

Stinsensqueeze with the
Gallery Climate Coalition (GCC)
Catalogue design

Our utopian dream to design and produce a fully environmentally conscious exhibition catalogue has opened up many insights and considerations we would like to share around book printing and production today. We hope this transparency and our shared findings can be used as a tool to enable future environmental design considerations in relation to printed materials, or more specifically the book.

These considerations are by no means exhaustive – rather a springboard to dive deeper.

Raw Materials

When selecting the raw materials there are some key variables to consider around sustainability, such as their provenance, and how they are processed and produced. Below are some key considerations and questions to ask.

Paper

What is the paper made from?

Recycled fibres, virgin fibres or non-wood fibres (e.g. denim, hemp). While recycled fibres usually have a lower carbon footprint than virgin papers, this depends on the exact methods used to source and manufacture the recycled paper.

How were the raw materials sourced?

There are many organisations offering certification on environmentally appropriate practices and sourcing. It can be hard to gauge the effectiveness of these approaches: is offsetting your carbon use by planting four trees that will take forty years to grow a viable, sustainable solution?

Some of the forms of accreditation we encountered were: FSC (The Forest Stewardship Council), SFI (The Sustainable Forest Initiative), The Blue Angel, EMAS, ISO 14001, EU Eco Label and PEFC (The Programme for the Endorsement of Forest Certification). They each enforce regulations relating to environmental standards, some are connected to governments and to market interests, while others operate as independent non-profit organisations.

How was the paper made?

Processing paper in acid-free environments with a chlorine-free manufacturing chain (from raw materials to end product) averts the internal chemical deterioration of paper over time, and prevents chlorine and its derivatives from harming the environment, and aquatic life in particular.

Where is the paper made?

It is important to consider both the processes and energy consumption used in making paper, and delivering the paper from the mill to the printers – for example does it travel by boat and truck, or can it be delivered on a bicycle, or by hand?

This catalogue uses four paper stocks: Revive Natural, 115gsm – carbon balanced (through World Land Trust's Carbon Balanced Paper scheme), manufactured from FSC® Recycled 100% post-consumer waste at three paper mills in Europe, in accordance with ISO certified standards for environmental quality and energy management.

Oxygen Recycled, 120gsm by Lessebo, Sweden – carbon balanced (Tree Budding scheme, for every tonne of CO₂ that they offset, one tree will be planted in the UK) and manufactured from FSC® Recycled 100% pre-consumer waste (waste that never leaves the mill and gets remade back into paper) in accordance with ISO certified standards for environmental, quality and energy management.

Crush Grape, 120gsm by Favini – contains residues from the processing of grapes for wine and food (15%), combined with 40% post-consumer waste, and FSC® certified virgin fibre. Crush Grape is produced with EKOenergy and is GMO free, which results in a 20% reduction in carbon footprint.

Woodstock Pistacchio, 285gsm by Fedrigoni – made with 80% pre-consumer recycled waste, and 20% FSC® certified virgin fibre, by Fedrigoni, Italy. It is acid and chlorine free, and can be carbon balanced on request with the World Land Trust.



Crush paper by Favini, distributed in the UK by Fenner paper.

Ink

What is the ink made from?

Ink often contains toxic content. There are many more environmentally-conscious options – vegetable-based inks and soy-based inks – but some are better than others. Even with vegetable inks, black is often made from carbon black, which is derived from heavy petroleum, is a listed carcinogen, and causes environmental degradation.

Are there issues with sourcing or using sustainable inks?

The findings on sustainable inks was more limited than with paper. We found that vegetable or soy based ink can take longer to dry (you can use an aqueous coating to seal it), but it has less impact on the environment during production, use, and when the paper is 'de-inked' to be recycled.

The black in this catalogue is printed using algae ink from Living Ink. Algae ink is a plant-based biodegradable ink, a renewable carbon black alternative. It uses vegetable oils as the carrier of the black pigment from the algae. At large-scale production, algae black pigments are carbon negative. Algae absorbs atmospheric carbon dioxide and Living Ink 'locks' that carbon in the bio-based black pigment for over 100 years. This publication is the first time it has been used in the UK.

