

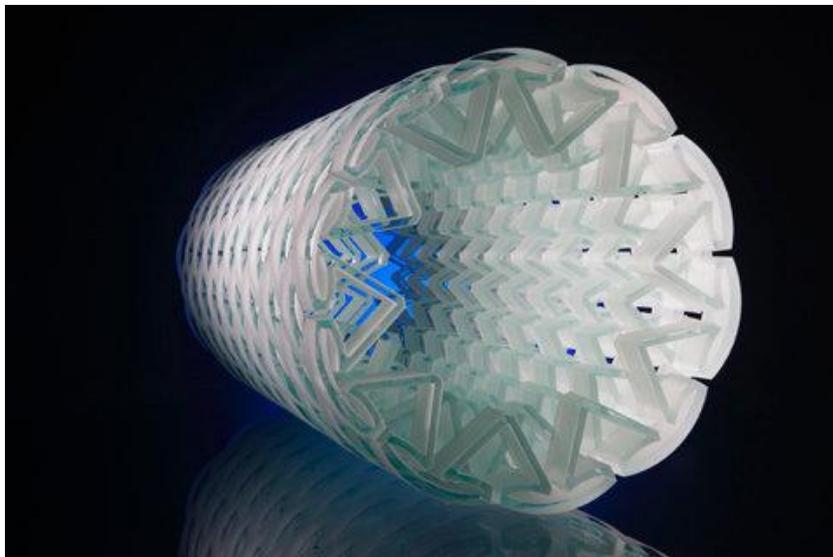
Vanessa Cutler

The Creative Aspects of Waterjet Cutting for Glass

based on a talk to CASW, September 2017



The Creative Wales Award 2106 gave me an opportunity to develop new works. I returned to making after a period in academia where my focus had been diverted. My current practice is very much about challenging parameters of materiality and technology, especially waterjet technology and glass.

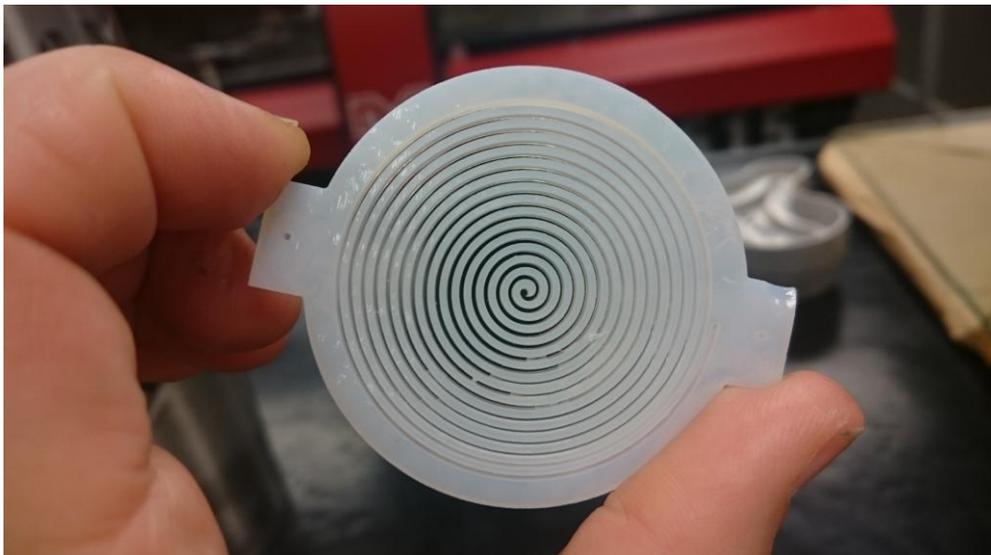
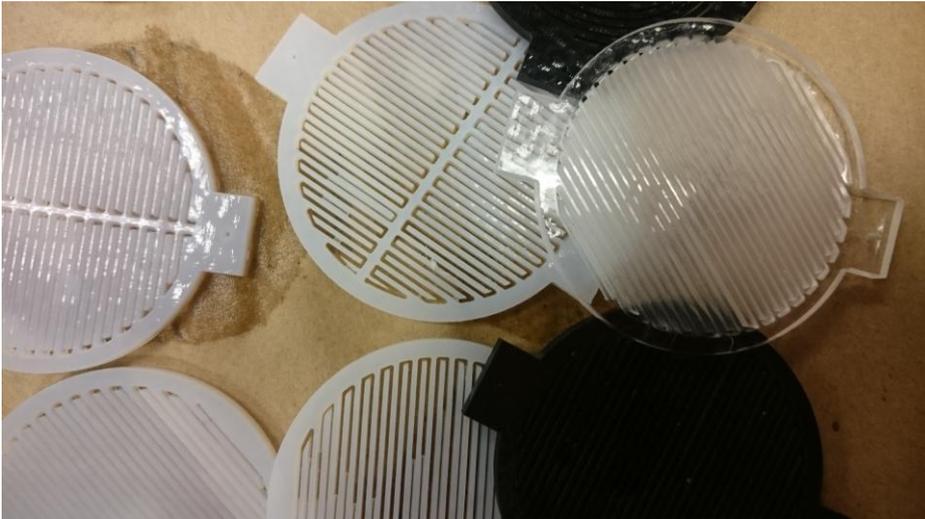


