Gleaning Potential
Practicing design through material expression

A project submitted in fulfilment of the requirements for the degree of Master of Design.

Simon Lloyd
B.Design (hons)

School of Architecture and Design
RMIT University
June 2009
Abstract.

This research project examines the potential of gleaned material fragments to inform a practice of designing artefacts for production.

The project presents processes of working with material fragments in the context of newly designed artefact examples to demonstrate a capacity to explore and apply the expressive potential of material within my design practice.
I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or part, to qualify for any other academic award; the content of the project is the result of work that has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Simon Lloyd

12th October 2009

Acknowledgments.

I am grateful for the guidance and steadfast encouragement of my supervisor Mick Douglas and to my family Libby and Georgia for their continued support throughout this project.
Glean 1. To collect (information) facts etc) by patent effort. 2. To gather (the leavings) from a field after the crop has been reaped. 3. To gather the leavings from (a field, etc). [Of glener < LL gleñare < Celtic] — glean'er n.

Gleaning 1. pl That which is collected by a gleaner; a remaining portion. 2. The act of a gleaner.
Potential 1 Possible but not actual. 2 Having capacity for existence, but not yet existing. 3 Physics Existing by virtue of position: said of energy; distinguished from kinetic. 4 Gram. Indicating possibility of power. See POTENTIAL MOOD. 5. Having force of power — n. 1 Anything that may be possible; a possible development. 2 Gram. The potential mood. 3 Physics A condition at a point in space, due to local attraction or repulsion, such that a mass, electric charge etc, at that point becomes capable of doing work. 4 Elec. The charge on a body as referred to another charged body or to a given standard, as the earth. Considered as having zero potential. — potential·ly adv.
Gleaning Potential
Practicing design through material expression
Contents

Introduction 01

Locating Potential 13
  The informative mark
  Material and form
  Material expression

Gleaning Potential 51
  Introduction
  Claus Oldenburg
  Encounter with Mark Dion

Tuning Potential 71
  Categorisation
  Comparison
  Framing
  Magnification
  Scale
  Modelling
  Photography
  Emulation
  Documentation
  Isolation
  Evaluation
Introduction
Gleaning Potential: Practicing Design through Material Expression

This research examines the potential of gleaned material fragments to inform my practice of designing artefacts for production.

I seek to develop and optimise a deep material awareness within a functional design practice. During the past ten years my design practice has diversified, enabling me to explore a range of materials, principally ceramics but also wood, metal, pitch and recently felt. While I have always employed materials in an economical way, I am also very conscious that any interventions I employ within a design be fully in keeping with the potential of selected materials. I aim for as sympathetic an intervention of design into materiality as is allowable. In this way the finished artefact attains a purposeful disposition.

Through processes of gleaning and examining material fragments I am able to identify and isolate states of material integrity as an elementary concept, totally in keeping with that material’s vocabulary. In this way a material’s expressive potential may be isolated, examined and understood, and later extended and applied within the production of a designed artefact. While the idea of “truth to materials” is well known within design discourse and has informed my prior design practice, in this project I am seeking to develop an extension of this concept. Here the focus begins with a material’s expressive qualities and is expanded to allude to the processes forming (and deforming) the material and to the way that a material is a reflection of the wider environment from which the material was sourced.
Within this project *Gleaning Potential*, I have examined small fragments of my environment, collecting and considering what may be described as primal influences. My gleaning of material fragments that have been discarded and abandoned from both within my local suburban environment and from other sites has some similarities with that activity common to travellers or tourists. Visitors to new environments often select objects as being of interest or in some way representative of the local environment from which they were purchased or extracted. Groupings of such gleaned fragments are to be encountered in many homes, displayed upon some flat surface, a table corner or shelf.

While my gleaning actions are similar to those of the “everyday gleaner” I am particularly interested in the material forms of the fragments and the ways in which they respond to specific environments. Here the form given to a material through the processes of design and later manufacture will determine its response to environmental conditions. For example, the thin walled aluminium drinking container will deform under pressure unlike a more structured small metal casting.

I bring a designer’s perspective to everyday gleaning as I consider how the material of the fragment and its form have responded to local conditions. For example: as I live close to a major road, such local conditions include the shedding and expulsion of fragments from cars. These fragments are run over by road traffic and crushed to form an industrial terminal moraine that is deposited along the roadsides. Atmospheric conditions further affect these remains. Such roadside fragments selected for their initial interest may become models for design inquiry. For example, the relationship between a fragment’s found form and its particular material qualities may become an exemplary model to guide future exploration within my practice of functional artefact design and production.
The potential of a gleaned fragment to inform my design practice is in direct proportion to the degree and thoroughness of inquiry undertaken through it. The more thorough the investigation, the greater the level of potential that may be revealed. At its most basic, a gleaned fragment, say of wood, may remind you simply that it is made from wood. If the wood is placed next to a fragment of stone, the two fragments may then suggest a new potential, a union of wood and stone. One might continue in this way to consider a fragment’s form, material composition, transparency, hardness, colour, etc. Further consideration may be directed toward the way a fragment has deformed or gained patina, the quality it gives under direct light or a pattern within its structure that the light reveals. Devoid of its original function the fragment becomes a free agent of stimulus, able to be associated at will to initiate new design potential for the development of artefacts. It becomes a case-study tool within an ever-changing collection of fragments/tools that reveal potential in dynamic relations to each other. The exhibition *Gleaning Potential* seeks to demonstrate how my working with material fragments has expanded the potential of my design practice through an intensified engagement with material expression.

In this project document I describe and reflect upon processes of my design practice that particularly engage in the potential of material qualities that may be applied and utilised within the design of and production of functional artefacts. In the first chapter *Locating Potential* I outline and expand upon the key areas that define this research: these include information interpreted through observing marks, the relationship between a material and the form it manifests and finally the expressive qualities inherent within materials. In the second chapter *Gleaning Potential* processes of collection are examined in relation to other creative practices that employ gleaning, namely

---

those of artists Claus Oldenburg and Mark Dion. In chapter three Tuning Potential I have listed and considered processes by which potential may be isolated and made available as a model for later application within my design practice. The final chapter Availing Potential documents projects in which an understanding of my research findings has been applied within my practice.

Through the exhibition and these stages of collection and later development, this project Gleaning Potential presents my increased capacity to explore and apply the expressive potential of material within my design practice.
Locating Potential
The informative mark

Potential exists within the discarded, broken and lost fragments of artefacts that I have gleaned from the roadsides of my local suburb and from other sites. Such fragments have experienced manufacture and use and have begun the process of decay - overall a rich existence. As a result such fragments made from metal, plastic, paper etc, have accumulated both marks and patina in accordance with their material composition. Metal fragments bend and corrode, plastic fragments show multiple scratches and often crack or split while paper stains and becomes brittle in sunlight. In this way each gleaned fragment may be considered the result of an experiment in material behaviour, although in most cases the exact experiences undergone by the fragment remain unknown. However it is possible to "read" the fragments and in this way gain some understanding of the processes that have formed and moulded them. Herein lies the potential. The fragments are miniature examples, models of material behaviour representing a wide range of material types that may be selected for their particular potential of material behaviour or form, which may later be applied as a primary idea within an designed object. Such potential may manifest as a particular form of stiffening rib surviving from the original manufactured object or as a textured surface created between the road surface and a large truck tyre.

In his essay "Patina" 1 Gerrit Terstiege identifies both the scratch and the stain as informative marks.

The scratch does inform us that at a certain place at least two materials have encountered each other, of which the scratch is the linear trace with a visible beginning and end, with a visible width and depth ... Scratches are generated on the condition that one of the two colliding objects or materials must be harder than the other.

A stain is similar to a scratch in that its form, which seems to be an arbitrary one at first, is able to store precise information on a certain process. It is often possible to see with which degree of velocity the fluid hit the material, how thin or thick, or which colour it was.

Later in his essay Terstiege makes the connection between scratches made intentionally on semi-dried clay bricks in Mesopotamia to the advent of written language. With this control and intention the scratch truly becomes an informative set of marks. The stain too becomes informative but not in such a consistent way. 2

In my kitchen is an open cupboard I use to store a collection of wide pans. The surfaces of the cupboard are matt white and are easily marked. As a consequence each time a pan is returned to the shelf it leaves a set of marks plotting the force and trajectory of its being "put away". Such marks are recorded in two axes, both in plan on the

---


2 Although in the hands of Swiss physician Rorschach the symmetrical stain becomes open to interpretation as part of his psychological tests.
bottom shelf and more often in elevation upon the cupboard side. In this way the side panel of the cupboard is used as a guide to direct the pan on to the top of the stack. The marks plot the direction and collision of pans with the cupboard wall and in this way they become an informative document. Where the marks reach a lower limit, a cut off point in this case there exists a clean white band, an area existing below the height of the pans marking rim.

Australian artist John Wolseley has through his drawing practice with the aid of an assistant, invented an active form of this recording process. Working in fire affected forest areas Wolseley runs at charred vegetation with large mounted sheets of paper. He collides with the blackened forest and the resultant marks become both a very accurate trace of the collision and also marks of a high aesthetic value. Later Wolseley will interpret a particular grouping of marks as say a bird in flight and enhance the collision marks with his own, re-enforcing the “idea” of bird. Such marks are uncontrived and true in the sense that they were generated through a real event. They also relate to each other on the page making some overall sense. It is also interesting to note Wolseley’s use of representations of bird song in the form of electronically generated wave patterns. Wolseley identifies potential within this electronic wave form and includes it within his drawing. While such electronic marks require some interpretation to be fully read, their form is already information - rich, structured and poetic, suggesting rising and falling pitch and interval. The inclusion of such a diverse range of marks creates a rich and informative document, intensifying the aesthetic and poetic qualities that exist in Wolseley’s work.

---

1 This phenomenon may also be viewed within the English rural countryside. Here within pastoral areas used to graze cattle the underside of mature trees reads as a flat plain seemingly limiting growth. Such a limit is in fact determined by the reach of the tallest cattle grazing the lower foliage.
While the traces of more random encounters with objects may be documented through recording marks it is also possible to employ limited mechanics with which to regulate the outcome of marks produced.

