

Building an environment for all
University of Oxford
Disability Lecture 2025

Sam Howison

Dedicated to ...



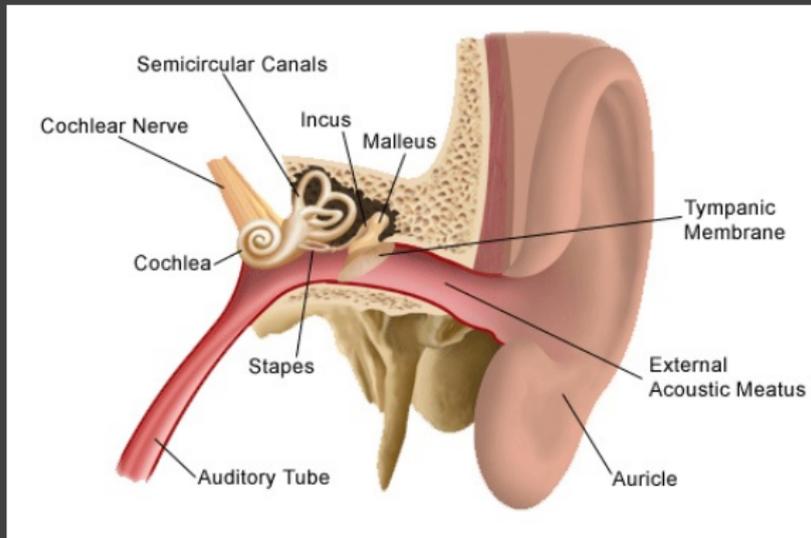
Prof Ian Shipsey¹ My First Hearing Aid,² Prof Ian G Taylor³ ...
...and to my parents.

¹Photo: Oxford University.

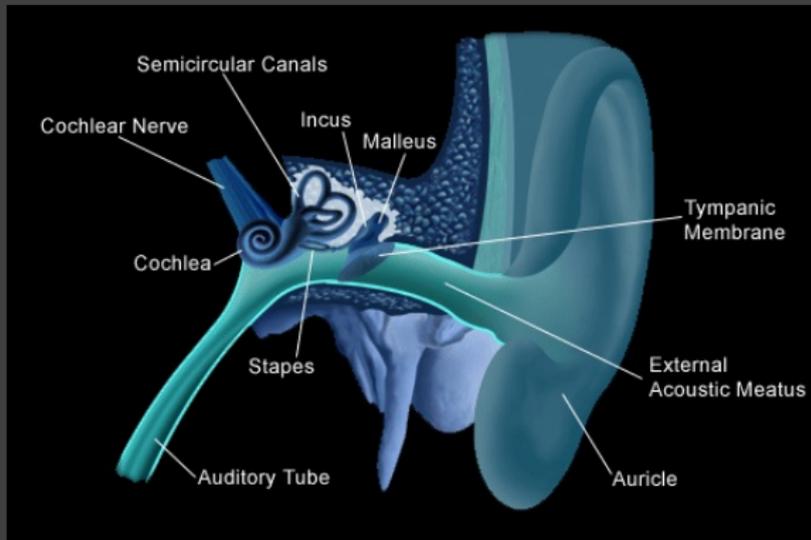
²Philips, Eindhoven, c. 1960.

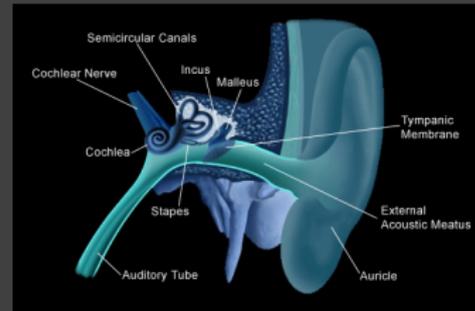
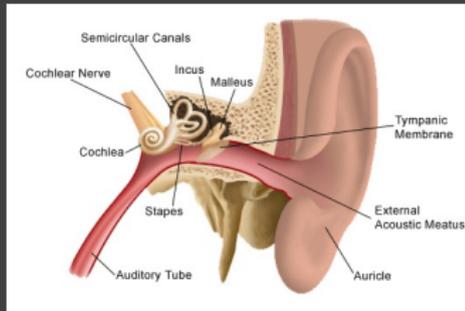
³Photo: Royal College of Physicians.

Our amazing ears



Our amazing ears (inverted colours)



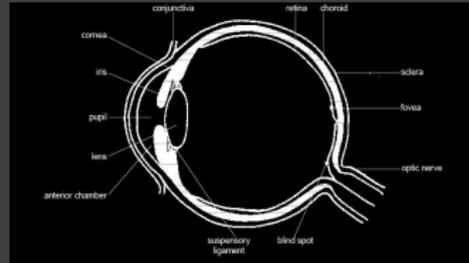
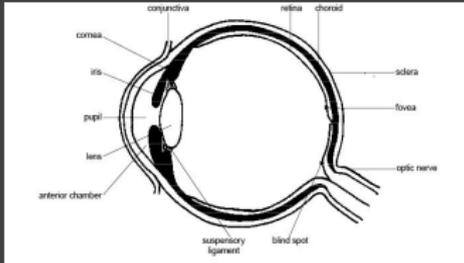


Detects frequencies from $O(10)\text{Hz}$ to $O(10\text{kHz})$ – rumble to bat-squeak – and air-motion amplitudes in the nanometres.

