Unearthing Port Talbot

Contents

I have been researching and producing a body of work in relation to a town called Port Talbot. It is a working-class town in South Wales on the coast, home to the largest Steel Works in the UK owned by Tata Steel. The town has a rich natural landscape that is overlooked due to the dominance of the towns steel industry. The imposing presence of the Steel Works in the landscape gives it visual importance but without the surrounding natural environment it would not be present as it relies on resources such as the reservoirs, transport links and the sea.

I am drawing on my family's knowledge of the area as my dads side has lived there over many generations, so I have regularly visited Port Talbot. During this project I have visited Port Talbot on three different occasions in the Summer, Winter and Spring. With my grandparents having passed it has meant I have been camping and living in other accommodation on site to carry out my research. I had a tour around the steel works in Port Talbot for a day and also a coal mine in Blaenafon. I have gained a deeper insight into the industrial processes of steel and the importance of Port Talbot's industrial existence to the community. My Grandad also worked at the Steel Works from 1946 until 1991 - it played an important part in my family's lives as well as many other families in the area.

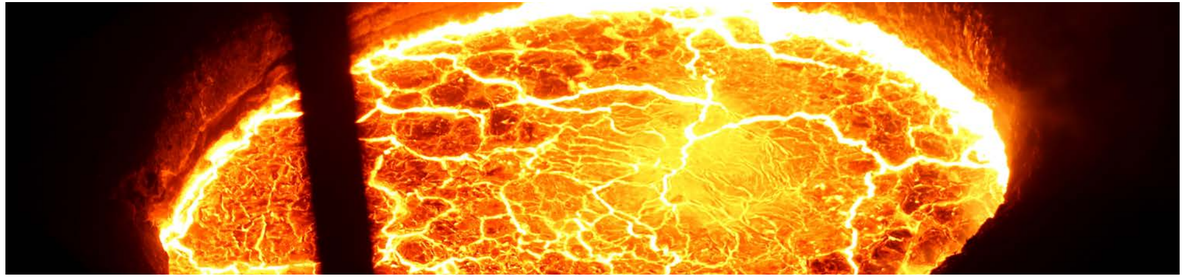
Within my work, I hope to capture the beauty that I have been exposed to, showing the true character of Port Talbot lying beneath the surface. It is the relationship of human and natural environment that has inspired me to create this body of work that reflects on the notion of place.

Grandparents Ron and Barbara Fuller posed in the natural landscape of Port Talbot.

The Steel Works

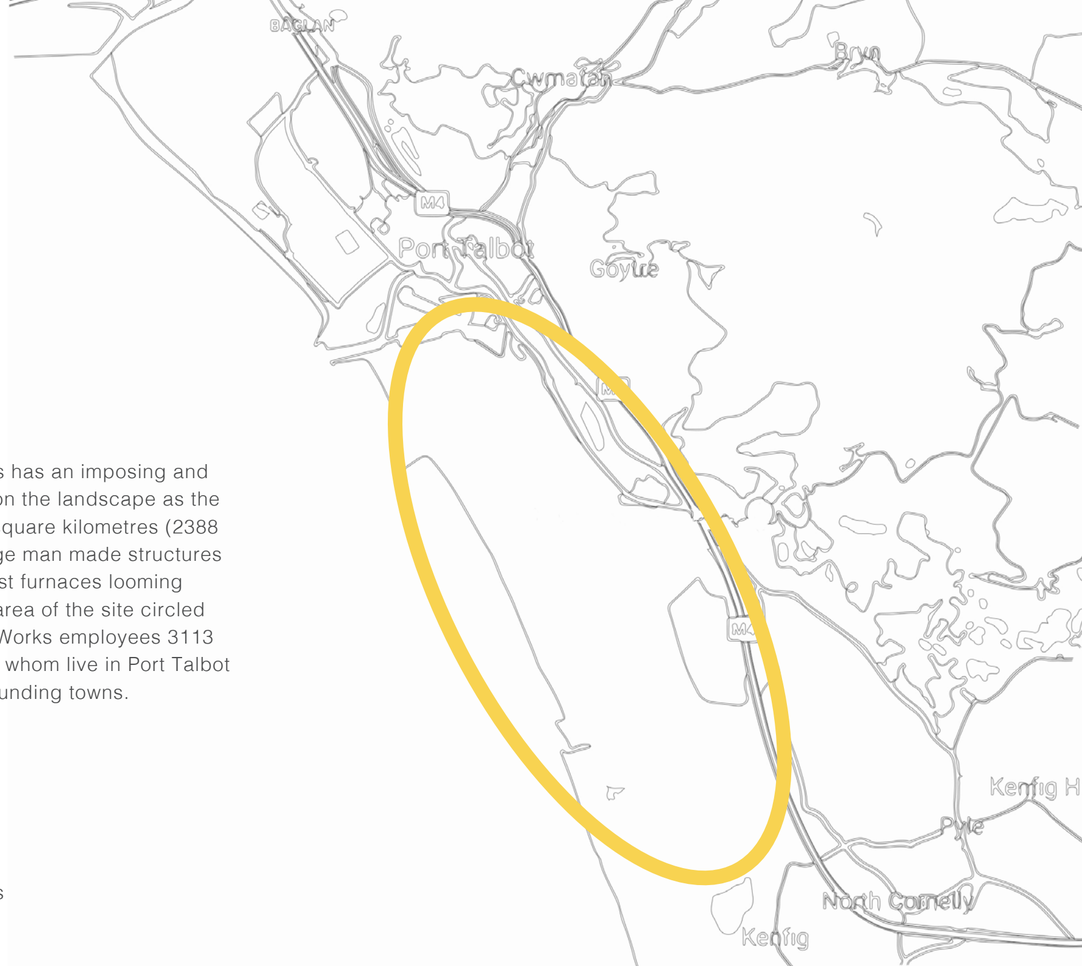
Port Talbot Steel Works is owned by Tata Steel and is the largest Steel Works in the UK. This factory has a significant presence visually as well as financially to the community of Port Talbot and wider. I felt it was vital for my research for me to gain access to the site as it has such a presence in the local community. Through a series of emailing and calling I was finally able to gain a contact within the company, this being the Technical Director Jon Ferriman. I managed to arrange a visit to the works with his PA Jane Ogilvie.

I visited the works on the 29th August 2017, where I met and spoke to Jon Ferriman about production methods, its relationship with the community and its impact to the UK economically. After a coffee with him I was then introduced to Bob Emmett who is retired as a steel worker now but still works part time to show visitors around the works. Bob showed me around the site starting from the raw materials the steel is made from, all the way through to the finished products ready to be transported to customers. This guided tour was a great insight into learning the processes used in the production of steel and looking at the visual industrial aesthetic of the site.



The Steel Works has an imposing and vast presence on the landscape as the site covers 13 square kilometres (2388 acres), with huge man made structures such as the blast furnaces looming over the town (area of the site circled in yellow). The Works employees 3113 people many of whom live in Port Talbot and other surrounding towns.

The Steel Works



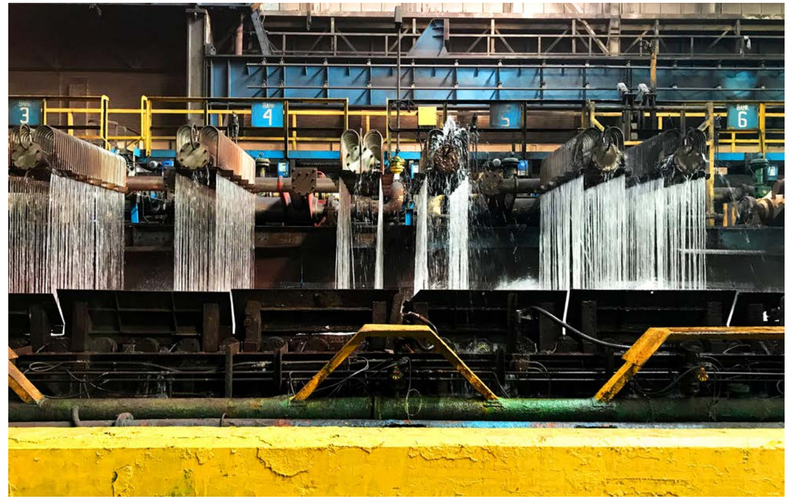
The location for the Steel Works is extremely important as it relies on natural resources such as the deep water harbour to receive all raw materials which arrive from around the world. It also relies on three waters sources (Reservoirs between the Works and the M4, on-site lagoon and the River Afan to the west side of the Works) and transport links such as the M4 and train lines running through Port Talbot for transporting products.

The deep water harbour at the Steel Works.

Trains lines running directly through the steel works to transport finished products to other locations.

The M4 passing through Port Talbot.

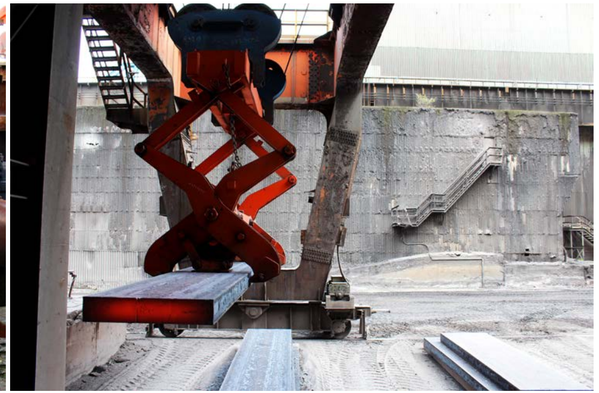
The River Afan running down from the surrounding mountains through the town to where the Steel Works collects the water.



Water being used in the hot rolling mill to cool sheet steel down.

The Works has a tremendous impact not just on the surrounding area but plays a major role in the Welsh economy; it is one of the largest employers in Wales, it is the Welsh Governments key anchor company and is the largest private sector investor in Wales. Approximately 54% of Port Talbot's material is used in the UK and the works currently produces 3.7 millions tonnes of steel each year with a maximum capacity to produce 5 million tonnes a year.

Finished steel slab being rolled out of part of the factory known as the heavy end of the steel production.



