



**Dig** Inclusion

## **Goldsmiths University - Design Review**

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10th April 2019

## Introduction

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**Accessibility Standard:** Web Content Accessibility Guidelines (WCAG) 2.1.

The report provides details of any accessibility or design issues that need to be addressed for the site to meet [WCAG 2.1 AAA conformance](#).

The executive summary may also reference additional recommendations for improving the accessibility of the site.

Information about applying recommendations, methodology and further information can be found near the end of the report.

*David Lucas*

*Dig Inclusion*

## Using the Design Review

The Design Review looks at a number of pages that are in the design stage of a website's creation. This will mean that components and links do not work, however, guidance can be provided to ensure that conformance failures are avoided.

There are three sections in the detailed analysis section:

1. Design issues.
2. Possible issues and
3. Design Considerations

The Design Issues section covers issues that can currently be identified from the website design. This may cover issues including colour contrast and language.

The Possible Issues section contains potential errors. It cannot be confirmed whether or not it is a fail as the website is still in development. However, it is important to flag the possibility of an error occurring.

The final section, Design Considerations, cover broad categories that are not contained within the design given, but may arise on other pages once the website is in development. This includes forms and multimedia.

A brief explanation of Dig evaluation methodology and WCAG 2.1 can be found at the end of this report under [Standards and methodology](#).

## Executive summary

There were a number of queries that were raised as part of the testing process. While any non-conformance issues identified are in the Detailed Analysis section of this document, the specific queries will also be addressed below.

### Blue CTA button

This button had no conformance issues. The button text is both clear and explains its purpose. Likewise the colour meets contrast requirements.

### Text highlighted with the yellow bar

Visually, the information text is different to surrounding text. In terms of being read through a screen reader, no additional information is needed in this instance. The yellow bar itself is a non-interactive item and therefore does not need to meet minimum contrast requirements. However, as the yellow does fail elsewhere, this should also be changed for consistency.

### Three variations of CTA button styles in the central column

While the contrast between the button text and yellow button is sufficient, at 8.6:1, the contrast between the button outline and the background page fails this at 1.4:1 meaning that some users may have difficulty locating the button.

The contrast ratio for interactive components needs to be at least 3:1. Choosing a different colour will allow the non-text contrast criterion to be met. As the yellow colour appears throughout the site in various capacities, a discussion may need to take place to decide which colour to use.

The button with the grey border would also not meet requirements, unless the button's function is disabled. If it is an active component then it must have a contrast ratio of 3:1. If the border of the button was a colour of hex #959496 or darker, then this would pass. This could help users to differentiate between a button in focus and not in focus.

### A pull out quote

The quote appears to be fine as it is clear that it is a different section of text, separate from the main body. As noted previously, the yellow colour, as a non-interactive item, does not fail. As long as the quotation has the correct markup, including the citation, then it will pass.

There are however a couple of considerations that may need to be made. As it is a separate block of text, the read order must be considered. It would not make sense to a screen reader user if the quotation appeared in the middle of unrelated text. This could result in a fail under other criteria.

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In the specific case of this quotation, the term 'UUKi' may not be understood by some users. Under AAA WCAG conformance, provision must be given to explain acronyms. One method for this is expanding the acronym on its first instance on a page.

### Nesting of headings

The nesting of headings allows a user to understand both connection and separation of text. In the design that has been given, there is a clear heading structure of main body content. The heading levels 2, 3 and 4 are clear and will allow a user, including those using assistive technologies, to know they have entered a new section of text.

In the Design Considerations section, the importance of heading structure is noted and we encourage this clear heading hierarchical structure throughout the site.

### Link colour

In the document DigInclusion\_v05, a green text is used for links. This green text does not meet contrast requirements, having a ratio of 5.8:1, below the AAA threshold of 7:1, and would need to be darkened to #386155 to meet the requirement. Likewise, in DigInclusion\_v06, an alternative green is used that also fails, having a contrast ratio of 5.4:1.

It has been noted that there was some discussion in the Goldsmith's team regarding the link colour. It is recommended that the standard hyperlink blue is used for links on the site using the hex code #0645AD. The standard blue colour has a high contrast ratio of 8.5:1 and is familiar to users, helping with consistency and identification. Other colours may be chosen, but it must meet the contrast requirements. Furthermore, although not a requirement, it would be advisable to provide a second identifying marker to links, such as underlines, to help further differentiate the links from main body text.

Against WCAG 2.1 AAA criteria, the following non-conformant issues were found:

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We hope that you find the following analysis useful and informative. If you have any questions, please do get in touch – we are here to help.

## **Detailed analysis**

This section contains the analysis of the product against WCAG 2.1 AAA success criteria. We have included references to each checkpoint in the guidelines, any conformance issues found with examples and screenshots, and recommendations that we feel can be made to resolve issues.