Processes complex waveforms and can locate sound origin.

Performance varies widely!

Our astonishing eyes

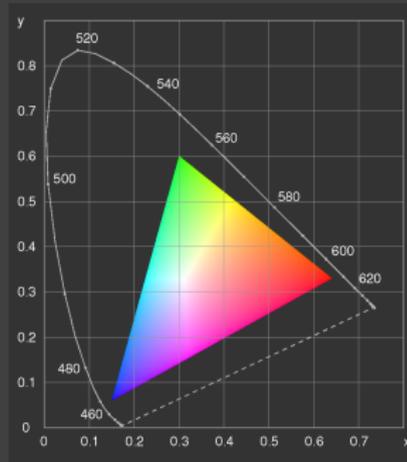
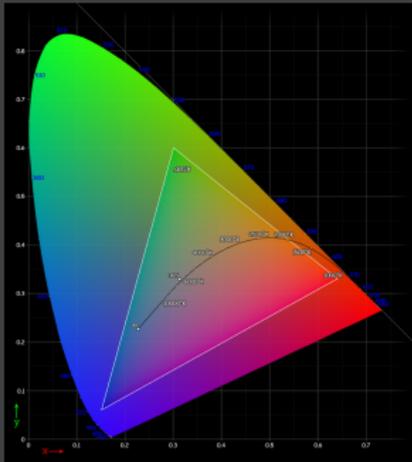


Detect light in visible spectrum 400–700 nm. Starlight 1,000 photons per second, daylight 10,000 trillion photons per second.

Performance varies widely.

Maths and colour (digression)

Our eyes are mathematicians! They take all the information in a spectrum and compress (project) it into 3 numbers.



The CIE1931 chromaticity diagram and⁴ RGB as in LED displays.

⁴Image: Dietrich Zawischa

Set out to design accessibly from the very beginning and you will benefits far more than just its 'target clients'.

The later accessibility is brought in the less effective it is.
Retro-fitting is costly and expensive and may not deliver.

And always bear in mind ...

Theme

Set out to design accessibly from the very beginning and you will benefit far more than just its 'target clients'.

The later accessibility is brought in the less effective it is.
Retro-fitting is costly and expensive and may not deliver.

And always bear in mind ...

“For every complex problem there is an answer that is clear, simple, and wrong.” (HL Mencken)

Bollards (care, lack of)



Bollards (care, lack of)



Let's take a journey to work



Sandwich boards, scooters, signage ...

Let's take a journey to work



Sandwich boards, scooters, signage ...
Bicycles!!

Let's take a journey to work



Sandwich boards, scooters, signage ...

Bicycles!!

Wheelie bins!!!

Let's take a journey to work



Sandwich boards, scooters, signage ...
Bicycles!!

Wheelie bins!!!

Where's the green ink when you need it???

Pillar to post (retrofit, or not)



Crewkerne station, and a lamppost as seen by someone with incipient cataracts.

Steps (1) (a bad compromise)



Weston Library



Christ Church Hall approach

Keypads (contractors, compromise)



Perspectives on keypads



Stairs (good planning)

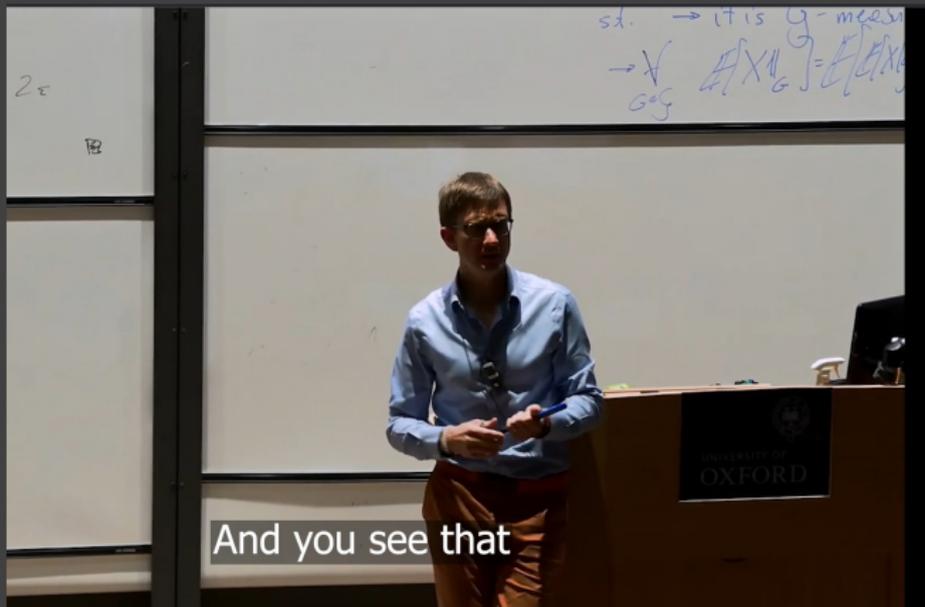


Stairs in the Andrew Wiles Building.

