



Electro-Graphic Wallpaper

SLQ Wiki Fabrication Lab 2024/04/25 15:16

Electro-Graphic Wallpaper



That sounds dangerous...

This workshop is really two workshops; wallpaper making and interactive wallpaper making. It's about taking the old school process (hand routing wallpaper for block printing taken from [this video from Pathe News](#)). The final product is to create wallpaper that interacts with temperature, whether that is ambient temperature or controlled temperature (electric blanket wallpaper).

Workshops will use Fabrication Lab equipment but not be dependent on it; it could all be done by hand if equipment was not available. It would just be more difficult. All processes developed as a part of this project will be documented for replication (gigs, press designs etc) so it could be rolled out wherever.

This project ticks off on art, science, technology and enterprise. The first three are self-explanatory (I think) and the last - enterprise - is modelling a viable SME within the fabrication space. You could make good money making bespoke wallpaper.

The Idea is...

- **First part of the idea** To create designs in Illustrator (or similar) for routing on a CNC (the big one of the small on) for printing onto blank wallpaper rolls. We would work with an old-school print maker to unpack the way it was done (production process) and how we could update it. This would be it's own workshops.
- **Second part of the idea** To work with heat reactive colour pigments to create prints that will react ambient temperature change. This would be a seperate workshops also, working on small form projects to perfect the technique and the science.
- **Further iteration of this process** to work a thermostat controlled element into a laminate within the paper so the effects can be controlled externally. Also exploring the use of a multiple of pigments that react at different temperatures to create various effects.

The final resultant workshops - Electro-Graphic Wallpaper - will be offered November/December 2017.

Materials

These materials are per participant if not specified otherwise.

Tools

Tools required during the workshop. It is not required that one of each is supplied for participants but one tool per two participants is preferred.

Development

Assistance to develop this idea has been seeked out with Anita Milroy, an experienced visual artist, printer and mixed media maker. Anita has also completed level 3 Laser induction and is inducted on the CNC. MB

Flying Arts Trial

The first trial of this workshop will be with the Flying Arts *artiz* participants over 2x 3hr sessions.

In the **first session** participants get a general overview of using illustrator for designing vector file suitable for cutting out as woodblock prints either on the laser or CNC. This first workshop will mainly recycle the AI for Laser (lamps) workshop we have run over a couple of seasons. During the workshop participants will have an opportunity to create their own design (or customise example designs) in pairs.

The first session will end with a demonstration of the CNC and cutting one of the participants files(the rest of the art work will be cut on the laser over night.

The second session will start with participants reassembling their print blocks ready for printing a length of wallpaper each, using the 2 colour designs they developed with a partner the day before. these will be printed on a rig that will be developed in house (mick)and tested (with Anita) to ensure reasonable prints are achieved.

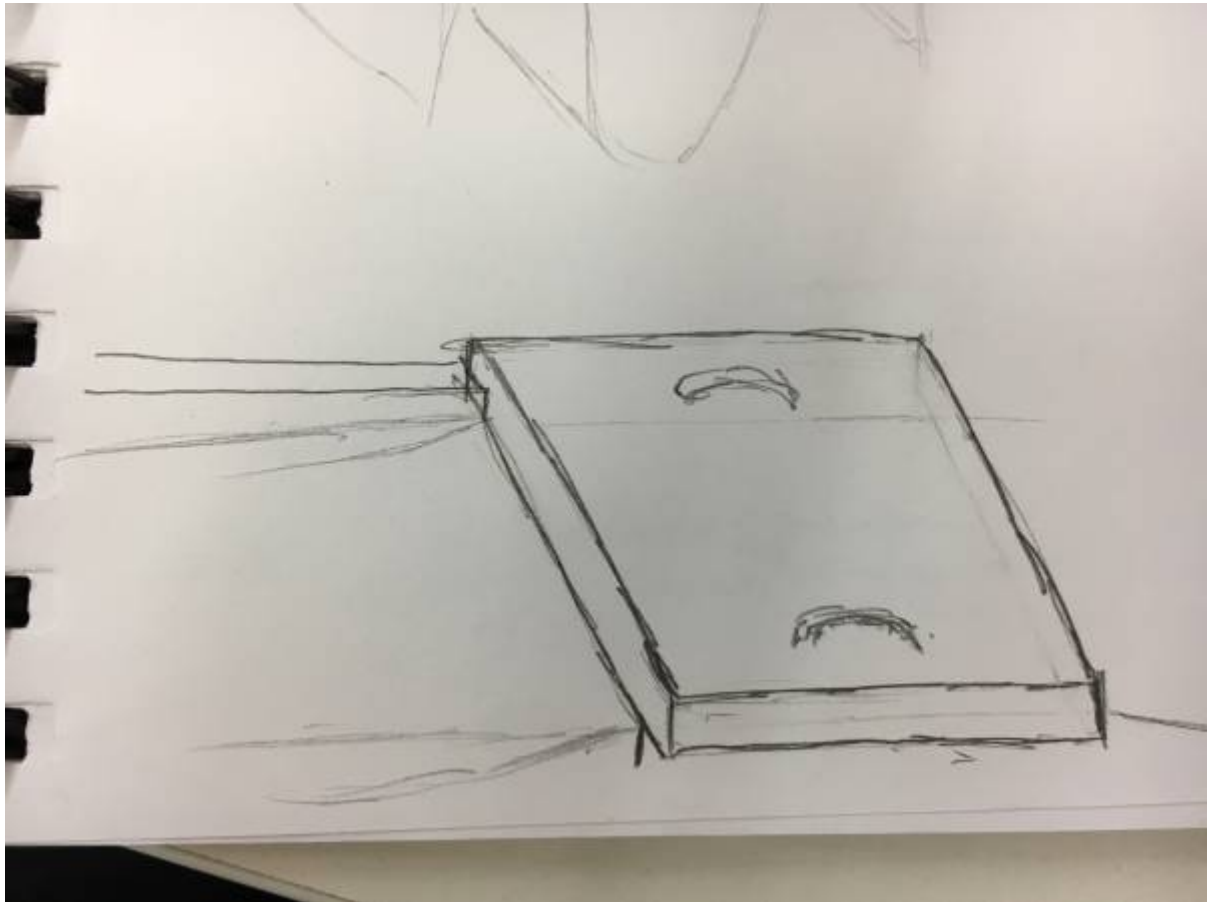
In lead up to these deliveries Mick will also trial the use of thermographic pigments in this printing process.