In his series of work “Three Standard Stoppages” Marcel Duchamp records the position of three one-metre lengths of tailor’s twine dropped from the height of one metre on to a canvass cloth of Prussian Blue. In the original version of 1913-14 each of the lengths of threads was glued into position after landing on the cloth. This cloth was later cut into a wide strip and backed with glass. Each trace, a drawn line, is later represented as a line cut from timber, a ruler of sorts, which may be used to re-create that singular trace. Here Duchamp’s work becomes an experiment into the material nature of a particular twine used by tailors. One senses its weight and rigidity and its capacity to fall in an orderly manner. Duchamp’s experiment is simple yet elegant, recording the flexibility between a material and its form. My own encounters with linen twine unwound from a spool have been of an unruly twisting material resembling a soft spring. Such experiences suggest that Duchamp either bought his twine by the straight metre or undertook to train it first by suspending weights from its length.

As part of an Artist in Residence project entitled “Creating my space”, I worked with a local Montessori School in Melbourne to create a series of sculptures representing the Solar System to scale. The Earth was represented by a large spherical seed form and a child’s hand cast in bronze, and the much larger Saturn was represented by a

---

1 Original version, 1913-14 Paris. Complex construction of multiple parts inside wooden box 129.2x28x23cm. Later exhibited at the Museum of Modern Art with the Katherine S. Dreier Bequest in 1953. At this time Duchamp added two new elements, two wooden meter sticks marked “1 METRE” and a label of clarification by Alfred H. Barr Jr.
scaled section of its rings. Working to scale, I had explored use of a notched trammel fixed at one end to produce grooves in a layer of clay below. Like a giant compass, the wooden bar would inscribe a series of parallel grooves in the clay resembling some stone-age record. The large sheets of clay were later cut radially, sectioned and fired. Later I proposed a more durable solution that would take longer to produce but could also be used to illustrate the process through which marks were created to represent the planet’s rings. The model producing the marks was again fixed, producing an arching trajectory. In this development of the Saturn sculpture I made reference to the short steel chains used to support the lowered back ends of trucks. When not in supporting use, such chains swing with the truck’s movement wearing curving marks into the paint of the steel truck sides. In my version, a wedge shaped segment of 5mm steel sheet representing the planet’s rings is cut to scale and mounted vertically. At a central point one end of a metal chain is anchored on a pivot and allowed to hang down over the steel plate, its free end connected to a cast iron ball beyond the base of the plate.

Within the school environment the ball and chain would be manipulated by the children, in effect damaging and marking the steel surface in a controlled way. The effects of oxidisation would help to further enhance the arching marks produced by the partially captive chain. In relating this fragment to the planet Saturn, the child imagines the marked steel section as a component, a ‘model’ through which all of the rings of the planet may be represented. Being able to touch and view this one section the child is able to then imagine multiples forming the whole ring. This experience of visualising the whole through the part is reinforced within the Montessori classroom with equipment demonstrating the fractions of a circular disc, similar to that of my sculpture. The chain also becomes an effective metaphor to describe the force of gravity and its effect upon the particles that compose that celestial body’s rings.
Having established that marks resulting from actions may be read and understood, I would now like to extend this understanding to include the ‘reading’ of small gleaned fragments. These fragments are made from a range of different materials, each with a quite unique way of recording scratches and corrosion, depending upon how hard or soft that material is and how durable. Such fragments, like the steel section representing Saturn’s rings, may become models representing the effects upon a material’s durability over time. A material’s quality and patina may also be replicated or at least approximated to some degree. In addition the form and proportion of the material fragment acts to control the ways by which it might, like Duchamp’s twine, deform or be shaped adding a further layer of information.

As my work has evolved, my focus has become more attuned to the ways in which any given material can manifest primary form — the ways by which the simplest manoeuvres by the material, like the resultant trace of an action, become true and seemingly natural. This includes bending and folding, the simplest means by which a material might be transformed from a two-dimensional sheet into a functional three-dimensional form. There are many crafted indigenous examples of containers that resolve this problem [transforming from two to three Stocks]...
dimensional form) in direct ways by working with the qualities of the materials to hand. Within the indigenous cultures of Australia, bark removed from trees has traditionally been used to produce a range of functional objects from canoes to gathering dishes. I have a small trough shaped dish about 60 cm in length. Its form, like a gutter, is that of the tree from which it was removed. While still malleable its ends have been pleated and drawn up together to close the ends. Later a short carved wooden stick is pushed through the bark pleats locking them in place. The resultant form is poetic and elegant in that it comes so naturally from the material. Such solutions evolve by working with the material over long periods of time, although in this instance there are aspects of the object’s form, its resolution, that might be emulated.

The ideal potential of the material fragment as a model lies in the singularity of its idea. Separated from its original function the fragment becomes a free agent whose particular material qualities and form may be re-associated in other configurations. The collection or gleaning of such fragments allows for the material potential each carries to be realised through new associations. Later promising configurations may be utilised as models to produce relationships and introduce expressive material qualities within designed artefacts.

In this way I have chosen to glean fragments representing a wide range of materials to form a reference collection that informs my process of design in various ways. The collection, whose fragments were originally selected simply as being "of interest", serves as a memory aid in recalling a particular material and its qualities, or in uniting materials of a complementary nature. This function is of primary importance, not only for simply recalling a material’s visual form, but also serving to initiate other haptic and sensory potentials. While the sight of a bread roll reminds us we are hungry, in a similar and seemingly obvious way, material fragments trigger

Sandpapers, 60 grit top / 350 grit below.
History recalls many a happy accident where the convergence of a particular design problem and a very familiar object has brought some recognition to bear on the problem at hand. Had Utzon been sitting next to a bowl of bananas and not oranges while contemplating the form of the Sydney Opera House, the result might have been quite different. This is a very elementary idea and yet one I feel has a considerable influence over all our thinking. To have access to a gleaned reference collection, a physical collection of possibilities becomes highly advantageous to a designer.

Gleaned collections are ubiquitous and are to be found world wide, in museums, but also within people’s homes. Gathering activities and later examination and display constitute processes by which we make sense of our environment and culture and in a way they define who we are. It is interesting to note that the collections of curiosities, the forerunners of our modern museums were also exhibited in a room within the house. On a domestic or intimate scale, small objects and fragments are gleaned and housed in whatever receptacle is to hand. The drawers and shelves of our homes in this way become repositories for the specific and the unwanted, objects usually of little monetary value that carry significances that are yet to be fully defined.

Of particular interest to me are the pockets of adventurous children who give value to and collect all manner of curiosities. While the collecting habits of children, and therefore the contents of such dark receptacles, may have changed from lengths of string, pen knives and small dry dead creatures, their contemporary collections are by no means of a totally electronic nature. Young children maintain an interest in the material world. However once the child becomes an adult it would seem that such curious enquiries all but abate, if the web site www.faceyourpocket.com is any guide. This site invites participants to scan and post the contents of their pockets on the web site. The participants also include their face within the image, by
way of identifying this ‘cultural zone’. My first impression on viewing the site for the first time is that some people must have very large pockets. It also becomes clear that like the face book site, faceyourpocket functions as an extension of the individual’s persona. Furthermore, the representations of these pocket collections on the website seemed to be contrived to reflect the culture of the young and aspirational.

In contrast, Eskimos traditionally have carried with them small hand sized carved bone and ivory animals that reside in clothing pouches. Such talismans fit well in the palm of the hand and are eminently suited to the nomadic life. One may also imagine there exists little on the open tundra that may have been discarded for later collection.

The artist’s studio is often a repository of gleaned materials and objects. The studio may house extensive collections of a wide range of objects, gleaned by the artist and later displayed as a stimulus or reference for artistic process. Spending prolonged periods of time amongst such inspired groupings engages the senses and the sub-conscious. Proximity allows for frequent visits and deep engagement.

During the past thirty years I have worked as a practitioner, designing and manufacturing functional artefacts produced from a wide range of materials. Processes of research, design and subsequent manufacture took place in a way that was seemingly independent from external influences and purely of my own making. Yet after these “isolated” processes reached fruition I would discover other artefacts within my home environment that clearly echoed those of my practice. This state of affairs took me by surprise and yet within this process of recognition I had very clearly discovered a form, an origin, that was present as a key component of the finished artefact. There are many examples within my practice of this phenomena, however the most direct was a serving tray in laser cut steel, with thin beech wood beneath my feet the recycled rubber strip doormat. Schematically the two objects were identical — strips of material held together with connecting rods and spacers employed to separate the elements.

In reflecting on such encounters two questions come to my mind. The first question relates to the production of cultural identity and its interconnectedness to the multitude of associated artefacts held within the geographic boundaries of both community and home. My second question seeks to determine if I can intensify or otherwise affect such sub-conscious influences. Presumably, one must also consider with care those household objects inherited or given that one does not identify with. In thinking about the first question I am reminded of a train of inquiry from the beginning of my research processes, namely:

If a number of designers, each informed by a different cultural background, were given an identical design brief for a functional artefact, how would those resulting artefacts differ when a comparison was made?

What components of that culture’s identity would be selected by each designer as significant and applied to their finished design?

In questioning the possible ways in which potential, as a workable idea, may be located, it has become apparent to me that the idea of “recognition”, a process by which I am able to identify potential within artefacts is important. The make up of a selected palette has in its turn the potential to inform directly the final composition of my designed and manufactured artefacts. Let me expand this idea a little and consider my two questions, particularly the second as it becomes key to an understanding. If an artefact is to carry cultural significance it has clearly to be a product of that culture; global design trends should be excluded as far as is possible. Ignoring such vagaries as global design trends and fashions does not exclude the designer’s skills and sensibilities, but allows a greater cultural focus to be
'Material expression' is the term I would like to introduce to the reader. It is a term I shall use in relation to the range of qualities a material may exhibit. In such a vocabulary of material expressions, a sheet of paper may exist as flat and smooth, crumpled and textured, dry and brittle, wet and limp, torn and fibrous and charred and in ashes. Materials, like ourselves, may be said to manifest a broad spectrum of expressive states of being through which we may elicit a richer understanding of their make up. As with any human expression, the form and consequent meaning of a material expression may range from a gross gesture to one so subtle in its intonation that it might be missed, but for the depth of a shared communication, the material equivalent of a body language. Materials' most expressive states occur in their early raw state and during final decay when they reveal their constituent elements.