## Design Issues

### Colour Contrast

Colour contrast of text is insufficient for users with low vision

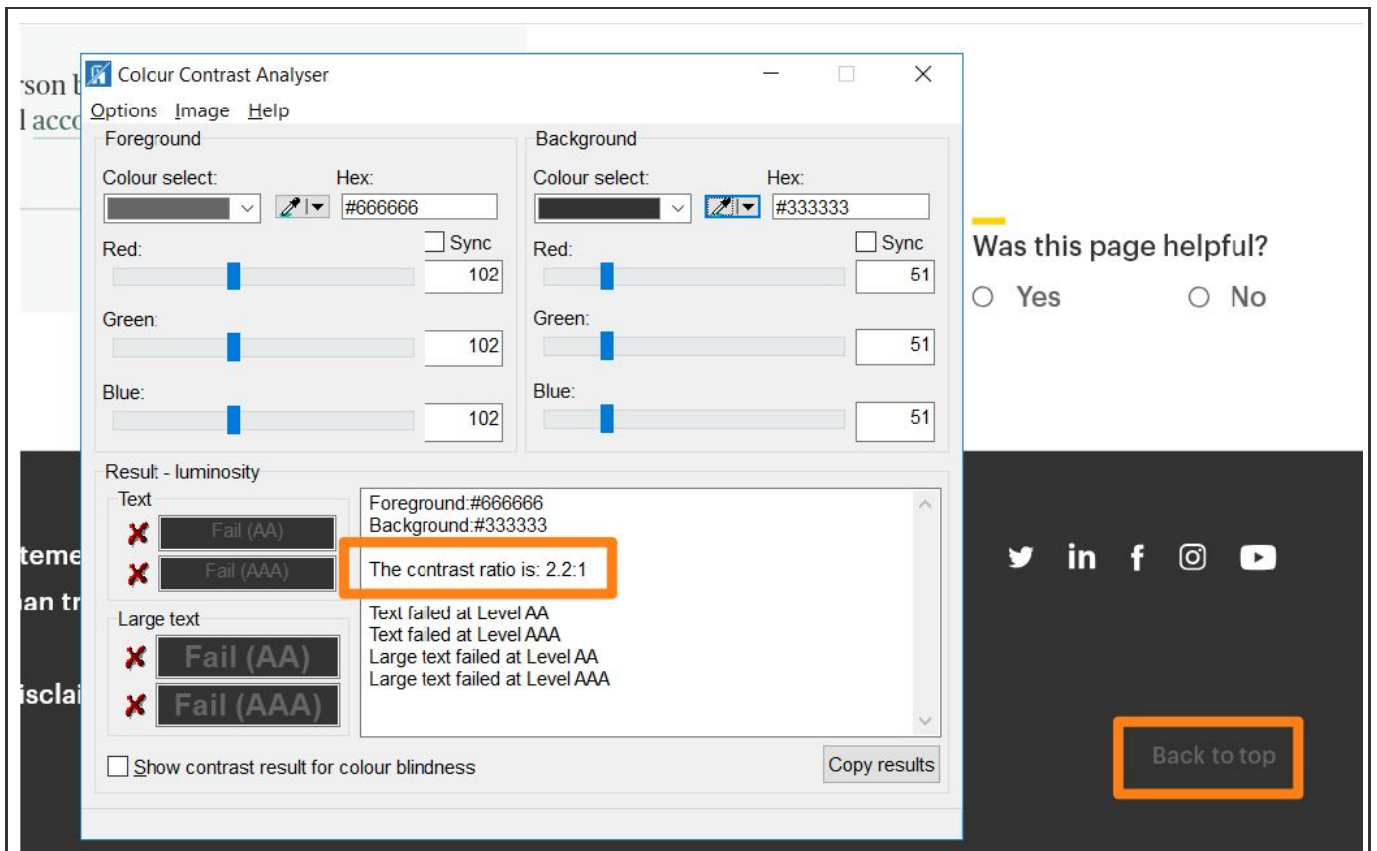
<b>Issue:</b>	Some text does not meet minimum contrast requirements and may be difficult for some users with vision impairments to read.
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#### Examples:

The screenshot shows a document with a link "Who to contact for other residences." highlighted in orange. A "Colour Contrast Analyser" window is overlaid on the document. The tool shows the foreground color as #496C60 and the background color as #FFFFFF. The contrast ratio is 5.8:1, which is highlighted in orange. The tool also shows that the text passed at Level AA but failed at Level AAA. The document text includes sections for "Heating operation times" and "Radiators".

The green-blue link colour for text has a contrast ratio of 5.8:1. In document DigInclusion\_vo6, the contrast ratio for the link is 5.4:1.

As mentioned in the [Executive Summary](#), the standard blue hyperlink meets the minimum contrast requirements and is a known colour. This known blue colour will provide a level of consistency for users.

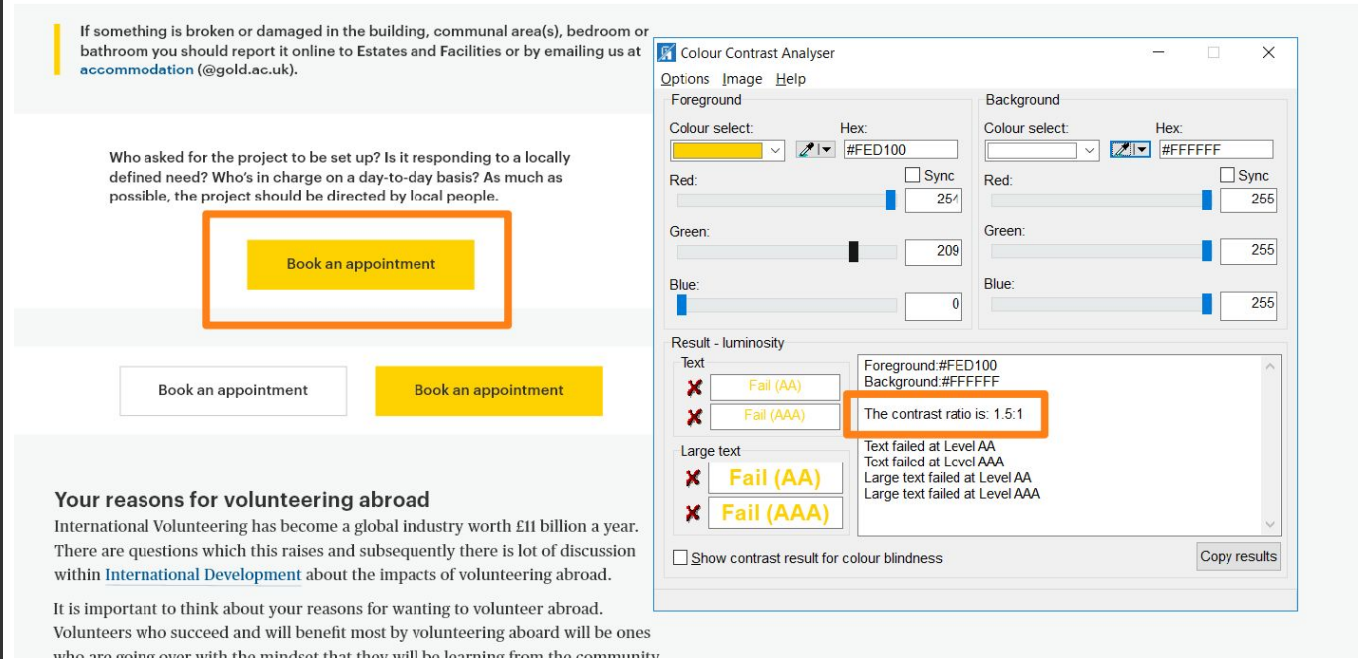


The back to top button is a useful feature, providing a quick way for a user to navigate back to the top of the page. However, the low contrast ratio of 2.2:1 means it will be difficult for some users to identify this feature.