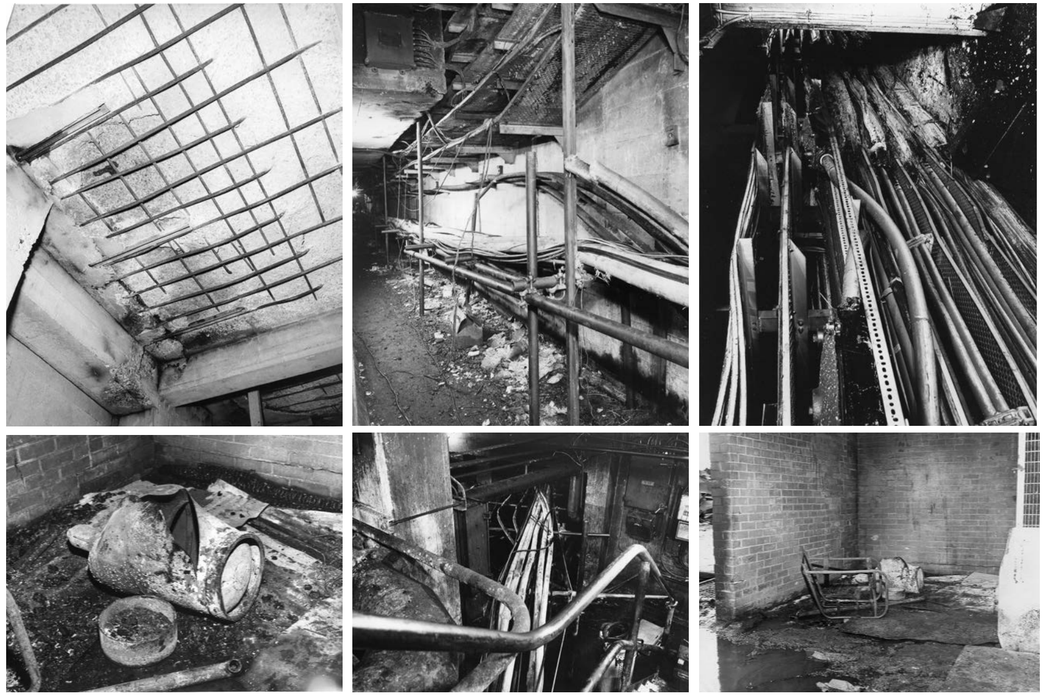
A crane moving the finished steel slab ready for collection.

The Steel Works are and has been a huge part of Port Talbot's history and landscape. It played an important part in my family's lives as well as many other families within the area and still does today. My grandad worked at the steel works from 1946 until 1991 as an Electrical Engineer.

These images show my granddad Ron Fuller as an apprentice at the Steel Works with other apprentices.

Ron Fuller second row up at the end.

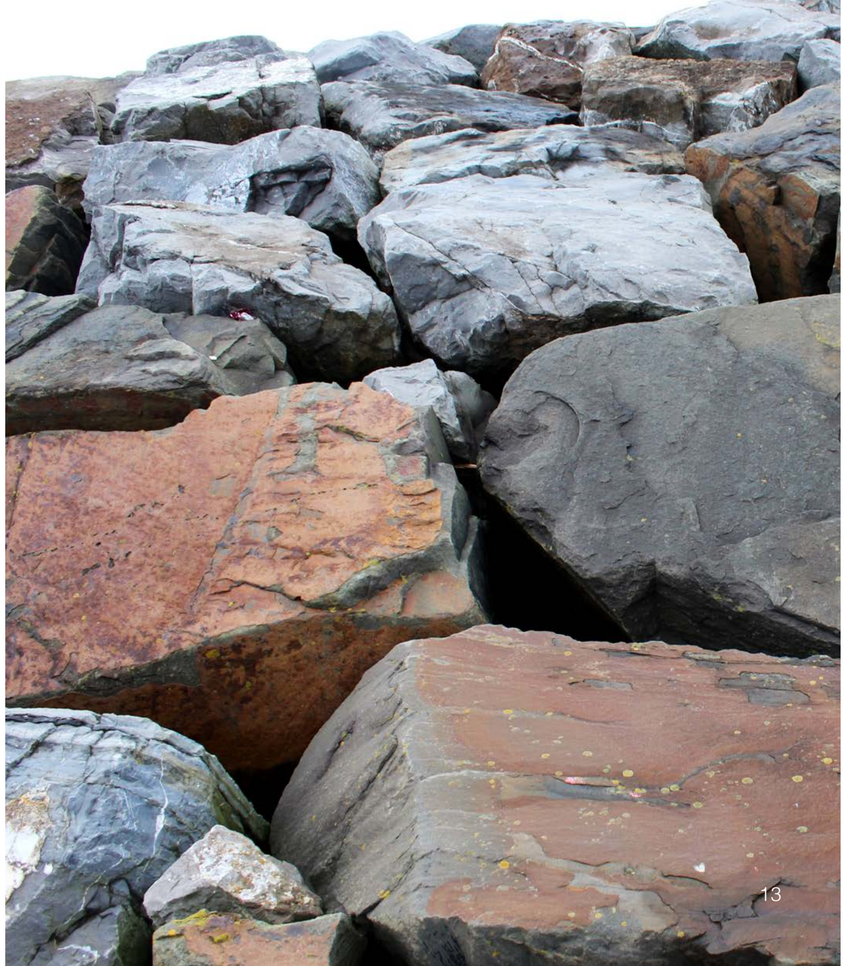
Ron Fuller top left.



Photos of a fire that took place in the Steel Works while my grandad worked there. He was called out to inspect the damage and the cause of the fire.

The Natural Landscape

I have visited Port Talbot for my project on three different occasions to provide my research with a wealth of first hand inspiration in order for me to build my knowledge of the location and reflect on it as accurately and as sensitively as possible. I have focused on a variety of natural locations which I believe to be significant to Port Talbot because they are visually rich and have a tremendous amount of history that links to the industrial landscape. These locations are Brombil Reservoir, Cwmwernderi Reservoir, Kenfig / Sker Beach and Aberavon Beach. By doing multiple trips it gave me the chance to compare how each location changed over the course of the year from season to season.

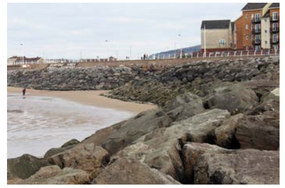












Aberavon Beach -

Aberavon Beach is a popular area for locals to walk and explore. It is a three mile long beach with two miles of it being a promenade which means its easily accessible. The beach is sandwiched between where the mouth of the River Afan and the River Neath meet the sea. Where the River Afan meets the sea you can sea the Steel Works clearly and also its deep water harbour. This end of the beach is very popular as it is nearer the town. Further up the beach nearer to the mouth of the River Neath it starts to become more remote becoming less accessible due to the long walk and sand dunes on the banks.

Brombil Reservoir -

Brombil is a hidden reservoir which is known by local people and its exact whereabouts is starting to fade. This is evident as speaking to my father he knows many people in the area that do not know of its location and he has seen the area become increasingly more overgrown since his childhood which is a sign of less people journeying up the mountain to it. The walk up to the Reservoir is a steady incline up alongside a river. Once you reach it you are confronted with a bright blue lagoon of water that changes colour depending on how the sun hits it.

In 1814 a small coal mine opened in Brombil Valley to help the mine at Goytre (Cwmwernderi). The same vein (sheet-like body of crystallised minerals) was worked at Brombil as at Goytre, the miners at both sites worked to meet each other. This linked the mine at Brombil to the mine at Goytre. Eventually Brombil acted as an airway for the Goytre mine. The coal that was extracted was used and carried to a local copper works in Taibach (an area of Port Talbot).






Cwmwernderi Reservoir -

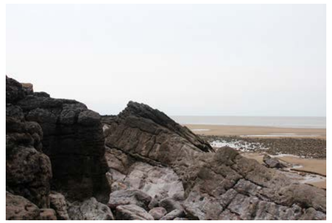
Cwmwernderi Reservoir is located in Goytre and has been named the The Blue Pool or The Blanky by local residents. The area hosted Cwmwernderi Colliery which closed in 1927 but remains of the mining industry can still be seen on the walk up to it. The Reservoir opened in 1902 to supply water to Port Talbot, the expansive pool of water still exists and clears a vast open space in the forest.

Kenfig / Sker Beach -

Kenfig is a national nature reserve on the outskirts of Port Talbot. It is one of Wales' top sand dune reserves. Many species of plants, insects and birds rely on this coastal environment for their survival. The area possesses an extensive plain of sand dunes which eventually leads to the coastal headland known as Sker Beach. To the west of Kenfig the industrial presence of Port Talbot's Steel Works looms in the horizon. This blunt contrast of humans and nature living side by side is a simple reminder of our cohabitation with our environment.









Location Colour palettes -

I produced a series of compositions from my own photos of the different locations that focus on the colours and texture of the landscape at that time of year. From there I took the five main colours that are in each picture, seen in the top left hand side.

Aberavon Beach (31st August 2017)

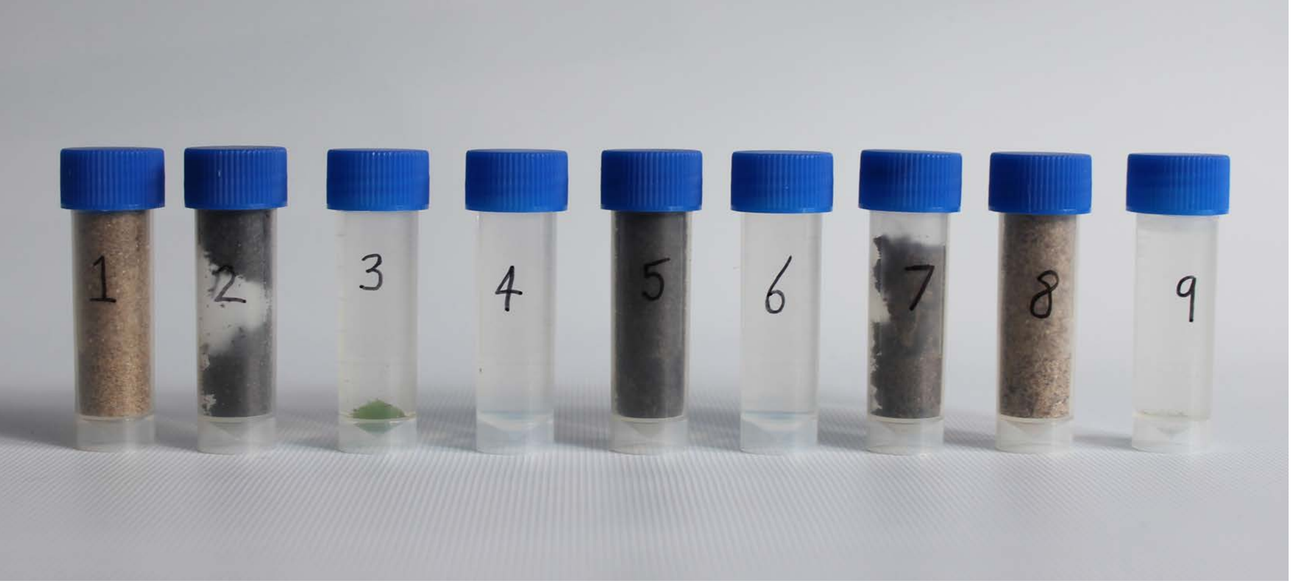
Brombil Reservoir (30th August 2017)

Cwmwernderi Reservoir (20th December 2017)

Kenfig (22nd December 2017)

Alternative Research Methods

The use of photography and drawing plays a vital role in my research as they help to capture the physical environment and my experience in the landscape. However I have used a range of other experimental research methods to gain an insight into Port Talbot from different perspectives as opposed to just using traditional ways of recording information. Some of the research I have included in this section are scientific experiments, working on site, leaving my work in the landscape and creating drawings through wind.



