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Swarf Streams: Building interdisciplinary practices to contemporary modes of production

I am a maker and engineer based in Birmingham. Working at the intersection of craft, design and engineering, I employ traditional and contemporary modes of production to explore materials and making processes. Using technical expertise to develop sculpture, functional objects and writing. I am the first female Engineering Technician for the School of Physics and Astronomy at the University of Birmingham and have previously collaborated and worked in various creative industries from aerospace to animation. Recent exhibitions include 'Useful Editions' for 'Production Show', at Eastside Projects, Birmingham 2017. 'Artefact', Birmingham, 2017 and Life in Clay: Experimental Practice at Grymsdyke Farm. RIBA, London, 2016. I am also on the Committee for the Contemporary Philosophy of Technology Research group at the University of Birmingham.

Whilst working in the Physics workshop (and other small scale workshop previously). I found that material waste is particularly prevalent in small engineering and manufacturing facilities. When a material is machined it generates "swarf" or metal chippings, the techniques and processes within production generates waste which is unusable and often ends up in landfills. Whilst gains have been made in large companies to recycle swarf streams, these systems are not possible in smaller workshops where the volume of waste produced is not on the same industrial scale. Many scrap metal collectors do not collect swarf, so it is easier to throw out than to build up, store and process inhouse. As raw materials availability diminishes, all manufacturers need to find means of using materials economically and find environmentally sustainable production techniques to reduce or manage waste.

As a designer/maker, I proposed a creative solution to tackle this issue of material waste. With permission from the University of Birmingham Physics workshop I have begun to acquire offcuts from the Water Jet cutter and metal swarf from CNC milling machines and lathes. From this waste I have been collaging materials together to create unique and useful responses to waste in the form of furniture and objects. From this I have been running workshops in which the wider public can create their own product with swarf and liaising with colleges to discuss the issue of engineering waste. I am now working with other facilities across the university- most notably the Foundry in the department of Materials and Metallurgy, reusing titanium metal slag to create bespoke products. Eventually I would like to develop and roll out a system which facilitates and encourages recycling in small scale workshops.

Engineering and Contemporary craft both embody the same processes and tactile engagement with materials. Whilst both utilize the same skill set, there continues to be a limited engagement between practices and there are most notably, clear gender divisions, despite very similar processes being used across disciplines. How can these clear divisions be bridged? I propose to discuss the interrelation between engineering and craft, alongside discuss how my background as a creative practitioner and an engineer have led to a richer engagement with materials and processes