

Checklist for Accessibility

Checks we should do after building webpages, to ensure we meets users' accessibility needs.



From Newcastle. **For the world.**

Why accessibility matters

Some interesting statistics:

- Dyslexia International suggests that **nearly 10% of the population experience dyslexia. That equates to around 700 million people worldwide.**
- The estimated number of people **visually impaired in the world is 285 million, 39 million blind and 246 million having low vision.**
- **1 in 12 men and 1 in 200 women worldwide are colour blind = 300 million people.**
- More than 5% of the world's population – or **466 million people – have disabling hearing loss.**

We **should not hinder or discriminate against users with these issues** by providing inaccessible content.

But, looking at these figures, **can we really afford to exclude these people** from engaging with our research, becoming students here or working with us?

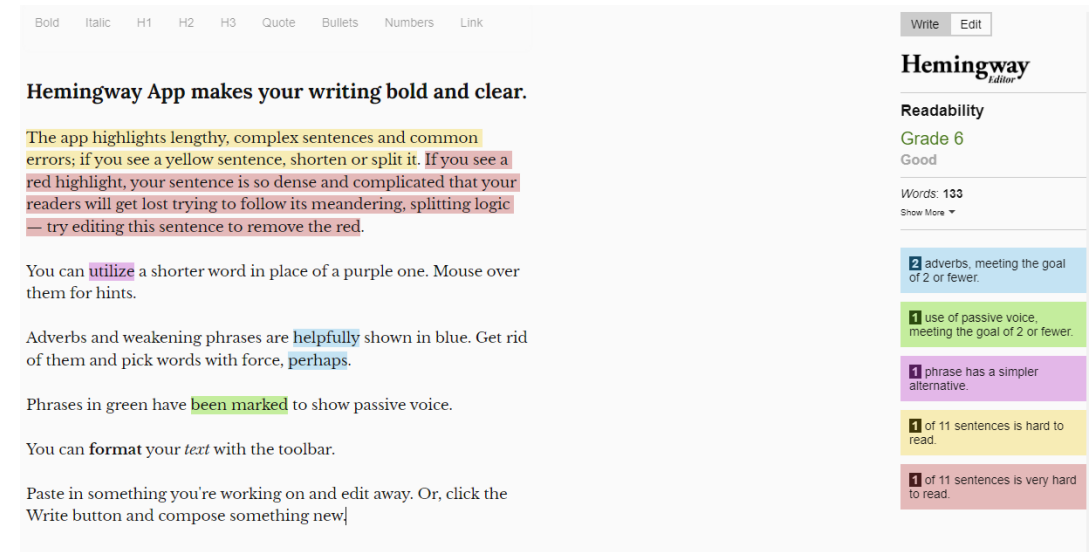
Readability (grade level, sentence length and passive voice)

- sentences of no more than 20 words
- active rather than passive voice
- a grade level of no greater than 9 (research content – 12)

All users - [Research](#) shows that when average sentence length is 14 words, readers understand more than 90% of what they're reading. At 43 words, comprehension drops to less than 10%.

Dyslexic users - "Compared to their non-dyslexic peers, individuals with dyslexia were significantly less accurate and marginally slower on passive sentences." - [Wiseheart, R., Altmann, L.J.P., Park, H. et al. Sentence comprehension in young adults with developmental dyslexia. *Ann. of Dyslexia* 59, 151 \(2009\).](#)

Blind/partially-sighted users – Findings from a 2020 [Oslo Metropolitan University study](#) into screen reader use determined most participants exhibited the highest comprehension and lowest workload with sentences comprising 16–20 words.



The screenshot shows the Hemingway App interface. At the top, there's a toolbar with options like Bold, Italic, H1, H2, H3, Quote, Bullets, Numbers, and Link. Below the toolbar, the main text area contains several paragraphs of sample text. The app highlights various issues: yellow highlights for long or complex sentences, red highlights for dense and complicated sentences, purple highlights for words that can be replaced with shorter alternatives, blue highlights for adverbs and weakening phrases, and green highlights for passive voice. On the right side, there's a sidebar with the Hemingway logo and a 'Readability' section showing a grade level of 6 and the word count of 133. Below this, there are several colored boxes with specific feedback: a blue box for adverbs, a green box for passive voice, a purple box for a simpler alternative, a yellow box for hard-to-read sentences, and a red box for very hard-to-read sentences.

Tool to use = [Hemingway App](#)

Edit raw content or check existing content using this tool to:

- optimise sentence length
- eliminate passive voice
- remove unnecessary jargon and words
- achieve the grade level for audiences

Experts/researcher users - Research shows [grade level 13 or above requires too much effort for all audiences](#). It's accepted there's a need for necessary jargon for expert audiences, but the rest of this guidance applies.