In order to assist the reader in understanding my thinking on material expression, let me categorise four possible stages through which material may pass.

**Pre-manufacture.** Here the raw materials are in evidence and as such express qualities of their physical status, i.e. wood in the form of a cut tree trunk, or plastic in granular form.

---

Active status. Here the completed artefact is in use and readily gains modifications as it relates to its environs.

Decline. Through use the material from which the artefact is made becomes worn to the point at which it has no further use.

Entropy. The components of the artefact separate and are broken down.

In thinking about the expressive qualities of materials, at this final point, that of entropy, a material, like any living structure, becomes its most expressive. Glass shatters, wood splits and metals corrode. Through observing this final, highly expressive stage other “sub-surface” qualities are revealed; the wood cell’s form is clarified by rot, residual structures in steel forms are made visible by rust. While at its most expressive, the practical use of materials in this state of entropy has clearly little structural potential. Rather, those key elements that are present in this final stage might be employed in more stable forms to allude to the continued acts of decay.

This state of material expression is by no means universally appreciated. In their book On Weathering, Mohsen Mostafavi and David Leatherbarrow consider the modernist architectural movement, in particular the thinking of Le Corbusier, and his relationship to the material world.

Implied in Le Corbusier’s understanding of the white building is a finality that manifests itself upon the completion of a construction, although anticipated at the beginning of the project. Accordingly, the duration that is to follow the completion of the building – the life of the building – is conceived as a subtraction from the ideal condition of the project realised before inhabitation and weathering. It is in this sense that
staining and erosion can be seen as an antithesis to the identity of the project.

In this way the ideal state of such modernist structure lasted for less than one second, the time taken after completion to record the building’s image on a photographic plate. I note in the case of Le Corbusier, that his post war buildings show little of this early “ideal built state”, but rather become materially highly expressive and some would say brutal. Whatever the prevailing opinion, Le Corbusier’s buildings remain after more than half a century as exemplary buildings.

The concept noted by Mostafi and Leatherbarrow of an optimum material state representing an ideal architectural form also extends to artefact design. Clearly this perfect state is not attainable and yet the ideal, like Donan Grey’s desire for a youthful and unchanging appearance, has its consequences. Plastic as a futuristic material offers a stand in, a replacement. Lacking in any visible underlying structure, its pristine veneer suspends the idea of “perfection”; its neutral state representing ‘another’ substance, still absent. Designer Anna Castelli Ferrieri, working for Kartel, brought some life into this otherwise dull substance by substituting multiple colour into the moulding process. In her moulded furniture forms we see in the fluid washes of colour a frozen record of its hot manufacture. Plastic, while molecularly highly stable and enduring, quickly loses its pristine quality when used to manufacture functional artefacts. Use renders that object obsolete. By contrast, objects made of non-plastic materials may become worn, but may continue in service and even attain greater aesthetic value.

I introduced earlier the concept of material expression, a vocabulary of material states that any material might exhibit as it performs — bending, flowing, becoming dry.

the point where a material may be almost unrecognisable. Ideal, almost romantic states also exist and in such states the tactile and the visual, in fact all the senses, are in some way addressed. Recently I was given a wooden cup, which was purported to have the ability to transform tap water into something much sweeter. This cup, whose bowl is the size of my palm, has a wide short handle making it more scoop than cup. Carved from very fine and densely grained wood its thicker walled body gives way to a thin drinking edge at the rim. I can also clearly identify the position it held within the tree by reading the annular rings around its form. Drinking from the cup I did indeed experience more than ordinary tap water. Filling the cup’s bowl, the water darkens its form; like a stain, the cup seems to absorb the water. Later in bringing the cup to my lips to drink, my nose enters the cup’s enclosure and smells the aromatic wet wood. It is this olfactory response, so close to that of taste, that seems to shift my experience and transform the water. So we respond, gaining an experience of a material through its expressive qualities.

Having given one example of wood let me now me add another – steel. In the first state of pre-manufacture our experience of these materials is quite different, for both are not initially visible in a form we recognise. One is harvested above ground, while the other is mined from below ground level. Wood as a living material has evolved as a “network of fibres”, but not quite as seventeenth century scientist Robert Hook depicted them as “composed of pores full of fluid”. The idea of visualising wood as composed of fine bundles of fibre is useful in later considering its expressive qualities. Indeed this analogy holds true as one considers the annual latitudinal growth of a tree and the annular rings recording this growth made visible within the cut tree trunk.

Metals including iron, which is later processed into steel through the addition of carbon, are extracted as ore from open pit mines. Their structure, unlike wood, is hard and crystalline, formed as geometries of interlocking crystals. Processes of extraction and refining are heavily industrialised. Through later refinement of rolling, casting and extrusion, the resultant steel is standardised in sections for production.

A considerable number of texts exist describing both timber and steel production and of their later usage. For the purposes of this inquiry it is enough to bring into focus the tacit understanding gained through encountering such materials. The “dark” smell of oiled steel in the racks or, as James Agee recalls in his tour of tenant farmers’ houses in the mid 1930s America, “The odour of pine lumber, wide thin cards of it, heated in the sun, in no way doubled or insulated, in closed and darkened air.” 

How then might the “experience” of each material best be expressed and in what form?

Wood is: fibrous, light in weight, warm to the touch, aromatic, both ridged and flexible, of moderate hardness and durability, structural, unique in its surface patterning, an insulator: Available to cut, to split, to tear, to plane, to saw, to burn, to dye, to pulp, to bend, to sharpen, etc...

Steel is: crystalline, heavy in weight, cold to the touch, both ridged and flexible, highly durable with high degree of hardness, structural, shows minimal surface structure, a conductor: Available to cut, to shear, to fold, to cast, to drill, to melt, to oxidise, to punch, to press, to form etc...

How might we optimise our experience of wood within a designed artefact, for example? Clearly the artefact should “play to” its prime qualities, while retaining some idea of its natural state. Recalling wood as being comprised of long bundles of fibres offers a model for manufacture. The boat form conforms to this model. Thin planks are gently flexed to form a closure in two symmetrical arcs. It is light in relation to its bulk. Early boats were constructed from long

---

strips of timber, tied together with fibre. Here another model of bundling comes into play. Indeed the example of the Inca boat, made from bundled reeds, further illustrates this model.

In returning to the ways in which an object might exemplify a particular material, say of wood, it becomes advantageous to experience wood in its many forms within the object. The Windsor chair may be viewed as a contemporary exemplar of boat construction. Here, each of the wooden components of the chair utilises the different structural qualities of various timbers. Flexible yew or ash for the steam-bent “bow” of the chair back, straight splitting beech for the turned back sticks, and wild grained non-splitting elm for the seat. The Windsor chair is testimony to the craftsmanship and understanding of the woodsman, allowing a rich experience through its many manifestations of the qualities of wood. The “Circo” chair of the late 1980s continued this lineage, as do those of ‘Thonet’ and designs of Danish designer Hans Wegner. These designs become tools, their refined structures and sensibilities heightening our experience of this material. Like tools, these chairs become active in use. Forces are at play within the timbers; like springs, the chair’s wooden components work in harmony to support weight and absorb horizontal stresses. Contrastingly, an imposed reduction in the size of the material available (scarcity of material) may also heighten our experience, in that an initial level of repair is first required to establish sufficient material for production, eg. African textiles utilising narrow woven strips to produce a larger fabric suitable for clothing.

Steel presents quite another paradigm and yet, as with wood, there are some overlapping production techniques, particularly in early metal construction. The use of rivets to join smaller beaten strips of metal into a workable whole is almost akin to techniques of boat construction. Similar joining methods were used to make armour. Mark Newson’s “Lockheed Lounge” comes to mind as an
example expressing material qualities of metal, as does Nick René’s compressed dish form utilising cylindrical sheet metal distortion. Both these examples amplify our experience of steel through illustrating production techniques. Due to its high strength, steel offers up a greater challenge than wood, simply in terms of the tools required to manipulate it. However this can be resolved at a small scale, due in part to the nature of pre-manufactured standard steel sections. The degree of precision in its manufacture determines very particular expressive qualities. By this I mean that the extruded "H" section girder already exists in a highly expressive form and need only be manipulated slightly to adapt this form to produce functional requirements that are sympathetic.

Italian designer Enzo Mari’s adaptation of this standardized form through minimal intervention is a prime example. Mari’s experiments with the practical design application of “simple” industrial materials and techniques were directly related to the objects produced by Danese.  

The *Ferri saldati* (welded iron) were the first containers designed by Mari. His intention was to demonstrate that expressive and formal values could even be found in a simple welded seam. This was left in plain sight, and was executed by a common labourer and not a craftsman, in order to avoid that personal touch in handcrafted objects that was already being criticised at that time.

In thinking about the category of experiences that steel offers, two come to mind, which conveniently cover opposing ends of the spatial divide. Large engineering structures utilising and connecting smaller components clearly express steel’s potential. Extended tools such as bridges are working structures that, like the Windsor chair, utilise the steel and iron components to their best advantage. Forces in tension and compression are expressed in an almost diagrammatical way. I am thinking

---

Sennett calls **material consciousness**, a level of deep material understanding where advances in material thinking may take place.

In my own thinking, I would like to suggest that this awareness of the material is not all one sided and that we read and respond to the “expressive” qualities of the materials we connect with. This occurs primarily through the visual, but also through the haptic and olfactory, depending on the values placed upon them. We all have some level of understanding based upon our cultural make-up; and such understandings may vary considerably. I believe however that expressive material qualities may be enhanced and amplified within designed artefacts to increase the individual’s understanding of a material. This may occur both by explicitly revealing the numerous material expressions inherent in the material from which the artefact is made and/or through emphasizing traces of the manufacturing process. These twin concerns, firstly, with exemplifying a material’s expression through its form and secondly, instigating situations through which a richer understanding of processes may be gained, become key research foci.

