



Don't wait for the green brief!

UX Glasgow – 6 Dec 2023

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Welcome!



Let's play!

Quiz

Question 1:

Which has the larger carbon footprint?



a. The Internet

b. United Kingdom

Answer:

a. The Internet

If the Internet was a country,
it would be the **6th largest polluter**

– source: A. Andrae & T. Edler,
via GreenIT and The Shift Project

Quiz

Question 2:

How many trees would it take to offset the impact of spam emails?



a. Almost 2 million

b. Almost 2 billion

Answer:

b. Almost 2 billion

1.6 billion trees would have to be planted to offset the pollution of spam emails

– source: GerryMcGovern, World Wide Waste

Quiz

Question 3:

What consumes more energy?



- a. **30 min GMeet call**
- b. **Charging a typical smartphone**

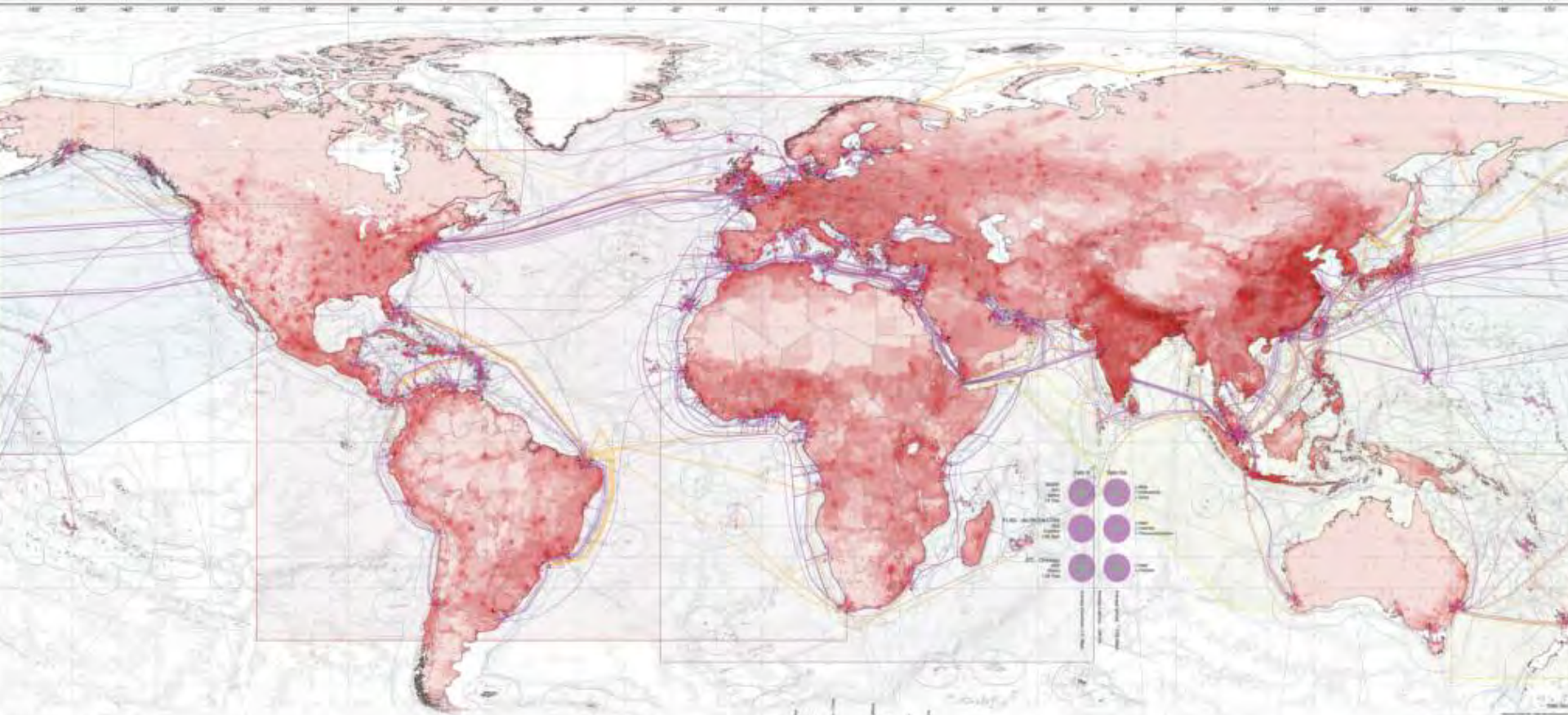
Answer:

They are the same!