Colour contrast

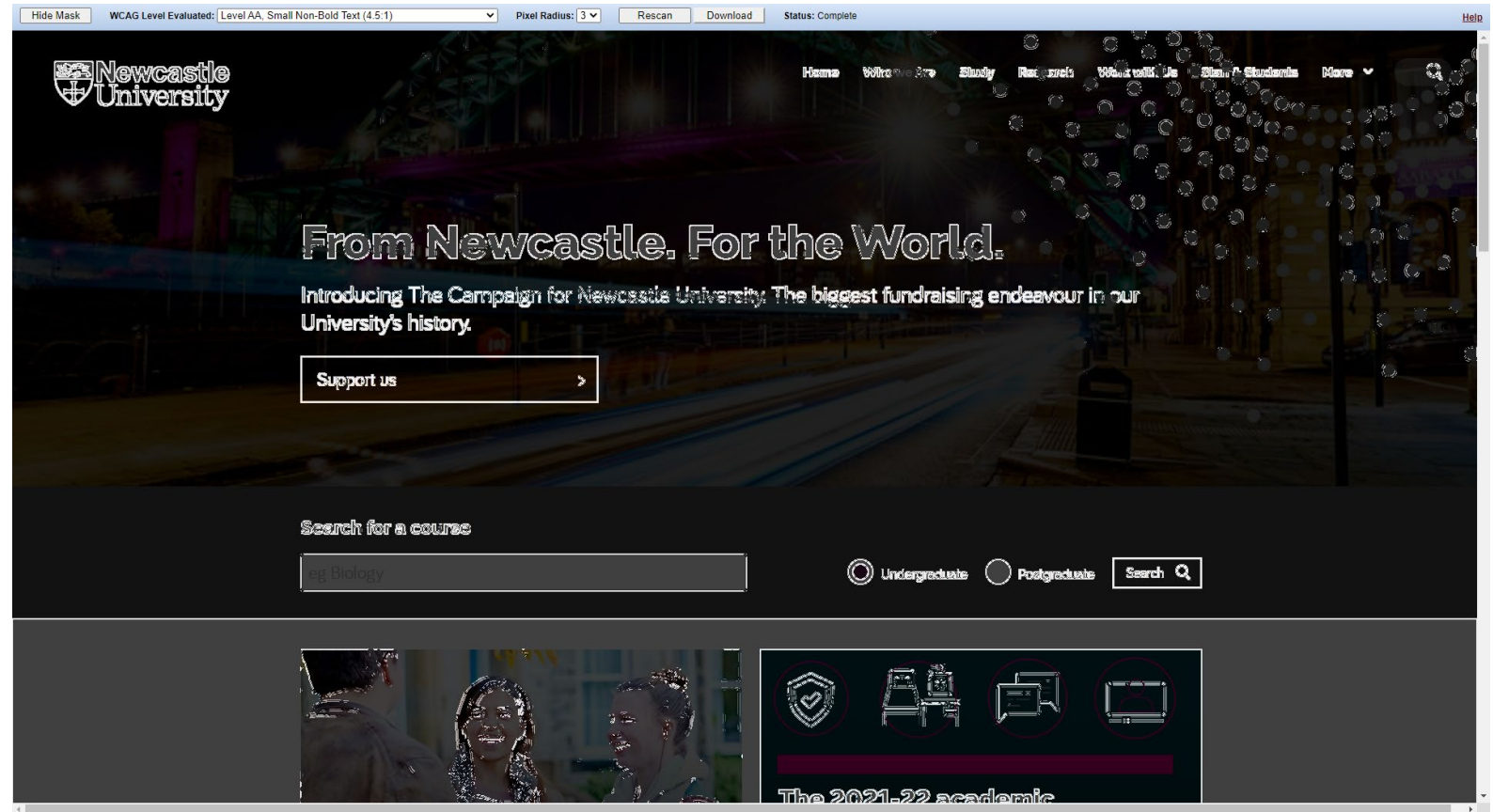
Colour contrast between text and background is important on web pages.

It affects some people's ability to perceive the information (in other words to be able to receive the information visually).

The [Web Content Accessibility Guidelines \(WCAG\)](#) recommend [minimum levels for colour contrast](#) between text and background, based on a mathematical formula.

Tool to use – [Colour Contrast Analyser \(Chrome extension\)](#)

Takes a screenshot of the page you're on and analyses it using the WCAG formula.