***Intertwine:** example of earlier work exploring 3 axis waterjet cutting to produce 3D objects*

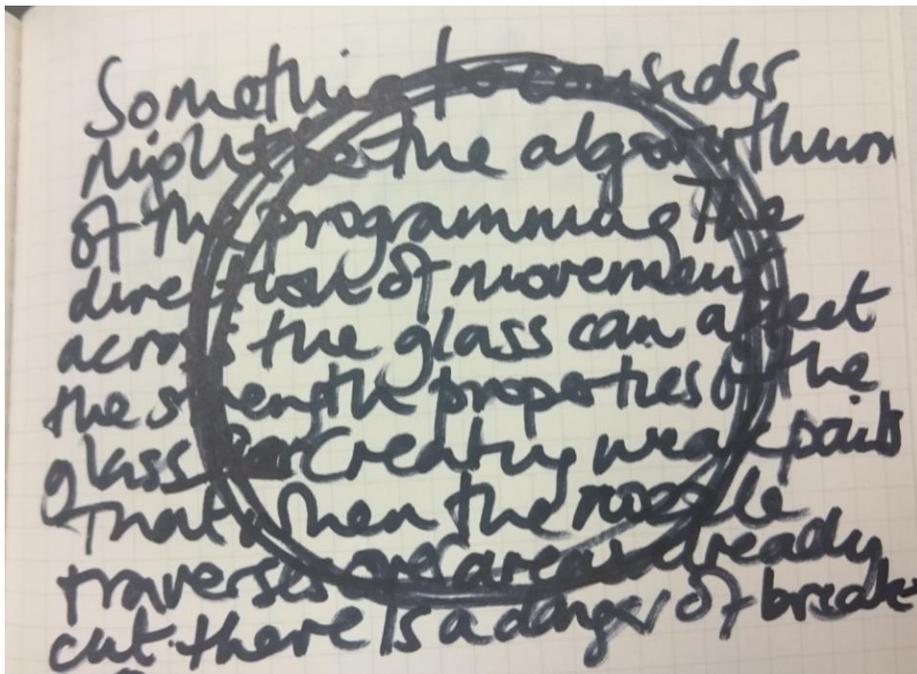
In this talk I'll bring a personal insight to my work and explain how the outcomes are influenced indirectly by everyday experiences and actions personally encountered, viewed or experienced. The Creative Wales Award was a return to making, a reassessment of the skillset and a fascinating journey that led to working in collaboration with industry. The past few years have involved helping other artists apply the technology to their work, and this opportunity was perfect to reinvigorate my practice and stay ahead of the field.

As part of the journey I worked with two American companies located in USA: Omax based in Kent, Seattle WA, and a turbine company in Cincinnati OH. This gave me an opportunity to work with three and five axis micro-waterjets and to collaborate with a number of partners - each bringing its own challenges.

The Creative Wales project began with looking at the parameters of the waterjet cutting machine to see how fine and delicate a line could be cut. In some way my approach is like that of an engineer; see what the machine can do with the material through a series of samples/tests, and then continue on to more complex forms. Handwriting seemed to be the most complex, presenting challenging software programming and cutting procedures. Why use handwriting? As with any residency overseas, travel luggage is limited; the pen is an accessible and easily transportable tool.

