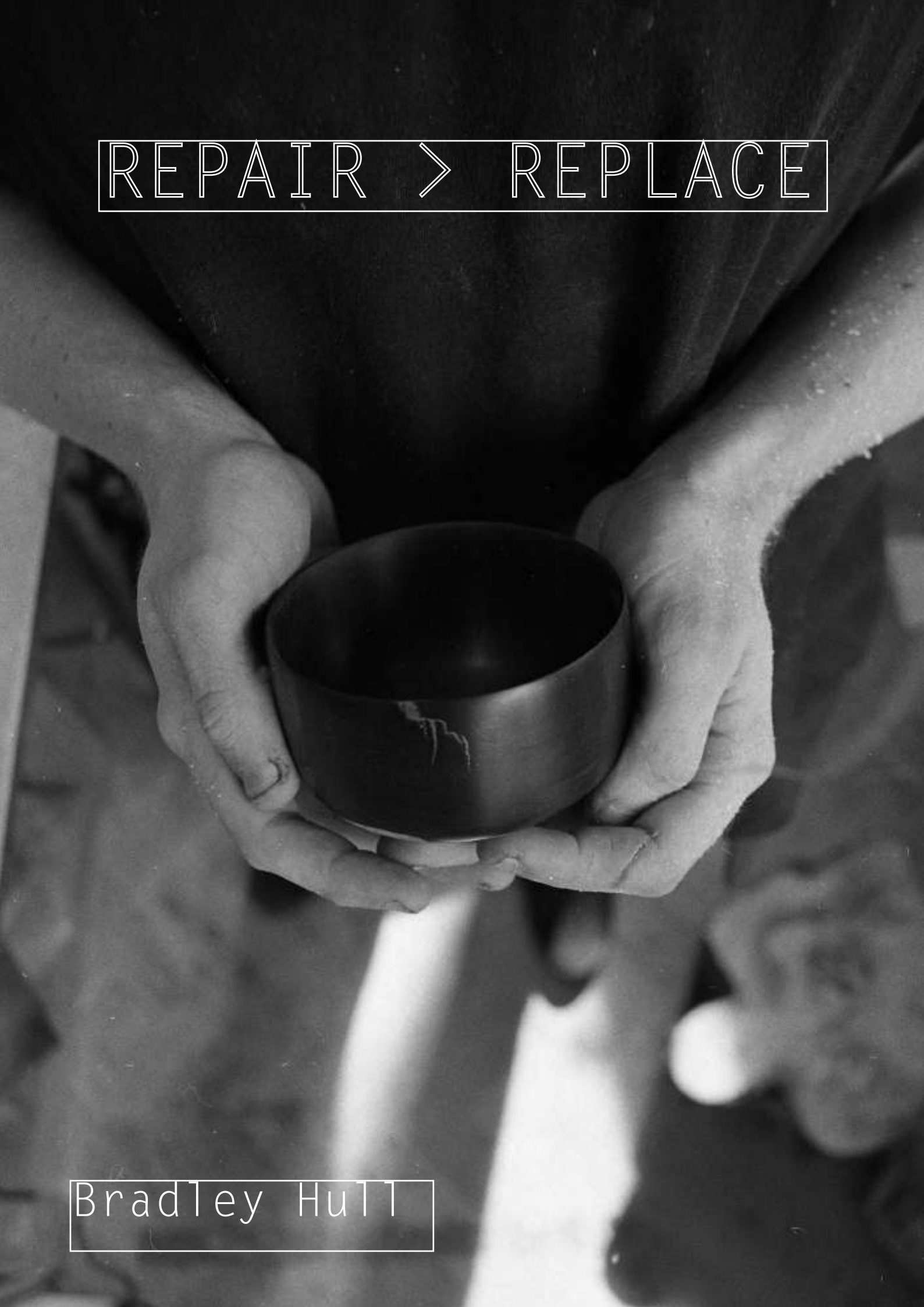
REPAIR > REPLACE



Bradley Hull

Contents Page

Previous Project- ‘The Market’ Heals (2016)

University of Brighton

Arts and Humanities

Ba Hons 3D Design And Craft level 5

Bark Inkayed Sideboard
'The Market' - Heal's Project

Bradley Hull

The ANNA-MARIA DESOGUS MEMORIAL AWARD 2016

Imagine a therapy that has no known side effects, is readily available, and could improve your mental functioning at zero cost. This project explored problems derived in urban environments by introducing visual cues, associated with nature into the home. Psychological studies by Kaplan et al have proven with the Attention Restoration Theory and the Psycho evolutionary theory show how natural cues can decrease stress and improve mental cognitive performance. The reason I used bark, is because it is commonly discarded and seen as a waste material and burnt. The material has infinite diversity in terms of pattern, colour and texture and this beauty is highlighted with its use as an inlayed material.

Walnut drawer front with bark inlay
Designed 2016
Heals ‘The Market’ project

- The starting point for Repair > Replace was to develop previous ideas into using different layers of timber in design. My initial focus was to use bark as a visual stimuli. The raw, natural and un-refined qualities of bark contrast machined elements from the same material. The surface qualities and textural variance creates a link with the material source. Furthermore bark is a waste product, scarcely used in product and furniture design.

- The drawer shown above was my first material test into inlaying bark from a walnut tree, into machined walnut components. This task revealed the limitations of the process and how bark can be used. As tree trunks are round, the bark usually has a curved form, which makes inlaying challenging. I was able to overcome this by using vertical cuts from a log instead of horizontal and then planing down the bottom surface to be level/flat.

After the process of critical reflection I realised that my previous project has very strong links to wabi-sabi philosophy, merging natural/organic elements with madmade materials and machine processes. This gave me the two driving forces for this project. Wabi-sabi could be used to better explain the principles of naturalistic design and modernism could be used to explain functional, machine led design process. My main interest being in finding ways to merge and combine characteristics from both design philosophies to create my personal design ethos.

By making a range of bowls I can apply these researched surface characteristics to inform experimentation. Using bowls as a medium for research means that I can produce a wide range of products (15) instead of 2-3 pieces of furniture.

The design characteristics of the drawer front below are;

- Smooth, sanded sections of walnut, contrasted by natural elements such as the drawer divider (a branch) and the bark inlay
- Colours and dyes are from natural sources
- Organic materials
- The materials have been forced to meet the artists design specifications,
- Textural variances between the design elements
- A shiny finish (danish wax) has been applied
- Function and utility are primary values of the design
- Readily available materials have been used

REPAIR > REPLACE

AIMS

- EVOLVE IDEAS / CONCEPTS OF USING BARK AS A MATERIAL IN DESIGN + CRAFT

→ NATURALISTIC ASSOCIATIONS AND VISUAL CUES

→ MATERIAL 'JOURNEY' AND ASSOCIATIONS WITH THE RAW, NATURAL MATERIAL

↓

THIS CONTRAST BETWEEN REFINED AND UNREFINED USAGE OF THE SAME MATERIAL

- FOCUS ON WOOD PIECES WITH KNOTS, SPLITS + IMPERFECTIONS

→ FINDING CONCEPTUAL AND TRADITIONAL WAYS TO 'REPAIR' THESE PIECES

- RESEARCH INTO MODERNISM + WABI SABI DESIGN PRINCIPALS + PHILOSOPHY

→ WHAT ARE THE DESIGN + SURFACE CHARACTERISTICS?

→ CREATE A SPECTRUM OF THESE CHARACTERISTICS

→ PRODUCE PIECES REACTING TO THIS SPECTRUM

- LEARN A NEW SKILL OF LATHING FOCUSING ON MORE CONCEPTUAL TECHNIQUES

REPAIR > REPLACE

→ PROJECT PROCESS

↗ BOOK RESEARCH

STARTING POINT : EXISTING IDEAS OF RESEARCH INTO THE BENEFITS (PHYSICAL , MENTAL) OF NATURALISTIC DESIGN.

- BARK INLAY - TEXTURE CONTRAST
- WABI / SABI RESEARCH
- MODERNISM RESEARCH

} DESIGN PRINCIPLES + ~~SURFACE~~ SURFACE CHARACTERISTICS

→ VISUAL RESEARCH - SHORT PHOTOGRAPHY BOOKS, TO SHOW THESE SURFACE CHARACTERISTICS

CREATE A DESIGN PHILOSOPHY SPECTRUM

→ MATERIAL RESEARCH - WOOD AS A MATERIAL

- WHAT VARIABLES ? → HOW COULD THIS BE CONTROLLED ?

MOISTURE CONTENT AND DRYING TESTS → TO INTISE BREAKAGES AND IMPERFECTIONS IN A MATERIAL

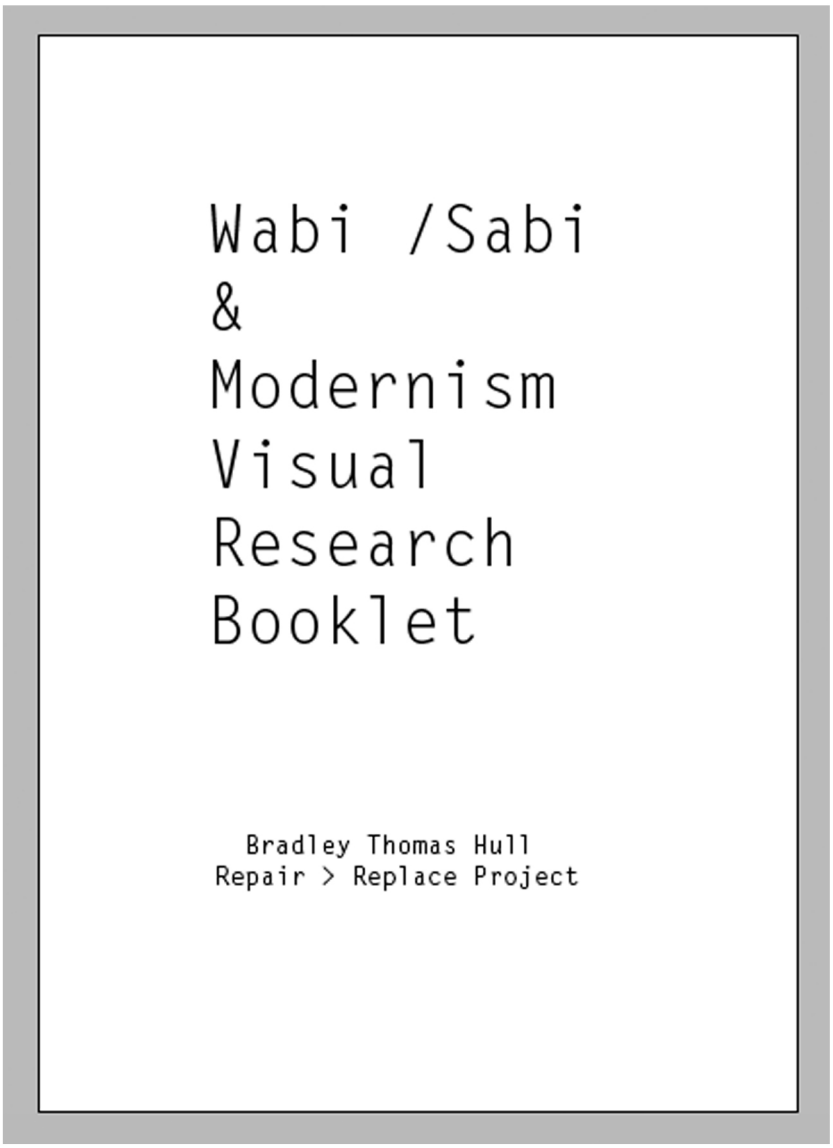
→ MATERIAL EXPERIMENTATION → CREATING A ASSYMETRICAL ORGANIC SHAPE

- DRYING BOX
- DIRECT HEATING

→ REPAIR TECHNIQUES ;

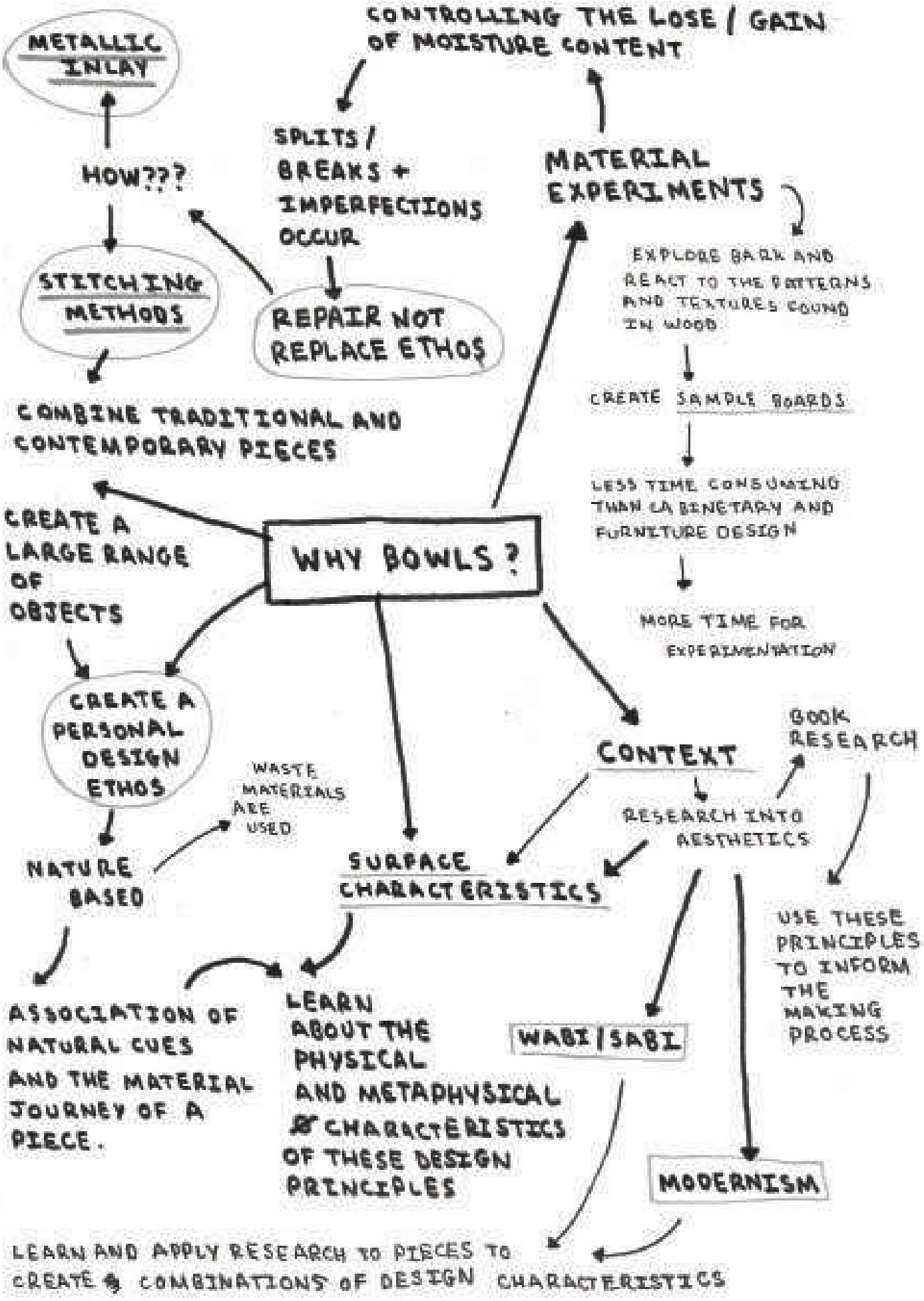
- STITCHING
- METAL INLAY → KINTSUGI INFLUENCE

→ PRODUCE PIECES COMBINING MATERIAL, BOOK + VISUAL RESEARCH. REACTING TO THE SPECTRUM OF DESIGN PRINCIPALS + PHILOSOPHIES.



The research booklet, seperate to this PDF explains why I have picked these two design philosophies - wabi-sabi and modernism

- The booklet contains my initial ideas into questioning ‘material perfection’ (a characteristic of modernist design)
- Using surface characteristics to identify links to these two design philosophies
- Visual examples of modernist and wabi-sabi objects, analysis of the corresponding design elements
- Influences into using repair techniques, such as Kintsugi and how this can be applied to wood turning and the vessels I produce
- Initial sample pieces and how they could be developed and integrated into this project


METALLIC INLAY
HOW???
STITCHING METHODS
CONTROLLING THE LOSE / GAIN OF MOISTURE CONTENT
SPLITS / BREAKS + IMPERFECTIONS OCCUR
REPAIR NOT REPLACE ETHOS
MATERIAL EXPERIMENTS
EXPLORE BARK AND REACT TO THE PATTERNS AND TEXTURES FOUND IN WOOD
CREATE SAMPLE BOARDS
LESS TIME CONSUMING THAN CABINETARY AND FURNITURE DESIGN
MORE TIME FOR EXPERIMENTATION
COMBINE TRADITIONAL AND CONTEMPORARY PIECES
CREATE A LARGE RANGE OF OBJECTS
WHY BOWLS?
CREATE A PERSONAL DESIGN ETHOS
WASTE MATERIALS ARE USED
NATURE BASED
CONTEXT
BOOK RESEARCH
RESEARCH INTO AESTHETICS
SURFACE CHARACTERISTICS
USE THESE PRINCIPLES TO INFORM THE MAKING PROCESS
ASSOCIATION OF NATURAL CUES AND THE MATERIAL JOURNEY OF A PIECE.
LEARN ABOUT THE PHYSICAL AND METAPHYSICAL CHARACTERISTICS OF THESE DESIGN PRINCIPLES
WABI / SABI
MODERNISM
LEARN AND APPLY RESEARCH TO PIECES TO CREATE COMBINATIONS OF DESIGN CHARACTERISTICS


WOOD
WMCP

COMPARISON OF WABI-SABI AND MODERNISM

* BOOK RESEARCH - LEONARD KOREN (WABI/SABI)

SIMILARITIES

- BOTH APPLY TO ALL MANMADE OBJECTS, SPACES AND DESIGNS
- BOTH ESCHEW ANY DECORATION THAT IS NOT INTEGRAL TO STRUCTURE
- BOTH ARE ABSTRACT, NONREPLESENTABLE IDEALS OF BEAUTY
- BOTH HAVE READILY IDENTIFIABLE SURFACE CHARACTERISTICS → IDENTIFY THESE

MODERNISM - DEPARTURE FROM CLASSICISM AND ECLECTICISM

WABI-SABI - DEPARTURE FROM THE CHINESE PERFECTION & GORGEOUSNESS OF THE 16TH CENTURY AND EARLIER

WHAT ARE THE DIFFERENCES? → IDENTIFIABLE SURFACE CHARACTERISTICS

CREATE A SPECTRUM WITH THESE CONTRASTING CHARACTERISTICS AT EACH END

EXPERIMENT WITH THE MIDDLEGROUND SPACE WHICH HAS AN ESCENCE OF BOTH ENDS OF THE SPECTRUM. I AM MORE INTERESTED IN THE WABI/SABI NATURALISTIC APPROACH

DIFFERENCES

MODERNISM	WABI/SABI
• PRIMARILY EXPRESSED IN THE PUBLIC DOMAIN	• PRIMARILY EXPRESSED IN THE PRIVATE DOMAIN
• IMPLIES A LOGICAL RATIONAL WORLDVIEW	• IMPLIES AN INTUITIVE WORLDVIEW
• ABSOLUTE	• RELATIVE
• LOOKS FOR UNIVERSAL PROTOTYPICAL SOLUTIONS	• LOOKS FOR PERSONAL, IDIOSYNCRATIC SOLUTIONS
• MASS PRODUCED / MODULAR	• ONE OF A KIND / VARIABLE ↳ APPEALS TO MY DESIGN ETHOS
• EXPRESSES FAITH IN PROGRESS	• THERE IS NO PROGRESS
• FUTURE ORIENTATED	• PRESENT ORIENTATED
• BELIEVES IN THE CONTROL OF NATURE	• FUNDAMENTAL UNCONTROLABILITY OF NATURE ↳ I AM INSPIRED BY THIS APPROACH
• ROMANTICIZES TECHNOLOGY	• ROMANTICIZES NATURE
• PEOPLE ADAPTING TO MACHINES	• PEOPLE ADAPTING TO NATURE
• GEOMETRIC ORGANIZATION OF FORM (SHARP, PRECISE, DEFINITE SHAPES AND EDGES)	• ORGANIC ORGANIZATION OF FORM (SOFT, VAGUE SHAPES AND EDGES)
• MANMADE MATERIALS ↳ LESS SUSTAINABLE??	• NATURAL MATERIALS ↳ PREVIOUS WORK INTO USING BARK, VIEWED AS A [illegible] MATERIAL

- THE BOX AS A METAP -HOR (RECTILINEAR; PRECISE; CONTAINED)
- OSTENSIBLY SLICK
- NEEDS TO BE WELL MAINTAINED
- PURITY MAKES ITS EXPRESSION RICHER
- SOLICITS THE REDUCTION OF SENSORY INFORMATION
- IS INTOLERENT OF AMBIGUITY AND CONTRA -DICTION
- COOL
- GENERALLY LIGHT AND BRIGHT
- FUNCTION AND UTILITY ARE PRIMARY VALUES
- PERFECT MATERIALITY IS AN IDEAL
- EVERLASTING

I AM INTERESTED IN SCULPTURAL WORKS

OBJECT I AM PRODUCING

- THE BOWL AS A METAPHOR (FREE SHAPE, OPEN AT TOP)
- OSTENSIBLY CRUDE
- ACCOMODATES TO DEGREDAT -ION AND ATTRITION
- CORROSION AND CONTAM -INATION MAKES ITS EXPRESSION RICHER
- SOLICITS THE EXPANSION OF SENSORY INFORMATION
- IS COMFORTABLE WITH AMBIGUITY AND CONTRADICTION
- WARM
- GENERALLY DARK AND DIM
- FUNCTION AND UTILITY ARE NOT SO IMPORTANT
- PERFECT IMMATERIALIY IS AN IDEAL
- TO EVERYTHING THERE IS A SEASON

LINKS TO IMPERMANENC

OBJECTS WEAR IN OVER TIME, NOT OUT

PLOT A SPECTRUM OF AESTETIC APPROACHES

HOW TO EVOLVE THIS RESEARCH???

MORE SURFACE QUALIT IES / RESEARCH

MATERIAL QUALITIES AND PROCESSES

DESIGN PRINCIPLES

→ WABI / SABI

PHYSICAL AND METAPHYSICAL PROPERTIES

- ORGANIC
- FREEDOM OF FORM
- UGLINESS + BEAUTY
- COLOUR
- SIMPLICITY
- SPACE
- BALANCE
- SOBRIETY

These are the key design points for wabi / sabi. The more of these points (properties) a piece has the more wabi / sabi the piece will be on the spectrum.

Therefore.....

→ WHAT ARE THE MODERNISM DESIGN PROPERTIES ?

THESE FORM THE OTHER END OF THE SPECTRUM

THESE CONTRAST THE WABI | SABI PRINCIPLES

MAKE A BRAINSTORM OF THESE PHYSICAL AND METAPHYSICAL PROPERTIES

→ MY AIMS FOR THE PIECES CREATED ;

- EXPLORE THE MIDDLEGROUND MIXING AND COMBINING PROPERTIES OF BOTH DESIGN PHILOSOPHIES.
- THIS EXPERIMENTATION THEN FORMS MY OWN PERSONAL DESIGN ETHOS

DESIGN PRINCIPLES OF WABI/SABI

- MOST MODERN DESIGNS LACK INTIMACY, AND PRODUCTION COSTS AND SHREWD MARKETING SCHEMES PLAY DEFINING OUR LIVING SPACES.

→ WABI/SABI OFFERS AN ALTERNATIVE TO THESE POORLY DESIGNED AND MASS PRODUCED ENVIRONMENTS

↓

ONE SHOULD OBSERVE, WITH THE UTMOST ATTENTION, THE DETAILS AND NAUNCES THAT ARE OFFERED TO THE KEEN EYE

HELPS IDENTIFY AND QUESTION MATERIALITY

↓ IN THESE IMPERCEPIBLE DETAILS ONE CAN FIND VISAUL TREASURES

↓ NATURALISTIC IDEOLOGIES

↓ COMBINATION OF OTHER NATURAL MATERIALS

↓ WHAT MATERIALS COULD I USE ?

