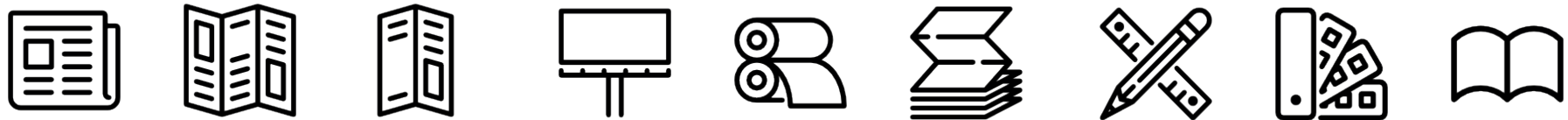


Sustainable Print

for Designers



How can we minimise the environmental impact of what we do?

How will this brief work?

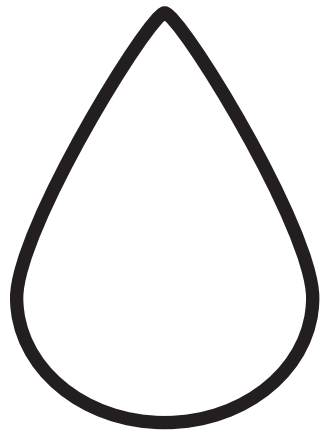
**This project is worth 70% of the overall module
(30% was the intensive week of workshops)**

**Its designed to get you thinking about the huge range
of possibilities within 'print'**

**We will also cover sustainability in relation to how we
operate as graphic designers**

We have a printers on-board to work with

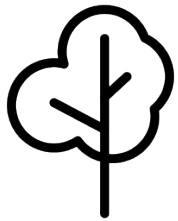
Fast Paced! Submission deadline: 20th November



The graphic design industry relies on a number of resources, such as energy, water, paper, inks, solvents and packaging to enable and facilitate the work we do.

For a piece of design work to be *'sustainable'*, we must be aware of the implications of our design decisions.

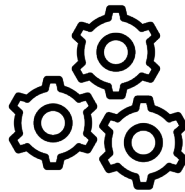
By making informed decisions, we designers can look at minimising the environmental impact of our work, and reign in its carbon footprint.



trees cut
down



shipped to
paper mill



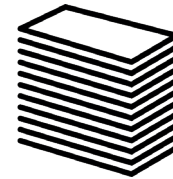
turned into paper
using machinery
and chemicals



shipped
out to
printers



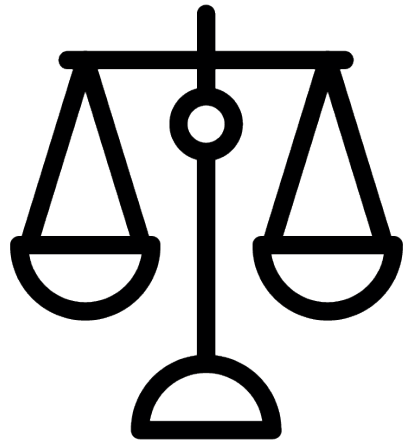
ink and
machinery
to print



cut to
size



waste
dumped



Why do we do it?

For a piece of design to be 'sustainable', all that has to happen is for the impact scale to tip. If the book impacts upon the user, ending in social change for example, the negative environmental impacts would be outweighed.

Its function is seen as worthwhile.

In this module we will look at how we can use various print methods to enhance our design work.

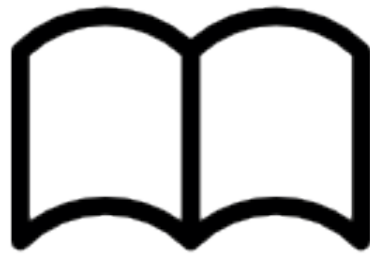
Really thinking about how to engage your user is the first step in being a sustainable designer.

Essentially, we look to cut out the wasteful 'throw enough out there, some of it will work' mentality, in favour of well calculated, targeted design. Less waste and more impact.