<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.4.6</a> Contrast (Enhanced) (Level AAA)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	Users who have low vision may have difficulty reading text that is not of sufficient contrast.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Ensure contrast ratio for standard sized text exceeds at least 7:1             <ul style="list-style-type: none"> <li>○ <code>a {</code> <ul style="list-style-type: none"> <li><code>font-size: 14pt;</code></li> <li><code>color: #006318;</code></li> <li><code>background: #FFFFFF;</code></li> </ul> </li> <li><code>}</code></li> </ul> </li> <li>● Ensure large text has a contrast ratio of at least 4.5:1</li> </ul>

	<pre>○ a {   font-size: 18pt;   color: #018845;   background: #FFFFFF; }</pre>
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Colour contrast across borders of interactive elements is insufficient for users with low vision

<p><b>Issue:</b></p>	<p>Interactive elements such as inputs and buttons do not have a distinct and clear border between them and the page.</p>
<p><b>Examples:</b></p>	
 <p>The screenshot shows a website interface with a yellow button labeled "Book an appointment" highlighted by an orange border. A "Colour Contrast Analyser" window is overlaid on the right, showing the foreground color as #FED100 and the background as #FFFFFF. The contrast ratio is calculated as 1.5:1, which is marked as a failure for both AA and AAA levels. The analyser also shows that the text on the button fails at Level AA and Level AAA.</p>	
<p><b>WCAG 2.1 ref(s):</b></p>	<ul style="list-style-type: none"> <li>● <a href="#">1.4.11</a>: Non-text Contrast (Level AA)</li> </ul>
<p><b>Affected users:</b></p>	<ul style="list-style-type: none"> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>

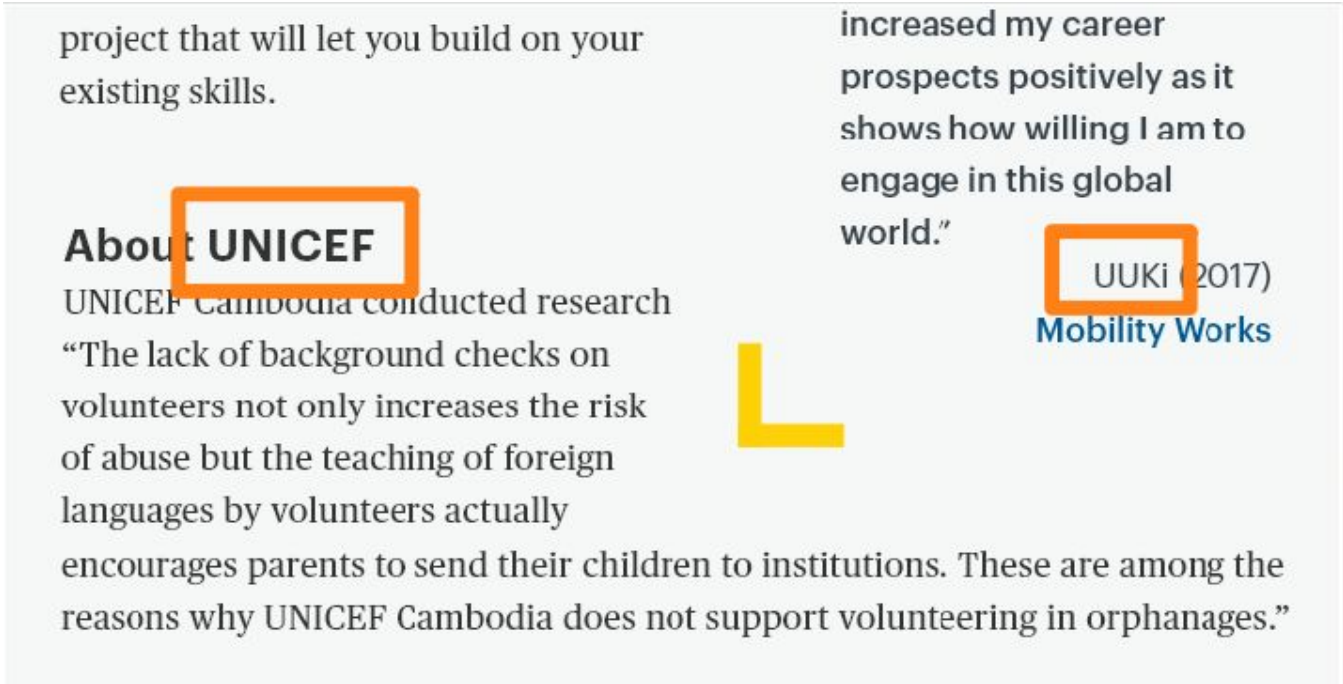
The yellow button has a contrast ratio of 1.5:1 compared to the background. While the black text does meet the requirements, the button must also be considered against the background.

It is noted that the yellow colour does appear in other contexts, such as outlining a quotation. However, as a quotation outline is not an interactive element and is purely decorative, the colour does not need to meet the contrast requirements. However, for consistency, the designers may choose to do so.