Printing Rig

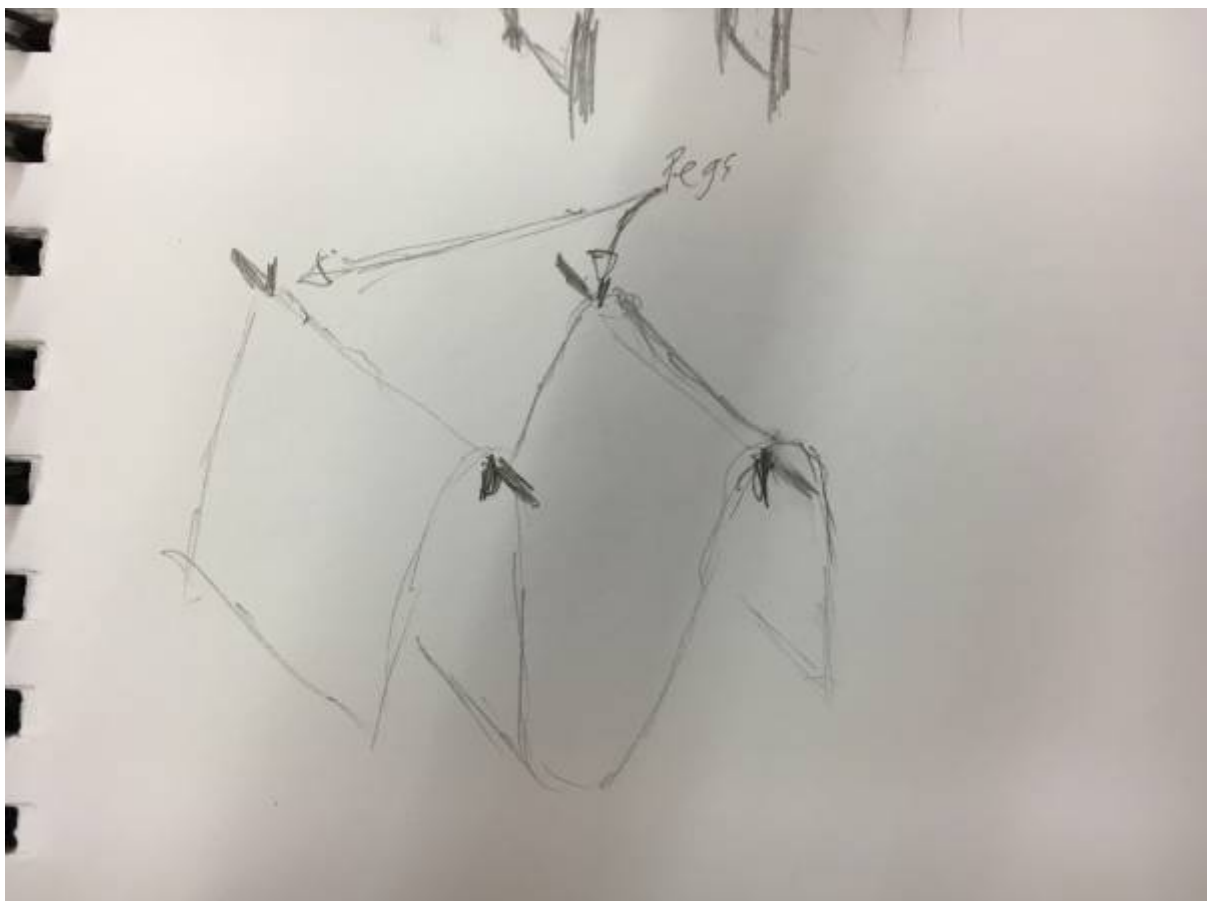
over the last few weeks i (MB) have built a 1st prototype of the printing rig. it consists of a reel roller attached to a set of guide rails designed to align the blank paper perfectly with a printing surface (also with registration guides)



in which a wood block, that has been inked in a tub with coloured printing medium is pressed down with.



The paper will be drawn through and hung on a drying line.