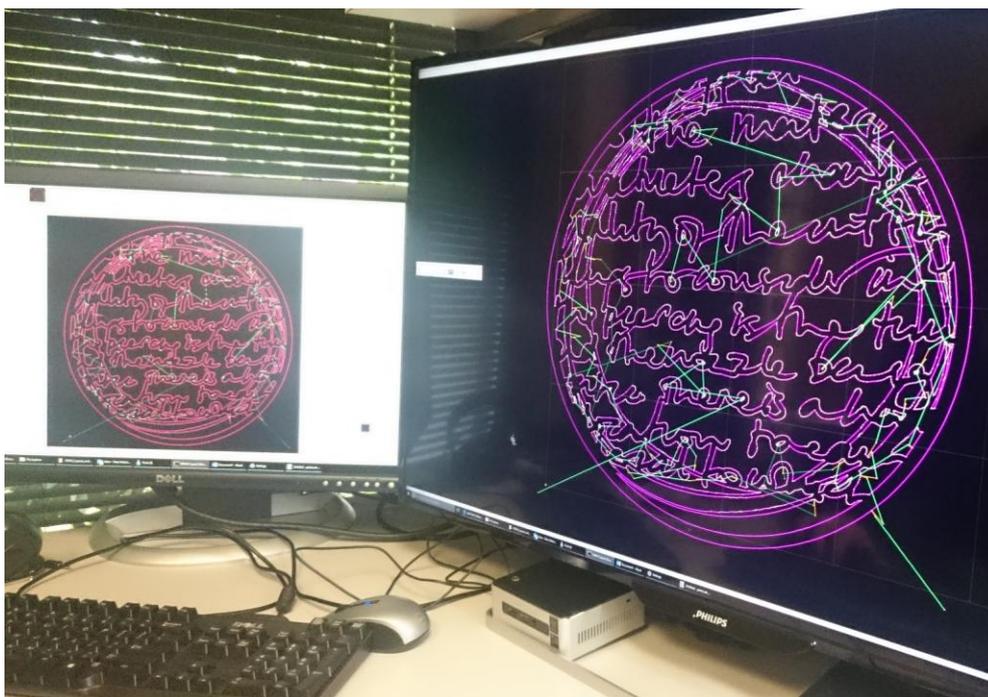


*Initial tests of cutting fine lines
Glass discs 50mm diameter*



Sample of capturing my handwriting

Words relate to what was been learnt whilst on the machine which was then interpreted into glass



*Programming: figuring out the best procedure to enabling a successful outcome
This process was replicated in **Scrutiny** and in a larger work entitled **Chitter Chatter***



*Scrutiny - exhibited at Craft in the Bay Cardiff 2015
The result of waterjet cutting my own handwriting; 100mm diameter*

The project led from interpreting my own handwriting to looking closely at the handwriting of others. Approximately fifty people sent/offered handwriting to be programmed; some known, other friends, acquaintances and strangers. The challenge was to make the writing understandable yet to ensure the material maintained its integrity and strength. The range of writing was surprising; it included free writing (often displaying current feeling or underlying problems) plus a variety of items from sections from private letters and singular statements to shopping lists.

A photograph of the handwriting was transferred into a program and then each medal was individually programmed and cut. In some instances the choice was made to use singular words or cross-sections of writing rather than fitting the entire sentence into the space. As in many conversations we select what we hear, say and write, therefore the composition was intentionally haphazard in its final display. Then by distorting each of the medals the material gained depth and identity was disguised.



Details of glass medals prior to being kiln-formed. This demonstrates the complexity of cutting and the ability of the machine to capture the nuances of an individual's handwriting



***Chitter Chatter** exhibited at Collect 2017*

1200mm x 1200mm over 500 glass micro waterjet cut discs of handwriting, kilnformed and pinned into a grid. Each medal is approximately 55mm diameter. The viewer is drawn into the conversations that are happening across its surface

The handwriting project was just one of two projects exhibited at Craft in the Bay and at Collect. The second was **Gibberish**, a response to the chaos of the past few years and how we order our hectic lives.

As with the handwriting piece, **Gibberish** was multi-layered, asking the viewer to take time to look into the work. As with much of my previous work the viewer is drawn to look through/into the work, to focus attention on the space on the other side. As with **Chitter Chatter** each disc is pinned to its background, allowing each to respond to its environment and move accordingly.



Gibberish 1200mm diameter

*Includes hundreds of empty discs covered in nonsense and distorted.
None of the words make sense and nothing can be read and understood.*

The Creative Wales work was an 18 month departure from the work that I had previously made and exhibited. It was a great opportunity for collaboration in terms of applying and developing skills and extending my network. It enabled me to focus on research interests that had previously existed in earlier work but possibly not in such a narrative way.