<b><i>Impact on users:</i></b>	Users who have low vision or are cognitively impaired may have difficulty locating interactive elements or their borders making it difficult to interact with page content.
<b><i>Suggested solution(s):</i></b>	<ul style="list-style-type: none"><li>● Ensure contrast ratio of the border for interactive elements exceeds 3:1<ul style="list-style-type: none"><li>○ <code>&lt;label for="name"&gt;Your Name&lt;/label&gt;</code> <code>&lt;input type="text" id="name" name="name" /&gt;</code>  <code>#name {</code> <code>  border: 1px solid #848282; //assumes page</code> <code>  background is white</code> <code>  background: #FFFFFF;</code> <code>}</code></li></ul></li></ul>

**Language**

The text content on a page may not be clear to some users

<b>Issue:</b>	Content on the page may contain abbreviations, complex terms or be at a level beyond that of lower secondary school level.
<b>Examples:</b>  <p>The screenshot shows two columns of text. The left column contains the text: "project that will let you build on your existing skills." followed by a heading "About UNICEF" where "UNICEF" is highlighted with an orange box. Below this is a paragraph: "UNICEF Cambodia conducted research 'The lack of background checks on volunteers not only increases the risk of abuse but the teaching of foreign languages by volunteers actually encourages parents to send their children to institutions. These are among the reasons why UNICEF Cambodia does not support volunteering in orphanages.'" The right column contains a quote: "increased my career prospects positively as it shows how willing I am to engage in this global world." followed by "UUKi (2017) Mobility Works" where "UUKi (2017)" is highlighted with an orange box. A yellow L-shaped graphic is positioned between the two columns.</p>	
<p>There are some acronyms on the page that may not be understood by all users. Although both organisations may be well known, some users may never have heard of them and therefore these acronyms should be explained in the text.</p>	

## Heating operation times

The heating is turned on when the outside air temperature stays below 18C for more than eight hours on three consecutive days.

The heating is set to maintain the correct temperature between 6am and 2am every day through the heating season.

## Radiators

The radiators in the flats do not always have hot water running through them. To keep the conditions at the optimal level, we do not run the heating constantly, instead they are run according to the outside temperature.

You can control the radiator in your room with a Thermostatic Radiator Valves (TRVs). These detect the temperature in your room and will adjust to maintain the correct temperature. We recommend that you leave this at “3” and turn them down to “0” or “\*” if you are going to be away for a few days.

There are at least two instances where text may not be understood by some users, including those who use assistive technology. The term ‘18C’ is not a full description of ‘18 degrees celsius’. Likewise the star icon may not be understood or may be communicated ineffectively by screen readers.

In both cases, using alternative forms may require additional information to explain the terms.

<p><b>WCAG 2.1 ref(s):</b></p>	<ul style="list-style-type: none"> <li>● <a href="#">3.1.3</a> Unusual Words (Level AAA)</li> <li>● <a href="#">3.1.4</a> Abbreviations (Level AAA)</li> <li>● <a href="#">3.1.5</a> Reading Level (Level AAA)</li> <li>● <a href="#">3.1.6</a> Pronunciation (Level AAA)</li> </ul>
<p><b>Affected users:</b></p>	<ul style="list-style-type: none"> <li>● Cognitively impaired</li> </ul>
<p><b>Impact on users:</b></p>	<p>Users who cannot understand certain terms or words may struggle to interact fully with the website. It could leave users</p>

	<p>with a slower journey or result in them leaving the website entirely if they believe they cannot understand the content.</p> <p>It is possible that some users may be financially disadvantaged if there is a financial implication to a decision they have made but not understood.</p>
<p><b>Suggested solution(s):</b></p>	<ul style="list-style-type: none"> <li>● Provide a definition for unusual words       <ul style="list-style-type: none"> <li>○ <code>&lt;dl title="Nautical terms"&gt;</code>  <code>&lt;dt&gt;Knot&lt;/dt&gt;</code>  <code>&lt;dd&gt;</code>  <code>&lt;p&gt;A <em>knot</em> is a unit of speed equalling 1 nautical mile per hour (1.15 miles per hour or 1.852 kilometers per hour).&lt;/p&gt;</code>  <code>&lt;/dd&gt;</code>  <code>&lt;/dl&gt;</code></li> </ul> </li> <li>● Provide the meaning of an acronym as part of the text       <ul style="list-style-type: none"> <li>○ <code>&lt;p&gt;The WAI (Web Accessibility Initiative) demonstrates the W3C (World Wide Web Consortium) commitment to accessibility.&lt;/p&gt;</code></li> </ul> </li> <li>● Provide the pronunciation of a word.       <ul style="list-style-type: none"> <li>○ <code>&lt;p&gt;The soldier decided to desert his position&lt;/p&gt;</code>  <code>&lt;figure&gt;</code>  <code>&lt;figcaption&gt;Pronunciation of desert:&lt;/figcaption&gt;</code>  <code>&lt;audio controls src="/media/examples/desert.mp3"&gt;</code>          Your browser does not support the  <code>&lt;code&gt;audio&lt;/code&gt;</code> element  <code>&lt;/audio&gt;</code>  <code>&lt;/figure&gt;</code></li> </ul> </li> <li>● Ensure that reading level used does not exceed early secondary school level       <ul style="list-style-type: none"> <li>○ Incorrect example: <code>&lt;p&gt;Greetings and salutations upon you and your kin&lt;/p&gt;</code></li> <li>○ Correct example: <code>&lt;p&gt;Hello&lt;/p&gt;</code></li> </ul> </li> </ul>

## Possible issues

### Structure

Quotes require the appropriate quote markup

<b>Issue:</b>	Blockquote or quote markup is required for quotations.
<b>Examples:</b>  <p>Try to find a project that will let you build on your existing skills. In this way you are likely to be more useful to the local communities. On top of this, think about</p> <p>how you will apply your learning upon your return to your home country. If you are volunteering about a cause you are particularly passionate about during your time abroad, think about how you will further help this cause on your return.</p> <p>Some projects can disrupt the local markets which can have a negative impact on the community's development potential. Try to find a project that will let you build on your existing skills.</p> <p><b>About UNICEF</b> UNICEF Cambodia conducted research "The lack of background checks on volunteers not only increases the risk of abuse but the teaching of foreign languages by volunteers actually encourages parents to send their children to institutions. These are among the reasons why UNICEF Cambodia does not support volunteering in orphanages."</p> <div data-bbox="679 831 1289 1753" style="border: 2px solid green; padding: 10px;"><p>"The ability to live and adapt in different environments will raise my prospects by demonstrating how fluid I can be in different situations.</p><p>"Studying abroad has increased my career prospects positively as it shows how willing I am to engage in this global world."</p><p style="text-align: right;">UUKi (2017) <b>Mobility Works</b></p></div>	

There is a quotation on the page. This will need the appropriate markup for both the quotation and the author.