The rest of the catalogue is printed with Novavit® F918 SUPREME BIO, a vegetable-based, ecologically friendly, fast-drying printing ink.



Algae Offset Ink printed for a Patagonia handout. Image by The Office of Ordinary Things.

Design and Production

When creating the design, careful consideration of how the pages present images and text can help reduce waste. Likewise, for the print production, decisions around binding, print run and the printers themselves can help create a more sustainable book.

Print run

How many books are you printing?

Reducing the print run is the largest impact we can have on carbon footprint. Only print essential

dummy copies during the design process (which can be repurposed after), think about alternative solutions for disseminating the book (e.g. sharing or borrowing books from people, organisations, or libraries), and limit the potential for leftovers.

This catalogue was a print run of 3,000 copies. We produced 1 dummy + 3 x B2 scatter sheets for proofing images.

We are also advocating for the creation of a reading space at the museums and bookshops where this catalogue is stocked. This will allow people to read the book without buying it, and access other relevant titles.

Paper quantity/wastage

How can you reduce the amount of paper being used?

The second most significant consideration in reducing environmental impact is reducing the amount of paper used, which in turn reduces the printed area. This can be achieved by reducing the size of the book (by defining the dimensions and page count of the book according to the dimensions of the large format flat sheet) and reducing the weight of the paper (using less pulp, and decreasing overall weight, which requires less energy to transport). It is also possible to reduce the page-count by making use of all space, maximising on content and minimising the amount of empty space on the page, while taking into account readability, and design approach. You can reduce the size of the margins – use indents for paragraph separation rather than line breaks – and use smaller point sizes for text, choosing a readable, accessible typeface.

This typeface, Calluna, was selected due to its readability and flowing, calligraphic feel (counterbalancing the many digital projects in the exhibition with type that connects to the human hand).

The book is jam-packed with content, and the visual and text sections are clearly defined, meaning that the text section had the potential to feel dense. To counteract this, we mixed up our type treatments throughout the pages.

The grid system of the book was set using the Fibonacci sequence – something that connects humans and nature. Using the smallest visible unit when placed on the B5 format, we developed a grid that provided us with tighter margins and longer line lengths than we normally would use when designing a book.

Ink quantity

How can you reduce the amount of ink being used?

There are multiple ways to reduce ink: use a lightweight typeface; apply opacities on colour; use outlines or patterns rather than solid colour fill; blind em- or de- boss; or reduce the number of lithographic plates.

Reducing the number of plates not only reduces ink, but also the need to produce plates and time on press, which all contributes to a reduction

in energy use and raw materials. This can be achieved by printing monochrome or duotone, and managing sections where it is full colour.

We didn't fully explore reducing this due to the exhibition intentions – to be vibrant and positive.

We tested using the outline of letters and having one-colour sections, but balancing the requirements of budget, designing an environmentally conscious book, and the vision for the exhibition meant we had to make compromises. The book is printed in full colour except for the final section, which is black with one spot colour.

Printing

How do you find a sustainable printers?

A quick way to identify a sustainable printer is to see if they adhere to the ISO14001 environmental standards. ISO14001 is an internationally agreed standard that sets out the requirements for an environmental management system. It helps organisations improve their environmental performance through more efficient use of resources and reduction of waste, gaining a competitive advantage and the trust of stakeholders.

Consider what energy they use, what kind of lighting they use, and their waste management. It is also important to consider their location in relation to the final destination for the book and how they treat their workforce.

We printed the catalogue with Calverts, a workers' cooperative wherein their employees jointly own and control the company, putting into action the cooperative values of equity, solidarity, democracy, self-responsibility and equality.

We selected Calverts due to their sustainability credentials and locality to the project (they are based just down the road from the Barbican so will use a cargo bike to deliver the books). They recycle plastic containers, and solvents are collected by a licensed environmental partner and where possible treated by bio digestion. 100% of their electricity is generated from hydroelectric and wind power. Their supplier is Ecotricity, who also supply gas for their heating system.

They have a B2 Heidelberg Lithographic press, and recycle their aluminium printing plates (they are re-used by the construction, motor and print industries).



Credit: Calverts.coop

Book-binding

How to make book-binding more sustainable?

