LEARMING FROM NATURE

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THESIS IN SUPPORT OF MAJOR PROJECT.

LEARNING FROM NATURE

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--- JOHN DEWEY.-

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INTRODUCTION.

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AIMS OF THE MAJOR PROJECT AND THESIS.

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AIMS OF THIS THESIS AND MAJOR PROJECT:

This thesis will I hope provide a broad guideline for an approach to teaching, learning and working, based on the close study, and subsequent understanding of the relationships and values that exist within the structure of the natural world.

In undertaking this project I have chosen to by-pass the man made or urban environment as a source, as I believe it can only be fully utilized and critically appreciated following an initial and wide-ranging exploration of the natural world -- which has after all, proved its efficiency of function and design by the very survival of all its elements existing together, often in fierce opposition to one another.

KNOWLEDGE FROM NATURE.

Nature can provide us with a firm foundation of knowledge for the efficient use of line, shapes, colour form and surface qualities in all activities relating to Arts and Crafts. One of my principal aims in this thesis, is to state the importance of building up a visual vocabulary of source material, through the making of drawings and close observational studies and records of nature.

These can subsequently serve as a comprehensive informative back-up, of information for use in a wide range of areas covering Painting, Printing, and all Crafts involving the design of both decorative and functional forms.

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MY MAJOR PROJECT: SOURCE MATERIAL AND MEDIUM OF EXPRESSION.

I chose ceramics as the medium for my major project, and as my source material I selected the sea shore and the examples

My use of the source material as an aid to the design and of Marine life it has to offer. realization of specific functional forms will be discussed more fully in chapter 2, but followed the same principles and approach which I shall outline in the following pages.

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WHERE TO START:

Any part of the visible natural world is a satisfactory starting point for the development and collection of visual records.

Plants, Vegetables, Stones, Leaves, Fruits, Shells, Feathers, Bark, all offer an endless source of possibilities.

DRAWING:

Learning to make a carefully observed drawing is one of the bases of visual education, the act of making one is complete in itself, as well as being a first step to more varied activities.

It is very important when drawing from nature to remember that if full benefit is to be felt from the venture, then every mark made should be specific and relevant, and all should be treated with equal significance.

It can be frustrating rather than liberating, to have a strong personal impulse to communicate an idea and then realize that one lacks the technical skill, experience of other media, or sense of form to convey the idea satisfactorily.where at all possible, .I believe it is desirable that the student of nature should pursue the accumulation of information about all aspects of the area being investigated through as wide a variety of media as is practically possible and suitable, so that both activities develop side by side.

- -- i) The understanding of the world around us, and how it works.
- ---ii) The understanding of the materials in use and how they work.

This way craft skills, be they drawing, painting, printing, pottery or whatever, will not be seen as an isolated activity involving the development of precise skills for their own sake, but rather as a choice of alternative means of realizing personal projects and ideas.

The inherent discipline which the satisfactory development of any skill demands, will enable the student to achieve the freedom of expressing his own ideas in a suitable and adequate manner.

THE ROLE OF CRAFT SKILLS: " A SERVANT TO OUR NEEDS"

In the initial stages of exploring the natural world, all the strategies of thinking, ways of looking, seeing, analysing, recording and evaluating should be given most emphasis, and if enthusiasm for the considerations can be aroused — through nature walks, collecting sessions, visits to the Zoo or Natural History Museums and slide shows. The abilities or inability to handle pencil, paints, materials will not come to be regarded as the main goal and means of success in the art activity, but rather will come to be seen as the serving tool which the student learns to use as a way of achieving interesting and stimulating results.

DRAWING:

Obviously the methods undertaken to pursue a knowledge and record of the aspects of nature which I shall discuss in the following chapter, need not depend solely on the traditional skill of drawing. Other methods of gaining and recording information, such as photography, filming, making rubbings may prove adequate, particularly for students whose enthusiasm might be frustrated by their inability to master the skill of drawing.

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However drawing can hardly be surpassed as a means of research, The moment by moment act of visually looking, thinking and recording our discoveries, provides us with not only a permanent piece of information about a thing, but also causes a very intimate personal response to the object perceived. Aspects of natural forms (lines, colours, textures, form) when studied either individually or collectively through drawing, help us , I believe reach a more immediate understanding of these qualities than the somewhat more impersonal act of clicking a camera.

THE LAWS OF NATURE.

A basic knowledge of the elements and principles of nature is required before anyone can be expected to make conscious and successful visual manifestations of an idea, "successful" in this instance implying the ability to choose a logical means (medium and design) to express an idea.

When the student has studied these basic essentials, he can then choose to use or consciously reject this knowledge, according to his own ideas and intentions. One of the most important aims that the study of nature can help us achieve -- is the ability to choose suitably with discretion and honesty, in order to

make the best use of our potential to communicate an idea to others.

PERCEPTION:

I stress once again that I consider the strategies of perceiving the wonderful complexities of nature (which I mentioned earlier) to be of greater importance than the young students ability to produce art. More important is the ability to appreciate its values, and the development of an involved appreciation of the world around us.

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that on leaving school a person may never again be called upon to make a drawing, painting or piece of 3 D work, but if they leave with the ability to make critical informed evaluations of the visual world that they encounter, then they are well equipped to enjoy, understand, and possibly implicate positive changes in all that they encounter throughout their lives.

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CHAPTER 1.

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EXPLORING NATURE.

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EXPLORING AND ANALYSING NATURE: WHY?

CAVE PAINTINGS:

An interest in recording and communicating themes of nature is as ancient as man himself. The cave paintings of Lascaux, in France, which are reputedly 15,000 years old, will testify to this.

AN CHIENT GREECE:

The ancient Greek and Roman civilizations strove towards artistic perfection, looking to nature for both information and inspiration.

MIDDLE AGES:

During the middle ages art frequently became removed from this most elementary teacher often due to religious pressures.

RESAISSANCE:

However Giotto and his contemporaries reintroduced the approach of direct contact with, and observation of nature , as a source for the content of their paintings. This approach paved the way for the full flowering of the Renaissance -- culminating with Leonardo Da Vinci's amazing records, discoveries, and insights into the structure and mechanisms responsible for many of the mysteries of nature.

LEOMARDO DA VINCI:

The drawings of Leonardo show the combination of an artistic and scientific approach. He was interested not only in the surface appearance of living things, but also in the mechanics involved to make it function. The labours of his inquisitive mind enabled him to understand the machine-like efficiency



Above: Cave Paintings. Lascaux, France. 13,000 B.C. Below: Egyptian Fish Vase. About 1365 B.C.



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of nature. In turn, his knowledge of the workings of nature enabled him to develop logically and shrewedly the plans for his own inventions, ranging from flying machines, to submarines, to military armoured vehicles. Some of his inventions were successful — others not (but he continued to modify and experiment with his unsuccessful plans).

DESIGN OF INVENTIONS:

ALC: NOT

The works of Leonardo are a prime example of how all good inventions and scientific developments result from a close and thorough understanding of the laws of nature. The ability to correctly interpret and understand the relationships that exist in nature is vital, if we hope to create for ourselves an efficient and visually attractive man - made world.

SCIENCE AND ART:

Although two different activities, Science and Art have always shared at least one common theme -- the world around us. Down through the centuries both activities have - through their examinations of the laws and relationships that exist in nature - produced a wealth of informative observations and interpretations.

Nowadays both activities have become very highly specialized and with the possible exception of Industrial Design and Architecture very little real interaction occurs between the two. Nevertheless it is interesting to regard the approach of a Scientist wishing to discover the essential nature of a substance: By analysing it into its component arts, he can discover and identify its true nature.

This will then anable him to re-arrange and purify the individual components — thus creating a new substance. with the intention of having certain distinct advantages over the original.

If this is the case in science then it is not possible that by following a similar course of action and by coming to understanding the laws of nature that govern form, pattern,

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Leonardo Da Vinci: 6th. Century Italy. Above: Anatomical Study. Below: Design Drawings for War Chariots.



colour as found in natural objects, then we can use this knowledge to help us develop more truthful, efficient (and subsequently more visually attractive) man-made objects.

CEZANNE : THE STUDY OF FORM:

I

That the above approach can and does work has been demonstrated by the paintings of Paul Cezanne. Down through the centuries many artists have endeavoured to analyse and understand form. However it was not until this century that an artist has really successfully come to grips with the nature of objects in space. This Artist was Paul Cezanne. He believed that the artist's role was to bring order to our experience of the physical world., To analyse our impressions and fit them together again into a conception of nature that would be a true interpretation.

