

# The Unbearable Weight of a Massive Web Estate

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# How massive is massive?

- Approx. 2,000 websites under our University domain (ed.ac.uk)
- 1,300,000+ URLs returned in Google Search
- 160 websites (8%) in central University Website service
- 1000+ Website editors
- Single set of regulations/policies/best practice required across the web estate

# A Green Web Estate Internship (or 3)

- Great experience in having interns over to help
- Aim is to introduce sustainability as a core part of our web estate governance
- Measure and understand the environmental impact
- Deliver recommendations and next steps
- Easy right?

# Measuring website emissions is complicated!

- Where are emissions created?
- How are they created?
- Operational AND Embodied !



Data Centres



Network Infrastructure

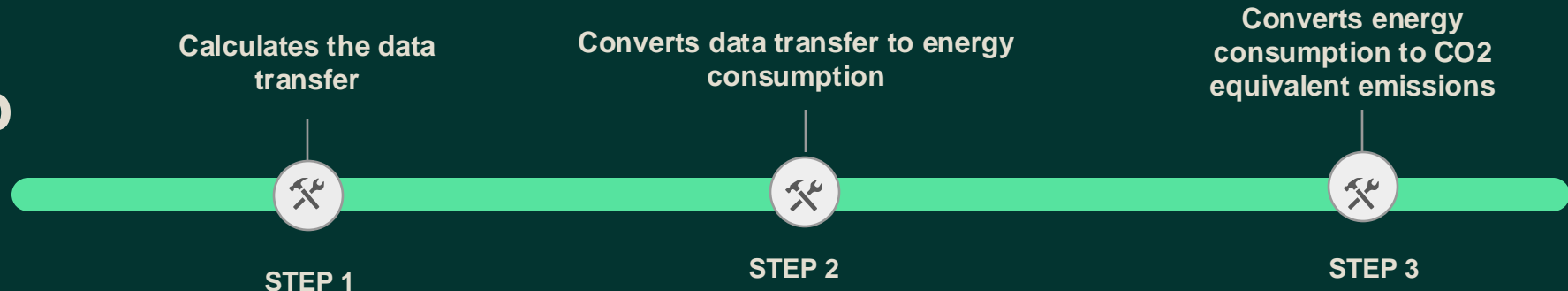


End-User Devices

# Simplifying the measurement

- The Sustainable Web Design Model
- Page weight = Overall size of a web page (MB)
- Use page weight as a proxy metric

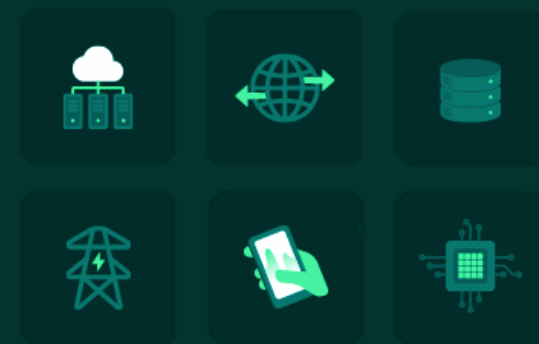
## Three Step Process:



# Different tools!

- Variety of tools and methods!
- Best for webpages – Ecograder
- Pros and Cons

## Ecograder



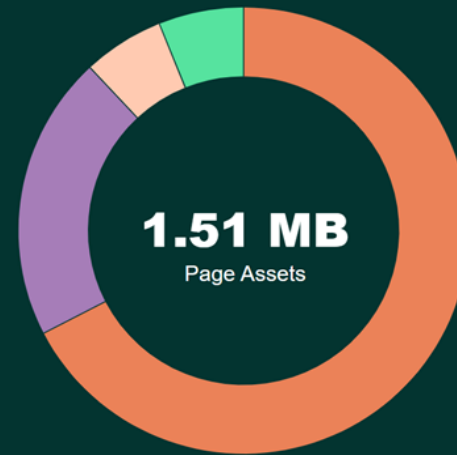
Enter a URL below to see how it performs:

Website Carbon Calculator

# Beacon

# Key Sustainable Design Principles

- Images & Videos
- Page Weight Optimisation
- Content Management
- Meeting user needs



Scripts and media assets contribute to your page's emissions estimate but they aren't the only factor. The chart below breaks down estimated emissions impact per page view of individual asset types at this URL.