<p>Consideration will also need to be made regarding the quotations position in the flow of the document. A screen reader user, for example, would be disorientated if focus is brought to the quotation out of context. If the read order is illogical, there would also be a fail under the read order criterion.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationships (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> </ul>
<b>Impact on users:</b>	<p>Text that is a quotation is often styled in a way that is obvious to sighted users. If the text is missing quote or blockquote markup then it's not clear to non-sighted users where a quotation begins and ends, or whether the text is a quotation at all.</p>
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Provide correct markup for quotations <ul style="list-style-type: none"> <li>○ <code>&lt;blockquote&gt;</code>  <code>&lt;p&gt;"Whether you think you can or think you can't, you're right."&lt;/p&gt;</code>  <code>&lt;/blockquote&gt;</code></li> <li>○ <code>&lt;p&gt;&lt;cite&gt;Henry Ford&lt;/cite&gt;&lt;/p&gt;</code></li> </ul> </li> </ul>

## Forms

(ARIA) Radio button choices need to be grouped using ARIA radiogroup

<p><b>Issue:</b></p>	<p>When a screen reader user reaches a group of radio buttons they need to hear the individual button value along with the question that is being asked. For this to happen the question and group of answers need to be programmatically associated.</p> <p>If this does not happen then the user will only have the answer as information to hand, and this is not enough.</p>
<p><b>Examples:</b></p> <div data-bbox="523 891 1106 1144" data-label="Image"> </div> <div data-bbox="124 1256 1121 1491" data-label="Image"> </div> <p>There are radio buttons at the bottom of the page. The radio buttons need to be grouped together so that users of assistive technology are given context and the relationship between the two (or more) options.</p>	
<p><b>WCAG 2.1 ref(s):</b></p>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationship (Level A)</li> <li>● <a href="#">3.3.2</a> Labels or Instructions (Level A)</li> <li>● <a href="#">4.1.2</a> Name, Role, Value (Level A)</li> </ul>
<p><b>Affected users:</b></p>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>

<b><i>Impact on users:</i></b>	Without a legend for context, a screen reader user may have some difficulty completing a form correctly.
<b><i>Suggested solution(s):</i></b>	<ul style="list-style-type: none"><li>● Ensure Switchable buttons have correct aria markup<ul style="list-style-type: none"><li>○ <pre>&lt;div role="radiogroup" aria-label="Frequency"&gt;   &lt;button tabindex="0" role="radio"     aria-checked="true"   &gt;Daily&lt;/button&gt;   &lt;button tabindex="-1" role="radio"     aria-checked="false"   &gt;Monthly&lt;/button&gt;   &lt;button tabindex="-1" role="radio"     aria-checked="false"   &gt;Yearly&lt;/button&gt; &lt;/div&gt;</pre></li></ul></li></ul> <p>Note: Ensure javascript is used to fill in functionality including:</p> <ul style="list-style-type: none"><li>● Changing selection with arrow buttons</li><li>● Aria-checked and tabindex changing to correct value on selection</li></ul>

## Links and buttons

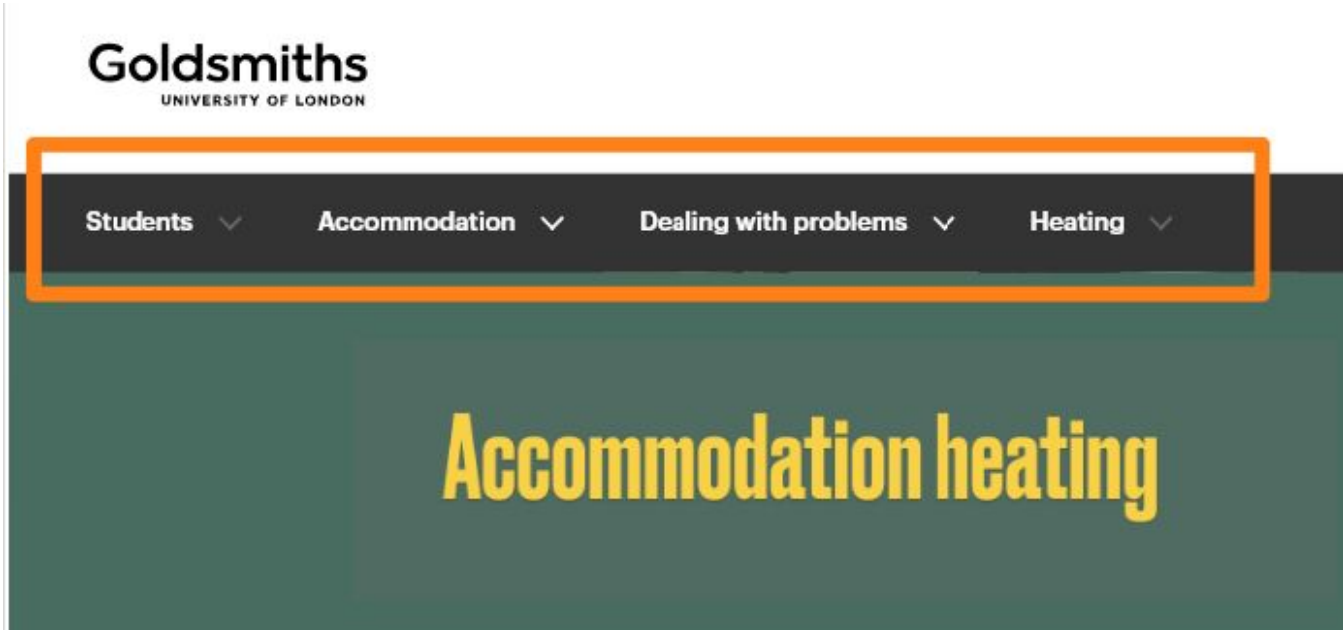
Email addresses or Phone numbers are not linked (Advisory)