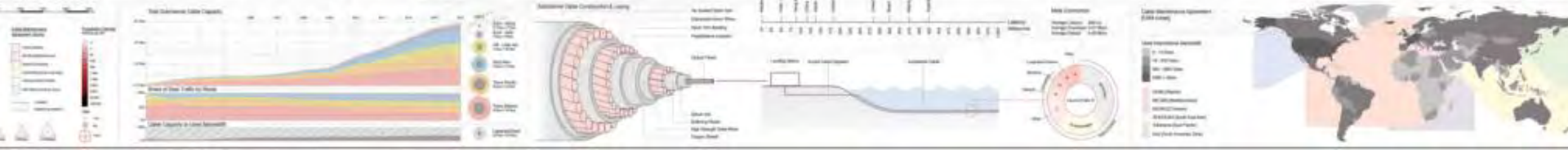
A 30min GMeet call on a MacBookPro
= ⚡ **0.012kWh** or 🌱 **5g CO₂e**

Which is approx. the same as
🔌 charging 1 smartphone

Digital is physical



WORLD CABLE NETWORK / 2010



Facebook Data Centre



Digital is material



**End-user
devices**



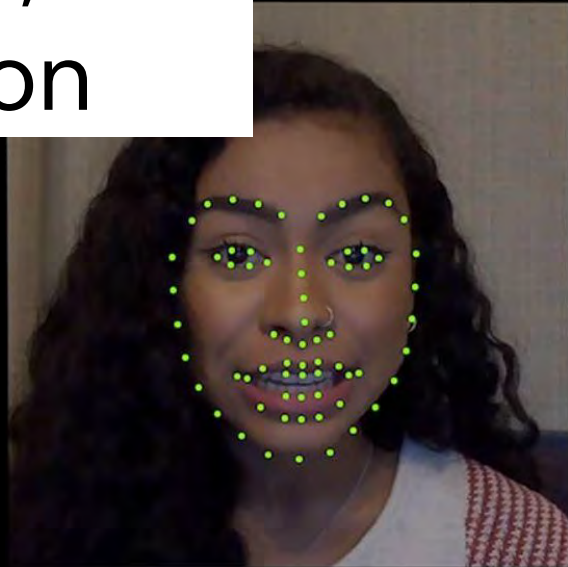
Transmission



Data centres



Technology is part
of the problem, but
also the solution



h.264

Bandwidth: 97.28 KB/frame



AI Video Compression

Bandwidth: 0.1165 KB/frame

~~Let's design sustainably.~~

How might we create
digital products, services
and experiences more
responsibly?



*Keep doing what we know how to do well.
But without wrecking the planet more.*

**Digital
Sustainability**



**Global
connectivity**

How can we resolve the appeal and clear benefits of global connectivity
with health of our local and planetary ecosystems?

**Digital
Sustainability**



**Gen
AI**

How do we leverage the potential of GenAI to automate and optimize repeatable tasks
whilst balancing carbon intensity of the query and speed of the output ?

**Digital
Sustainability**



**Ambient
Computing**

How do we balance ecological sustainability, with the desire for always on, seamless digital experiences?

**Digital
Sustainability**



**Cloud based
software**

As more software and digital systems go cloud based, how can we resolve the demand for fluid, untethered experiences with digital sustainability?

