

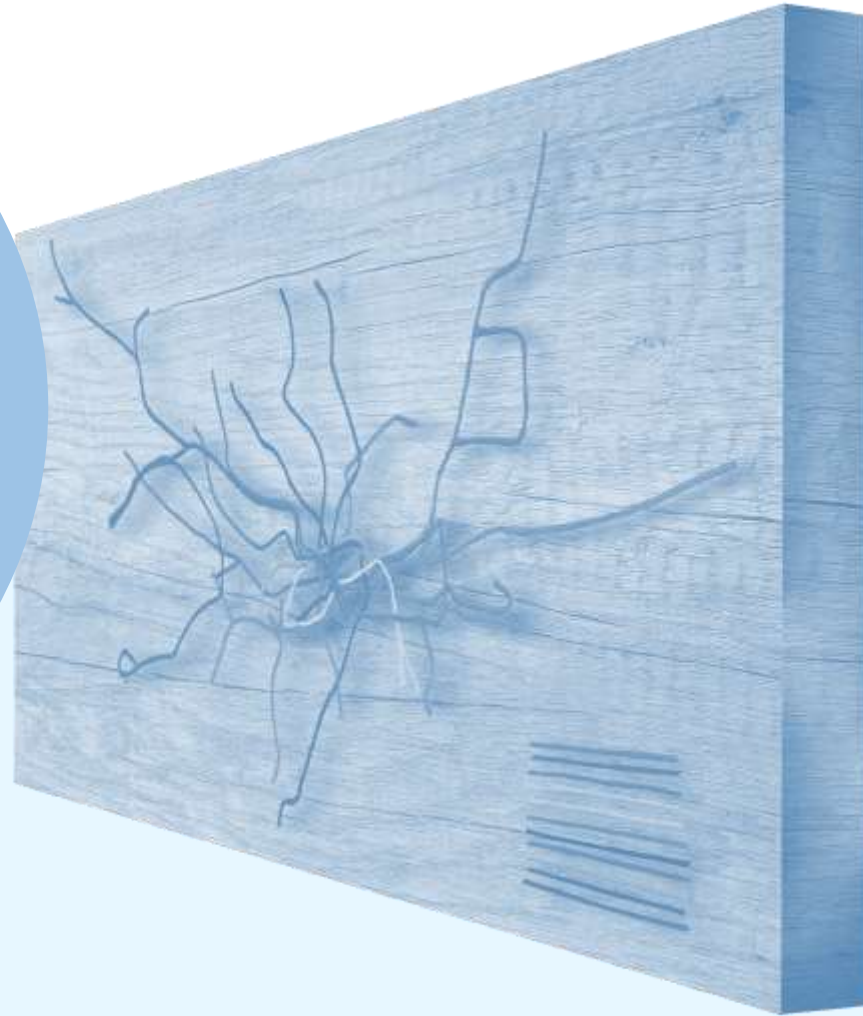
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AD313 PDF 2

Edited Publication

3D Design and Crafts BA (Hons)

University of Brighton



Statement

My research started with the investigation of making. What is the process and the conception of 'objects'? How does nature generate and process fragility?

The word process means different things to different industries and encompasses so many things within nature and society. My research is aimed at looking at how we evolve or get to the end of the process.

Key Words

Journey

Noun

The suggestion of travel or passage from one place to another by various means.

Process

Noun

A series of things that are done in order to achieve a particular result

Product

Noun

An article or substance that is manufactures or refined for sale.

Fragility

Noun

The quality of being easily broken, damaged or vulnerable to its environment.

Through research and adventure this study aims to discover the tolerances within clay, while utilising the material properties to maximise form capability. Formed and molded in various structures replicating existing 'objects' or castings, in ceramics.

The body of work will capture the routes undertaken by various matters; while understanding the external factors, and exploring the material influence and its environmental exposure.

I aim to explore rail, water, road and air traffic networks alongside living organisms though botany and anthropology.

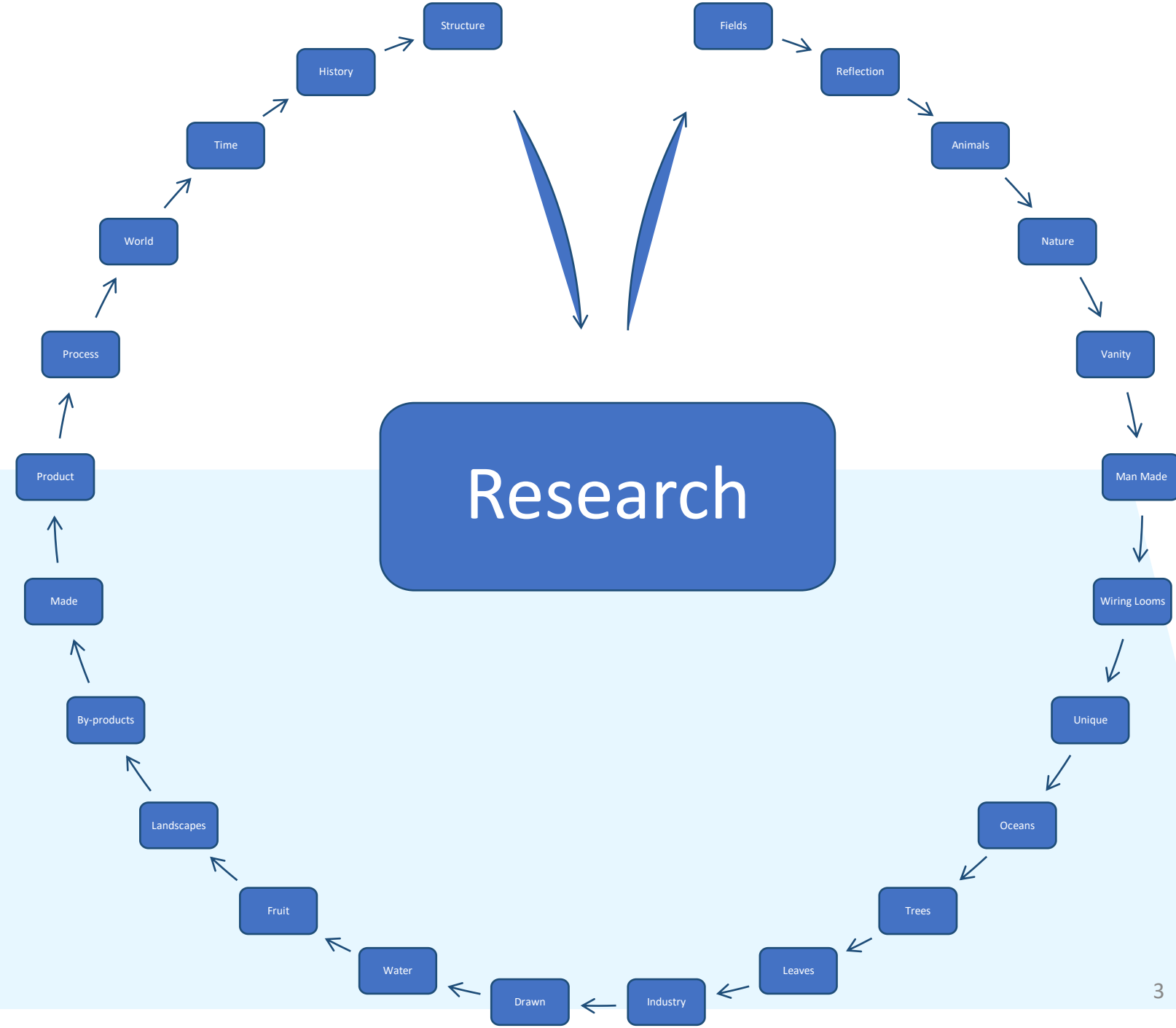
By casting and replicating textures; I aim to capture fragility, and see if the surfaces are susceptible to deterioration within the environment or by our cultural development.

The body of work should reflect an element of scale and identifiable aesthetic via colour and arrangement, through the execution of various technical practices.

Research

My research started with the investigation of making, process and the creation of 'objects'. How does nature generate and process fragility?

The word process means different things but the definition remains the same.





The Process

The process of the water cycle and the treatment process vary;

1. Rain water is collected,
2. Water is stored,
3. The water is then screened,
4. Particles are removed,
5. Water is then treated,
6. Then pumped for domestic use.

The Journey

The journey water follows is extensive. We use water for both direct and indirect purposes including consumption, growth, industry, recreation, navigation, travel, as an energy source and for irrigation.

The demand for water is growing above the rate of our population.

Water treatment processes differ for industrial, domestic and agricultural use. But is all processed through the same water plants across the UK. On the south coast we have Southern Water and Southeast Water who maintain and distribute water through a network of pipes. The romans originally transferred water in gully's, and canals. Then during the Victorian times and the industrial revolution centralised water pumps were installed, along with a network of lead piping. Today pipes are made with plastic for ease of manufacture and hygiene.

Product

Water follows a natural cycle, this cycle forms and impacts the earths weather and how we live. The water cycle explains how water evaporates from the surface and is then cooled and condensed into rain or snow, which falls to the earths surface as precipitation. This water is then collected into reservoirs, rivers, lakes or is absorbed into our food chain.

This map is a GIS plan. A geographic information system (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on the Earth's surface. The Water network is mapped via satellite data and can provide not only a map of infrastructure but has data layers showing buildings, accounts, fire hydrants, burst mains and asset condition grade information to help inform replacement decisions. It's not just a map but a visual plan of all assets. The levels of layers within a water companies GIS data is countless.



This map shows the water pipes in an estate in Eastbourne, water is an essential utility. The right to water is UK law. Water is pumped from a reservoir through a network of pipes throughout the United Kingdom and is piped directly to your dwelling. This network is one of the largest in the country, we have many networks hidden underground for example water, gas and telecoms. Most utilities follow a similar network.

It's a rare opportunity to access the water GIS Plan, I was granted permission to use this for this project. This is classed as confidential information, water is a right to life utility and therefore is heavily protected.

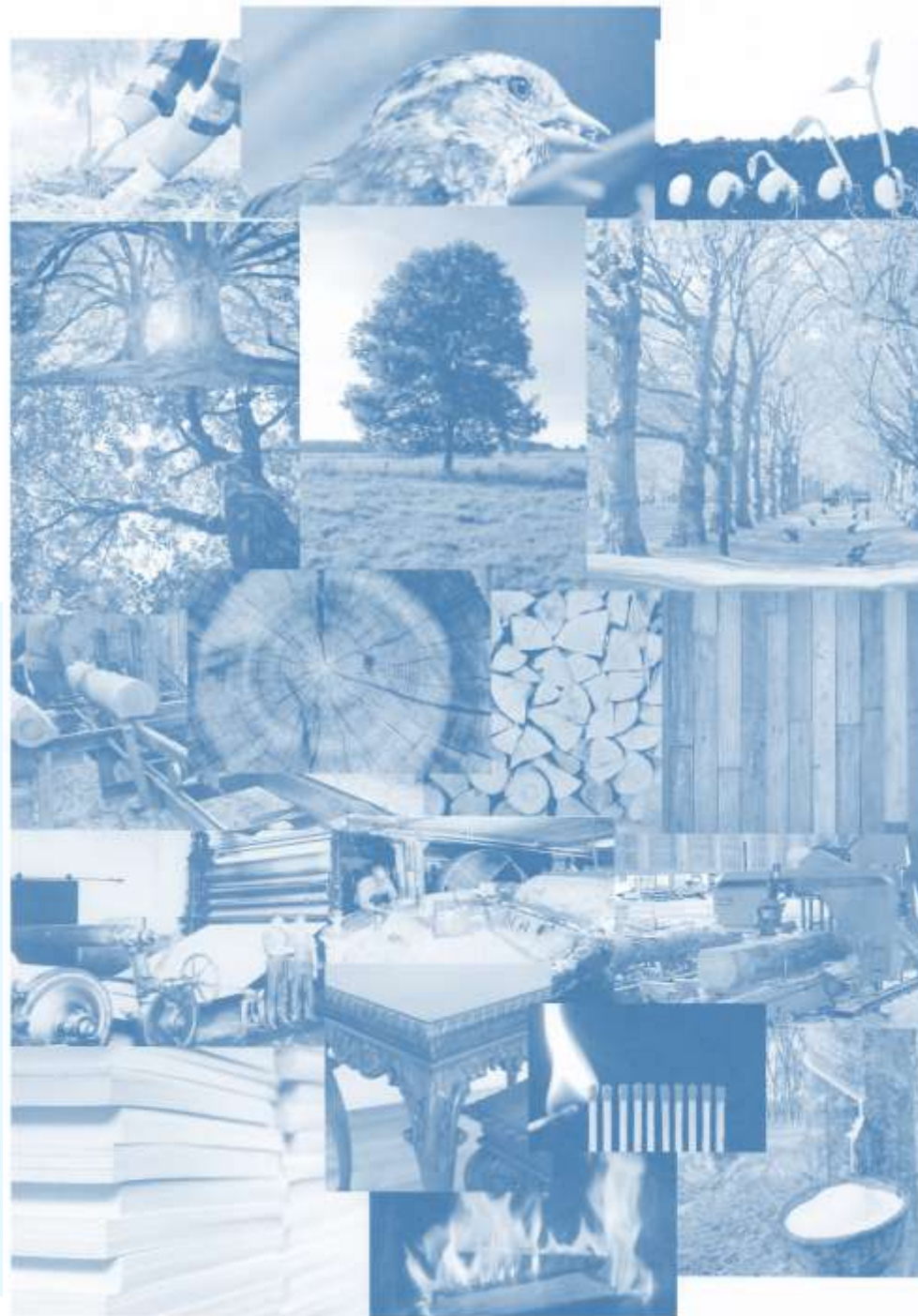
Trees

Product

Many by-products come from trees, leaves and fruits are part of the process. Products such as raw wood, fruit, adhesives, oxygen to name a few. These are then used to further make paper, furniture, fuels, juices and other building materials. The tree is crucial to the daily life of everyone. A trees journey is as important as any within our environment.

