To The Technology Of Pottery, Oxford, Pergamon Press, 1988.

RHODES, D, Kiln Design, Construction and Operation, London, Pitman & Sons, 1968.

ROBERTSON, Seonaid, Rosegarden And Labyrinth, A Study In Art Education, Texas, Spring Publications, 1963.

ROBISON, Jim, Large Scale Ceramics, London, A&C Black, 1997.

WHYBROW, Marion, The Leach Legacy, St Ives Pottery And Its Influence, Bristol, Sansom & Co., 1996.

WILSON, Richard L., Inside Japanese Ceramics, Tokyo, Weatherhill, 1995.

Catalogues

ABERYSTWYTH ARTS CENTRE, International Potters Festival 1997, Wales, 1997.

HOUSTON, John, The Abstract Vessel, London, Bellew, 1991.

Web Sites (www)

Ceramics Collection and Archive at Aberystwyth Arts Centre, Wales.
http://www.aber.ac.uk/~mov/new.htm. 31/7/1997.

International Potters Festival by Steve Mattison.
http://www.ftech.net/~carrog/ipc97.htm. 18/8/1997.

Primitive Surfaces by Tony Nankervis.
http://cator.hsc.edu/~kmd/caveman/projects/pottery/primitivesurface.html. 7/9/1997.

Shared Obsession by Steve Mattison.http://www.ftech.net/~carrog/talk.htm. 17/7/1997.

Articles

BEHAN, Jim, "Craic Na Caoloige", Ceramics Ireland, Spring, 1997, pp.5-13.

BLACKIE, Sebastian, "A Paper Kiln", Ceramic Review, No. 115, 1989, pp. 32-34.

BLACKIE, Sebastian, "More Paper Kilns", Ceramic Review, No. 130, 1991, pp.13-15.

COOPER, Emmanuel, "Duncan Ross- Precise Vessels", Ceramic Review, No. 129, 1991, pp. 16-18.

DAVIS MAC NAUGHTON, Mary, "Soldner: The Teacher", in Paul Soldner A Retrospective, Ca., Scripps College, 1991.

GIORGIO, Jean- Marie, "Cuissons En Meule", Revue Ceramique Et Verre, No. 94, May/ June, 1997, pp.48-51.

HAYES, Barry, "Pit Firing", Ceramic Review, No. 117, 1989, pp. 31-33.

HARRIS, Jennifer, "The Primacy of Handwork" and "The Unity of Art" in Harris, J and Harrod, T, William Morris Revisited- Questioning The Legacy, Manchester, Whitworth Art Gallery, 1996.

HARROD, Tanya, "Paradise Postponed", in Harris, J and Harrod, T, William Morris Revisited- Questioning The Legacy, Manchester, Whitworth Art Gallery, 1996.

KIESEL, Jan, "Igbara Odo Pottery Commune, Nigeria", Ceramic Review, No. 132, 1991, pp.6-7.

LAUDENBACH, Cathy, "Jomon Festival", Japan, Ceramic Review, No. 127, 1991, pp.33-34.

LEVIN, Elaine, "A Life In Art", in Paul Soldner A Retrospective, Ca., Scripps College, 1991.

NOCK, U.D., "Clamp Firing", Ceramic Review, No. 132, 1991,pp.26-27.

O BRIEN, Michael, "Nigerian Pottery", Ceramic Review, No. 119, 1989, pp.36-37.O DULAING, Donncha, "Neolithic Pottery Revisited", Archaeology Ireland, Issue No. 19, Vol No. 6, Spring 1992, pp.13-15.

OWEN, Elspeth, "International Potters Camp", Ceramic Review, No. 119, 1989, p.38.

SALMON, Antonia, "The Elemental And The Mysterious", Ceramic Review, No. 130, 1991, pp. 8-10.

SLIVKA, Rose, "The Dynamics of Duende" and "Risk and Revelation", Slivka, R & Tsujimoto, K. (eds.), The Art of Peter Voulkos, N.Y., Kodansha International, 1995.

SMITH, Peter, "Bonfire Brilliance", Ceramic Review, No. 163, 1997, pp. 25-28.

TSUJIMOTO, Karen, "Peter Voulkos- The Wood-fired Work", in Slivka, R & Tsujimoto,K. (eds.), The Art of Peter Voulkos, N.Y., Kodansha International, 1995.