During his lifetime he analysed the world around him, striving to discover the underlying structures that existed behind the surface of all natural forms. His endeavours led him to the conclusion that the inherent structures and character of nature are all embodied within four basic shapes -- the cone, the cyclinder, the cube and the sphere. All natural forms - he believed, could be seen to be made up of composites of these shapes.

Besides causing major developments to occur within painting, sculpture and the related arts, Cezanne's interest in and approach to nature, initiated a new attitude in the development of the visual language and communications of this century.

Paul Cezanne: 1839 - 1906: Above: Study of Trees on a Hillside. Below: Pot of Flowers with Pears.



THE NATURAL AND MAN MADE ENVIRONMENT:

In an ideal world, most people would agree - the man made environment would exist and function in perfect harmony with the natural world. Man would parallel nature by creating for himself surroundings of houses, roads, towns and everyday objects of truly efficient shapes, of which the resulting relationships would be varied and harmonious -- just as in nature. However such an ideal world has not yet occured and is hardly likely to in the foreseeable future.

THE 20 th. CENTURY:

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As the world becomes more and more technologically orientated, the power of the individual to control and preserve the state of his environment becomes more remote. Nevertheless it is not impossible for us to improve the quality of our visible world, even if it extends no further than our own immediate living quarters — through the application of perception, thought, imagination and effort in all that we make or select for our own use.

CONFUSION IN A FAST - MOVING AGE:

Despite the fact that the advances made in science this century have enabled us to gain tremendous insights into the workings of nature, our world is now progressing at such a speed that the application of these findings is frequently muddled, chaotic and misplaced.

The ever increasing confusion that exists within the man made environment, illustrates this unfortunate fact. It becomes more and more essential for each of us, as consumers and witnesses of this technologically advanced society to develop the ability to respond with positive critical perception to all that we encounter.

Herbert Read said that " The crafts could, more than any other form of education, transform our social environment .

As an instinctive revolt against the shoddy products of our factories, they could immediately bring into the home an undercurrent of good taste in furnishings, clothes and utensils"

While a hypothesis could be written on what constitutes " good taste " I do believe that if craft and the study of nature are fused and become a combined activity, the potential educational value which can result is immense. The process of understanding and evaluating begins with the material substance of nature, and combined with a craft (drawing, ceramics, weaving or whatever) this process leads on to a created object. As the making of an object demands many decisions, it is therefore an excellent training ground in independent judgement.

WHY BELIEVE FAITHFULLY IN NATURE?

Over a span of millions of years, since life began on earth, almost all natural forms have undergone numerous changes of physical substance, size, shape, colouration etc. in order to arrive at their present most logical and efficient form. This process has meant that many species and types along the way, became extinct, because in the finely balanced structure of the natural world only the most efficient forms will succeed and survive.

No shape found in nature is accidental, all are adapted to the needs of a specific situation. Consequently nature can teach us a great deal about the laws of efficient design and the resulting visual satisfaction of shapes.

Nature can help us to see how changes and modifications in our own man-made objects will help them evolve into more logical efficient constructions.

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THE FUNCTIONING FORMS OF NATURE:

Every single part or component that contributes to making the whole of a natural form (size, shape, weight, surface quality) is there to serve a specific function, so when we stop on the sea shore to admire a crab, fish or whatever, or admire the flowers and birds in the field, we are in effect admiring an efficient functioning machine. The coloured pattern on a sea shell, or birds wing, or animals coat, is amongst other things, there to provide camouflage.

The delicate fine needles that protrude in a neat regular manner from the domed body of a sea urchin, provides a protective cover from other sea animals.

Even the varying colour hues found in sea weed often depends on the climatic conditions of the sea, and on the microscopic organisms on which it thrives. If any of the conditions which determine the need for the above mentioned characteristics, were to change, then those characteristics would have to change also, or consequently the natural form would no longer be fully efficient within the new conditions.

NATURAL FORCES:

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Therefore, in nature there is a definite relationship between the material or physical substance of a form, the force which shapes it, and the form which results from the shaping. All the shapes found in nature are the outcome of specific forces acting on the material substance of which they are composed. So to fully understand natural forms we must also try to understand the nature of the elements which shaped it, water, wind, heat, cold, etc.

If we can grasp this basic fact, that in nature form follows function, then we will realize that it is a law which should apply just as directly to the shapes we make ourselves, which are also intended to serve a specific given purpose or function.

SUITABILITY OF FORM:

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In nature there is a best shape evolved for each individual form, a best size, best colour, best pattern, and best material. Beacause each of these qualities must perform efficiently in order to serve the whole, when combined (as is usually the case) in a natural form. They all exist in harmony and perfect balance, any one quality is virtually inseperable from the others, for to remove the presence of one would be to lessen or even destroy the overall efficiency of the whole.

Is this not , essentially, what we also strive to achieve in the shapes and objects of our own creation. Admittedly some of the qualities of our own man-made objects will often serve essentually decorative purposes — the pattern of a printed dress fabric, or the ornate slip trailed pattern on a ceramic bowl. But even when certain qualities which are introduced are not entirely essential to the basic functioning of the object, they should nevertheless be introduced to enhance it rather than detract, and should never detract from, or lessen the efficiency of the object.

OBSERVING AND RECORDING NATURE:

Sometimes a lot of technical knowledge is necessary for us to comprehend the real reasons behind the structure and character not only of man-made shapes, but also of many natural forms. However in the case of relatively simple structures a great deal can be perceived and understood through and during the process of drawing and recording, by applying a critical, objective and reasoning outlook of thought and vision. This is particularly the case with the observance of pattern as it occurs in nature. By studying the outwardly visible patterns of a form we can often acquire an immediate insight into the character of the form, its structure, and its shape.

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PATTERN:

Because patterns in nature grow with their forms and develop in the same way as the forms, they frequently offer the viewer an almost graphic explanation of the structure of the form. Take for example the common mussel shell, there is a distinct relationship between the blue and black colour patterns of the shell and the shape of the shell. The pattern is created by the same forces which created the shell. The form and colour pattern are inseperable. The same is true of the pattern on the surface of the whelk shell -- though it differs in appearance from the mussel's pattern, because the structure is different. The patterns of both these shells, while undeniably visually pleasing, are not there for decoration, they are the result of the growth and self preserving properties of the shell. Because the structure of each shell is different the mussel being fan shaped while the whelk is spiral shaped. the surface patterns resulting from the structures are also different. Even within the same species or families of nature, surface qualities will differ according to minute individual differences within the structure of each shell.

Another very clear example of the inter-relationship of pattern and structure is the surface of a leaf (large leaves such as Sycamore and Cak are ideal to study), where the veins are seen to emphasise and reflect the shape of the leaf, while serving as the strong structural skeleton and source of life to the leaf.

The decorative pattern of small white spots, that characterise the domed surface of the sea urchin are not there merely as decoration -- they are the sockets that anchored each of its hundreds of needle-like spindles, which are its protection against marauding enemies.



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WHY DO THE SHAPES OF THE SHELLS DIFFER?

Because their inhabitants and individual life styles and requirements differ. The tapering rotund spiral shape of the whelk shell provides a protective home for its coned worm-like inhabitant — while the broad open end enables it to keep a firm suction grip on rocks or other shells. The body of the mussel is of an entirely different shape.

The soft pliable tentrils of the innumerable types of sea weeds, enable them to move in virtually any direction depending on the prevailing currents within the sea. Their lack of regidity prevents them from snapping off under the pressure and speed of the water, and also enables them to occupy a maximum volume of water, from which to feed on all the minute micro-organisms they thrive on.

LIVING FORMS:

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Service of

Besides giving strength to the flattish surface of the scallop shell, its serrated ridges and edges, enables it to spit out a stream of water from any side thus causing it to jet off or up in the opposite direction as a means of escape from enemies, such as the star fish.

Although all the shapes mentioned above differ in structure and appearance from one another, they are all ideally adapted to their own specific purpose, and are all functioning shapes.

Even the very brief points which I have drawn attention to in the previous paragraph are sufficient to indicate that in the ideal shapes of nature, and in the ideal shapes that we all have the potential to create, there exists a perfect relationship between the shape itself, its requirements, and the material, or method of construction.

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UNDERSTANDING MATERIALS:

By becoming fluent and familiar with the use and possibilities of the materials we use, we increase and improve our ability to produce ideal ; more efficient shapes.

This is particularly important nowadays, with an ever increasing range of materials, and manufacturing methods at our disposal. Long ago when the material content of man's life was less complex, the relationships that arise between the material, the method (or force) and the resulting shape, seemed to have been well understood.