The Process

1. Seed stage,
2. Germination,
3. Growth,
4. Reproduction,
5. Pollination,
6. Spreading seeds.



The Journey

Trees (Leaves) are grown all around the world. Thirteen percent of the United Kingdom is woodland. The current government pledge to plant a further eleven million trees in the next five years. Local organisation and charities also play their part. Lancing Parish council declared a Climate Emergency in May, the full council then reserved ten thousand pounds to contribute towards tree planting and other ways to support the preservation of our world.

Leaves contribute to our biodiversity, pits from fruit, fall to the ground or are spread further away via bird droppings. The seeds then sprout through germination and evolves into a sapling. A small tree grows enabling the release of oxygen. It does this by using energy from the sunlight to make glucose from the remanence of carbon dioxide and H₂O. Oxygen is the released as a by-product.

Leaves grow and die in line with our four seasons, new buds grow during the spring, flourish during the summer and then begin to fall in Autumn, the decaying process then takes place during winter.

The Process

Each bricks follows the below journey;

1. Raw clay is extracted from the earth,
2. Raw clay is then processed into a clean clay,
3. Clean clay then pushed into a mold,
4. The bricks are then air dried,
5. The bricks are then kiln fired,
6. Packaged into 'ton' pallets,
7. Sold to consumer for construction.

Product

The journey and process of bricks for example begin life in a natural form, soil. There are many areas where you can find natural clay deposits. Ideal locations include river bed and banks, building sites where there has been excavations. Otherwise you can look for naturally exposed deposits such as field ditch's/channels or unused quarries. Natural clay differs from that bought from a supplier, often natural clay is consumed by other materials and aggregates.

The Journey

The Journey of excavating natural clay includes a drying process, adding moisture/water to form a slurry or slip and then it is separated through sieves to leave you with a pure clay product, known as a clean clay. This is then left on a plaster surface to extract excess moisture. At this stage you would wedge by hand unless in an industrial environment to obtain a quality, 'balanced' clay. The manufacturing of bricks, in an industrial environment means some steps in the process are done on an industrial scale.

There are many techniques adopted throughout the world for extracting clay and manufacturing bricks, but fundamentally the process remains the same.



Patterns

Patterns form in nature, there are many identifiable patterns. For example, visible consistencies form in the natural world in forms of symmetry, spirals, waves, tessellations, stripes. You do not have to look far to identify a pattern formed by nature. Honeycomb, pinecones scales, ripples in sand created by the wind and the stripes on an animals' back are all examples of natural patterns.

Patterns are formed through physics and chemistry and can be explained by mathematics. Patterns can be observed in various ways; through photography, under a microscope, through the naked eye, from space, dissection and through investigation and manipulation.

Photographed Patterns and Structures





This a manmade structure is called a stake and strand weave. This wovern pattern is known for its strength. There is a huge process involved in weaving; sourcing certain willow, the drying process, soaking and the tools needed as part of the process.



The pine cone and poppy head pattern follows Fibonacci's Sequence. This natural forming structure is pondered by scientists but is explained as the most effective growth method. It may mean maximum exposure for light thirsty leaves and or maximum seed arrangement.



Year Planner for Research, Testing and Making

Term W/C	Month	Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
1	January	1	Dissertation							
2		2	Dissertation				Dissertation Deadline			
3		3	Sample Tiles	Sample Tiles	Map Drawing	Map Plates	Map Plates	Plan Portfolio		
4		4	Set Up Formative Assessment	Print Portfolio	Extruding Samples	Extruding Samples	Formative Assessment	Plan Portfolio		
5	February	1	Extruding Samples					Artists Research		
6		2	Extruding Tubes					Artists Research		
7		3	Mill Wooden Cradle	Mill Wooden Cradle	Bisque Fire Samples	Glaze Sample Tubes	Glaze Sample	London		
8		4	Test Glazes		Turn Wooden Former	Photograph Samples	Tutorial	Oxford	Networks Research	
9	March	1	Make Plaster Former	Make Plaster Mould	Cast Mould	Bisque Fire Casts	Glaze Casts/Group Review	Lower Beeding		
10		2	Source Wood for Base	Mill Wooden Base	Make Final Mock-Up			Complete Plan for Professional Practice		
11		3	Complete Plan for Prof. Practice	Prof. Practice Plan Deadline	Make Final Pieces (Tube Map?)			London - Norfolk		
12		4	Make Website & Business Cards	Plan Portfolio			Turkey			
13	April	1	Easter Break							
		2								
		3								
1			4	Make Final Pieces & Assemble Portfolio					Plan Portfolio	
2	May	1								
3		2	Degree Set Up							
4		3								
5		4					Private View	Public Show		
6	June	1	Public Show							
		2								
		3								
		4								
	July	1								
		2								
		3								
		4		Graduation						
										11

Revealing the Skeleton of a Leaf Structure



The process of revealing the skeleton of a leaf

Process

1. Spread leaf evenly into a saucepan,
2. Add sodium carbonate power,
3. Add enough water to dissolve the powder,
4. Boil the leaves until they become soft and limp,
5. Maintain the water level as the leaves simmer for 2 hours,
6. Remove the leaves from the substance, be careful not to damage the structure. Use gloves and or a utensil.
7. Using a soft brush, brush the leaf pulp away on a dry cloth or paper towel to reveal the Skelton.

Life cycle of a Leaf (Natural Process)





This marker pen drawing shows the outline of a forest view in Lewes, Sussex.

This view is a typical outline of the density trees survive in, each tree fights for the light and water through a networks of routes and branches.

This density creates a vertical landscaped pattern. I may use this pattern within my designs for my ceramic vessels.

Casting Slip



Casting a complete leaf in slip 64x70 cm

Casting Slip Results

This further investigation of a leaf's (Rhubarb) skeleton shows the detail in its structure, which varies leaf by leaf. Each leaf type changes to maximise the efficiency of photosynthesis. During this process I painted casting slip to cast the full leaf's skeleton. Unfortunately the slip was applied too thin to support its own body. Only fifty percent of the structure survived in the kiln firing process.







This resolved rhubarb leaf was finished in a green, high gloss glaze. The glaze, sprayed on to achieve an even finish. The slip cast reveals the full texture and detailing showing every vein, including the fragility of the edge of the leaf.

Multi-Layered Coloured Casting Slip

I used a green casting slip to create a further identifiable aesthetic and relationship between the original form and my castings.



The left hand image shows a variation in the number of layers of slip being applied. This was to test the structure to ensure the leaf was in tact after the firing process.

The end result of this experiment was interesting. It appears the round and oval shaped leaves held the body of slip better than the heart or orbicular shaped leaf, irrespective of the layers of slip.

My theory of layering the slip, although with a higher risk of them shattering in the kiln process due to variation in moisture content and thickness, prevailed. Three complete forms survived the firing process.

Sadly three of these castings were smashed in my studio space prior to me photographing the end result, however the results were conclusive and beneficial to my research.

One layer of slip



Two layers of slip



Three layers of slip



Further slip castings of a leaf structure. You can see from this research the fragility in the body. The cracks and missing pieces were evidence of the failures in the slips structure. Unlike the structure of the leaf, the skeleton created a reverse effect. The Skelton was the weakest point of the casting process, making them fragile to movement and touch.



Contextual Research

Historic hand painted Maps



After reflecting on the leaf's skeleton, its visual remains and structure left a network and map. A map of how its resources are both absorbed and released.

This inspired me to further investigate this type of pattern.

The road network and historic mapping of the United Kingdom has a vast history, this enabled evolution through trade, travel and development.



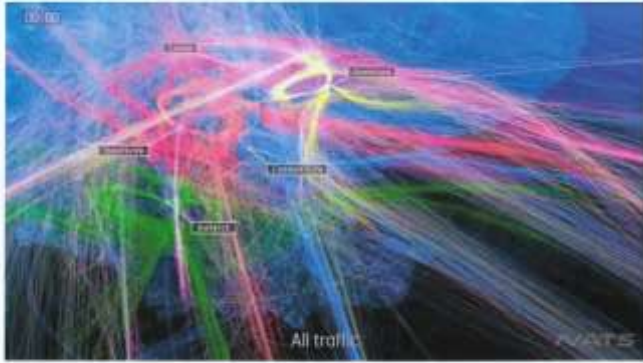
United Kingdom maps show historical data, often boundaries can change but the waterways and geography cant. For example new roads are found or built. Evolution sees the introduction of motorways which sometimes changes the geography. Both photographs I took in an antique shop at Christmas while on a mini break in Burford, Oxfordshire.



The above image is of the National Air Traffic Services (NATS) flight paths. NATS monitor airspace for many of the United Kingdoms airports.

The drawing to the left is a trace of the image on an acetate sheet.

Thermal Image of our Airspace Network



This scanned, watercolor painting is of the thermal image taken of the United Kingdom by NATS. It clearly shows the hot spots around London Stanstead, Heathrow and Gatwick Airports.



United Kingdom Gas Utility Services Network



A crucial network in the United Kingdom is the Gas Utility Network. Mapped on the left hand image.

To the right, is a pen drawing of the full Gas Network, including Bacton Gas Works, on the Norfolk Coast.

I have visited Bacton Gas Works, Norfolk many times, admiring the engineering behind the vast pipework and scale of the processes in place.



Image Source

<https://www.newcivilengineer.com/innovative-thinking/sea-defences-bacton-sandscaping-protects-coastline-20-11-2019/>

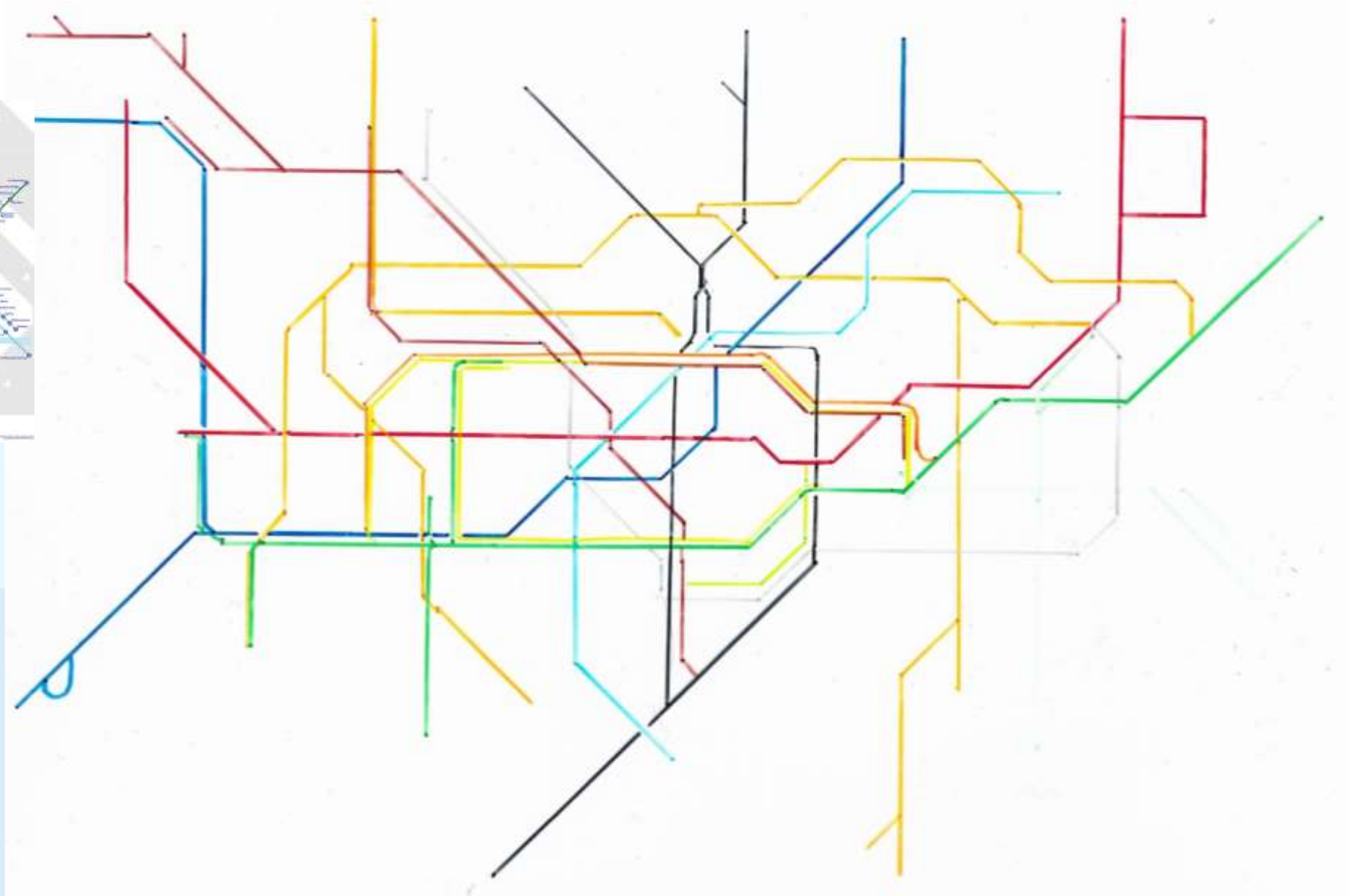
<https://www.shell.co.uk/about-us/meeting-todays-demands/processing-oil-and-gas/bacton-gas-plant/about-bacton-gas-plant.html>