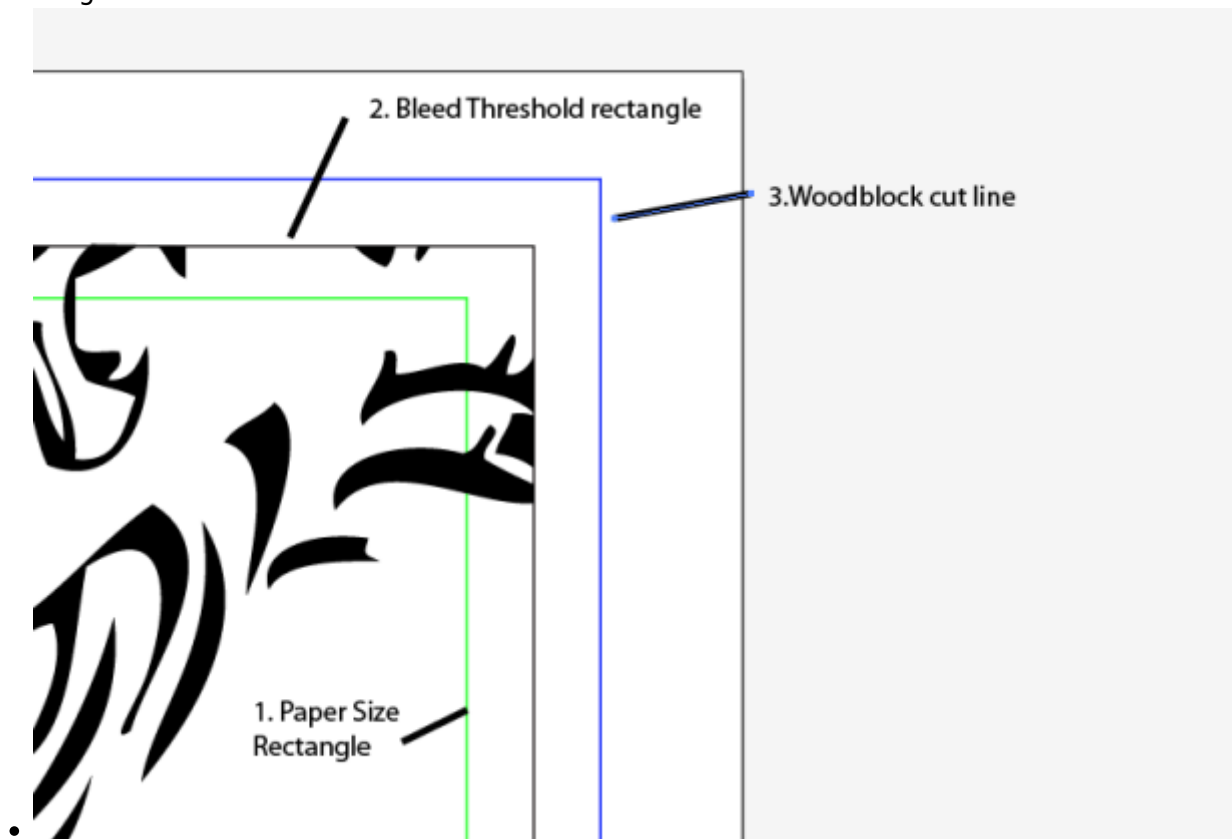


to ensure reasonable printing of repeatative patterns each wood block will be created with artwork with a 10mm bleed on all sides.

AI Tips for creating a repeatable pattern woodblock print

There is a number of tips I discovered in creating artwork in AI to test the prototype

- Lock off a with the three rectangles from inside to out. 1/ Paper size rectangle, 2/ Bleed thresholdrectangle, 3/ Woodblock cutline.
- line up repeated motif with a reference point in the artwork and with papersize threshold rectangle
- the artwork needs to continue past this paper rectangle into the bleed rectangle
- add new anchor pots on all paths that cross the bleed rectangle.
- remove all anchor points that sit outside the bleed rectangle.
- now manipulate the anchor handles that make the curves of the paths bulge over the bleed rectangle.



Tips for re assembling your cut out design

Plywood cut in the Laser



- First do the jigsaw puzzle of lining up the parts of the design with the score lines you have cut on the back board.
- probably want to use tweezers for this.
- i found using the soot marks on one side and resin stains on the other help me to orientate all the parts so they were the right way up.
- Also tried to keep the different sections apart to start with (lower left hand corner , centre, upper right hand corner) though some of these were mixed up.



- Then i glued the parts in place using aquahear (PVA glue) and a brush where necessary.



* Again place these parts with the tweezers.









This is a fairly fiddly, focused and intricate activity. it requires some quiet and motor skills. it may not be for every one. the Flying arts participants will be able to do this in their pairs

Acrylic cut in the Laser

for this i(mb) trialed cutting out the parts on 3mm acrylic at the same time a scoring a 2nd piece of 3mm acrylic. This turned out good with the cut out parts sicking down to the second piece of acrylic

Afterwards i went round with a syringe full of acrylic adheasive and glued the parts down, sqirting the adheasive nect to the parts sucked the glue thru (capillary action?). i guess we'll see if they remain stuck after they are washed in the post printing clean up.





Test Print 1

So my first test print was a bit of a failure.

* The tub that i used to spread out the paint was not level. This meant that the paint spread on the surface (which wasn't very well spread) wasn't making even contact with all the positive areas of the block. it also made contact (inked) negative areas of the block. Thi might be resolved by applying the paint to the block on a pane of glass (acrylic?)or with a hard roller?