PHYSICAL + METAPHYSICAL PROPERTIES

① ORGANIC – THE TIDES OF TIME SHOULD BE ABLE TO IMPRINT THE PASSING OF YEARS ON AN OBJECT. THIS WEAR AND TEAR DOES NOT DETRACT FROM VISUAL APPEAL

DESIGN CRITERIA:

- NO SHINY, UNIFORM MATERIALS
- MATERIALS CLEARLY SHOW THE PASSING OF TIME
- MATERIALS WHOSE DE-EVOLUTION IS EXPRESSIVE AND ATTRACTIVE

② FREEDOM OF FORM

- THE PIECE IS PERSONAL AND INTIMITE IN ITS FORM. LITTLE ATTENTION SHOULD BE GIVEN TO SYMMETRY OR REGULARITY

THE OBJECT'S FORM IS DICTATED BY THE MATERIAL USED AND THE FUNCTION IT PROVIDES

THE ARTIST STRIVES TO BRING OUT THE INNATE BEAUTY FOUND IN NATURE

- ASYMMETRY OR IRREGULARITY
- THE FORM COMES FROM THE PHYSICAL PROPERTIES OF THE MATERIAL USED
- ARTLESSNESS NOT ARTISTRY
- THE PIECE EVOLVES IN A NATURAL AND UNFORCED WAY
- NO SYMBOLISM

③ TEXTURE

- THE REAL BEAUTY LIES IN THE SMALL DETAILS WHERE THE PASSING YEARS HAVE ADDED EXTRA DEPTH

IF WE LOOK AT ANY OBJECT IN ENOUGH DETAIL WE WILL SEE IMPERFECTIONS AND FLAWS

- ROUGH AND UNEVEN
- VARIEGATED AND RANDOM
- TEXTURES FORMED BY NATURAL SPORADIC PROCESSES.

" TEXTURAL COMPLEXITY AND RANDOMNESS ARE ESSENTIAL ELEMENTS IN WABI / SABI, FOR WITH-OUT THEM A PIECE WILL NOT TRULY SUGGEST THE ARBITARY NATURE OF EVOLUTION AND DEVOLUTION"

- ANDREW JUNIPER

(WABI / SABI THE JAPANESE ART OF IMPERMANENCE)

④ UGLINESS AND BEAUTY

- OUR IDEAS OF WHAT REPRESENTS BEAUTY AND UGLINESS ARE MAINLY BASED ON LEARNED ASSUMPTIONS ABOUT THE ITEMS THAT WE PERCIEVE IN OUR OWN SEPERATE WORLDS

- DISREGARD FOR CONVENTIONAL VIEWS OF BEAUTY
- AN ~~AESTETIC~~ AESTHETIC PLEASURE THAT LIES BEYOND CONVENTIONAL BEAUTY
- BEAUTY IN THE SMALLEST MOST IMPERCEPTIBLE DETAILS

⑤ COLOUR

- NEARLY ALL THINGS CONSIDERED WABI/SABI HAVE NOT JUST ONE COLOUR BUT A MYRIAD OF COLOURS BLENDING TOGETHER → INTRICATE AND INTRIGUING PATTERNS.

- NO HARSH OR STRONG COLOURS
- SUBDUED LIGHTING
- COLORS AND DYES FROM NATURAL SOURCES
- DIFFUSE AND MURKY COLOURS
- MATTE TONES THAT LACK UNIFORMALITY

⑥ SIMPLICITY

- THERE IS A NEED TO FOCUS ON ONLY THE ESSENTIAL PART OF THE DESIGN; BEYOND ITS FUNCTIONAL REQUIREMENT NO OTHER EMBELLISHMENT SHOULD BE REQUIRED

- NO EMBELLISHMENT OR OSTENTATION
- UNREFINED AND RAW
- USE OF FREELY AVAILABLE MATERIALS

⑦ SPACE

- WHEN CONSIDERING WABI/SABI EXPRESSIONS, AN ALLOWANCE SHOULD BE MADE FOR SPACE TO PLAY AN ACTIVE ROLE

THE ABUNDANCE OF ~~EMPTY~~ SPACE DRAWS THE EYE TO FOCUS ON PARTICULAR DETAILS OF AN OBJECT

THE USE OF SPACE AFFECTS VISUAL AESTHETIC, WHERE THE OBJECT IS PLACED (ENVIROMENT), ALSO THE SPACE WITHIN THE ACTUAL OBJECT

- NOTHING SURPLUS TO REQUIREMENT
- SIGNIFICANT AREAS OF 'NOTHING' IN INTERIORS AND GARDENS
- AMPLE SPACE ARROUND ALL ACENT PIECES
- ACCENT PIECES AT AN ABSOLUTE MINIMUM

⑧ BALANCE

- IT IS ONLY BY CONTINUED OBSERVATION OF THE SURROUNDINGS THAT A FEEL FOR UNWRITTEN RULES FOR BALANCE, BECOME IMPRINTED ON THE AESTHETIC JUDGEMENTS ON THOSE TRYING TO CREATE

- CAREFUL AND CONSTANT OBSERVATION OF THE PHYSICAL BALANCES FOUND IN NATURE
- NO PRE-SCRIBED FORMULAE
- NO REGULAR OR UNIFORM SHAPES
- DESIGN ELEMENTS BALANCED IN A WAY THAT LOOKS COMPLETELY NATURAL AND UNFORCED

⑨ SOBRIETY

- MUCH OF THE BEAUTY ACCREDITED TO THE SIMPLE LINES OF JAPANESE DESIGN COMES DOWN TO THE DETERMINATION TO KEEP BOTH ART AND EVERYDAY DESIGNS TO A FUNCTIONAL MINIMUM

- REALITY OF IMPERMANENCE USED TO ADD A SENSE OF PERSPECTIVE AND FINALITY
- PIECES THAT ARE INTIMATE AND PERSONAL
- DESIGN WORK APPROACHED WITH HUMILITY + SINCERITY
- ALL ASPECTS OF DESIGN KEPT TO A FUNCTIONAL MINIMUM

DESIGN PRINCIPLES

→ MODERNISM

- RADICAL DEPARTURE FROM 19th CENTURY CLASSICISM AND ECLECTICISM

KEY POINTS

- MASS PRODUCED MODULAR → MADE BY MACHINES → DESIGNED AROUND PRODUCTION METHODS
- MAN-MADE MATERIALS → COMPOSITES, SPECIFIC CHARACTERISTICS FOR FUNCTIONALITY
- EVERLASTING → IN CASES PROTECTED AGAINST THE ELEMENTS/NATURE → SUITABLE FINISHES ARE APPLIED → NEEDS TO BE WELL MAINTAINED
- FUNCTION AND UTILITY ARE PRIMARY VALUES → ERGONOMICS, ANTHROPOMETRICS AND USE OF AN OBJECT ARE CONSIDERED
- GENERALLY LIGHT AND BRIGHT
- PRECISE AND CONTAINED → PERFECT MATERIALITY IS AN IDEAL → HIGHLY WASTEFUL
- GEOMETRIC ORGANISATION OF FORM → SHARP-DEFINED EDGES → LACK OF TEXTURE IN THE CHOSEN MATERIAL E.G. POLISHED SILVER
- GEOMETRIC ORGANISATION OF FORM → MODULAR / REPETITIVE
- EXPRESSES FAITH IN PROGRESS → CONSTANT DEVELOPMENT
- FUTURE ORIENTATED, BELIEVING IN THE CONTROL OF NATURE
- → PEOPLE ADAPT TO MACHINES → SEARCHES FOR UNIVERSAL PROTOTYPICAL SOLUTIONS

MODERNIST OPPOSITES / CONTRASTS TO THE WABI/SABI DESIGN PRINCIPLES

① ORGANIC –

- NEEDS TO BE WELL MAINTAINED

- SHINY UNIFORM MATERIALS
- NO SIGN OF USE, DETERS WEAR AND DAMAGE
- COMPOSITE MAN-MADE OR REFORMED MATERIALS – E.G. RESIN

② FREEDOM OF FORM

- SYMMETRY
- MACHINED
- SYMBOLIC
- FORM DEPICTS ARTISTS VISION
- MODULAR
- MATERIAL IS 'FORCED' TO MEET DESIGN

③ TEXTURE

- IDEAL OF PERFECT MATERIALITY

- SMOOTH, NO TEXTURE VARIANCE
- TEXTURE REMOVED OR FORMED BY A MACHINE PROCESS
- EVEN / UNIFORM
- BULKY / STRUCTURALLY STRONG?

④ UGLINESS + BEAUTY

- CONVENTIONAL VIEWS OF BEAUTY
- TRENDY?
- BEAUTY INTO THE PROCESS OR MANIPULATION OF MATERIAL
- TREND DEPENDS ON SUB-GENRE OF MODERNISM

⑤ COLOUR

- COOL • GENERALLY LIGHT AND BRIGHT
- ARTIFICAL COLOUR – FROM PROCESS?
- UNIFORMALITY
- STRONG PRIMARY COLOURS
- METALLIC ELEMENTS
- SOURCE OF LIGHT (REFLECTIVE, ETC).

⑥ SIMPLICITY

- EVERLASTING
- SOLICITS THE REDUCTION OF SENSORY INFORMATION
- REFINED
- OSTENSIBLY SLICK
- COMBINATION OF MULTIPULE ELEMENTS / MATERIALS

---

⑦ SPACE

- MULTIPULE ASCENT PIECES
- NO 'OPEN SPACES' OR MINIMAL CONTROLLED PANELLING FOR EXAMPLE.
- PRECISE
- 'WHOLE'
- LACK OF DEFECTS OR NATURAL MARKS - HOLES, KNOTS, SPLITS - ETC

---

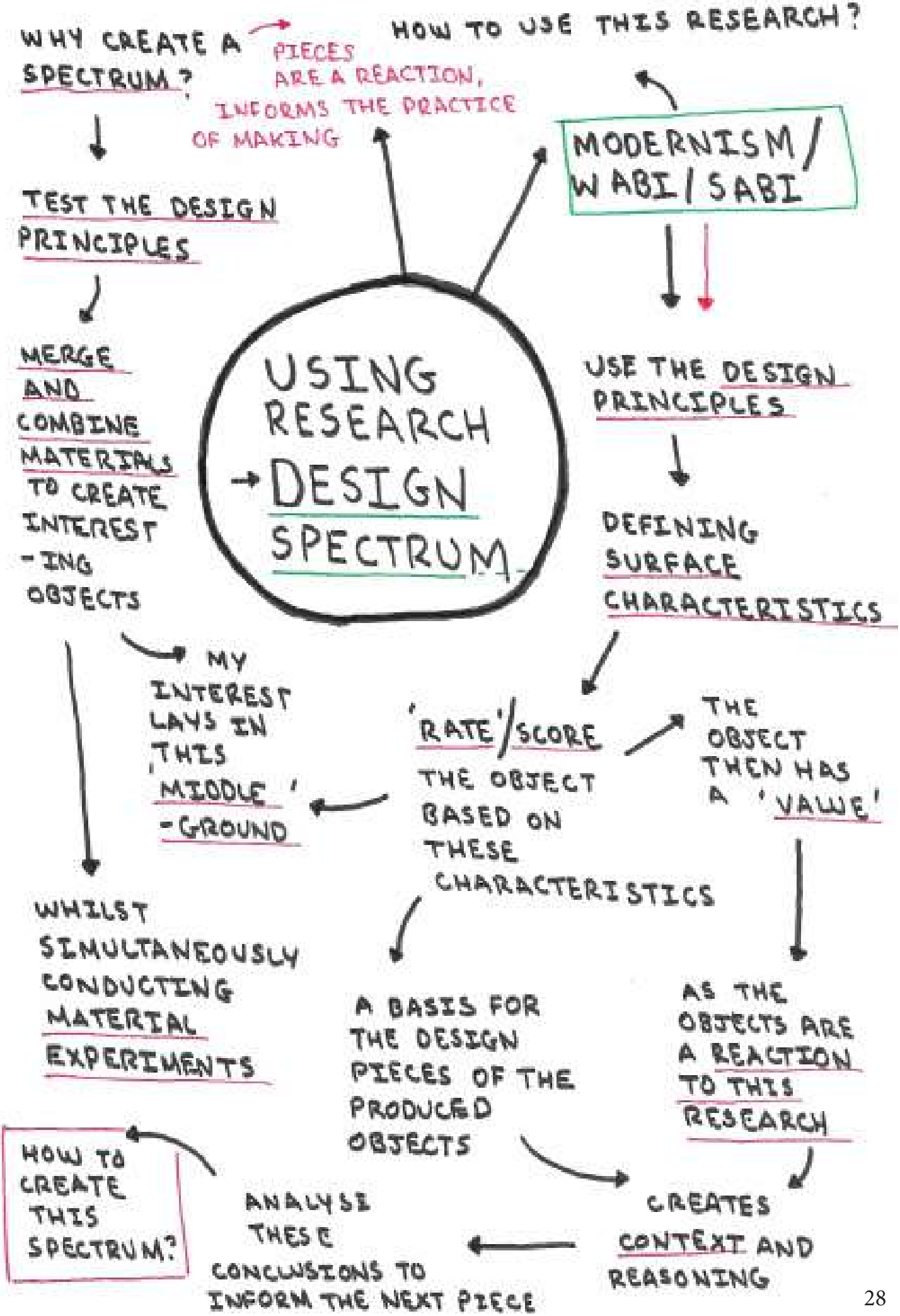
⑧ BALANCE

- ~~PRECES~~ PRECISE PRE-SCRIBED FORMULAE
- MADE TO A SPECIFICATION
- UNIFORM, REGULAR SHAPES
- BELIEVES IN THE CONTROL OF NATURE - FORCED DESIGN
- PERFECT MATERIALITY IS AN IDEAL

---

⑨ SOBRIETY

- UNIVERSAL PROTOTYPICAL SOLUTIONS
- FUNCTION AND UTILITY ARE THE PRIMARY VALUES
- MULTIPUL FUNCTIONS
- DESIGNED TO ACCOMIDATE AND FACILITATE HUMAN BEINGS
- NOT FRAGILE AND BRITTLE, DESIGNED TO WEAR OUT AFTER USE AND BE REPLACED
  - → CONSUMPTION
    - NOT IN ALL CASES
      - → DEPENDS ON THE FUNCTION OF THE PIECE


WHY CREATE A SPECTRUM?
PIECES ARE A REACTION, INFORMS THE PRACTICE OF MAKING
HOW TO USE THIS RESEARCH?
MODERNISM / WABI / SABI
TEST THE DESIGN PRINCIPLES
USING RESEARCH → DESIGN SPECTRUM
MERGE AND COMBINE MATERIALS TO CREATE INTEREST -ING OBJECTS
USE THE DESIGN PRINCIPLES
DEFINING SURFACE CHARACTERISTICS
MY INTEREST LAYS IN THIS 'MIDDLE' -GROUND
'RATE'/SCORE THE OBJECT BASED ON THESE CHARACTERISTICS
THE OBJECT THEN HAS A 'VALUE'
WHILST SIMULTANEOUSLY CONDUCTING MATERIAL EXPERIMENTS
A BASIS FOR THE DESIGN PIECES OF THE PRODUCED OBJECTS
AS THE OBJECTS ARE A REACTION TO THIS RESEARCH
HOW TO CREATE THIS SPECTRUM?
ANALYSE THESE CONCLUSIONS TO INFORM THE NEXT PIECE
CREATES CONTEXT AND REASONING

CREATING A SPECTRUM TO INFORM MY MAKING

* USE BOOK RESEARCH TO SCORE AN OBJECT BASED ON ITS PHYSICAL AND METAPHYSICAL PROPERTIES.

→ WHICH ARE;

- MATERIALITY
- FREEDOM OF FORM
- COLOUR
- SIMPLICITY
- BALANCE
- SOBRIETY
- UGLINESS AND BEAUTY
- SPACE
- TEXTURE

9 ~~8~~ KEY PRINCIPLES

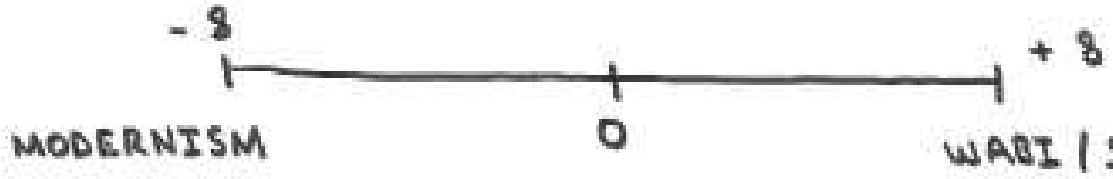
ASSIGN A VALUE TO THE OBJECT POSSESSING A VALUE (DESIGN DETAIL

USE THESE PRINCIPLES TO PLACE THE FINISHED PIECE ON THIS SCALE

WHAT NUMERICAL VALUE TO ASSIGN TO THESE CHARACTERISTICS?

- WHOLE AND ROUNDED NUMBERS SHOULD BE USED E.G. 0, 1, 2, 0.5

- THE MIDDLE OF THE SPECTRUM SHOULD BE 0



- EACH VALUE IS $1, FOR ONE CHARACTERISTIC

→ THEREFORE THE REACTION TO A DESIGN CHARACTERISTIC PLACES THE OBJECT ON THE SCALE

CREATING THE DESIGN SPECTRUM

- 9 PRICIPLES FROM WABI / SABI RESEARCH

→ OPPOSING PRINCIPLES OF MODERNIST PHILOSOPHIES FOR EACH 9 POINTS

9 PRINCIPLES ;

- ORGANIC : (FORM OF A PIECE IN RELATION TO ITS MATERIAL JOURNEY) WEAR + TEAR
- FREEDOM OF FORM : THE PROCESS OF WORKING A MATERIAL NATURAL OR MACHINED FORM
- TEXTURE : SURFACE TEXTURE + DETAILS
- UGLINESS + BEAUTY : CONVENTIONALLY BEAUTIFUL BASED ON LEARNT IDEALS
- COLOUR : PLAIN, NATURAL DYES ? OR SHINY FLAWLESS FINISH
- SIMPLICITY : ANY EMBELLISHMENT OR ADDED / IMPLIED FUNCTIONS ?
- SPACE : 'OPEN' SPACE OR ENCLOSED FORM ?
- BALANCE : UNIFORM SHAPE ? OR NATURAL AND UNFORCED ?
- SOBRIETY : FUNCTIONAL OR FUNCTIONLESS ITEM

→ THE OBJECT IS BASED ON ALL PRINCIPALS AND JUDGED BY EACH ONE. THE MOST CHARACTERISTICS AN OBJECT POSSESSES DETERMINES ITS SCORE.

How are the bowls rated?

Page 19 - 26 explains the 9 design principles each piece is rated on

Each design principle holds a value based on how closely a piece relates to either Modernist or Wabi-Sabi philosophy.

If there are strong links to a principle the piece will gain a value of 1. To form a strong like the object should agree with 2-3 characteristics of the corresponding principle wether it be Modernism or Wabi-Sabi.

Strong links to Modernism s gain a value of -1
Strong links to Wabi-Sabi gain a value of +1

Therefore the maximum rating of a piece is either + 9 or - 9 forming the range of the spectrum

Weak links are when a object contains one characteristic of a principle, or the link is not entirely certain

Weak links to Modernism gain a value of - 1/2
Weak links to Wabi-Sabi gain a value of + 1/2

The rating depends on the identified links to the two design philosophies.

Each outcome will therefore have nine seperate ratings from - 1 to + 1

These ratings are added together to create a total rating for an object.

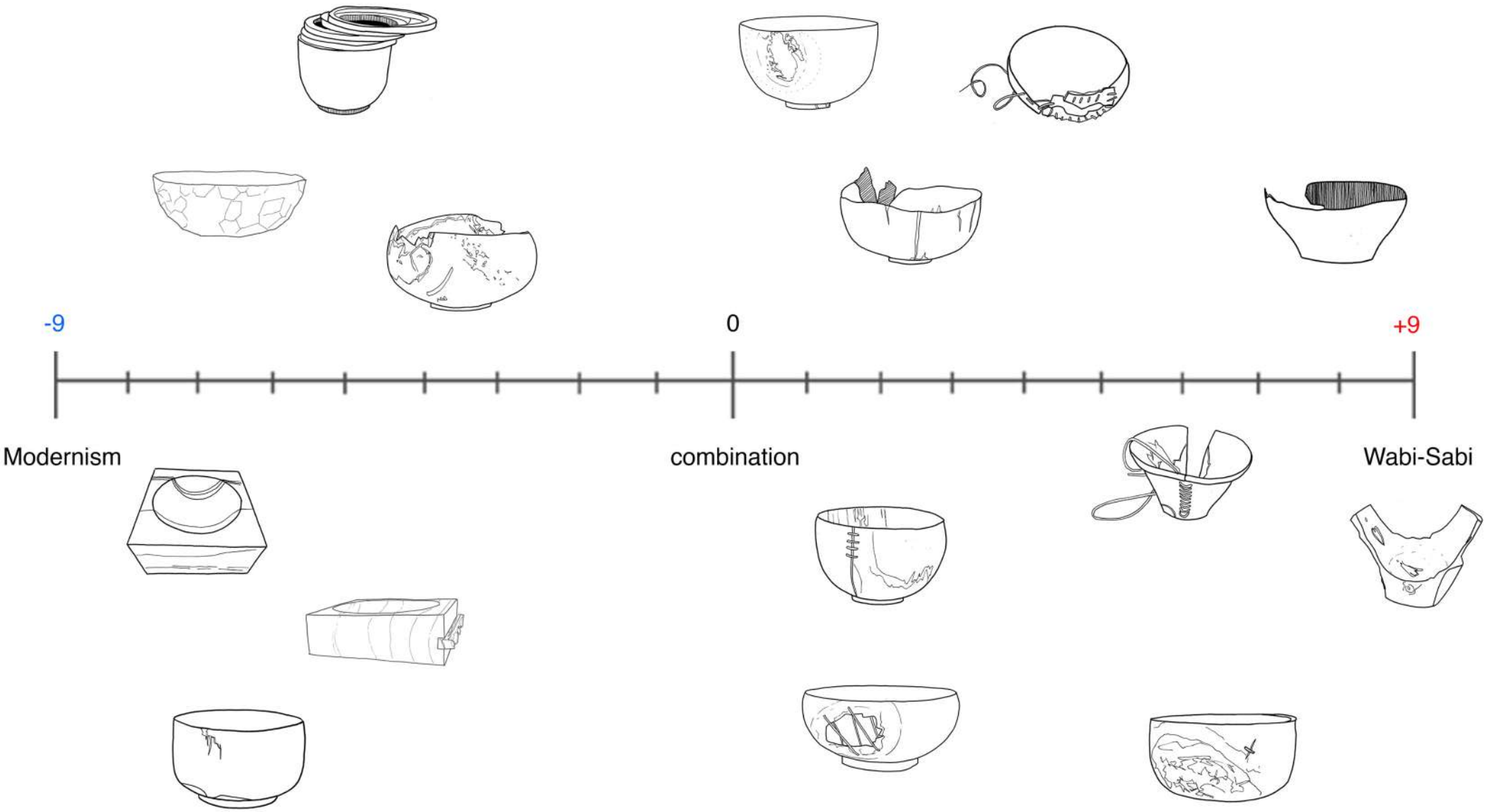
If an object has principles of both Wabi-Sabi and Modernist characteristics the rating is 0 for that chosen principle

Therefore..