**Digital
Sustainability**



**Immediate
business goals**

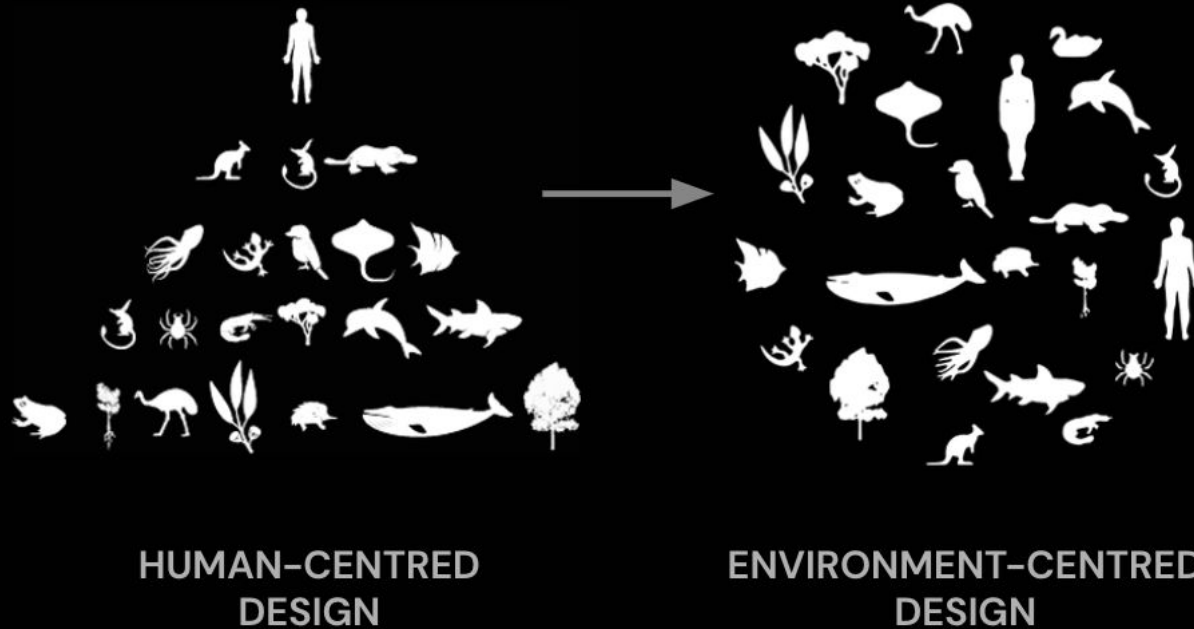
How do we respond to immediate business challenges that might conflict with our sustainability ambitions?



Every little step matters

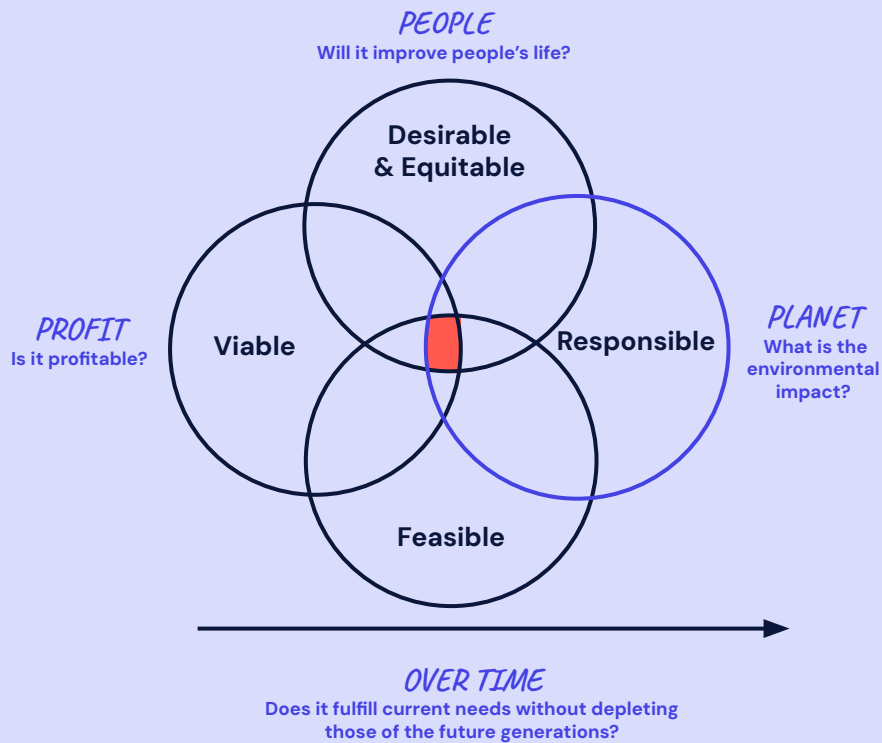
What is Responsible Design?

What we design, build, release is part of the planet ecosystem



What is Responsible Design?

Reframing our approach



Start here!

Here are small actionable steps to get you started effortlessly

- 1 **Design for low impact (UI)**
- 2 **Keep doing good UX**
- 3 **Advocate to business**
- 4 **Think holistically**
- 5 **Adopt shared values**

Start here!