London Underground Map



London Underground tube map is one of the most famous and identifiable maps in the world.

The drawing to the right is a sharpie line drawing replicating the London Underground Map in its current format.



The Centre Pompidou, Paris, France.

A vacant site, the Plateau Beaubourg was selected to be used for a multidisciplinary construction, the building was to be a cultural centre for arts.

The architects and designers chose to keep the internal structure simple and vast so each floor could be versatile. The ideology around this was revolutionary and during its construction much controversy around the sites actual use was scrutinised.



The practicality of locating the stairs; utilities, structural supports externally was an innovation. The notion was to ease maintenance access and prevent disruption of the buildings inhabitants while creating a unique piece of architectural history.

The reality, sadly means the external surface area is largely increased by tubes, tunnels and structural columns, all now exposed to natural elements, apposed to external wrapping for example glass or cladding. This additional surface area has meant maintenance costs exceed that of a conventional building, with integral utilities.

The use of colour and piping to display a user-friendly space, closely links to my ideas of an efficient network, making the experience a primary factor, above the conventional limits and restraints of materials.







Artists Research



Tottenham Court Road Tube Station

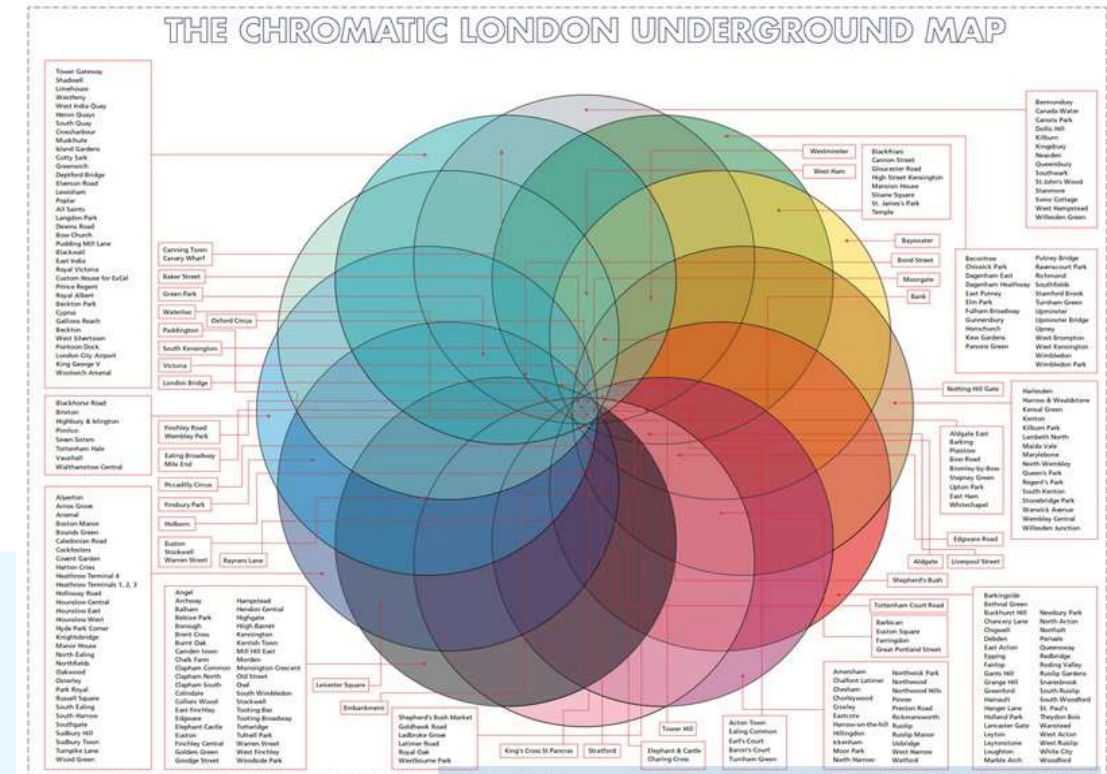
Below; Harry Becks original tube network map design. The use of bold colours made the tube lines identifiable while retaining the importance of the interchanging and connecting stations clearly.



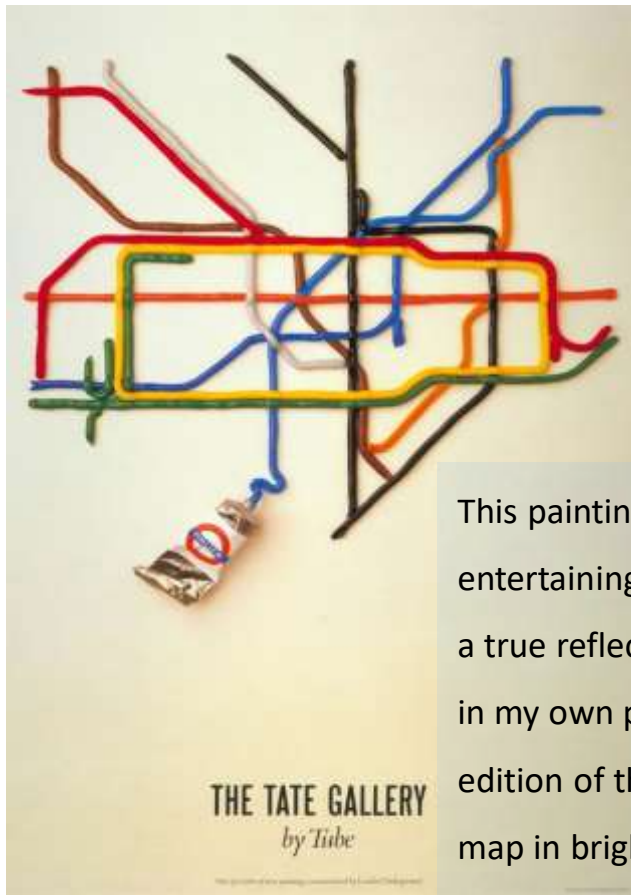


Artist Yuri Suzuki portrays her edition of the London Underground Map. This edition focuses on the electrical element of the network, using electrical components with a type font used in the sci-fi world to contextualise the longevity of the London Underground.

This artists interpretation of the map add depth and texture to an ordinarily 2D image.



Francisco Dans interpretation and design for an alternative tube map looks aesthetically pleasing but difficult to navigate.

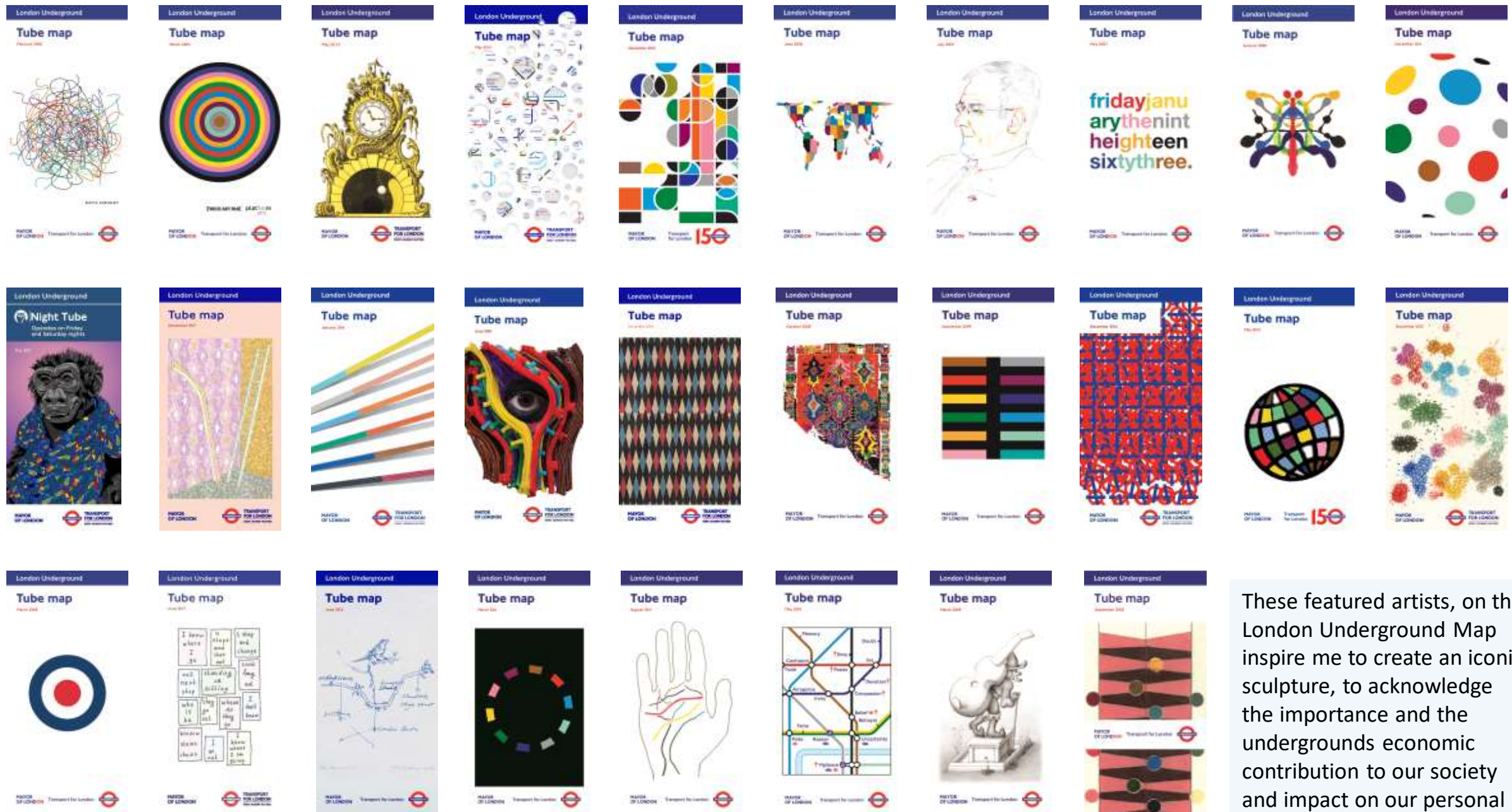


This painting by David Booth is an entertaining, mixed media painting. It is a true reflection of what I want to create in my own practice; a three dimensional edition of the London underground tube map in bright, vibrant colours celebrating the experience visually.

This painting captures the artists experimental personality while replicating an iconic and identifiable map.



Kyle Beans use of straws to recreate the tube map shows a good use of mixed media. The artist has been resourceful to obtain the variation in colour. I hope to achieve this in my glaze tests, when recreating the map myself in clay.