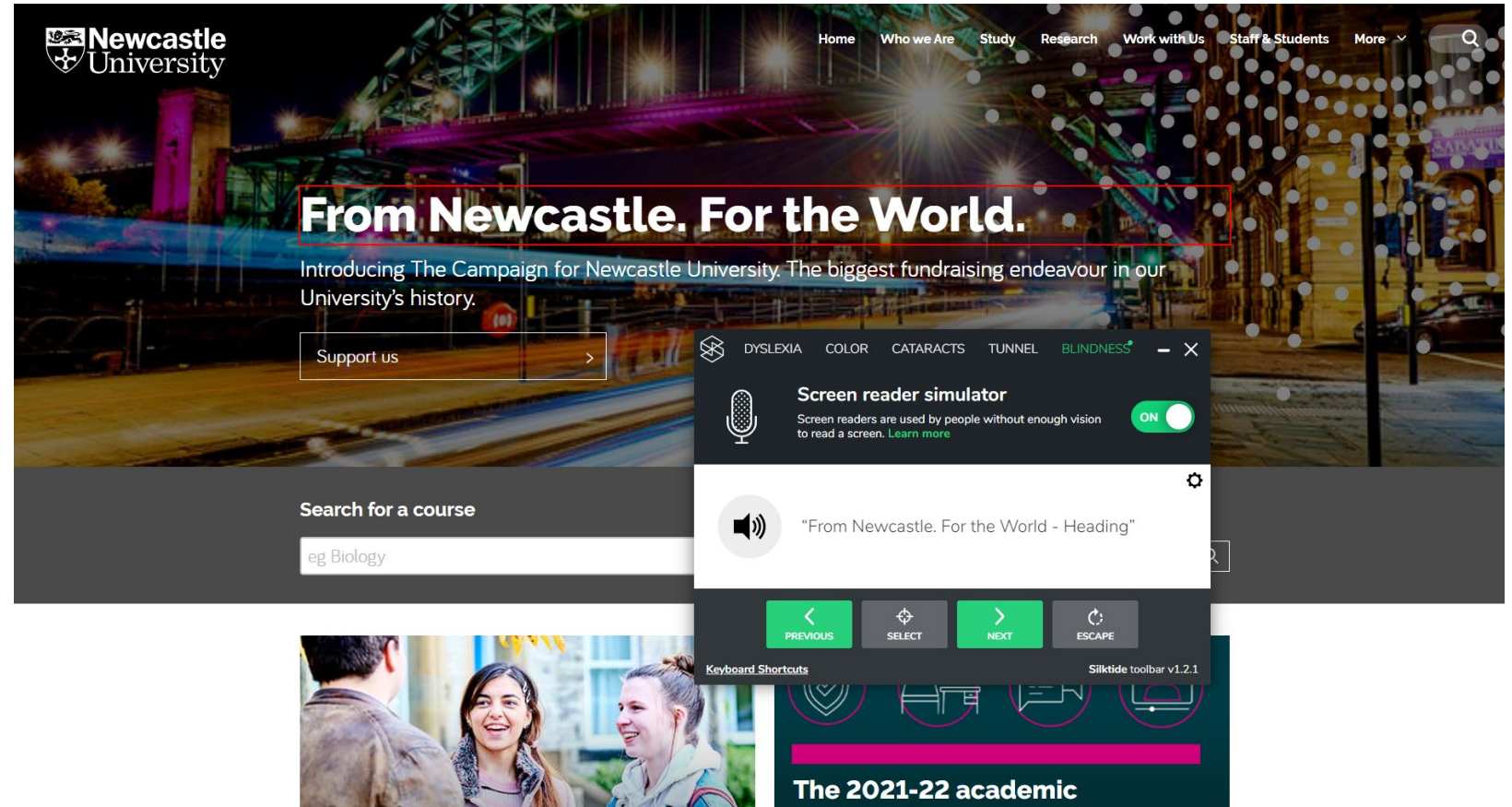
If the text is perceivable once the “mask” is in place, then there are no colour contrast issues. If you're struggling to make out the words with the “mask” applied – then some of your audience may struggle with the colour contrast on your page.

Screen readers

Blind, partially-sighted and, sometimes, dyslexic users rely on screen readers to help them understand what's on a web page.

Using a screen reader in building a page can highlight:

- missing image/video alt tags
- problems with code stopping important content being read out
- long sentences that are too convoluted to understand
- shows you where links might not be descriptive enough for the user
- problems with the layout and structure of the page that would hamper navigation
- whether links are identified



Tool to use – [Silktide Disability Toolbar and Screen Reader Simulator](#)

It not only reads the content out for you, but displays what's being read and the context.