- The textured paper didn't pick the ink up evenly either
- The design was flawed also you need the artwork in all four corners to be a repeatable pattern (rookie Mistake)





also the lack of positive space in the artwork in the top right and bottom left meant that there was

nothing to hold the negative surface of the block away from the paper when pressure was applied and allow paint to register where theres no artwork.



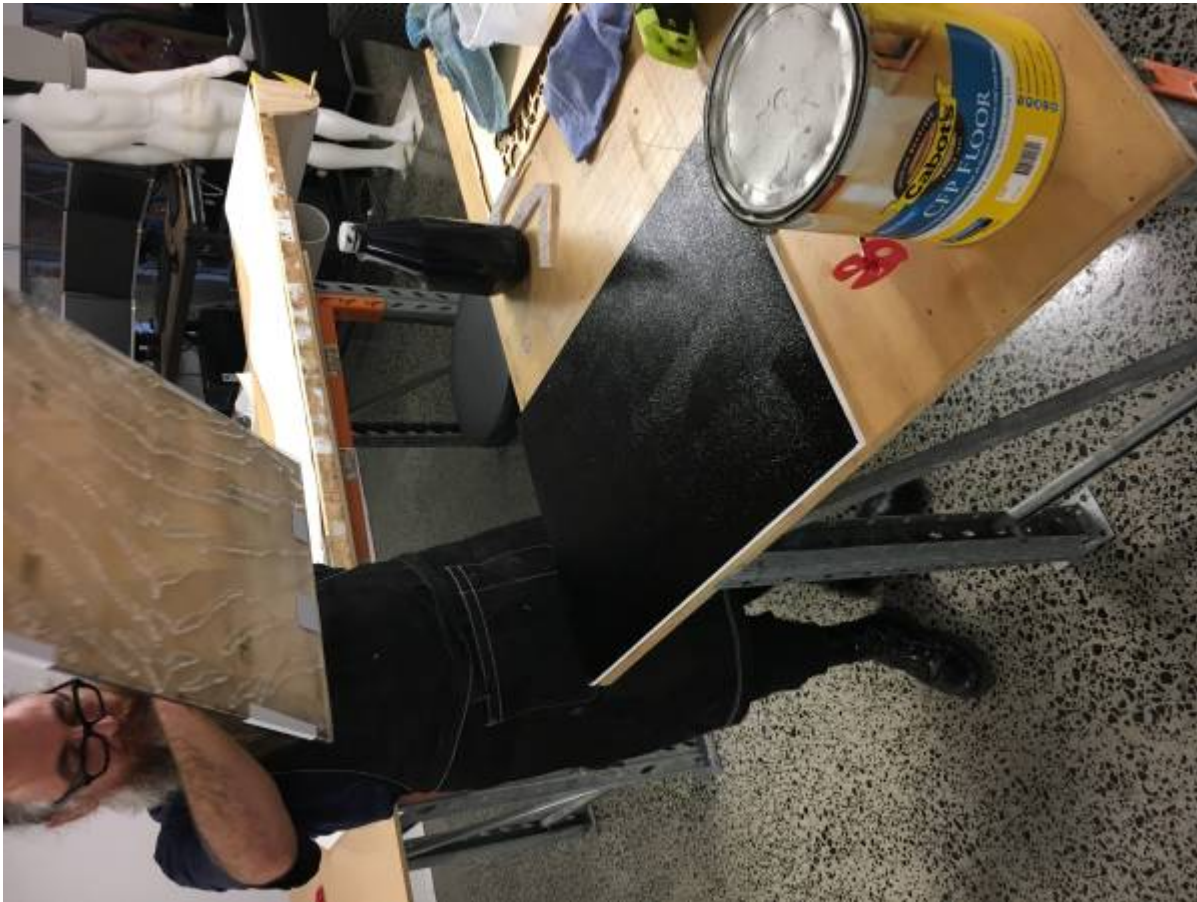


Test Print 2

This time instead of the tub of paint. i used a piece of expanded pvc foam board as a flat surface to roll the paint out on



and a different wall paper stock the wallpaper i used in the first test had a plasticity texture (sourced from Bunnings)



The second type of paper (sourced from wallpaper direct in the UK) has less texture and the texture is