Core Materials

used in everyday graphic design



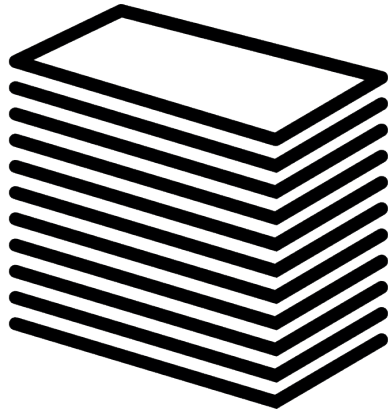


Understanding Paper

Perhaps the most obvious resource we use in vast quantities as designers is paper. It's the main printable surface for all of our books, magazines, leaflets, flyers, business cards, zines, posters etc...

What goes in to making paper?

The make up of your average sheet of printer paper



Fibers from Wood & Grasses (Cellulose)

Clay to fill and bind it

Chalk to give smooth surface

Bleach to colour white

There are two main ‘families’ of paper to realise.

Coated



Coated paper has been coated with a surface sealant, typically clay, to impart certain qualities, including weight, surface gloss, smoothness and reduced ink absorbency.

The main categories are 'gloss', being a shiny surface, and 'satin', not so shiny.

The coating means the ink doesn't soak in, allowing for bolder colours and higher DPI.

Do we need these coatings on our paper stock? Is our design photo led?

Uncoated



Uncoated paper stock is paper that has not been coated with a surface sealant. Also known as ‘offset’ or ‘matte’, they are often used to achieve a grainy-like texture to the printed surface.

This is often used within sustainable printing, as it cuts out the need for clay or chalk sealants, and the ink naturally dries into the surface, cutting out the need for heat driers.

Examples demonstrating the differences are available.

GSM Paper weight

Paper weight is measured in 'GSM', meaning grams per square meter.



As a starting point of reference, the average paper you will use at home as 'printer paper' is 80gsm.

Higher GSM is achieved by adding more clay or chalk filler, giving you a more dense paper stock.

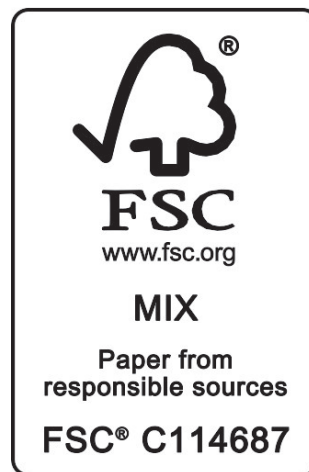
The right GSM for the right job. Don't always stick to the default.

Environmentally friendly paper

There are many different sources of eco-papers out there, but its worth noting that just because its recycled, doesnt always mean its the best option.

Recycled paper can need to be heavily bleached to get it back to being a solid white surface.

Other options are available.



Sustainable Sourcing

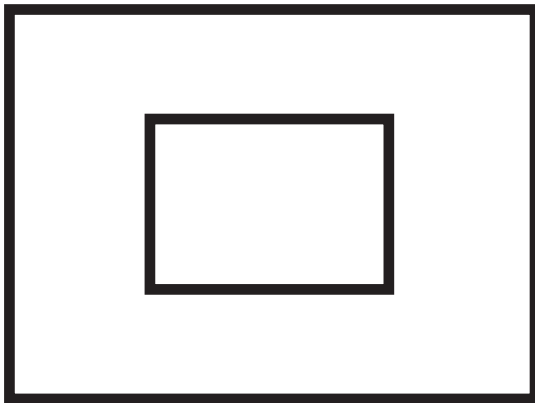
In the UK, we can look for these logos on our paper or printed material to let us know their sustainable credentials.

One is from recycled material, the other from responsibly managed forestry sources - both are sustainable in different ways.

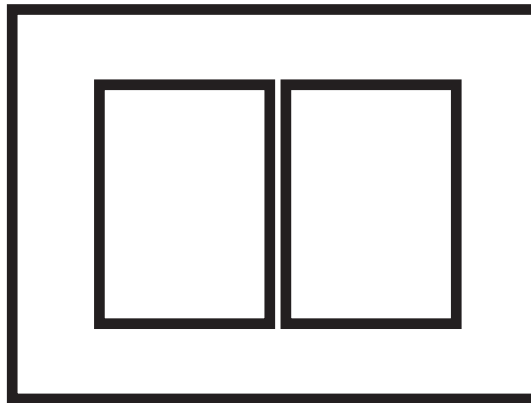
Always ask for these credentials when selecting your paper.