Soil, sand and water samples -

I took samples from the ground from four different locations in Port Talbot. The nine samples I collected contain a variety of materials such as salt water, soil, sand and fresh water. This method of research provided me the chance to gain a small close up inspection of what was in the landscape and how organic matter differed in each location.

Below is a list of the nine samples I took, detailing the location they were taken from, date and what the sample is containing:

1- Kenfig- sand sample, Latitude: 51.518972 / Longitude: -3.747327 (28/08/17)

2- Kenfig- soil sample, Latitude: 51.511452 / Longitude: -3.739712 (28/08/17)

3- Kenfig- fresh water sample (pond), Latitude: 51.516385 / Longitude: -3.736065 (28/08/17)

4- Brombil Reservoir- fresh water sample, Latitude: 51.577066 / Longitude: -3.736598 (30/08/17)

5- Brombil Reservoir- soil sample, Latitude: 51.577303 / Longitude: -3.736755 (30/08/17)

6- Cwmwernderi Reservoir- fresh water sample, Latitude: 51.598571 / Longitude: -3.711713 (30/08/17)

7- Cwmwernderi Reservoir- soil sample, Latitude: 51.598540 / Longitude: -3.711302 (30/08/17)

9- Aberavon Beach- salt water sample, Latitude: 51.605005 / Longitude: -3.839854 (31/08/17)

Sun light, temperature, water content and PH -

I used this device to record sun light, temperature, water content and PH at four separate locations.

Sker Beach (Monday 28th August):

Stuck in sand
Latitude: 51.520094
Longitude: -3.754261
- Sun light: normal+
- Temperature: 25c
- Water content: Wet+
- PH: 7.5

Cwmwernderi Reservoir (Wednesday 30th August):

Stuck in soil
Latitude: 51.598119
Longitude: -3.710965
- Sun light: Normal
- Temperature: 18c
- Water content: Dry
- PH: 3.5

Stuck in water
Latitude: 51.598453
Longitude: -3.711245
- Sun light: Normal
- Temperature: 15c
- Water content: Wet
- PH: 4

Brombil Reservoir (Wednesday 30th August):

Stuck in soil
Latitude: 51.577159
Longitude: -3.736781
- Sun light: Normal
- Temperature: 19c
- Water content: Dry
- PH: 3.5

Stuck in water
Latitude: 51.577453
Longitude: -3.736745
- Sun light: Normal
- Temperature: 16c
- Water content: Wet
- PH: 5

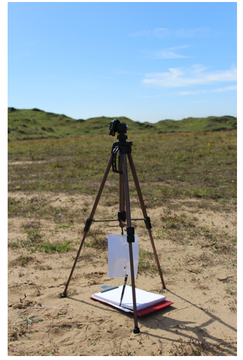
Aberavon Beach (Thursday 31st August):

Stuck in sand
Latitude: 51.608331
Longitude: -3.842481
- Sun light: High
- Temperature: 28c
- Water content: Dry+
- PH: 3.5

Wind drawings -

Using my camera tripod I attached a pen to a piece of paper using string that had been threaded through the paper and tied to the pen. The paper helped to catch the wind which moved the pen on the paper, creating abstract line drawings.

Cwmwernderi Reservoir
Latitude: 51.598083
Longitude: -3.711698



Kenfig:
Latitude: 51.519027
Longitude: -3.747057

Brombil Reservoir:
Latitude: 51.577256
Longitude:-3.736836

Line drawings created by the wind.

Quadrant -

I made a square wooden frame which I threw randomly three times at two different locations (Brombil Reservoir and Kenfig). This process of recording data is called a Quadrant. This allowed me to randomly select a small section of land to assess the local distribution of plants and other materials that were on the ground around me.

Latitude: 51.577198
Longitude: -3.736673

Latitude: 51.518670
Longitude: -3.746739

Latitude: 51.577207
Longitude: -3.736685

Textures -

Pushing clay onto different surfaces at Brombil Reservoir to transfer textures. This was a three dimensional technique used to reveal textures and patterns similar to graphite rubbings.

Making on site -

Working with clay on site in Port Talbot next to Brombil Reservoir, for example creating a pinch pot. I found this to be a useful exercise as this helped me to connect and respond with the landscape through clay. By making outside in this location was a great way to intuitively respond to the landscape. I also rolled the vessel in the ground to pick up texture and dirt from the site.



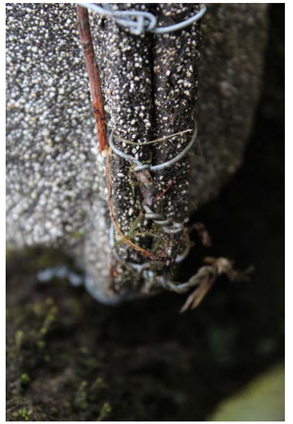

Experimenting with tying clay blocks to rope and throwing them into Cwmwernderi River. This was an enjoyable experience as it created unexpected forms by chance. I even ended up losing some of the pieces due to them ripping off the rope because of the force of the river. The water smashed the clay against rocks which changed the form and transferred texture.




Blow torching the clay pieces from the river to keep their forms so I could take them away with me. These responses to Port Talbot were created through natural processes using the river as my tool to sculpt the work.

Leaving work on site -

I experimented with leaving three pieces of work on site in Port Talbot at Brombil and Cwmwernderi Reservoirs. The idea was to return the work from where it was originally inspired from. I left them in December and returned in March to collect them. The pieces were fired up to stoneware temperatures of 1260 degrees so I did not expect the forms to change but perhaps the surfaces of the work would.



Photographs of the work in March after 3 months of them being on site. I found the pieces had collected dirt and debris that attached themselves to the work. The steel wire and bolts had also rusted in areas.

Material Collection and Testing

The various materials I have collected from Port Talbot help to inspire my work and root the objects that I make to the landscape. By using these materials it helps to create a narrative that is directly embedded within the artefacts that I make. Using these materials has required various testing and experimenting to see what results they provide.

The image on the left shows me collecting sea water from Aberavon Beach. The idea was to experiment with using this water in glaze recipes as the salt in the water may change the glazes. I also collected water from Cwmwernderi Reservoir but this is fresh water so I am not sure how much it would change my glazes due to it holding a similar chemical content to tap water.

I collected sand from Sker and Aberavon Beaches to experiment with adding sand to clay. The reason for adding the sand to the clay body (in my case modelling clay) was to strengthen it in order to hand-build more efficiently due to the extra grog. I tested the sand by adding 10% and 20% worth of sand to the clay. I found that 20% was the strongest and it also had a much richer and rougher surface. Sand blasting the tiles helped to reveal the quality the sand gave to the clay. The sand added black and brown speckles to the clay as well as having very small shiny speckles which I expect to be fine glass found in sand.

10% Sand

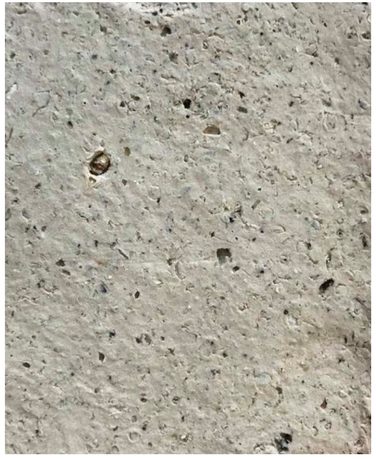
20% Sand

I discovered slag being washed up on Aberavon Beach from the Steel Works. Slag is a by product created when steel has been separated from its raw materials.

Unfired Fired

I decided to experiment with adding slag that I had collected from Aberavon Beach and adding it into glazes to see how it would affect the colouring and texture of the glaze. I added slag, as it was found in small particles, to a transparent stoneware glaze and dipped a test tile into it (SL1 tile). I also experimented with grinding the slag into a fine powder with a pestle and mortar and adding it to the same transparent stoneware glaze (SL2 tile). I fired both the tiles to 1260 degrees but found that no significant change took place. The only change was that tile SL1 had a slight brown speckling.

I conducted two experiments using clay and slag. I mixed the slag into two clay bodies, these being modelling clay and black clay. I fired both the test tiles to 1260 degrees. The slag did not change the colour of either of the clays but added a slight speckling to both as well as acting as a combustible because it burnt away in certain areas to create gaps.



Fired modelling clay and slag test tile.

Fired Black clay and slag test tile.

Investigation

I experimented with offcuts from a foam form I found on Sker Beach next to Kenfig. I dipped small pieces of the foam into semi porcelain slip. I wanted the foam to burn away in the kiln leaving the clay with the texture of the foam. The semi-porcelain pieces of foam were fired at 1000 degrees (low bisc). Once fired I was left with hollow pieces that when broken into revealed detailed patterns. The foam did not soak the slip up as it was too dense therefore I was only left with the texture of the outside surface of the foam. I had hoped for the pieces to have a more complex structure from where the foam soaked the slip up but this was not the case.

Unfired

Fired

Fired

Before Firing

First Firing
Ramp- 60
Soak- 0
Temperature- 400

Second Firing
Ramp- 60
Soak- 0
Temperature- 700

Third Firing
Ramp- 60
Soak- 0
Temperature- 1000

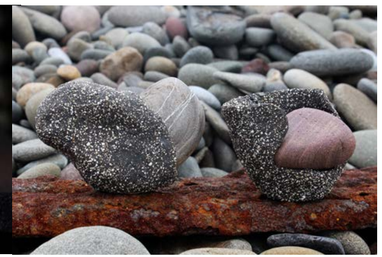
Forth Firing
Ramp- 60
Soak- 0
Temperature- 1260
(Stoneware)

I experimented with firing the stones that I collected in Port Talbot to see if they would survive the kiln firings up to stoneware temperature (1260). I also wanted to see if the stones would change colour and distort.

I found that the stone became richer and deeper in colour and the pattern became more prominent the higher I fired it with it staying structurally sound.