Look for example at the shape of ancient Greek Temples, whose shape, height, size etc., was determined by the strength and capabilities of the stone from which it was made. The length of the stone cross-beams was the factor that determined the maximum possible space between any two columns. Does this same fundamental understanding of the necessity to relate materials to method in order to achieve maximum efficiency, always occur today ?. Unfortunately not, despite the fact that building materials and methods of construction have changed redically in this century, many of the modern buildings in our towns and cities try to mimic the styles and characteristics of the architecture of past centuries - when both their purpose and materials were very different from those of today.

SURFACE OF FORM:

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The surface of a form - patterns and colours are what distinguishes it from otherwise similarly shaped and sized forms.

In nature, the relationship between surface pattern and the form comes about - as was mentioned earlier, through the working of natural laws. Examination of the surface qualities of natural forms will enable us, not through straightforward mimicry, but as a result of the knowledge and insight gained,

to make man-made forms which are both efficient and attractive as a result of a true interactive relationship existing between the form and its surfaces qualities.

Quite frequently the solutions arrived at by man, bear a striking similarity to solutions arrived at by nature, particularly when the context of both man's and natures problems are similar.

COLOUR :

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Today, the vastly expanded range of materials at our disposal, for all inventive and creative activities, poses the increased possibility of our misusing materials, and in no area more so, than in our use of colour.

The way we perceive form, pattern and colour is influenced by our surroundings, the environment in which we grew up and the physical or visible things which we encounter every day, and undoubtedly affects our choice and use of these elements in the objects we make.

With the vast range of colours, going from one end of the spectrum to the other in as wide a range of materials -neon lights, flourescent papers, glass, bricks, paints etc., in use in our urban environments today, it is vital that we understand the effects of colour and colour combinations.

VISUAL RE- ACTION:

Colour is perhaps the most immediate thing we see on looking at an object, consequently the visual effect and context of a form can be greatly altered, effecting an improvement, simply by altering its colours.

Because of this, it is essential that we give great consideration to our choice and use of colour, and the relationships that occur between the form itself and the colours being uded in it.

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ABOVE: COLOUR CAMOUFLAGE IN NATURE BELOW: COLOUR CONTRAST IN NATURE.



CHOOSING SUITABLE COLOURS:

By examining the colour families and colour contrasts that occur in nature, we can learn that only colours which are bound to each other by a certain relationship will be in harmony and present a compatible appearance. In nature this harmony comes about in various ways. An obvious reason is because it is an inherent part of the surface pattern, which in turn is related to the basic structure of the form. On further examination we will usually find that contrasting colours are balanced together, by the patterns which they form, and also by the quantities or proportions in which they occur.

WHAT ELSE CAN WE LEARN FROM NATURE:

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Besides offering us a lot of basic information and insights into the true value of form, pattern, texture and colour -nature also teaches us a lot about associated considerations which the successful use of these elements implies.

Nature teaches us about <u>proportion</u> and how proportion is directly linked to <u>balance</u>.

Sometimes a shape will assume symmetrical proportions to enable it to balance sufficiently to function. -- A crab is symmetrical. Other shapes will be assymmetrical in order to function efficiently. The star fish and sides of the sea urchin are assymmetrical.

Unity is evident in all natural forms because all the elements involved are combined effectively to make the form a fully efficient unit.

Just as unity is evident throughout nature so also is <u>harmony</u>. Harmony is the effect resulting from all things being in proportion, so there are no extremes, but an acceptable order of priorities.



PROPORTION AND BALANCE IN NATURE: ILLUSTRATED HERE BY THE ASSYMPTRICAL SHAPE OF THE STAR FISH.



RHYTHM RESULTING FROM REPITITION- ILLUSTRATED ABOVE LEFT IN THE REPEATING WALL SECTIONS SEEN IN A CROSS-SECTION OF A SHELL. ABOVE RIGHT: REPITITION IS EVIDENT IN THE PROTRUDING SPINDLES AROUND THE SIDES OF THE SHELL, AND ON THE BEAD-LIKE RAISED SURFACE. THE SPIRALLING ARRANGEMENT OF THESE ELEMENTS RESULTS IN A RHYTHMIC EFFECT.
<u>Repitition</u> — The effect resulting from elements repeating themselves can be found at all levels in nature, ranging from the pattern within a single feather to that of an expanse of sand or shingle beach.

<u>Rhythm</u> in nature is often closely linked to repitition and pattern. It occurs when there is an appearance of continuing similar movement or sequences.

Another of the most basic elements in evidence in nature is <u>contrast</u>, or the effect resulting from various very different elements occuring within the same form.

PERCEPTION AND DISCRIMINATION:

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NAME OF BELLEVILLE

An awareness of all the above-mentioned considerations can enable us to decide on the suitability of the elements we employ for use in our own projects. It can help us to decide which medium to use, what techniques to employ, what subject matter or source to refer to, in order to obtain the effect we are looking for, to best communicate a specific idea, and to efficiently serve the purpose of our designs.

Hopefully this perception of the basic true structures and relationships that exist in the natural environment, will eventually enable the student to become a more critical and appreciative consumer of landscape, architecture, everyday objects, and all aspects of the built environment. By developing an ability to understand and interpret the how's and why's of the natural world, the young students powers of discrimination will develop both generally and naturally, through sound experience of value judgements of line, shape, colour, texture and structure, thus enabling not only an informed judgement to occur, but also effecting a positive personal response to the natural and man-made environments.*

CHILDREN &



ALL THE ELEMENTS OF NATURE -FORM, COLOUR, PATTERN, REPITITION, RHYTHM, AND PROPORTION, ARE ALL <u>UNITED</u> HARMONIOUSLY AND EFFECTIVELY IN THE BODY OF THE YOUNG TURTLE - ILLUSTRATED ABOVE.

CHAPTER 2.

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THE MAJOR PROJECT IN CERAMICS: MY APPROACH TO THE PROBLEM.

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THE MAJOR PROJECT:

The Project I chose to pursue entailed the design and production of a number of functional household vessels, to be completed through the medium of ceramics.

Information regarding suitable forms for the vessels, would be the outcome of studies made through the medium of drawing, of a specific area of the natural environment.

THE SOURCE:

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THE SEA SHORE:

I chose my source material from the Atlantic Sea Shore in the area of BELMULLET, CO. MAYO.

It is an area with which I am very familiar, and by now have a fairly intimate knowledge and affinity for the variety of beaches that abound there. Some of the beaches are very stark, wild and stony with little evidence of marine life - particularly those facing directly out to the atlantic, while those fringing Blacksod Bay on the more sheltered side of the Peninsula are very different, with long sandy stretches, and inlets possessing an abundance of sea life and vegetation.

It was from these warmer protected shores that I chose to select the forms which would be the source of information for this project.

I made a varied selection of some of the most interesting and accessible sea shells, pebbles, stones, sea weeds, and sea urchins I could find. From these I then selected a more modified collection, of all the forms which I considered to be most visually interesting in terms of shape, colour, surface te_xture , and condition.

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MY COLLECTION OF MARINE LIFE CONSISTED OF:

SHELLS:

Common Mussels. Great Scallops. Tortoiseshell Limpets. Common Dog Whelks. Cockels. Periwinkles. Tower Shells. Common Sea Urchins.

SEA WEEDS:

Bladder Wrack.
Knotted Wrack.
Channel Weed.
Flat Weed.
Oar Weed.
Serrated Weed.
- and various small red weeds which I could not identify by name.

I made a number of line, texture and colour drawings of the selected forms. With the exception of some of the smaller red seaweeds - which were of extreme simplicity of form and surface, most of the drawings are enlarged studies of the forms, as this allowed for greater scrutiny and analytical observation of the various elements and qualities possessed by each.

A point which I consider worth mentioning, is that it was for me, the <u>action</u> of drawing the shapes that caused me to realize that they were all essentially shapes of a Flamboyant character, the shapes as seen translated to paper being comprised largely of curved lines, and circular. spiral and rotund forms.

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TWO VIEWS OF THE ATLANTIC SEA SHORE, RELMULLET, CO. MAYO.



A SELECTION OF THE MATURAL FORMS COLLECTED FROM THE ABOVE HEACHES.

THE PROJECT:

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Survey

3 CERAMIC HOUSEHOLD VESSELS:

The personal project I wished to pursue involved the design and production of 3 utensils suitable for multi purpose everyday household use.

- 1) A large low open dish: suitable for the display and serving of cold foods such as salads, fruits, savouries, and sea food dishes such as salmon and trout, and their accompanying dressings.
- 11) A large enclosed dish : with a good interior volume of space, to serve a table centre piece for serving hot or cold dishes ie. Hot trout or Cod casserole, Soups and Vegetables. This vessel could also serve when not in table use, as a decorative container for flowers, plants, fruit etc.