Through what means may a material’s expressive qualities be illustrated within the design and manufacture of a functional artefact for those expressive qualities to be fully experienced?

Through what means may design and manufacturing processes be represented and understood within the completed functional artefact?

Richard Sennett’s later chapter *Expressive Instructions* talks about the difficulty of articulating an understanding of material processes through a medium that is text based. Such articulations are often vague and operate under the assumption that the reader has a greater base understanding of material and operational processes, than actually may be the case. In articulating my own understanding of what is to me a very familiar topic, I have

---

Wooden boats at the Danish Viking boat museum in Roskilde. The museum was built on the site of archeological finds of numerous Viking boats. It functions today both as a museum and as an education centre. Boats here are constructed by hand using traditional methods little changed since the Vikings. Such working methods exemplify the expressive material qualities of wood.

experienced an inordinate level of difficulty in offering a comprehensive and coherent account of my design thinking. To quote Sennett, “Language struggles with depicting physical action, and nowhere is the struggle more evident than in the language that tells us what to do.

Whoever has tried to assemble a do-it-yourself bookcase following written instructions knows the problem. As one’s temper rises, one realises how great a gap can exist between instructive language and the body.”

The key phase offered by Sennett in response to this difficulty is “Show, don’t tell”. I can well remember being taught how to make or throw a pottery vessel on the wheel. Of course, it all looks so simple, and as I watched my instructor’s body at play, its articulation of force and concentration helped me to gain some understanding. Later when I practiced, my throwing had improved. I had understood some detail, some unknown factor, which I had put into practice. I had also learned to “hunch” over the wheel and to bite my tongue. Such understandings it seems are all inclusive; one gets the full package!

In reflecting upon the ways in which we understand process, I am reminded of Christopher Alexander’s first book, A Pattern Language, and of the chapter entitled “Shop front schools”. Here Alexander considers the ways in which those of an inquiring mind (mainly young children) were able to view the local crafts people at work through their shop windows: the cobbler, blacksmith, baker etc. Through such observations came a desire to experiment and to put into practice some of the understandings they had often viewed through repeated visits. This opportunity to learn through observation, imitation and experiment has diminished or at least shifted today as many craft practices —of repair, for example— have themselves become disposable. Perhaps today the blacksmith

some small way, and other processes have come to the fore. The baker and the chef once “out the back” have become prominent, revealing primarily not their own processes, but rather the cleanliness of the environment in which they operate.

While these examples help to illustrate the extent of our capacity to comprehend the states of matter in relation to processes, it also serves to indicate the great range of our understanding and experience with materials and their manipulation. Clearly we require some primary understanding or previous experience of materials in order to engage with any artefact at a deeper material level.

By engaging the user in a frequent or prolonged exploration of the object to hand, a more enduring material experience may be gained. Such an engagement becomes in some sense a play through which narratives may be offered. The child’s jigsaw comes to mind. The whole is offered as a set of components to be assembled. These fragments may be transformed to produce a whole image. Unlike some Ikea product there are no exploded diagrammatic instructions, rather an image of the finished product. Through visual recognition and comparison the forms and image fragments are matched and physically connected. Such recognitions are often incorrect and yet the pieces still connect together. Here the flexing of the cardboard or rigidity of the plywood pieces becomes apparent as green is forced into green. Once completed the “puzzle maker” has gained an experience both of the material and the means by which “the whole” was assembled. This idea of offering engagement through the assembling of components for use is a helpful approach to the question of how an understanding of the materials that constitute an artefact might be gained.

The potential for us to experience the rich expression of materials through applying knowledge gleaned from fragments clearly exists. Processes used to form materials may also be made explicit, and like the scratch
or stain, become readable. Not unlike the components of the jigsaw, the gleaned material fragments when collated and interlocked present a rich seam of potential that may be later applied in the design and production of functional objects. In Locating Potential I have written of some of my underlying thoughts on a material’s expressive qualities. This potential has now been recognised and in the following chapters I will detail procedures for Gleaning, Tuning and Availing this potential.
Gleaning potential
Why glean potential? Gleaning potential. Why not growing potential or grafting potential?

Clearly there is an element of chance at play here. What I know and understand is clearly limited. I can expand upon the familiar and extend my knowledge but still it remains known to me. By incorporating the element of chance I am able to encounter the truly new, and given the choice, to accept it or deny it.

It has been my experience that artefacts produced within my practice of design, clearly have their visual origins within my working and living environment. While this may come as no surprise, I became increasingly interested in the rate of this subliminal visual uptake in relation to the more orthodox lines of conscious design enquiry. The environments of visual practice, "the studio" have long employed acts of gleaning. Here collections of artefacts sit upon shelves and are actively displayed. I recall a photograph of British sculptor Henry Moore sitting in front of a collection of rocks and large bones, each gleaned very particularly as models or concepts with potential to inform future sculptural works. Publications of photographs illustrating artists in their studios become highly informative by revealing to the reader the connection between the finished works and the environment in which they were created. Within such images one can very clearly identify the correlation between the artist’s environment and its representation within the work. It would be almost impossible I suspect to

not be influenced by one’s environment, even if one inhabited a perfect white room. One can however be selective in choosing the objects with which one cohabits. By purposely selecting and displaying material fragments associations may be activated and information retrieved from the mind. In effect the fragments become triggers, external visual and tactile markers in whose presence subliminal and conscious referencing is constantly at play. This pro-active approach enables both the parameters of the inquiry to be set, allows for associations to be made and recalled and new ones considered.

My gleaning is primarily that of the traditional gleaner, so eloquently considered in Agnes Varda’s film The Gleaners and I¹. The fragments that form my expanding collection are not listed as missing or lost but simply abandoned. Other gleanings include the capturing of images and information and processes from other practices.

During the late 1950s American sculptor Claes Oldenburg began to explore the idea of “ray gun”.

"...Oldenburg made huge numbers of ray guns [in plaster, in papier-mâché, in all kinds of materials, in fact] but he soon saw that he didn’t even need to make them: the world was full of ray guns. All one has to do is stoop to gather them from the sidewalks. Even better he did not even need to collect them himself: he could ask his friends to bring them to him [he accepted or refused a find, based on purely subjective criteria].”²

---

²
Later when presented with a ray gun by a friend Oldenburg would have to decide upon the merits of this new contribution. In doing so Oldenburg posed a number of questions:

- Is this ray gun outside the bounds of what we can considered a ray gun?
- Is this ray gun over-represented in all existing ray guns?
- Is this ray gun a worthwhile exception?
- Does this ray gun reinvent the entire concept of ray gun?

In this way each new ray gun challenges not only its possible form, but the very idea of what such an object is. By using an object that is in itself undefined the objects “gleaned” from the sidewalk define and map the idea of ray gun. In a similar way my gleaned objects while not conforming to an “ideal” expand my thinking around material, its form, expressive qualities and construction. Clearly aesthetic judgments are also at play. Within Oldenburg’s collection of right angled objects the material colours are muted, easy on the eye allowing the nature of their forms to be contemplated. Oldenburg’s ray guns also interest me. However I would like to reclassify them as corners, models which document a material’s ability to make a 90 degree turn.

In considering and locating the focus of my own research I have after many detours returned to a place that is familiar a domain within which key landmarks are clearly recognisable. A major component of my past exhibition practice has been the inclusion of visual material that has either informed my work directly or that I have used as a guide to in some way illustrate or contextualise the artefacts within the exhibition space. Such images form a convenient and neat solution within such a formal environment, if one were to be more precise the result would obviously be more organic and engaging. The ideal would be in effect represented by the entire contents of the studio and probably large areas of the house. Within my own practice collected images and found objects inform my design and later production work. Such found objects and images are collected because they contain some element be it a material quality, a particular form, or an aesthetic consideration that has been recognised by me as belonging to my design practice. That is, it relates in some way or simply that I would wish to include its contribution.

Practice > recognition > practice >

A continual loop is at play. A loop that is continually recognising potential and drawing it into play, which in its turn recognises other potentials. By formalising this process of gleaning I am able to expand upon the potential available.

The act of gleaning is ancient and an integral part of being in the world. Our contemporary consumer society one might say has embraced the act of gleaning, however in this new version we pay for the privilege. The new gleaners with their supermarket trolleys enact ancient rituals, stooping low to recover prized objects from the discounted goods shelf. Fortunately there are objects of immense value that remain discarded and unnoticed. In her film The Gleaners and I, Agnes Varda also explores the potential within the gleanings of here subjects. It is an act of defying social convention, stooping to pick up, to liberate the earth bound object. Most often in the form of discarded food, the gleaners appreciate this gift while abhorring wasteful acts. Only recently has the European Parliament passed an act to stop the dumping of grown produce that does not conform to a perfect standard. This produce will now be sold whereas before a high percentage of say the potato crop was dumped because it was misshapen or too large.

\footnote{Varda Agnes (2002) The Gleaners and I. Madman films.}
My gleaning talks of a chance encounter, a serendipitous discovery if you will with a material fragment that in turn offers me some new understanding. Within this realm I am reminded of the “little gleaners” small children and the ways in which they engage with the material world by collecting small objects. Being closer to the ground becomes a distinct advantage as they quickly pocket away new findings. The collections of small boys would have included glass marble trophies, a pocket knife, string etc. These “little collections” were much exhibited and traded giving their owners a portable entry into the material world.

I have also utilised the pocket as a measure in my inquiries. My version is a small plastic pocket in which I asked my students to glean fragments from around the university where I teach. This measure becomes useful in later making comparisons between the assembled collection of gleaned fragments. One short fifteen minute gleaning period produced some interesting findings including: a small sample of rain water and a 50cm rubber octopus tentacle! The plastic pocket [10cm x 15cm] gives a structure to the finished collections that were later pinned on the studio wall. I also note the ways in which each student approached the task of selecting and collecting a few discarded objects from the campus. In the past I gave no limitation on the size of the objects and received whole street signs and safety bollards. Within the clear plastic bags I received: objects too large to fit, improbable collectables such as water, whatever came to hand, objects in quantity, a single loop of flowering vine, two considered items of a complimentary nature, the curious and the ridiculous.
Encounter with Mark Dion 2005

The work of artist Mark Dion is deeply engaged with processes of documentation, classification, curation, collaboration and re-categorisation. He also engages with other processes, namely those of the learned institutions with which he cooperates, the Museum and the University. Through his interventions within processes of tradition Dion creates turbulence, creating new parallels. Juxtaposing specimens in unconventional unions, re-categorising and re-ordering, through his seemingly chaotic intentions potential is manifest. Through this re-alignment new questions are posed and answered, knowledge is brought into being. At the time of my encounter with the work of Mark Dion, the results of one of his processes (the Tate Thames dig) was on display at the Tate Modern, an extensive new gallery housed in a former power station on the banks of the river Thames.