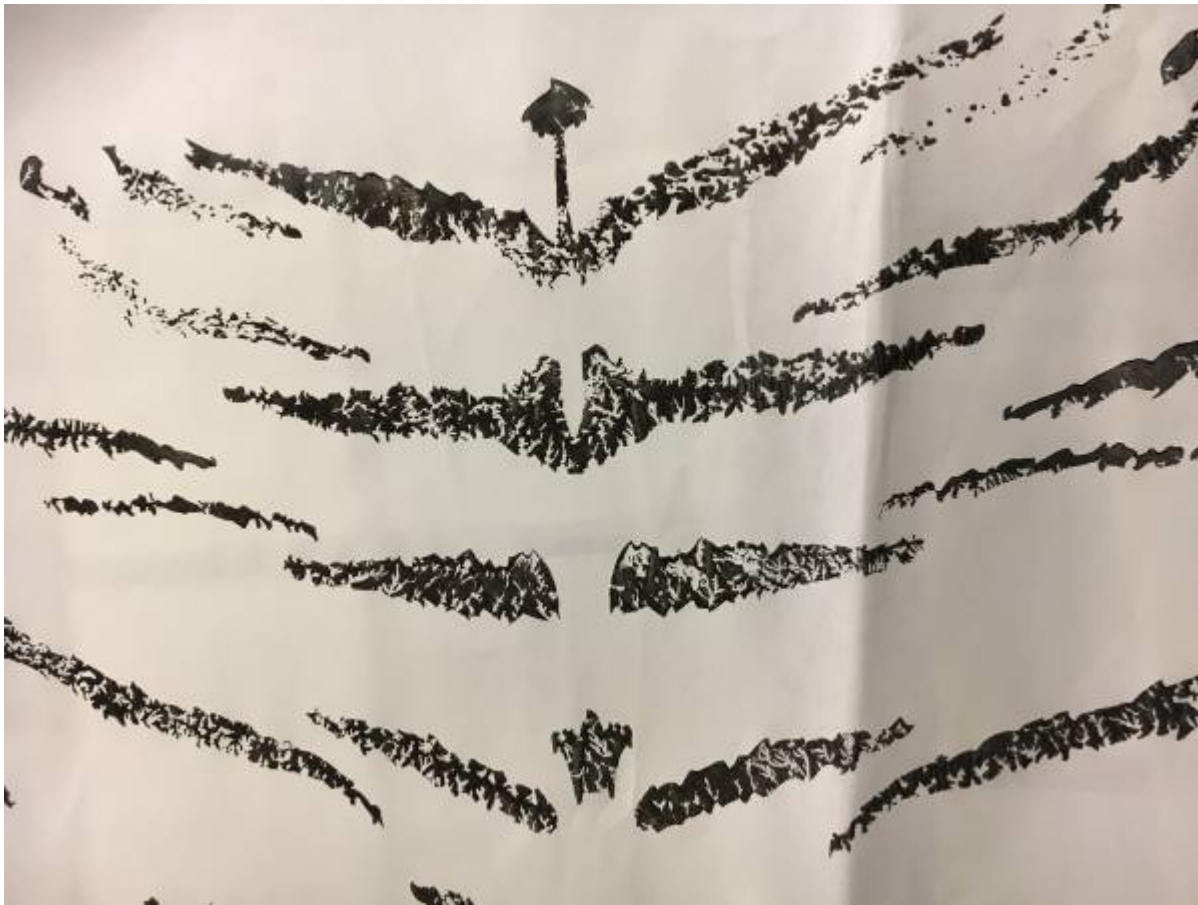
casted into the paper. The texture of the paper was still a an issue as you can see in the photo of the limited print. Another strategy that may yeild some improvement is to line the bed with some foam.





the use of the pvc board to spread the paint with a roller was successful - though the polished surface

of the acrylic printblock cause the paint to bead creating interesting but ultimately unwanted patternation.



you can see this patternation in the print above on plain paper. we'll try to resolve this by giving the acrylic a light sand and trialing using craft card as the positive surface of the block.