In section-sewn books, this can be achieved by reducing processes (such as the level of trimming), switching solvent-based adhesives for bio-based adhesives, using 100% cotton thread and PVA glue, which is non-toxic and widely regarded as biodegradable.

This catalogue is section-sewn with an open-spine using 100% cotton thread and a thin layer of PVA for strength.

The word utopia stems from Thomas More's book *Utopia*, combining the Greek words *ou*, meaning 'no, not' and *topos*, meaning 'place'; no-place, an impossible ideal, a position to seek, where the effort – rather than reaching the fictional paradise – may be what makes it worthwhile.

We would like to thank Heath Lowndes and Danny Chivers from the Gallery Climate Coalition for all their help and insightful discussions. Nina Carter, Martha Dillon and Matthew Lewis from *Its Freezing in LA* for their guidance on how to create a more sustainable book, and finally Arthur Stitt from Calverts, for his support throughout the production of the catalogue.

Stinsensqueeze (STSQ) is a graphic design studio, founded by Stina Pariente Gromark and Louise Naunton Morgan, based in London and Paris, who specialise in publications, visual identities, exhibitions, typefaces, art direction and digital platforms for individuals, commercial brands and cultural institutions.

Their approach is dialogue driven. Through careful analysis of content and context they support clients and collaborators to fully communicate their ideas, delivering appropriate solutions with both a functional and emotional impact. Their design process is equally led by conceptual research and craft, which results in unexpected outcomes – the design of bespoke typefaces, use of non-standardised materials and productions methods.

What is the climate impact of this publication?

Catalogue designers Stinsensqueeze approached the Gallery Climate Coalition to review the climate impact of this catalogue.

Creating 3,000 copies of this catalogue required the printing of around 2.6 tonnes of paper, of which around 2.2 tonnes was from recycled sources. For a typical publication printed in the UK, this would result in around 6.5–7 tonnes of carbon dioxide equivalent (CO₂e) being released into the atmosphere, from the fuel burned to transport the raw materials, pulp the paper and power the printers. This would be the same as 3,000 people driving around 8 miles in an average car. It is important to note that the emissions figure would be around 15% higher for a publication made with 100% virgin paper.

At the time of this catalogue going to print, we don't know exactly how the real-life carbon footprint of these pages compares with the figures above. Gathering precise and reliable data on how the material, design and production considerations made by Stinsensqueeze have impacted the carbon footprint has proved to be challenging.

However, as more people in exhibition production and book making demand low-carbon choices, this situation will hopefully improve. It should become easier to find more detailed information on the exact emissions from various practices and alternatives in the culture sector.

As we come to terms with living in a climate emergency, we need to get used to *always* asking the question: what is the climate impact of this publication? And – more importantly – what can we do to reduce it?

It is impossible to plan a route to a destination without knowing where you are starting from. Calculating emissions is an essential step on the journey towards low impact operations and environmental responsibility.

GCC asks its members to set a CO₂e reduction goal of at least 50% by 2030 and provides the necessary resources and tools in order to achieve this including a bespoke and easy to use carbon calculator, which is available to all free of charge.

The insights gained from this process, and the subsequent pathway of action that emissions measuring offers, is crucial to making effective change.

The same methodology has been used to estimate the impacts relating to this book. The careful consideration of the consequences associated with

the production of this publication demonstrates keen environmental responsibility and sets new standards for sustainable printing and publishing, within the current limitations of the industry.

Heath Lowndes, Managing Director of Gallery Climate Coalition (GCC) and Danny Chivers, environmental advisor to the GCC.

Gallery Climate Coalition (GCC) is an international charity and membership organisation providing environmental sustainability guidelines for the art sector.

The coalition's primary target is to facilitate a reduction of the visual art sector's greenhouse gas emissions by a minimum of 50% by 2030 (in line with the Paris Agreement's goal of keeping global warming to below 1.5 c) as well as promoting zero-waste practices.

GCC was founded in London in February 2020. As of March 2022 GCC has over 700 members in 20 countries around the world, including artists, museums, non-profits, art sector businesses and commercial galleries. Membership is free and open to all.

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