My encounters with Mark Dion have been more frequent of late and like some of Dion’s processes a certain amount of serendipity is seemingly involved. Encounter number three at my University Library introduced me to Dions “Cabinet of Curiosities” [Mark Dion and the University as Installation]. This book published by the University of Minnesota Press in 2006 was encountered by chance upon the lower levels of the stack. I had no idea of the book's content but could identify upon its cover a collection of carefully arranged artefacts.
which caught my attention. The book documents Dion’s encounters within University collections, principally held for teaching purposes. These collections are often little used by the departments as new teaching standards have been introduced. Dion’s exploration of such collections of which even members of departments are unaware, clearly charts forgotten territory. In his research Dion also re-categorises outdated equipment as artefacts of interest, elevating their cultural standing. This process of re-examination is a form of “wakening” through which an engagement with the substance of an historical past might be revisited with a fresh perspective. In his challenging of museumological conventions and in particularly those of classification and representation, Dion has sought to engage a cultural overlay that gives meaning not only to the artefacts, but also to the mechanics of their exhibited presence. For example in “The Great Munich Bug Hunt” we are told “an enormous dead tree collected from the Black Forest was installed in a gallery space allowing Dion, along with a group of local entomologists, to drill into the tree in search of the invertebrates living inside.” Processes of extracting the specimens, identification, preservation and exhibition were all visible to the public to observe. Later Dion extracted historical collecting and classification tools from the Museum’s collection to inform the viewer of such historic gathering processes. Within my own research regarding material potential I am also interested in processes whose illumination becomes informative, processes of collection and categorisation, processes of modelling and development, of production and examination.

During the summer of 2006 I walked along the South Bank of the Thames. Beginning at the site of the 1951 Festival of Britain where the London Eye now stands and turns, I followed the river down stream toward the Tate Modern. Having passed beneath Tower Bridge I noted that the tide was out, revealing in places narrow strips of shingle against the river walls. Finding my way on to this narrow strip I hoped to find some fragments, fragments resulting from almost two thousand years of occupation on this site bordering the river. Like Mark Dion in 1999 I had the
expectation of a find. I had visited the North Bank of the Thames twenty years earlier and found clay pipe fragments. I began to probe and explore the area almost directly beneath Tower Bridge. Dion with twenty volunteers worked on two sites for two weeks. I worked for about half an hour. Having found and identified some pottery fragments, a large tooth of a cow or horse and some metal fragments, I decided upon collecting ceramic fragments only. This was due in part to my limited time, but also that the fragments were of a high quality and clearly held potential. Dion and his volunteers had also begun to uncover a wide range of fragments: rusty keys, knives, a baby’s shoe, bullet shells, teeth, animal bones, broken pottery, glass and toys. They “immediately worked out a categorisation scheme to organise the collections,” in the event grouping each significant collection of fragments. After the digging and cleaning the fragments were later re-categorised and housed in a large purpose built cabinet within the Tate Modern. Dion later spoke about the process:

I think about this project as consisting of three stages: the dig, the cleaning and preparation, and the exhibition in a cabinet. For me they are all equally important... One way to describe this project is to say that it visualises the entire process leading up to the final exhibition.

Later I resumed my walk along the embankment towards the Tate Modern. It was during this visit to the gallery that I first encountered Mark Dion’s work and in particular “the Tate Thames dig”. Within the large cabinet constructed to hold the finds, were banks of drawers to waist height that could be opened and explored. Their contents were arranged within wooden divisions and protected by a sheet of clear Perspex. I felt an initial disappointment in not being able to handle the fragments, but then I had my own collection “in pocket.” Dion had been clear in his intention to display all found fragments, “old and recent, trash and treasure”, that is, all “durable” objects. Within the cabinets I noted a slippage, a deliberate re classification to in some
way equate fragments over time. The rusting iron rim with round plastic disk [my recall], like Claus Oldenburg’s “mouse museum” of the late 1960s, Dion made association’s through form and colour, simple links and connections that we all may accomplish in our own way, yet connections still unfamiliar to the Museum.

Dion’s fragments clearly are of interest as curiosities, by the fact that they have been dug up and revealed and while they may challenge certain conventions no attempt is made by Dion to apply such knowledge. Oldenburg’s ray guns however transcend the material and by past function to invoke deeper memories of the far future.

During the day, I like Mark Dion I had also begun a refined process of categorising of my gleaned fragments. Here the intention of my search had been different [in a subtle way] from those of Dion’s volunteers. They were instructed to collect all fragments of curiosity, guided by their own understanding of the instruction. Clearly bicycle frames or tree branches were not to be collected. Dion had an end game in mind and scale clearly played an important role. In my search a prior understanding, both tacit and explicit, existed. I was therefore able to make my selections of ceramic fragments with regard to their quality and ability to exhibit clear processes of production. Such clear identifiable features would in turn allow the dating of individual fragments and yield potential through later examination of their material expression. Within my gleaned fragments I could clearly position the ceramic processes of some fragments back to a medieval period.

Here both the neck rim section’s and the often impure clay body are visible. The low firing temperatures and the inefficient kilns of that time are also evidenced by the ease

---

1 A full listing is made within the appendix of this document.
2 During my masters research I undertook an archaeological dig at Brill in Oxfordshire the site of extensive medieval ceramic production. Fragments collected from this site are similar in form (neck rims) to those of the Thames fragments.
higher fired porcelain the edges are more pronounced. Fragments of eighteenth century salt glazed German beer bottles, nineteenth century "mocha" ware were also found.

It is interesting at this point in my writing to consider my experience of gleaning within the shingle banks of the Thames in relation to its historical context. How might the experience change between the personal discovery and identification of historic artefacts with that of the identification and elevation of artefacts within the Museum? Do the narratives of culturally significant artefacts and their dissemination within cultures provide a more enhanced experience of that culture’s identity? The Swiss cow for example has been retained within the pastures of the Alps because of that cultures identification its importance within the Swiss pastures. Once agricultural practices changed the practice of grazing disappeared. Now an additional fee collected by tax is paid to the farmer to retain this inefficient, yet culturally significant practice. The life size plastic cow chained up to prevent theft in a suburban Australian garden however suggests an all together more puzzling logic at work, a water tank?

During the early stages of my project visits to particular sites were made expressly for collection purposes. Later gleaning became integrated into my daily activities. Fragments collected each day were placed in a box by my front door upon my return, to be collated later. Like Oldenburg I am now in the welcome position to also receive gleaned material fragments from other people who have in some way identified or observed my gleaning practice. Indeed I will make some provision within my exhibition to encourage such an activity, an area, possibly a wall containing jars or a shelf that may house such public

---

1 A distinctive 19 century ware whose tree like motifs are produced by applying a mixture of manganese dioxide powder with tobacco juice to the edge of the wet, freshly dipped slip. The tobacco juice forms expanding grow channels in the wet slip which in turn is stained by the presence of manganese dioxide.
gleanings. During the time of the exhibition their material potential could be extracted and also displayed, day by day.

The act of gleaning in the ways I have described becomes a potent tool in both the location of a territory under investigation and identification of future models of material inquiry and application. The direction and focus of such gleanings is truly infinite as is its application. Is this fragment a ray gun or a corner? In which ways does this fragment define the concept of transparency? Having now identified potential within a fragment and in so doing gleaned that fragment to become part of a larger collection the question now arises as to how such potential may be processed or tuned and made available?
Tuning Potential
Having gleaned the fragments containing potential, consideration must now be given to processes through which that identified potential may be refined or tuned. Such processes include:

**Categorisation**

This process is of primary importance in the initial understanding and later consideration of fragment groupings. Fragments were categorised by material type as per my material enquiry. However this could easily change and be viewed say in relation to fragments that are sharp or have cutting edges. Light or reflective material could be another category. In relation to cultural determinacy specific the documentation of regions in which gleaning took place would become useful as a tool in later examining any visible approaches of difference between fragments.

**Comparison**

Of the methods of tuning and assessing the gleaned material fragments for potential, those of comparing similar or clearly opposing fragments is of high importance. This act of looking and feeling difference between the gleaned fragments is helpful in both gauging material texture and freely associating future potential. For example in measuring and determining the relative
size of “grog” in brick fragments as fine or medium. Also in relation to the particles’ colour and variation or spatial distribution. In my early investigations gleaned fragments were arranged by both comparative means and by association.

On a large sheet of paper measuring 2 by 1.5 metres my gleaned material fragments were laid out as they came to hand. From memory I began with a series of circular objects including a round wafer biscuit I was about to eat with my coffee. Having made the connection it seemed only appropriate to include it. Other working fragments, models from my studio, were also included within this early mapping process. When a fragment broke the rhythm or was clearly not fitting in I would begin a new category on the paper, which in turn would attract its own associated fragments with potential. In looking now at this first mapping of my gleanings it becomes clear that the visual is to the fore while there is an underlying intellectual trend toward material connections. Mapped areas of pure form would give way to the geometry of structural detail and back to visual form; the two dimensional to the three dimensional. In some way it seems the gleaned fragments were once again grouping themselves, not in free association, but around my very specific design concepts. Having established my collection it would also be of interest to have the gleaned fragments categorised by other people both engaged in design thinking and others in quite different occupations. Tactile and olfactory mapping could also be undertaken at this time.