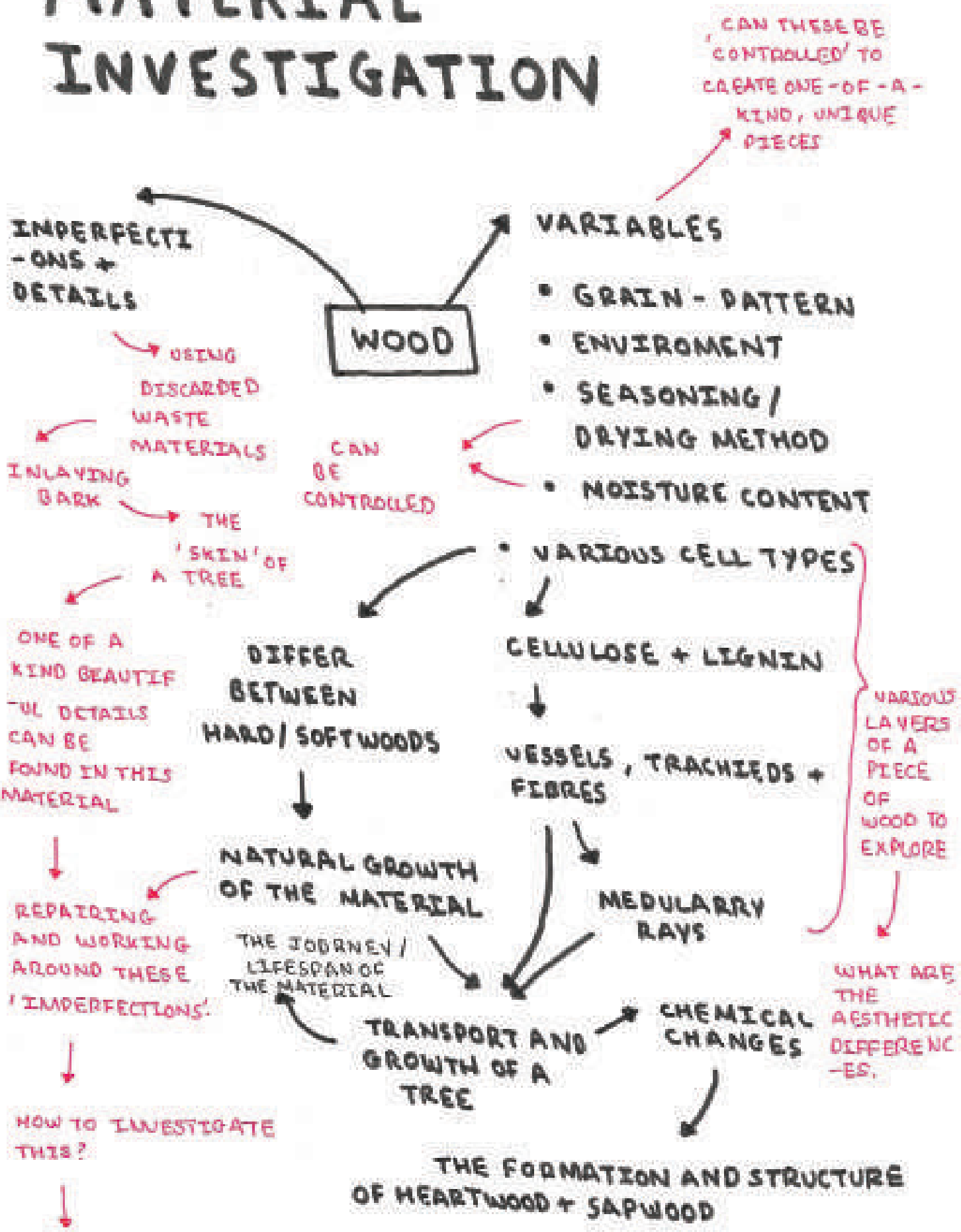
If an objects total rating is from - 9 to - 4.5 the object will fall into the Modernism section

If an objects total rating is from - 4 to + 4 the object will fall into the combination/middleground section

If an objects total rating is from + 4.5 to + 9 the objects will fall into the Wabi-Sabi section


-9
0
+9
Modernism
combination
Wabi-Sabi

MATERIAL INVESTIGATION



Wabi/Sabi Vessels

These pieces have the strongest reactions to Wabi/Sabi design principles, Rated on the spectrum

Ratings on the scale from + 4.5 - + 9.0

Design Characteristics that are associated with a Wabi/Sabi aesthetic;

- Primarily Expressed in the private domain
- Implies an intuitive worldview
- Relative
- Looks for personal idiosyncratic solutions
- One of a kind/Variable
- There is no progress
- Present - Orientated
- Believes in the fundamental uncontrollability of nature
- Romanticizes nature
- People adapting to nature
- Organic organization of form (Soft, vague shapes and edges)
- The bowl is a metaphor (free shape, open at top)
- Natural materials
- Ostensibly crude
- Accommodates to degradation and attrition
- Corrosion and contamination make its expression richer
- Solicits the expansion of sensory information
- Is comfortable with ambiguity and contradiction
- Warm
- Generally dark and dim
- Function and utility are not so important
- Perfect immateriality is an ideal
- To every thing there is a season
- Unrefined, textured pieces

Burnt Elm Bowl - Direct Heating Test

Elm Bowl, With direct heating process applied
5 1/2 x 6 x 3 Inches
Designed 2016
Material test - kiln dried timber

Aims of the piece;

- To encourage warping applying the heating process, to create an organic and unforced assymetrical form
- How will kiln dried wood with a lower moisture content react to the process of direct heating?

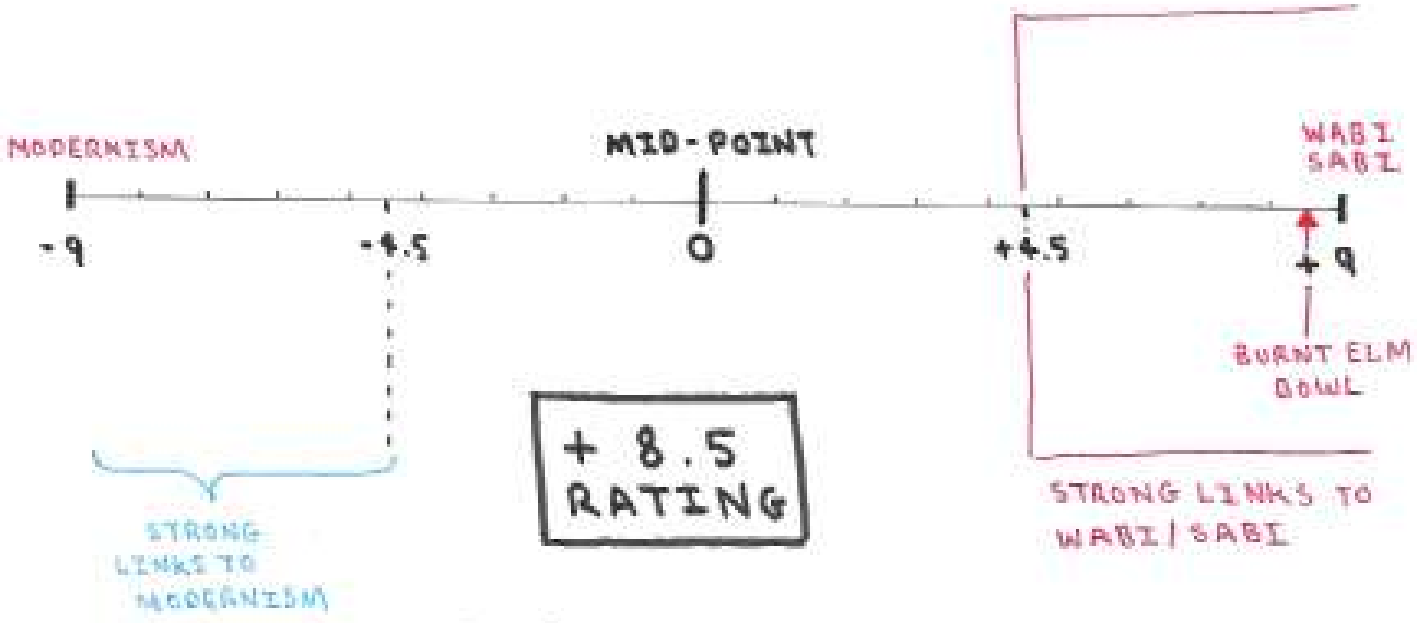
RATING ON WABI/SABI + MODERNISM SPECTRUM

① ORGANIC	- Warped, assymetrical form De-evolution of the material	+1	STRONG WABI/SABI LINK
② FREEDOM OF FORM	- Rough + uneven (variegated) - TEXTURES formed through natural processes	+1	STRONG WABI/SABI LINK
③ TEXTURE	- Assymetry, natural evolution of the process - No symbolism - Artlessness	+1	STRONG WABI/SABI LINK
④ UGLINESS + BEAUTY	- Beauty in the smallest details - Burnt material - disregards conventional views of beauty	+1	STRONG WABI/SABI LINK
⑤ COLOUR	- DIFFUSED dark colours - No harsh or bright colours - burnt + elm grain blend together	+1	STRONG WABI/SABI LINK
⑥ SIMPLICITY	- Unrefined + Raw - Freely available materials - No ostentation, basic elements of form	+1	STRONG WABI SABI LINK

⑦ SPACE	- Accent pieces are a minimum - Areas of 'nothing' open space - Missing burnt part of the wall	+1 STRONG WABI/SABI LINK
⑧ BALANCE	- Balances between natural processes / burning wood - Forest fires - Artifical process is not 'unforced'. I hooked the bowl	+0.5 WEAK WABI/SABI LINK
⑨ SOBRIETY	- The bowl represents Impermanence and illustrates the material life cycle - All aspects of the design are kept to a structural minimum. → The ash rubs off and the structure has be weakened. Function is therefore removed	+1 STRONG WABI/SABI LINK

TOTAL : 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 0.5

= + 8.5



THE BURNT BOWL HAS A STRONG LINK TO WABI/SABI, PHYSICAL AND METAPHYSICAL PROPERTIES

TECHNICAL EXPERIMENT

MOISTURE CONTENT DRYING METHOD

WHY??

- PRODUCE A MORE ORGANIC, ASSYMETRICAL FORM (WABI / SABI CHARACTERISTIC)
  → ONE OF A KIND / UNIQUE PIECES
- INFLUENCE BREAKAGES, SPLITS, IMPERFECTIONS
  → RAPID HEATING IS REQUIRED TO ENCOURAGE SPLITS IN THE MATERIAL – TO THEN BE REPAIRED
- NO OVEN OR DRYING BOX AVAILABLE AT UNIVERSITY → MAKE ONE

HOW TO MAKE THE DRYING BOX?

- NO DIRECT HEAT, I DO NOT WANT TO BURN AND DESTROY THE STRUCTURE COMPLETELY
- ALUMINIUM BOX, MAGMA BENT IN 2 PIECES TO FORM A LOOSE CUBE

AIR CAN ESCAPE AND AVOID A PRESSURE BUILD-UP

HEAT CAN BE APPLIED WITH THE BLOW TORCH

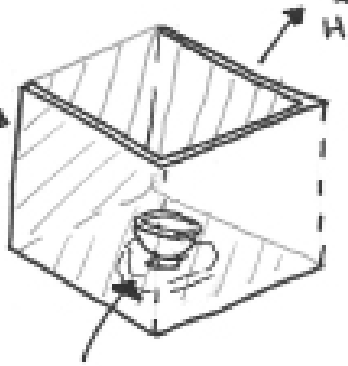
VARIABLE TO CHANGE THE SPEED OF DRYING

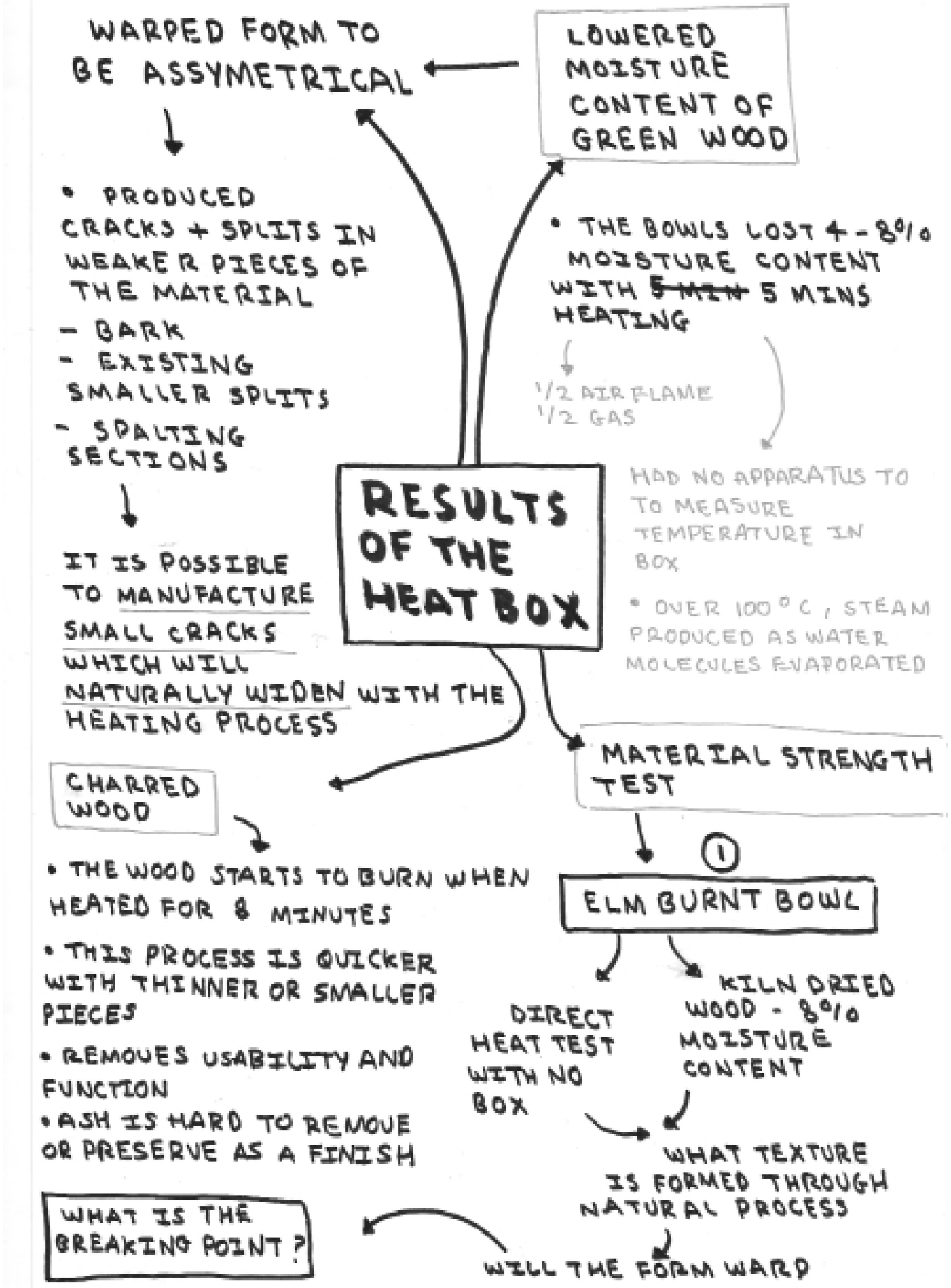
x 2

2 BENDS

SLOT TOGETHER

LOOSE FITTING SO HOT AIR CAN ESCAPE

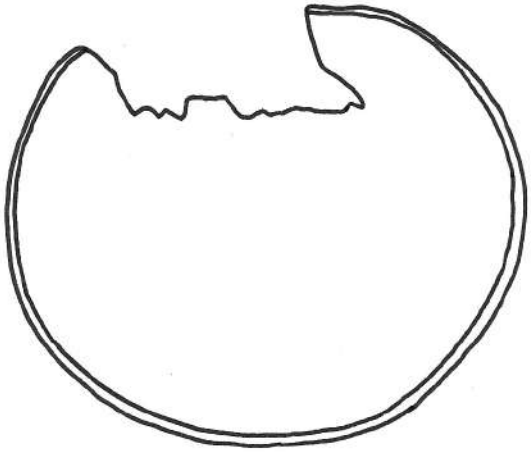



WARPED FORM TO BE ASSYMETRICAL
LOWERED MOISTURE CONTENT OF GREEN WOOD
• PRODUCED CRACKS + SPLITS IN WEAKER PIECES OF THE MATERIAL
- BARK
- EXISTING SMALLER SPLITS
- SPALTING SECTIONS
• THE BOWLS LOST 4 - 8% MOISTURE CONTENT WITH ~~5 MINS~~ 5 MINS HEATING
1/2 AIR FLAME
1/2 GAS
HAD NO APPARATUS TO TO MEASURE TEMPERATURE IN BOX
• OVER 100°C, STEAM PRODUCED AS WATER MOLECULES EVAPORATED
RESULTS OF THE HEAT BOX
IT IS POSSIBLE TO MANUFACTURE SMALL CRACKS WHICH WILL NATURALLY WIDEN WITH THE HEATING PROCESS
MATERIAL STRENGTH TEST
CHARRED WOOD
• THE WOOD STARTS TO BURN WHEN HEATED FOR 8 MINUTES
• THIS PROCESS IS QUICKER WITH THINNER OR SMALLER PIECES
• REMOVES USABILITY AND FUNCTION
• ASH IS HARD TO REMOVE OR PRESERVE AS A FINISH
1
ELM BURNT BOWL
DIRECT HEAT TEST WITH NO BOX
KILN DRIED WOOD - 8% MOISTURE CONTENT
WHAT TEXTURE IS FORMED THROUGH NATURAL PROCESS
WILL THE FORM WARP
WHAT IS THE BREAKING POINT?

This is the heat - box which I made, to lower the moisture content and warp the pieces of wood inside. This process was used to create later greenwood bowls. The sycamore bowl which is in the combination section, uses this process to slowly heat and distort the form.

To create the burnt elm bowl I used the box with the front piece of steel- not attached so the torch could directly heat and burn the surface of the wood. In total this process only took about 5-10 and if I continued heating the form the walls would have continued to break.

MATERIAL TEST - BURNT BOWL



WHY?

CHANGE FORM TO BE MORE ORGANIC (WARPING) → ACHIEVED WITH HEAT

HARD TO ACHIEVE AN 'EVEN' SCORCHING OF OBJECT

2 - 3 MINUTES OF HEAT TORCH

SPLITS OCCUR + COLOUR CHANGE

HOW DOES THE APPEAR -ANCE OF THE GRAIN CHANGE?

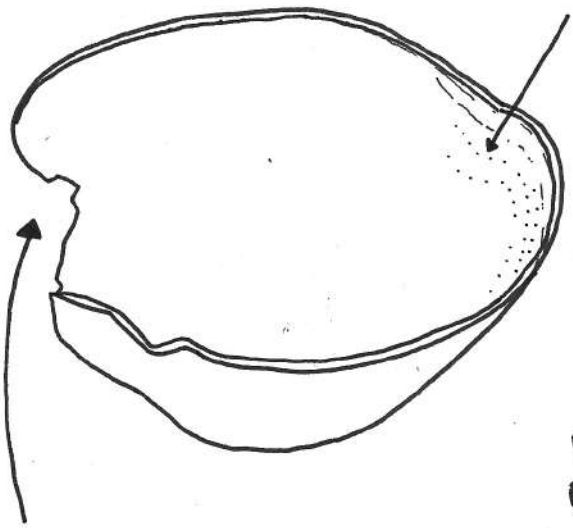
- MORE VISIBLE
- ASH / COAL DEPOSITS
- CONTRASTING TEXTURE

WALL BREAK

(PUSHING THE MATERIAL TO THE EXTREME)

TEST STRUCT -URAL STRENGTH

CREATES NEGATIVE SPACE

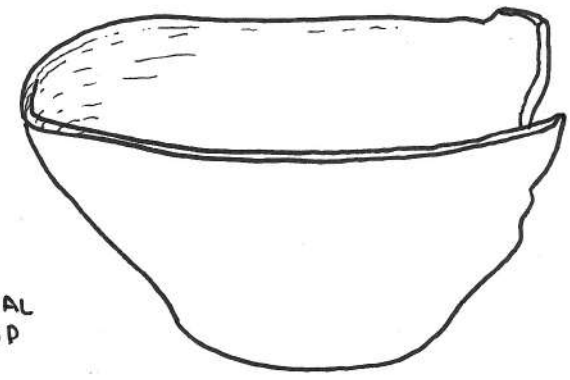


WHAT AESTHETIC CHARACTERISTICS DOES THIS PIECE GAIN FROM THE PROCESS?

HOW DOES THIS LINK TO RESEARCH

MORE 'NATURAL' + DELICATE FORM

- 'IMPERFECTION'
- ORGANIC FORM
- COLOUR CHANGE / CONTRAST
- TEXTURE CHANGE



CHARCOAL BUILD UP

MESSY

MARKS OBJECTS

CLEAR LACQUER DID NOT HELP THE SITUATION

HOW CAN I CONTROL / GET RID OF THE BURN MARKS?

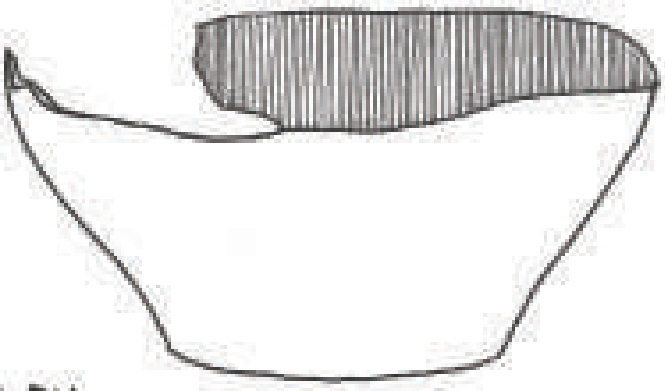
NON DIRECT HEATING

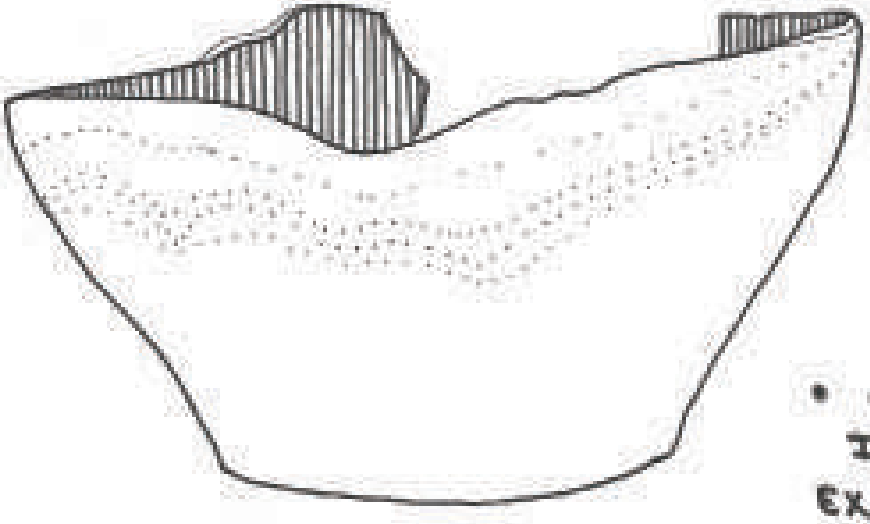
USING WOOD WITH A HIGHER MOISTURE CONTENT

- OPEN SPACE - NEGATIVE SPACE → DUE TO ALL OF THESE DESIGN FACTORS THE BOWL IS VERY WABI SABI

- NATURAL FORCE OF USING FIRE

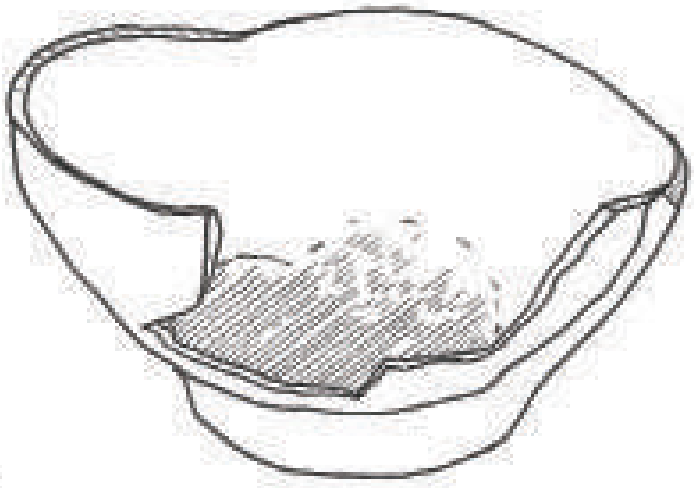
- INTERESTING AND INTRICATE GRAIN OF THE ELM MATERIAL
  → HIGHLIGHTED BY BURNING





- WARPED ORGANIC FORM
- SIGNS OF ATTRITION (PROCESS) - BURNING
- NATURAL MATERIALS
- CONSTRASTING INTERIOR + EXTERIOR TEXTURES

- BREAKAGES AND SPLITS
- IMPERFECTION
- SCORCHING REDUCES THE FUNCTION OF THE PIECE
- UNPRETENTIOUS RAW + UNREFINED



These sample pieces were produced before the elm bowl was heated. I was concerned with the finish and aesthetic of the burning process.

This was a way of testing;

- Can a finish be applied to the piece after heating? (clear laquer, Wax) - does this ‘seal’ the ash?

I applied clear lacquer but these sample pieces still had residue if handled from the heating process. The samples also tended to attract dust after this finish.

- The longer the piece was heated with the gas torch the more the texture was pronounced. The sample of the left illustrates that the natural grain is first brought out during heating and then the piece starts to form a texture and cracked aesthetic.

- I decided to push the elm bowl to its material extreme, heating until imperfections and breakages occured.