111) A large jug for decanting water.

All three vessels to bear a basic relationship to one another through the inherent character of design of each vessel, being derived from the same source material. The vessels were not necessarily to present the image of a"set" - wherein the most complete and satisfactory perception of one vessel would depend on the presence of the other two.

Each vessel to be completely self sufficient and a visually and functionally satisfactory entity in itself capable of serving a number of different purposes. Although they are not intended as a set of matching pieces, it is intended that the vessels when seen alltogether or two at a time should appear in harmony, and complimentary to each other.

HAND BUILDING THE FORMS:

All three vessels would be constructed using hand building techniques.

Slab-building and pinching were employed for the two dishes.

Coiling and slab-building were used in the making of the water jug.

DRAWING:

As my drawings of the marine forms progressed and accumulated, I began to realize that unlike a great many of the natural forms found on land - where vertical and horizontal lines and structures would often appear to predominate, on a superficial level at any rate, over curves and arcs. eg. tree trunks, branches, grasses, crops, the skeletons of humans and mammals.

Marine life offered predominantly curved and rounded forms straight lines, often being a vital part of the structure, but the overall effect ans appearance being one of rounded streamlined forms.

While this statement is admittedly a bit generalized, it would appear nevertheless to be a logical outcome of the different forces which shape the forms of land and sea.

The drawings of both the sea weeds and shells indicated forms of strong voluptuous character - frequently very flamboyant in the shapes and lines and patterns they displayed. This is particularly the case in the frilled Rococcesque shapes made by the broader leafed sea weeds, a characteristic which is heightened by the plants ability to twist and writhe in virtually any direction in the water.

Indeed on examination of many of the extravagances of the Rococo Style in 18th. Century France - the word itself means " Rock and Shell" one finds that the style embraced as the basic foundations of Sculpture, Painting, and Architecture,

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the spiralling shapes, curved lines, and exuberant forms that abound in all forms of marine life. Although a consciousness of marine life was obviously not one of the main causes or influences for the Rococo style, It is nevertheless interesting to draw attention to the similarities of appearance that can arise when art and nature share similar basic structures and characteristics.

NATURE AND FORM OF THE VESSELS:

Initially, I had intended to make vessels of very simple form, and had hoped to balance and compliment this simplicity of outline by the incorporation of a decorated surface - the nature of which would be derived largely from the studies made of the collected objects.

However the more I became involved in the drawings of the natural forms, the more I came to respond to the total flamboyance of their character. Of the examples of sea life I had collected, the only understated quality I found they possessed was that of colouration. This was possibly due to the cold, untropical region from which they came - but also I suspect from the age and state of decay in which many of them were found. I began then to regard form and decoration as of equal weight and importance in the overall appearance - where one would not bear a greater or lesser relationship to the other. When dealing with such flamboyant or exuberant shapes however, one is possibly posed with a greater problem of successfully marrying form and surface decoration than when dealing with very simple straightforward shapes. It was for this reason that I concentrated mainly on the actual forms of the vessels first, keeping tentative plans for decoration at hand, but not finalising these until the form itself had materialized, and could then help suggest more realistically, ideas for surface decoration which would be suitable for the form as it existed in three dimensions, and not merely as a plan on paper.

The leather - hard vessels were kept moist in the " damp cupboard" throughout this period, to prevent any necessity for unduly hurried rash decoration of the surface. (for fear of the clay drying out.).

VESSEL NO. 1 : OPEN DISH.

The first vessel I decided to make was the low open dish, as it posed relatively few problems related to function - its intended purpose implied that it be large, low, flat bottomed, with some form of walls or sides that would allow for the liquid and leafy contents to be held without fear of spillage. After making some preliminary experimental drawing I decided to concentrate most of the decorative forms of the design, around the walls of the dish - leaving the base smooth and flat, to allow for easy arranging and serving of food. By this stage, I had decided as the outcome of my drawings, to utilize the broad decorative shapes of the scallop shell, in combination with the serrated frilled shapes of the brown sea weeds. The combination of these forms offered the possibility of strong fluid shapes with a suggestion of movement - balanced by more rigid linear spinal structures.

A SUITABLE DESIGN:

I made a number of small trial clay versions of the dish using various numbers of scallop shapes combined, to form the wall structure. From these experiments I deducted that an irregular number of sides, resulting in an assymmetrical appearance gave the strongest result - possibly because the vessels were hand-made and so could never really attain the structural perfection of wheel thrown ceramics, which because of the motion of the wheel are always symmetrical. If the sides of the dish were symmetrical, one would automatically tend to measure-up or compare each side with its opposite equivalent, and with hand built ceramics the possibility of this absolute perfection would be rare, and consequently the result

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could look shoddy and disappointing.

Besides the strength of appearance which assymmetry lent to the shape, I realized from the drawings I made of sea -urchins (which is a circular dome shaped shell animal, whose shell can be seen to be composed of five curved wall sections) that an assymmetrical structure would appear to play a very real role in the structural strength of objects possessing a centre from which all other parts radiate. The same assymmetry can be seen in the shape of the common star fish, who has five legs.

Rather than leave the five wall sections standing flatly upright, I twisted and pulled the right side of shape out and down, as I felt this was a logical continuation of the movement and fluid curvature that already existed in the accordian like surfaces of the walls.

DECORATION OF SURFACE:

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I made slight concave impressions at the base of each wall section to create a more natural looking transition between the very decorative forms of the walls and the contrasting flat base surface. Into each of these impressions I then placed a number of small beads of clay - to introduce another surface texture, which I felt was needed to alleviate the somewhat " bald surfaces of the dish. I also encrusted sections of the wall with individual clay beads to allow the theme to become a natural part of the dish, and also again, to relieve the regularity of the serrated surfaces.

The next step would be the decoration of the surface of the form.

DECORATION: POINTS TO BE CONSIDERED.

One of the problems posed by the decoration of a surface in the round - where the surface protrudes and recedes depending on the varying circumferences of the vessel, is that a proposed

decorative shape or design can look perfectly balanced and arranged on paper, or on a flat slab of clay, but when applied to a curved or otherwise non-flat surface, can become distorted - with some areas of the design becoming too prominent where they coincide with the more prominent areas of the shape. While other areas of the decoration appear to become less important, through our diminished view of them where curvature of the surface results in a foreshortened view. Thus our visual perception of a shape can be greatly altered depending on the shape into which it is imposed.

ENRICHMENT OF FORM :

Decoration should ideally be something that enriches and emphasises form. It can be either structural or applied. Structural when it results from the method of making or from natural decorative effects inherent in the particular material, be it glaze or body. Applied when either patterns, symbols, shapes or ceramic materials have been added to the surface by one or more of the many techniques of decorating.

CONTRASTS:

A wide range of visual contrasts can be introduced into a form in decoration which will either predominate or be woven into the fabric of the design. Amongst these are :

Areas of dark contrasted with areas of light.

Large compared with small. Short against long. Sharp compared with rounded Thin against thick. Curved compared with straight. Open shapes compared with enclosed. Fluid shapes contrasted with static. Textured surfaces opposed to smooth or plain.

Everything must be compared and carefully considered; when a shape is made it leaves a shape or space which should also play its part in the composition.

The essence of good decoration is that it should become so integrated with the form that we cannot disassociate pattern and shape.

CHARACTER OF FORM:

The nature of decoration and the technique used must be in keeping with the character of the ware. An engraving or litho print would be suitable for an earthenware or fine china teapot, but hardly suitable for a coiled or pinch pot. The way in which these basic formal values have been used, will constitute the designs aesthetic merit.

The purpose of decoration is to enrich a form or surface with variations of texture, tone, line or colour be they structural or applied.

Structural decoration occurs mainly in hand made wares, as opposed to mechanical production. The richness of unsmoothed coils on a coiled Peublo jar for example, or the patterns of texture on stoneware or earthenware pots caused by ash deposits in an open wood-fired kiln.

When a thrown shape has rich vigorous throwing rings on the surface it may seem superflous and unnecessary to add any further decoration.

STRUCTURAL AND APPLIED DECORATION.

In the past many applied patterns were developed from decoration that was originally structural, or from structural patterns in other natural materials, such as basketry and marble. Some forms of structural decoration have been studied and intentionally used to add richness to ceramics. The calculated use of metallic deposits in a stoneware body, to combine with the glaze during firing, is a method of decoration practised by many present day studio potters.