Descriptive links

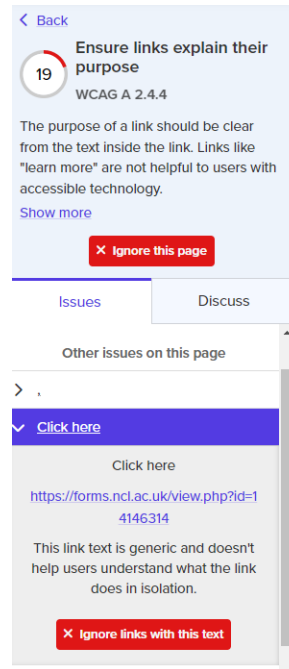
Poor link text hurts usability, SEO and accessibility.

Links should have good information scent: that is, they must clearly explain where they will take users,

The visually-impaired use a screen reader. They can get an overview of a page by tabbing through links on a page.

But only if those links are descriptive. Link text like “Click here” doesn’t provide the information they need to inform that action.

Search engines use the anchor text as an additional cue to what the page or document is about.



Not descriptive, but also redundant

Ensure links explain their purpose

relation to the opportunity, content and views contained in the linked website.

Contact [Global Opportunities](#) for more information and support with your application. Please let us know if you are successful in your application, we would love to use your experience to help other students!

Climate Conscious Travel Bursary

Newcastle University is committed to reducing its carbon footprint.

One of the most significant actions we can take is by considering the way which we travel and limiting the number of flights we take. Travel better, travel slow! With more comfort, countryside views, stops in the city centre, and even the chance to meet new friends on the way, bus and train travel offers a way to see and experience more. Make your journey part of your trip!

Read our brief guide to [Climate Conscious Travel](#).

[Click here](#) to apply for an NCL Climate Conscious Travel Bursary to support you to travel better to your summer placement destination.

Please note that the Bursary is only eligible for journeys taking place in spring/summer 2022. The deadline to submit this form is the **1st of July 2022**.

Please note that to avoid double funding, students whose travel costs are paid through the Turing Scheme (or alternative funding schemes) will only be eligible to claim travel costs via this bursary where actual costs exceed the travel costs already funded.

If you have any questions about the bursary, please email global.opportunities@ncl.ac.uk

Tools to use – [Silktide](#) and [Silktide Disability Toolbar and Screen Reader Simulator](#)

Silktide will quickly identify links that aren't descriptive. You can find them under the Ensure links explain their purpose item in the platform's accessibility section checklist. You can also test how descriptive links are, by running them through the screen reader simulator and listening to what's read back to the user.

