

perpendicular angel design

organizing and simplifying, one illumination at a time

AN EVENT APART OT 2021: ZERO WASTE WEB DESIGN BY TOM GREENWOOD

It's a new day, and today starts out with Tom Greenwood explaining zero waste web design.

Because this year I used Twitter's threading / topics feature, it's giving me 2 tweets in each embed I do here. I'm embedding every other tweet for readability. There's a PDF at the bottom of the page in case this all collapses.



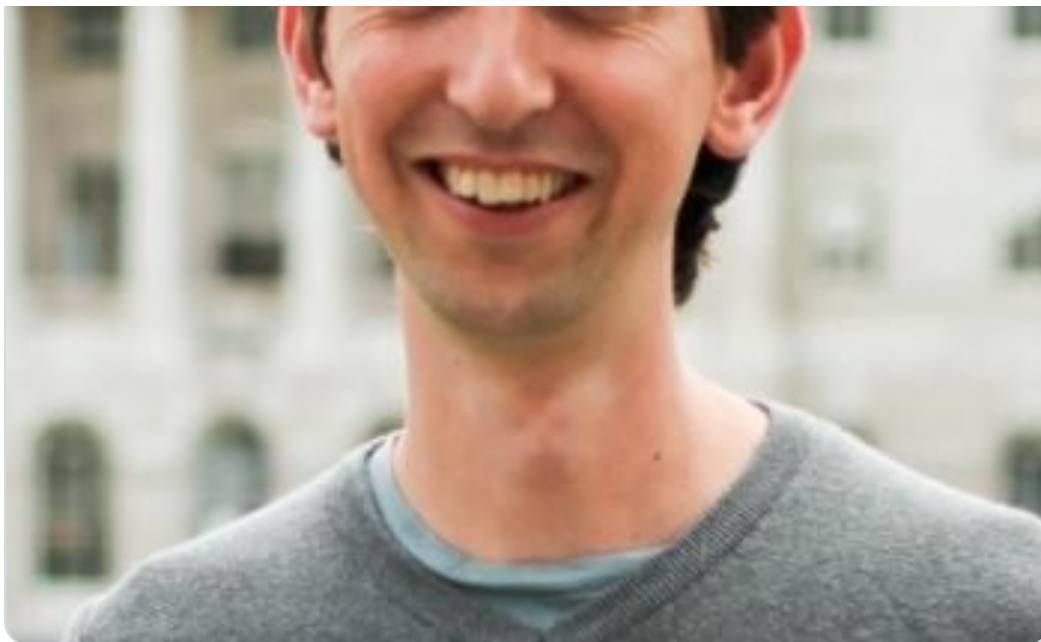
zeldman 
@zeldman



👉 Can you apply a "zero waste" save-the-earth approach to modern web design and development? Author Tom Greenwood [@eatwholegrain](#) says yes and shows how as [#AEAOT](#) Fall Summit Day 2 begins.

[aneventapart.com/event/fall-sum...](#) [@AnEventApart](#)
[@ABookApart](#) [#webdevelopment](#) [#design](#) [#ux](#)
[#conference](#)





10:55 AM · Oct 12, 2021

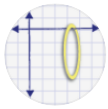


8



Share this Tweet

[Tweet your reply](#)

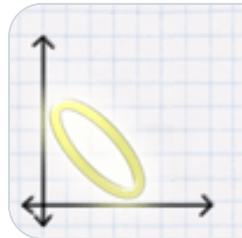


Anne Gibson @perpendicularme · Oct 12, 2021

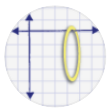


Replying to @perpendicularme

Morning all! I'm going to catch up on the 2 sessions I missed yesterday later today at some point. In the meantime, we'll be starting out with Tom Greenwood and Zero Waste Web Design at 11 ET. His book is excellent - you can read my review here: perpendicularangel.com/2021/03/sustai... #aeaot



Sustainable Web Design by Tom Greenwood
I've know that there is a movement to mak...
perpendicularangel.com



Anne Gibson
@perpendicularme

Waste is expending something carelessly, extravagantly, or to no purpose. There's no waste at all in nature. All resources have a use and a value, used again and again. Waste is a modern invention. #aeaot

11:04 AM · Oct 12, 2021

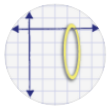


1



Share this Tweet

[Tweet your reply](#)

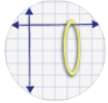


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Plastics that can be manufactured so cheaply that we can use them once and throw them away was one of the beginning of waste. We have sources of material external to ourselves that allow us to save our own resources/energy. #aeaot



Anne Gibson

@perpendicularme

By the 1980s we were very much a consumerist society, the idea of throwing away things and causing mountains of waste.