Framing

Of the many hundreds of fragments I have gleaned during my research, the majority are palm sized, 60mm x 40mm. This became a conscious decision in order to make any

1 Ground fired body added to clays to provide a proportion of already fired and often refractory material.
does include numbers of much larger fragments often including discarded whole objects. I began to isolate the fragments in my process of categorisation by giving each space around them. Later fragments were mounted individually on ply boards; this would allow different fragments to be easily compared while retaining a spatial integrity.

Of these larger fragments each had a very positive identity both as an object and as a material being—a tin can with a dark tin patina, a forged iron rail clip and a shattered painted orange plywood fragment. I was interested in trying to comprehend what dialogue these objects might have and for that to happen I built three recessed enclosures within a ply sheet [painted white] to house them. While this is a very conventional display device, standard to the museum and art gallery, I did find it useful to sense a relationship between the object and the size of the space it inhabited. This framing device has a potency in optimising the perceived “value” of the object, in a sense enlivening it.

By placing objects /fragments together in these dysfunctional groupings I also hoped to intensify the viewer’s perception of both the fragment and its material character. Numbers of these experimental groupings were undertaken¹, each further exploring ideas of concealment and visibility of the housed object /fragments. Due to the depth of the housing, the object was not visible as the viewer approaches from the side and not until the viewer stands in front of the housed group do they fully become visible. I later developed this concept as a horizontal work, the receding housing being buried beneath ground level. In this orientation the viewer can only approach from the side and not from above. From a distance, only the tops of the over scaled objects are visible; not until the viewer is very close to the housing pit are the whole objects made visible.²

¹ Studies of groupings are illustrated on following pages.
² Submerged housing for ”Plato’s box” image.
Magnification / Scale

Here the potential is a little on the small size and requires magnification. Generally speaking the small forms are visible, however potential may well be extracted from the truly microscopic as with diatoms. I have an image from the centre of a sea urchin which I have taken and enlarged. It shows a ring of fine ring structures of a highly expressive form. By using enlargement / magnification both material expression and form become potential. Such processes are enhanced by increasing the scale of the original form as a three dimensional card model in order to fully examine and tune the final form. In this way the smallest fragment has the potential to gain architectural proportions.

Modelling

The use of modelling becomes a key tool in the exploration of potential within gleaned material fragments. In situations where the original forms require adjustment and development in transitioning toward a workable solution, modelling becomes invaluable. Second and third generation modelling may also explore new potentials that may be unrelated to any specific outcome. As an example, the ring-pull on canned drinks is a very refined tool. The punching and forming processes undertaken in its forming give an experience of precision and strength relative to its small scale. I am examining the use of an enlarged and adapted form of this ring-pull to become a metal formed handle for use with a ceramic jug. To fully explore this form I will need to produce an oversized model upon which to experiment. Later when the form is sufficiently realised, working production drawings may be produced. Working in this larger modelling scale simply becomes easier to manipulate within the design and development stages.

---

1 Skeletal structures of microscopic sea creatures composed of silica, geometric in form.
Material input - Modelled outcome

In thinking about the standard use of blue foam for modelling within design institutions, I am reminded of primary environmental outcomes, that is that the resulting model can only exist as an outcome of its environment, which in this instance is blue foam. Such a medium is usually cut with a hot wire and abraded with paper and can only approximate a form that is carved and foam like. Even a designer with a sound material knowledge will make subtle decisions during the modelling process which relate to the expressive qualities that are foam, pre-determining the modelled outcome. I note with interest that a large percentage of foam modelling is for plastic components, a material that has no expressive potential, but which may emulate those materials that do possess rich and expressive qualities. In questioning if the outcome would differ with another modelling medium, the answer is clearly yes, material qualities and their expressive states directly affect the modelled outcome. I have referred to the work of Claus Oldenburg earlier, in particular to his modelling of large sculptures. Here Oldenburg models with a range of materials - electrical wire, twigs, and card board, later selecting particular qualities or material ideas that might be extended forward into the next generation of material modelling.

Photographing.

During earlier enquiries I also nominated a functional/visual category which would span material boundaries. For this first example I selected a containment or channelling device, in effect a funnel. This was again gleaned as fragments with the addition of photographs of both small artefacts and extending in scale to the architectural. The collection was later mounted on 200mm x 200mm card to enable equitable association and then wall mounted. Included were used fabric filters, medical applicators, lighting shades, water towers and adapted forms including a broken bottle neck. While this collection was Part of series of “funneling” forms used to explore the evaluation of gleaned fragments

80
81
this elemental form and the way in which this process of mapping a function / form are useful in defining “funnel ness”

**Comparative evaluation.**

As the tuning of potential suggests, its final outcome is to provide a refined understanding of a material’s expression. Such processes may utilise a variety of techniques and devises of which comparative evaluation is one. How course? How Fine? How thin? How strong? How pure? etc.

**Taxonomy**

The concept of any classification in relation to the gleaned fragments may relate directly to the question being asked of the collection. During my early investigations, objects were organised with respect to both form and material type. This often randomised grouping sought to find sympathetic relationships between the objects by laying them out on a large grided board. Here a particular area, of say circular or sphenical objects, would morph and lengthen to become oval. When the object’s shape did not conform to this category a new system was instigated. Later fragments were grouped in material types enabling the range of a material’s expression to be experienced. In this way the categorisation of the collection is determined by the investigation being undertaken. For example questions of transparency or weight relative to mass will determine a spectral response from the collection. Clearly only a relatively small sample of the collection will respond say to its ordering as transparent materials, however it is nonetheless interesting to pose the question, what are the transparent qualities of wood or steel? Can one look through these materials? In what ways? Do values in transparency enhance our appreciation of the material qualities of say concrete? While such questions may fall in negative territory they nonetheless prompt further questions that while not achieving a precise answer achieve other workable solutions of value.
Models of future potential

Models developed through the exploration and development of any given fragment may in turn become part of the overall collection. In this way second and third generation concepts have the potential to combine with all other fragments creating new potential. Through models and photographic documentation the collection is able to expand.

Documentation

Through conventional existing forms and new methods of documentation as yet dormant potential may be availed. Through photography, drawing, and three dimensional scanning such unrecognised potential may be recognised and put into play. Of particular interest are a range of existing documentary methods that may be considered secondary - photocopying, scanning, frottage, casting and impressing to name a few. Each frame of viewing through documented means has the potential to offer a new or recalled line of inquiry. Gleaned fragments collected by my students in small plastic pouches were projected using an overhead projector. While such fragments were visible only as shadows the particular quality of the shadows edge becomes highly illuminating in suggesting how hard or sharp a fragment might be. Not surprisingly, by projecting selected fragments the transparency or non-transparency of a fragment is also revealed. Some, like glass and plastic one recognises as being transparent, however others that may be stained and appeared opaque revealed their transparent nature. Tuning, as I have described it in this chapter, represents procedures and methods that enable potential to be translated in many ways until a suitable type is recognised. In this case my analogy with sound and particularly the radio seems apt. For in the same way one is able to tune the radio frequency until one recognises the station of choice, so it is with the gleaned fragments. The difference however is the many thousands of channels available and the sometimes poor reception. One has to develop not only a discerning eye, but also an ear.
Availing Potential
In this final section I would like to talk about my practice and the processes through which the potential obtained through gleaning and later tuning are given form. Within the gleaning process my design thinking has been at play, from the initial recognition of potential present as a material quality and/or form within available gleanings. Recently I found a small crushed white container that had begun to oxidise along its crushed lines. The relation between the rust and the white, the aging and the yet to be aged, form a strong relationship whose pattern may be manipulated in some new form or material. The folds of the container extenuated by rust becomes a diagram by which one might more fully comprehend the forces that crushed the container. Such fragments have become identified as relating to a specific idea to which they bring potential as a specific material expression or as a form that acts as a model that may be expanded upon. This potential has been made available and may now be applied to aid an existing project or to develop its own pathways in initiating new areas of formal enquiry. This becomes a matter of a fitness for use and the suitability of the potential to match the requirements of the project in hand. Usually it is the case that a group of significant key potentials present themselves and through the initial working processes enable concepts to develop. I like to think about this mental process as being sedimentary, that is an accumulation of ideas or models once observed settle upon the minds floor. In places where a similarity or repetition occurs the sedimentation thickens to form a topographic landscape equating to ones cultural experience. In this way a potential theme or model reaches a critical altitude and is brought to the attention of the conscious mind. Such internal landscapes may also be replicated by the collection of gleaned fragments. Here fragments originally identified as containing a specific potential become gleaned in a higher quantity, thus proclaiming their

Hand made scale bricks used to explore construction methods. By utilising real bricks rather than those traditionally made of wood, the child is able to extend their experience of the material world.
value as a significant model which may later be availed to my practice. To illustrate these processes I will explore some significant material groups, isolate key areas of their potential and later apply this understanding and give them form. The two material categories I will examine here are, ceramics as terracotta fragments and paper including fragments of card and packaging.

I regularly visit a very small beach that has formed amidst the large stone coastal breakwater. Due to the tidal flows in this particular area a large amount of debris from the bay is deposited here. As well as large quantities of plastic and wooden sticks there are fragments of brick, roof tiles and clay pipes. The majority of such fragments become easily identifiable as terracotta due to their particular red colour. This colour, due principally to the presence iron oxide, constitutes a secondary clay or an impure primary clay which is available in abundant quantities globally. Softer and less durable than its primary counterpart, nonetheless it has a warmth and earth-like character that makes it a rich material to handle. Of the samples I collected, particularly of brick, it soon became clear that the larger pre-fired fragments better known as grog embedded within the clay body were different for each piece of terracotta. These fragments vary both in size and colour and like the grain visible in cut timber have the capacity to produce a rich surface and varied colour and textural combinations. While this grog is physically locked within its host’s clay body and worn at the same rate, aggregate held within road surface fragments protrudes as the softer bitumen body recedes. These two material states or expressions, when compared in this way begin a dialogue that enables us to comprehend the material’s composition.

Within general ceramic manufacturing, clays and slips are refined and processed for production. With the exception of brick and tile-making, grog added to the clay body is generally unacceptable and would not be visible on the finished clay surface. Only through wearing down the clay surface by damp sponging prior to firing or later surface grinding can the introduced grog be made visible. It is my intention to manipulate the considerable potential within these fragments...
to produce functional objects that also illustrate the processes of erosion. Despite its seemingly fragile state terracotta offers considerable design potential, for while its body is softer than porcelain, it is nonetheless durable.