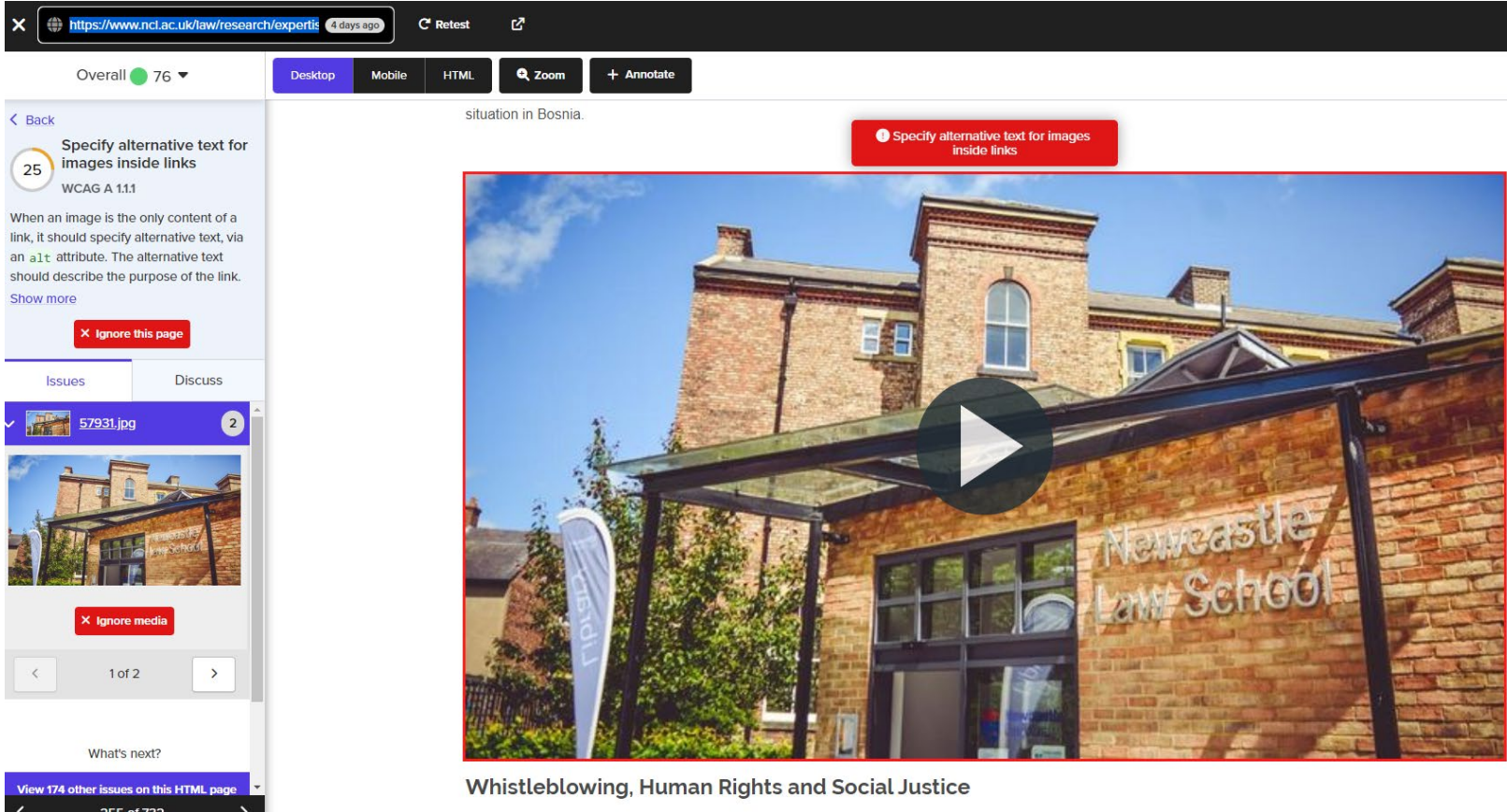
Alt tags

An alt attribute specifies the text that is displayed when an image cannot be loaded, e.g. due to server problems or a bad internet connection of users.

This is also very helpful for blind people because it is read out by screen readers.

In addition, it also helps Google with the thematic classification of an image.

Therefore, it is especially important that this short text reflects the content of an image and contains the most important keywords.



With no alt text for this image, or the video behind, a screen reader reads out the word "link" to the user. They have no indication of about what it takes them to.

Tool to use – [Silktide](#)

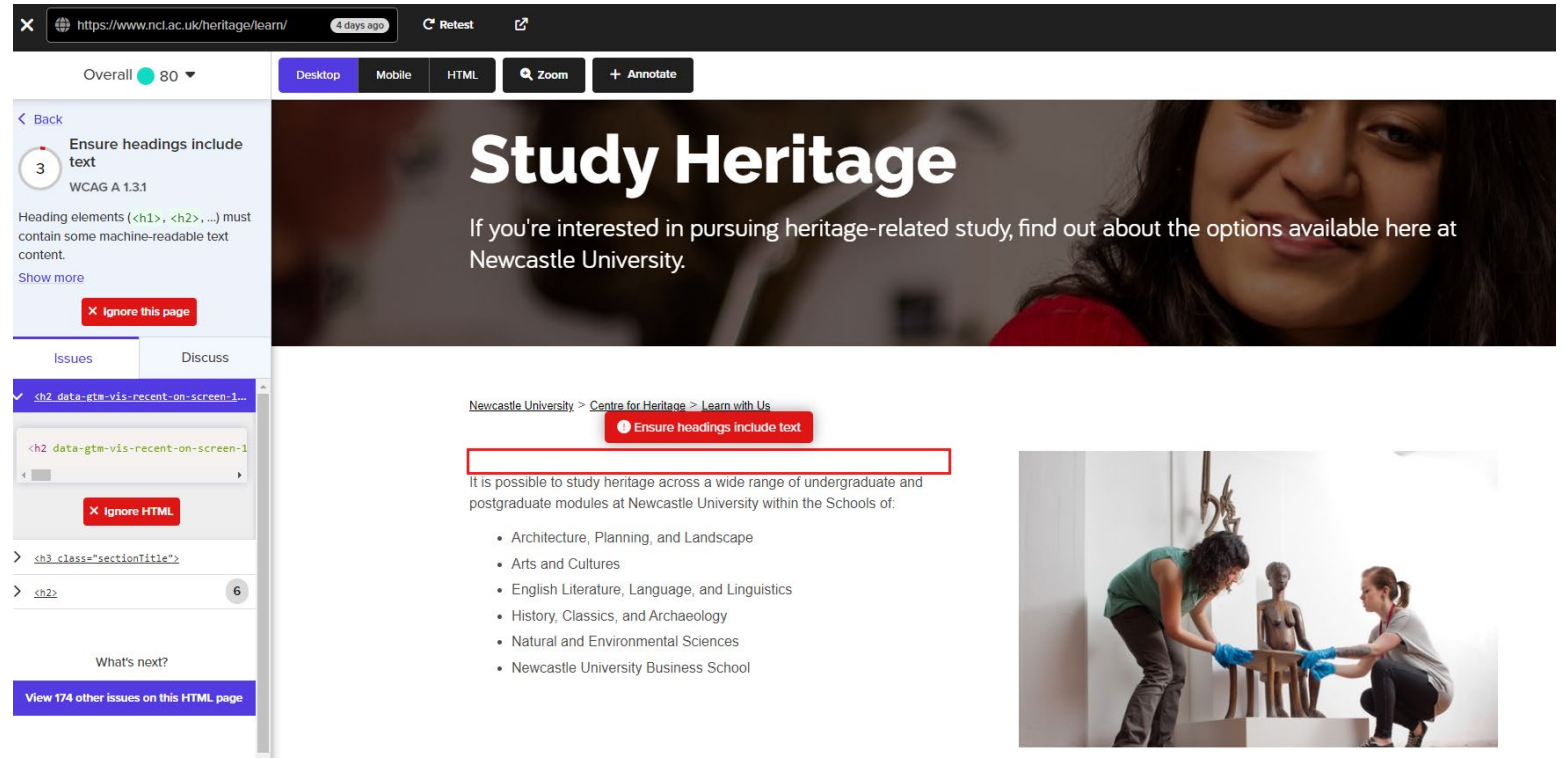
Silktide will flag any images that it can see on the page that require alt text, based on the context of their use. So it will ignore decorative images but not those that prompt an action by the user.