These featured artists, on the London Underground Map inspire me to create an iconic sculpture, to acknowledge the importance and the undergrounds economic contribution to our society and impact on our personal inner journeys. 34



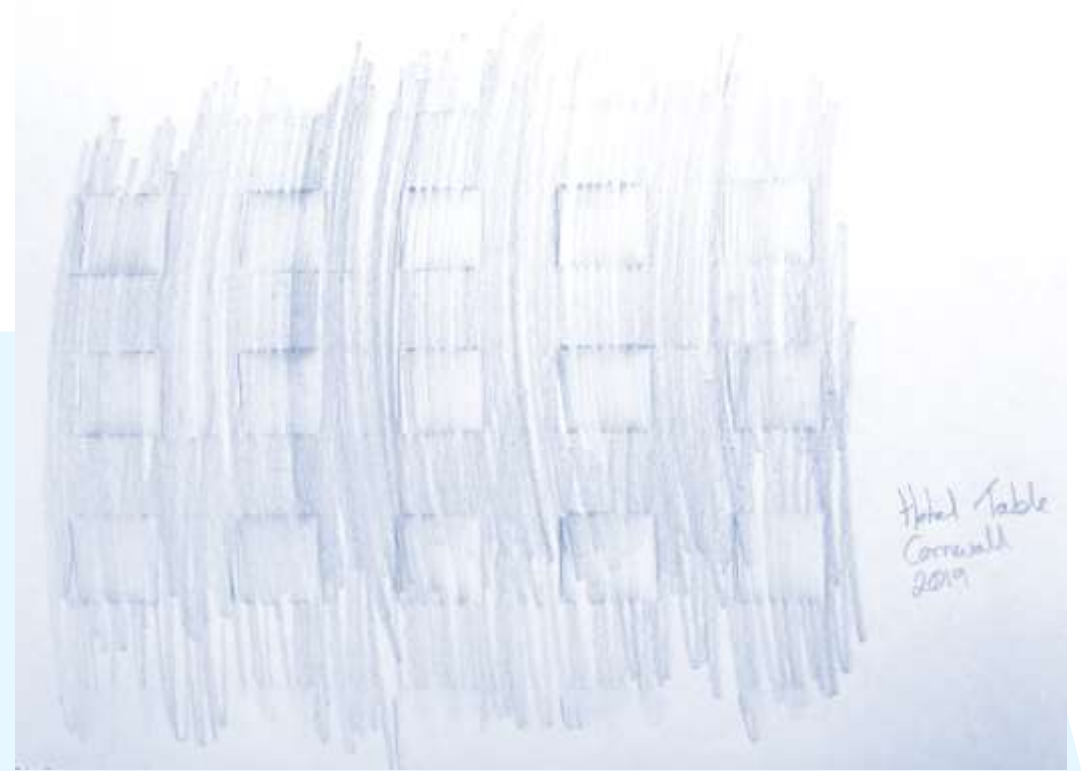
Field Research

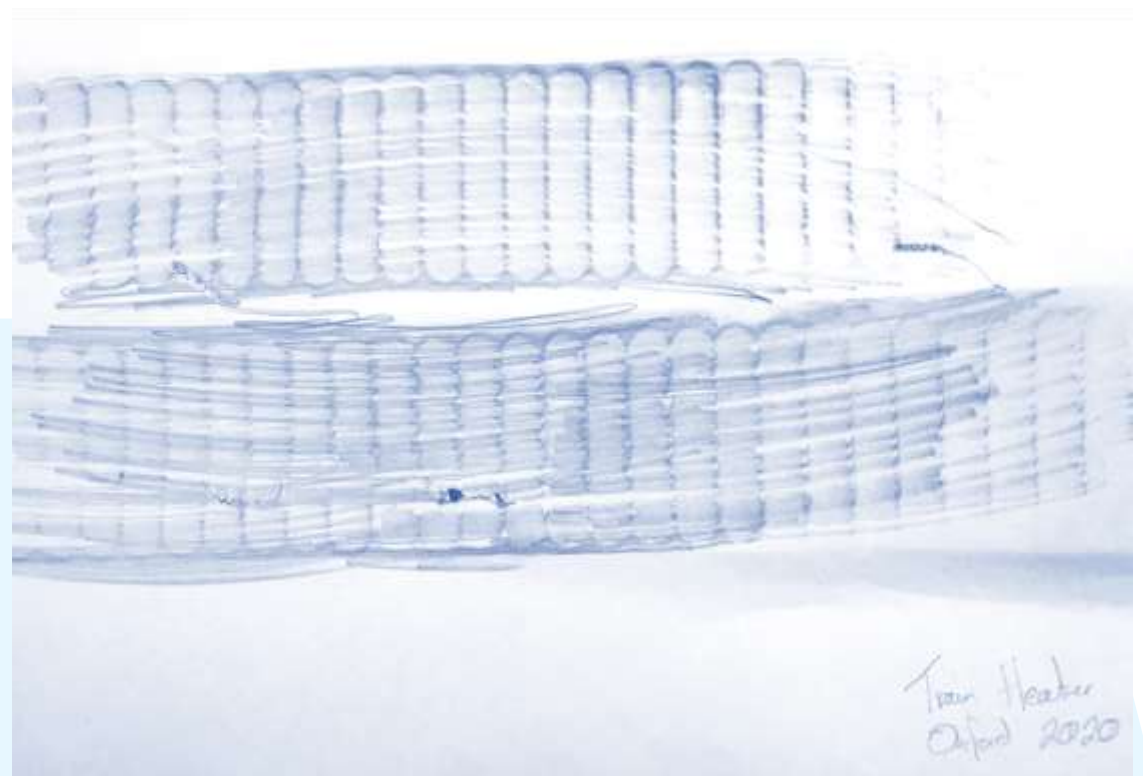


Here I have collected many textures on various journeys, both in and on London underground and during my travels across the United Kingdom. I hoped to use some of these textures within my work to evidence the experience and geographical relevance of the texture in line with each piece of work I create.

On each journey I take, the; route, weather, means and company can change. I would like to expose this variance in my practice through colour and texture. To capture the fragility and experience when travelling.

Frottage – In pencil





Journeys I have taken, photographed and documented to contextualise my research.

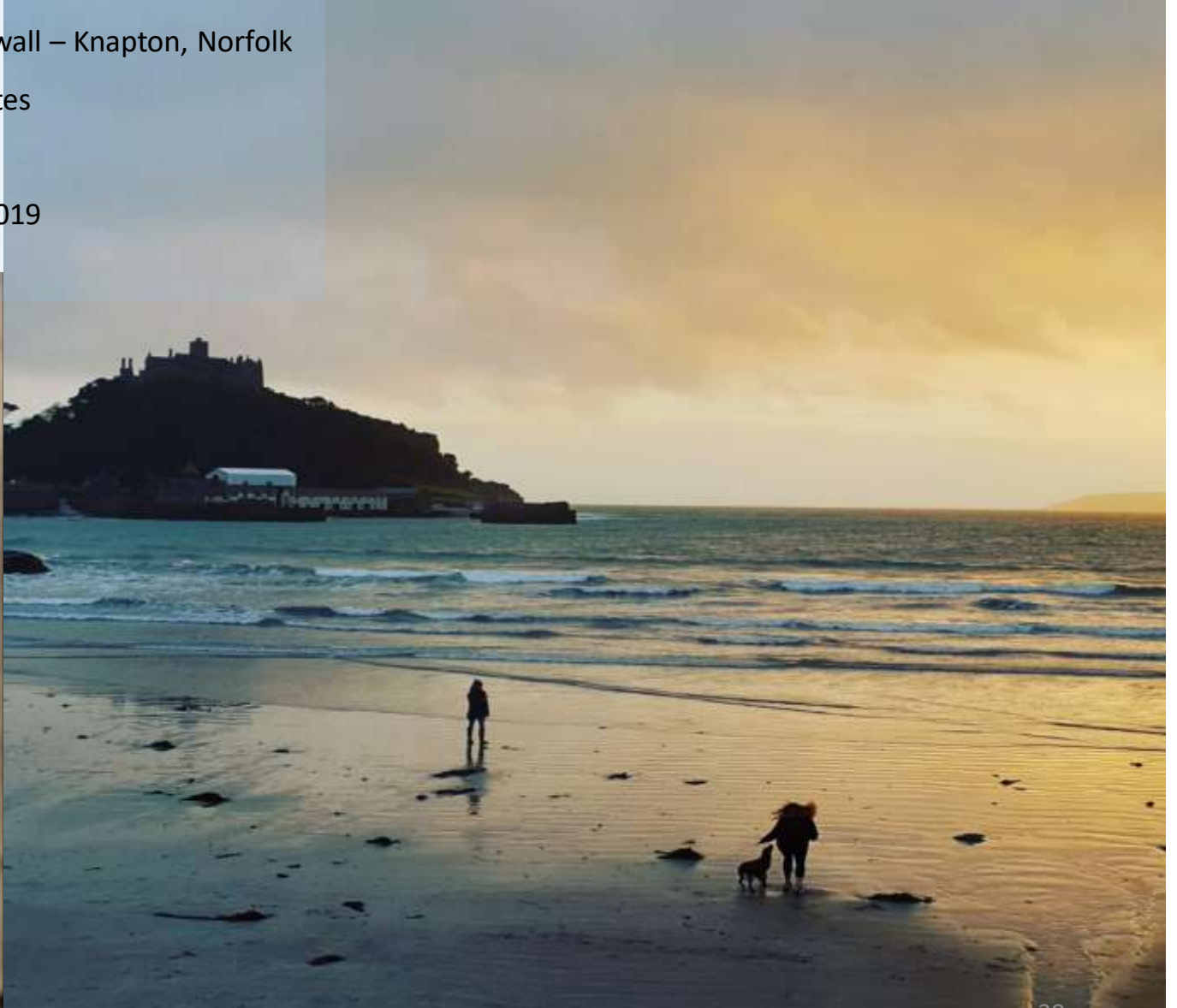


Camelford, Cornwall – Knapton, Norfolk

6 Hours 32 Minutes

380 Miles

26th December 2019





Lancing, West Sussex – Rottingdean, East Sussex

2 Hours 29 Minutes

29 Miles

11th January 2020





Lancing, West Sussex – Burford, Oxfordshire

2 Hours 24 Minutes

130 Miles

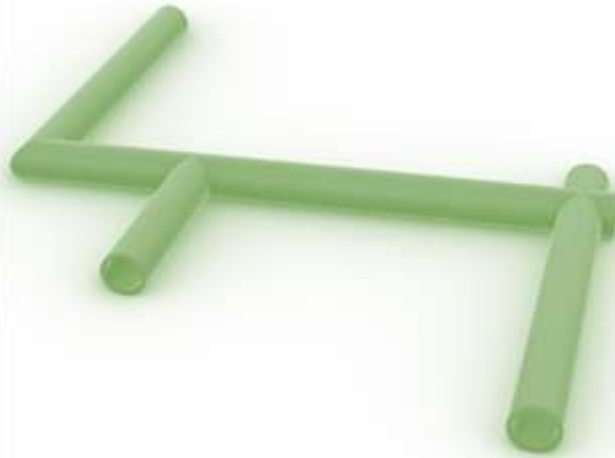
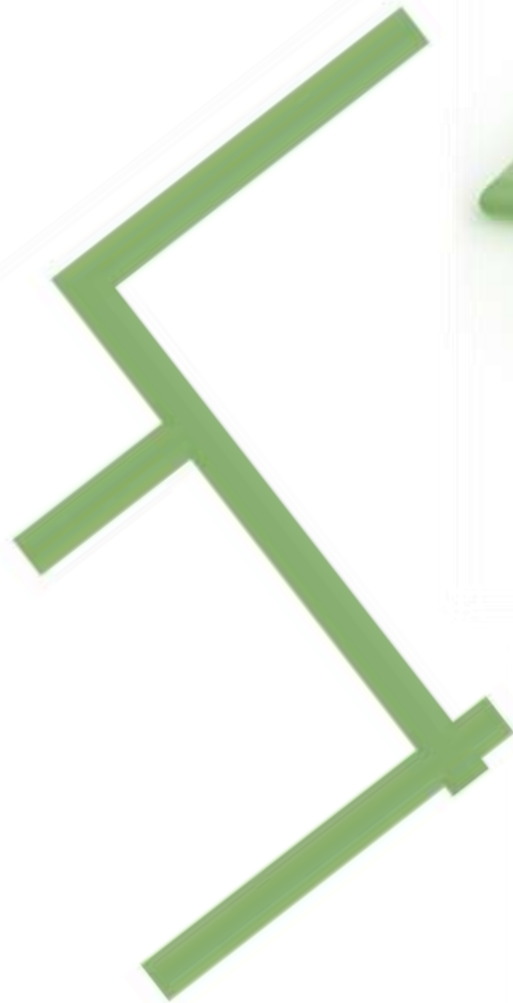
18th January 2020





Process Research

Rhino 3D Design



Here is a Rhino 3D model of a section of the London Underground, District line.