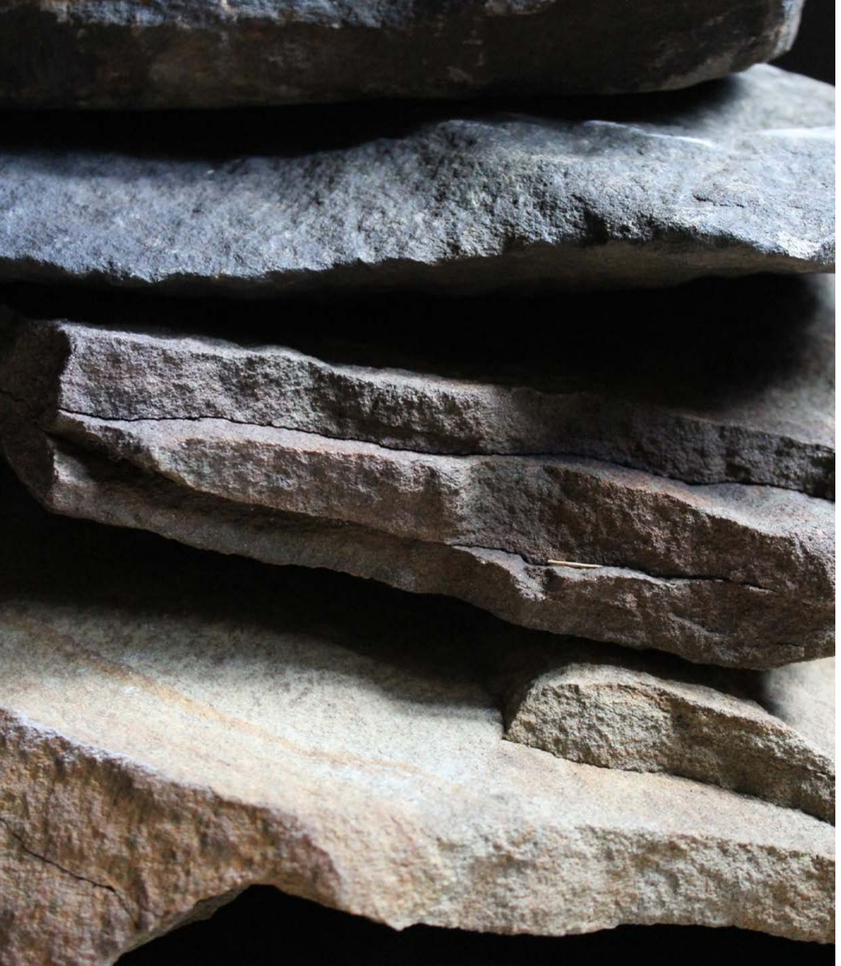
After Firing at Stoneware (1260)

Small maquettes that combine clay and stone together. I fired the pieces as one to lock them both in place. This proved to be successful as they can not be separated and the clay did not crack. This series of work is a metaphor for the Steel Works using and interacting with the natural environment by the black clay made by human work wrapping and encapsulating the natural material (stone).

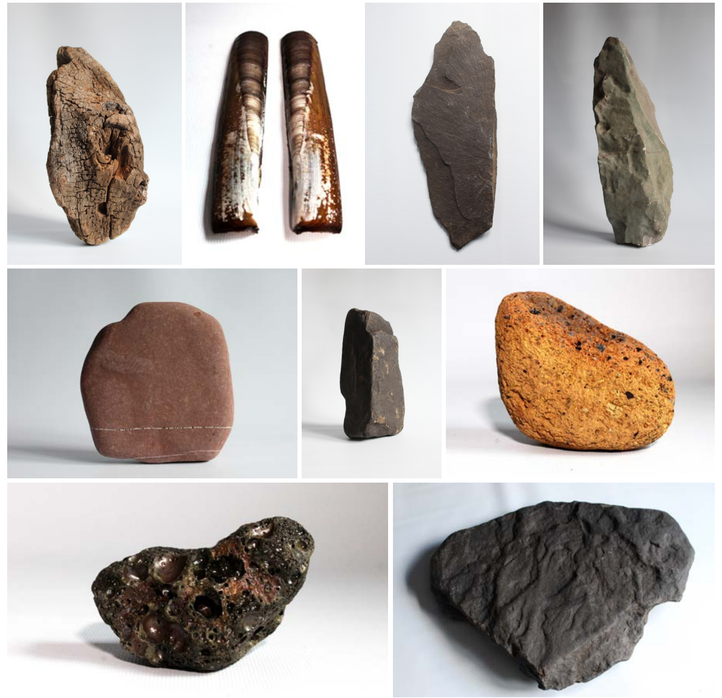


Found Objects -

I created different compositions and still lifes using found objects in the landscape of Port Talbot; positioning these organic forms in these ways made them seem immediately more sculptural and monumental rather then forgotten materials lying on the floor.



I collected a range of natural objects from the landscape to photograph out of context on a white photography background. By doing this it removes the distractions of the surrounding environment of the object allowing me to focus on the form, texture and colour of the materials.



The Three Bodies of Work

Through my research and experimentation I found that Port Talbot possesses a diverse range of qualities and characteristics. It hosts a vast amount of different natural environments, from mountain ranges, rivers and reservoirs to sand dunes and the sea. This working class town has a real sense of community where one supports the other. The steel works is the driving force in the town as it is a huge site that can be seen across Port Talbot which employees a large percentage of the community.

I have chosen to focus on three different aspects of Port Talbot to create three bodies of work that are inspired by different perspectives and features of the town. I have chosen to respond to the vulnerable side of the town through the uncertainty the Steel Works faces and the dependence on it (Exposed Pillars), the relationship the natural and man made worlds have with one another (Charged Vessels) and finally the former coal mining industry that was present in Port Talbot mountains (Undercut).

Exposed Pillars

The community of Port Talbot has for years been reliant on the Steel Works for employment. Recently the Steel Works has declined, as demand for its products has fallen due to overseas companies being more competitively priced. This has meant jobs and the scale of production have had to be scaled down in response to the reduction of revenue. The heavy dependence the community has on the Steel Works, and it relying on the community and natural landscape, makes it a vulnerable place in terms of one not being able to function without the other.

In 2016 the Steel Works faced potential closure due to it making a £1 million daily loss. Tata Steel was planning on selling the business which put many jobs at risk. However the outcome was that Tata Steel invested more assets into the company showing its commitment to the future of steel-making in Port Talbot. This highlights the reliance the town has on it for jobs and income, referenced in the following articles.

About 15,000 jobs could be affected if a buyer is not found for Port Talbot's steelworks, a councillor has claimed.

Indian owner Tata Steel is selling its entire loss-making UK business but did not give an "open ended" commitment to keep plants open during the sale.

Port Talbot is Tata's biggest UK plant with about 4,000 workers but councillor Tony Taylor, said closure would have a much wider impact.

He said the Welsh and UK governments needed to step in and help.

But Prime Minister David Cameron **ruled out nationalisation at a meeting on Thursday**.

He said the government was "doing everything it can" to resolve the steel crisis but said nationalisation was not the right answer.

He said the situation in Port Talbot was of "deep concern" and there were "no guarantees of success".

'Tata Port Talbot steelworks closure 'could hit 15,000 jobs'', BBC, http://www.bbc.co.uk/news/uk-wales-35930158, Published: 31 March 2016.

Tata Steel will finance the repair of a blast furnace at Britain's largest steelworks in Port Talbot, Wales, extending its life by seven years and soothing concerns about its commitment to Europe's steel sector, four sources said.

India's Tata Steel signed a preliminary deal last year to merge its European steel assets with those of Germany's Thyssenkrupp in a move driven chiefly by a need to address steelmaking overcapacity in Europe.

Fully relining a blast furnace typically costs over £150m and gives the furnace an additional 20 years of life approximately, while the repairs Tata is looking at will cost about half of that, the industry sources said.

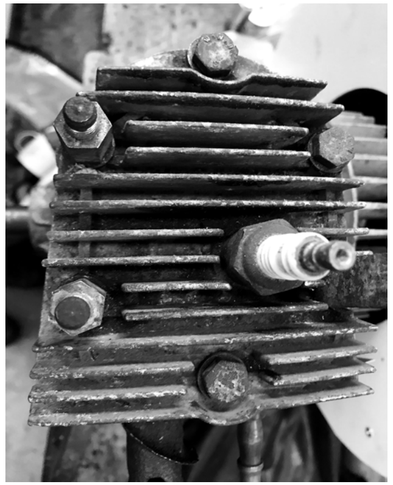
With earnings at the Port Talbot running at a fraction of those at Tata and Thyssenkrupp's European assets and Britain's exit from the EU posing extra risks, the plant was seen as particularly vulnerable in the event of a downturn.

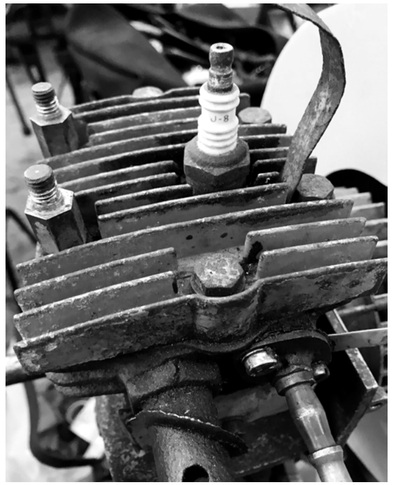
'Tata to invest in Port Talbot steel plant post Thyssenkrupp merger ', The Telegraph, https://www.telegraph.co.uk/business/2018/02/13/tata-invest-port-talbot-steel-plant-post-thyssenkrupp-merger/, Published: 13 February 2018.

The susceptibility of Port Talbot is not just evident economically through the Steel Works and community but it is also seen in its natural environment. Although the natural environment has a dominant and over-arching presence due to huge mountain-scape's, the sea and vast reservoirs and rivers, it still has a sense of vulnerability as can be seen with the ever changing eroding sands at Kenfig and delicate plants holding onto dear life.

I wanted to represent Port Talbot's vulnerable and some what deteriorating industrial character by using processes and forms that reflect and capture these qualities. Initially I explored the idea of using casting slip and hand building through the use of cardboard. I felt cardboard was a good material as I knew it would burn away in the kiln and leave a clay structure behind. By dipping cardboard in slip I was able to build structures by a layering process.

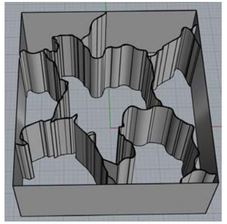
Using a combustible such as cardboard causes gaps to be left where the cardboard pre existed. This therefore highlighted my making process to reveal the layers and structural quality of the ceramic work. I found that sandblasting helped to blow away areas to show the layering clearer. The ceramic layers that are left are incredibly fragile and require a solid wall of clay to join the layers together otherwise they will collapse (seen in the bottom left image). This is why creating a vessel is ideal as the inside will act as a central support column to hold the layers together while the outside can be sanded blasted back to show the quality of the process and unique aesthetic. The thin layers that are left represents the delicate nature of Port Talbot's steel industry.