Paper Usage

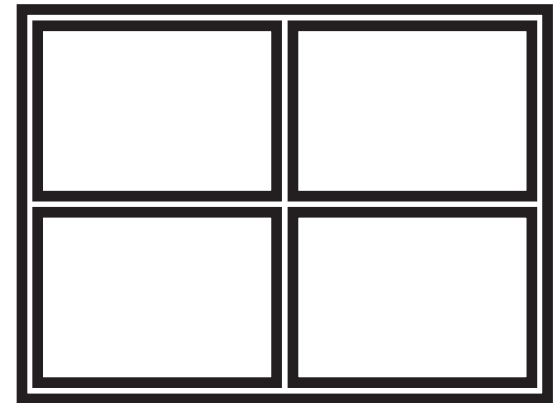
Firstly, think about page size, and whether you are likely to be wasting paper when its cut down.



'1 Up'



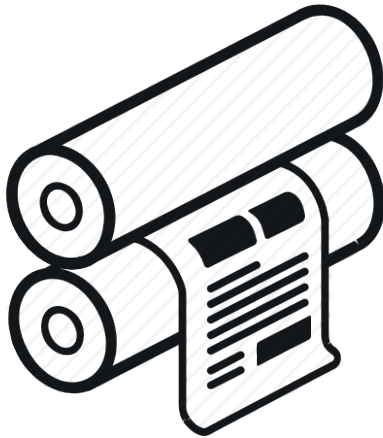
'2 Up'



'4 Up'

Litho Printing

The Offset Process



Offset lithograph printing is still the leading way of producing large 'runs' of work.

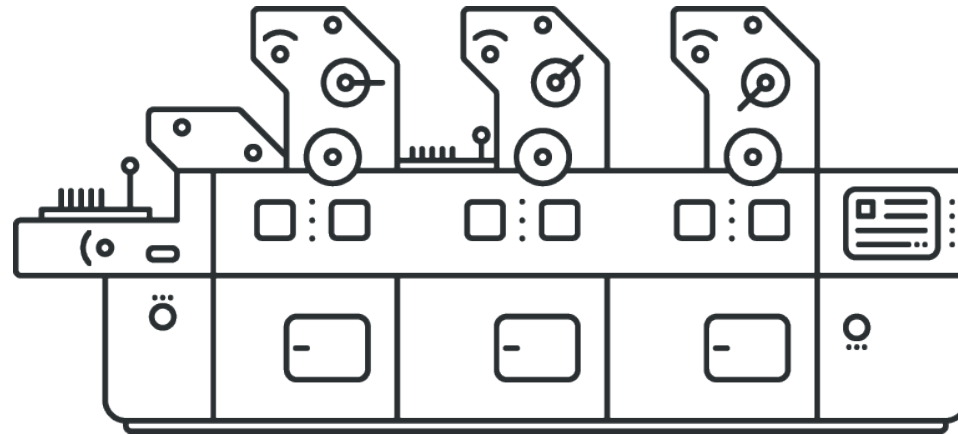
Its why we set all of our print files up as CMYK.

Offset Lithograph Printing

A typical print is separated out into its 4 colours, **Cyan**, **Magenta**, **Yellow** and **Black**.

A lazer-etched printing plate is made for each of the 4 colours. These are most commonly made out of metal.

Each colour is then printed one at a time to produce a final image.