Daniel is hunting down so untextured blank paper

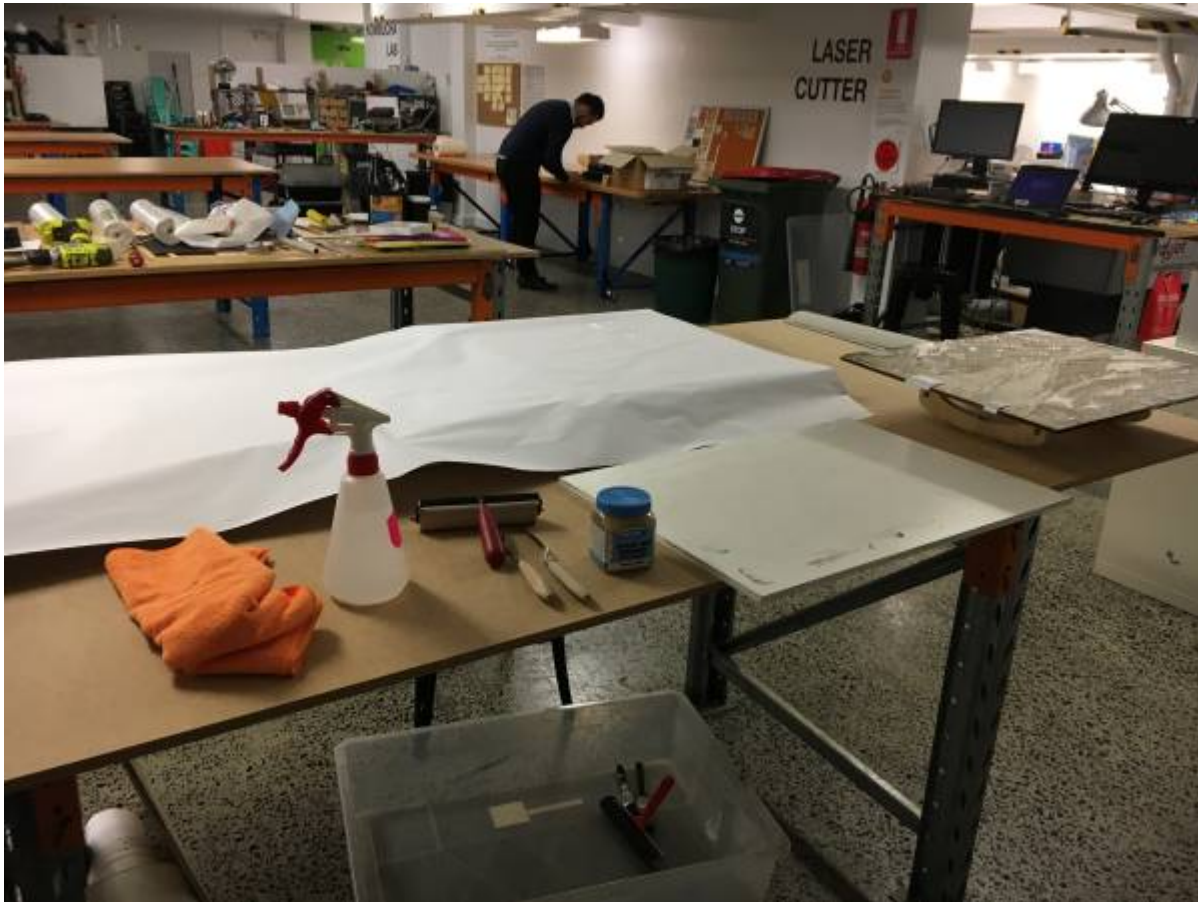
Thermographic Pigments

Test Print 3 over the last couple of months I (mick) have had trouble finding buying the thermoreactive pigments. Test print three was done with the SolarColorDust.com Black to Pink Ultra thermoreactive (87F) pigment

<http://solarcolordust.com/products/create-your-own-sample-pack-thermal-dust-86f-8a222844-875c-49ad-ac14-be7fe4377bce>

Setup

Its good to have all you gear ready to go before you start



Lay out **everything** you are going to need for the whole process from mixing you block ink, printing drying and clean processes.

Mixing

- Medium
- Pigment
- Sherbet spoon (for measuring out pigment)
- mixing plate (expanded PVC board or glass)
- Palette Knives
- Rags

Printing

- Wallpaper block
- Soft Brayer (Soft rubber roller)
- Paper (loaded up, aligned and ready to print)
- Scissors
- Print Bed
- spray bottle?

Drying

- Clothes line (set up ready to go)
- Pegs

Cleanup

- Tub
 - Brushes (under your bench ready to clean up quickly)
 - Hose
 - Dry rack
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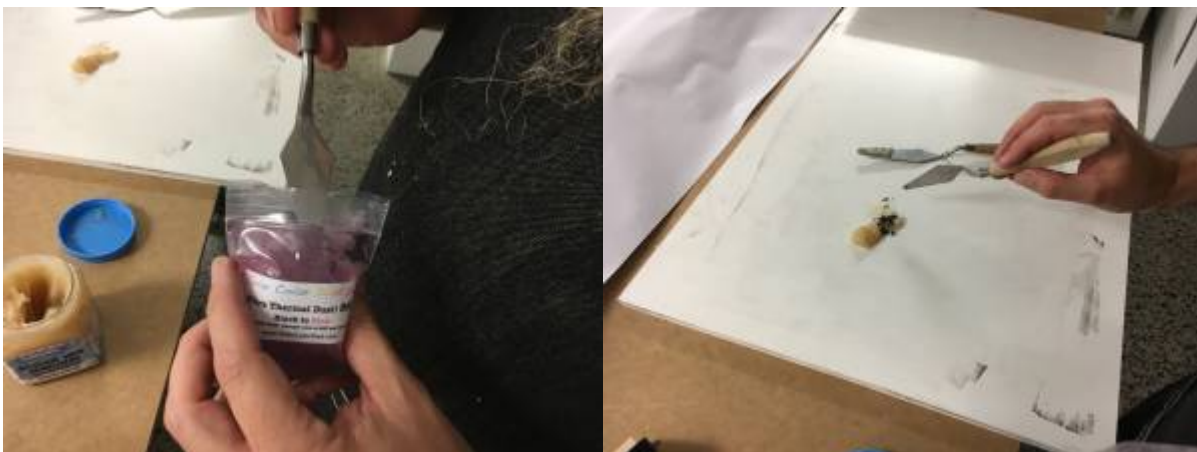
Mix Pigment and Medium to make ink

measure out some medium on to the mixing board/glass with a palette knife. Make a valley/depression in the middle of your chunk of medium.



you probably need less than you think. 1 or 2 level teaspoons of medium is probably a good start.

With the sherbet spoon measure out some pigment into this depression (like when you crack an egg into flour when your making cake batter) 1 or 2 level sherbet spoon is probably the right concentration of pigment.



Care fully fold the pigment into the medium (without blustering the dry pigment everywear and wasting it) until it is a consistent mix.



Now with your soft rubber brayer, roll out the ink onto you mixing board/glass until the ink is spread thin across an area of the board. If you have the right consistency ink and it is spread correctly the roller will start making a sticky sound as you roll over the ink. Once you have this, you are ready to start printing.



Load your roller with ink



Load the positive of your block with ink



Line up the block with the registration angles on closest side of the printbed.