1

Design for low impact

abc Fonts

- Use lighter fonts, system fonts
- Limit the use of custom fonts
- Use fewer variations

Media

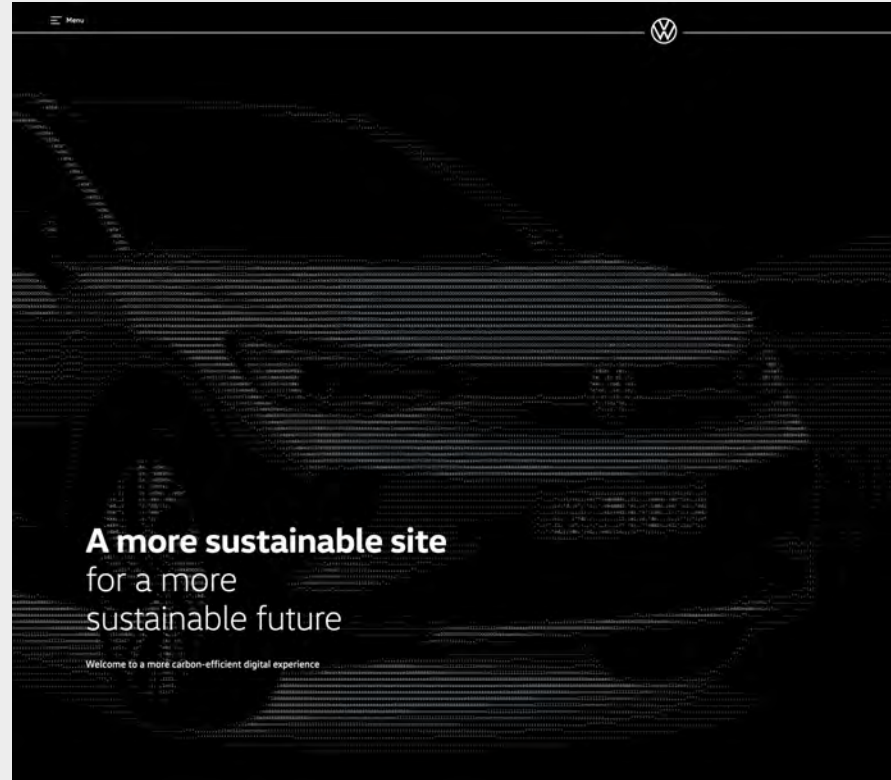
- Use less images or compressed images
- Don't load images until actively requested by users
- Optimize video files
- No auto-play / preview videos

UI Components

- Avoid UI carousels, pop-ups and components that load content automatically
- No embedded maps
- No Ads
- Sharing buttons only if necessary

💡 Colour choices


- Limit the amount of light emitted by the screen
- Consider Dark mode first




Start here!


2


Keep doing good UX


 **Efficiency + Usability = saves energy and eliminates waste**


Economy of means often equals economy of waste

 **Identify time spent on the product and data exchanged**
Where is the value, is it worth it?

 **Think Minimum Impact Product (not just MVP)**
Limited means/low budgets bring creative solutions that are often more than enough

 **Keep serving the interests of your users**
Think accessibility, inclusivity, privacy, safety – AS A DEFAULT

 **Inform the user of the impact of their browsing behaviour**

 **Reduce, re-use, recycle:**
Most IxD patterns exist, streamline the process




[Link](https://www.organicbasics.com) to organic basics website

Start here!

We're creating tools and guides for our team mates: the [Responsible Design Cards](#)

Mindset
Human-centric to planet-centric




Think of the planet's ecosystem as a stakeholder. What would it look like if we were to design for the Earth?

Focusing only on your target users means you could be overlooking the broader environmental and social impact, whether immediate or long-term.

Impact: ● ● ● Effort: ● ○ ○

User flow
Is it necessary?



New features, images, videos, and animations add to the energy consumed and loading content.


When the bandwidth is low, it can damage the user experience.

So consider if they add real value or if you could help the user achieve their goal with a more frugal design.

Impact: ● ● ● Effort: ● ● ○



Font
Use system fonts




Custom fonts are heavy and slow down performance. They use more bandwidth and more requests⁵ to load.

System fonts are already installed on devices. Why don't you give them a try?

Impact: ● ○ ○ Effort: ● ○ ○

Implementation
Write clean code



Write, refactor, and organize code using best practices¹⁶ that eliminate redundancies, technical debt, and unnecessary bloat.

The proper amount of code needed to achieve successful functionality means greater efficiency for the server computing the application and faster load times.

Impact: ● ● ● Effort: ● ○ ○



Start here!