Logical heading structure

Headings communicate the organization of the content on the page. Web browsers, plug-ins, and assistive technologies can use them to provide in-page navigation.

Nest headings by their rank (or level). The most important heading has the rank 1 (<h1>), the least important heading rank 6 (<h6>). Headings with an equal or higher rank start a new section, headings with a lower rank start new subsections that are part of the higher ranked section.

Skipping heading ranks can be confusing and should be avoided where possible: Make sure that a <h2> is **not** followed directly by an <h4>, for example. It is ok to skip ranks when closing subsections, for instance, a <h2> beginning a new section, can follow an <h4> as it closes the previous section.



The screenshot shows a browser window at <https://www.ncl.ac.uk/heritage/learn/>. The page title is 'Study Heritage'. The main heading is 'Study Heritage'. Below it is a paragraph: 'If you're interested in pursuing heritage-related study, find out about the options available here at Newcastle University.' Below that is a breadcrumb: 'Newcastle University > Centre for Heritage > Learn with Us'. A red box highlights the breadcrumb, with a tooltip that says 'Ensure headings include text'. Below the breadcrumb is a paragraph: 'It is possible to study heritage across a wide range of undergraduate and postgraduate modules at Newcastle University within the Schools of:'. Below that is a list of schools: Architecture, Planning, and Landscape; Arts and Cultures; English Literature, Language, and Linguistics; History, Classics, and Archaeology; Natural and Environmental Sciences; Newcastle University Business School. Below the list is an image of two people examining a mannequin.

Tools to use – [Silktide](#) and [SEOility](#)
Both flag empty headings, while the latter highlights incorrect heading structure.

Heading level	Content
H1	The Stephenson Building
H1	The Stephenson Building Duplicate text
H2	£110m investment in world-class engineering facility
H2	Empty heading
H2	Key features
H2	Empty heading

Style

Capitals – keep them to a minimum (nouns and page titles only please)

Why? It's all about shape. People with cognitive impairments can process lower case letters more easily because they are distinctive in shape. CAPITALS ARE NOT.

Italics – no thank you

Why? It's adding a style that corrupts the legibility of the font for the user. Having a perceivable font is critical to users with cognitive or visual impairments.

Bold – yes please, but sparingly

Why? It **helps scan readers** to quickly **pick up keywords and phrases** from your content.

But using bold like this doesn't help anyone. It doesn't aid scan reading. It just hurts users' eyes and makes content more difficult to read.

Tools to use:

For capitals and italics, there are no tools available to check pages. Really it's a judgement call by eye.

But if there are any full sentences that are capitalised or italicised, they should be deemed inaccessible and avoided at all costs.