Lower the print block down onto the paper and in alignment with the registration angles on the far side of the printbed



Press the block down with your body weight



Carefully pull the block off the paper and admire your handy work (*or complete failure as a human being*)



Draw you wallpaper through the printbed to load up ready for you next print



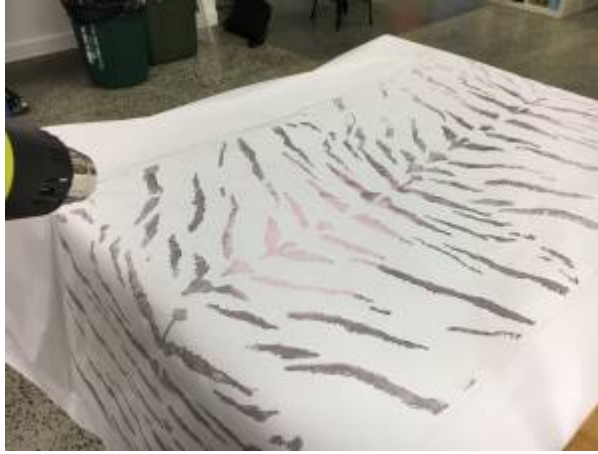
Reload ink onto your block



Rinse (not really) and repeat process until you have your ceiling height length of paper.



The Thermo reactive pigment work pretty well and is even sensitive to body temperature (put your



hand on the dry ink and it changes.

Print Test 4 Also ran a test with Little Bird Electronics Red to clear Thermo Pigment

<https://littlebirdelectronics.com.au/products/thermochromatic-pigment-red-20g>

In this test i added a lot more pigment (1-2 sherbet spoons per 1-2 teaspoons of medium.)

and did not use the timber backboard with the handles - just the transparent arcylic block.

Without the timber in the way you could see what you are doing when lining up the block with the paper and the print bed.

You can aslo se where you need to apply more pressure to the back of the block to ensure that the positive seface has been pressed against the paper and uniformly spread the ink.

Workshop Plan

this is the workshop plan that we mostly followed in the trial of this wotkshop with Flying arts kids over 2x 3hour sessions

intro_to_illustrator_for_laserand_wallpaper_block_printing.docx
includingn illustrator keyboard shortcuts and cheats

Workshop 1 Section 1

Demo of the laser and our wallpaper block-printing jig

20 min

Workshop 1 Section 2

Dimensions of wallpaper design

15min

Workshop 1 Section 3

Intro to designing for Laser in Adobe Illustrator

- Whats AI and vector Graphics • Set up a new document in Adobe Illustrator • Place some artwork • Navigating layers - lock off reference and digging down into a design • Selection and Navigation tools
- Simple Drawing Tools lines • Line Thickness and colour • Transform, Grouping, Joining
- Paths, joining and find outlines and the Pathfinder tool • Text Tool • Trace reference material • Live Trace

40 min

Workshop 1 Section 4

2 Colour Block-print Designs in Pairs

90 min

Workshop 1 Section 5

Laser cut a design and reflection

20 min

TryIt and Feedback

The Kids seemed to love the workshop and really take to both the illustrator session and block printing session

- the yp engaged with the manual drawing/ tracing tools (not just opting for the live trace)
- they also engaged eagerly with the weeding and experimentation with colours and **of course**

loved the Laser

- They were not as interested in the wallpaper as a product but this could be an age thing

Woodford 2017 Delivery

The Edge delivered 2 Electrographic print making workshops at Woodford. In the lead up to Woodford members of the team were asked to contribute block designs to be printed on fabric (t-shirts, wall hangings). Robust colour-fastness of the prints was achieved by adding Chromacryl Textile medium (approx 5ml to 100ml of printing medium) and ironing the finished print. We also took EVA foam (craft foam) sheets which cut into designs and stuck down to plywood offcuts with 3M spray adhesive to create a printing block of their own design. This process allowed participants who wanted to make their own designs to rapidly produce a block in the short workshop duration (approx 1 hour for design & 1 hour for printing). Participants who were not confident in designing could choose from the premade range of laser cut/ CNC routed blocks. This gave us an excuse to show a video and talk about the Laser and CNC resources available to the public at the edge.

Both deliveries of the workshop were very successful with a range of participants from various ages and backgrounds (young and old serious crafts people and tourist) signing up and engaging deeply in the activity. There were a number of people who used the workshop as an opportunity to make a souvenir (t-shirt/ wall hanging) to bring home from their festival experience.