This program allows me to see the three dimensional aspect of the work. This way of working is new to me, I have had to learn how to use Rhino3D for the purpose of this document.

My skillset is still basic but I have achieved the design, shape and scale and shadows.

The material element is limited on this software, if I had more time to develop my skillset I would further investigate how to upload textures and surface colours.

Extruding Clay



This process in ceramics is an efficient and stimulating process, the extruder allows you to form both hollow and solid forms. This process was perfect for me to build cylindrical shapes to replicate sections of the London Underground.

The process allows you to change the diameter, be hollow/solid and to differentiate the shape/form.

The hollow tube was perfect for the tunnel form and to create the journey experience within ceramics as it allows sound, light etc. to travel through it, much like the London Underground it self.



Channel



This channel idea came from the fragility of the ceramics, the tubes have a tendency to roll, and whilst I think this is the right form and material, I would like to create some form of stand or channel to hold each piece.

The image to the right shows a length of Oak, this is my preferred material due to its close links to the underground. But this material is too dense to attain a 'clean' channel with the tooling available so I have settled for Pine, the image to the left.



Milled Channel in Pine



Finished Channel



Extruded Cylinders



This process and potential in scale is perfect, but the form it self is still not refined or reminiscent of the 'journey' as such. As you can see I have refined the joining of pieces together, much like PTFE tubing or copper. These joints were strong and held weight, much like the industrious tunnels you see within engineering. Despite this strength and durability, this form is too modular for what I am trying to create in this project. Therefore I will use this form for as test pieces for glazing and development.

Hexadecimal London Tube Map Colours

LINE	TRUE HEXADECIMAL
Bakerloo	#B36305
Central	#E32017
Circle	#FFD300
District	#00782A
Hammersmith and City	#F3A9BB
Jubilee	#A0A5A9
Metropolitan	#9B0056
Northern	#000000
Piccadilly	#003688
Victoria	#0098D4
Waterloo and City	#95CDBA
DLR	#00A4A7
Overground	#EE7C0E
Tramlink	#84B817

These hexadecimal numbers have helped me identify and choose the correct glaze mixes and stains to obtain the true colours of the tube network.

Each colour is truly identifiable, the colours I create must be true, and match.

I have struggled to date to identify the colours as every means of publishing the colours vary in print, on screen and online.

Glaze Mixes

							130g Wet Slip = 100g Dry Weight				
Code	MFR Code	Glaze Colour	Glaze %	Glaze MFR	Base Glaze	Code	MFR Code	Glaze Colour	Glaze %	Glaze MFR	Base Glaze
292	NC029	CACTUS	2	SCARVA NANO	P2027	RIO1	N/A	RED IRON OXIDE	1	N/A	P2027
293	NC029	CACTUS	3	SCARVA NANO	P2027	RIO4	N/A	RED IRON OXIDE	4	N/A	P2027
296	NC029	CACTUS	6	SCARVA NANO	P2027	RIO5	N/A	RED IRON OXIDE	10	N/A	P2027
442	NC044	ROYAL BLUE	2	SCARVA NANO	P2027	SR10	N/A	SIGNAL RED STAIN	20	N/A	P2027
443	NC044	ROYAL BLUE	3	SCARVA NANO	P2027	SR2	N/A	SIGNAL RED STAIN	2	N/A	P2027
446	NC044	ROYAL BLUE	6	SCARVA NANO	P2027	SR5	N/A	SIGNAL RED STAIN	6	N/A	P2027
112	NC011	CHERRY	2	SCARVA NANO	P2027	TR10	N/A	TRUE RED STAIN	10	N/A	P2027
113	NC011	CHERRY	3	SCARVA NANO	P2027	TR2	N/A	TRUE RED STAIN	2	N/A	P2027
116	NC011	CHERRY	6	SCARVA NANO	P2027	TR5	N/A	TRUE RED STAIN	5	N/A	P2027
542	NC054	PINK	2	SCARVA NANO	P2027	TRQ 10	N/A	TURQUIOSE STAIN	5	N/A	P2027
543	NC054	PINK	3	SCARVA NANO	P2027	EG2	N/A	EGG YELLOW STAIN	2	N/A	P2027
546	NC054	PINK	6	SCARVA NANO	P2027	EG5	N/A	EGG YELLOW STAIN	5	N/A	P2027
582	NC058	PLUM	2	SCARVA NANO	P2027	EG10	N/A	EGG YELLOW STAIN	10	N/A	P2027
583	NC058	PLUM	3	SCARVA NANO	P2027	BO5	N/A	BRIGHT ORANGE STAIN	5	N/A	P2027
586	NC058	PLUM	6	SCARVA NANO	P2027	SL5	N/A	SLATE GREY STAIN	5	N/A	P2027
172	NC017	LEMON ZEST	2	SCARVA NANO	P2027	BIO2	N/A	BLACK IRON OXIDE	2	N/A	P2027
173	NC017	LEMON ZEST	3	SCARVA NANO	P2027	BIO5	N/A	BLACK IRON OXIDE	5	N/A	P2027
176	NC017	LEMON ZEST	6	SCARVA NANO	P2027	BIO10	N/A	BLACK IRON OXIDE	10	N/A	P2027
6010	NC060	GRANITE	10	SCARVA NANO	P2027	CO2	N/A	COBALT OXIDE	2	N/A	P2027
3810	NC038	MALIBU	10	SCARVA NANO	P2027	CO5	N/A	COBALT OXIDE	5	N/A	P2027
64210	6242	BERMUDA	10	SCARVA MASON	P2027	CO10	N/A	COBALT OXIDE	10	N/A	P2027
						HTR2	N/A	HIGH TEMP RED	2	N/A	P2027
						HTR5	N/A	HIGH TEMP RED	5	N/A	P2027
						HTR10	N/A	HIGH TEMP RED	10	N/A	P2027
						VP2	N/A	VANADIUM PENTOXIDE	2	N/A	P2027
						VP5	N/A	VANADIUM PENTOXIDE	5	N/A	P2027
						VP10	N/A	VANADIUM PENTOXIDE	10	N/A	P2027
						PBS10	N/A	PITCH BLACK STAIN	10	N/A	P2027
						TQS10	N/A	TURQUIOSE GREEN STRAIN	10	N/A	P2027
						YS2	N/A	YELLOW STAIN	2	N/A	P2027
						YS5	N/A	YELLOW STAIN	5	N/A	P2027
						YS10	N/A	YELLOW STAIN	10	N/A	50 P2027

Glaze Mix Test Tiles





Solid Glaze Mix Tests – Spray Gun





District line – Hammersmith & City Line – Circle Line – Piccadilly Line – Central Line



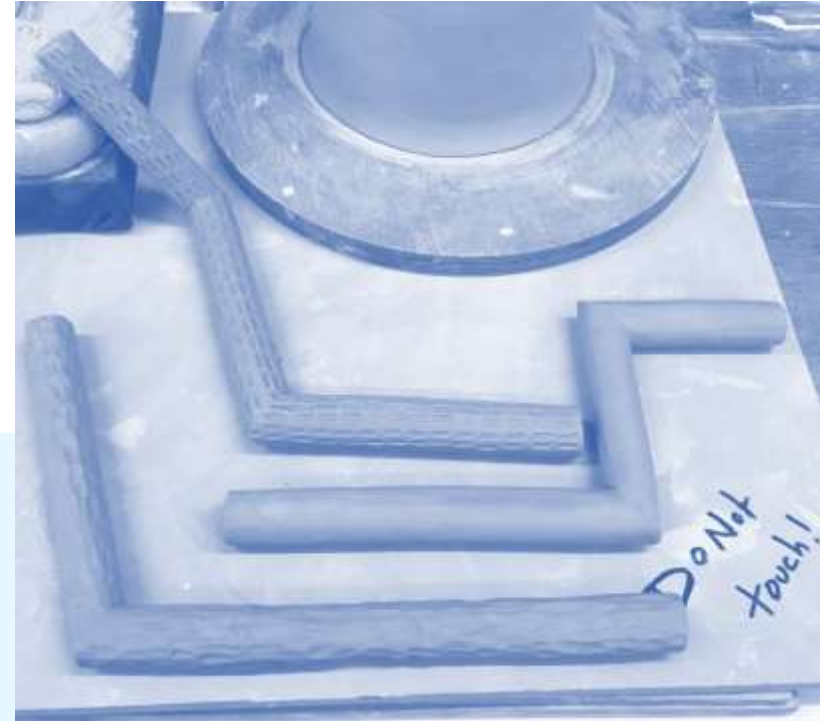
London Underground Vessel, Glaze before and after firing (Central Line)



