



Accessible design for print

Good design should be clear, legible and easy to understand for all, including those with disabilities. Everyone has a right to access information and this is now a legal requirement for public sector bodies. Below are some of the design considerations we factor into our work.

Alignment

Avoid justified text as it creates “rivers of white” which makes it difficult to read. Ragged text makes it easier for the reader’s eye to jump from line to line. Also avoid blocks of centre-aligned text as these are difficult to read. Do not break or hyphenate words over two lines. Keep text horizontal. Avoid widows and orphans (lines at the beginning or end of a paragraph, which are left at the top or bottom of a column, separated from the rest of the paragraph).

Colour

Ensure there is high contrast, at least 70% contrast, between the background and text. Use a colour blind app like Oracle, for example, to check how a document looks to someone who is colour blind. The contrast ratios are quite surprising – **white text on orange** is less readable for someone with a visual impairment or dyslexia than **black text on green**.

Font size

A typical size for body text in print is 12 point but this isn’t always viable depending on the room available. Our advice would be to not have type below 9 point.

Forms

Ensure plenty of space is provided in forms for the response.

Layout

Keep layouts clear and simple and avoid large blocks of type. Ensure the flow of type is obvious. Embrace any white space and **don’t feel the necessity to fill up every bit of space**. Use wide margins and leave space between paragraphs.

Hierarchy

Arrange type and graphics in a way which reflects their importance, i.e. use clear hierarchy of headings. This aids readability and understanding. Use style sheets.

Paper stocks and binding

Use matt or uncoated paper as gloss paper can have a glare making it difficult to read. Do not choose paper weights less than 90gsm to avoid show through. If the document is to be bound, create sufficient margin in the centre for the text to be readable.

Typeface

For large amounts of text the common advice is to use a sans serif typeface for legibility. However, serif typefaces are credited with increasing both the readability and reading speed of long passages of text, helping the eye to travel along the line. This is why in newspapers, books and magazines the serif typeface is prevalent. So our typeface consideration is more centred around good design practice, i.e. having adequate leading (line spacing), good kerning (space between the letters), font size, alignment, etc. Avoid the overuse of capitals, or condensed and italic fonts. Do not underline words – use bold for emphasis instead.



Accessible design for print

Alignment

Align text left, do not justify text or use horizontal text and avoid hyphenation.

Colour

Ensure there is high contrast between text and background.

Font size

Ideally use at least 12 point body text but no smaller than 9 point.

Forms

Allow adequate space to write in.

Layout

Construct clear and simple layouts with an obvious flow and space between paragraphs.

Hierarchy

Apply obvious hierarchy in headings.

Paper stocks

Use matt or uncoated paper, not gloss.

Typeface

Check readability, avoid blocks of text in capitals, allow adequate leading and paragraph spacing.

“We do not design for our design peers but for the diverse set of users who will interact with our products... If anything this will push us to the limits of our creativity in finding visually pleasing designs that enable the success of a wider set of users” Jesse Hausler (accessibility specialist)



Accessible pdfs

Increasingly we are printing less (whether due to global pandemics or sustainability) and are providing our designs either as downloadable pdfs or emailing them out to users. It is imperative that these pdfs are accessible to all, can be read by a screen reader and comply with relevant legal requirements. As a starting point we use the same considerations as “accessible design for print” and generally adhere to good design practice.

Abbreviations, times and dates

A screen reader might read an abbreviation as a word, so “eg” could be read as “egg”. It is important, therefore, to put full stops in abbreviations - e.g., i.e., so that the screen reader reads them as letters. Use the 12 hour clock and the word “to” rather than a dash, i.e. 9.00am to 5.00pm or 12 April to 24 May.

Accessibility check software

Software is available to check pdfs. Acrobat can provide an accessibility check and make some fixes. **CommonLook PDF validator** is a free add on to Acrobat for Windows users.

Acronyms

The screen reader should read them correctly in capitals, e.g. “uk” might be read as “uck” but UK will be read as individual letters.

Alt text

Clients need to provide alternative text (alt text) for images and graphics which provide essential information. Purely decorative images can have an empty alt text box or be tagged as “artifact”.

Alternative formats

Provide a text only Word document as well as a PDF. We can export the PDF as a Word document in Adobe Acrobat.

Colour

Use at least 70% contrast between the background and text. Use a colour blindness app like **Oracle**, to check how a document looks to someone who is colour blind.