Within my initial inquiries working with a simple square ring form, I have introduced small gleaned brick fragments into the prepared clay body. Once hand shaped or formed in a simple plaster mould, the dried surface of the ring may be sponged to reveal the brick fragments. These sea-worn and rounded fragments in turn also carry other smaller fragments varying in colour and often revealing unmixed clay types. Upon the ring’s surface a portion may be left untreated to illustrate this pre-worked area. Once dry the ring is fired forming a physically coherent entity. Later both front and back surfaces are ground to reveal in part a cross section of the clay body’s make up and those of the introduced brick particles. In this way each process is able to be read within the finished ring, demonstrating the material’s expressive qualities by comparative means.

Paper and cardboard fragments are in evidence within our environments in large quantities, particularly as packaging. The quantity of paper and card in household rubbish during the 1920-30s was about 12%, the same as organic waste, but well behind dust and cinders from coal burning. In 2002 after an increase to 25% during the 60-70s, levels of paper and card have returned to 12%. Paper and card fragments collected generally are from discarded packaging either as a smaller whole unit or torn from a larger commercial box. Like terracotta, paper and its related products are generally considered to operate within a specific functional range, that is short to medium term use, the great exception here being its use in book production. By using a material slightly above its general functional capacity, by in effect challenging its

enhancing the object’s qualities. Within my design practice paper becomes both a modelling medium and an expressive material whose qualities may be replicated. During 2008 I experimented with paper folding to produce forms for cutlery. Due to its highly malleable nature paper will quickly generate suitable forms through manipulation. These forms are later refined and may be transferred to other more durable sheet materials. I was able to utilise the paper concept through a stiffer polypropylene sheet directly to a mould from which I cast a ceramic spoon. In this way some of the expressive qualities of the paper are embedded within the ceramic spoon’s form and may be read and understood utilising our paper experience. By using paper rather than other computer or modelling tools, the finished form is a true expression of the two dimensional material. It makes sense visually having conformed to the logic that is paper.

Of all the materials with which I work paper and its associated manifestations is the most universally understood. Because we encounter it every day we have become familiar with its expressive material qualities. We tear and fold it, crush and burn it, we also understand what happens when it becomes wet and limp and further comprehend its transition into the box and egg carton forms. Here is a universal material. If we were to then take this understanding of paper and translate it to a more durable material, say sheet steel, such an understanding would still persist. Thus if we folded up a simple steel container and asked how it was made, the answer is quite simple; it is within our general realm of understanding. Some years ago I gleaned a low corrugated cardboard box used for vegetables. Its interior was white and the exterior was blue. These two coloured card skins defined interior and exterior and were mediated by the corrugated core of neutral brown card. The card was slightly waxed making it more durable. Openings punched in the box’s ends became handles and also allowed the white interior to be read through the blue sides. In studying this card form I began to envisage a cooking pan made from sheet steel, but following processes utilised to form card. In this way the pan’s constructional processes would be defined by the material qualities of card it would be a folded vertical seam, punched and folded handles, retaining
object that would in some way define its usage as card and yet through this seeming paradox raise some questions that may later generate an understanding.

In considering the potential I have availed to my practice through this research project, there have been many substantive outcomes, like the tuning process. However they are not in themselves proclaimed as major discoveries, but rather subtle understandings through which previous ideas may be challenged and new thinking identified. Once such understandings are imbibed then their potential becomes considerable. With such understandings seemingly elementary concepts may be re-evaluated and presented with an altered perspective. Dormant projects may also be re-evaluated and revisited with a fresh material understanding. Having now completed my research by examining the ways in which particular materials may be utilised in their most expressive forms within design projects, I am eager to apply my thinking within other design contexts. While my interests lie primarily within the domestic realm, I can envisage applying such material thinking within the wider public realm as sculptural interventions. Within my material awareness it has also become possible to focus on a larger architectural scale and examine the influence of a material’s expressive qualities upon inhabitants of particular built environments, in particular within schools and learning centres where secondary environmental and material influences are at play.

During the early part of my investigations I explored the haptic qualities of a range of materials that are commonly used and understood by subverting their application, by laying a false trail. I designed and constructed a watering can made from felt, a wooden frying pan and a moth cast in metal. Each of the artefacts’ forms was iconic and easily identifiable, as were those of the materials. My original idea was to exhibit all the objects longitudinally. However, since the exhibition was being explored by a partially sighted and blind audience I realised the need to take a more spatial approach. Here the suspended forms acted rather as landmarks, guiding the individuals through the now spatial configuration of objects. The haptic is undoubtedly a rich domain for experiencing material expression particularly through tactile mapping and other aids to assist in navigating the environs for the blind and partially sighted. Such interventions also assist our interpretation of the greater world as we view it by reinforcing our primary visual sense. In his book “Designing Design” Kenya Hara presents examples of artefacts orientated toward the haptic. These designed artefacts clearly have also become vitalised as visual design forms through such sensory inclusiveness. Within the book are many examples of such haptic re-enforcement, including the highly tactile quality of its pages. One example given is a project for hospital signage. Here the directional and informative graphics are printed on cloth covers becoming signage clothing that is clear and legible while being soft and clearly fabric based. This remains as visual design, too high to be touched and without braille. Its effect, its material expression is however very compelling, particularly when one considers the designer’s thinking which emphasises the idea of hygiene through the washing process. Every week together with all the hospital’s bed linen, the signage also gets a wash and iron and may be seen being changed, re-enforcing the idea and provision that creates an hygienic condition. Such ideas aid the design through both heightening the material’s expressive nature and creating a richer considered design environment.

What is my experience of a material’s expressive quality at play within a functional object?

This clearly is not a simple question and requires some thought for it becomes key to my thinking both of the finished designed object and my identification of potential within gleaned fragments. The appeal of these fragments lies in their utter simplicity, in their singular idea manifesting form as material expression. In experiencing this profound relationship I understand implicitly the ways in which the material has responded to forming processes and has in turn influenced them. This relationship between form and the resultant expressive material qualities becomes critical to our later experience and understanding of the object. When imposing functional requirements one should be mindful to give scope for the virtuosic expressions of a material to be articulated. How strong? How fine? How durable? Each new material enquiry in relation to a desired function alludes to desirable or
optimal form through which the material will best be manipulated and presented.

While I can neither recall the form or the material of the object I encountered in the Museum of Decorative Arts in Copenhagen many years ago, the experience I remember was profound. The material and its particular form both surprised and delighted me. In these terms objects seem to transcend the mundane world of obliging servants to become truly poetic. I do however recall two other Danish objects worthy of mention. The first a ceramic pepper mill produced by Danish porcelain company Bing and Grondahl in the 1980s. The mill at first sight resembles a white porcelain electrical insulator and is possibly unlike all other pepper mills. It is made entirely of porcelain both glazed and un-glazed with the addition of no other material. The two components, an upper storage reservoir and the lower grinding mill constitute its utter simplicity. The two components are locked together during manufacturing. Holes in the upper section allow peppercorns to feed between the walls of the two nestling elements grinding them. Here then is a functional artefact that clearly demonstrates the many qualities and virtuosity that is porcelain. Removed from its mundane role as a supplier of food or drink receptacles, porcelain clearly illustrates here its material qualities in the production of refined engineered objects.

Both light and workable, the second object I recall is a paper food container that might best approximate the Styrofoam trays used by supermarkets to package meat or vegetables. These small containers are formed in the manner of papermaking using a pulp made from fine structural and coarse textural grass fibre. Small quantities of natural dye within the pulp give a unifying colour of ochre and pale copper green. In addition to its clearly sustainable nature, the object re-enforces the durability and structural qualities of paper and pulp. Used commercially such an object would I believe signpost the questioning of existing packaging material practices and extend our thinking towards its other uses. This small fibre dish thin walled and translucent exemplifies the material – form relationship. Such a union borders on the truly
poetic whereby minute fibrous particles are united in a durable fused layer.

I am also reminded of images by the Russian film maker Andrey Tarkovsky. As the title of his book *Sculpting in Time* suggests, the richness and poetic quality of Tarkovsky's films is in large part formed with the expressive processes of the material world. I hesitate here to use the word substance for Tarkovsky's material world seems to deny such a profound right and yet such substances as exist are truly poetic. Through alchemical forces of heat, rings of condensation evaporate from the table top, through fire, whole buildings dissolve into smoke and ash. In the same moment vapour manifests as water within a room seemingly dissolving its form. Matter through Tarkovsky's lens defies physical laws. Liberated from gravitational forces, figures slowly rise to become suspended in mid air. Here in the darkness the pulsating images of light portray worlds inhabited by truly unworldly expressions of material potential.

In thinking about my own "poetic" approach to a vocabulary of a material's expression the gleaning of material fragments becomes key to gaining a finer appreciation of material understanding through their handling and subsequent examination. Such fragments gleaned selectively extend the parameters of one's thinking through the introduction of a broad spectrum and appreciation of material expressions. Such understandings are manifest within the artefacts manufactured within my design practice, however post-research these outcomes may be seen to have extended beyond the bounds of the functional artefact. During 2007 I proposed a large sculptural work in sheet steel exploring the scale and spatial placement of two gleaned artefacts. Here two objects gleaned from an old tool shed became the basis of the work. The objects a metal funnel and a rectangular tea tin now used to store nuts and bolts, were visually united by their dull grey metal patina and the complimentary nature of their forms. Through tuning processes the two were placed in a small framing space in which their forms were partially contained. In certain positions the funnel's spout and tin's corner extended beyond the parameters of the imposed space. The relationship between the volume of the frame and
the external surface of each form was brought into prominence, in effect the space in between the two objects. The body of the frame also acts to obscure the two forms, depending upon the viewer’s position relative to the framing void. This void enlarged in scale became a large opening in the ground into which two enlarged steel fabricated versions of the funnel and tin were placed. From a distance only the extended parts of the object were visible. As one approached more was revealed until looking into the void the entire object became visible.