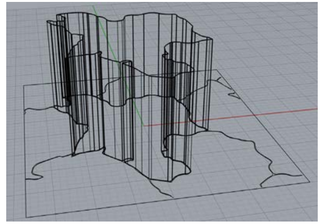


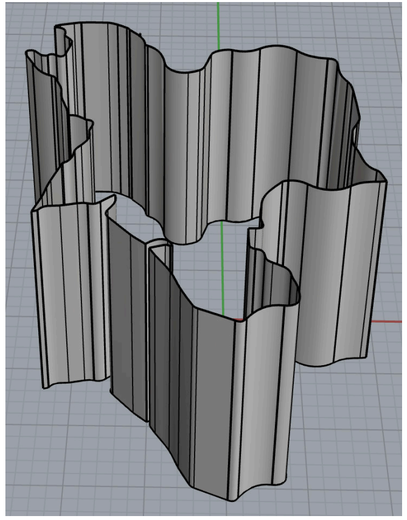


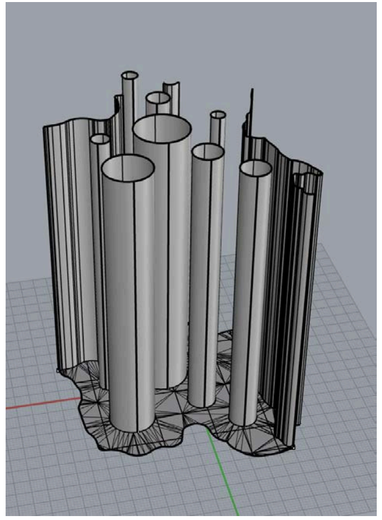
These mechanical parts I found have a similar aesthetic that is created when using my cardboard process as well as these metal parts and the ceramic work both referencing the industrial character of Port Talbot.

The layering effect that is created has a direct correlation to the Steel Works as these images show an electrical fire my Grandad attended during his time at the works.

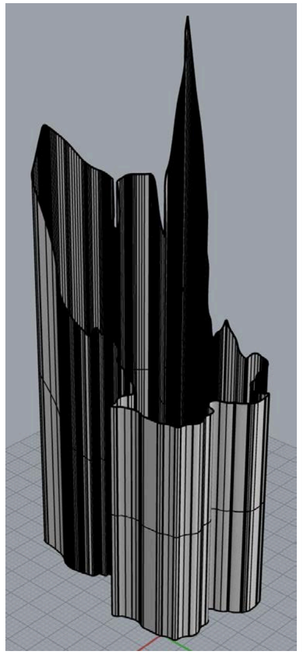


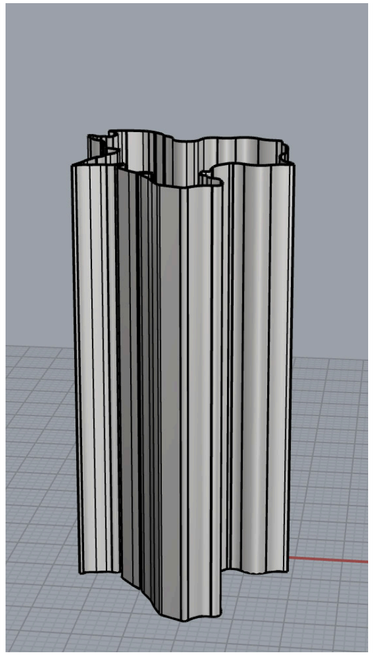


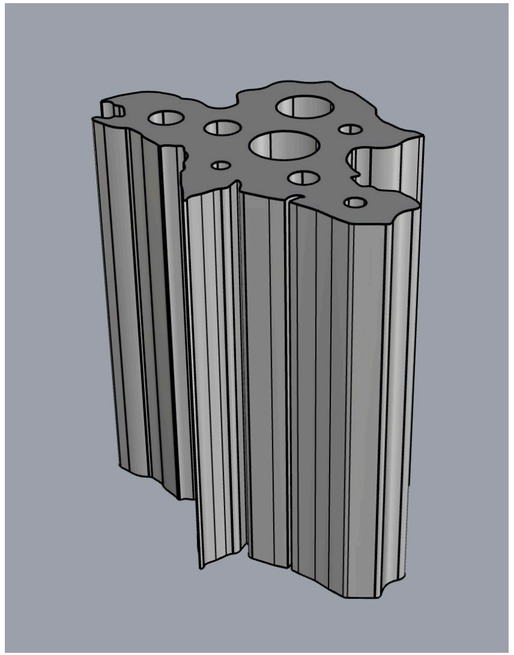


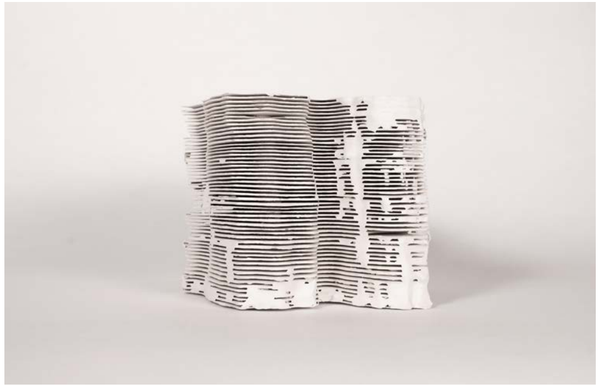


By using cardboard I was able to apply digital technology and processes to my work. I created forms and objects on Rhino which I was then able to laser cut in flat sheets to create accurate forms. This series of renders show how I was able to take the geographical outline of Port Talbot and transfer it into Rhino to extrude and explore as a vessel.









These photos show one of my initial experiments where I have layered cardboard that has been laser cut in the shape of the geographical outline of Port Talbot and then dipped in slip and fired. You can see in some areas there are parts missing and cracks which is caused by the clay shrinking around the cardboard too much.

I decided to add a very fine grog to the slip I was using called molochite which stops clay shrinking and cracking as much. This was a vital process and turning point in this body of work as I was finding the clay was shrinking too much around the cardboard which does not shrink causing the clay to crack and break. I therefore experimented with adding different percentages of molochite to the clay. I found 20% was a adequate amount to stop the cracking.

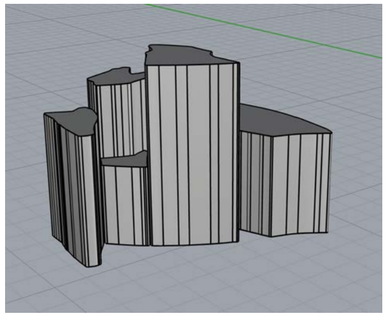
10%

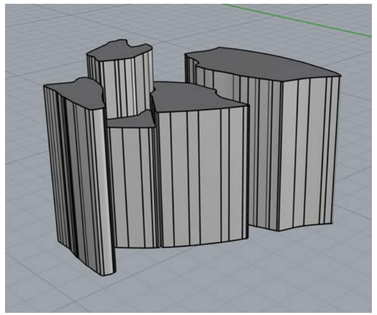
20%

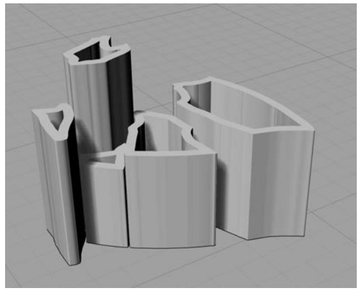
30%

The left hand side image is the original wind drawing I took from Brombil Reservoir in the summer. I scanned and transferred the drawing into Adobe Illustrator to trace the lines (seen in the right hand side image). I then selected certain sections that created whole shapes. I managed to pick out 5 different forms that connect and slot into each other (these are highlighted in yellow). The reason for using the wind drawing is that the wind is a fragile and delicate element that gracefully passes through areas and around objects without being seen. These traits align with the vulnerable character of Port Talbot that I am responding to, as well as the process and aesthetic of the work that I am creating.

I then imported the 5 shapes from Illustrator into Rhino. I was able to extrude the shapes upwards to create these column structures. I experimented with offsetting the different objects at different heights to create different levels to echo the idea of landscape.

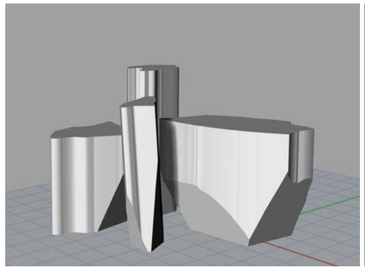


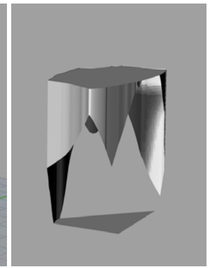


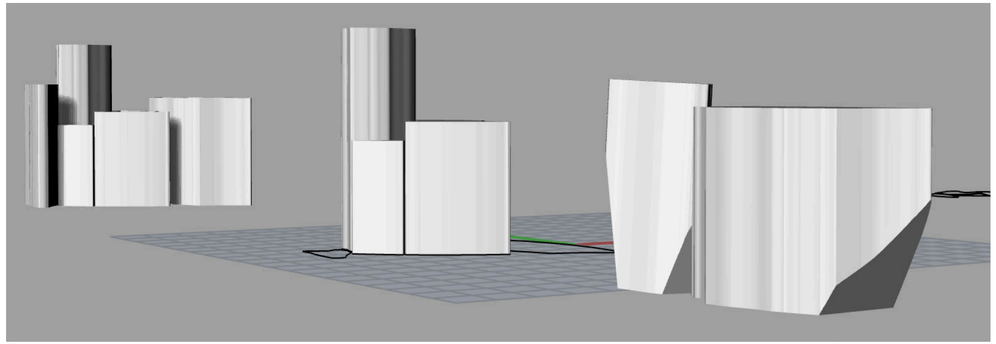


I began to hollow out the forms to create 5 vessels. Having a hollow inside does not just have a functional or aesthetic role like traditional ceramic vessels. Due to my process of dipping cardboard in slip and sand blasting the outside to reveal the layers, it means I have to have an internal structure or wall to hold all the layers together.

I decided to shape the bottom sections of the pieces by cutting straight sections off to create overhangs that reflect the fragile nature of the work and also to break up the straight flat lines and edges that run from top to bottom that extruding shapes creates. The cuts were inspired by the lines created in the landscape where the mountain tops meet the sky or where the sea meets the beach.