My work has always been about being inquisitive and exploring traditional practices, building an intimacy of hands-on application and the indirect approaches of industrial processes. My work is produced through ‘informed play’ questioning process, machine parameters, software, materials and how they achieve an aesthetic. I am always willing to risk both materials and process in order to draw in the viewer, to engage and question approaches to the work.

Influences to all my work, past and present, have been related to my environment, such as architecture, geometry and everyday interactions that sublimely influence my aesthetics and colour palette. My early work involved much colour and texture, and focused on techniques and skills that came from my architecture glass training at Swansea in the 90s. As the work evolved and I undertook PhD research, the use of colour became more muted. Sketchbooks become more notes and sketches drawn from my daily environment.

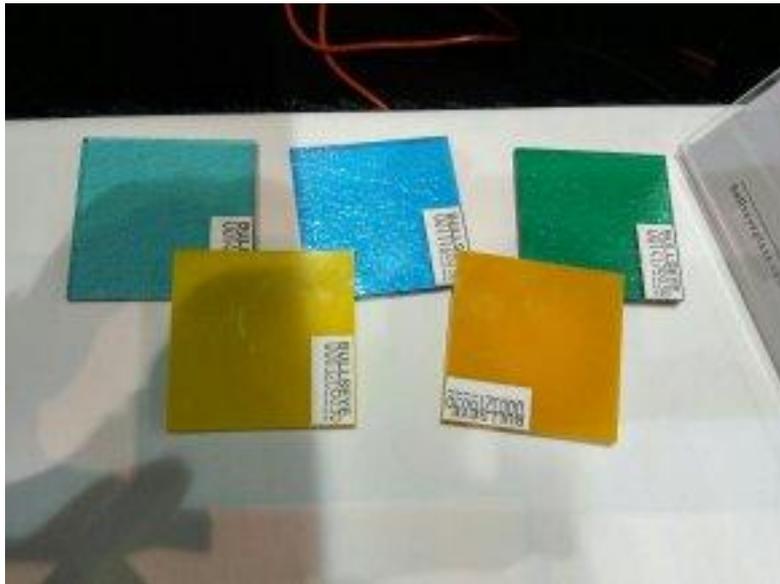
Since the Creative Wales Award 2016 the use of colour has started to reappear in the work. The palette draws from places, trips, daily conversations, emotions and reactions. In turn I bring muted tones to bright colours, and contrasting finishes into the work. The following images demonstrate the subtle use of colour in earlier work and the use of colour in recent work produced in 2017.

Influences and previous work



Summer Season - waterjet cut glass with coloured glass inserts

Influences and colour palette



A Thanksgiving trip on the water Kent WA influenced a selection of colours for casting a thick glass block that I later used to investigate 5 axis cutting

On leaving academia I looked to industry in order to progress. It felt like being a new graduate again, having to find new working partners and draw upon the industrial community. Collaboration had to be beneficial to both parties and over the past few years those contacts have developed and links made that allow me to call on their services. In turn the artistic artifacts have been disseminated within the industry through looking at the methodology, feeding back about software and disseminating information through joint papers. My experience of helping a number of other artists apply the technology to their work was useful in communicating what I needed. Sometimes making work isn't about the final outcomes but rather about understanding working methods, working around people's daily responsibilities and machine scheduling.



Experimenting with 5 axis cutting raised issues about how one form can be removed from a block of material - taper lock!



Room for one more
5 axis cutting influenced by the environment of the turbine industry

Without collaboration with industry my work would have been very difficult to produce. Engagement has become increasingly important as materials and equipment becomes more expensive or technically complex. For the 5 axis work the advice and knowledge of the programmer is vital. In my case the programmers had to adapt their own software. That in turn helped them understand the parameters of their own software and its capabilities. Additionally, being in those environments influenced the aesthetics of my work; turbine-like forms.

I have worked through contracts with companies as an artist/engineer to apply my methodology and this has demonstrated the parameters of the machining that is available to these companies. Now back in the UK I am continuing my practice and looking at the possibility of forming similar relationships with industry.

Background note

Vanessa Cutler has now moved from Swansea to Portsmouth.

Her website – www.vanessacutler.com - includes an extensive portfolio of her work.

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