<b>Issue:</b>	Email addresses and phone numbers are present on the page and appear to be plain text instead of an anchor link.
<p><b>Examples:</b></p> <div style="text-align: center;"> <h1>Campus support officers</h1> <p>Available every night 6pm-6am to talk about absolutely anything.</p> <p>Call 020 7919 7284</p> <p>Email <a href="mailto:campus-support">@gold.ac.uk</a></p> </div> <p>The telephone number and email address could be programmatically linked. This would allow users, including those on mobile devices, to tap the number or email to contact the support office.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationships (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>

<b><i>Impact on users:</i></b>	When email addresses and phone numbers are in plain text and not interactive, users will be required to copy-and-paste. This makes it difficult for users to interact with this information and make contact.
<b><i>Suggested solution(s):</i></b>	<ul style="list-style-type: none"><li>• Email address and phone numbers should be programmatically linked<ul style="list-style-type: none"><li>○ <code>&lt;p&gt;Phone: &lt;a href="tel:01234567890"&gt;01234567890&lt;/a&gt;&lt;/p&gt;</code></li></ul></li></ul>

## Name, role and value

Expanding control needs appropriate name, role and value

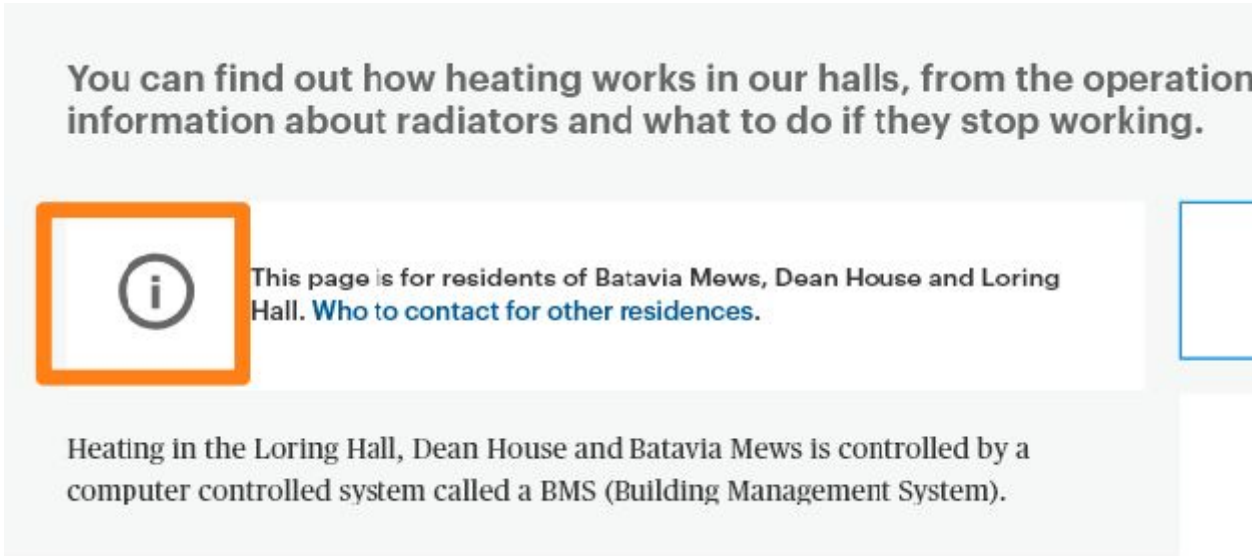
<b>Issue:</b>	Expanding controls must have the appropriate features that make it accessible to people who use screen readers.
<p><b>Examples:</b></p>  <p>The screenshot shows the Goldsmiths University of London logo at the top left. Below it is a dark navigation bar with four items: 'Students', 'Accommodation', 'Dealing with problems', and 'Heating'. Each item has a small downward arrow indicating it is an expanding menu. An orange rectangular box highlights the entire navigation bar. Below the navigation bar, the text 'Accommodation heating' is displayed in large, bold, yellow font on a dark green background.</p>	
The expanding content in the menu needs to have the appropriate name, role and value. Some expanding menus items works by hovering over the content, which then loads below. Other content works by clicking the mouse to load the content. In either case, keyboard only users must be able to access this content.	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">4.1.2</a> Name, Role, Value (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	Very often expanding controls are created using links or buttons with no appropriate roles or instructions. Adding the appropriate

	role or value makes the purpose of the control more obvious to non-sighted users.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Ensure accordions have correct aria markup <ul style="list-style-type: none"> <li>○ <code>&lt;button id="panelheader1" aria-expanded="true" aria-controls="panel1"&gt;Section 1&lt;/button&gt;</code>  <code>&lt;div id="panel1" class="panel" role="region" aria-labelledby="panelheader1" aria-hidden="false"&gt;</code>  <code>  &lt;p&gt;Section 1 content...&lt;/p&gt;</code>  <code>&lt;/div&gt;</code>  <code>&lt;button id="panelheader2" aria-expanded="false" aria-controls="panel2"&gt;Section 2&lt;/button&gt;</code>  <code>&lt;div id="panel2" class="panel hidden" role="region" aria-labelledby="panelheader2" aria-hidden="true"&gt;</code>  <code>  &lt;p&gt;Section 2 content...&lt;/p&gt;</code>  <code>&lt;/div&gt;</code>  ... </li> </ul> </li> <li>● Buttons that affect another element should inform assistive technology of its relationship <ul style="list-style-type: none"> <li>○ <code>&lt;button aria-controls="accordion"&gt;Expand All Items&lt;/button&gt;</code>  <code>&lt;div id="accordion"&gt;</code>  ...  <code>&lt;/div&gt;</code> </li> </ul> </li> </ul>

## Design Considerations


### Images

Content images have appropriate alt text

<b>Consideration:</b>	The text alternatives for images are clear, appropriate and concise
<p><b>Example:</b></p>  <p>The 'i' symbol provides context for the surrounding text; that it is important. Appropriate alternative text should be provided to help users understand the context. It is also possible that in other locations there will be images that provide context for users. For example, a map of a campus may help users, but there must be a suitable alternative text for images that can clearly describe the images.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.1.1</a>: Non-Text Content (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>