Final Glaze Test Results



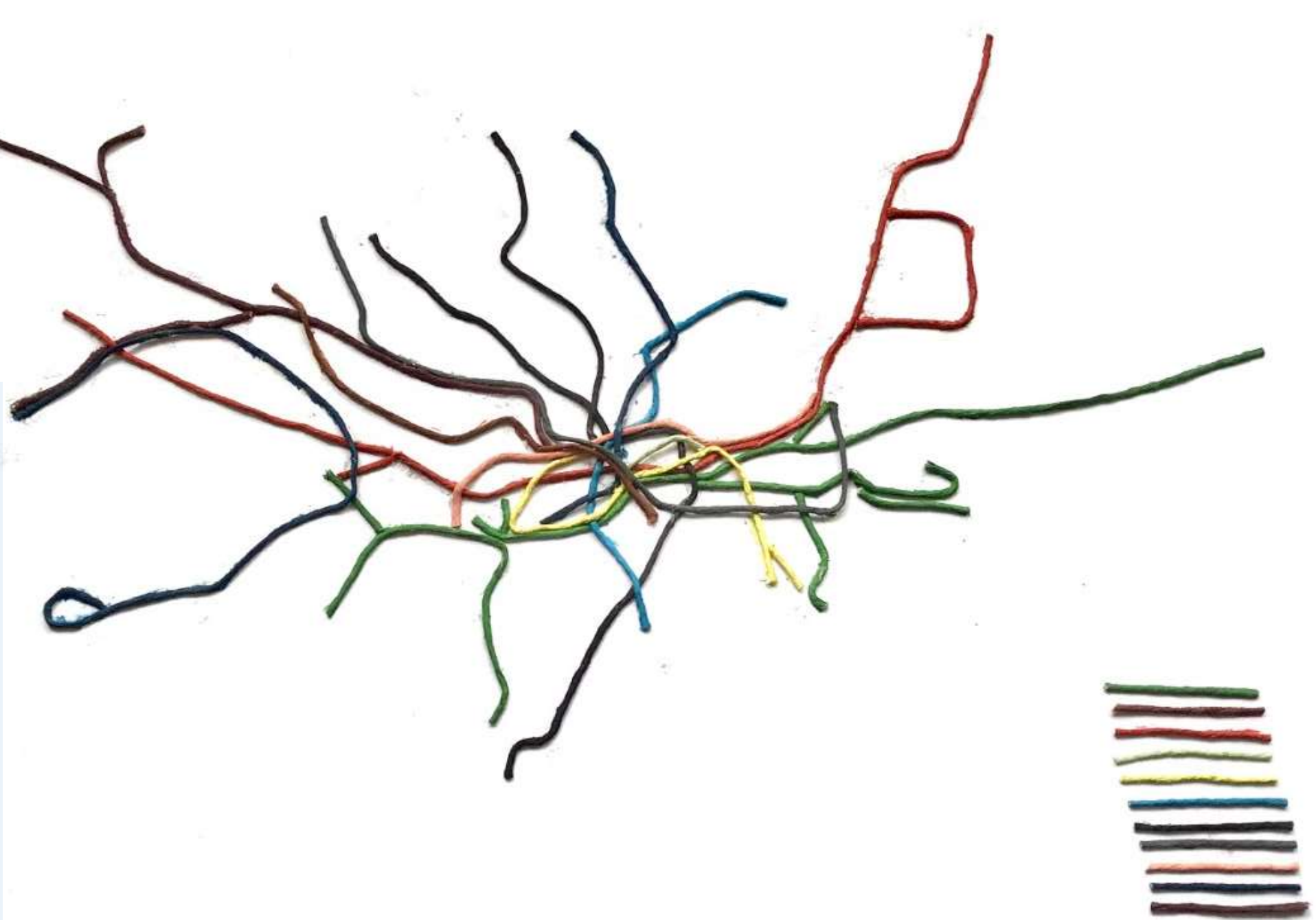
Textured Tube Tests

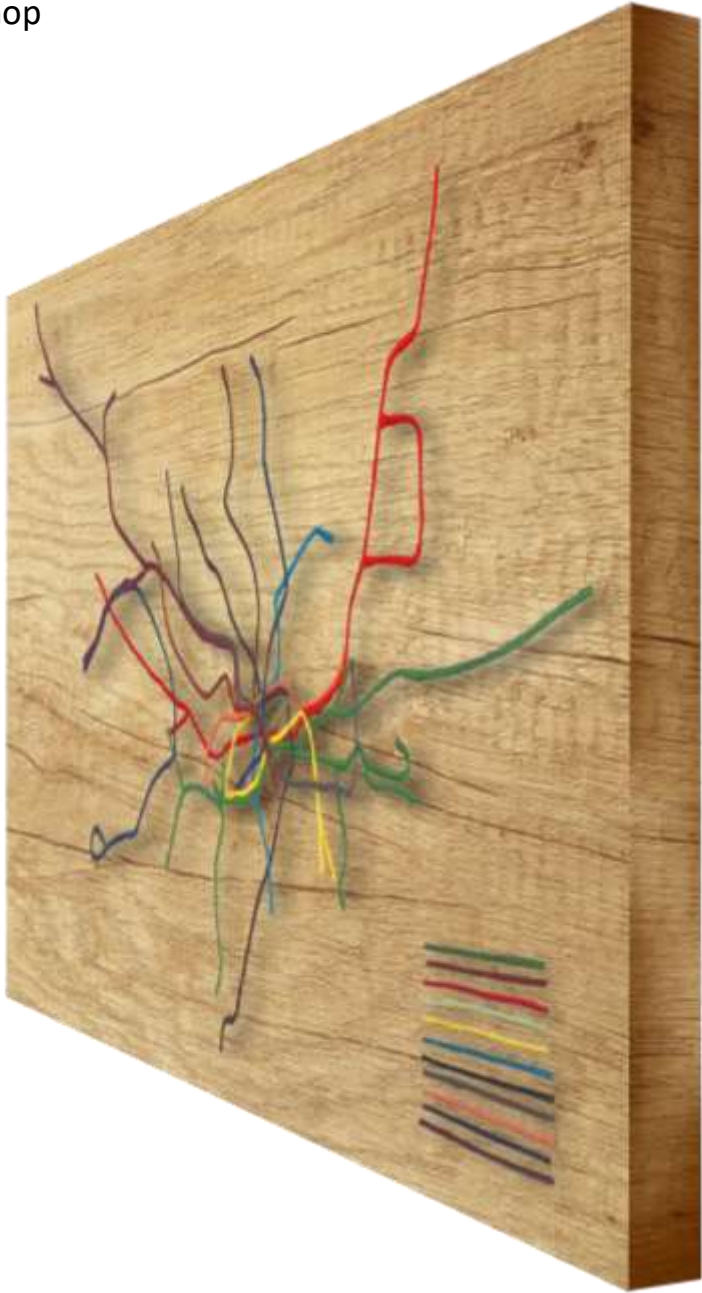


The textures work well on these small scale tubes, I will upscale these to include them on the larger vessels. These textures are some of the textures I am recreating from my travels on the London Underground, they will be relevant to each line. Sadly, the small scale tubes do not lend themselves to the fluidity of the LONDON underground TUBE network in this form.

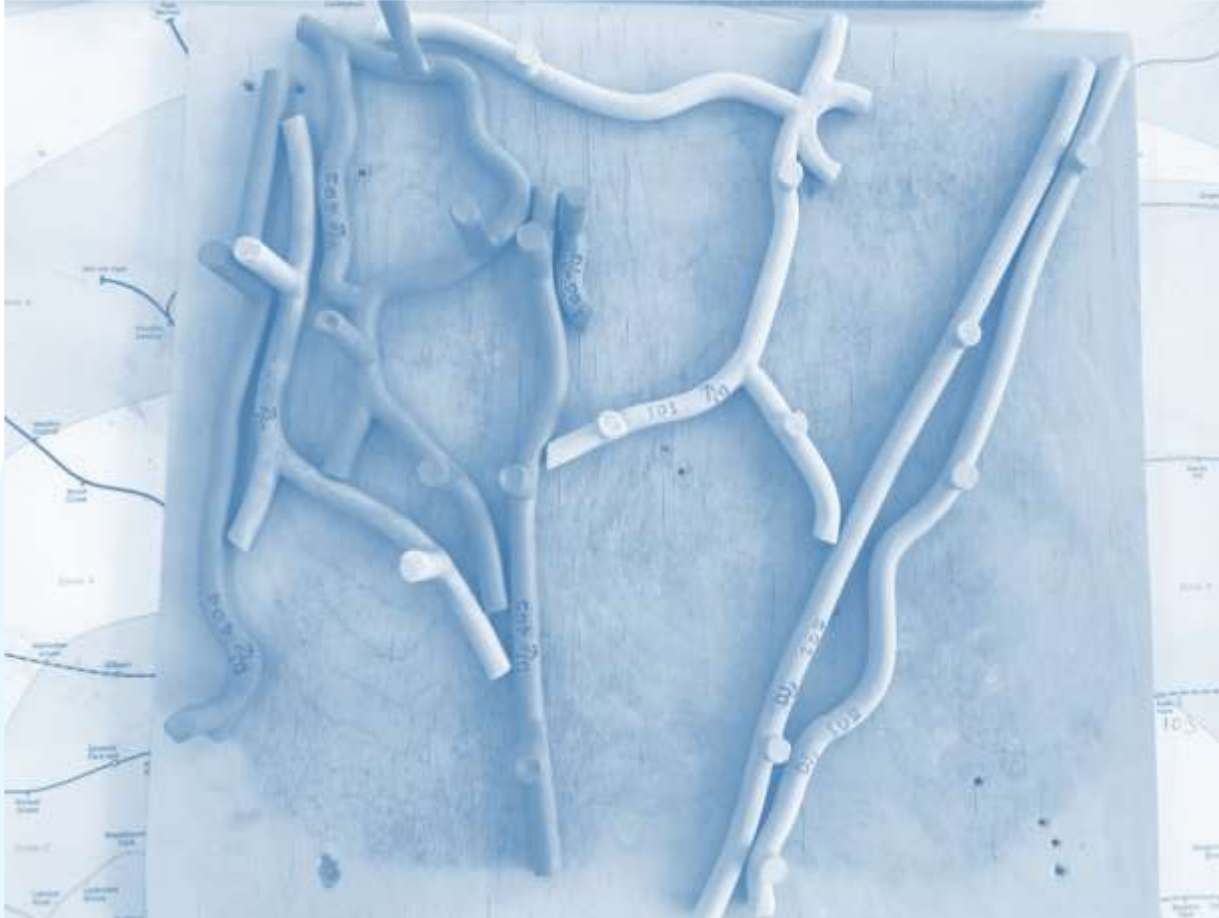
This is a geographically correct plan of the London Underground Tube network. I aim to recreate this, by extruding clay, and mounting it on a wooden board on a large scale, 200x120cm.

Made from household string on white card, each piece is colour matched and painted to the same colour as each tube line as shown in the key, on the right.





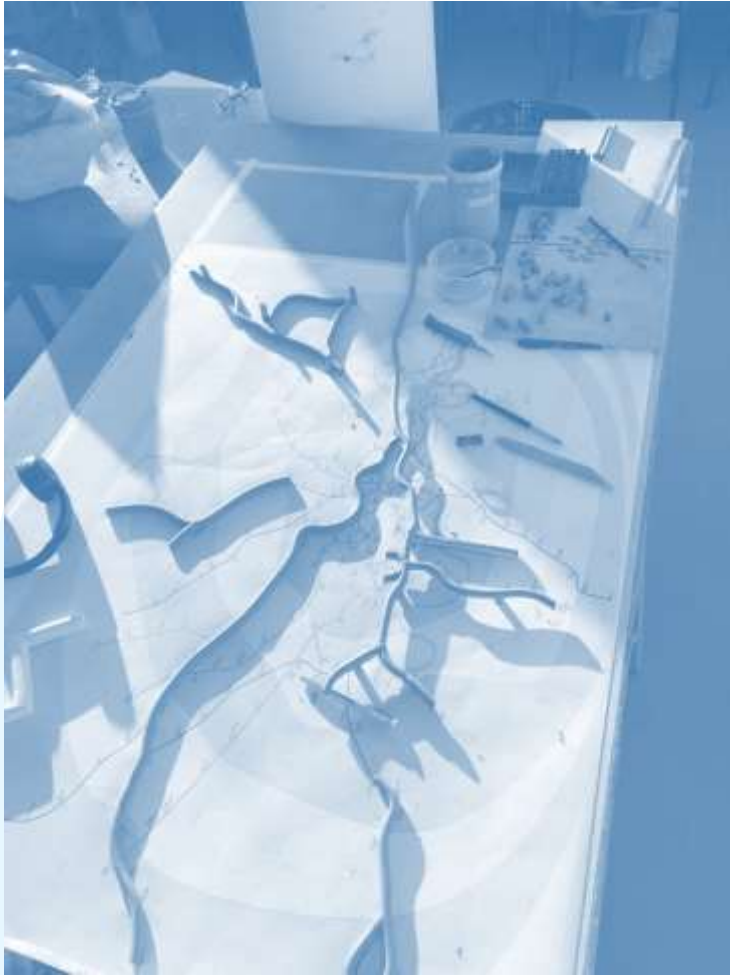
Underground Map Test Pieces



This numbering will help me identify which piece goes where on the map when assembling the final piece.

This smaller tubing is much more fluid and meets my needs and ambitions of creating a geographically accurate tube map.

London Underground Map Planning

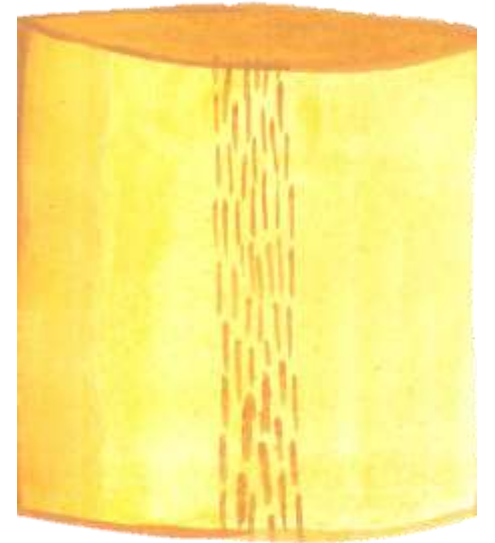
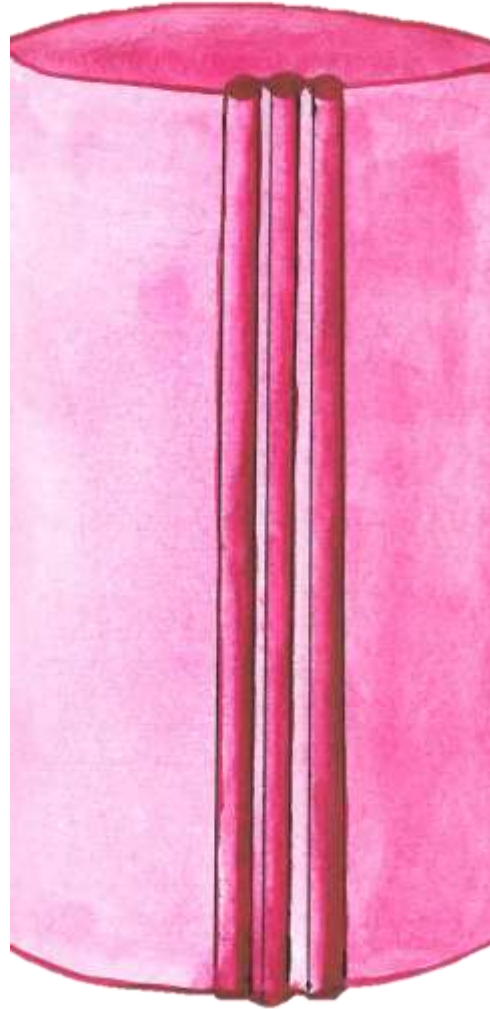
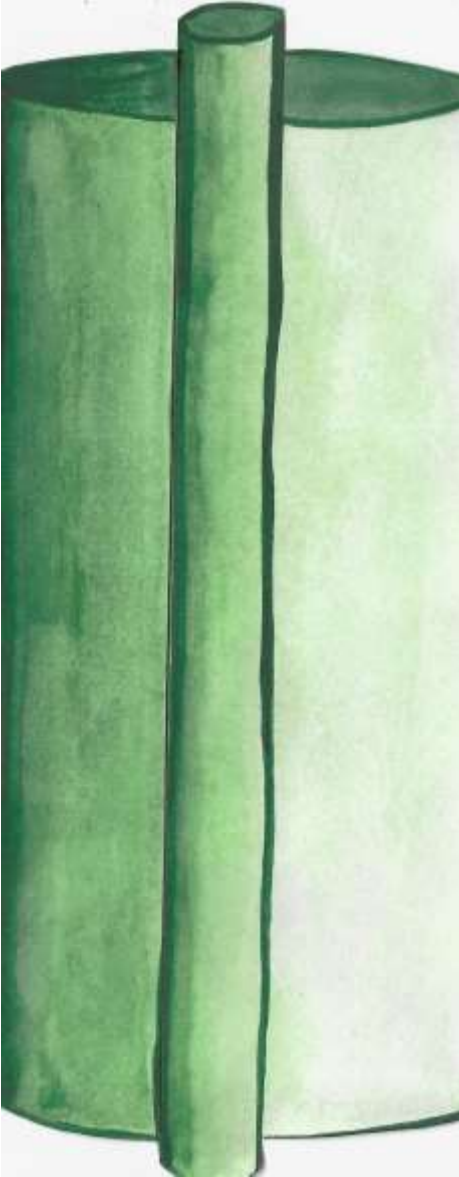