Spalted Sycamore Vessel With Stitching & Bark Inclusion

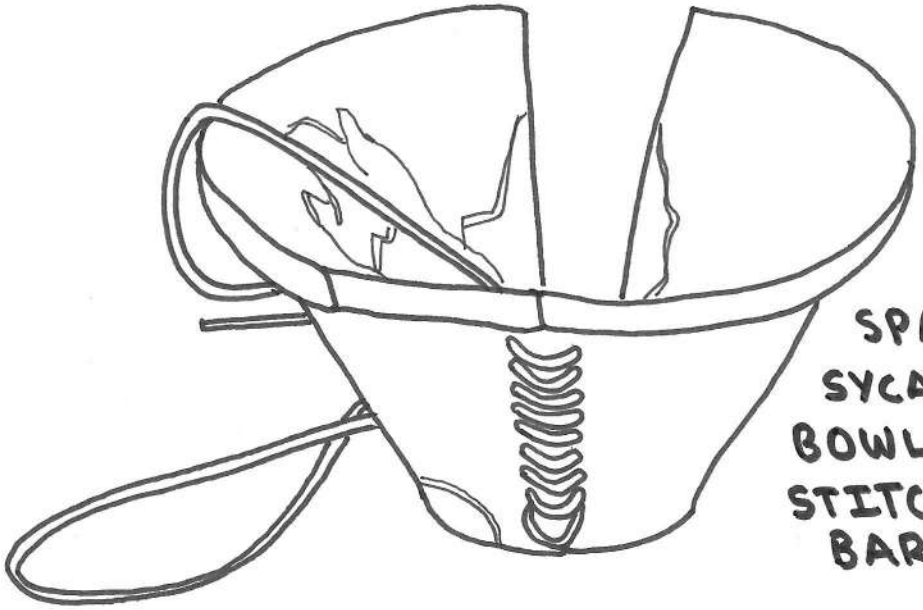
Spalted Sycamore Vessel with bark rim and stitched
on one side (Leather Cord)
7 1/2 x 7 x 4 1/2 inches
Designed in 2016

Aims of the piece;

- Shape the form to include the natural bark rim
- Seperate the vessel into two pieces to experiment with a repair technique of stitching
- What structural qualities will the stiching add to the piece?
- Highlight the natural splating of the sycamore by making this figuring the focal point of the piece. The bowl was cut in half to do this and create ‘open space’ in the design.

Process;

- Initially turned to keep as much of the bark rim as possible, how the blank was cut is shown in the development of this piece.
- Green wood (spalted sycamore) was used and gradually air dried during the process over a week so no splits were formed.
- Once the final shape was turned to show the spalting forming on the interior or the piece, I decicded to highlight these patterns by cutting the bowl in half on a band saw.
- A 3mm drill but was used and the holes were drilled by hand to accomidate leather cord.
- I decided to only stitch one side of the piece as this was a material experiment, to see if the stitching could strucutally hold the two halfs together. I wanted to leave this open space which is a design characteristic of Wabi/Sabi.

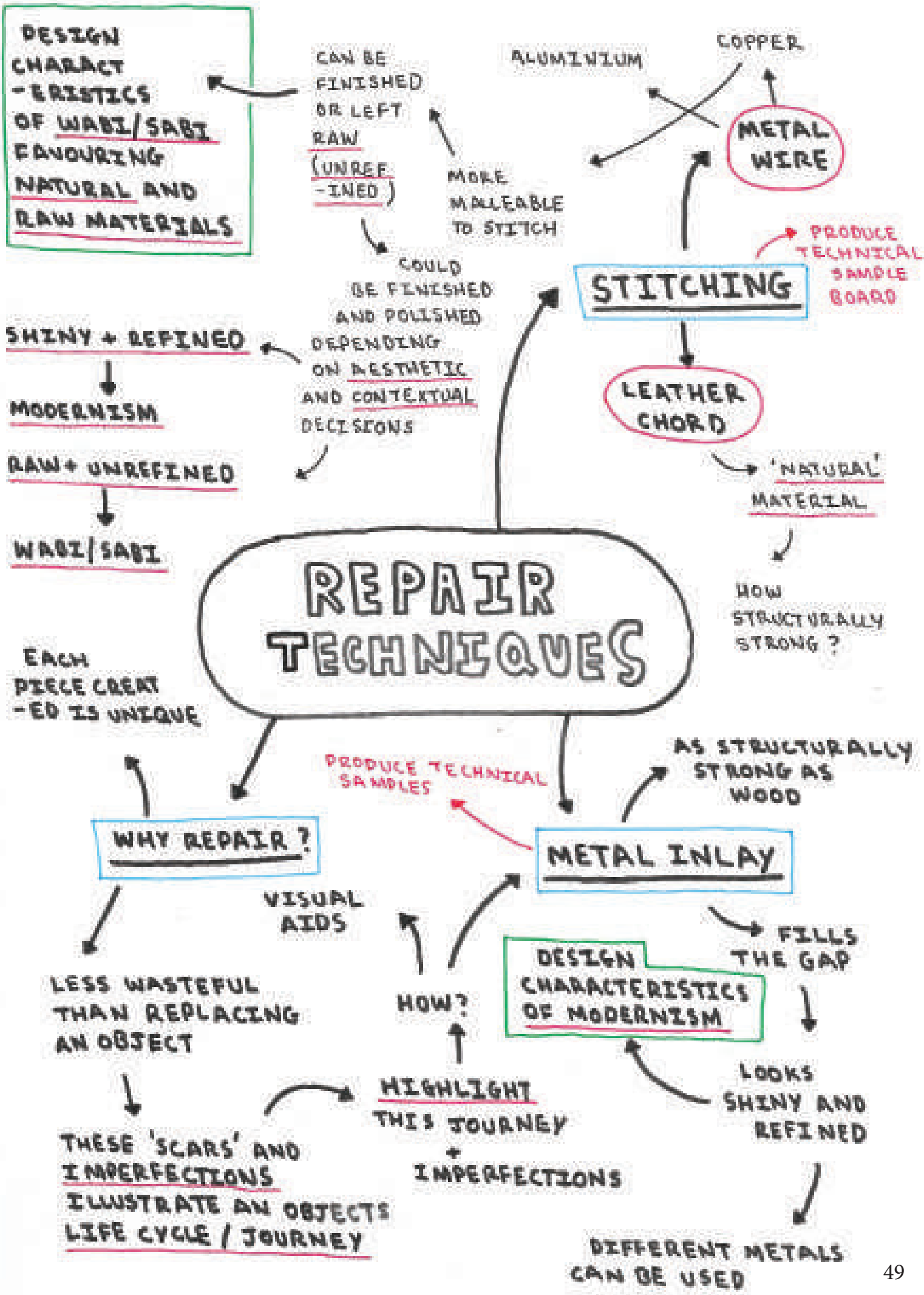


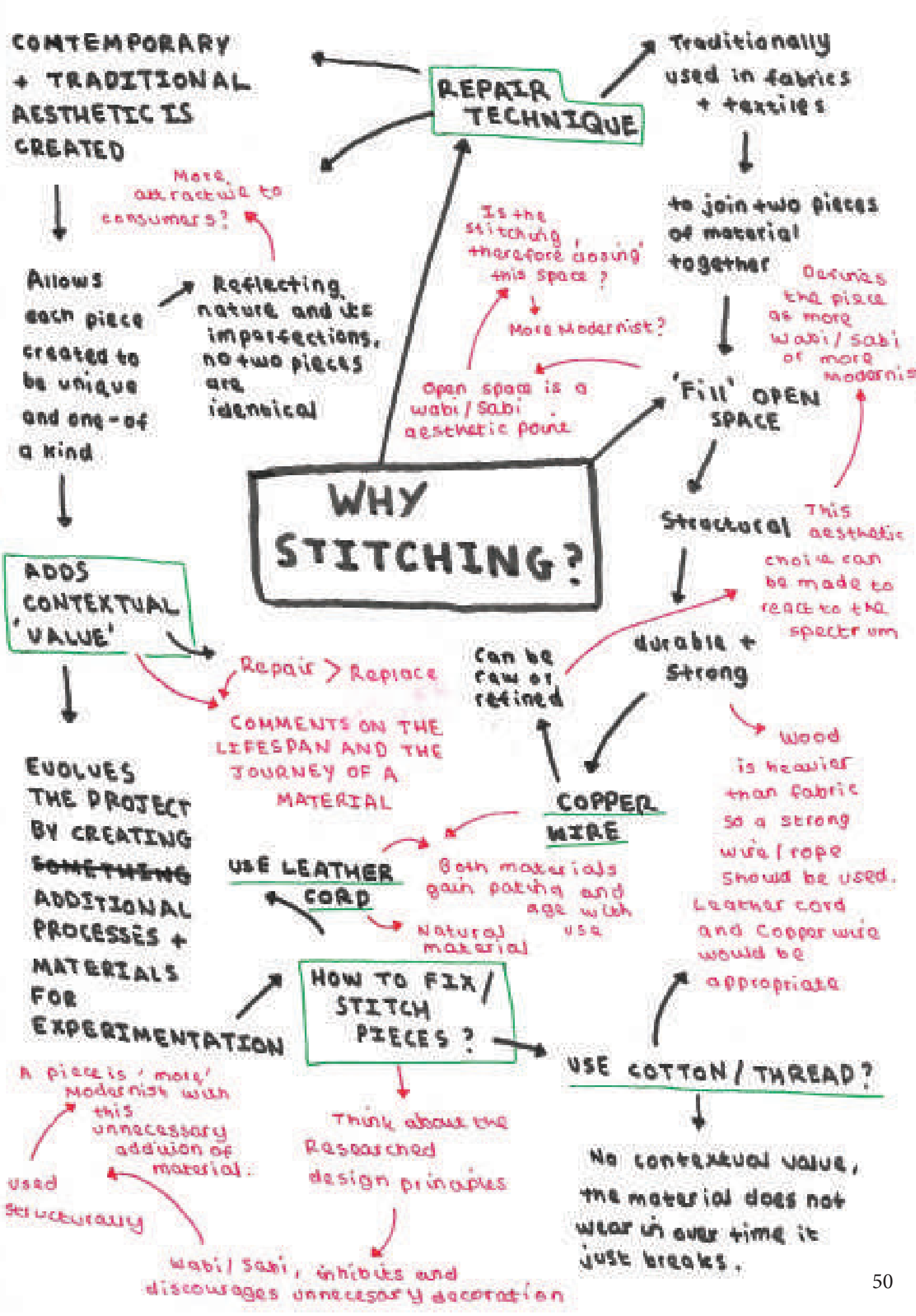
SPALTED SYCAMORE BOWL WITH STITCHING + BARK

RATING ON SPECTRUM

① ORGANIC	- No shiny or uniform materials, the inclusion of the bark rim. Natural leather cord is used for the stitching - Natural raw and unrefined material. - De - evolution of material + natural spalting. (+1) STRONG LINKS TO WABI/SABI
② FREEDOM OF FORM	- The rim interior is symmetrical, which is the only uniform part of the bowl - The form comes from physical properties of the log blank used - Natural and unforced. (+0.5) WEAK LINKS TO WABI/SABI
③ TEXTURE	- contrast between sanded sections are raw unrefined components such as the bark rim and stitching - These are natural textures. - No finish has been applied, natural spalting patterns (+0.5) WEAK LINKS TO WABI/SABI
④ UGLINESS + BEAUTY	- Aesthetic pleasure of the de - evolution of the material ~~through~~ through the stitching on one side of the bowl. - Not conventional or traditional methods, combining stitching to an object and including bark. (+1) STRONG LINKS TO WABI/SABI

⑤ COLOUR	- No harsh or strong colours, murky and diffuse patterns in the spalting - Myriads of various colours in the bark colours - Natural brown leather cord is used - no metallic elements (+1) STRONG WABI/SABI LINK
⑥ SIMPLICITY	- Refined and sanded sections which contrast other un-refined sections. The stitching is not minimal to structural qualities - No added elements apart from this repair method. - Use of freely available materials. (0) LINKS TO BOTH PHILOSOPHIES
⑦ SPACE	- Lots of natural markings from the spalting, and the piece is not a 'whole'. - Open space in design, as only one ~~sp~~ side has been stitched, with minimum ascent pieces. - The rim is wide and un-restricting and not contained. (+1) STRONG LINKS TO WABI/SABI
⑧ BALANCE	- No regular or uniform shapes, the form was pre-scribed and blank cut to include the bark segment - Design elements are balanced in an 'unforced' way. - Perfect materiality is not an ideal, the marks and layers of the wood are highlighted. → Physical balances found in nature. (+0.5) WEAK WABI/SABI LINKS
⑨ SOBRIETY	- Function and usability of the vessel are not primary values - The piece represents the de-evolution and impermanence of the material - Functional minimum, slightly restored by stitching the two pieces in a loose way. (+0.5) WEAK WABI/SABI LINKS.
TOTAL RATING (+6)	The piece would have a higher wabi/sabi rating if the stitching was not included, creating more open space and the texture of the wood had been left raw and not sanded to 300 gsm.


DESIGN CHARACT -ERISTICS OF WABI/SABI FAVOURING NATURAL AND RAW MATERIALS
CAN BE FINISHED OR LEFT RAW (UNREF -INED)
MORE MALLEABLE TO STITCH
ALUMINIUM
COPPER
METAL WIRE
PRODUCE TECHNICAL SAMPLE BOARD
STITCHING
COULD BE FINISHED AND POLISHED DEPENDING ON AESTHETIC AND CONTEXTUAL DECISIONS
SHINY + REFINED
MODERNISM
RAW + UNREFINED
WABI/SABI
LEATHER CHORD
'NATURAL' MATERIAL
HOW STRUCTURALLY STRONG ?
REPAIR TECHNIQUES
EACH PIECE CREAT -ED IS UNIQUE
WHY REPAIR ?
LESS WASTEFUL THAN REPLACING AN OBJECT
THESE 'SCARS' AND IMPERFECTIONS ILLUSTRATE AN OBJECTS LIFE CYCLE / JOURNEY
VISUAL AIDS
HOW?
HIGHLIGHT THIS JOURNEY + IMPERFECTIONS
PRODUCE TECHNICAL SAMPLES
METAL INLAY
AS STRUCTURALLY STRONG AS WOOD
FILLS THE GAP
DESIGN CHARACTERISTICS OF MODERNISM
LOOKS SHINY AND REFINED
DIFFERENT METALS CAN BE USED


WHY STITCHING?
REPAIR TECHNIQUE
Traditionally used in fabrics + textiles
to join two pieces of material together
CONTEMPORARY + TRADITIONAL AESTHETIC IS CREATED
More attractive to consumers?
Allows each piece created to be unique and one-of a kind
Reflecting nature and its imperfections, no two pieces are identical
Is the stitching 'closing' this space?
More Modernist?
Open space is a wabi/sabi aesthetic point
'Fill' OPEN SPACE
Defines the piece as more wabi/sabi or more modernist
Structural
This aesthetic choice can be made to react to the spectrum
ADDS CONTEXTUAL 'VALUE'
Repair > Replace
COMMENTS ON THE LIFESPAN AND THE JOURNEY OF A MATERIAL
Can be raw or refined
durable + strong
Wood is heavier than fabric so a strong wire/rope should be used. Leather cord and Copper wire would be appropriate
EVOLVES THE PROJECT BY CREATING ~~SOMETHING~~ ADDITIONAL PROCESSES + MATERIALS FOR EXPERIMENTATION
COPPER WIRE
USE LEATHER CORD
Both materials gain patina and age with use
Natural material
HOW TO FIX/ STITCH PIECES?
USE COTTON/THREAD?
A piece is 'more' Modernist with this unnecessary addition of material.
used structurally
Think about the Researched design principles
Wabi/Sabi, inhibits and discourages unnecessary decoration
No contextual value, the material does not wear in over time it just breaks.

PROCESS OF STITCHING

- USE SIMPLE STITCHING TECHNIQUES

- Minimal 'structural' stitching embodies the wabi / sabi ethos - using natural materials for example leather

  → Experiment with different 'parts' of the material and how they react to this process.

  ↓

  E.g. Bark and cambium cells can be fragile, brittle and structurally 'weak'.

  * If copper wire is used it should be minimal, unrefined, textured and finished in a raw way.

'MODERNISTIC' APPLICATION;

- SHINY
- REFINED
- EVEN TEXTURE → 'Perfect' finish

} POLISHED → PROTECTED → Not prone to natural change by use or the surrounding environment

- EXPERIMENT WITH METAL WIRE / STAPLES → THE METAL CAN BE TEXTURED AND UNFINISHED TO BE 'MORE' WABI / SABI
- NEAT

WABI / SABI APPLICATION; ← THE METAL CAN BE TEXTURED AND UNFINISHED TO BE 'MORE' WABI / SABI

- ORGANIC
- MINIMAL
- NATURAL MATERIALS → use natural cord.
- VARYING TEXTURES
- AGEING
- WEAR + TEAR
- PATINA

Crossover between the surface characteristics of the two aesthetics

These pictures show the blank in its raw form and the form after turning. I wanted to keep the vessel unenclosed, to create more negative space I band-sawded the piece in half. As the sycamore had dried it sanded well and left an even finish on the interior and exterior of the bowl.I chose not to finsih the wood as oil and wax turned the timber yellow.

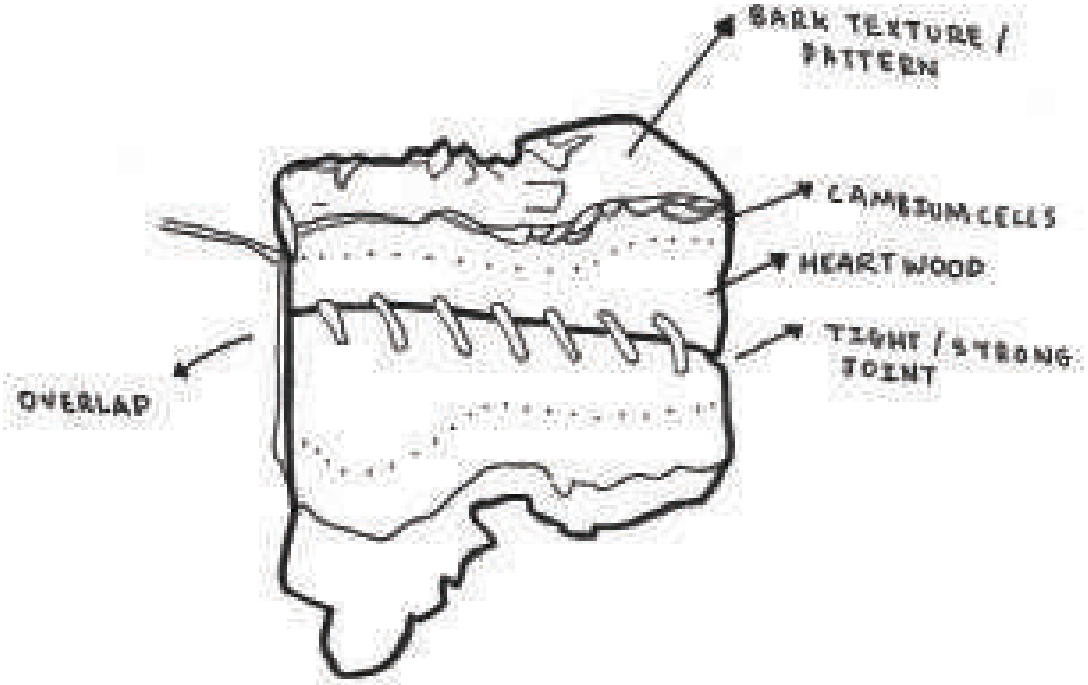
Results of the stitching process;

- I am happy with the aesthetic created with the stitching process. To develop this idea into the next test piece I could try using a thinner leather cord which I think would make the piece appear more ‘delicate’. This better suites the Wabi/Sabi aesthetic, but this may remove structural strength.

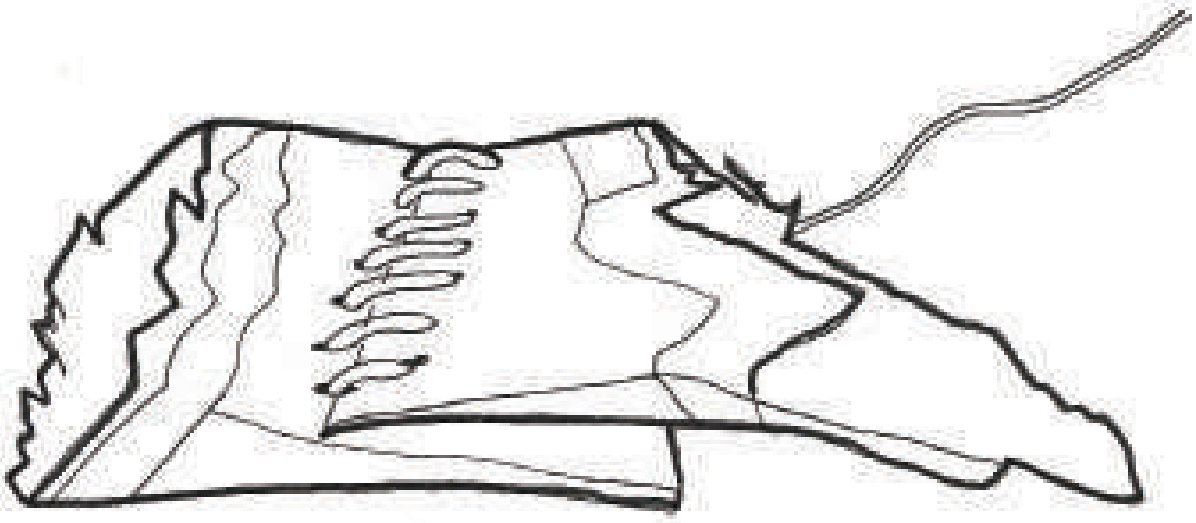
- However the functionality and usability of the piece is not so important and are not primary values. Therefore with later test pieces I have experimented with thinner leather cord ranging from 1-2mm.

- The process of stitching in this piece leaves open space in the design and highlights the spalting patterns in the piece which was my main aims for this material experiment. This highlights the material de-evolution of the piece.

This sample piece illustrate a way to connect two pieces of live edge bark with sapwood/heartwood inclusions. This was an experiment to stitch with leather cord and see how two pieces of material could be connected together.



With the following pieces I have evolved the process of stitching to try other applications, By using different thickness of leather cord and colours a different design aesthetic is created. Furthermore with other experiments using copper wire and ‘staples’ a more Modernist aesthetic can be created. I have created a range of samples and mounted them on a board to show different applications of this stitching process.



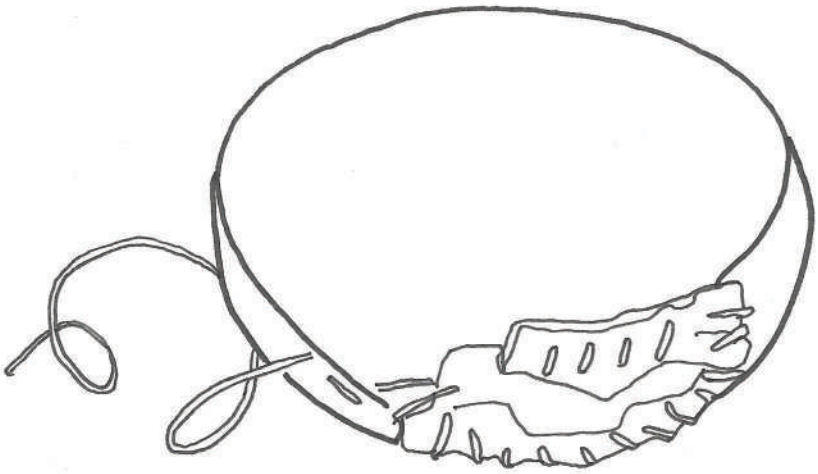
Lime Bowl with Bark and Stitching

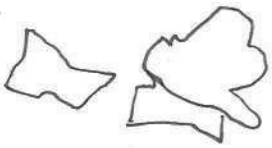
Lime Bowl With Leather Cord Stiching and Bark Inclusion
7 x 7 x 3 inches
Designed 2016

Aims of the piece;

- To evolve the stitching process to connect the bark onto the heartwood of the lime material. This forms a texture difference and naturalistic cue of the source of the material.
- Use thinner more ‘delicate’ leather cord to see if the bark inclusion can be held and form a structural strength. This delicacy is also communicated with using thin turned walls of the vessel.

LIME BOWL WITH BARK AND STITCHING





RATING ON SPECTRUM

① ORGANIC	- No shiny materials, the stitching represents the material journey of the piece attaching the bark to the piece, this de-evolution is expressive and attractive. - The leather cord additionally is a natural material. (+1) STRONG WABI/SABI LINKS.
② FREEDOM OF FORM	- Assymetry and irregularity is created by the bark addition the lime rim is symmetrical before this addition. - The form is from the physical qualities of the material and the way the wall broke, during the process - The material has been manipulated by machining processes and contains areas of symmetry. (+0.5) WEAK WABI/SABI LINKS.
③ TEXTURE	- The bowl has been sanded to 400 gsm before the bark and stitching was added, achieving a smooth refined surface. A uniform, even texture. - The bark and stitching offers an un-refined textural difference and contrast in the object. (+) QUALITIES OF BOTH PRINCIPLES.
④ UGLINESS + BEAUTY	- Not a conventional or trendy use of the combination of material, especially in the use of bark. - Contemporary as stitching is incorporated. (+0.5) WEAK LINKS TO WABI/SABI AESTHETIC.