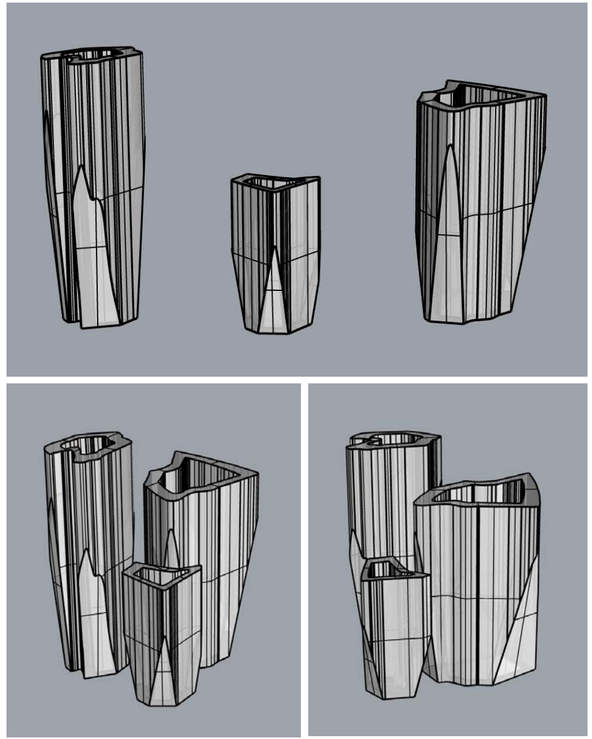






Exploring depth of field with different objects to create a landscape composition using Rhino.

I imported my final designs into a software called Slicer to break up the objects into slices. Each slice can be seen by the blue lines running across the object. The software divides the object up by the thickness of the material you are using (in my case 0.2mm corrugated cardboard). It also lays out each slice of the object once it has been sliced onto the height and width of the materials in order for it to be laser cut.



3D printing small models first before committing to laser cutting as this allowed me to see the work physically as opposed to just on a computer screen.

Three final pieces with two laser cut out ready to be dipped and one already dipped in slip drying out before firing.

Exposed Pillar -

Through the use of traditional and digital processes these architectural columns express Port Talbot's industrial character. The deteriorating forms represent the decline and struggle of the Steel Works alongside the resilience and strength of not being shut down.

Charged Vessel

This body of work has been designed and inspired by the human interaction with the landscape. Port Talbot has a rich natural landscape which has been used as a source of material collection for many years whether this be for coal, stone or flint. These materials have been heavily used for building by local people for many years as well as the steel industry using coal. This control and manipulation to form man made structures has inspired me to highlight this collaboration between the natural made and human made work.

Photographs taken of stone walls and buildings close up around Port Talbot's town.

I have used stone and flint found in Port Talbot to create a series of experiments that play with the idea of man and natures collaboration and interaction with one another. I threw a series of vessels and distorted them using the found objects. This interference that nature provides breaks the symmetry and perfection created by human work on a throwing wheel. The dialogue that is created between the two materials and opposing processes of chaos and perfection creates an interesting contrast.

Thrown vessel pressed into the stone it is being displayed on.

I experimented with pushing large rocks into a large solid lump of clay. This intuitive almost primal approach to making by pushing rocks into clay, creates for an innate response fuelled by Port Talbot. Removing the stones revealed deep textures in the clay. I then flipped the piece over and hollowed it out into a vessel. The vessel tilting to one side creates a sense of uncertainty which I feel does not represent Port Talbot's rugged mountainous landscape. Instead it feels like a fragile and delicate looking object as it does not stand strong.



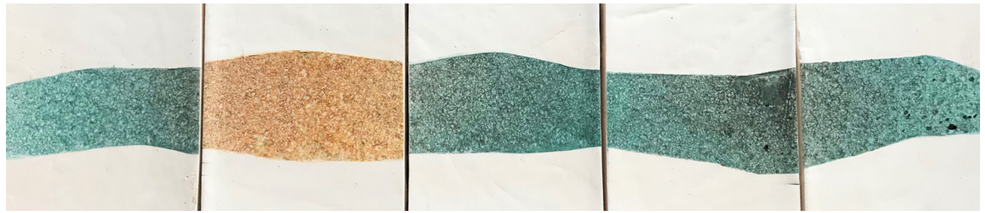


Using a large stone from Port Talbot to create a press mould. I pressed two slabs of clay into the mould to pick up the texture and joined the pieces together. When joining the work I made sure to highlight the seam line of where I joined them to show the object as being human made.

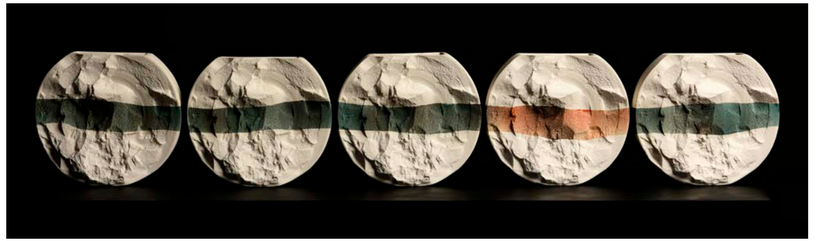



I experimented with using plaster by intuitively using found objects from Port Talbot as tools to shape work. I found this to be an almost primal and natural way of working as it was just me, the material and the found object. This stripped back process acts as almost a metaphor in representing the character of Port Talbot. This is because the towns Steel Works has carved its man-made presence in-between the natural surrounding landscape made up of mountains and sea. To create this work I started off with a cylinder of plaster that was just about to set. Working with wet plaster meant I had to work within the time pressures of plaster setting which meant I did not have time to think, allowing me to capture my innate response.

These slip cast forms have been made by creating a master from an old broken plaster lathe head and then making a four part mould. This work looks at the relationship of the industrial and natural landscape of Port Talbot. The dominant and powerful presence of the Steel Works and natural environment creates a powerful balance and composition between humans and nature, leading to a controlled symmetrical form made by human work with a natural rocky texture inspired by the mountain ranges in the area.



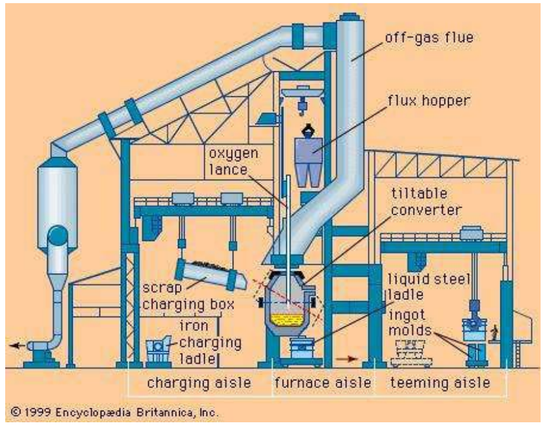
Brombil Reservoir hosted a coal mine and human traces can still be seen today with remnants of industrial activity and artefacts littering the landscape. I wanted to portray the natural landscape through the use of colour on the slip cast forms. Using the colours and tones from the reservoir I was able to replicated them on the work by spraying a series of oxides and stains. The line that is sprayed represents the lines and contours that are made from where the mountain tops meet the sky and where the reservoir hits land.



I created a master for a mould by laying different rocks collected in Port Talbot on top of one another to create walls. The gaps were filled in with clay to stop the plaster from coming out. The surface that is created from the stones and clay create a surface that is similar to stone walls and buildings in Port Talbot.
I poured approximately 25 litres of plaster into the stone mould. Once the plaster set I revealed the master by pulling the stones away. The plaster picked up the texture of the stones incredibly well and the seam lines from where the clay joined the rocks together. The man made edges and contours created from the smooth areas from where the clay joined the stones contrasted with the high textured surfaces. These smooth edges reflect humans use of natural materials and is a reflection of the making process.

A seven part plaster mould being produced from the master made from the stones collected from Port Talbot.

I created a tool which enabled me to pour slip out of a seven piece mould, instead of picking it up by hand to pour the slip out of. The reason for this is that the mould is extremely heavy especially when it is filled with slip, as it holds 25 litres. This contraption is made out of an old cable spool that I have adapted so I can slot my mould into. The rig allows me to roll the mould upside down in order to pour the slip out once the piece is cast. This tool has enabled me to scale up the size of my moulds while still providing me with delicate ceramic work and an even cast. This mechanised process I have created was informed by the production of steel in Port Talbot. The picture on the next page is from my visit to the Steel Works and shows molten iron about to be poured out into another vessel (known as charging the vessel). This method, once the materials have been added, converts pig iron into steel using a process called Basic Oxygen Steelmaking shown in the diagram on the next page. This is similar to me tilting and rolling my wooden rig over in order to pour the slip out of the mould.



Encyclopedia Britannica, Basic oxygen steelmaking, https://www.britannica.com/technology/steel/Basic-oxygen-steelmaking

Vessel Being Charged.

Filling up and pouring out 25 litres of slip from the mould. I found casting the piece for 40 minutes to be the ideal time to get a thin but stable wall for the vessel.

Returning the vessel to Cwmwernderi (Goytre) in Port Talbot was an important process as it helped to re-contextualise the piece by bringing the body of work full circle back to where it began. I placed the work back into the river from where the six stones where originally pulled from to create the surface and form of the vessel.

Charged Vessels -

This series of work draws from the materials in the landscape and man made industrial processes. These vessels interlock with one another to create a dialogue and relationship that make up landscape compositions similar to the Steel Works and the natural environment of Port Talbot.

Undercut

Port Talbot has a rich history of mining coal that has left traces of its past behind in the surrounding mountains. This work is a response to this extraordinary industry that has faded from the Welsh landscape. The process of mining and the locations they were set in has inspired this line of work.

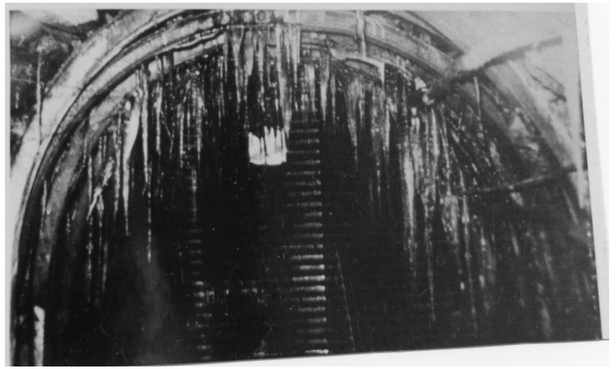


Photo taken by my great Grandad of the inside of a mine he was working at in Port Talbot. The square patch of light in the middle is the door way out and the long shards hanging from the ceiling are icicles.

During my visits to Port Talbot I continuously visited Brombil Reservoir and Cwmwernderi Reservoir in Goytre. Both these locations are littered with remnants of the former coal industries.

My Great Grandad John with his two brothers either side Idris and Evan working at a local Port Talbot coal mine.

Memories of mine...

MEMORIES came flooding back for some former miners after they saw a picture of colliery workers in last week's *Guardian*.

Terry Davies, aged 76, said the picture was taken at the Glanhafod Mine where he worked for almost 20 years.

Mr Davies, who was born and brought up in Cwmavon but now lives in Fairways, Sandfields, was able to recognise everyone in the photograph.

"The picture was taken by Ken Kingdom who did a bit of amateur photography in his spare time," said Mr Davies.

"It was taken on the afternoon shift at Glanhafod Colliery, which we worked between 2pm and 10pm.

"The photograph was taken in 1951.

Working

"I started working at the mine in 1939 just after my 14th birthday.