AND TOTAL CARE

Applied decoration is a purely human concept and application. Here man can observe or draw his own constructions, natural forms and patterns, to be assimilated in part or whole, and produce them as ideas or designs in the form of symbols or patterns to be used in an integrated way as decoration. It is therefore an external element which is added to the ceramic surface or form.

So to decorate anything successfully it is vital to establish a true relationship between the pattern and the form to which its applied, without this no successful decoration is possible. Generally speaking the character of the form should be reflected in the pattern. As a general rule it can be said that a strong heavy form calls for a strong pattern, while a light delicate form demands a delicate pattern.

A suitable pattern will not only decorate, but will also enhance a form. It should appear to be an extension of the basic shape, flowing out of the form and not appearing to be stuck on as an afterthought.

Just as it is impossible to seperate form from surface qualities, it is also impossible to consider form and surface without also including colour. The colours used in decoration will affect the character of the form, and the way we interpret it.

THE DECORATION OF THE DISH:

When the dish was leather hard I painted the outside walls with blue slip. I chose the colour blue, because of the choice of slip colours available to me, it is one of the most successful in finished stoneware - presenting a rich vibrant clear blue. I also chose it because of its inherent marine associations - a characteristic which I wished to maintain not only in the forms but also in the colouration of the three vessels. I related the now blue outside to the inside of the dish, by painting some of the encrusted pebbles in blue slip also. I left the inside predominantly unpainted, as I felt it already had enough decorative qualities in form alone. The differences in colour of the inside and the plainer shaped outside, would

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have the effect of creating both balance and contrast in the whole form.

When the slip was dry, I felt that some extra "tie" was needed between the interior and exterior surfaces of the dish, and I achieved this by engraving (sgraffito style) into the slipped walls of the outside walls - five fans composed of simple tapering lines which echoed the linear forms of the inside walls.

VESSEL NO 2 : LARGE EN CLOSED DISH:

It seemed a logical progression from the open dish, to next tackle the design and construction of the large enclosed dish. It was in essence to be simply a more developed version of the former. It did however involve the performing of slightly different functions. It was not to be primarily for the display of foods, as was the open dish, but for keeping foods hot. This requirement suggested the need for a deeper, more compact interior space. A smaller opening would help to contain heat within, some form of lid or cover would also be necessary to keep contents warm.

A large bulky vessel - which would probably be very hot when in use, would also require handles of some sort, for comfortable and secure handling and lifting of the vessel.

A SUITABLE SHAPE:

The consideration of the above requirements suggested a bowl shaped vessel with a small base growing upwards and outwards to a wider circumference and then sloping inwards again to a narrower opening. This would enable the vessel to contain a large volume of food stuffs or whatever, the small base would provide easy access to all areas of the interior. The large flat base in the open dish was both necessary and easily accessable, but in the deeper vessel such as this, while obviously being more inaccessable due to the smaller opening, would also be unnecessarily space-

consuming on a table top.

I decided to utilize the five sided structure again in this vessel.

- (1) because it would relate to the first dish.
- (11) like the first dish it was also to be a slab construction and therefore would anyhow require the use of flat clay slabs.
- (111) I again intended using curving rounded shapes at the neck of the pot, and felt that a somewhat angular body was necessary to balance and compliment, through contrast with the more flowing nature of the upper forms.

CONSTRUCTING THE BODY:

Initially, I thought it would be possible to construct the main bowl of the pot using five pattern-cut slabs, bent over at their centers and attached to each other at their sides, and then attached at their base to a pentagon-shaped base slab. However after an unsuccessful attempt at joining the leatherhard slabs in this way, I realized that it was not really possible to join the pieces accurately and successfully in this way, as the result was an unattractive and inefficient looking sharp-sided angular construction. As I wanted each wall section to have a slight convex curvature, I realized that it would be necessary to construct the bowl from ten wall units - five for the walls of a top half and five for the walls of a bottom half. This way each half of the bowl could be given the desired curvature and be fitted and joined together when leather hard.

This approach proved successfull, and as an extra precaution I reinforced the many joins of the bowl with an additional soft coil of clay, pressed into the join lines and then smoothed into the walls.



VESSEL NC. 2. IN THE BISCUIT FIRED STATE, THE STENCILLED SEAWEED SHAPES DECORATE THE SIDES.

HANDGRIPS:

In making the open dish I became aware that the curved "scallop" walls, apart from being a delicate and structural element of the dish, also provided sturdy handholds, the serrated surfaces also provided a non-slip grip.

I decided to combine the idea of a decorative rim at the top of the bowl, with the necessity for sturdy handgrips for lifting the vessel. I again used the theme of the scallop shells. I cut five premeasured semi-circular identical shapes from a prepared slab, and while in this fresh state, I shaped each of them into the basic serrated forms necessary , as it would not be possible to do this successfully once they were attached to the neck of the dish. I then attached each with slip, at a slight outwards angle to the five sides of the opening. wetting each with water to prevent cracking, I pulled and pinched each into the required shape and curved the edge of each downward to give a firmer handhold (when viewed from above this had the effect of creating a revolving propeller-like appearance). The downward twist of each "handle" enhanced the fluidity of their curved shapes, and helped to create a greater sense of rythmn, linking each form to the next.

The angle at which the five scallop shapes move out from the neck of the dish, was chosen so that the shapes appear to move fluidly from the structure of the dish, and not appear as a seperate structure attached to the bowl. The fact that one side of each scallop shape curved down to overhang the dish shape, also contributed to the sense of unity between both. At this stage I felt that the contrast between the simple, stark, slightly angular body of the dish, and the curves and frills of the upper forms, was a bit too great. Some slight softening and balancing, accentuation of the lower structures form was necessary. To achieve this I attached gradating.beads of clay to the vertical joins of the bowl, this helped to accentuate the pentagonal character of the bowl, and also lent it some areas of focal interest. I increased the surface texture slightly by piercing the center of each bead.

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THE LID.

The next problem to be solved was the provision of a suitable lid.

A flat lid was out of the question, it would present too extreme and unrelated a contrast to the main bulk of the dish. A circular, domed lid would not appear logical - as the lid was in effect, to be the top of the five sided main form. So it seemed natural to continue the theme of the pentagonal into the lid, giving it only a slight dome so as not to be in competition with the height and curves of the scallop shapes. Because of the curvature of the scallop shapes at the opening of the dish, it was not possible to consider a lid with an overlapping lip - which would rest on the edges. The lid would have to sit flush into the opening - this necessitated some form of additional structure on the edge of the lid which would serve a similar function to an overlapping lip. I achieved this effect by attaching a small upturned tendril or "finger" to the center of each of the five sides . These were attached at an outward angle, equal to the angle at which the scallop shapes turned out from the opening.

I attempted a number of different handle shapes (both on paper and in clay) for the lid, before I eventually decided on the five dome-topped "fingers". This shape related very directly to the "fingers" at the sides of the lid, and also reflected other elements of the pot - being of an equivalent number of sections to the wall structure of the pot. Also, by being assembled with a slight outward curve to each finger, their rounded shapes combined with the linear appearance of five seperate verticals, related them well to the serrated surface of the scallop handgrips.

SURFACE DECORATION.

The next stage to be considered was the decoration of the actual surfaces . I could of course have left them plain, as the form of the vessel as it now was, was quite decorative in itself. However, I thought that the exuberant organic qualities

of the vessel could be further enhanced and explained by the application to the surface, of flat decorative shapes, expressing the same exuberant qualities and source material of the forms of the vessel.

I also felt that surface decoration would help to restate focal areas of interest on the vessel - a consideration which I think is very important to an object where so many forms are in evidence.

Once again I chose slip as the method of decoration, as I think this medium offers the precision which, considered necessary to compliment the form.

From the drawings I had made of sea weeds I adapted a number of silhouette shapes, and from these I made five different paper stencils. Each stencil was soaked in water and pressed onto a wall of the vessel. The stencils were large, to balance the size of each wall area. Small isolated shapes would have appeared lost and unrelated to the size and shape of the wall areas.

I tried to relate the shapes of the stencils to the wall sections, letting them grow up and out from the base and spread out in flowing movement over the upper wall areas - our view of which is more comprehensive than that of the lower regions of the pot. In the slip decoration of the whole vessel , I used only one colour - blue again, as I felt that any more colours would look chaotic on a form that already combined so many decorative elements.

I accentuated the edges of the scallop shapes by painting them blue also, and I allowed the colour to continue into the forms of the shell shapes in the form of tapering curling lines that followed the surface structure of shapes. The edge of the lid, the tips of the "fingers" and the entire handle were also painted blue. To make a more natural transition from the blue handle into the uncoloured lid surface, I applied a simple brief sea weed silhouette at the centre of the lid. The pentagonal nature of the pot was again highlighted by painting small radiating dots along the join edges.