Screen readers read capitalised letters one at a time, as if they were acronyms. Something to bear in mind.

To check use of bold, use [SEObility](#). It gives you an indication of how much bold you can use on a page and whether you've used too much.

Bold and strong tags
■□□

✓ The usage of strong and bold tags is perfect. We recommend the use of up to 15 tags for this page.

Strong and Bold
Tags

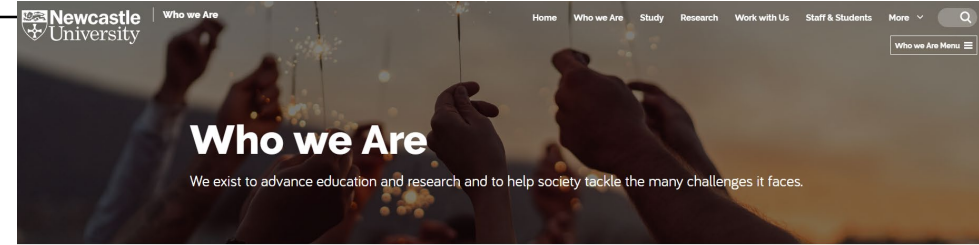
Supplementary content

Don't use an image or video in place of words

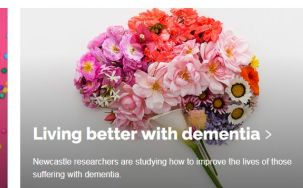
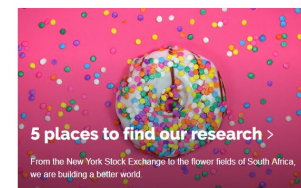
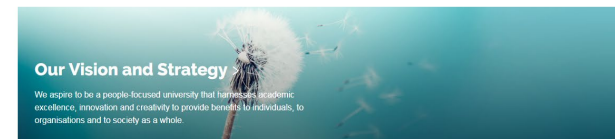
Images that try to convey lots of written detail won't be accessible to partially-sighted or blind users. And it probably won't legibly display on mobile devices either. An image should support written content, with **alternative text (alt text)** for screen readers and search engines.

Video embeds from YouTube can be [inaccessible in certain countries](#) (China, Sudan etc) and to those with poor internet connections. Video requires subtitles for the hearing-impaired. It is supplementary content.

The number of words on a page is important for **SEO**, as **too few words** can affect the ranking of page.



From Newcastle. For the world.



See more of our vision in action >

This page relies too heavily on a video that's not accessible to all.

Video embeds

Scripted video content should carry closed captions for those who are deaf or hard of hearing. If video doesn't include this, it absolutely should.

We usually embed from YouTube, though other video hosting platforms have been used for embedding. Embedding doesn't necessarily mean the user is greeted with closed captions as soon as they hit play.

But the service we used for embedding in the website not only does this, it also loads an image rather than the video into the page. So we're optimising for page load. Embeds are also responsive design.

Tool to use: [Iframely](#)

For embedding with closed captions and hold load and play until clicked.

Rich media at its best

1900 publishers, responsive players, images, apps, surveys, cards, GIFs, AMP, simple APIs — crafted to perfection with coffee and love.

NU Futures | Developing a research career at Newcastle
Newcastle University · Mar 9, 2022

Mobile Desktop

```
<div><div style="left: 0; width: 100%; height: 0; position: relative; padding-bottom: 56.25%;"><iframe src="//iframely.net/hv10hK8?_cc_load_policy=true&click_to_play=1" style="top: 0; left: 0; width: 100%; height: 100%; position: absolute; border: 0;" allowfullscreen scrolling="no" allow="autoplay *; accelerometer *; clipboard-write *; encrypted-media *; gyroscope *; picture-in-picture *;"></iframe></div></div>
```

- Closed captions
- Hold load & play until clicked

Start from:



To add the options editor to your app, take a [read here](#)

Responsive design

Mobile traffic now exceeds desktop traffic, and Google penalises websites which don't support mobile.