Daniel Knapp(?) came up with the idea of total recycling. They founded a salvage operation for up cycling and repurposing things #aeaot

11:06 AM · Oct 12, 2021

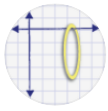


1



Share this Tweet

[Tweet your reply](#)

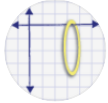


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Daniel felt that total recycling should be solved at a global level. In Canberra, Australia, they passed a No Waste Act stating that nothing would be wasted in the city by 2010. (They didn't hit the goal, but any movement is good movement.) #aeaot



Anne Gibson

@perpendicularme

Corporations don't help much on these goals.

by the end of the 20th century this became a mainstream issue. The zero waste life-style movement tried to find ways to not create trash. There's a sector of shops and products around this. Fit your own waste in a mason jar. #aeaot

11:12 AM · Oct 12, 2021

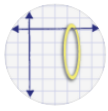


1



Share this Tweet

[Tweet your reply](#)

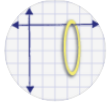


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Tom was excited about industrial design in uni. He was also concerned about the environmental impact. Created one of his first websites. After a few years he felt disillusioned, just scratching the surface. Started a design studio. [#aeaot](#)



Anne Gibson

@perpendicularme

Certifying as a b corporation made Tom think hard about whether they were actually meeting the highest standards of social and environment impact as a digital agency. "It's not relevant" was the message they got.

Started researching the environment impact of the web
[#aeaot](#)

11:15 AM · Oct 12, 2021

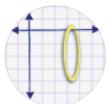


1



Share this Tweet

[Tweet your reply](#)



Anne Gibson @perpendicularme · Oct 12, 2021

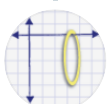


Replying to @perpendicularme

The internet consumes 200TWh of electricity per year in data centers alone. That's the same amount as Australia or Spain for a year, not including telecom, etc.

The internet produces as much greenhouse gas as global aviation or the country of Germany.

[#aeaot](#)



Anne Gibson

@perpendicularme

[websitecarbon.com](https://www.websitecarbon.com) helps you determine how much energy your website is burning. Old, old-fashioned simple websites were much lower impact than new

simple websites were much lower impact than new exciting fancy websites. #aeaot



Website Carbon Calculator | How is your website impacting the pl...
The internet consumes a lot of electricity. 416.2TWh per year to be precise. To give you some perspective, that's more than the entire...
[websitecarbon.com](https://www.websitecarbon.com)

11:18 AM · Oct 12, 2021

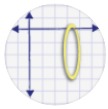


1



Share this Tweet

[Tweet your reply](#)



Anne Gibson @perpendicularme · Oct 12, 2021

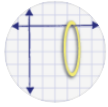


Replying to @perpendicularme

In other industries, products get more efficient over time. In our industry it's heading the other direction.

Although internet speeds have increased massively, networks are more efficient, but average load times have remained static.

[#aeaot](#)



Anne Gibson

@perpendicularme

The average webpage is 400% bigger on desktop and 1200% bigger on mobile. Websites are becoming more and more bloated, consuming all the gain in efficiency. Additional bloat in our webpages eat up the gains in efficiency.