⑤ COLOUR	- No harsh or strong colours, the imperfections and materials used are from natural sources. - Matte tones lack uniformity - There is imperfection, knots, splits in the form. (+ 1) STRONG LINKS TO WABI / SABI
⑥ SIMPLICITY	- un-refined and raw elements from adding the bark, both freely available materials. - Not ostensibly slick. - Lots of natural defects, imperfections and marring of the piece. - A delicate curved form. - Bowl is sanded to be refined, the stitching is an additional component / element. (+ 0.5) WEAK LINKS TO WABI / SABI
⑦ SPACE	- Ample space around the bark accent piece, with a minimal application to 'close' the open space in the vessel - Small open spaces between the bark layers - This makes the piece 'a whole' - The abundance of space draws the eye to certain design elements such as the stitching. (0) CHARACTERISTICS OF BOTH PHILOSOPHIES.
⑧ BALANCE	- No 'perfect' materiality, there are no uniform precise shapes. - The design elements are balanced in an un-forced way, with no pre-perscribed formulae. - The repair is due to fixing a break due to the thin delicate walls. (+ 0.5) WEAK LINKS TO WABI/SABI
⑨ SOBRIETY	- The repair has been approached with humility and sincerity of the materials used. - The function has been partly restored to with the stitching, but the piece is still delicate. - Sculpture and context more important than the aspect of function. WEAK LINKS TO WABI / SABI (+ 0.5)
TOTAL RATING	= (+ 4.5) STRONG LINKS TO WABI SABI; these would be stronger without the sanded texture and leaving the open space from the breakage.

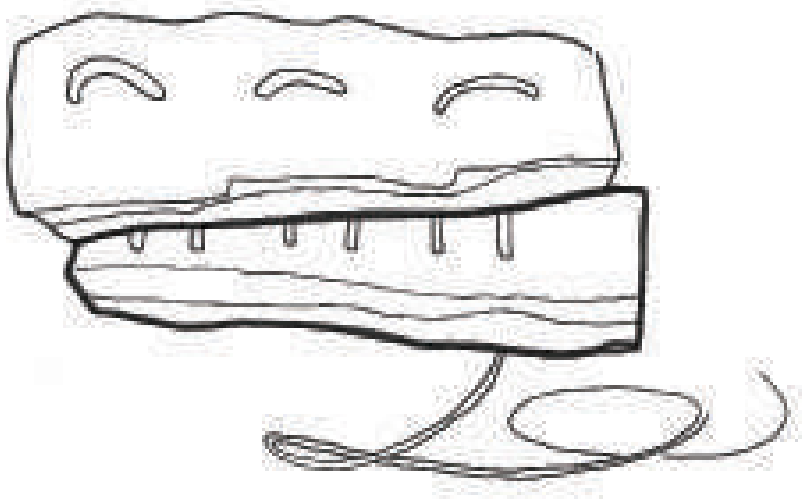
Process;

- When cutting the blank I tried to include as much of the bark as possible and have a live edge.
- Bark is not a strong material, therefore the form of the bark infleunces the form and curve of the bowl produced.
- Whilst turning the piece to be as thin as structurally possible, this whole section of bark inclusion broke away leaving a open space.

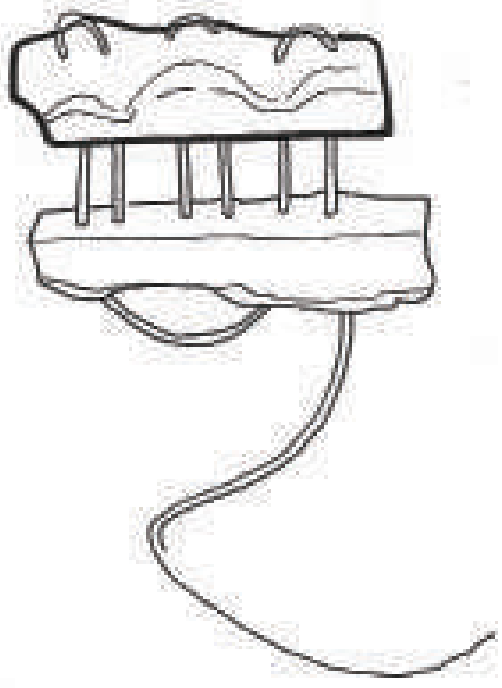
Process Continued;

- I chose not to leave this open space in the design, by doing this the rating on the spectrum was affected. If i had left this open space the piece would have had a higher score on the Wabi/Sabi spectrum.
- Next i selected a natural leather cord, instead of using a man-made composite or metal element.
- I used bark which I had collected, that already had a slight curve so it could be manipulated to 'fill' the open space.
- I chose to use multipule pieces of bark to try and imitate the curve of the existing wall, these pieces were stitched together.To hold the bark in place I stitched all around the bark and attached these pieces to the sycamore so they were secure.
- The structural strength of these pieces can withstand light wear and tear but if a lot of pressure is applied these pieces will break.
-To develop this idea for the next piece I will use more minimal stitching as aesthetically the piece will look more natural and unforced.
- This piece was rated to be Wabi/Sabi because even though the open space was repaired, usability and function of the piece were not primary values in the design.
- I feel that this experiment was successful as i was able to connect the bark to the open space and regain minimal functionality of the bowl. With the next test I will try to regain this bark section without having to add additional pieces to the design.

Learn more about the development of the stiching process by looking at the Wabi/Sabi section. The previous sycamore bowl explains this in more detail.



This sample piece again explores connecting two pieces of bark and cambium cells together. Using simple stitching and hand drilling this method is accurate and quick. The structual stability created by using this technique is more than sufficient to support adding additional components to the vessels I have turned.

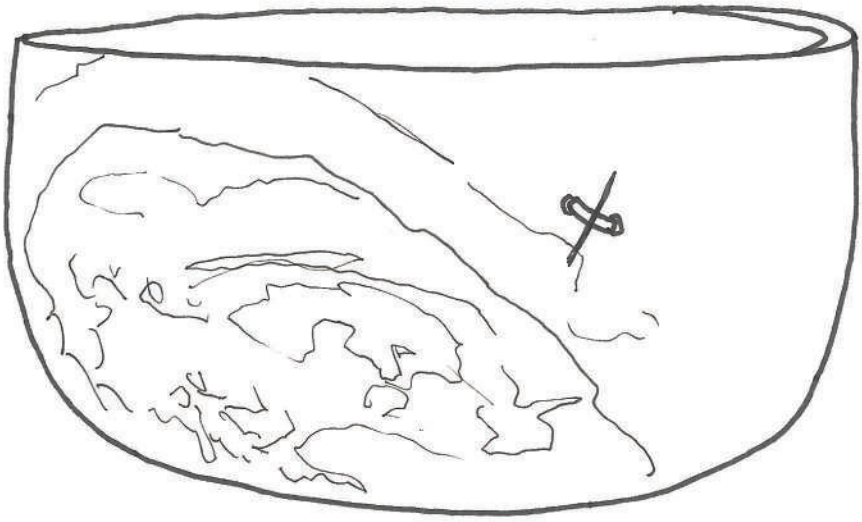


Oak Burr Bowl With Metal Staples

Burr Oak bowl, With Copper and Brass Staples
8 x 8 1/2 x 4 1/2 inches
Designed 2017

Aims;
- See how turning a piece of burr with a high moisture content, warps when it dries naturally, forming an organic form and natural texture
- Use an additional ‘repair’ technique of using small metal staples

OAK BURR BOWL



RATING ON SPECTRUM

① ORGANIC	- Inclusion of copper and brass 'staples' which are textured and unpolished but are shiny materials. - Natural burr patterns which have imperfections and splits etc in multipule places. - Material clearly shows the passing of time and de-evolution. (+0.5) WEAK LINKS TO WABI/SABI
② FREEDOM OF FORM	- Assymetry of the form as the bowl was turned when wet so warped and split when drying - This was not controled and natural - The form came from the blank burr log which was un-even and had a high moisture content. (+1) STRONG WABI/SABI LINKS
③ TEXTURE	- Rough and un-even, was machined when wet and outside sanded. As the material shrunk at different rates a natural-unrefined texture was formed - variegated and random, lots of material 'imperfections'. (+1) STRONG WABI/SABI LINKS
④ UGLINESS + BEAUTY	- The aesthetic patterns and textures found in the material are an aesthetic pleasure that lies beyond conventional beauty. - Beauty in the smallest details in the material (+1) STRONG WABI/SABI LINKS

⑤ COLOUR	The colours and patterns are formed from natural sources, they are un-uniform and contain a range of colours blending together. - Metallic elements in the metal staples which are unsanded, unfinished so these elements are not shiny and blend in with the natural material. (+ 0.5) WEAK WABI/SABI LINKS
⑥ SIMPLICITY	- No embellishment or ostentation, minimal staples are used to control the splits and stop the vessel from breaking - The elements of the design are un-refined and left raw. - The exterior is sanded, but still has a textural variance. (+ 0.5) WEAK WABI/SABI LINKS
⑦ SPACE	- No elements surplus to requirement, lack of 'open' space although the rim is wide an open - Lots of small splits and defects in the material. - The vessel is a 'whole' due to repair (+ 0.5) WEAK WABI/SABI LINKS.
⑧ BALANCE	- No pre-scribed formulae to the drying and warping process - No uniform or regular shapes - Design elements are naturally balanced and unforced. (+ 1) STRONG WABI/SABI LINKS
⑨ SOBRIETY	- Design is intimate, personal and all aspects of the design are kept to a functional minimum. - Reality of the material journey and impermanence of the material due to the splits etc, that have been repaired to restore some function (+ 0.5) WEAK WABI/SABI LINKS.
TOTAL RATING (+ 6.5)	The vessel would be a higher wabi/sabi without the repair of metal elements which re-gain some function and close this open space in the walls.

Process;

-I started by turning the bowl when its the moisture content of the timber was around 30%.
-The form was depicted by the shape of the burr blank, which i wanted to retain as much material as possible. Therefore i turned the piece to until it was round.
-I wanted to regain as much of the bark inclusion and burr patterns as possible to gain a surface texture, a charactersitic of Wabi/Sabi.
- The curve and exterior form of the piece therefore was shaped to including this section of the material.
- The ‘foot’ of the bowl was left so
the inside of the bowl could be turned.

- I sanded the outside of the bowl when the material was wet as i wanted to create a textural difference between smooth finished timber and unrefined natural features.

- The blank was then left for 4 days to air dry and this process was constantly happening during turning.

- The inside was turned before the bowl was left to dry, but not sanded.

- The form was symmetrical before the drying process but due to the burr material, sections of the bowls dried at different rates.

- This created a warped ‘organic’ form.

-To stop the splits from becoming larger and the bowl breaking into more than one piece, I decided to develop a material sample and apply small metal staples.

- Structurally these staples hold the form together and act to strengthen 2 parts of the bowl.

- The application of these staples stopped the material from moving, texturally they were not polished, as i wanted to retain a Wabi/Sabi aesthetic.

- By tapping these staples in with a metal hammer this added a texture to the pieces, leaving them unrefined and raw.

A material test to develop existing methods of stitching and repair. These copper ‘staples’ create a structural strength far greater than the leather cord used in previous tests. This is useful for managing splits and cracks created in the drying process. Open space can be retained and so can minimal function of a piece.

The sample pieces below were experiments to see how I could combine unrefined and refine textures together. The variance in texture created combines Wabi/Sabi and Modernist characteristics. The association between the raw material, and a machined finsih, highlights the material journey of a piece.

Sycamore Tree Stump Bowl

Spalted Sycamore Tree Stump
9 x 7 x 7 inches
Designed 2016

Aims;

- The main aim of this piece was to create an bowl with a high Wabi/Sabi rating on the spectrum. I wanted to maniulate the form, using machinery as little as possible to retain the natural organic form.

Process & Development;

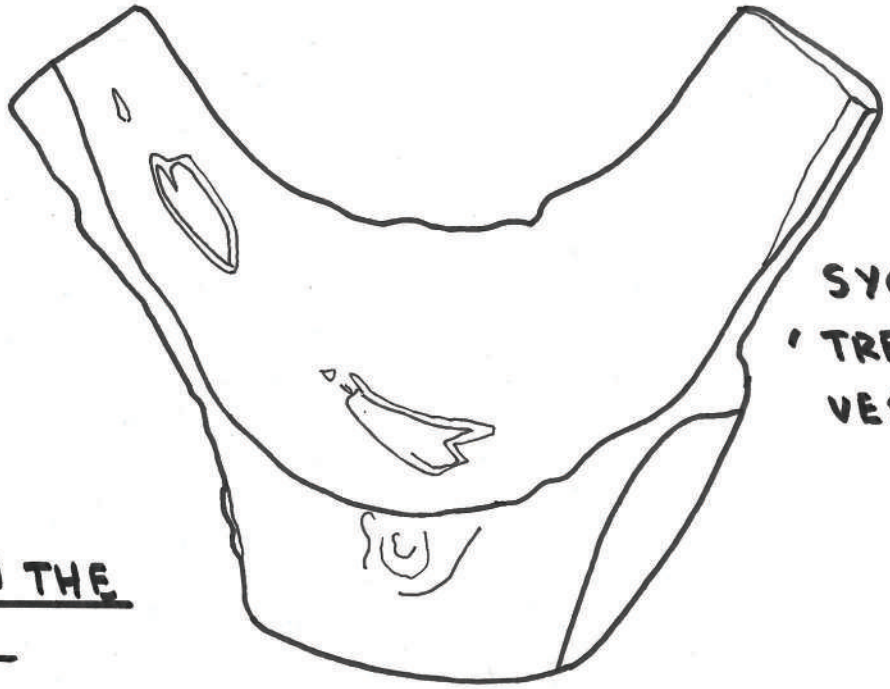
- The stump was cut as greenwood with a chainsaw, the only process that was applied was a rough turning of a bowl shape.

- I tried to retain as much of the branches as possible, to create an organic form.

- Some of the branches had to be cut down as the tool rest of the lathe was to close at certain points, making the bowl dangerous to turn.

- I did not want the form to be obvious, usability and functionality are not important with this piece.

- The development of this piece was as mimimal as possible, the form was dictacted by the logistics of turning the piece, and the surface was left textured and not sanded.



SYCAMORE
'TREE - STUMP'
VESSEL

RATING ON THE SPECTRUM

① ORGANIC	- No shiny uniform materials, the material shows the passing of time, this is an unrefined section of a tree. - The material has been manipulated in the most minimum way to show the de - evolution of the material. (+1) - There is bark, spalting, branches, heartwood and sapwood.
② FREEDOM OF FORM	- There is assymetry and irregularity in the form, this is how the piece was prepared with a chainsaw. - The form therefore comes from the physical properties of the material used, this evolution is natural and unforced (+1) STRONG WABI / SABI LINKS
③ TEXTURE	- Exterior and interior has not been sanded, is rough, unrefined and ~~over~~ variegated. - The exterior texture of bark is created by natural sporadic and enviromental processes, as much of this bark is retained during turning (+1) STRONG WABI / SABI LINKS
④ UGLINESS + BEAUTY	- There is beauty in the smallest details of the material, the use of an un-refined piece of timber is not a conventional view of beauty. - This piece has been machined and worked in a minimal way, highlighting spalting marks and nature. (+1) STRONG WABI / SABI LINKS

⑤ COLOUR	- No harsh or strong colours are used in this pieces, they are all natural dyes and markings. - Diffuse and murky tones of the sapwood and bark. - These tones lack uniformality - NO added colours finish etc. - All natural. (+1)
⑥ SIMPLICITY	- No added embellishment or ostentation, unrefined and raw. - Use of freely available sycamore material. - No added functions or intentions of the piece, bare minimum of function. (+1) STRONG WABI/SABI LINKS
⑦ SPACE	- There are multipwe open spaces in the piece and the form is open, there is a slight bowl curve been applied. - significant areas of 'nothing' - Accent pieces are at an minimum with lots of open space between them (+1) STRONG WABI/SABI LINKS.
⑧ BALANCE	- No pre-scribed formulae to the piece, with the least use of machinery and process applied. - No regular or uniform shaped. - The design elements are balanced in a natural and unforced way. (+1) STRONG WABI/SABI LINKS.
⑨ SOBRIETY	- Functional minimum in the vessel, it could contain or hold an object but has limited functions. - The piece is intimate and personal - There are no added elements or combinations of materials. (+1) STRONG WABI/SABI LINKS.
TOTAL RATING +9	This piece has strong links to WABI/SABI as the design elements are mainly natural. The form has been altered minimally retaining the natural form as much as possible. The texture has been left un-refined and un-finished purposely.

The process of collecting the greenwood was carried out in Cuck-field woods. These sycamore trees had been coppiced as part of forest management. They had been left to dry for a month or two, Therefore the wood did not have a massively high moisture content when it was collected. The form of the piece was altered as little as possible only to accomidate fitting on the lathe. I wanted to keep as much of this natural and organic form as possible.

Middle-Ground Bowls

This section of bowls contain design characteristics from both Modernist and Wabi/Sabi design philosophies. These are the most ‘balanced’ bowls in this respect. containing elements which are natural and unforced, and machine processes which have been applied to control the material.

- A bowl may contain a assymetrical form, has been sanded, but splits caused by the heat box process may be filled in using aluminium and resin. The shiny and refined elements blanace out the natural organic form creating a hybrid design.

- This is the section of bowls that I was most interested in experimentng with, as one of my aims of this project was to form my own design ethos based on this middle point.

-’Perfect mmateriality’ can be achieved in these pieces in terms of the finish, but there are other raw unrefined elements such as the bark inlay that create a textural difference.

- These bowls include most of the experiments into the inlay techniques, repairing these pieces. By highlighting these imperfections and defects in a material, the material journey is ilustrated. Evolving my research I wanted to explore applying the process of Kintsugi to pieces, commonly used with ceramics. I have applied this technique with wood.

The bowls in this section form the middle part of my design spectrum, with ratings from -4 to +4. These bowls are not all completely balanced in terms of design characteristics, but are the outcomes which best fit in this section.

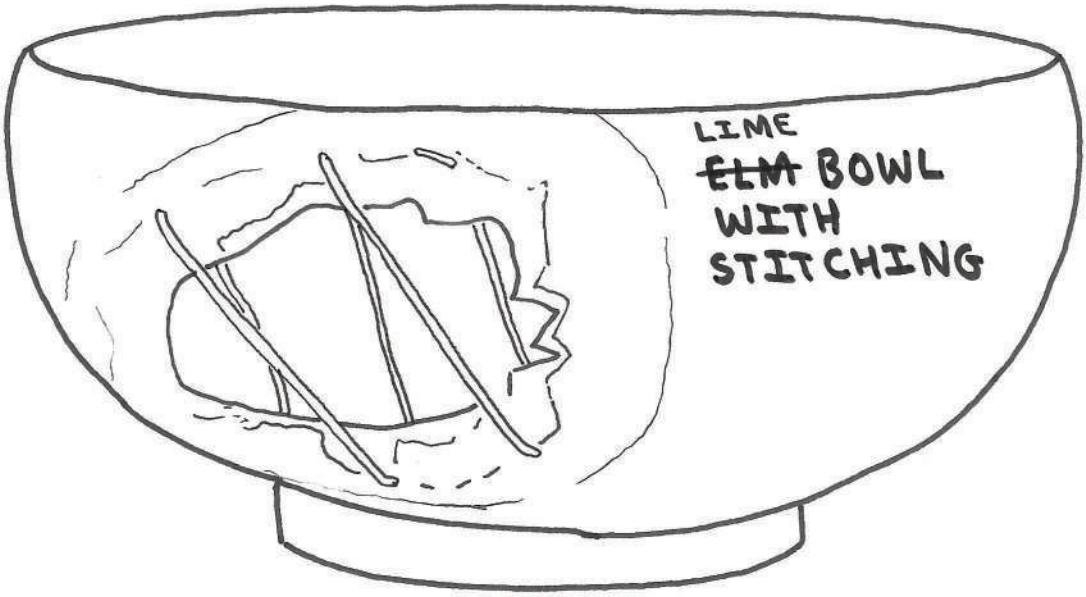
This section for me is about exploring bowls which can be functional/usable whilst being sculptural and intimate at the same time.

Lime Bowl
With Bark Inclusion
& Stitching

Lime Bowl with leather cord stitching
6 1/2 x 6 1/2 x 3 inches
Designed 2017

Aim;

- To turn a piece similar to the other lime bowl, but try and regain the bark inclusion, which broke off during lathing in the last material test.



RATING ON SPECTRUM

① ORGANIC	- Well finished surfaces (shiny) - De-evolution of the material - breakage of wall → Marks of process are imprinted on the material +0 DESIGN CHARACTERISTIC OF BOTH PHILOSOPHIES
② FREEDOM OF FORM	• The piece is perfectly symmetrical the rim and walls are thin → The piece is delicate • Imperfection in the breakage +0 DESIGN CHARACTERISTICS OF BOTH PHILOSOPHIES
③ TEXTURE	• smooth, sanded to 400 gsm - Texture is machined - Textural variegation in the bark segment. • Texture of leather cord ↓ contrast between smooth interior and exterior walls and open space with bark inclusion and leather cord +0 DESIGN CHARACTERISTICS OF BOTH PHILOSOPHIES

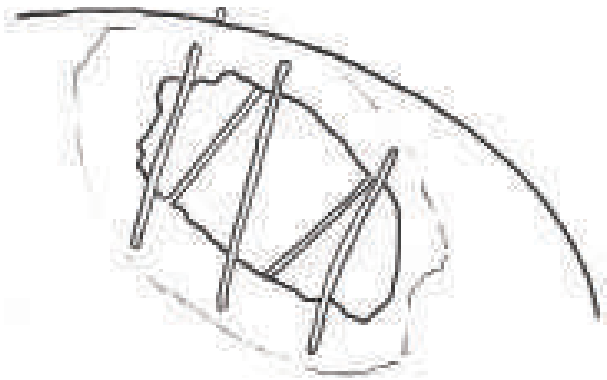
④ UGLINESS + BEAUTY	- No a conventional match of techniques, contemporary - Beauty in multiple layers of wood cells, bark, cambium - Aesthetic pleasure beyond conventional beauty (+0.5) WEAK LINKS TO THE CHARACTERISTICS OF WABI/SABI
⑤ COLOUR	- No harsh or strong colours - Colours of bark inclusion and patterns are natural which lack uniformality - Interesting and introcate patterns (+1) STRONG LINKS TO WABI/SABI CHARACTERISTICS
⑥ SIMPLICITY	- Combination of multiple design elements (stitching adds structural strength - Refined form, texture, aesthetic → Precisely machined to include the bark (-0.5) WEAK LINKS TO MODERNIST CHARACTERISTICS
⑦ SPACE	- Open space with wall breakage → 'filled' with stitching - Natural knots, markings (0) CHARACTERISTICS FROM BOTH DESIGN PHILOSOPHIES
⑧ BALANCE	- No pre-scribed formula, working with the breakages caused by the process - Design elements are natural and unforced - slight control of nature as the form and curve controls how big the breakage is. (+0.5) WEAK LINKS TO WABI/SABI CHARACTERISTICS
⑨ SOBRIETY	- The piece is intimate and personal, the aspects of the design are a functional minimum - Form is delicate / fragile - close to breaking point - Function is not a primary value the piece is more sculptural, illustrating the journey of the material. (+0.5) WEAK LINKS TO WABI/SABI AS THE PIECE RETAINS SOME FUNCTION
TOTAL = (+2) RATING	0 + 0 + 0 + 0.5 + 1 - 0.5 + 0 + 0.5 + 0.5 = (+2) THE PIECE CONTAINS MOSTLY BALANCED ELEMENTS OF BOTH DESIGN PHILOSOPHIES WITH A WEAK LINK TO WABI/SABI CHARACTERISTICS

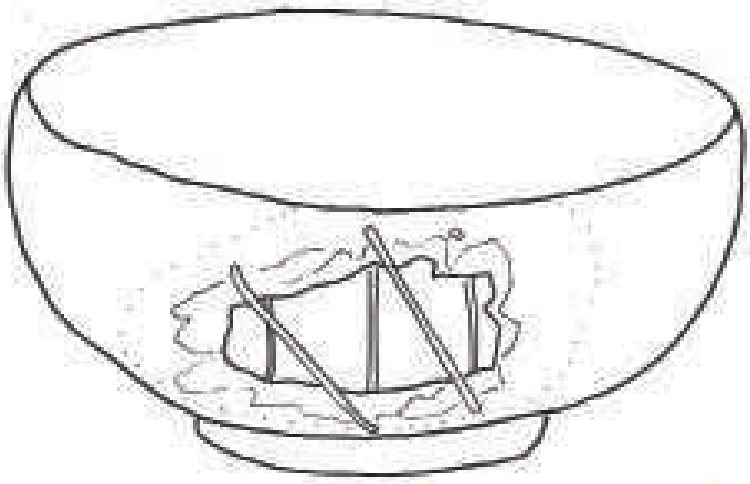
The devlopment of this piece was very similar to the Wabi/Sabi lime bowl in the previous section.