3

Advocate to business

- Check regulations, macro issues and competition
- Learn how much your customers / end users care about environmental issues
- Environmental gain often translates into economic gain: showcase industry case studies and collect examples
- Empower your main stakeholders to carry that message across within the business

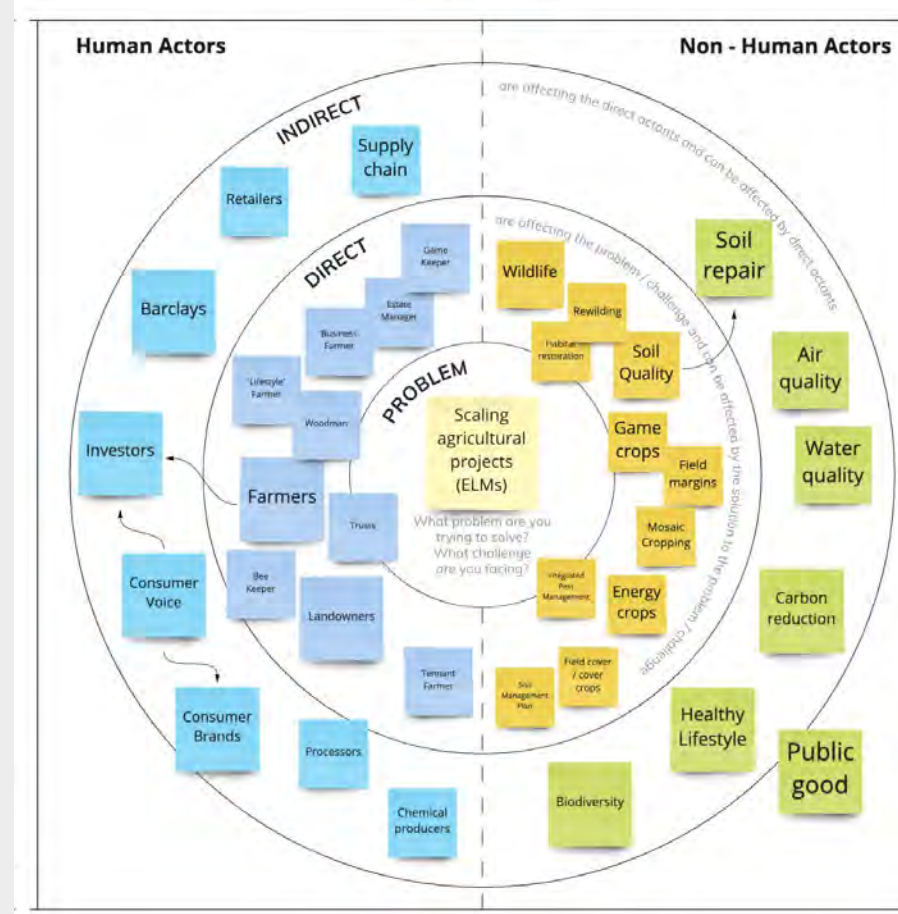
“Facebook has halved the number of servers needed to run its site by compiling its PHP code in C++, thus cutting by half its GHG emissions and avoiding building a new data center, which would have cost about 100 million dollars.”

— [Eco-conception web, Green IT](#)

Start here!

4 Think holistically

- Think not only in terms of impact reduction but also **value creation**
- **Adopt a systemic approach** and add an environmental and social impact layer to your practice. Use **planet-centric design** toolkits: 1 technique at a time – you can use a part, a blend, or your own version
- Share your challenges, learnings, outcomes with your collaborators, partners and sphere of influence



Start here!

5

Adopt shared values

- Bring together the whole team
- Set a shared vision
- Define principles that are actionable and help make decisions
- Think of your personal conduct
- Think of the output, end-result of your work

efficient

open

honest

*Inclusive &
welcoming
difference*

*Circular &
regenerative*

*Carbon &
energy
conscious*

Resources to help you on your journey

Impact of digital on the planet

- [the Shift Project](#)
- [World Wide Waste, Gerry McGovern](#)

Planet-centric toolkits and green software guides

- [Method's Responsible Design Cards](#)
- [Stop Designing For Yesterday](#)
- [Sustainable Web Design toolkit](#)
- [Systemic Approach by Design Council](#)
- [Green Software Foundation](#)

Measuring your impact

- [Carbonalyser](#) web browser extension
- [Ecograder website impact calculator](#) and www.websitecarbon.com



This is just the start.



Thank you!



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