"We had some very happy times there and the miners had a superb working relationship with the managers," he added.

"Work was hard but there was superb camaraderie and friendships among the boys.

"The mine closed in 1957 and I went to work at the Afan Colliery in Abergwynfi, but it was a different story.

Mr Davies said one of the colliers was a member of a famous Port Talbot family.

"Ethel James married Richard Burton's sister and helped to bring him up."

COLLIERY CROWD: Miners at the Glanhafod colliery in 1951. Pictured (clockwise from left) Elfed James, Will Sharpe, Sam John, Idris Williams, Cliff Wright, Tom Staton, John Williams, Bert Williams and Terry Davies.

Idris Williams, aged 81, also recognised everyone in the picture including his late brother John.

"When I saw the photo it brought back old memories," said Mr Williams, of Penllyn, Cwmavon.

"My three brothers, father and grandfather all worked down the mine and I worked there for 46 years.

"They were a good group of lads at Glanhafod and I enjoyed my time there," he added.

Solved: the mystery of these pitmen

THE *Guardian* reached as far as London this week as a great-niece of Richard Burton rang the heritage hotline.

Jane Trowell, a teacher from North London, identified her grandfather Elfed James as one of the coalminers at Glanhafod Colliery.

Mrs Trowell, aged 36, was sent a copy of the *Guardian* by her cousin Llewela who lives in Margam.

"It was great to see a picture of Grandpa in his work environment," said Mrs Trowell.

"He moved from Raglan to North London in 1967 to be close to Mam and the rest of the family.

"He was always very strong even in his old age and he used to show us his huge muscles in his arms.

"He used to be a bit short of breath at times and he used to have a cough from the time down the mines.

"The miners used to be very political and when Grandpa moved to a middle-class suburb in London, he used to tell them that they had no idea about the working man," she added.

"He was a great character and the people in London loved him."

Mr James, who died in 1980, helped to raise famous Port Talbot actor Richard Burton.

"Grandpa married Cis Jenkins who was Richard's older sister," explained Mrs Trowell.

"When their mum died, Richard was looked after by Grandpa and Grandma. My mother Rhiannon grew up with Richard like an older brother, though he was her uncle."

Next to call was Arthur Rees, of Penycae, Port Talbot, and he was amazed that no-one called in about the photo the week before.

"It is a group of miners from the Glanhafod Colliery," said Mr Rees.

Leonard Hopkins, of Bryndyfan, Cwmavon, also phoned to recognise his father Coelbyn Hopkins in the picture.

"The men are outside Glanhafod Colliery in Goytre standing outside the 'intake' entrance.

"Also in the picture is Terry Davies, who was the manager of the coke ovens in the steel works.

"He would be about 76 now, as he was about the same age as me."

Bryn resident Merfyld Wright telephoned the *Guardian* after recognising her late husband, Cliff Wright, who is pictured third from left in the back row.

"His younger brother and father used to work at Glanhafod Colliery and Cliff is in this picture," said Mrs Wright.

"I think this photograph was taken in the year we were married — 1951 — and just four months later my husband was in an accident and never worked there again.

"His grandfather Samuel Wright was in charge of the Oakwood Colliery in Pontrhydyfen.

"It was lovely to see this picture," she added.

And the men were familiar faces to *Guardian* reader Lewis Williams — who was known as Lew the Lamp.

"I looked after the lamps and the lamp room," said Mr Williams, of Bryn Road, Seven Sisters.

"The year in the photograph is 1947 and that was the year that the coal industry was nationalised.

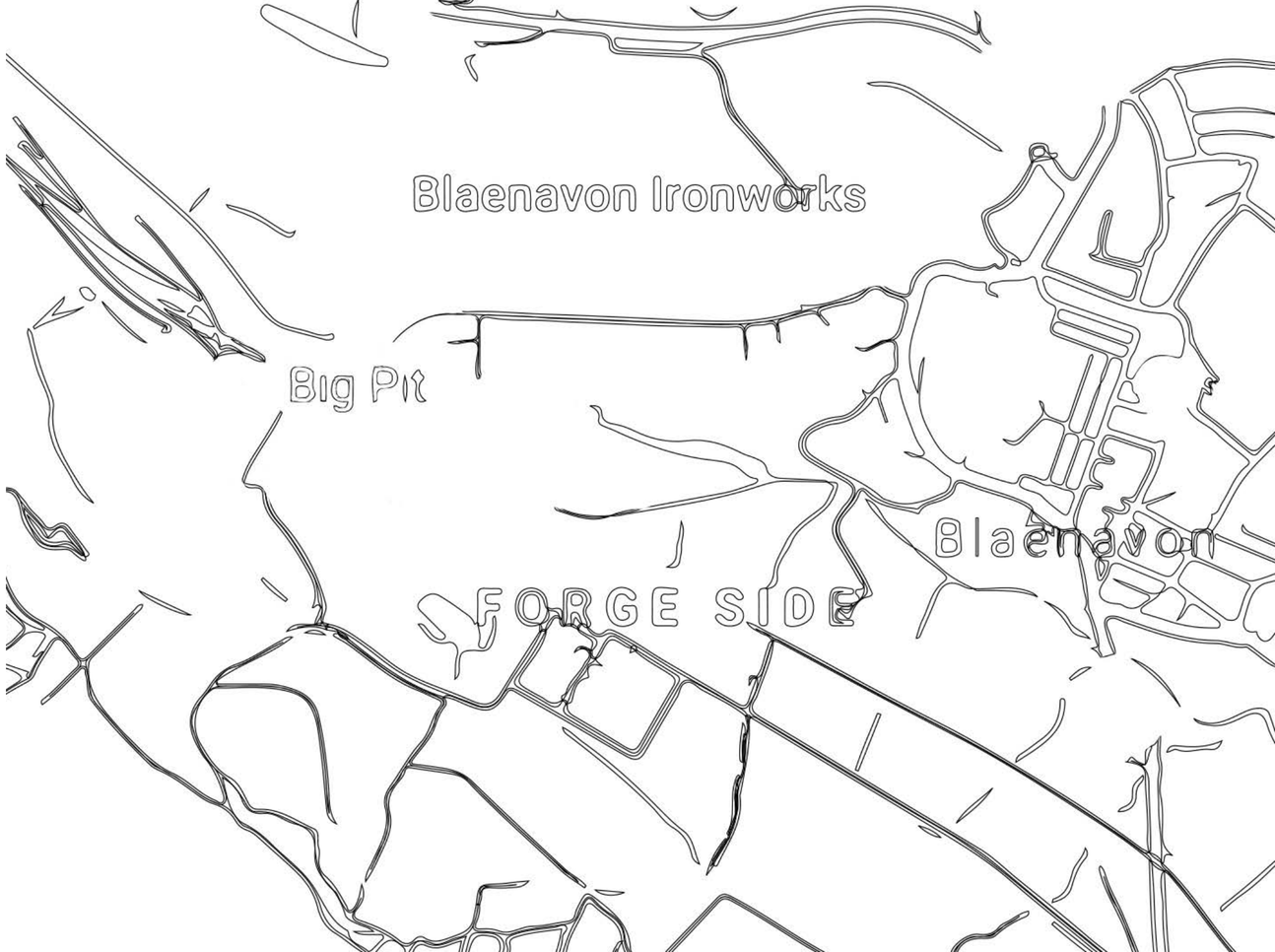
"I think the photograph was taken between shifts — which would explain why I am not in the picture.

"This was the busiest time for me."

The coal industry in South Wales was a huge business before the mines were shut down due to coal being cheaper to buy from other countries. Port Talbot had mines located in many places in the area including Goytre and Brombil collieries. My great Grandad and his two brothers were miners at these locations.

Photos of Idris and John with fellow coal miners.

Big Pit -
I visited Big Pit which is a National Coal Mine Museum in Blaenafon in South Wales. During my visit I was shown around a disused coal mine 300 foot underground. This trip provided with a wealth of first hand experience and knowledge of what the coal mining industry was like in Wales and helped me to understand working life for my great grandad. It enabled me to further understand the production processes of mining and the conditions the miners would have been under.



The Cage

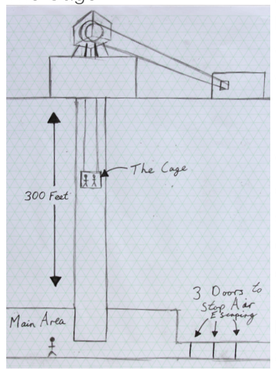


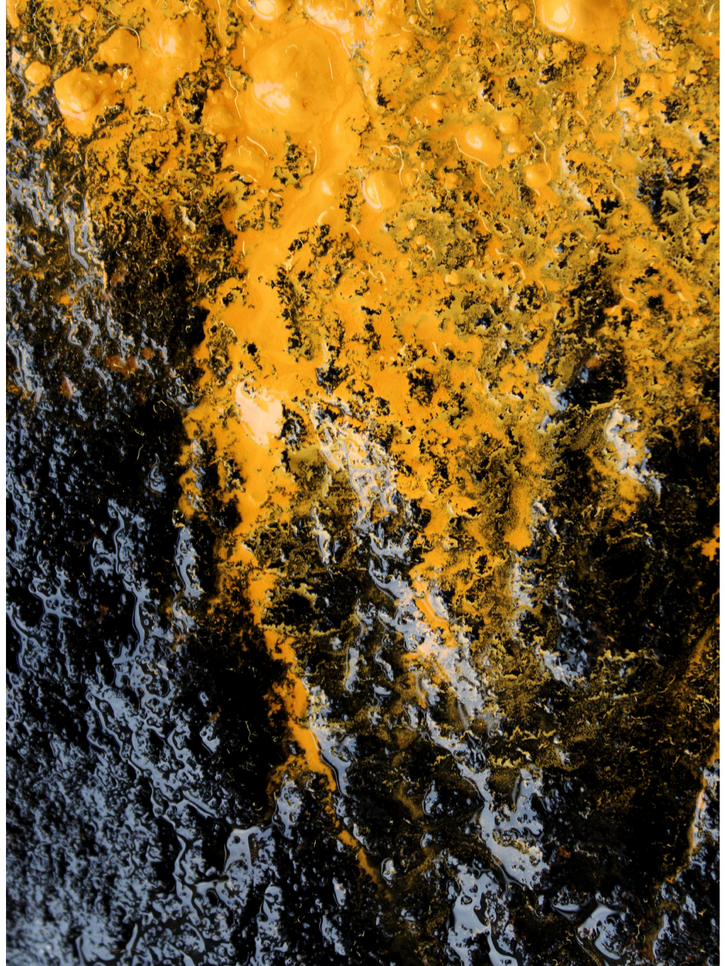
Diagram of the main mine-shaft.