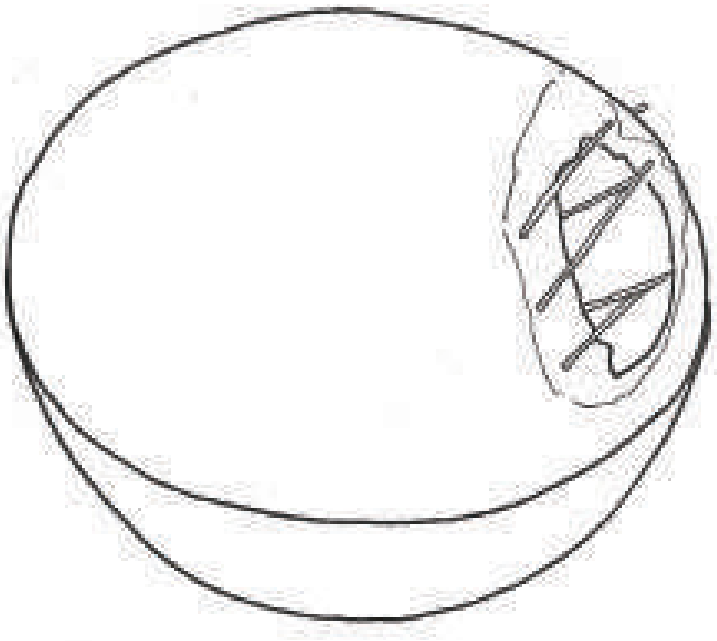
- The process was almost entieraly the same, but I tried to retain this bark inclusion without it breaking off during the process.

- By doing this I also uncovered the cambium cells around the piece which, was part of my material investigation.

- The stitching was as minimal as possible to retain the function







- The piece has been sanded exterior and interior to include modernist values.

- The rim of the piece was also designed to be symmetric and precise - not organic and warped.

- Therefore the Wabi/Sabi design features were including this bark section and using natural leather cord for the repair. Furthermore the break creates ‘Open space’.

- Stitching samples and process relating to this piece can be found on previous bowls in the Wabi/Sabi section.

With this sample piece I used a piece of walnut and my aim was to uncover the different layers found within the material. At the top and bottom sections of the sample there is bark, which has been sewn onto cambium cells. These are the cells found underneath the bark that contain intricate patterns.

- This stiched bowl was aimed to uncovered the beauty of these cells which was challenging, as they could be easily lost with the lathing process.

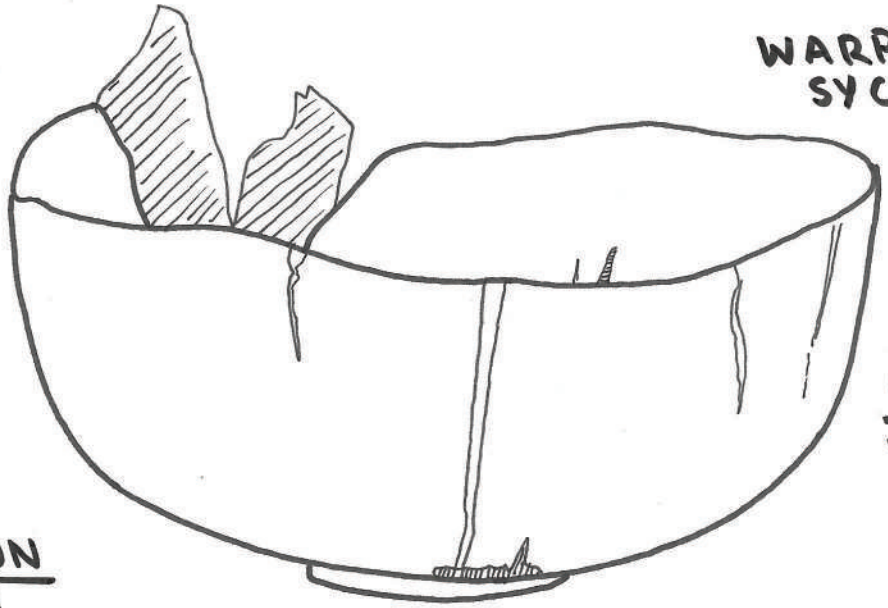
- As these cells are highlighted as the ascent piece of this bowl, the aim of the experiment has been sucessful. To evolve this process I experimented with other stitching processes in later pieces.

Sycamore Bowl With Bark Stitching And Aluminium Inlay

Designed 2017
8 1/2 x 9 x 5 1/2 inches
Leather cord, bark, spalted sycamore, epoxy resin and alumnium

Aims;

- Use the heat box, to create an organic and warped form, a development form the Burnt Elm Bowl in the Wabi Sabi Section.
-Evolve the stitching process of previous bowls to repair the piece, Use the inlay technique to fill splits, created during the process.

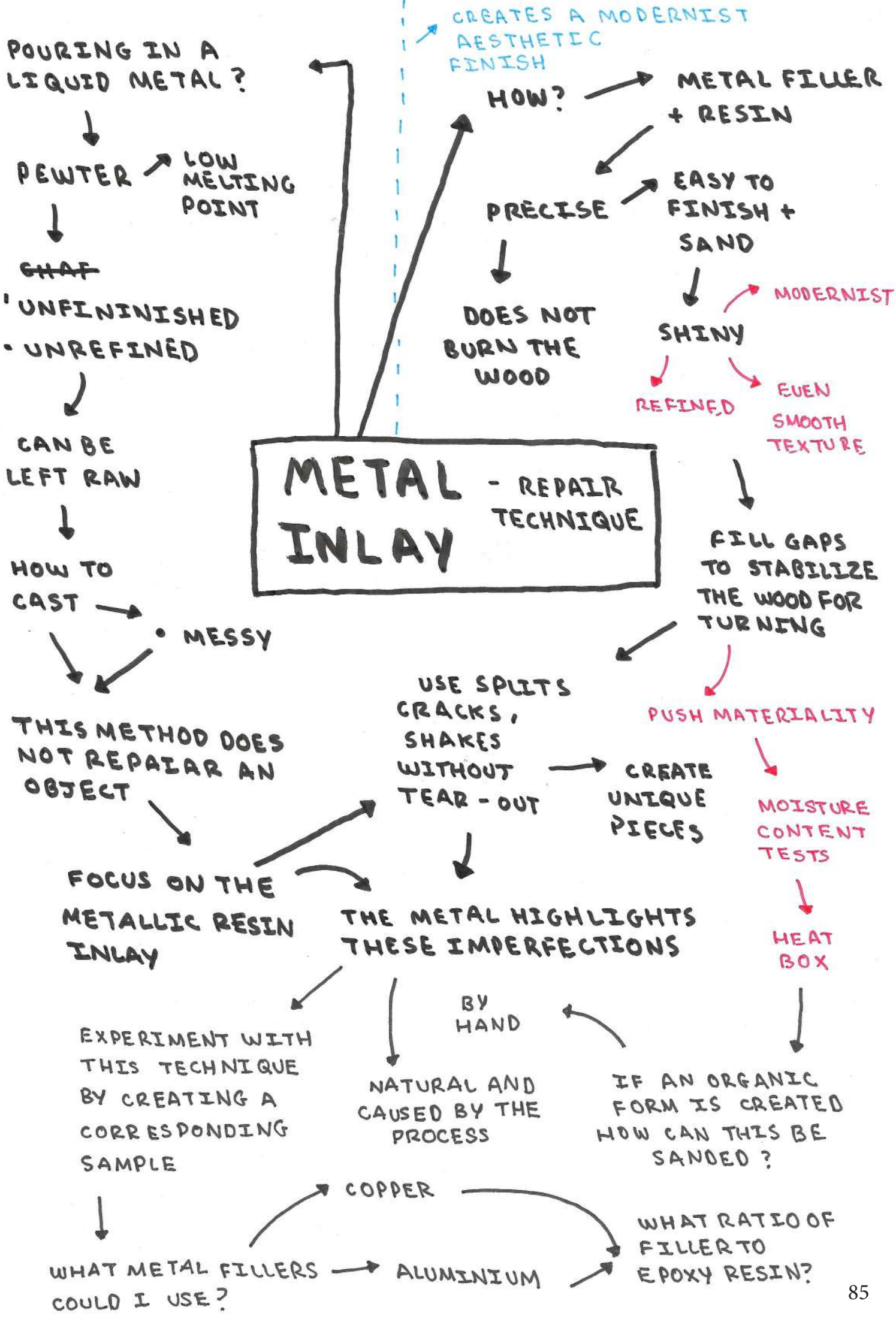


WARPED SYCAMORE BOWL WITH BARK STITCHING + ALUMINIUM INLAY

RATING ON SPECTRUM

① ORGANIC	- Shiny aluminium inlay, manmade materials (epoxy resin) - Natural bark from tree stitched on to open space, a de-evolution of the material → visual 'wear and tear'. (+ 0) BALANCED CHARACTERISTICS OF BOTH PHILOSOPHIES
② FREEDOM OF FORM	- Assymetry in form, the bark is not level with the Rim - The rim has an organic form - The form is from the natural properties of the material used. ~~+ 0.5~~ (+ 1.0) STRONG LINKS TO WABI/SABI CHARACTERISTICS
③ TEXTURE	- Smooth in parts (sanded to 400 gsm), Rough and uneven in other elements such as the bark. - Texture formed by machining and natural and sporadic processes (+ 0) BALANCED ELEMENTS OF BOTH DESIGN PHILOSOPHIES
④ UGLINESS + BEAUTY	- Beauty in the small details of the spalting wood patterns and the bark - The inlay of aluminium can be seen as conventional and 'trendy', the use of the bark is a stark contrast. (+ 0) ELEMENTS OF BOTH CHARACTERISTICS
⑤ COLOUR	- colours and patterns from natural sources, with diffuse and murky tones in the spalting, no uniformality to these patterns. - Inlay is reflective (a source of light) (+ 0) BALANCED CHARACTERISTICS OF BOTH PHILOSOPHIES

⑥ SIMPLICITY	- unrefined aspects : stitching and bark - Refined inlay and sanding - A combination of multipwe materials and processes → Heating process to 'warp' material. + 0 EQUAL ASPECTS OF BOTH DESIGN CHARACTERISTICS
⑦ SPACE	- Multipwe ascent pieces - Added components surplus to requirement - Natural marks and defects to spalting which are un-uniform. - 0.5 MOSTLY MODERNIST CHARACTERISTICS
⑧ BALANCE	- NO pre-scribed formulae, or uniform shapes. - The inlay was a structural addition after the material was heated / warped and split. - Observation of nature due to the use of adding bark where the original pieces broke due to heating. + 0.5 MOSTLY WABI / SABI CHARACTERISTICS
⑨ SOBRIETY	- Not functional fragile and delicate - sculptural process piece, incorporating multipwe design elements. → These are formed by the process and materiality experiments. - Intimate and personal piece - Functional minimum - not finished, unrefined + 1.0 STRONG WABI / SABI LINK
TOTAL RATING : + 2.5	+0 + 1 + 0 + 0 + 0 + 0 + -0.5 + 0.5 + 1 + 2.5 THE CHARACTERISTICS ARE MAINLY BALANCED BETWEEN BOTH PHILOSOPHIES. THE PIECE HAS WEAK WABI / SABI LINKS DUE TO THE ORGANIC FORM AND THE DELICACY OF THE FORM. THESE LINKS WOULD BE STRONGER WITH THE LOSS OF ADDITIONAL MATERIALS. ↓ LEATHER CORD, BARK, EPOXY RESIN, ALUMINIUM


METAL INLAY - REPAIR TECHNIQUE
POURING IN A LIQUID METAL?
PEWTER
LOW MELTING POINT
~~CHAF~~
UNFININISHED
UNREFINED
CAN BE LEFT RAW
HOW TO CAST
MESSY
THIS METHOD DOES NOT REPAIAR AN OBJECT
FOCUS ON THE METALLIC RESIN INLAY
CREATES A MODERNIST AESTHETIC FINISH
HOW?
METAL FILLER + RESIN
PRECISE
EASY TO FINISH + SAND
DOES NOT BURN THE WOOD
SHINY
MODERNIST
REFINED
EUEN SMOOTH TEXTURE
FILL GAPS TO STABILIZE THE WOOD FOR TURNING
USE SPLITS CRACKS, SHAKES WITHOUT TEAR-OUT
CREATE UNIQUE PIECES
PUSH MATERIALITY
MOISTURE CONTENT TESTS
HEAT BOX
THE METAL HIGHLIGHTS THESE IMPERFECTIONS
BY HAND
EXPERIMENT WITH THIS TECHNIQUE BY CREATING A CORRESPONDING SAMPLE
NATURAL AND CAUSED BY THE PROCESS
IF AN ORGANIC FORM IS CREATED HOW CAN THIS BE SANDED?
WHAT METAL FILLERS COULD I USE?
COPPER
ALUMINIUM
WHAT RATIO OF FILLER TO EPOXY RESIN?

Process and Development;

- This bowl was turned when the spalted sycamore timber had a high moisture content and had just been collected from the woods.

- The bowl was then roughed out into a form with this high moisture content, trying to retain as much of the bark as possible, this bark inclusion influenced the final form and curves of the piece.

- The log blank was minimally turned until it had a symmetrical rim, so material was removed until the piece was round and then could be dried in the heat box.

- Because I did not want the surface of the material to burn I heated the bowl in multipule stages, the first two times when the wall thickness was around 10mm. For each of these heating stages the moisture content of the material was reduced by 4-6% with 6 minutes inside the heat box.

- I lowered the heat of the flame to ensure that the material inside did not burn and scolder. Evolving the process from the burnt elm bowl as this ash residue is extremely hard to remove from the piece as is penetrates the surface deeply.

To see the process of the heat box, look at the Burnt Elm Bowl in the Wabi/Sabi section of the document

- After heating the bowl twice for 12 minutes in total the form did not warp that much, as the moisture content was still around 15%. This was due to the wall thickness so I decided to lower this to around 3-5 mm.

- However whilst lathing I noticed that the form was not round and that the bark inclusion had split during heating and was starting to break.

- As I wanted to achieve a more warped form I knew at this stage that the bark inclusion that had split would break off during the process and this happened.

- Now that the wall thickness was reduced, the piece when heated 2 more times for an additional 12 minutes in total the moisture content dropped to around 8%. The resulting form had warped significantly, fulfilling the aim of this experiment.

Process continued;

- The picture above is the result after the initial 12 minutes in the heat box, before reducing the thickness of the walls. The bark section had become weak and split.

- During the final drying and heating process 4 additional splits started to widen around the bowl, making the structure significantly weaker. The piece was also harder to turn as the assymetrical form meants when lathing not all material was removed evenly.

- I decided to stabilise the structure of the piece by using resin and aluminium powder, evolving a a sample test.

- This process filled the gaps and splits created, but could not be used to repair the large open space where the bark had broken. Therefore I decided to evolve the stitching process used in previous tests and samples to ‘fill’ this open space.

- The application of the metaliic resin inlay had to be repeated 3 times in total, as I did not add enough aluminium filler and there were small gaps and bubbles in the inlay.

- These sections of the bowl had to be hand sanded because of the bowls organic form. Sanding on the lathe was not an option at this stage.

- The picture above illustrates inlaying aluminium and copper mixed with epoxy resin which was the technique used in this piece.

- Finishing the piece and sanding the interior and exterior parts was the most time consuming part of the process, This had to be done by hand.

- The exterior was sanded to 600 gsm, as the metallic inlay becomes shiny in aesthetic. The interior was sanded to 400gsm, as i wanted to create a slighly textural difference.

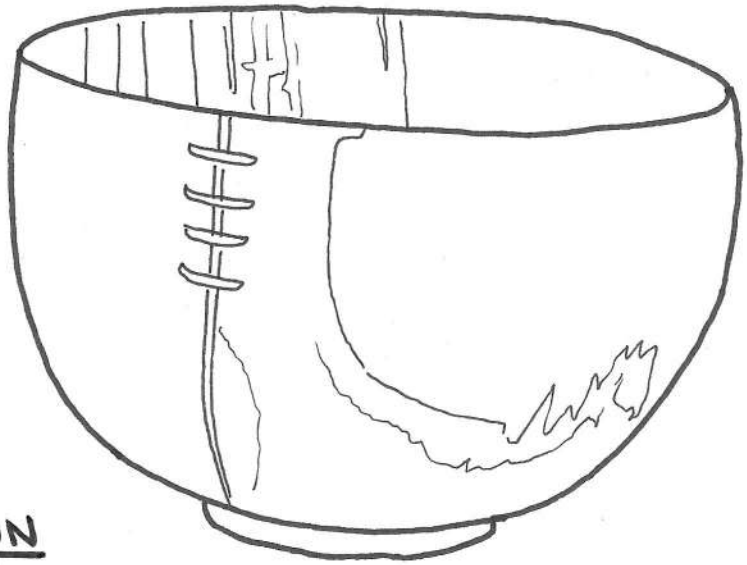
This bowl achieved the aim of forming an organic and assymetrical form by using the heat box, I also feel this was a final refinement of the application of stitching and inlay techniques.

Spalted Sycamore Bowl with Copper Staples

Spalted Sycamore Bowl with Copper Staples
7 x 7 x 5 inches
Designed 2017

Aims;

- Try and turn the largest vessel possible and highlight the natural spalting marks of the material.
- The piece was not indended to have splits but was dropped during transport so I decided to include staples to retain a function and strengthen the structure. Developing this repair technique.



SPALTED SYCAMORE BOWL WITH COPPER STAPLES

RATING ON SPECTRUM

① ORGANIC	- shiny material added (copper staple) but is textured to be more unrefined - The de-evolution is expressive and ~~big~~ attractive. the piece split during process but was 'repaired' +0.5 LINK TO WABI SABI CHARACTERISTICS AND THE MATERIAL JOURNEY
② FREEDOM OF FORM	- The form was heated but did not warp so is symmetrical, the form however is reflective of the spalting patterns being highlighted will a gentle curve - Delicate thin walls and imperfections are features. +0 SYMMETRICAL FORM WHICH IS UNFORCED EVOLVING TO HIGHLIGHT NATURAL FIGURING OF THE WOOD
③ TEXTURE	- The piece does not truly suggest the imprints of a natural process, the texture is smooth and formed by sanding and the process. - However there is texture variance with the copper staples, and there un-refined finish. +0 LINKS TO BOTH PHILOSOPHIES, THE TEXTURE VARIANCE OF TWO CONTRASTING MATERIALS
④ UGLINESS + BEAUTY	The aesthetic pleasure lies beyond the conventional views of beauty as the details can be found all around the piece. It uniquely combines uncommon practice and imperfections such as splits +0.5 WEAK LINKS TO WABI/SABI CHARACTERISTICS

⑤ COLOUR	Dyes from natural spalting of the sycamore material, patterns are uniform and have multiple combinations of diffuse murky colours. → copper is not shiny, but is still slightly shiny due to the hammered uneven surface +0 ELEMENTS OF BOTH DESIGN PHILOSOPHIES
⑥ SIMPLICITY	- un-refined and raw elements of the copper staples, simplistically placed to add structural strength - use of freely available materials - combination of multiple elements, the sycamore is refined and has a long complex curve +0 ELEMENTS OF BOTH DESIGN PHILOSOPHIES
⑦ SPACE	- Open spaces in the 2 large splits, with ample space around the accent pieces (staples) in the design. - significant 'areas of nothing'. - splits have been manipulated so slightly less wabi/sabi. +0.5 WEAK LINKS TO WABI/SABI CHARACTERISTICS
⑧ BALANCE	- No pre-scribed formulae in relation to the imperfections, gentle heating exaggerated existing splits in the wood. - 'control' of nature with the repair technique as this is not vital - Makes the piece more functional. +0 EQUAL ELEMENTS OF BOTH PHILOSOPHIES
⑨ SOBRIETY	- Added functional with repair, for structural support - Fragile and delicate wall ~~length~~ thickness - Functional aspects and utility are not primary values - More 'sculptural piece' highlighting the impermanence of the material. +0.5 MOSTLY WABI/SABI CHARACTERISTICS
TOTAL RATING = +2	THE ELEMENTS ARE ALMOST BALANCED AS THE PIECE HIGHLIGHTS NATURAL IMPERFECTIONS. HOWEVER MULTIPLE ELEMENTS ARE INCLUDED AND THE COPPER IS SHINY. THERE IS ALSO A TEXTURE CONTRAST BETWEEN THESE MATERIALS.

Development And Process;

- The initial aim of this experiment was to try and turn a piece as large as possible safely using the limitations of the machinery.

- These long curved walls, uncover as much of the natural spalting marks as possible highlighting these intricate patterns. This re-inforces a Wabi/Sabi aesthetic.

- I wanted to have this figuring as the Wabi/Sabi element and then sand and finish the bowl to create a refined finish with little textural difference.

To explore the process of the heatbox - look at the Burnt Elm Bowl development in the Wabi/Sabi section

- The piece was heated initially in the heatbox but I did not want to achieve an assymetrical form as at this stage hand sanding would take to long. Therefore the bowl was roughed out with a wall thickness of 10mm and heated only once for 5 minutes to encourage as little warping as possible.

- Because there were no bark sections the material dried at a uniform and even rate, causing no imperfections or material defects.

- I lathed the form after this initial drying to create a symmetrical rim and walls, which would be easier to sand and finish, I initially then sanded the bowl to around 320 gsm.

- The balance between these patterns and the refined finish was going to be the ended of the process of this piece, as a large form was created and therefore the aims of this test piece were fulfilled.

- However when transporting the piece to take photographs it was dropped down a flight of stairs and this formed two large splits in the walls of the piece.

- Structurally this weakened the piece and reduced the functionality of the bowl.

- To retain the functional Modernist characteristics I therefore decided to repair the bowl with the metal staples technique.

This is due to the metal staples adding a lot of structural strength as explored with the Oak Burr Bowl in the Wabi/Section.

- The image above shows the bowl, at its finished stage before the accident when it was dropped and the splits appeared.

- The process of adding the staples was simple and 2mm holes were drilled either side of the splits and then a piece of copper was bent by hand and hammered into place, any overhang was removed.

- I chose to texture these metallic elements with a metal hammer to even out the design characteristics of Modernism with the unrefined elements of the copper. A characteristic of Wabi - Sabi.

By doing this open space created in the splits was controlled in a forced way to regain the functionility of the bowl.

The textural difference created contrasting sanded walls and the unrefined copper staples balanced characteristics from both Wabi/Sabi and Modernist design philosophies. So it this respect the bowl had fulfilled its aims and reacted to an unexpected breakage and repair.

Small Sycamore Bowl With Bark Wall

Spalted Sycamore bowl with Bark Inclusion
5 x 5 x 3 1/2 inches
Designed 2017

Aims;

-Develop the idea from the sitched lime bowl in the Wabi/Sabi section to include the layers of cambium cells and bark in the object.

- Contrast this raw texture with a sanded symmetrical form combining characteristics of Wabi/Sabi and Modernism. Trying to control the process so the bowl does not break like previous tests

RATING ON SPECTRUM

① ORGANIC	- De evolution of material, bark is a link to the raw product - Material shows passing of time, wood rings - Cambium structure + multipule layers of the material.	+1	STRONG WABI / SABI LINK
② FREEDOM OF FORM	- Symmetrical form - No 'open space' - symbolism through using bark? visual cue - Rim is not exactly flat - slightly less modernist	- 0.5	WEAK LINK TO MODERNISM
③ TEXTURE	- Smooth well finished - Texture variance with bark. - Thin walls, spalting marking in the interior of the bowl	0	EQUAL VALUES OF BOTH PHILOSOPHIES

④ UGLINESS + BEAUTY	- Beauty in small details highlighted in the bark and spalting markings. - conventional view of beauty in the form, not organic or uncontroled. 0 EQUAL ASPECTS OF BOTH PHILOSOPHIES
⑤ COLOUR	- Nature light sycamore colour - Patterns from spalting - natural imperfections - Contrast of bark - Not murky +0.5 MOSTLY WABI / SABI CHARACTERISTICS BUT A LIGHT COLOUR OF WOOD WITH FEW IMPERFECTIONS
⑥ SIMPLICITY	- NO added elements - Bark is unrefined and raw ↙ Sanded +0.5 MOSTLY WABI / SABI ELEMENTS, THE FORM IS SHAPED BY THE PROCESS AND NOT ENTIRELY ORGANIC
⑦ SPACE	- Ample space around the bark - No 'Open' spaces - No detail surface to requirement ↴ → The added base ? +0 EQUAL ASPECTS OF BOTH PHILOSOPHIES
⑧ BALANCE	- Forces shown in nature shown - bark inclusion - A pre-scribed formulae to include bark → How to cut the blank • Regular shape of a bowl / vessel • 0 EQUAL ASPECTS OF BOTH PHILOSOPHIES

⑨ SOBRIETY

- Design is delicate and considered - thin walls
- The blank was controlled (nature) so the bark inclusion followed the natural form of the piece.