**Images:** 1.02 MB, 0.3971 g of CO2e

**Scripts:** 311.22 KB, 0.1214 g of CO2e

**HTML/CSS:** 87.30 KB, 0.0341 g of CO2e

**Other:** 91.28 KB, 0.0356 g of CO2e

# This doesn't have to be boring...

# LOWWWW

Sustainable Web Design

Guidelines Emissions Ratings Contact Accessibility Controls

## What is sustainable web design?

Web technology has the potential to bring huge benefits to society and the environment, but only if we use it wisely...

This website emits 0.43g of CO2

**GAS**  
sensational record label

LINK | MAMIKOMOTO - KOSK RESIDENCY

links ↓

mint a sam find out more ↓

shuffle

←

what is sam ↑

English

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Staples New Arrivals Bestsellers

CAFÉDIRECT SHOP STOCKISTS PODCASTS

PRODUCTS IMPACT LEARN NEWS

BETTER FOR EVERYONE

COFFEE AS DECENT AS IT ACTS

[www.lowwww.directory](http://www.lowwww.directory)

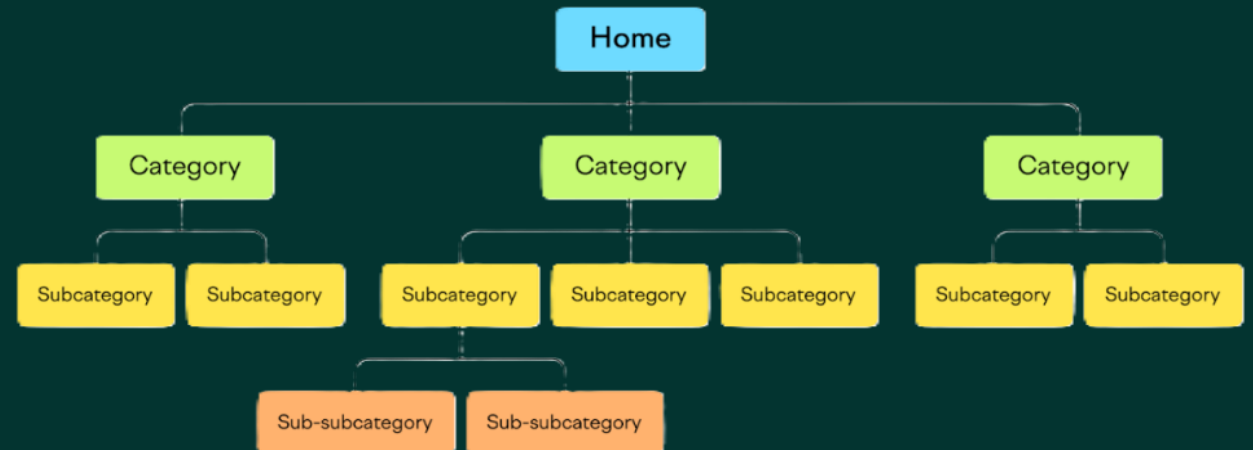


# But what about?...

- Caching
- User navigation, SEO & whole websites
- Location

<https://digitalbeacon.co>

First visit		
<small>CO2</small>	<b>0.540g</b>	<small>SIZE</small>
		<b>1.44 MB</b>
Return visit		
<small>CO2</small>	<b>0.011g</b>	<small>SIZE</small>
		<b>30.45 KB</b>