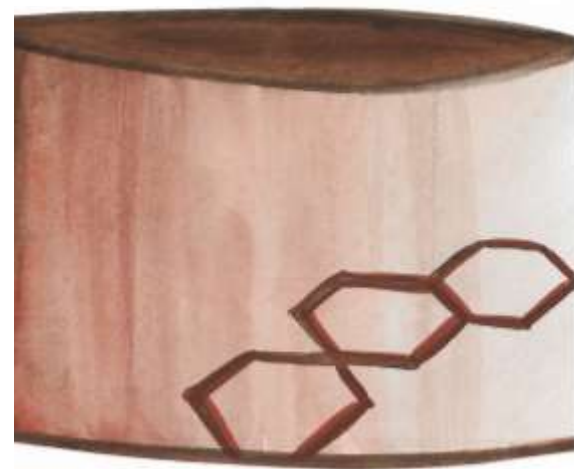
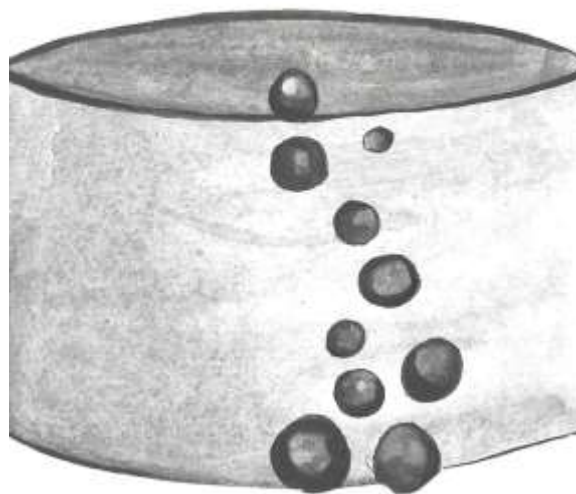


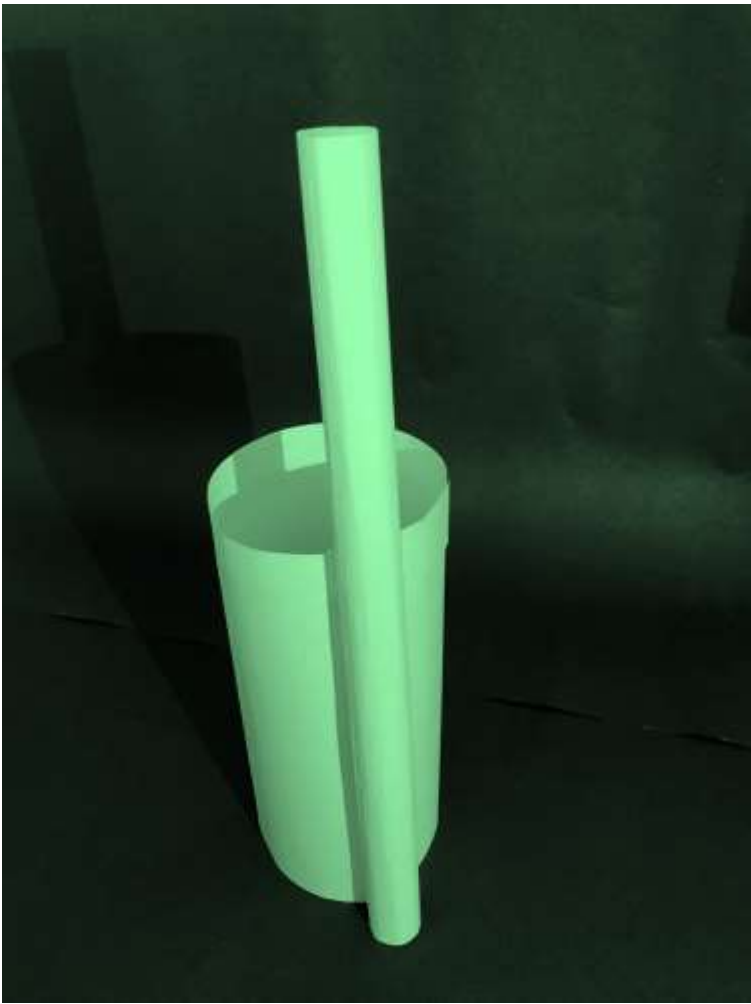
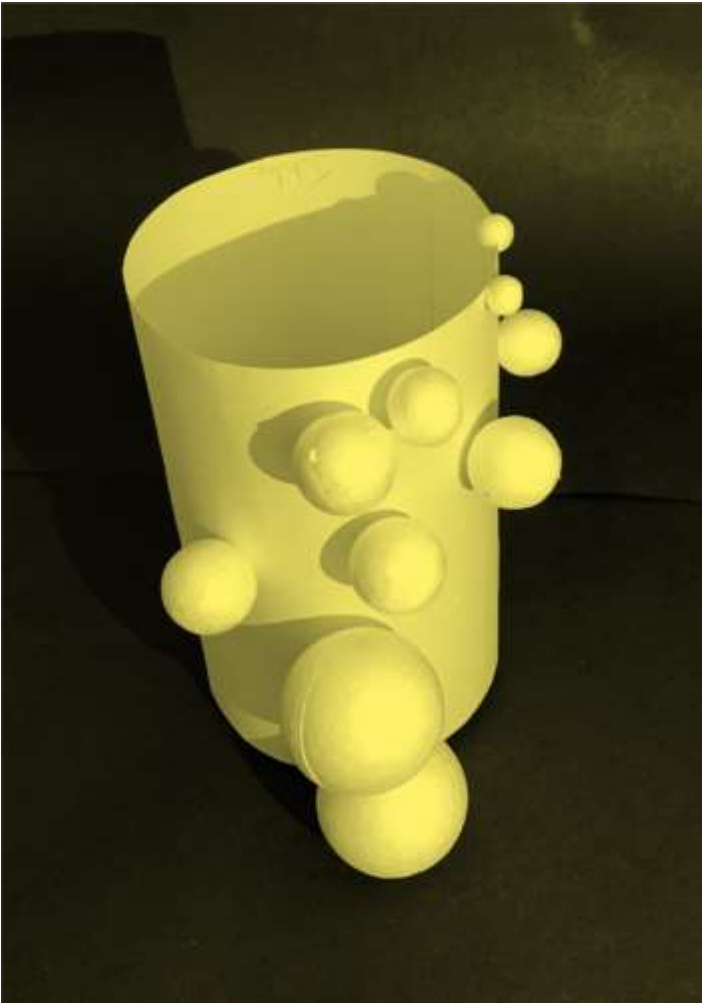


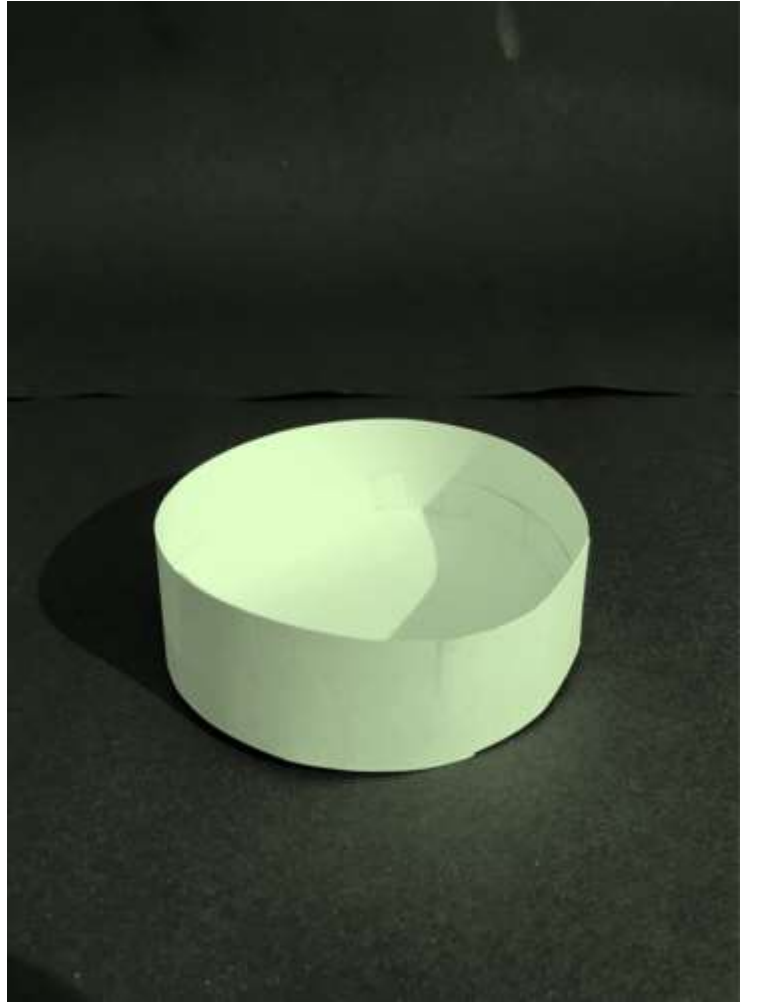
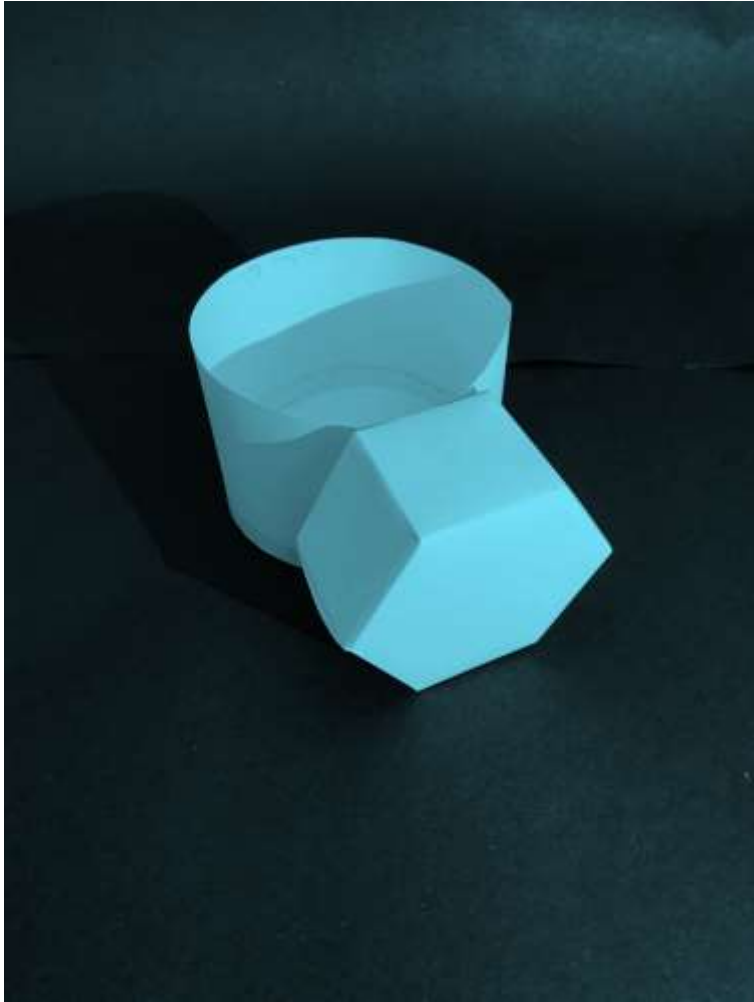