In an enclosed vessel such as this, the appearance of the interior is obviously not as noticeable as the exterior. Nevertheless to give the interior an unobtrusive but related appearance to the outside, I painted the same small radiating dots on the lower joins of the walls, terminating them where the joins met the edge of the base.

VESSEL NO. 3: THE WATER JUG.

For the third and final vessel - the water jug, I decided to adopt a different approach from that which I applied to the former two. I aimed at a more streamlined simplicity of form, as I felt this would be more appropriate to the liquid contents for which it was intended. Handbuilding was once again the method of manufacture, - this time combining coiling and slab building. I decided to use the edges of the top of the jug, as the main decorative feature in the form. Using ideas taken from the frilled edges of the brown wrack weeds, I made some experimental sketches which helped me decide on the shapes, proportions, and finally method of making.

COILING.

I first made a slightly egg-shaped coiled body - being more elegant than a spherical shape, also the longer upper slopes allowed for a more natural fluid transition into the intended flowing forms of the spout and neck. While the body was firming up slightly, I cut from a flat slab another slightly egg-shaped piece of clay. Out of the centre of this I cut a hole slightly smaller than the opening at the top of the body. When both were leather hard, using slip I placed the flat slab over the neck of the body and moulded the two together. By applying pinching and pulling techniques the small end of the egg shape became the spout of the jug, while the sides of the slab were pulled vertically upwards to continue the flow of the bodie's structure, and also to form the sides of the spout.

THE HANDLE.

The back of the slab was pulled downwards, to balance the outward thrust of the spout, and to contrast with the upward swing of the sides. It also allowed for the efficient anchoring of the handle to the jug. I cut a hole into the back of the slab to allow the handle to pass through and join onto the body of the jug. I left the handle with slight blunt ends as I felt this gave a necessary contrast to the fluid lines in evidence throughout the rest of the form. I balanced this cut out by placing a few clay pebbles on the upper lips of the jug.

SLIP DECORATION.

Some surface decoration was necessary to emphasise the form and its character a little more. I t was also necessary to relate it in colouration to the former two vessels. I felt that the flowing lines of the jug could be enhanced by a decoration which flowed out and over the form itself. To do this I painted the entire upper half of the jug with blue slip and allowed it to trail off downwards in hanging sea-weed derived silhouettes.

GLAZING THE VESSELS:

The problem of glazing the vessels was one to which I gave long and deliberate consideration. As all three vessels were slip decorated, it was essential that whatever glaze was used would allow the slip to show through adequately, and would also create a harmonious resulting colouration between the glaze in its true state and the glaze in its altered colour over slip.

A transparent glaze was an obvious option as it would allow the slip to show through clearly and with a minimum of problems.

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However I decided against this as I had previously used it on a large stencil slipped pot and felt that it resulted in a somewhat dead raw appearance when used on large areas of clay. Also, I thought the extreme contrast of tones that would be created by a transparent glaze over slipped and unslipped surfaces, would be too great - especially on vessels where there was already a lot of decorative elements in the form itself.

MATT WHITE GLAZE.

Idecided instead to use a matt white glaze, as this in its straightforward state has a warm mottled frothy appearance, and when placed over blue slip has the effect of diluting and softening the colour to a sky blue.

The more subtle played-down colour scheme that the matt white offered, would I felt, provide the necessary simplicity to balance the flamboyance of the forms themselves.

POST SCRIPT:

A small test bowl was made to determine the colouration resulting from blue slip under matt white glaze. The bowl was painted with blue slip on the outside and engraved with sgraffito design. This bowl is on display with the 3 Major Project Vessels, to illustrate the colour effects intended for these vessels.

Unfortunately however, due to a misunderstanding, the 3 Major Project Vessels were given an Electric Kiln firing instead of the necessary Gas Kiln firing.

The electric firing caused the glaze to behave in a different manner to gas fired glaze, and as a result the desired interaction between blue slip and white glaze did not occur.



THE TEST BOWL.







VESSEL NO. 2. LARGE ENCLOSED DISH.



VESSEL N C. 3. THE WATER JUG.



THE THREE VESSELS SELN TOCETHER.

THE MAJOR PROJECT:

IN CONCLUSION:

Although, as stated in the post-script, the final outcome of the three major project vessels differed somewhat in appearance from the original intention, the quality of the surface colouration and texture resulting from the error, did not displease me.

If the vessels had been fired in the gas kiln, the white glaze would have assumed a slightly glossy or silk finish, with very even colouration - the blue slip showing through in an equally even manner.

However, the electric kiln firing- while failing to allow the slip to show through, nevertheless caused a very satisfying, rich and varied colouration to occur, which undoubtedly enhances the forms of the vessels.

The matt, slightly gritty texture of the glazed surfaces is happily very much in keeping with the organic character of the forms. The range of colours which are in evidence white, buff, brown and stone - some of which are the result of a slight "burning out" of the glaze in some areas,are also very compatible with the nature of forms - being as they are, reminiscent of the original source material for the project - sand, pebbles, shells, seaweed etc.,

A conclusion I can draw from the result of the error, (over the firing of the vessels) is that the two apparent options for the final colouration of the vessels, -

1) That which was intended, and

11) That which occured, would most likely give equally satisfying, though different results, but each nonetheless enriching and enhancing the essentially marine-like organic forms of the vessels.

OTHER USES FOR THE SOURCE MATERIAL:

Besides providing me with the necessary source of inspiration and information for the design and execution of these vessels, the drawing which I made for the project, of seaweed and shells, also became very conveniently and unexpectedly useful in other activities with which I was involved at the time. Some of the drawing, of the scallop shells provided the idea and information for the design of a small evening bag, which I made in soft white leather, while the drawings of the seaweeds and sea urchins provided an interesting and decorative theme for a lino-print.

The ability of source material studies to spill over as a source of information for other activities, can be exploited to great advantage, not only in our own work, but also in the classroom - where a single observational study by the pupil, can provide the motivation for a variety of other activities in crafts, design and other imaginative work.

CHAPTER 3.

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SUMMARY AND CONCLUSIONS.

TO SUM UP:

The statements made in Chapter One, and the practical implimentation of these principles as described in Chapter Two, point towards a very definite, and single minded approach to the teaching of art and design. I do not propose however, that this approach - wherein natural laws are explored to the <u>exclusion</u> of all else, - should be carried right through a five year school curriculum, but I do believe that if a course of learning based on the study and subsequent understanding of nature, as outlined in this thesis, is introduced to the first and second year students in a Second Level School (11 - 13 years old approx.) it provides a firm, stable, and honest anchor on which to build and extend in the following years activities, involving man-made creations and environments as well as further exploration and use of themes of nature.

A SUITABLE AGE AT AN IDEAL STAGE:

If the young student understands the structures in natural forms, and the laws of necessity which determine the inherent relationships that occur within a form, he/she is equipped to make informed judgements and decisions regarding the art and design work which is produced or encountered in the following school years.

RESPONSE:

In the first and second years of Secondary Schooling, the pupils are usually of an age where they respond enthusiastically to both animate and inanimate natural forms, and a desire to make stylized pseudo - adult records of what they see (as often happens in middle or later teens) is rarely a factor to be contended with.

So it is an ideal age group, at an ideal stage of their education to initiate into a comprehensive course of basic visual perception.

A visual education course based on a study of the natural world, if undertaken in the junior years of secondary schooling, may frequently benefit from the parallel activities occuring in the junior Biology class- where the study of the structures of simple living creatures is a recurrent theme. Similarly with the junior Geography course, where the effects of natural environments on plant and animal life are noted and explained. Thus by recognising what is happening in the artclass as having wider implications than simply drawing or painting, as reinforced by the activities of the fore-mentioned subjects, the young student will hopefully realise the true values of nature, and the wealth of information we can gain from the observation and perception of these values.

In a course such as this the most basic skills which will be required for all creative activities in the following years are introduced and developed as an intrinsic part of the process of observing, recording and drawing conclusions.

Skills of : i) Drawing with various medium.

- 2) Colour perception and application.
- 3) Skills of cutting and glueing.
- 4) Awareness and use of composition.
- 5) Ability to recognise and create textures and petterns.
- 6) Skills of construction in 3D.

NATURE AND THE HISTORY OF ART AND DÉSIGN.

Besides the practical advice it has to offer us, the study of the natural world can also open the set

of the natural world can also open the gates for a straightforward, stimulating study of the history of art. The history of art is after all an intrinsic element in the history of the development of man, and the many civilizations which have come and gone, and those which still endure.