Photos

















References

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Files

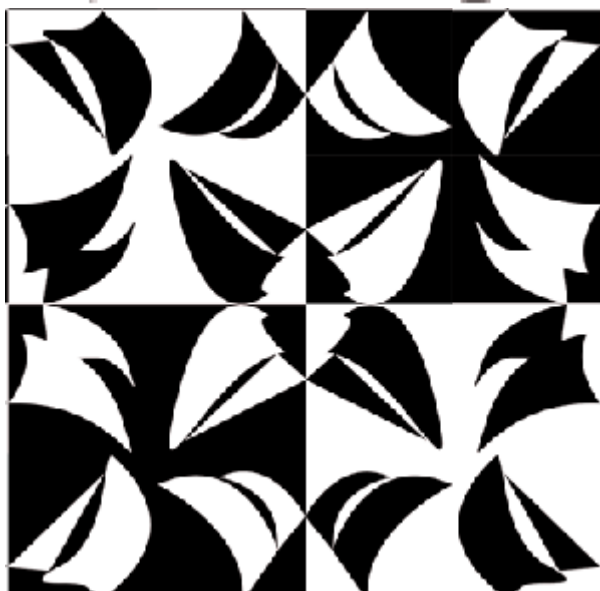
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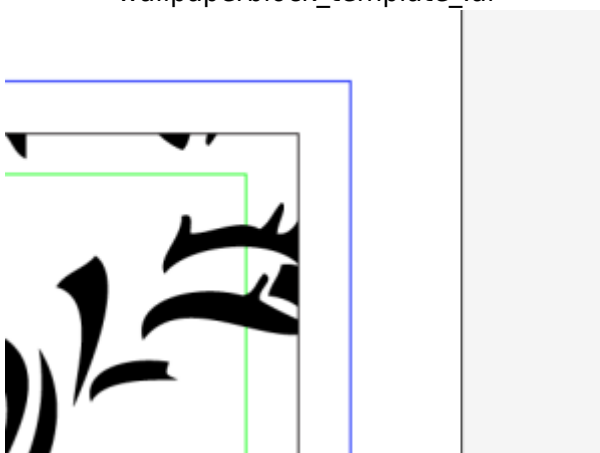
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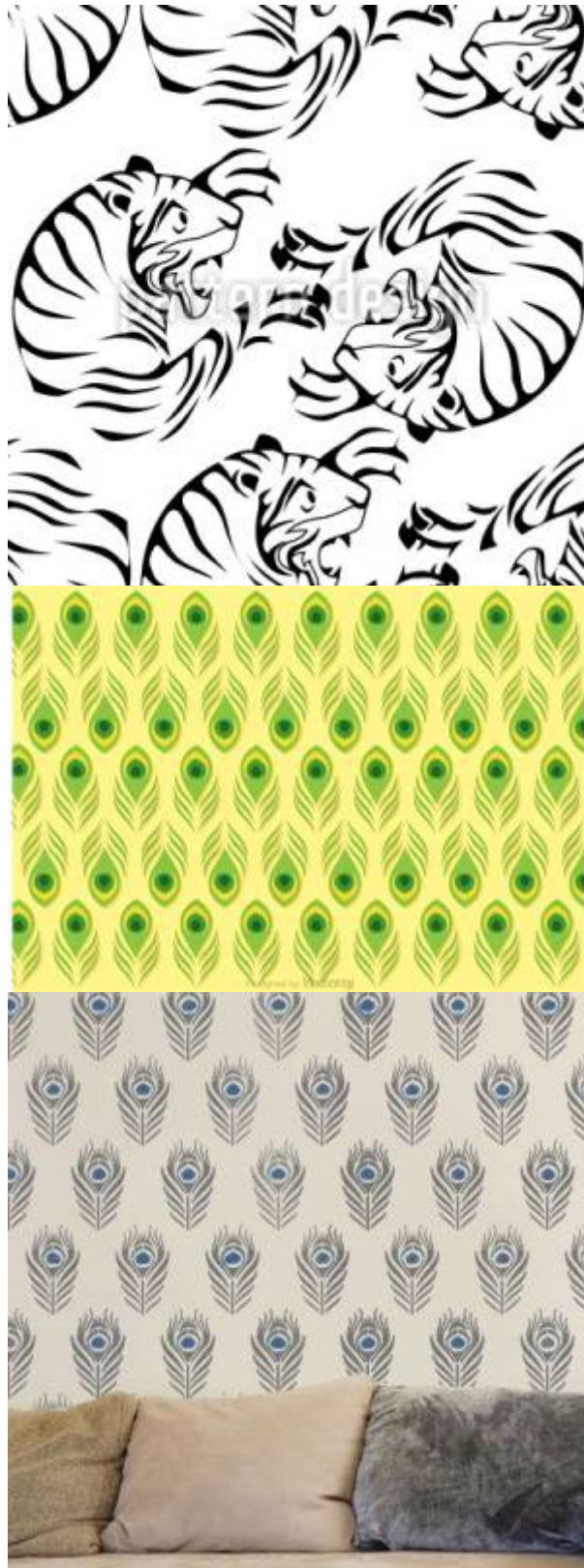


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Critical Success Factors

[Which of the critical success factors does this Prototype target? For more details see](#)

SLQ-Strategic-Plan-2016-20

Enable Access

- ☒ [✓ michael, 2016-11-22]Provide life skills and early childhood literacy programs
- ☐ Increase free access to digital content
- ☐ Strengthen Queensland library infrastructure and discovery platforms

Engage Community

- ☐ Grow the State's historical collection of Queensland culture and heritage
- ☒ [✓ daniel, 2016-12-01]Engage with communities of interest through dedicated centres of

engagement

- ☐ Facilitate the community's use of and interaction with content

Build Capability

- ☒ [✓ michael, 2016-11-22] Build capacity within our communities of interest
- ☐ Generate new revenue sources
- ☒ [✓ michael, 2016-11-22] Position our workforce for the future

Delivering of The Edge Promises

Aside from the SLQ Strategic Plan, there is The Edge's commitments to the community and the lens we look at it through. Here are a few more check boxes for you to answer

This empowers creative experimentation across...

- ☐ Art?
- ☐ Science?
- ☐ Technology?
- ☐ Enterprise?

It will inspire...

- ☐ Whimsy?
- ☐ Nostalgia?
- ☐ Curiosity?
- ☐ Awe?

Created by *Daniel Flood* on 2016/11/09 08:47.

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