London Underground Vessel in Watercolour



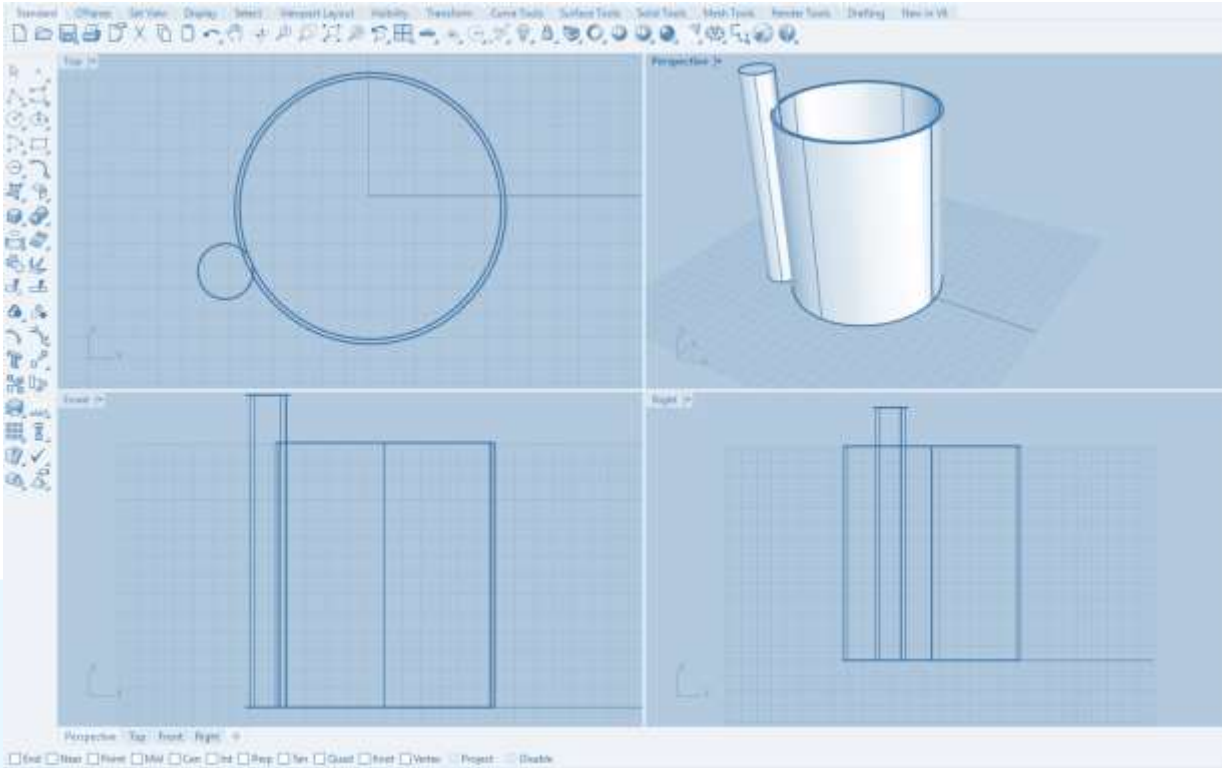
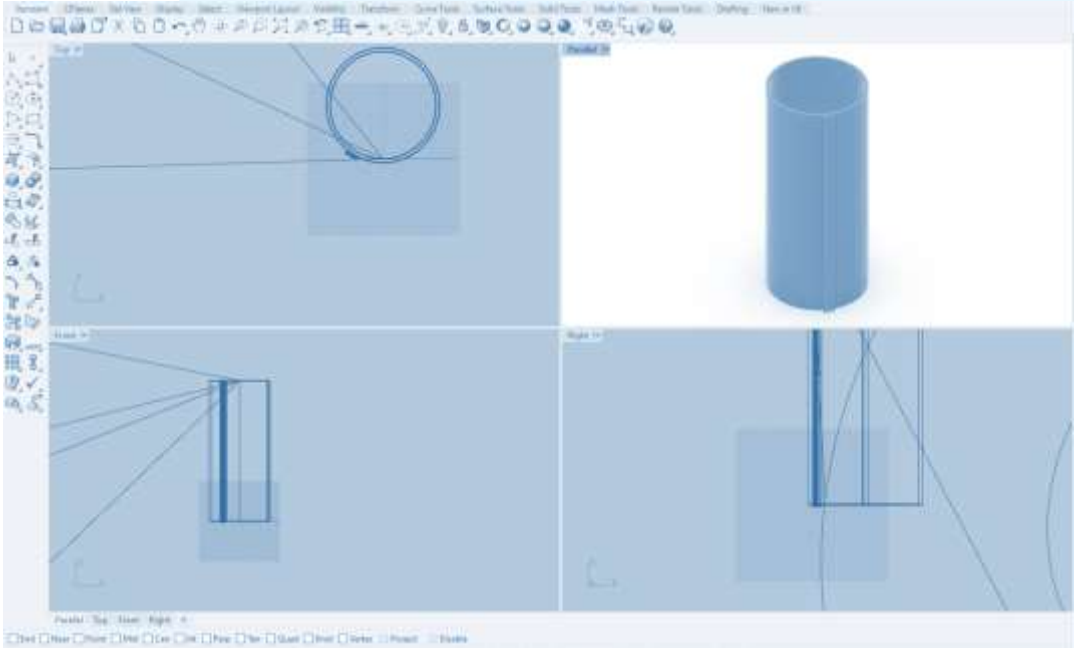


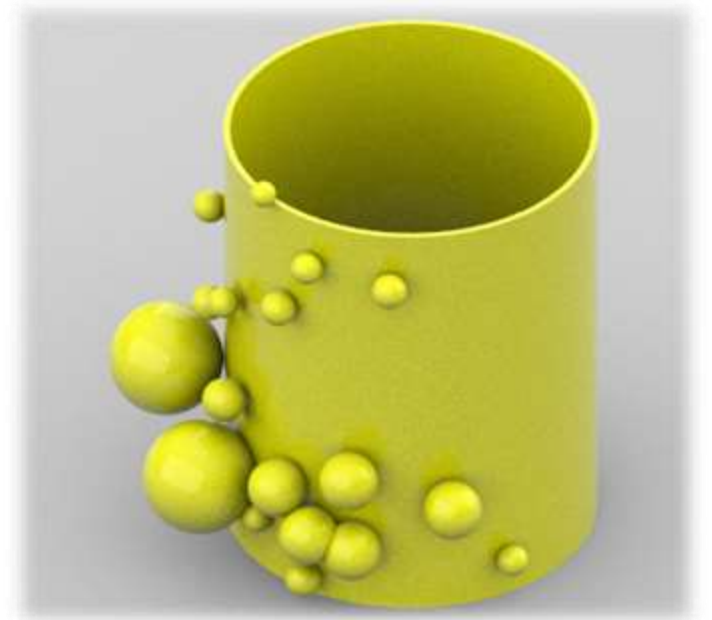
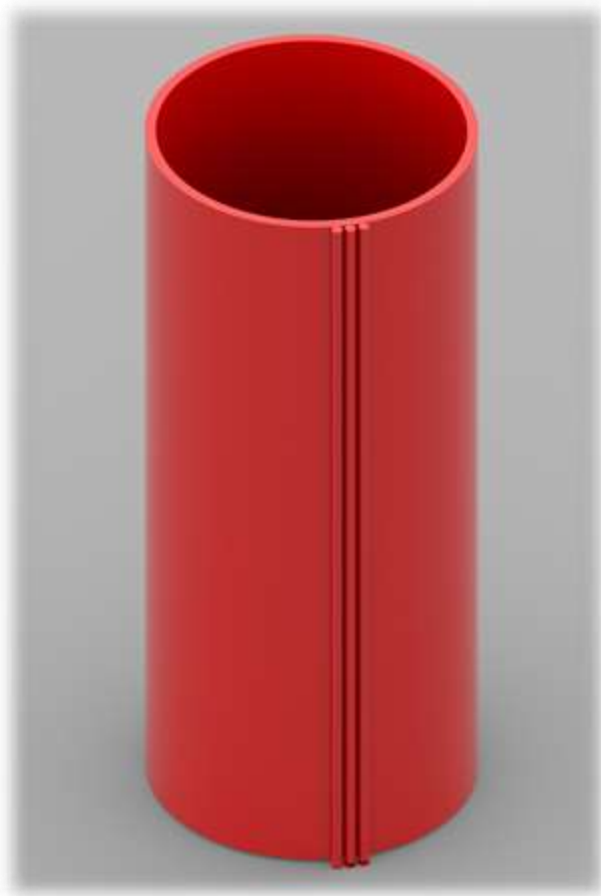






London Underground Vessel Plans in Rhino3D





These rendered 3D files are ready and waiting to be sent for 3D printing. The benefits of designing large vessels in this way is that you can see a scaled image similar to a ceramic final piece. These images show a true representation of how I could produce these vessels in clay. I would aim to slab and hand build these on a large scale.

This is my first attempt at the large scale vessel in clay. This large scale vessel proved difficult to build due to the size of the slabs, each piece although 60x30cm proved to small to achieve the taller vessel in one go. This vessel built from 3 large slabs totaling 70cm tall. This sadly was unable to hold its own form due to the 'state' of the clay, I should have left the clay to dry more before constructing this large piece.



The finish achieved in this piece was not to the standard I had intended. I will need to re-construct this in a larger slab of clay to achieve an even finish, to enable the form to hold its own body.

The tube representing a 'tunnel' on the front of the vessel was extruded, this was attached using slurry but again the form was too wet and didn't hold its own body.



Reflection of Research

Conclusion of Research

To conclude this body of research, I have overcome technical difficulties and process anomalies while embracing the method and experiences I have encountered.

My research has encompassed physical journeys where I documented the experience in; frottage, photography, drawing, modelmaking and scrap booking. This 'data' then allowed me to further research a location, experience and the textures when I returned to the studio.

Each journey impacts life itself, emotionally and sometimes physically. You are continually experiencing change and evolution and sometimes decay, of which I hope to have captured in my research.

Outcomes

- The scale of the vessels proved difficult in the studio, the equipment and space and my lack of skills in this area meant it took many attempts for the clay body to hold its own form.
- I could have thrown the vessels on this scale, but my throwing skills prevented this. I would have attempted to work on this area further given more time to develop this skillset.
- I would have preferred to use oak over pine for the tube cradles, due to its strength and structural qualities.
- Glaze mixing was successful and I achieved the correct hexadecimal colours after vast research.
- The slab built vessels took a long time to dry, the clay would have benefited from being able to air dry for longer before being manipulated and the vessels being built.
- The former I used should have been custom built or ordered but the cost implications prevented this. Instead I used a 50L bucket which allowed movement during the vessels construction adding stress on the clay.
- The tube line map worked well but the mounting process was difficult to overcome.
- The oak board was extremely heavy to mount and move, making sale and hanging potentially difficult.

Processes and Methods

- Frottage
- Photography
- Drawing
- Mixed media
- 3D Software Model Design
- Ceramics
 - Extrusion
 - Slip casting
 - Mold making
 - Press molding
 - Glazing
 - Spraying
 - Painting
 - Dipping
 - Colouring Slips
 - Hand building
 - Slab rolling
 - Throwing
- Paper Maquettes
- Painting
- Woodwork

There is still room for improvement within many of these areas but I feel my knowledge and experience is strong in terms of ceramics, particularly slip casting, glazing and combining ceramics and wood in sculpture.

I would agree that my 3D software experience is lacking and I believe this shows in my Rhino 3D designs for the large vessels, also within the photoshop image of the underground map design. These are areas I will continue to develop where possible.

Another areas of weakness for me is the drawing on paper during the design stages of work, I feel more comfortable making maquettes and models to scale. These for me, are a true reflection of what I can create with ceramics. I sometimes struggle converting the two dimensional to the three dimensional.

Ceramics is an area I have confidence and passion, I enjoy pushing the material to explore its tolerances at each stage. My test pieces reflect this and show how much you can push a material to generate or replicate a finish or texture.

Things I have learnt / experimental, creative enquiry

I have gained the insight behind research, fully understanding the history and process of water, people, plants etc has helped me identify, how evolution supports survival. The terminology of evolution shared with journey both combine in this sense. Researching rail, water, road and air traffic networks alongside living organisms through botany and anthropology has sparked my interest to explore these areas through mediums outside of my comfort zone and skillset. While I have still enriched my ceramics knowledge, specifically with glazing and hand building large vessels and sculptures, I have also gained confidence in 3D software, model making, mixed media and carpentry within wood.

Each process I have undertaken has lead me to explore and research the parameters within my ability and the tooling and space within my environment. Pushing the tooling and space to maximise the quality, scale and delicacy of my sculptures. I have overcome the need for my work to be functional, and enjoy the creative path my work has followed.

I enjoyed experimenting with botany and nature, pushing slips durability during the firing process has taught me to accept the end result and work with the material, rather than fight it. Clay can be a difficult material to process, dependant on your skill-set or which process you choose to take. Its aesthetic values are developed independently, my intentions to explore has lead to the research of how aesthetics relate to an environment and thus create an experience.