→ This determined the thickness of the walls

↓

- And informed the curve and form of the piece.

→ Highlighted by the small stand

→ The bowl has a function

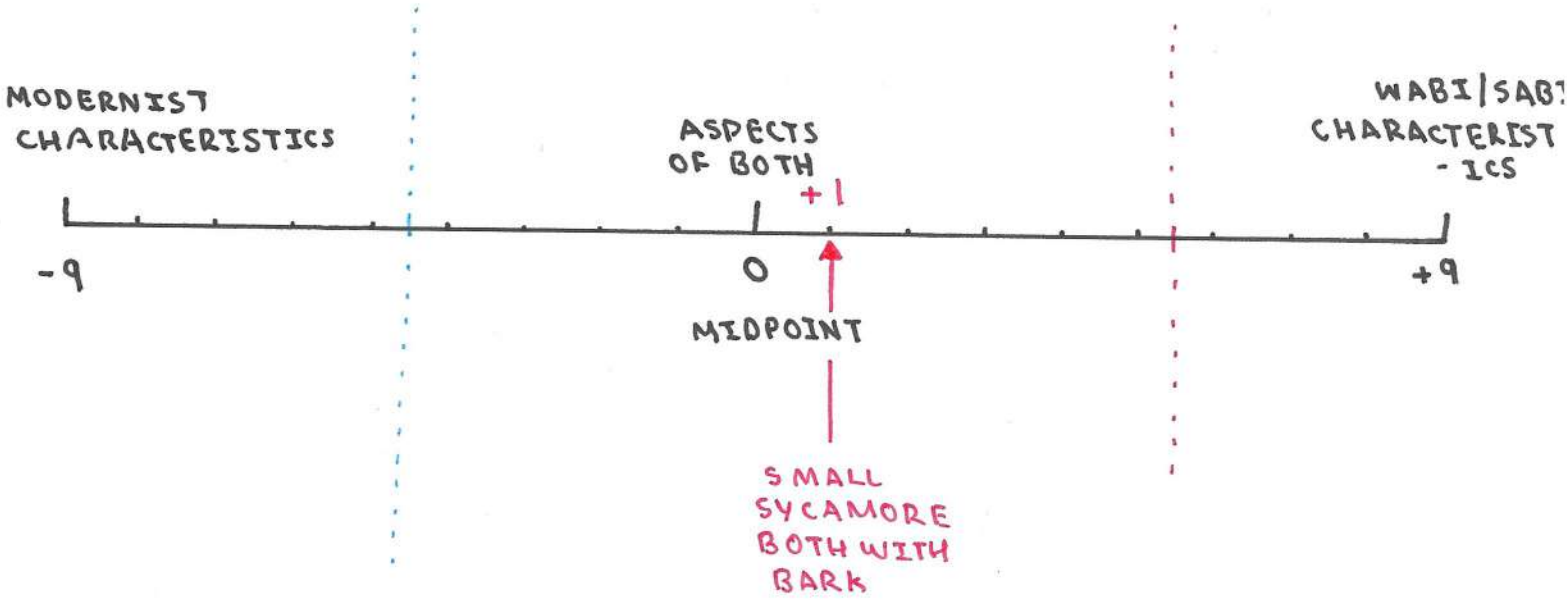
-0.5

WEAK LINK TO MODERNISM AS THE BOWL IS FINISHED TO A HIGH DEGREE, AND HAS A FUNCTION.

TOTAL SCORE: +1 -0.5 +0.5 +0.5 -0.5 +0 +0 +0 +0

= +1

+1 RATING



THIS BOWL COMBINES ELEMENTS OF EACH DESIGN PHILOSOPHY IN ALMOST AN EQUAL BALANCE

Development and Process;

- This piece is an evolution of earlier material tests into uncovering the layers of cells between bark and sapwood layers (cambium cells).

- The last two lime bowls, one in this section and the other in the previous Wabi/Sabi section tried to achieve this. Both of the bark segments broke during the process as the walls were either to thin, or the curvature of the form did not match the natural form of the bark.

- Therefore for this piece more care was taken during the process to try and retain this bark piece without breakages. This bark inclusion influenced the form and the curvature of the bowl.

- To keep a symmetrical form the greenwood was turned and left to dry naturally over 2 weeks so no splits and imperfections were formed.

- The piece was sanded to 300gsm to create little textural diference and retain a Modernist aesthetic. The main design feature was to incoporate the textural variance between the natural bark and the sanded interior and exterior

- This piece was sucessful in terms of retaining the bark feature and combining elements from both design Philosophies.

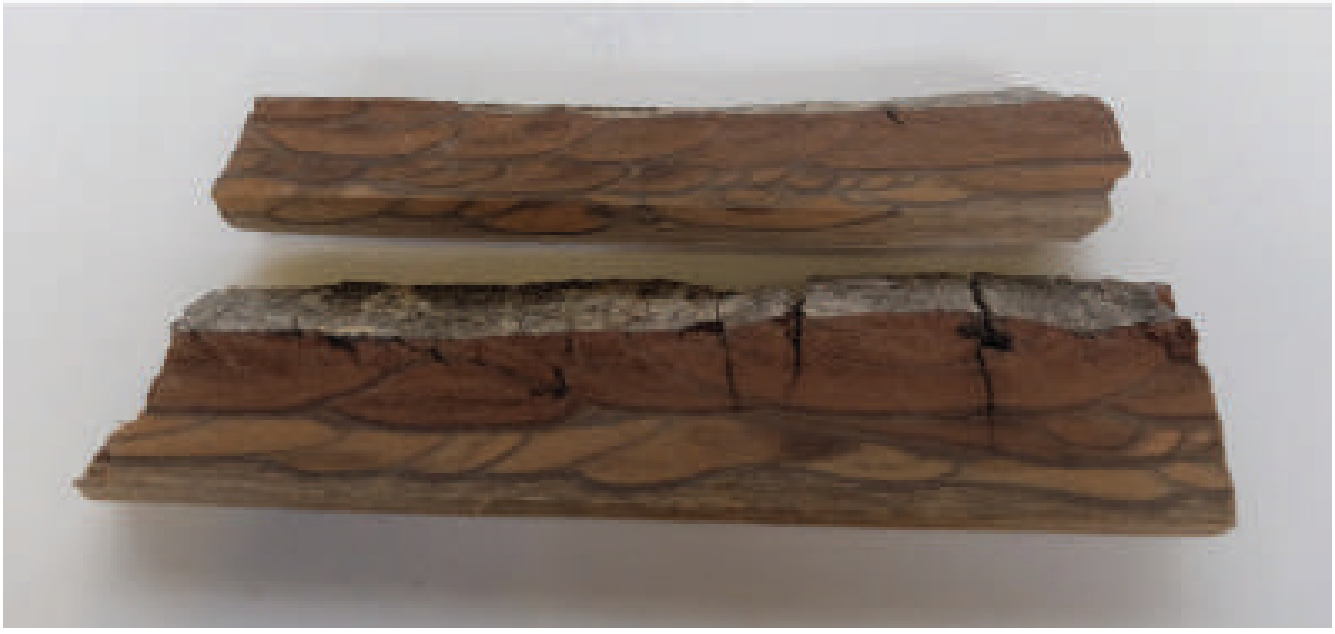
- This was one of the least developed bowls as it was an evolution of an aim which I failed to fully achieve with the other lime bowls.

- What i learnt from producing this piece was to include a bark segment care must be taken to work with the natural curvature of the bark. If thin walls are a rqequirement and if care is not taken, these weaker bark segments of the design will break during the process and form open space. This could be a required design element as a chracteristic of Wabi/Sabi. With other pieces this has been a chance to experiment with the inlay and stitching.

This bowl has been rated in the middle of the spectrum scale due to being functional but also illustrating the imperfections and natural journey of the material through the use of bark and spalting patterns.

A sample of walnut from the ‘live edge’ of the board. These multipule layers comprise of bark cells to the right which contain the other groups of cells, as a protective skin.

The cambium cells where the annual growth takes place consists of intricate patterns and detailing. Part of my experimentation is to reveal these multipule layers of cells, the main aim of this piece.



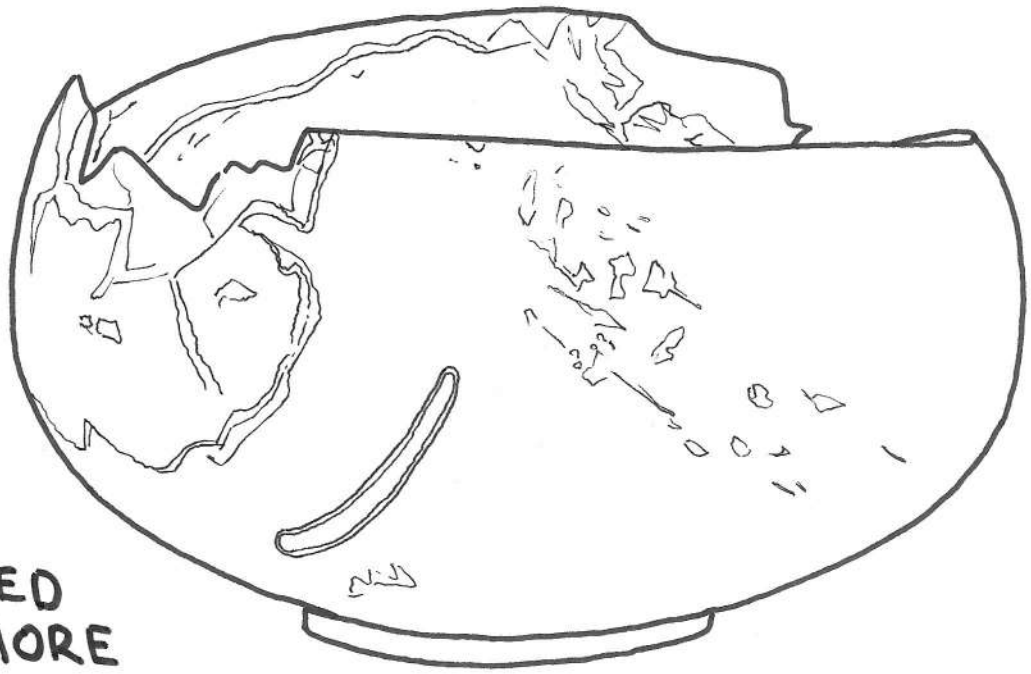
Sycamore ‘Drainpipe’ Bowl With Aluminium Inlay

Spalted Sycamore, ‘drainpipe form’ with aluminium & epoxy resin inlay
4 x 4 x 3 inches
Designed 2017

Aims;

- This bowl was my first inlay test evolving the original sample pieces.

- Use a piece of sycamore which has deteriorated and started to rot, known as the drainpipe, inside the middle of the trunk



SPALTED SYCAMORE BOWL + ALUMINIUM INLAY

RATING ON SPECTRUM;

① ORGANIC	• Aluminium shiny inlay → MANMADE MATERIAL • Material journey shown in spalting markings • well finished (shiny surface). (-1) CHARACTERISTIC OF MODERNISM
② FREEDOM OF FORM	• Assymetrical Rim • 'Drain-pipe' eroded part of tree, strengthened with resin + metal • The form is consistent, and delicate. (+0.5) WEAK CHARACTERISTICS OF WABI/SABI WITH ASSYMETRICAL RIM AND IMPERFECTIONS
③ TEXTURE	• Smooth shiny finish, sanded to 800 gsm. → HIGHLY CONTROLLED • only texture variance is on rim, smoothed off • Even wall interior thickness • Precisely machined. (-0.5) SOME CHARACTERISTICS OF MODERNISM WOULD BE STRONGER IF THE RIM WAS NOT ORGANIC
④ UGLINESS + BEAUTY	• Lots of small details in spalting • Delicate curvy form, natural influence • Metal inlay could be seen as Modernist. (+0) EQUAL ELEMENTS OF BOTH CHARACTERISTICS

⑤ COLOUR	• Multipule colours and patterns - Not uniform but random • METAL Aluminium inlay, shiny bright finish -0.5 MODERNIST CHARACTERISTICS WITH METAL INLAY, WEAKER LINK BECAUSE OF UN-UNIFORMALITY OF NATURAL PATTERNS
⑥ SIMPLICITY	• Highly reformed apart from 'lwie' edge (Rim) • Combines multipule elements (Resin + Metal filler). • Slick curvy design • uniform wall and base thickness -1.0 STRONG MODERNIST CHARACTERISTICS
⑦ SPACE	• 'whole' no open spaces • Multipule ascent pieces - imperfections. • 'Enclosed' form / contained Shape of the Rim  -1.0 STRONG MODERNIST CHARACTERISTICS
⑧ BALANCE	• Shaped specific form - Not natural • Not a uniform regular shape • Control of nature using process - Delicate piece • Natural appearance. -0.5 WEAK MODERNIST CHARACTERISTIC AS THE FORM IS BALANCE WITH FEW NATURAL INFLUENCES.
⑨ SOBRIETY	• Limited function due to the delicacy of the walls and size of the bowl. • Small base, not so stable • No added functions • Resin repairs the 'drain piping' of the sycamore. +0.5 WEAK CHARACTERISTICS OF WABI/SABI

TOTAL RATING: -1, +0.5, -0.5, 0, -0.5, -1, -1, -0.5, +0.5

= -3.5

This bowl has modernist design characteristics. These links are weaker as the ~~metal shiny inlay~~ Rim is assymetrical and the sycamore is highly figured, with imperfections.

Development and Process;

- This was the first metallic inlay test on a bowl, evolving previous work with the sample board.

- The spalted sycamore originally had a high moisture content, due to natural air drying and being left in the woods, the piece had started to rot and deteriorate. This is known as ‘drain piping’ as this rot occurs in the middle of the log where the spalting pattern resides.

- To create an organic and assymetrical rim I cut the blank, so this drainpipe section could form the rim and sides of the bowl.

- The wood had started rotting and was structurally weak, these sections of spalting were breaking off by hand.

- It was essential to repair and re-inforce these sections of the bowl, so it could be turned and hollowed out, I poured in aluminium powder mixed with epoxy resin shown in the picture below.

Process and Development Continued;

- The sides of the bowl were first shaped and then the face-plate was removed. To mount the faceplate on the uneven surface, I had to use small blocks of wood laying accross the surface of the blank.

- Now that it was time to hollow out the interior of the bowl the spalting drainpipe was weak, the piece would have completely broken without the resin inlay to add structural strength.

- The resin mixed with aluminium was poured freely into the top of the bowl, shown in the image on the page before. This process filled any gaps and meant that the interior could now be turned with less chance of the drainpipe spalting breaking away.

- As the resin was not applied precisely, there was a lot of work after this process to remove excess resin which had dripped and run down the side of the bowl. This process shaped the form as I wanted to achieve a form which was curved and slighly con-tained but delicate. Therefore the walls were turned to 2-3 mm.

- I decided to sand the piece down to achieve an even and uni-form finish to the bowl. This process also revealed the metallic element of the aluminium inlay.

- The aluminium inlay had a dull appearance until it was sanded to 320 gsm. I decided to sand the piece to 600gsm, to this me-tallic inlay was shiny - a characteristic of Modernism.

This bowl successfully combined multipule design characteris-tics. The natural spalting marks and ‘defects’ created an as-symetrical rim, which was contrasted by a sanded interior and exterior. The aluminium inlay was finished to leave a shiny surface a characteristic of Modernist design. As a initial test into using the resin inlay, this technique was effective and highlights the natural elements of the material. Therefore this was a sucessful material test which was developed into the other inlay pieces.

Modernist Bowls

These pieces have the strongest reactions to Modernist Design characterisitcs, rated on the spectrum

Ratings on the scale from - 4.5 to - 9.0

Design Characteristics that are associated with a Modernist aesthetic;

- Primarily expressed in the public domain
- Implies a logical, rational worldview
- Absolute
- Looks for universal, prototypical solutions
- Mass-produced/Modular
- Expresses faith in progress
- Future-orientated
- Believes in the control of nature
- Romanticizes technology
- People adapting to machines
- Geometric organisation of form (sharp, precise, definate shapes and edges)
- Manmade materials
- Ostensibly slick
- The box is a metaphor (rectilinear, precise, contained)
- Needs to be well maintained
- Purity makes its expression richer
- Solicits the reduction of sensory information
- Is intolerant of ambiguity and contradiction
- Cool
- Generally light and bright
- Function and utility are primary values
- Perfect materiality is an ideal
- Everlasting
- Multipule functions

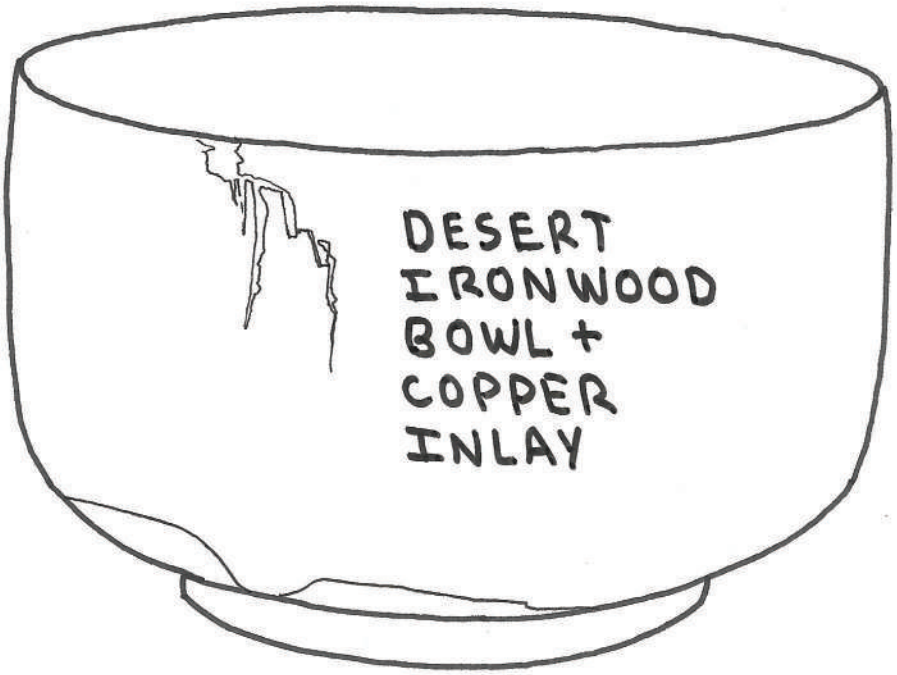
Desert Ironwood Bowl With Copper Inlay

Desert Ironwood bowl with resin and copper powder inlay
4 x 4 x 2 1/2 inches
Designed 2017

Aims;

- Use a small piece of one of the hardest, rarest timbers, to create an ostensibly slick, Modernist bowl

- The material is brittle so if any breakages occur use a shiny metallic inlay to repair the piece



RATING ON SPECTRUM

① ORGANIC	- Resin used (Manmade material) - shiny finish (Tung oil + copper inlay - 'Material perfection' (-1) LINKS TO MODERNIST CHARACTERISTICS
② FREEDOM OF FORM	- Sanded to 1200 gsm, smooth texture (feels like metal) - Heavy for size - Precisely machined (perfect symmetry) - Symbolism of context with the inlay representing thunder / lightning (-1) STRONG LINKS TO MODERNIST CHARACTERISTICS
③ TEXTURE	- smooth, sanded to 1200 gsm - No texture variance - Even wall thickness - consistent texture - Texture formed by precise machining and sanding. (-1) STRONG LINKS TO MODERNIST CHARACTERISTICS
④ UGLINESS AND BEAUTY	- Beauty in the small copper inlay detail and the unique wood grain / figuring - The inlay of shiny metallic elements are conventionally 'beautiful' and seen as a luxury component. - The form represents tea ceremony forms with a 'Chinese perfection' ideal and not wabi-sabi unrefined values. (-1) STRONG LINKS TO MODERNIST CHARACTERISTICS.

⑤ COLOUR	- Shiny surfaced has a polished surface, especially in the metallic copper inlay - Reflective properties - Dark tones (purple) mixed with yellow tones → Not completely uniform as sapwood and heartwood are both included in this piece. (-0.5) WEAK LINKS TO MODERNIST CHARACTERISTICS
⑥ SIMPLICITY	- Highly refined and machined in comparison to the qualities of raw desert ironwood - A rare and precious material - Not freely available - combination of materials, Resin, copper powder - Precise pre-scribed formulae (-1.0) STRONG MODERNIST CHARACTERISTICS
⑦ SPACE	- No open spaces, enclosed and contained shape - Accent pieces are an absolute minimum, lots of space around the copper inlay, which is the only accent piece, for structural stability (-0.5) WEAK LINKS TO MODERNIST CHARACTERISTICS
⑧ BALANCE	- uniform shape, curved to 'enclose' the rim - Perfect materiality is the ideal, polished and finished to a high degree - No pre-scribed formulae in relation to the inlay, the shape is a product of the raw material blank. To waste as little of the material as possible. (+0) EQUAL LINKS TO BOTH PHILOSOPHIES
⑨ SOBRIETY	- Brittle and delicate due to thin walls but very strong material - Intimate and personal piece and the design is kept to a functional minimum. - The bowl is functional and can accomidate daily use. The inlay structurally supports the piece making it more functional. (-0.5) WEAK LINKS TO MODERNIST CHARACTERISTICS
TOTAL = (-6.5) RATING	-1 / -1 / -1 / -1 / -0.5 / -1 / -0.5 +0 -0.5 = (-6.5) This bowl has strong links to Modernism characteristics, the inlay and context to Wabi / Sabi and the material journey lowers this rating slightly. And the symmetrical but not geometric form.

Process and Development;

- Desert Ironwood is one of the worlds rarest timbers, that is highly endagered and protected. It is uncommon to be able to get hold of pieces of the material. I was gifted a small off-cut from my tutor so I decided to experiment with the material.

- The blank shown in the cover picture was the original piece of timber, which was unrefined and raw. The aim was to remove as little material as possible to create the largest bowl out of this material to reduce wastage,

- The form was therefore defined by this, the diameter of the piece was as large as possible and the height utilised the full size of the raw timber blank.

- The material is very heavy for its size, because of the density of the cells and fibres. I wanted to turn a piece that had thin walls but was much heavier than the larger bowls that I had already turned.

- During turning the piece shown in the picture above, there were a few brittle small splits and cracks which appeared around the rim of the piece. These imperfections and material defects were not apparent until the lathing process.

- If these splits were not repaired and stabilised there was a good chance that the whole bowl would break during machining, wasting the precious material.

Therefore I decided to use the resin inlay technique. Which I could evolve from the earlier sycamore bowl with stitching and aluminium inlay, in the Combination bowls section of this document.

- The splits did not penetrate that deep into the walls of the bowl, so only a small amount of resin mixed with copper filler had to be applied. This process had to be repeated 4 times in total. The first few times the ratio of copper filler to epoxy resin was wrong, so I could not achieve a shiny metallic finish.

- I realised that the resin had to be sanded to atleast 600gsm, with every grade of sand paper making the inlay more metallic. As I wanted to achieve a refined Modernist aesthetic I decided to sand the piece to 1200 gsm. As seen in the picture below the iron-wood had to be sanded 5-10 times to remove all of the tool marks, and reveal the purple grain.

- Once the piece was sanded on the interior and exterior to 1200gsm , I had to reverse mount the bowl to remove the foot, which was challenging as the walls were thin and brittle and this process had to be undertaken with delicacy.

- The sample piece above shows the inalying tests with copper and aluminium. I decided to use copper powder as I had already experimented with aluminium.

This bowl was a successful experiment and one of my favourite bowls created. A refined and carefully machined finish was achieved. The inlay highlights the imperfections and adds context to the piece. The ironwood timber can only be collected after natural events such as lightning strikes and extreme weather, when the tree is damaged. The inlay therefore highlights the material life cycle.