Before setting off into the mine I was met by a former miner nicknamed ‘Monk’, who would show me around. He equipped me with a helmet and a belt which had a heavy battery, a safety lamp and a small breathing filter mask in case of a fire. Due to Health and Safety all electronic items had to be left above ground. Therefore I was unable to take photos in the mine.

We began our journey into the coal mine by being lowered down in what was called The Cage. It was a 300 foot decent into the mine. Monk told me as we stepped out of the cage and into the main entry area that this point was one of the busiest parts as people, equipment and coal would be constantly flowing in and out. Hence why I was surprised with how open and well lit this area was.

When we left the main area the ceiling and walls closed in and the only light that was present was our head lamps. We went through 3 consecutive doors to reach the coal face. It was important to close these as they forced oxygen right through the mine, in a similar way to valves in the heart keeping the blood moving in one direction around the body.

To prevent coal dust explosions and limit the amount of inhaled dust particles, limestone is sprayed along the walls regularly to reduce injuries. The limestone acts as a heat sink in the event of an explosion. I replicated this aesthetic by spraying liquid porcelain on coal.



When walking down one of the tunnels in the mine we came across a running stream which had pools of water that were bright orange. This created a powerful contrast of bright colour against the dark black coal face. This was caused by iron oxide being drawn out of the rocks. I have represented this by using orange glaze stain with water and applying it to a rock.

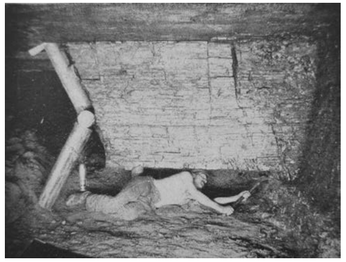
The bottom two images were taken next to Cwmwernderi Reservoir in Goytre. These pools of water were very similar to the ones that I saw in the mines. It is possible that this colouring is also caused by iron oxide as coal mines were present in Goytre.

When we arrived at the coal face Monk explained that coal was first mined by chipping away at the bottom to create an undercut. This would be propped up with wooden posts. Once the undercut was long enough all the wooden posts were hammered out and the existing coal on top would fall down.

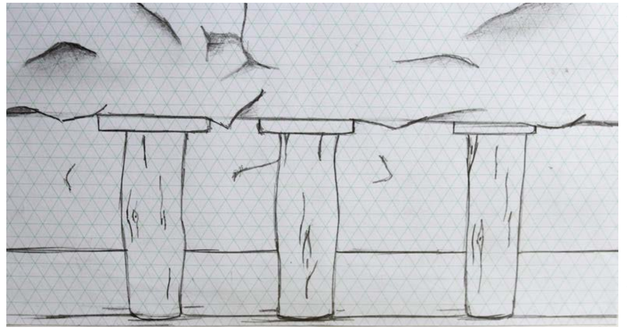
The introduction of machinery made it easier to mine. One machine that created undercuts in the coal face was given the name, ‘The Widow Maker’, as it kicked up so much dust which was not good for the operator. This added to the risks of lung disease which was already a problem for miners.

National Union of Mineworkers, http://num.org.uk/photographs/

Russell Lee Photographic Collection, https://nyx.uky.edu/fa/findingaid/?id=xt7r7s7hr44k



Hive Miner, https://hiveminer.com/Tags/coalface/Timeline



A drawing of an undercut propped up which I came across while in the coal mine.

A series of vessels inspired by the wooden props which prop up the rocky coal face.

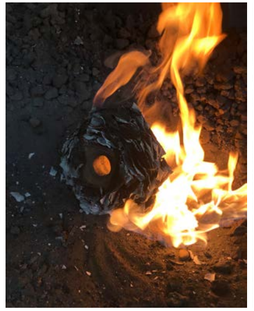
I created small pinch pots to experiment with making work in response to coal mining. I explored the idea of stacking them similar to lumps of coal being piled into a carte. I also supported them with wood in response to the undercuts in a coal mine being supported. The entrance of the vessels create dark caverns, simulating the entrance or tunnels to a mine. I also photographed the work on site in Goytre.

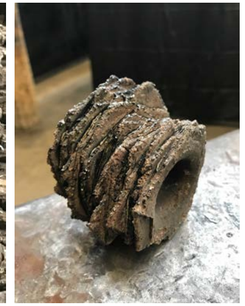
I used black clay to create the vessels as I was trying to give the impression of coal. However the work does not have the same quality of coal due to them being pressed and smoothed by hand. These models are too polished and clean.

I made a larger scale piece to explore the idea of creating work supported by wood found in Port Talbot inspired by the undercuts made in the mines. This time I concentrated on making sharper angles and more ridges in the clays surface to replicate the quality of coal. However this still did not work and created a piece that was smooth and had the aesthetic of being hand built. I found that using traditional hand building techniques such as coiling and pinching can at times be limiting on the finish and form that is required.

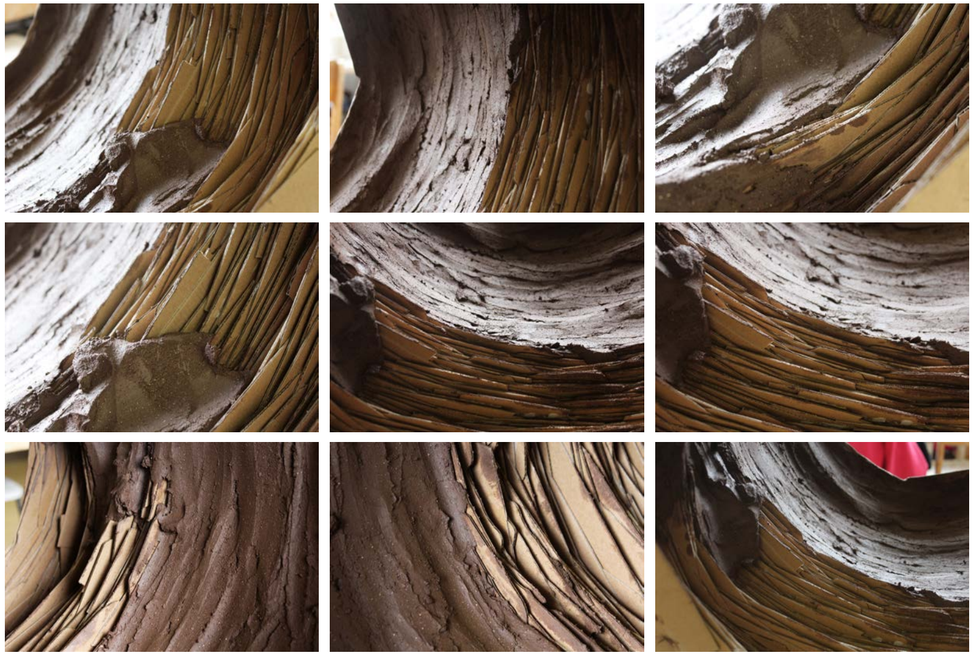
I decided to explore and examine the sedimentary structure of coal and to look at how it is formed. This led me to discover that coal is formed by a layering process over time. I decided to explore ways of using this layering effect in my own work through hand building techniques. I experimented with layering slabs on top of each other and bolting them together. Once the slabs were dry enough I decide to break and chip away at them as if I was mining coal.

Placing bolts through clay was inspired by Aberavon Beach where huge boulders and rocks are fixed in place by driving metal through the rock faces (seen in the bottom three images). The rocks act as a form of sea defence.



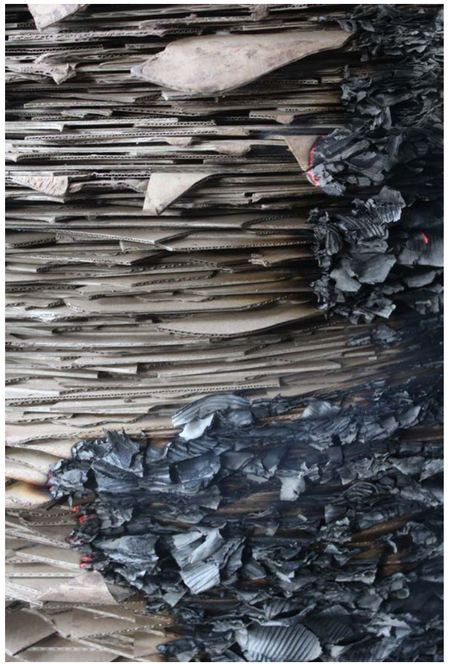


I continued experimenting with layering materials on top of each other as this seemed to create and resemble the quality of coal. I began to explore cardboard further by glueing layers of cardboard on top of each other. I then pressed clay into the inside of the cardboard like a press mould and burnt away the outer cardboard exterior. The clay picked up the texture of the layers of cardboard. By burning the glue and then firing it to 1260 degrees it created almost a glaze by it becoming shiny and metallic that sat on the clays surface, similar to slag from the steel process.



I decided to scale this process up by creating a larger one off press mould out of cardboard. The images above show the process of pressing clay into the inside of the mould. I needed to build a thick clay wall in order for the clay to deal with the sudden heat exposure it would face when the mould is burnt away. This meant I had to use roughly 100kg of clay, making the piece extremely heavy. The circular dark hollow hole that runs through the work resembles the tunnels and entrance point of a coal mine.

The process of burning away the mould was extremely important. I burnt it away when the clay was still extremely wet. This meant the clay had no time to dry out or shrink in size because if it started to shrink it would have broken due to the cardboard mould not shrinking with the clay. This one off mould making process allowed me to create extreme overhangs and undercuts which traditional plaster moulds would not allow for. Using an oxy propane torch was a great way to accurately remove the cardboard as I could pin point the areas I wanted to remove and also change the temperature of the flame to suit different areas, reducing the sudden thermal shock the clay was exposed to.



Undercut -
Through the use of experimental techniques and processes it has been possible to create this layered aesthetic that has a similar sedimentary quality to coal. The processes used allows for this unforeseen artefact to be uncovered as if it has been pulled from the ground itself.

Outcome

Summary Statement

Although I knew Port Talbot before I started the project, I feel I now have a much deeper and more meaningful insight and relationship with the town. I feel the collection of work I have produced demonstrates the knowledge and understanding I have gained of the town. This has been down to my rigorous investigation, built on regular site visits and recording methods, allowing me to project my findings and understandings into my final three bodies of work.

I have been able to concentrate on specific areas of the project in more detail by dividing it up into three separate pieces of work. Each body of work is informed by three separate processes and techniques, creating a narrative behind each piece. These processes have been informed by the location, allowing me to discover and push the boundaries of traditional methods of working with clay. This has opened up a whole new experimental approach to my practice through the experiences and lessons that I have learnt.

The town has provided me with lots of potential ideas and paths to explore in the future. One avenue that I would like to pursue further would be building on my use of alternative research methods as they have provided me with a whole new skill set for designing and making.

Stoneware fired black clay work bolted together, on a bed of redundant steel parts a blaze.

Luke Fuller

2018