Some compromises are unavoidable ...



Lighting (planning and expertise)





Meetingg rooms



- Backlighting
- Long tables dictated by room shape
- External noise (traffic, aircon), internal noise (furniture)
- No hearing assistance in large rooms
- Most rooms not suited to hybrid.

Meetingg rooms



- Backlighting
- Long tables dictated by room shape
- External noise (traffic, aircon), internal noise (furniture)
- No hearing assistance in large rooms
- Most rooms not suited to hybrid.
- **Do our meeting rooms support good decision-making?**



The world is full of noises



- Noisy workplaces are tough for all.
- Aircon, EM interference etc.
- Good acoustics don't excuse lack of hearing assistance.
- Why are induction loops so hard?
Built-in channels?

IT: (complexity)^N

- Hugely complicated and technical.
- Mobile and static devices.
- Vast and varied ecosystem.
- Vast range of opinionated users
- Constantly moving target.
- Essential for users to be proactive and ask for help (IT support always helpful, thank you!).

And yet

IT: (complexity)^N

- Hugely complicated and technical.
- Mobile and static devices.
- Vast and varied ecosystem.
- Vast range of opinionated users
- Constantly moving target.
- Essential for users to be proactive and ask for help (IT support always helpful, thank you!).

And yet (personal gripes coming up!).n..

– Software that doesn't adopt standard Windows or iOS Dark themes.

– Websites ditto.

– Un-accessible training course videos (H&S, InfoSec).

Is accessibility really embedded?

– Anne Trefethen et al. Digital Oxford podcast #8 (of 8).

The role of Departmental Safety Officer is to...
[Select all that apply]

- Be responsible for safety in the department
- Be responsible for safety in the building and grounds
- Advise on safety and health matters to the Head of Department
- Advise on risk assessments
- All of the above

Protecting against threats

Who are we at risk from?

"Hostile state actors are targeting UK universities to steal personal data, research data and intellectual property. This could be used to help their own military, commercial and authoritarian interests".
[Centre for the Protection of National Infrastructure]

We are all familiar with the threat from hackers and criminal gangs but in this age of global information technology and digital collaboration, a significant and growing threat to academic research comes from states whose democratic values are different from our own, states whose strategic intent is hostile to the values, freedoms and interests that are important to us.

The Information Security Team aims to safeguard the University without hindering academic freedom. We take a balanced, risk-based approach to information security. This relies on everybody taking personal responsibility to protect confidential information.

Find out more about what your responsibility is on the next page.

Back

Concluding thoughts

This has been a personal-experience tour.

I am not an expert!

Concluding thoughts

This has been a personal-experience tour.

I am not an expert!

Highly likely, I have missed out all sorts of insuperable (?) difficulties. And overlooked great work going on. Please don't be offended!

The same applies $\times 10$ to my attempt to draw conclusions.

Clear, simple, and wrong

Broadening our knowledge base

Accessibility Design Philosophy document (Estates Services website) is a really good platform.

Can we take it to the next level?

Broadening our knowledge base

Accessibility Design Philosophy document (Estates Services website) is a really good platform.

Can we take it to the next level?

- **Assemble user perspectives.** We all know about our own experience, maybe not that of others.
- Balance between supporting the whole range of possibilities and practicality.
- Documentation essential to ensure continuity and consistency. Success should not be down to chance.
- Specialist requirements. Laboratories??
- Colleges?
- Consistent follow-through needs people – a cadre of interested individuals whose work should be recognised (eg via responsibility allowances).

Interface with architects/designers/project managers, contractors

The architects and designers are *key players*.

– Communicate accessibility priorities: early (before their grand scheme is set in stone), continually (so that they are not forgotten).

Legal compliance is the bare minimum.

– Accessibility tours (failures and successes) for potential design teams.

– How to assess designs for accessibility? Role for AI?

– There needs to be a 'voice in the room' throughout, backed up by expert knowledge base.

– Strengthen feedback loop to architects (pro bono) and our own commissioning processes (pro nobis). How to evaluate completed projects?

Interface with architects/designers/project managers, contractors

The architects and designers are *key players*.

– Communicate accessibility priorities: early (before their grand scheme is set in stone), continually (so that they are not forgotten).

Legal compliance is the bare minimum.

– Accessibility tours (failures and successes) for potential design teams.

– How to assess designs for accessibility? Role for AI?

– There needs to be a 'voice in the room' throughout, backed up by expert knowledge base.

– Strengthen feedback loop to architects (pro bono) and our own commissioning processes (pro nobis). How to evaluate completed projects?

Can we make Oxford a beacon institution for inclusive design?