Conclusion

There can be no doubt that we are informed and shaped by the environments in which we live. Through our daily routines we establish and reinforce patterns and associations. These are powerful forces at work, operating below our conscious awareness to influence our thinking. The project *Gleaning Potential* is attentive to these subliminal forces and to the potential held within material fragments that form our environment. It seeks to foster a greater understanding of material expression and its application within the field of design through the material information such fragments provide.

In this document I have discussed how my design practice and my design thinking has been both expanded and consolidated through a sustained exploration of materials’ expressive potential. The project has identified and isolated states of material integrity and other potential from gleaned fragments. These extracted and refined potentials have been explored as models that may be applied within my practice of artefact design and production.

The research has intensified and clarified certain aspects of my approach to design. A focus upon the expressive qualities of materials gleaned in this research period has provided me with a clearer understanding of methods and their potential in my practice, and of my personal design philosophy expanded through practice. The potential of my design practice has been developed in three significant ways:

- practicing with an understanding of how material fragments can be employed as free agents of stimulus, able to be associated at will to initiate new design potential for the development of artefacts.
- practicing with an expanded repertoire of material explorations that give me an increased capacity to locate and apply the integrity and vocabulary of a material’s expressive potential
- practising with a increased capacity to avail and embed material understandings within my designed artefacts.

Some years ago I set a design project for a group of students that involved the devising of a chain of mechanical actions and re-actions. The activity operated within a defined volume of space. Introducing their design prior to activating it, a student said, “Water will then pour into the plastic cup, causing the metal ball at the bottom to float to the surface.” While the student’s mistake represents a momentary loss of material understanding [later recovered], it does however indicate a loosening of the thread which anchors us to the experience of the physical world. Such a loss of material understanding I suspect will become more frequent as our engagement with the material world diminishes. Throughout *Gleaning Potential* I have sought to reveal, develop and optimise a deeper awareness of material’s expressive qualities that might contribute to future design practice and thinking.

---

Exhibition Documentation
Bibliography


Cologne University Faculty of Design (1999) *Simple Text. 8th Year Book of the Cologne School of Design*. Koln, Verlag der Buchhandlung Walther Konig.


During August 2005 I returned to the U.K. and spent some time in London. One afternoon I walked along the South Bank of the Thames, beginning at the London Eye (the site of the 1951 Festival of Britain) heading East towards the Tate Modern via the re-constructed Globe theatre. The river was low. I made my way through small passageways and stone steps onto a small sandy stretch of exposed riverbed beneath Tower Bridge. Here the river bed is composed mainly of sand peppered with stones and other small fragments at such a density as to merit the description of gravel. I had previously found fragments of clay pipe further East towards Wapping in the mid-1970's so was aware of the possibility of finding some fragments of interest. I began to pick up interesting pieces, later refining my search to only ceramics. No digging was necessary so the shards of pottery and everything else lay exposed on the beach surface in full view. I believe there is a group that has the right to dig in the Thames mud at low tide (the mud larks) but their numbers are strictly limited. I remained for at most half an hour before continuing on my way to the Turbine Hall at the Tate Modern. What surprised me later was the quality of the fragments I had collected and the history they represented.

Most recognisable are the broken stems of clay pipes. A. Off white in colour and unglazed the pipe stems are 7-8mm in diameter with a fine 2-3mm hole running through the centre of the pipes core. Made in earthenware they feel quite strong which suggests they were fired quite high (say approaching 1000c) the off white clay body also appears to be quite refined. In appearance my collected pipe fragments (30-50mm in length) resemble contemporary oxygen probes, ceramic tubes of a similar size manufactured by extrusion. Looking closer at one of my pipe fragments, I can see two seam lines along its length indicating its manufacture in a two part mould. The other pipe fragments may have also been
produced by mould however a more thorough maker has removed all evidence of the seam. The two piece mould was first introduced in London some time between 1670 and 1690. The pipe was not a particularly durable item and being in much demand, the aid of any device or tool that might speed production would have been welcomed. The great length of the pipes stem is illustrated in the advertisement for Willis coffee house, here one can see the length some 30-40 cm which would have certainly added to the pipes vulnerability.

As to the hole running the length of the pipe’s core, one can only begin to imagine the possible ways by which such a small internal hole was produced. 1 If the pipes were slip cast in plaster moulds the casting process would naturally leave a hollow core, however the timing would be critical. If left for too long the slip would solidify leaving a solid pipe stem. 2 String or a combustible material may have been placed within the half mould before applying the second half. The string could later be fired out leaving a void or could be pulled from the mould while the clay was still soft. 3 Cutting a hole with a ridged wire in a jig? Guiding the wire over such a distance would be difficult but with the aid of a simple wooden guide the task might be workable. The stem could later be formed into an arc as required.

Of the other pottery fragments of note two of the twelve are of earthenware vessels used for food preparation or storage. The earliest may date back to the Medieval period (13 – 14th century.) B is crudely manufactured and low fired as it remains absorbent. If one examines its unglazed body a marbled effect of white primary and red secondary clay are quite visible, indicating an incomplete preparation of the throwing clay 2 that the incomplete mix was sufficient not to adversely affect production or 3 that the marbling produced a pleasant decorative effect. I suspect the second was correct and as with all manufacturing, time was of the essence.

The second example C may be of a later date or simply of a better quality production. Its body is a buff clay fully constituted with traces of olive green lead glaze visible on the top rim of the interior only. Lead glazes were much used during this

period, beginning with a direct “dusting” of Galena (Lead ore) on to the freshly thrown ware and later applying a slip or liquid clay rich in lead oxide that would fuse on to the vessel forming a simple glaze. The rim design on both the fragments is not dissimilar to those produced by Medieval potteries at Brill in Oxfordshire, although Brill ware is of a refined terracotta colour. Other samples from my Thames collection are of the same early period but of a darker colour. This is explained by the inefficient kilns or their operators of the wood fired kilns and or the position of the wares within the kiln. The dark clay body is created in a reducing atmosphere lacking oxygen.

The two salt glazed fragments D/E probably date back to the mid 1700s, although salt glaze production continued well into the twentieth century. The use of vaporised salt in glaze production originated in the German Rhineland. Here a hard durable glaze was produced when common salt (sodium chloride) was thrown into the kiln furnace when the temperature reached a maximum of 1000 centigrade (orange in colour). At this temperature the salt splits into its component elements of chlorine (which exits out the kiln chimney) and sodium which combines with silicates within the clay body to form a glass like glaze. Salt glaze has a very distinctive colour and texture, it is sometimes mottled in appearance giving it the description of Leopard skin. The simplicity of this process is very efficient as opposed to more conventional dipping and cleaning of glaze application, however the corrosive effect of the chlorine can quickly shorten the productive life of a kiln.

Two Thames fragments clearly reveal the leopard skin salt glaze on their exterior surfaces, while internally the result is more even producing a low sheen over the throwing rings left by the potter’s hands. The fragments forms suggest they were Bellamine bottles (beer bottles) either imported from Germany or produced in London by John Dwight after he patented the salt glaze process in England in 1693. Originating in Cologne in the sixteenth century the bottles ranged in height from 6 inches to 24 inches, had a stange foot (base ring), a round globe like body rising to a strong neck to which the handle was attached. A bearded head usually decorated the front of the bottle’s neck which is thought to have represented Cardinal Bellarmino (1542 – 1621) the leader of the Counter
Reformation from which the bottle derives its name. Of the two fragments, one has a double curvature and its orientation by dent of its horizontal throwing rings place as part of the spherical body of the bottle, its external diameter would be about 15cm. The second fragment is much smaller in diameter by say 5mm and is probably part of the bottle's neck. More importantly the edge of an applied decoration [Cardinal Bellarmine] is visible.

Of the remaining fragments, F/G two are plain porcelain imported from China or Japan and one is a fine sample H from a handle produced in clear glazed earthen ware (possible Queen’s Ware). If we also disregard the glass bottle fragment I and the horse / cow tooth J, three decorated shards remain. One of the three K remaining is completely flat and may either be a fragment from a plate’s centre or a decorative tile. It is hand painted in cobalt blue and shows a remarkable glaze fit, in that no crazing is visible. The remaining fragment L is of Mocha ware, a refined yet inexpensive ware produced in the nineteenth century. Its most distinctive motif being the tree like pattern produced when manganese dioxide is mixed with tobacco juice and applied to wet slip. The tobacco juice reacts with the slip forming a growth like pattern which the manganese dioxide stains black. The result is fixed during the later firing and glaze process.
Gleaned Fragments

Selected documentation of gleaned fragments from general collection. These selected fragments represent a small portion of the growing gleaned fragment collection. In this instance they have been documented in order of their size.
List of illustrations

Gleaning the laneways of Ormond. xiii
Colour detail of water damaged corrugated card xviii
Textile fragments from demolished house 3
Damaged pavement prior to removal. Ormond 7
Abandoned school house interior wall, Turkey 2008 11
Detail of road sign North Cornwall UK 1972 21
John Wolseley – expressive mark making 18
Sandpaper 60 / 350 grit & Ormond station platform 25
Books illustrating material expression in architecture 33
The experience of steel / precision and strength 39
Wooden boats at the Danish Viking Museum 45
In thinking about the quality of nails 49
Student gleanings displayed in the studio 57
Charred paper fragment 58
Gleaned flint from South coast of Britain 61
Mark Dion The Tate Thames Dig 66
Terracotta fragments from North Road beach 69

73 Laying out of gleaned fragments
77 Investigating the framing of gleaned fragments
81 Funnel forms used for evaluation
85 Considering potential within gleaned fragments
88 Wall tile for John Wardle Architects with P.Venables
91 Hand made scale bricks – explore construction
95 Modelling cutlery using paper
101 Silhouettes of fragments in sample bags
109 Detail of image of brick and road metal fragments
112 Exhibition general view Craft Victoria 2009.
115 Detail of gleaned collection.
116 Display of designed artefacts.
120 Investigation of fragments with RMIT students.
121 Structure interior.
122 Exhibition stamps.
130 Fragments from the River Thames London