In the first few years of the secondary education, aspects of art history can be introduced as a vital link in understanding how man in the past has utilized and pereived nature. To students of this age group, the social implications of a Cave painting, Egyptian tomb carving, Greek statue or Medieval tapestry, may be of more interest than the development of techniques and perception.

This interest should be encouraged, as it will come to be seen that social mores and conventions, and the different requirements of an age or civilization frequently determined the techniques used - of both medium and presentation.

In the third, fourth, fifth and sixth years of second level education, as the overall art curriculum is broadened and extended to cover <u>all</u> aspects of the world around us - both natural and man-made, the theme of nature can still provide a very useful aid in initiating an understanding of the ever-more complex recent history of art and design.

HISTORY OF LANDS CAPE PAINTING:

Take for example a course of art history study based on the theme of landscape painting. Such a course would cover virtually all aspects to be considered in a comprehensive understanding of the history of art.

> - Development of technique. Development of perception. Development of style,

and how these vary depending on the culture or civilization.

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Above: Colour Print by the Japanese Artist, Hokusai (1760-1849) Below: Water Colour by The English Artist, Thomas Girtin,(1775-1802). Illustrate the differences in the perception and communication of a similar theme - by two different cultures and traditions.



Evidence of the social demands of the artist and the interest of the patrons for whom he worked, are all to be found in landscape painting. For example, the small genre rural scenes. painted for the down-to-earth middle class patrons of 17th. century Holland , present a strong contrast to the frivolous, highly stylized and idealized rural views painted to decorate the boudoirs of 18th. century French aristocrats. The different attitudes relating to the manner in which the recurrent and ever popular theme of landscape has been painted, lead us from the romantic movement of the early 19th. century, to the stark realism of mid 19th. century and subsequently into the developing scientific interest in the effects of light on our perception of landscape, with the impressionists, which helped create a climate for the development of an interest into the 20th. century, where nature has frequently provided a jumping-off point for various art movements and individual artists, amongst them being Paul Klee, Mondrian, The Bauhaus and Le Corbusier.



Flowers and Living forms are the subject of both these Paintings, but the manner in which each Artist has chosen to use his source material has resulted in two very different images. Above: Jan Van Kessel (1626 - 79). Below: Giuseppe Arcimboldo (1527 - 1593).





The Netherlands have a tradition of outstanding Landscape Painting. Above: Meindert Hobbema (1638-1709) "Path on the Dyke". Below: Jacob Van Ruisdael (1628-1682) "The Cornfield".




Paul Cezanne (1839-1906) "Mount Saint Victoire"



Paul Klee (1979-1930) "By The Frout Stream"

TO CONCLUDE THIS THESIS I HAVE OUTLINED ON THE FOLLOWING PAGES A ONE YEAR SYLLABUS BASED ON THE STUDY OF THE NATURAL WORLD. THIS SYLLABUS IS SUITABLE FOR THE FIRST AND/OR SECOND YEARS OF A SECOND LEVEL ART CURRICULUM.

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1 YEAR SYLLABUS.

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FOR THE FIRST YEAR IN POST - PRIMARY ART EDUCATION.

AGE GROUP: APPROX. 11 - 13 YEARS.



ENLARGED LINE AND TONE DRAWINGS OF A PINE-CONE (APOVE) AND A BARNACLE-ENCRUSTED SHELL (BELOW), PROVIDED THE NECESSARY KNOWLEDGE AND INFORMATION ABOUT THE FORMS FOR FIRST YEAR STUDENTS (AGE II/I2 YRS.) TO MAKE THE CERAMIC TILES SHOWN IN THE PHOTOGRAPHS. RESIDE THEIR SOURCE DRAWINGS.





TWO MORE SETS OF DRAWINGS AND THEIR ACCOMPANYING TILES, MADE BY FIRST YR. SPUDENTS (AGE 11/12) AT MUCKROSS SECONDARY SCHOOL, DONNYBROOK, DUBLIN. ABOVE - TILE DERIVED FROM DRAWING OF COCKLE SHELL. HELOW - TILE DERIVED FROM DRAWING OF COCKLE SHELL.



NOTE: SEE SYLLABUS PROJECT: CERALIC TILES.

NO. OF LESSONS:

PROJECT:

4	LESSONS _	VISUAL COMMUNICATIONS
4	••	PRE - HISTORIC MAN
5	••	PEOPLE IN ACTION
3	••	HANDS
3	••	CAMOUFLAGE
7		AUTUMN LEAVES
4		CERAMI CS

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PROJECT:	VISUAL COMMUNICATIONS.
LESSON 1.	PERSONAL INTERPRETATION OF ELEMENTS OF NATURE.
2.	VISUAL INTERPRETATION OF WORD/IDEAS.
3.	SLIDE SHOW OF MAN'S VISUAL SYMBOLS.
4.	DESIGN OF POSTER.

LESSON 1.	PERSONAL INTERPRETATION OF ELEMENTS IN NATURE.
CONTENT :	Drawn and written statements/descriptions made on a large grid lay-out of 6 very different natural forms.
OBJECTIVE:	To develop awareness of personal responses to line, shape, colour in nature.
MATERIALS:	Paper, Pencils, Char-coal, Crayons, Feather, Bark, Apple, Grass, Twig, Moss:
LESSON 2.	IMAGINATIVE DRAWING.
CONTENT :	Visual interpretation of words and ideas in line shape colour on a grid lay-out.
OBJECTIVE:	To communicate effectively - in visual terms only - the essential meaning of a word or idea.
MATERIALS:	Pencils, Paints, Charcoal, Markers, Crayons, Paper, Ruler.
LESSON 3.	SLIDE SHOW/DISCUSSION.
content:	Audio-visual presentation of man's use of visual symbols ranging from pre-history to the present day.
OBJECTIVE:	To cause critical awareness - through discussion- of how man has used the emements of line, shape, colour to communicate a specific idea.
MATERIALS:	Variety of slides, Notebooks.

LESSON 4.	DESIGN OF POSTERS.
CONTENT:	Design of poster using paper cut-out shapes for " wind surfing" "flying", "mountain climbing" or other topics.
OBJECTIVE:	Develop ability to choose relevant shapes, colours, composition to communicate a specific idea/theme.
MATERIAL:	Coloured papers, (poster or sugar) Craft knives, Scissors, Rulers, Pencil.

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PROJECT:	PRE-HISTORIC MAN.
LESSON: 1.	NATIONAL MUSEUM.
2.	EXPERIMENTING WITH PRIMITIVE TOOLS-CERAMICS.
3.	GROUP-WORK, MURALS RESULTING FROM RESEARCH.
4.	COMPLETION OF MURALS.
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LESSON 1.	NATIONAL MUSEUM.
CONTENT.	Completion by each pupil of a work sheet on stone-age pots, in the National Museum.
OBJECTIVE:	To show that the decoration of surfaces by man is an age-old pursuit. Man's ability to utilize with inventiveness and imagination the most limited resources.
MATERIALS:	Worksheets, Pencils, Hard A 4 cardboard (to lean on).
LESSON 2.	EXPERIMENTING WITH TOOLS.
∞mtent.	Decoration of small clay pinch pots (or tiles) with " primitive" tools.
O BJE CTIVE:	To demonstrate how the character of a form's surface can be altered with great variation, with the most limited resources being used.
MATERIALS:	Clay, Tools-Twigs, Pebbles, Bones, Fingernails, Grasses.
LESSON 3.	GROUP MURALS.
content.	Groups of 4 pupils collecting and compiling information about Stone age Ireland for use in a group mural.
OBJECTIVE:	To reinforce the fact that objects in Museums once played a real functional role in day to day life of a past age.
MATERIALS:	Pupils own History Books, Nature books, Pencils, rough work , Paper.

LESSON 4.	COMPLETION OF MURALS.
CONTENT.	Execution of Murals by groups, each group member illustrating in the mural, a stone age pot in use.
OBJECTIVE:	To develop pupils ability to visualize museum items into the context in which they were used.
	To promote consideration, responsibility and harmony within a group situation.
MATERIALS:	Black sugar paper, Crayons, Scissors, Gum, Fabric scraps, sand, Magazines.

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ROJECT:	PEOPLE IN ACTION.
ESSON 1.	LIFE DRAWING.
2.	COMPOSITION.
3.	IMAGINATIVE DRAWING.
4.	EVERY DAY IMAGES.
5.	STORY BOARDS.