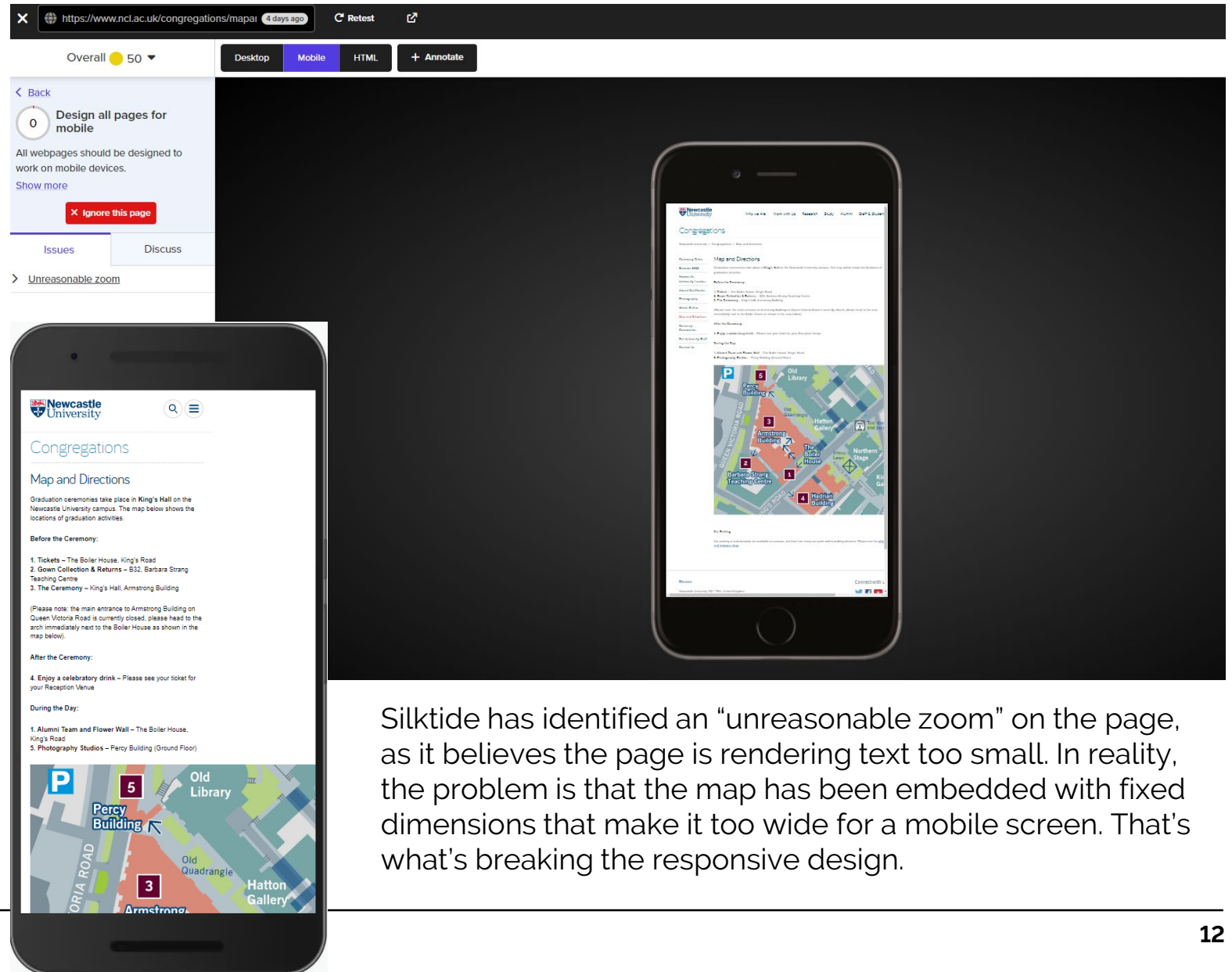
Allowing users to zoom in to mobile dimensions is also an accessibility concern, and is required by WCAG 2.1 onwards.

Specifically a website should use responsive web design, and support mobile devices as narrow as 320 CSS pixels without scrolling in two dimensions.

This is equivalent to the screen of an iPhone 5.

Tool to use: [Silktide](#)

Under Accessibility, you'll find a check called Design all pages for mobile.



Silktide has identified an “unreasonable zoom” on the page, as it believes the page is rendering text too small. In reality, the problem is that the map has been embedded with fixed dimensions that make it too wide for a mobile screen. That's what's breaking the responsive design.

Checklist for Accessibility

Optimising PDFs

Generally, we'd advise not using PDFs at all, as they're not great for accessibility or for mobile users. Create a web page instead.

However, we realise that the University likes their publications to be downloadable or showcased online.

Documents can be [made more accessible via Adobe Acrobat](#).

This won't necessarily help with mobile, though there are options from third-parties to create mobile versions.

We should always:

Optimise – run your PDF through [I Love PDF](#) compression and upload at less than 1MB (good for anything that's not too showy)

Showcase – find a service like [YUMPU](#), publish and embed using Iframely (see last slide) (for the high-quality brochures)

YUMPU allows you to add metadata to enhance findability. It also provides analytics for the views of your publications.