How Offset Lithograph Printing Works

<https://www.youtube.com/watch?v=5LMU-zB8Sro>



CYAN



MAGENTA



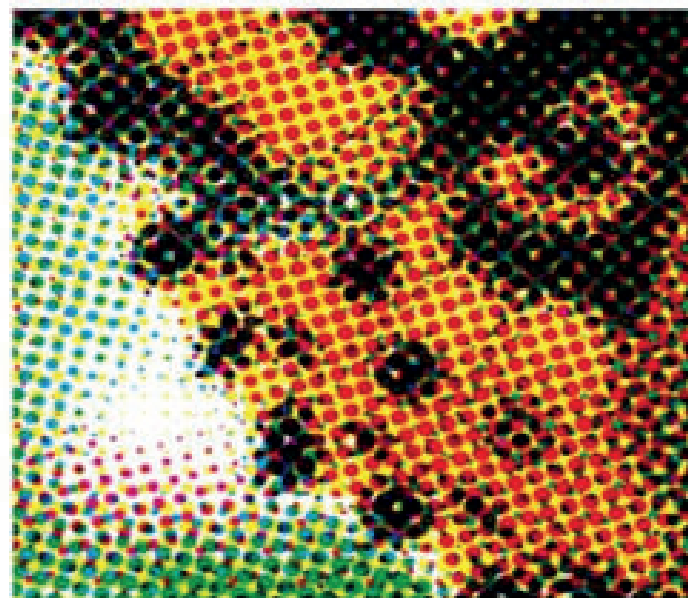
YELLOW



BLACK

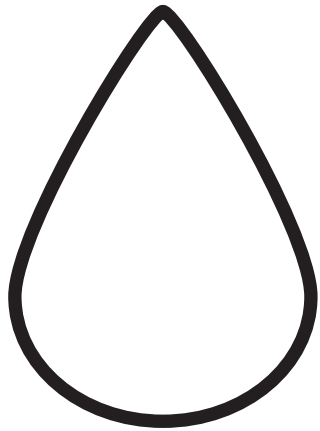


FINAL CMYK



DETAIL VIEW

Lithograph Inks



As just outlined in the video, the process relies on the fact that water and oil don't mix.

This means the vast majority of litho inks are oil based. This along with the other toxic chemicals the process uses for cleaning etc, make for worrying environmental impacts.

How many copies do you need?

Due to the way costings work out, its often tempting to get higher quantities than actually needed.

You often find 10 copies is only marginally cheaper than 100 - this is due to the costs when litho printing being predominantly in the setup, and the making of the plates.

This is why litho remains the industry standard process - its really cheap!

Setup for Litho

When you set up your files,
make sure you are in the correct
Colourspace.

To check go to:
File > Document Colour Mode
in Illustrator

In Indesign: File > Document Setup and make sure you're working with the intent is set to 'Print'

You can view the colour separations in any of the main 3 adobe programs before you send to print by opening the separations preview

Window > Separations Preview > Tick Overprint Preview



In Indesign: Window > Output > Separations Preview

Design Checks

for Litho Printing

- ④ C.M.Y.K Colourspace
- ④ Save your file as a PDF at 'Press Quality'
- ④ Make sure your printers marks are turned on



Trim Marks

These tell the printers exactly what size to cut your job down to.

Bleed Marks

These allow the printer to see the bleed you have set up and whether it is sufficient.



Registration Marks

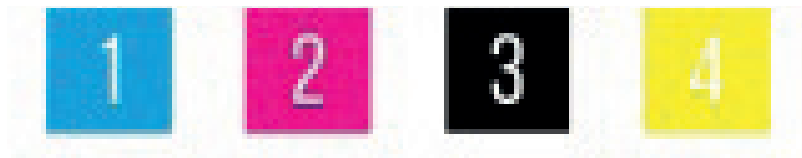
These target shaped marks sit off of the page area and enable the printer to accurately align the printing plates on top of each other.



Registration marks will appear on each plate, and they should be aligned to overlap perfectly for quality results.

Colour Bars

These serve many purposes, but the main two are to confirm:



how many colours have
been layed down



and if the density of
the inks are correct.

In Summary

The litho process is still the industry standard print process for large print jobs. This is due to its high speed and low financial costs when worked out per copy.

Perfect for jobs requiring thousands of copies, but there are much better solutions for your smaller jobs, which we will start looking at next week.

The Brief

For the first part of this brief, you will be setting your files up as if it is going to be printed through the litho process.

Today!

Have a think about the brief - and start making decisions on:

- 1. Your chosen content**
- 2. The document dimensions**
- 3. and set your files up accordingly, in line with the litho process**