

Under a Green Light – a darkroom for the future.

Most photography is now digital. A process that started nearly two hundred years ago has progressed faster in the last twenty years than at any other time in its history. Nearly everyone has a camera (phone) on them all the time to document their world. However, despite the convenience of digital, there is something timeless and magical about making photographs on film and developing in the darkroom.

Darkroom photography by its very nature is a slower process than digital. From taking film photographs to the process of making prints, there are no shortcuts to a process that has remained largely unchanged for centuries. In this way darkrooms can become a counterbalance to the fast-paced rush of life: a safe space, a haven of relative calm at school, through college, university and into adulthood. A place where you can unwind and become hyper-aware of every passing second. Time seems to lengthen, as does your breathing as you bathe in the tranquillity of the darkroom's dim and red-tinged light. But as we wake up from our darkroom dream, and our eyes adjust to daylight, we might notice that our lungs feel a bit tight as we breathe in the fresh air, and our hands feel a little sore. What's going on?

Traditional film and darkroom photography relies on chemicals – two acids and one alkaline. The developer, or 'dev', is an alkaline solution that brings your negative images to life. The 'stop' and the 'fix' are acid solutions that immediately halt development of the image on film and paper. The results are beautiful hand-printed black and white photographs and several litres of spent chemicals.

Film photography is not an environmentally-friendly art form, and the process has barely changed since photography's inception back in 1839. These three harsh chemicals carry hazardous substance labels and users must ensure they are disposed of correctly and not straight into the water system. Although the acrid smell, for some, becomes synonymous with the darkroom and the calming nature of this creative process, we should beware the harmful airborne toxins that can cause respiratory issues and shouldn't be inhaled over a prolonged period - add to that, they are known to cause skin allergies on contact.

The digital photography industry alone was 'expected to leap from \$47.59 billion in 2022 to \$50.71 billion in 2023' (1), yet continues to limit darkroom

users with the same, hazardous chemicals with no plans to provide a more sustainable, environmental alternative.

The photography industry has tried to convince users that digital photography is a more sustainable option and have reduced production of these chemicals, resulting in a global shortage. However, the notion that digital photography could somehow offer a more environmentally conscious solution is not the case. The carbon energy required to maintain data farms to store digital data alone is staggering (2).

How can we, as darkroom dreamers continue photography in this way? Should we continue? The answer must be no! We must, collectively, find a darkroom for the future.

At the start of the University of Chester's current academic year what had seemed like a theoretical proposition suddenly became a reality when stocks of film developer became critically short worldwide. Finding an alternative became a necessity, and one solution is Caffenol.

Caffenol is a tried and tested method of alternative development purportedly used as far back as WWII when chemicals were short but was then developed more convincingly in 1995 by Dr Scott Williams at the Rochester Institute of Technology, New York (3). The active ingredients of Caffenol are phenol-rich substances such as tea, red wine and some plants, but the basic formula can be made from washing soda crystals, coffee and vitamin C. If Caffenol is used as your developer, you negate the need to use acid as your stop - you can use fresh water in its place. This simple swap to Caffenol removes two hazardous chemicals, leaving only the need for fix to end the process. It's a huge reduction in chemical usage and a positive transition towards a greener, more sustainable darkroom.

And there are smaller and, on the surface, less obvious changes that can be made in the darkroom, which nevertheless have a cumulative impact.

A traditional washing regime during film development is a continuous flow of water. Film manufacturer Ilford's recommended B&W film wash time of 10 minutes running water equates to 6 litres per minute, which is a total of 60 litres of fresh water per film. At Chester, we have abandoned this technique, and utilise one where clean water is added to the film tank,

agitated, and discarded. This is repeated 3 times, reducing water consumption considerably to only 900ml for each 35mm film.

Other environmental measures we have introduced is providing students with aprons and cloth rags, so they can wipe their hands when moving from wet to dry areas in the darkroom. This has removed the need for paper towels and consequent wastage.

Fix, however, is where the real challenge lies. You could use a very time-consuming process using salt and water, but the practical application required is very restrictive within an educational setting. It appears that the large chemical manufacturers are unwilling to invest into much needed and in-demand environmentally aware alternatives. However, small companies such as Zone Imaging have begun to tap into this challenge and photography labs are working alongside scientists to develop viable alternatives with a greatly reduced hazard rating to both us and the environment.

The global shortage of darkroom chemicals should now be seen as a positive for the future of darkroom photography. As individuals gather and collectively question these traditions, beginning to replace them with viable, less volatile alternatives, us darkroom dreamers can see that our creative futures can be bathed in a more calming, cathartic red light, albeit with a green tinge.

References:

- 1) <https://www.globenewswire.com/news-release/2023/12/05/2791209/0/en/Digital-Photography-Market-Set-For-Impressive-Growth-Projected-To-Reach-62-8-Billion-By-2027-As-Per-The-Business-Research-Company-s-Digital-Photography-Global-Market-Report-2023.html>
- 2) **Sneyers, J. (2023). History and environmental impact of digital image formats. *Unthinking Photography*. <https://unthinking.photography/articles/history-and-environmental-impact-of-digital-image-formats>**
- 3) Williams, S (1995). A Use for that Last Cup of Coffee: Film and Paper Development, *Rochester Institute of Technology Digital Institutional Repository*. <https://repository.rit.edu/cgi/viewcontent.cgi?article=2126&context=article>

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