Are modern websites full of waste? [#aeaot](#)

11:21 AM · Oct 12, 2021

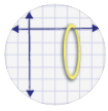


1



Share this Tweet

[Tweet your reply](#)

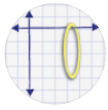


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

People who are living zero-waste lifestyles are embracing a modern minimalist lifestyle. Saves money, time, and enriches lives. [#aeaot](#)



Anne Gibson

@perpendicularme

Zero waste in the web: better performance, improved accessibility and inclusivity, reduced hosting costs, easier maintenance, improved user experience, improved set and pro, and reduced energy and carbon emissions. [#aeaot](#)

11:23 AM · Oct 12, 2021

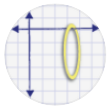


1



Share this Tweet

[Tweet your reply](#)

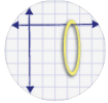


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Zero waste in the web: better performance, improved accessibility and inclusivity, reduced hosting costs, easier maintenance, improved user experience, improved set and pro, and reduced energy and carbon emissions. [#aeaot](#)



Anne Gibson

@perpendicularme

First fundamental question: do we need this? This site, this page this image, this content. What could we lose? Can we do the same with less? What can we lose that makes people feel like they're gaining something?

[#aeaot](#)

11:24 AM · Oct 12, 2021

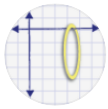


1



Share this Tweet

[Tweet your reply](#)

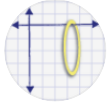


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Nielsen Norman found that if the image you're using isn't actually communicating anything useful, people don't even look at it. It's filler. It's wasted data / wasted space. Really common for us to fill whitespace with images. [#aeaot](#)



Anne Gibson

@perpendicularme

Some web designs make it look like we're more obsessed with how we look than what's useful. Focus on the information users want. [#aeaot](#)

11:27 AM · Oct 12, 2021



1



Share this Tweet

[Tweet your reply](#)



zeldman

@zeldman



"Detail is data, and data is energy." – [@eatwholegrain](#)

[#AEAOT](#) [#ZeroWasteWebDesign](#)

11:23 AM · Oct 12, 2021

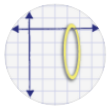


3



Share this Tweet

[Tweet your reply](#)

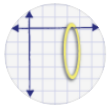


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

putting text on the side instead of writing over a hero image makes the text more readable and cuts the image size. Blurring image edges and keeping the focus on the focal point makes the image smaller. Switch to a black and white image for even smaller. [#aeaot](#)



Anne Gibson

@perpendicularme

Webp and avif files are 30%-50% smaller than jpg files. There's growing browser support for these file formats. Not using webp in many cases is a wasteful thing to do. [#aeaot](#)

11:30 AM · Oct 12, 2021

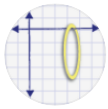


1



Share this Tweet

[Tweet your reply](#)



Anne Gibson @perpendicularme · Oct 12, 2021

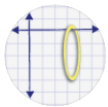


Replying to @perpendicularme

Shortpixel or tinypng can compress images even further, bringing files down, for example, by 77% of their original size.

We could also get rid of images altogether.

Or switch from photographs to CSS styles, color, and SVGs to create visual interest efficiently. [#aeaot](#)



Anne Gibson

@perpendicularme

SVGs can be a really really efficient way to show images. Hand optimizing them in Illustrator (or a text editor) can cut as much as 97% of the size of the image.

Tweak the number of colors.

[I love using photoshop's old-school "save for web" to reducing file sizes.] [#aeaot](#)

11:34 AM · Oct 12, 2021

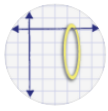


1



Share this Tweet

[Tweet your reply](#)

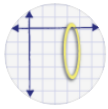


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

When we have fully white screens, every pixel is lit. Black screens use a lot less energy because the background is not lighting the whole screen. Blue is more energy intensive than red and green pixels. Consider moving away from a white and blue design. [#aeaot](#)



Anne Gibson

@perpendicularme

Dark mode in apps uses less battery and is more efficient. [#aeaot](#)

11:37 AM · Oct 12, 2021

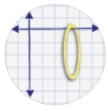


1



Share this Tweet

[Tweet your reply](#)

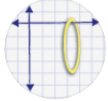


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Autoplay video is like the oil spills of the web. It's so inherently dirty and wasteful. GM's electric vehicle ad is as wasteful as an electric hummer. They demand your attention while burning through your data plan and sucking up your battery. [#aeaot](#)



Anne Gibson

@perpendicularme

Alternatives to video: interactive animations using airbnb's open source animation engine is more accessible, provides better control, and is less wasteful. [#aeaot](#)

11:40 AM · Oct 12, 2021

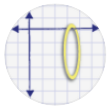


1



Share this Tweet

[Tweet your reply](#)

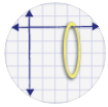


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Google's three principles for using animation in design: informative, focused, or expressive. [#aeaot](#)



Anne Gibson

@perpendicularme

What are the things in our code and designs consuming energy and CPU? How can we make things more efficient?