# Looking at the Web Estate

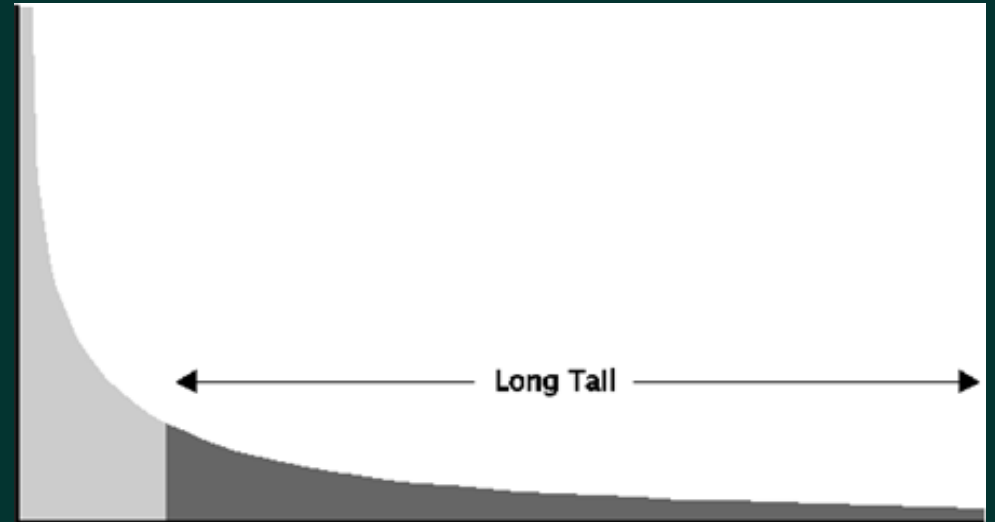
- Inaccurate numbers and estimates
- We decided we didn't want to use the numbers.
- Trends!
  - Homepages
  - Images were key emitters

# Is it all about Page Weight?

- What about storing in data centres?
- What about the E-Waste?
- The Rebound Effect

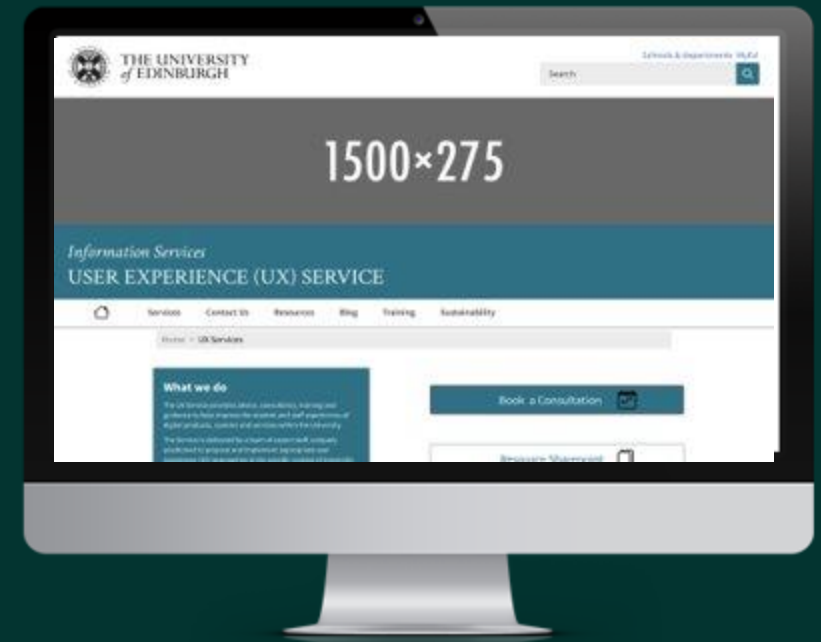
# Managing Content

- We cannot forget:
  - Unused Pages & Sites.
  - Where websites are hosted.
- 
- Gerry McGovern – 90% of all digital data is unused.
  - It's a people problem.



# Put this into practice! – UX Service Website

- Contains 20+ pages, majority of views across 5 pages.
- Videos contribute most to page weight but rarely viewed.
- Website requirements confirmed with website owner.
- Usability testing showed key information could be found without using images.



# Recap & Key Messages

- You can design your page to be less carbon intensive! (pretty easily and creatively)
- Reduce & Optimise Image and video use to support needs.
- Small tweaks make a big difference on the right pages.
- Regularly review content - Archive and Delete anything you don't need!
- Or in other words....

**It's a people problem!**

# What's to come?



- Creating an internal SharePoint for guidance.
- Improving Registry Tools – Little Forest
- Overall Web Governance Group
- Ultimately, provide the best User Experience



# Read our blogs!



# Get in contact

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# Key Links

<https://ecograder.com>

**Ecograder**

[www.lowwww.directory](http://www.lowwww.directory)

**LOWWW**

[sustainablewebdesign.org](http://sustainablewebdesign.org)

**Sustainable  
Web Design**