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LESSON 1.	LIFE DRAWING.
content:	Silhouette drawings (with aid of light projected onto model in front of white background) 4 poses: "walking profile" "standing at ease . front view", "crouching", "stretching" upwards.
OBJECTIVE:	Awareness of overall shape and the human body's
	potential for effecting a wide variety of shapes.
MATERIALS :	White paper, Pencils, Projector.
LESSON 2.	
TESSON 2.	COMPOSITION.
CONTENT:	Cutting out silhouette drawings in lesson 1. and arranging into a composition on black paper, to create visual effect of "running for bus"
	"thief" "accident" "conversation" or other topic.
OBJECTIVE:	To develop awareness of how by altering the arrangements of the same shapes our perception
	of the resulting image will also change.
MATERIALS:	Black sugar paper, Gum, Scissore.
LESSON 3.	IMAGINATIVE DRAWING.
CONTENT.	Translation of silhouette composition onto
	white paper and complete the context of the
	image by introduction of full background, details, colour to image.
CBJECTIVE:	To test and develop abilities of perception and
	recollection from memory of scenes/images
	encountered every day.
MATERIALS:	White paper, Pencils, Paints, Palettes, Brushes.

LESSON 4.	EVERYDAY IMAGES.
∞™TENT:	Each pupil is given a photo/image depicting a number of people- from which to devise in the form of a short written tale - a possible
ODIROTIN	comprehensive explanation for the content of the photo.
OBJECTIVE:	To develop and expand the narrative possibilities of the previous lesson through the creation of a sequence of coherent stages / images.
MATERIALS:	Selection of photos, Notebooks, Rough work paper, Pencils.
LESSON 5.	STORY BOARDS.
LESSON 5. CONTENT.	STORY BOARDS. Illustration of stories on story boards of a specified number of frames. visual images only (no words).
	Illustration of stories on story boards of a specified number of frames. visual images only

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PROJECT: LESSON: 1.	HANDS. LIFE DRAWING - SHAPES.
2.	LIFE DRAWING - FORM.
3.	IMAGINATIVE COMPOSITION.
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LESSON 1.		
LISSON I.	LIFE DRAWING - SHAPES.	
CONTENT.	 Division of page into 8 section grid i) 4 line drawing of own hand in 4 very different attitudes. ii) 4 line drawings of hand in same position from different angles. 	
OBJECTIVE:	Introduction to drawing living things, by simple study of the most elementary considerations - ability to move, change shape etc.	
MATERIALS:	Paper, Pencil.	
LESSON 2.	LIFE DRAWING - FORM.	
CONTENT.	Study of form - through i)"contour line" drawing of hand. 2) Tonal drawing of hand.	
OBJECTIVE:	To extend the pupils vocabulary of drawing methods, to successfully relate information about the subject of the drawing.	
MATERIALS:	Paper, Pencil.	
LESSON 3.	IMAGINATIVE COMPOSITION.	
content.	Imaginative image based on theme of hands eg. "magic gloves" "pickpocket" using own hands in suitable position as model for the activity taking place in the image.	
OBJECTIVE:	To develop imaginative abilities to visualize and extend an image into a different context.	
MATERIALS:	Paper, Pencils, Colouring medium (any).	

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PROJECT: CAMOUFLAGE. LESSON: 1. SLIDE SHOW - CAMOUFLAGE. 2. STILL LIFE.

DESIGN.

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LESSON 1. SLIDE SHOW: COLOUR IN NATÚRE.

CONTENT: A slide show with discussion on camouflage in nature. OBJECTIVE: To develop an awareness of the reasons for the wide range of colour combination and patterns that exist in nature. MATERIALS: Notebooks, Pencils. Slides. Thrush in tree, Butterfly on bark, Tortoise in undergrowth, Fish in seaweed, Peacock, Polar Bear, Tiger in bamboo, Frog. LESSON 2. STILL LIFE. CONTENT: Class divided into 3 groups, each individual of each group make a detailed colour observational drawing of 1) Tulips or 2) Rhubarb 3) Section of class room. OBJECTIVE: Develop ability to perceive and record colour variations and combinations within similar structures. MATERIALS: White paper, Paints, or Crayons, Pencils. LESSON 3. DESIGN FOR FABRIC. Members of each group are asked to make a design CONTENT. for camouflage clothing fabric for if) Hiding in Rhubarb patch, i) Hiding in field of tulips,

iii) Hiding in class room.

in cut-out paper shapes on paper.

OBJECTIVE: To develop ability to select and simplify and identify, essential elements characteristic of specific form/s.

MATERIALS: White paper, Scissors, Coloured paper, Gum, Brushes.

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PROJECT : AUTUMN LEAVES

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- LESSON 1. STILL LIFE
- 2. COLOUR MIXING
 - 3. TEXTURE
 - 4. PATTERN
 - 5. PATTERN
 - 6. PEINT FROM FOUND OBJECT

7. POTATO PRINT

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LESSON 1.	STILL LIFE.			
CONTENT:	Observational drawing in line and tone of natural form. (e.g. Autumn leaf, Bark, Shells etc.			
OBJECTIVE:	To develop skill of drawing.			
MATERIALS :	2B Pencils Natural forms (with textured surface) White paper.			
LESSON 2.	COLOUR MIXING.			
CONTENT:	Observation and recording of all colours found in natural form.			
OBJECTIVE:	To develop awareness of range of colours existing in nature. To develop ability to identify and mix colours.			
MATERIALS:	Natural form. Elack paper. Paints. Brushes. Pallette. or Wax and Oil Crayons.			
LESSON 3.	NATURE WALK-TEXTURE.			
CONTENT:	Discovering and exploring texture in nature by taking rubbings from natural surfaces encountered on a nature walk.			
OBJECTIVE:	To further an awareness and understanding of the different surface qualities in nature.			
MATERIALS:	Newsprint paper. Black wax crayons.			
	Drawing pins.			

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LESSON 4.	PATTERN.			
content:	Enlarging through drawing, a section of rubbing (taken in lesson 3.) and identifying the type of shape or line that recurs in the texture.			
OBJECTIVE:	Recognising and identifying patterns in nature.			
MATERIALS:	Ruler (for making enlarging grid). White paper. Black marker.			
LESSON 5.	PATTERN:			
CONTENT.	Making an original pattern by translating a simple drawn shape into a card stencil, and printing a repeat pattern on paper.			
OBJECTIVE:	To show how the repitition of any shape or group of shapes results in a pattern occuring. To develop skill of cutting and of colour application.			
MATERIALS:	Craft knife, Paint, Sponge, Card, Paper.			
LESSON 6.	PRINT.			
CONTENT:	Printing from found objects - natural and man-made.			
OBJECTIVE:	Introduction to printmaking using embossed surfaces.			
MATERIALS :	Newsprint paper. Objects with suitably flat embossed or engraved surfaces (coins, corks, shells, etc.) Paint, Brushes, Sponges Pallettes.			

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LESSON 7.	POTATO PRINT.
CONTENT :	Cutting a simple motif from potato, and creating repeat pattern from same.
OBJECTIVE:	Develop awareness of positive and negative shapes and the potential of simple shapes to develop into a more complex image - which until printed remains un-realised.
MATERIALS:	Potato, Knife, Paper, Paint, Sponge.

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RAMIC TILES.	PROJECT:
SERVATIONAL DRAWING.	LESSON 1.
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PERIMENTING WITH VARIOUS TOOL.	3.
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LESSON 1.	OBSERVATIONAL DRAWING.		
CONTENT:	Enlarged line and tone drawing of a natural form.		
OBJECTIVE:	To explore the qualities of form and surface, characteristic of a specific natural form. To introduce the skill of enlarging (by awareness of proportions).		
MATERIALS:	White paper, Soft pencils, Strips of card or Rulers.		
LESSON 2.	VIEWFINDERS.		
CONTENT:	Making and using a viewfinder.		
OBJECTIVE:	To select by isolating an area of the drawing, an image most characteristic of the natural form.		
MATERIALS:	Paper card, Craft knives, Rulers, Pencils.		
LESSON 3.	EXPERIMENTING WITH TOOLS.		
content :	Making of experimental tile surface using a wide variety of tools eg. nails, screws, spoons, fork, hair clips, matchsticks, wire twigs etc.		
OBJECTIVE:	To discover possible effects, suitable for creating specific textures.		
MATERIALS:	Variety of tools (mentioned above) clay, (or plasticene) rulers.		

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LESSON 4. THE DERIVED DRAWING.

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CONTENT: Making of ceramic tile using the drawing of the natural form as reference and source of information.
 OBJECTIVE: Interpretation and translation of 2D drawing into 3D image.
 MATERIALS: Clay, Tools, Drawing.

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