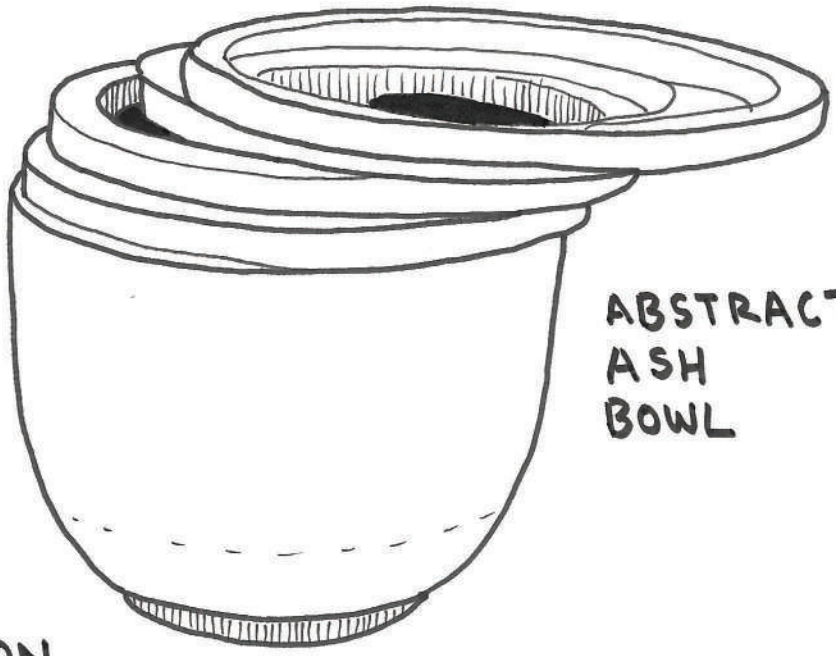
Abstract Ash Vessel

Ash bowl with abstract/Geometric Rings
8 x 6 1/2 x 6 inches
Designed 2017

Aims;

- Experiment with form and making a vessel with multipule elements joined together

- Develop my technical lathing skills to make precise ‘rings’



ABSTRACT
ASH
BOWL

RATING ON SPECTRUM

① ORGANIC	- Shiny, uniform finish to the Ash material - Machined precisely to create 'layers' or rings - Material forced to meet the design. -1.0 STRONG LINKS TO MODERNIST CHARACTERISTICS
② FREEDOM OF FORM	- Abstract symmetry in rings, base is symmetrical - Machined and manipulated by process into a certain form - Form depicts vision of artist - Slight assymetry in stacking -0.5 MOSTLY MODERNIST CHARACTERISTICS
③ TEXTURE	- Smooth, geometric top form, formed by the process of machining - The top rings are delicate and sculptural compared to the bulky base - Textures are not natural for the material, finished to 320 gsm sanding - Not finished with oil/wax -0.5 MOSTLY MODERNIST CHARACTERISTICS
④ UGLINESS + BEAUTY	- Beauty into the manipulation of the material. This piece could not be machined on a lathe in one piece. It is crafted by attaching elements together to get a certain aesthetic. Does not disregard conventional views of beauty. -0.5 MOSTLY MODERNIST CHARACTERISTICS

⑤ COLOUR	- cool, light and bright Ash wood - Primarily one colour, apart from slight diversity in the grain - colours are natural and not altered - sanded but not finished to be shiny. I prefer the lighter wood colour after experimenting with tung oil (+0) INTRICATE GRAIN PATTERNS ARE NOT UNIFORM SO THERE ARE CHARACTERISTICS FROM BOTH PHILOSOPHIES
⑥ SIMPLICITY	- Refined and precisely finished, combination of seperately made elements. - Made to a specification - Ash is a freely available material - Added embellishment. (-0.5) WEAK LINKS TO MODERNIST CHARACTERISTICS
⑦ SPACE	- Lack of defects and natural marks, there are multiple ascent pieces making up the ring of the piece. These pieces are not required structurally and crowded together. → The open space is constricted and enclosed by these rings (-1.0) STRONG LINKS TO MODERNIST CHARACTERISTICS
⑧ BALANCE	→ Precise formulae to produce the required abstract aesthetic formed by uniform shapes. - Perfect material is and ideal and nature has been 'forced' with aesthetic judgements. (-1.0) STRONG LINKS TO MODERNIST CHARACTERISTICS
⑨ SOBRIETY	Function has been partially removed, the item has been made more delicate and brittle. - Sculptural piece, functional minimum - The rings could represent a tree trunk and a tree being felled (highlighting the material journey) (+0) DOES NOT FIT IN WITH EITHER DESIGN PHILOSOPHY.
TOTAL RATING = (-5)	THIS PIECE HAS STRONG LINKS TO MODERNIST CHARACTERISTICS. THESE WOULD BE STRONGER WITH THE INCLUSION OF BEING MORE FUNCTIONAL AND INCORPORATING MANMADE MATERIALS. THE RINGS ABSTRACTED SLIGHTLY REMOVE FUNCTIONALITY.

Process And Development;

- This bowl was a testpiece to challenge my technical skills of producing a vessel, made from multipule components. Other bowls have had additional elements (stitching or inlay applied), This piece was turned from 2 seperate bowls.

- The technical skill involved to remove the ash rings one at a time was a challenge, Furthermore to make sure they were level so could be stacked on top of eachother, required precision machining.

- The bowl blank was created by using an 2 square offcuts of ash, which were wastage over from the square ash bowls (In the Modernist Section). These offcuts were planed down until both sides were level and then laminated together.

- The laminated pieces formed a blank which was around 6 inches tall (the maximum limit for the toolrest to be used safely).

- There was no pre-scribed formulae or influence in terms of the form, this was more of a material test to see if the process was possible. I wanted to create a textural difference, so the bottom segment of the bowl had a smooth sanded finish to 320gsm. The geometric rings splaying out, contrasting this smooth texture with geometric, sharp and precise shapes.

- After the lower smooth part of the form was lathed, I had to cut another ash blank to turn the rings out of.

- To make these rings as each is slighly bigger than the previous, a exterior tapered cyclinder was shaped, with the larger diameter at the faceplate end of the piece. The faceplate was kept on one side and the interior of the piece was lathed to create a thin wall. The diameter of this wall matched the rim thickness of the base bowl. From side on, using a pairing chisel each ring was removed one by one. It is essential to do this this accurtely and each ring will be slightly bigger because of the taper.

- This part of the process was challenging as I had to pair the piece with my left hand and catch the ring with my right hand to stop it flying into the tool rest/workshop. Once I lathed as many rings as i could from the blank, I stacked them ontop of the base bowl and glued them one by one to create an abstract form.

This piece was a sucess in the process and testing of creating a piece which it formed by multipule components. However I wanted to develop this form with further, blending in the texture from the base to the rings. This is an area for future development, which because of a finger injury and missing 3 weeks working I didnt have the chance to do as the process is time consuming.

Faceted/Geometric Sycamore Bowl

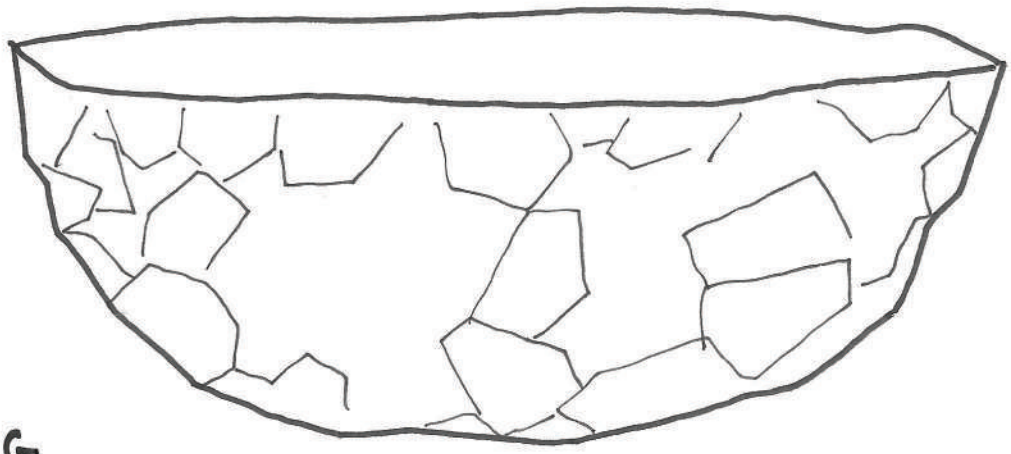
Spalted sycamore bowl, with geometric facets
6 x 6 x 2 1/2 inches
Designed 2017

Aims;

- To apply modernist characteristics to a bowl form. To experiment with sanding parts of the wall to create geometric facets.

- Combine other machining processes after the bowl has been removed from the lathe, to apply different design features.

GEOMETRIC FACETED BOWL - SYCAMORE



RATING ON SPECTRUM

① ORGANIC	- Needs to be well maintained, sanded to be fairly shiny. - Geometric facets are machined so the material is forced to meet Modernist characteristics - Material does not show the passing of time (- 0.5) WEAK LINKS TO MODERNISM
② FREEDOM OF FORM	- symmetrical form (Rim) produced by an applied machining process, the material is forced to meet the design. - The facets are different sizes and not completely symmetrical. - Form depicts artists vision, geometric and sharp. (- 0.5) WEAK LINKS TO MODERNISM
③ TEXTURE	- smooth sanded finish on interior, the facets are also sanded. - The texture on the exterior is formed by the machined process. - Ideal of perfect materiality - The walls are very thin in places and the piece delicate. (- 1.0) STRONG LINKS TO MODERNISM
④ UGLINESS + BEAUTY	- Regard for the conventional beauty, use of precise geometric facets. - Beauty in the process - The interior and form before sanding is the form of a standard bowl. (- 1.0) STRONG LINKS TO MODERNISM

⑤ COLOUR	- Cool, light colours, tung oil finish - No added colours of dyes - Natural spalting patterns from the material are multiple matte tones which lack uniformality (+ 0) CHARACTERISTICS OF BOTH PHILOSOPHIES
⑥ SIMPLICITY	- Refined and precisely machined, the surface is ostensibly slick. - Precise 'whole shape' - No natural defects e.g. knots, splits just the spalting pattern - combination of multiple processes, belt sanded to specification after turning. (-1.0) STRONG LINKS TO MODERNISM
⑦ SPACE	- No open spaces or defects to the sides of the bowl - whole, precise shape - The facets are surpus to requirement - Multiple ascent pieces with the geometric facets. (-1.0) STRONG LINKS TO MODERNISM
⑧ BALANCE	- Made to a specification by machining process - Pre-scribed formulae / precise - control of nature - uniform geometric shapes - Perfect materiality is the ideal. (-1.0) STRONG LINKS TO MODERNISM
⑨ SOBRIETY	- Function and usability are not primary values as the walls are thin in some places and delicate - All aspects of design are not at a functional minimum. The added facets are to create a geometric form with precise, 'sharp' lines. (-0.5) WEAK LINKS TO MODERNISM
TOTAL RATING - 6.5	The bowl is modernist due to the precisely machined faceted / Geometric form. The object would have a higher rating with no spalting marks and thicker walls so the structure is not as fragile.

Process and Development;

- The first step of the process was to create a symmetrical precise form. I did not want the wood to warp and move during the drying process, the sycamore was air dried for 3-4 weeks. By the time the piece had been turned it was at 8% moisture.

- The walls were turned to a thickness of around 6mm, the base of the bowl was slighly thicker at around 8-10mm.

- I wanted to control the material as much as possible, Using a bowl gouge to make the walls as thin and delicate as possible, to force the material to my pre - prescribed design ideas.

- It was important to not make the bowl too thin, during the sanding process if the walls were too thin breakages would occur.

- I did not want to repair this piece as I wanted the bowl to only have one main design feature - the exterior form.

- In reflection the process of adding the facets would have been easier if the walls were slightly thicker. This would have given me more freedom to create larger and deeper facets on the exterior.

- After using the disc sander to add facets to the outside of the bowl, the next step was to remove the marks from sanding by hand.

- This would have been more efficient if the belt sander was set up with 180 gsm sandpaper instead of 60gsm, leaving less marks to remove.

- The bowl was sanded to 320gsm but not all marks were able to be removed, to develop this process the bowl could have been sanded to 600+ gsm to create a shiny surface.

This test was sucessful in applying additional techniques and processes to create this exterior design feature. To improve the process I could have turned the walls thicker so the facets could be larger, defining the form more. This would have also been easier to sand and finish. Two coats of tung oil were applied to create a 'Modernist' aesthetic.

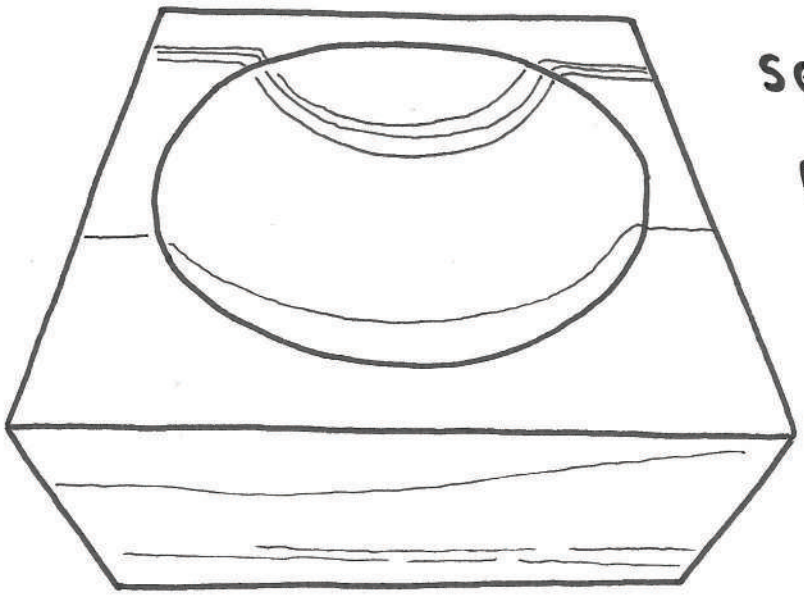
Square Ash Bowl

Square Ash Bowl
6 1/2 x 6 1/2 x 2 1/2 inches
Designed 2017

Aims;

- Experiment with a form with a geometric machined exterior, which has sharp/ precise corners

- Produce a piece were functionality is the primary focus of the design



SQUARE ASH BOWL

RATING ON SPECTRUM

① ORGANIC	- Shiny tung oil finish, no signs of wear and tear or material journey - Needs to be well maintained - 'Perfect materiality' no imperfections. -1.0 STRONG LINKS TO MODERNIST CHARACTERISTICS
② FREEDOM OF FORM	- Perfect symmetry of the piece, the design is completely uniform - Modular and precisely machined - Material is forced to meet the design -1.0 STRONG LINKS TO MODERNIST CHARACTERISTICS
③ TEXTURE	- smooth sanded to 400 gsm and finished (sealed to maintain 'perfect materiality' - uniform texture, bulky, thick strong walls of the bowl - Texture formed by machining -1.0 STRONG LINKS TO MODERNISM CHARACTERISTICS
④ UGLINESS + BEAUTY	- Beauty in the manipulation and finish of the material - Flowing grain compliments the trendy geometric form. -1.0 STRONG LINKS TO MODERNISM CHARACTERISTICS
⑤ COLOUR	Cool, light and bright, sanded and shiny until the material is 'reflective' Formality, one continuos wood grain -0.5 WEAK LINKS TO MODERNIST CHARACTERISTICS, WOULD BE STRONGER BUT NO BRIGHT ADDED ELEMENTS SUCH AS THE INLAY.

⑥ SIMPLICITY	- Refined and ostensibly slick - Everlasting - Use of freely available material (Ash) (-0.5) WEAK LINKS TO MODERNISM AS THE PIECE IS MADE FROM A FREELY AVAILABLE MATERIAL
⑦ SPACE	- No open space, or defects (holes, knots etc) - Precise machning - 'whole' - Bulky - Accent pieces at an absolute minimum - significant areas of 'nothing' (+0) EQUAL LINKS TO BOTH PHILOSOPHIES
⑧ BALANCE	- Made to specification - Pre-prescribed formulae - uniform regular shapes - Natural elements are 'forced' (-1.0) STRONG LINKS TO MODERNISM
⑨ SOBRIETY	- Designed for usability and functionality as primary values → Geometric, strong form • Universal protypical solution - Functional minimum (-1.0) STRONG LINKS TO MODERNISM
TOTAL (-7) RATING	-1 + -1 + -1 + -1 + -0.5 + -0.5 + 0 + -1 + -1 = (-7) VERY STRONG LINKS TO MODERNISM CHARACTERISTICS WOULD BE STRONGER IF ; • MORE MULTIPULE FUNCTIONS • METALLIC SHING ELEMENTS OR MANMADE COMPOSITES WERE ADDED.

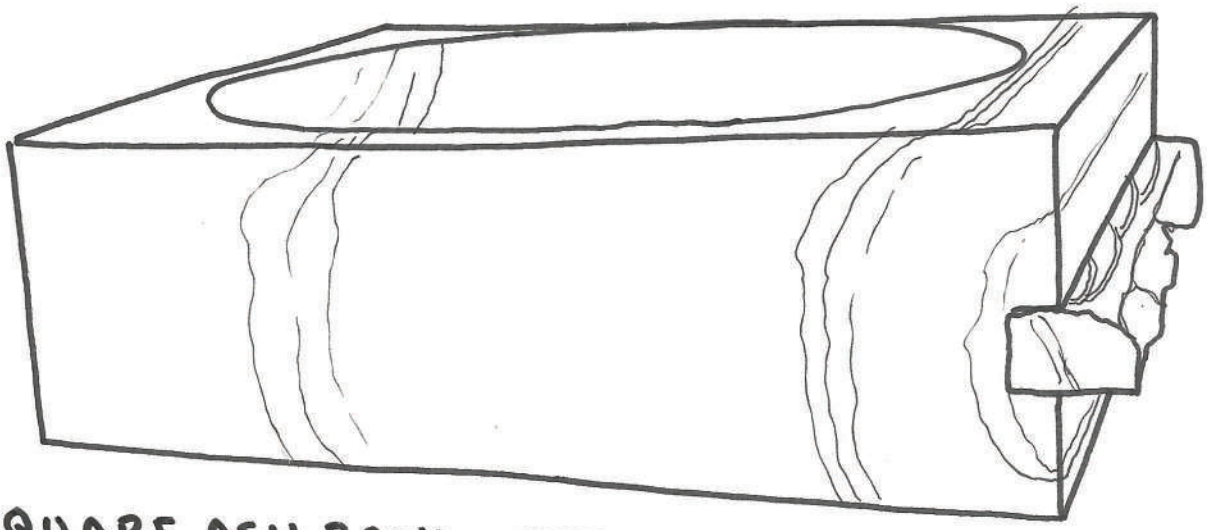
Square Ash Bowl With Bark

Square Ash Bowl With Bark Inlay
6 1/2 x 6 x 2 inches
Designed 2017

Aims;

- Develop the previous square form to have elements of a Wabi/Sabi aesthetic. Combining the process of bark inlay into the geometric shape

- Develop previous sample pieces into a finished product, the contrast between a highly refined element and an organic un-refined element.



SQUARE ASH BOWL WITH BARK INLAY

RATING ON SPECTRUM

ALTERATIONS TO RATING FROM THE ORIGINAL ASH BOWL;

① ORGANIC : - 1.0 originally, reduced to - 0.5, due to organic bark element (- 0.5)

② FREEDOM OF FORM - 1.0 originally, reduced to - 0.5, due to assymetrical sides, that are still geometric (- 0.5)

③ TEXTURE - 1.0 originally, reduced to - 0.5 due to textural difference with bark indusion. (- 0.5)

⑥ SIMPLICITY - 0.5 originally, reduced to 0, due to an added ascent piece of the inlay (0)

⑤ COLOUR - 0.5 original rating, reduced to 0, due to the bark adding matte, tones and patterns (0)

ORIGINAL SQUARE BOWL RATING (- 7)

RATING WITH BARK INLAY (- 4.5)

↳ The bowl still falls into the Modernism section of design characteristics.

Development and Process;

- The form of both square bowls was influenced by exploring geometric exterior forms. I wanted to work within the Modernist parameters, to produce a piece reacting to as many of the Modernist characteristics as possible.

- A simple polygon shape (a square) was chosen. Aiming for 'perfect materiality' and control of the natural material being essential to the process.

- The blank was cut into a square on the table saw after both sides had been planed flat. The first square bowl was aimed to be symmetrical and uniform. Therefore the blank was centered on the faceplate, so the bowled interior was in the middle of the square.

- When cutting the blank effort was made to try not to include natural imperfections of the timber such as knots and splits.

- The development for the first piece was simple, the bowled form was lathed and then the entire piece was sanded to 320gsm and finished with tung oil to create a shiny appearance. The small screw marks on the bottom from mounting the blank, were filled with shiny aluminium filler mixed with epoxy resin.

The finished piece is modular, geometric, symmetrical and sanded to a smooth and even finish, all design characteristics of modernism.

- The following square bowl is a development of this piece by altering some of the design characteristics to create assymetry within the form with the addition of organic elements (bark inlay).

- The process was almost identical to the previous square bowl. The square was cut on the table saw, with each edge being a slightly different length. The bowled interior is therefore not central within the blank, meaning that the wall thickness is different on each side. The base was also sanded to be angular, making the top surface slightly slanted. This in turn would lower the rating on the design scale, having weaker modernist links.

- To add a textural difference, contrasting the highly finished ash, I applied the technique of inlaying bark into the square exterior. This was the first bowl where I could successfully evolve the sample pieces exploring this process because of the straight flat surface. By adding this organic element and adapting the bowl this would weaken the pieces modernist rating on the design spectrum.

The samples above were my influence to use the bark inlaying technique on the square bowl. I wanted to use this process with previous pieces but on a rounded object it is very challenging to apply straight inlays. Which is why I had to stitch bark or cut a blank specifically to include a bark section. The test was sucessful in creating a textural variance in the adapted square ash bowl between the bark and sanded sections.

Evaluation of the project

Strengths;

- During this project I managed to learn about the materiaity of wood in a more scientific way. Initial research has allowed me to look at multipule layers and cell structure of the material to understand how it reacts to certain variables being changed. Experimenting with moisture content and using off cuts of timber with natural imperfections, have been my driving force for investigation.

- I have managed to experiment with kiln dried, air dried and green wood with a high moisture content. Using various heating and drying techniques I have been able to manipulate the form of a bowl. At times I have pushed the material to the extreme (breaking point) allowing me to learn and develop new methods to control the materiality of a piece in a specific way.

- Before this project I had not used a lathe before, this process has allowed me to create a larger range of objects, reacting to multipule design philosophies. Therefore I have evolved my technical woodworking skills, creating high quality finished pieces.

- I am very happy with using the stitching and metallic inlay techniques. I think the repair techiques to ‘fix’ certain pieces were highly sucessful. I like the way these traditional techniques have been used in a contemporary way, creating unique one of a kind pieces. This was one of my main aims creating my own personal design ethos combining characteristics from modernism and wabi-sabi.

- I managed to explore a wide range of different forms and shapes informed by the material blanks and offcuts which I used, appealing to more than one aethetic style. This helps market my work to a range of different people, which is why I created the design spectrum. The spectrum has given me a means to inform my making to analyse and reflect in depth about design choices.

- My sample boards illustrate that I have indepth knowledge with using wood as a material in a number of creative ways. I managed to develop most of these sample pieces into bowls. I have also been able to incorporate copper, aluminium, brass and resin into designs, learning invaluable knowledge about how to use these materials and there inherant qualities. These samples could be evolved into many applications in furniture and product design, which I can continue to develop further post graduation.

Weaknesses

- I feel like I could have explored the modernism section more, the abstracted ash bowl could have been developed into a range of 2-3 pieces. The use of layering multipule design elements and reconnecting the pieces could have created more interesting and stimulating pieces.

- I spent to much time learning and experimenting with lathing, instead of creating informed pieces based on research and the design spectrum. I could have created a larger range of pieces as I made around 20 vessels which could not be included in this project, due to lack on context and intent from research.

- I wanted to use liquid metal and sand casting techniques to form the base of a piece or fill cracks, creating metallic scultural pieces. Instead I only experimented with inlaying resin mixed with metal fillers, this is an opportunity for future development.

- The design spectrum could be evolved and improved, when rating the elements this was my own personal judgement. Getting another participant to also rate the bowls would validate the ratings. However the project is based on my opinion and forming my own design ethos which is why I didnt do this.

- I wanted to extend my research into using the heat box to warp greenwood I had collected from the forest. I had a serious finger injury the day after the wood was felled, meaning the logs dried naturally limiting my experimentation. I missed 3 of the final 8 weeks in the workshop limiting my output and development of final pieces.

Future development

My project has no ending, I could keep developing the existing repair techniques of stitching and inlaying bark and resin. I have thoroughly enjoyed the process and I am looking at continuing this project in the future. I have been limited to producing pieces that are 6 inches or smaller because of the machinery and accessories for the lathes. If I were to have my own lathe I could create pieces which are much larger for example, extending my own technical skills. As a basis of forming my own person design ethos I have realised I fall in between modernist and wabi-sabi values. I want to continue developing pieces combining elements from both design philosophies. This project has given my work context and a drive to further evolve ideas of my outcomes.