System fonts are free, zero waste. Not stored, not transferred over networks, already on devices.

[Hotels.com](#) only uses system fonts. [#aeaot](#)

11:42 AM · Oct 12, 2021

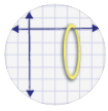


1



Share this Tweet

[Tweet your reply](#)



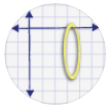
Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Th Inter typeface family is over 2000 characters if you pull down the whole font. If you subset the font, you can make it much smaller, especially if you set it to just english. From 544kb to 10kb. Woff2 is the most efficient file format for the font.

[#aeaot](#)



Anne Gibson

@perpendicularme

Trim your CSS! 555 color declarations on [zerowasteusa.com](#). Especially on websites that have been around for a while, we often find we have dirty css. Modular reusable styles in a design system can help with this. [#aeaot](#)

11:45 AM · Oct 12, 2021



1

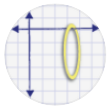


1



Share this Tweet

[Tweet your reply](#)

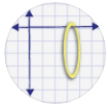


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Tracking scripts are wasteful not just in terms of time, but also in terms of data. #aeaot



Anne Gibson

@perpendicularme

Minimal GA is a tracking script that provides most of the data that Google Analytics provides, but at 1.5kb instead of 17kb. #aeaot

11:47 AM · Oct 12, 2021

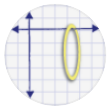


1



Share this Tweet

[Tweet your reply](#)

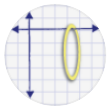


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Personalized ads may not actually be driving your revenue up, and some find that removing the tracking actually increases their revenue. Plus less waste. #aeaot



Anne Gibson

@perpendicularme

jQuery uses 30kb, and 77% of the web uses it. The entire sustainable web manifest webpage uses 27kb including a contact form. Simple forms without jquery save lots of data. #aeaot

11:51 AM · Oct 12, 2021

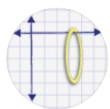


1



Share this Tweet

[Tweet your reply](#)

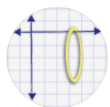


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

C, Rust, C++ are way more efficient than Perl, Python, and Ruby. Javascript is 7x more efficient than PHP, 16x more efficient than Ruby. #aeaot



Anne Gibson

@perpendicularme

Static web technology is more efficient than dynamically serving pages. Strattic serves static files, and switches off the CMS. #aeaot

11:53 AM · Oct 12, 2021

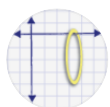


1



Share this Tweet

[Tweet your reply](#)

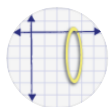


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Waste is an accessibility issue and an inclusion issue. "Large pages are taxes on the poor" - Gerry McGovern. #aeaot



Anne Gibson

@perpendicularme

Those of us who work in digital tend to work in more expensive places with faster connections. The average device in the world is a motorola moto e6, and high-speed internet is not the norm. #aeaot

11:54 AM · Oct 12, 2021

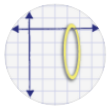


1



Share this Tweet

[Tweet your reply](#)

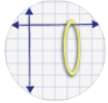


Anne Gibson @perpendicularme · Oct 12, 2021



Replying to @perpendicularme

Alex Russell: "For modern pages, half a megabyte is a decent hard budget." That's 1/4 the size of the average website, but also 20x larger than the website for the sustainable web manifesto. [#aeaot](#)



Anne Gibson

@perpendicularme

If you're not for zero waste, how much waste are you for? [#aeaot](#)

11:57 AM · Oct 12, 2021



1



Share this Tweet

[Tweet your reply](#)