Hyperlinks and bookmarks

Hyperlinks should clearly signal to the reader that it is a link by being differentiated in some way, e.g. bold italic. Check the link takes readers to the correct place. Contents pages should be bookmarked to take the reader to the correct page.

Interactive forms

Users should be able to enter values into a form field and the fields should be in a defined tab order to progress from one to the next in a logical manner. Allow adequate space for the response.

Layout

Reading order is very important as it is the order in which a screen reader will read the content to the user. This is especially important in tables and table headers.

Reflow

Check that the pdf can be presented in a single column to the width of the page which can then be read on a mobile device or on a standard monitor without the need to scroll horizontally.

Tags and hierarchy

Tags are automatically added in the source code of the document as you create it so documents need to be structured carefully with obvious hierarchy of headings using style sheets: P, H1, H2 etc.



Accessible pdfs

Abbreviations, times and dates

Check all abbreviations, dates and times. Can they be accurately read by a screen reader?

Accessibility check software

Use an accessibility checker to check the pdf.

Acronyms

Can all acronyms be accurately read by a screen reader?

Alt text

Are all relevant images and graphics tagged with alt text or tagged as “artifact”?

Alternative formats

Provide a Word document, **text only**, alongside the PDF.

Colour

Ensure there is high contrast between text and background. Check with apps such as Colour Oracle.

Hyperlinks and bookmarks

Check all links and bookmarks.

Interactive forms

Check forms are interactive.

Layout

Check reading order using a screen reader.

Reflow

Check the text will reflow to a single column.

Tags and hierarchy

Check hierarchy.



Accessible web design

An accessible website is one that is easily usable and coherent to all users regardless of their device, context or ability. Accessible websites are often faster, easier to navigate and appear higher up in search engine rankings. For more information: www.w3.org/WAI/fundamentals/components/
The Web Content Accessibility Guidelines (WCAG) are organised by four main principles:

Four principles of accessibility in web design: POUR

Perceivable. **O**perable. **U**nderstandable. **R**obust

Perceivable

Information and user interface components must be presentable to users in ways they can perceive.

This means that users must be able to recognise the information being presented (it can't be invisible to all of their senses).

Operable

User interface components and navigation must be operable.

This means that users must be able to operate the interface (the interface cannot require interaction that a user cannot perform).

Understandable

Information and the operation of user interface must be understandable.

This means that users must be able to grasp the information as well as the operation of the user interface (the content or operation cannot be beyond their understanding).

Robust

Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

This means that users must be able to access the content as technologies advance (as technologies and user agents evolve, the content should remain accessible).

If any of these are not true, users with disabilities will not be able to use the website.



Accessible web design

Alt text

Use alt text to briefly describe images. Clients need to provide this information.

Colour

Check contrast between background and text. Check for colour blindness using an app like Colour Oracle. Do not use colour alone to make information intelligible.

Consistency

Visual elements and functionality needs to be consistent across the web site. Consistency means visitors to the website spend more time engaging with your content.

Content

Clients need to provide clear content, clearly structured

Dynamic content

Some screen readers will only read what first loads on a site so there needs to be awareness when something moves otherwise users will miss any new content.

Feedback

During interactions users need to have clear feedback and alerts for errors.

Forms

Limit the amount of information that forms require. Place instructions before the field rather than after it. Provide clear and easy to understand instructions.

Hierarchy

Content needs to be carefully structured to ensure that hierarchy of headings is obvious. Ensure correct use of H tags.

Keyboard friendly navigation

For those who can't use a mouse all the interactive elements must be accessible by just using the tab key on a keyboard.

Links and buttons

Use distinct styles for interactive elements which stand out and are easy to identify.

Responsive and robust design

A website should work well and look good on many different devices and screen sizes including desktops, mobile phones and tablets. It should also be easy to navigate.

Resizeable text

Devices and browser enable users to resize text so avoid absolute units but use relative sizes instead. Never turn off user scalability.

Screen readers

Screen readers read out loud for visually impaired users so checking a website works with a screen reader is critical.

Tables

Keep tables very simple and only use them for tabular data. Don't use tables for lists.

Website navigation

Keep website navigation consistent and provide alternative features such as site search or a site map.

If you require any further assistance please contact Design and Print Solutions by emailing designsolutions@york.ac.uk