<b><i>Impact on users:</i></b>	<p>Screen reader users rely on text alternatives to make sense of the images that are displayed on the screen. Without accurate text alternatives, users who are unable to see the images may miss important information if it is not included in the alt attribute, or described in nearby text.</p> <p>Another issue can be that overly verbose text alternatives increase reading time and the amount of time a user needs to spend on a page.</p>
<b><i>Suggested solution(s):</i></b>	<ul style="list-style-type: none"><li>● Ensure alt attributes are provided for all &lt;img&gt; elements<ul style="list-style-type: none"><li>○ <code>&lt;img alt="Image of an orange" src="orange.png" /&gt;</code></li></ul></li><li>● Ensure alt attributes accurately describe the image<ul style="list-style-type: none"><li>○ <code>&lt;img alt="Image of an orange" src="orange.png" /&gt;</code></li></ul></li><li>● Ensure logo alt text represents the brand accurately<ul style="list-style-type: none"><li>○ <code>&lt;img alt="Massive Dynamic" src="md-logo.png" /&gt;</code></li></ul></li></ul>

Decorative images do not have alt text

<p><b>Consideration:</b></p>	<p>Decorative images that provide only an aesthetic purpose should have an empty ('null') attribute.</p>
<p><b>Example:</b></p> <div data-bbox="118 517 1452 701" style="border: 1px solid orange; padding: 5px;">  </div> <p>It is likely that there will be images that have been added for decorative purposes. These images should have an empty ("null") alt text.</p>	
<p><b>WCAG 2.1 ref(s):</b></p>	<ul style="list-style-type: none"> <li>● <a href="#">1.1.1</a>: Non-Text Content (Level A)</li> </ul>
<p><b>Affected users:</b></p>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<p><b>Impact on users:</b></p>	<p>The alt attribute in HTML supports disabled users by providing a description of the image. This can be critical when the image contains important information or content, or when the image is a link (in which case the destination page should be described rather than the image content).</p> <p>Decorative images such as the ones shown in the examples need to have an empty alt attribute (<code>alt=""</code>) otherwise screen readers may attempt to read the filename for the image which is not often useful, and potentially confusing. An empty alt attribute lets text to speech software (screen readers) know that the image has no significant content, and ignores it.</p>
<p><b>Suggested solution(s):</b></p>	<ul style="list-style-type: none"> <li>● Ensure decorative images have a blank alt attribute             <ul style="list-style-type: none"> <li>○ <code>&lt;a href="/account"&gt;</code>  <code>  &lt;img alt="" src="profile-icon.png" /&gt;</code>  <code>  &lt;span&gt;My Account&lt;/span&gt;</code>  <code>&lt;/a&gt;</code> </li> </ul> </li> </ul>

## No image text present on the site

<b>Consideration:</b>	Under AAA conformance testing, there must be no instance of image text on the site (logos are exempt).
<p><b>Example:</b></p> <p>Images of text are a point of failure under AA conformance testing. However some text images, such as infographics, are permitted. Under AAA conformance testing however, there must be no instances of image text except where it is essential (such as a brand logo).</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.4.9</a> Images of Text (No Exception) (Level AAA)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	Users may want to adjust the size of the text or make customisable changes for their viewing preferences. Image text cannot be adjusted, and this prevents a user from being able to understand the text.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Do not use image text except in cases where it is essential</li> </ul>

## Multimedia

Provision is given for alternatives within multimedia

<b>Consideration:</b>	Where there is a multimedia source, provision is given so that a user may still have access to the content.
<p><b>Example:</b></p> <p>There may be examples of multimedia throughout the website, such as providing online course material or demonstrating the life of the university.</p> <p>Regardless of the multimedia presented, it is important that provision is given for users who cannot receive the meaning of the multimedia in visual or auditory formats.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.2.1</a>: Audio-only and Video-only (Prerecorded) (Level A)</li> <li>● <a href="#">1.2.2</a> Captions (Prerecorded) (Level A)</li> <li>● <a href="#">1.2.3</a> Audio Description or Media Alternative (Prerecorded) (Level A)</li> <li>● <a href="#">1.2.4</a> Captions (Live) (Level AA)</li> <li>● <a href="#">1.2.5</a> Audio Description (Prerecorded) (Level AA)</li> <li>● <a href="#">1.2.6</a> Sign Language (Prerecorded) (Level AAA)</li> <li>● <a href="#">1.2.7</a> Extended Audio Description (Prerecorded) (Level AAA)</li> <li>● <a href="#">1.2.8</a> Media Alternative (Prerecorded) (Level AAA)</li> <li>● <a href="#">1.2.9</a> Audio-only (Live) (Level AAA)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> <li>● Deaf</li> </ul>
<b>Impact on users:</b>	If a user does not have access to an alternative for the content, it will prevent a user from understanding the material. For example, without sign language or closed captions, a deaf user may not be able to understand the purpose of a video.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Provide the appropriate alternatives for a media source</li> </ul>

**Structure**

Ensure there is a logical heading structure

<b>Consideration:</b>	The headings on the page should have markup and a level appropriate to their importance.
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**Example:**

The screenshot shows a webpage layout with several heading levels highlighted in orange boxes:

- Section 1:** A large heading: "You can find out how heating works in our halls, from the operation times, information about radiators and what to do if they stop working."
- Section 2:** An information icon followed by the text: "This page is for residents of Batavia Mews, Dean House and Loring Hall. Who to contact for other residences."
- Section 3:** A blue button: "Emergency and crisis support"
- Section 4:** A heading: "Heating operation times" followed by text: "Heating in the Loring Hall, Dean House and Batavia Mews is controlled by a computer controlled system called a BMS (Building Management System). The heating is turned on when the outside air temperature stays below 18C for more than eight hours on three consecutive days. The heating is set to maintain the correct temperature between 6am and 2am every day through the heating season."
- Section 5:** A heading: "Radiators" followed by text: "The radiators in the flats do not always have hot water running through them. To keep the conditions at the optimal level, we do not run the heating constantly, instead they are run according to the outside temperature. You can control the radiator in your room with a Thermostatic Radiator Valves (TRVs). These detect the temperature in your room and will adjust to maintain the correct temperature. We recommend that you leave this at "3" and turn them down to "0" or "\*" if you are going to be away for a few days."
- Section 6:** A heading: "Reporting problems"
- Section 7:** A heading: "Campus support officers" followed by text: "Available every night 6pm-6am to talk about absolutely anything. Call 020 7919 7284 Email campus-support (@gold.ac.uk)"
- Section 8:** A heading: "More from wellbeing" followed by a list:
  - Counseling
  - Disability service
  - Local healthcare
  - Concerned about a friend

Throughout the page there are several types of headings. It's important that consideration is given to the heading levels so that there is a clear hierarchical structure and users understand both connection and separation of text through this system.

<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationships (Level A)</li> <li>● <a href="#">2.4.6</a> Headings and Labels (Level AA)</li> </ul>
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<p><b><i>Affected users:</i></b></p>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<p><b><i>Impact on users:</i></b></p>	<p>Screen reader users use heading markup to understand the importance of information on the page, and frequently use them as a form of navigation.</p> <p>If content is presented in an illogical way, it can be very difficult for non-sighted users to make sense of the content based on the heading levels alone.</p>
<p><b><i>Suggested solution(s):</i></b></p>	<ul style="list-style-type: none"> <li>● Ensure headings are marked up correctly             <ul style="list-style-type: none"> <li>○ <code>&lt;h3&gt;Examples&lt;/h3&gt;</code></li> </ul> </li> <li>● A level 1 heading should be included on all pages             <ul style="list-style-type: none"> <li>○ <code>&lt;h1&gt;The Hypertext Markup Language&lt;/h1&gt;</code></li> <li><code>&lt;p&gt;This page is about HTML&lt;/p&gt;</code></li> </ul> </li> <li>● Headings should be used to provide structure and context             <ul style="list-style-type: none"> <li>○ <code>&lt;h3&gt;The Paragraph Element&lt;/h3&gt;</code></li> <li><code>&lt;p&gt;The p tag is used to denote paragraphs within a page...&lt;/p&gt;</code></li> <li><code>&lt;h3&gt;Heading Elements&lt;/h3&gt;</code></li> <li><code>&lt;p&gt;The tags h1-h6 are used to denote headings...&lt;/p&gt;</code></li> </ul> </li> <li>● Headings should follow a hierarchical structure</li> </ul>

Ensure that lists have the correct markup

<p><b>Consideration:</b></p>	<p>Content is a list of items and therefore should have the appropriate link markup.</p>
<p><b>Example:</b></p> <div style="text-align: center; margin: 20px 0;"> <h2>More from wellbeing</h2> <ul style="list-style-type: none"> <li>■ <a href="#">Counselling</a></li> <li>■ <a href="#">Disability service</a></li> <li>■ <a href="#">Local healthcare</a></li> <li>■ <a href="#">Concerned about a friend</a></li> </ul> </div> <p>Where there is a list of items, this should have list markup to help provide context for the related items. The type of list, such as if it is an ordered or definition list, should also be considered as part of the markup.</p>	
<p><b>WCAG 2.1 ref(s):</b></p>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationship (Level A)</li> </ul>
<p><b>Affected users:</b></p>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<p><b>Impact on users:</b></p>	<p>List markup is useful to non-sighted users as it provides a screen reader with important information about the content such as:</p>

	<ul style="list-style-type: none"> <li>● Whether the list of items is ordered or unordered</li> <li>● How many items are in the list</li> <li>● When each item in the list begins, and ends</li> </ul> <p>Without list markup the list can read like a string of text that might not make much sense.</p>
<p><b><i>Suggested solution(s):</i></b></p>	<ul style="list-style-type: none"> <li>● Ensure list data is marked up using list markup       <ul style="list-style-type: none"> <li>○ <b>Example 1:</b> <pre>&lt;ul&gt;   &lt;li&gt;Corn&lt;/li&gt;   &lt;li&gt;Tomatoes&lt;/li&gt;   &lt;li&gt;Beans&lt;/li&gt;   &lt;li&gt;Onions&lt;/li&gt;   &lt;li&gt;Garlic&lt;/li&gt; &lt;/ul&gt;</pre> </li> <li>○ <b>Example 2:</b> <pre>&lt;ol&gt;   &lt;li&gt;Do the first thing&lt;/li&gt;   &lt;li&gt;Do the second thing&lt;/li&gt;   &lt;li&gt;Do the third thing&lt;/li&gt; &lt;/ol&gt;</pre> </li> </ul> </li> <li>● Ensure correct list format is used       <ul style="list-style-type: none"> <li>○ <pre>&lt;ol&gt;   &lt;li&gt;Do the first thing&lt;/li&gt;   &lt;li&gt;Do the second thing&lt;/li&gt;   &lt;li&gt;Do the third thing&lt;/li&gt; &lt;/ol&gt;</pre> </li> </ul> </li> <li>● Key value pairs should be marked up as a definition list       <ul style="list-style-type: none"> <li>○ <pre>&lt;dl&gt;   &lt;dt&gt;Name:&lt;/dt&gt;   &lt;dd&gt;Walter Bishop&lt;/dd&gt;    &lt;dt&gt;Age:&lt;/dt&gt;   &lt;dd&gt;64&lt;/dd&gt;    &lt;dt&gt;Occupation:&lt;/dt&gt;   &lt;dd&gt;Research Scientist&lt;/dd&gt; &lt;/dl&gt;</pre> </li> </ul> </li> </ul>

## Navigation and order

A skip link is provided to bypass repetitive blocks of content


<b>Consideration:</b>	Provide a way for users to skip repeating blocks of content (such as navigation) present across multiple pages.
<b>Examples:</b>	In the design there is a menu bar. It is likely that this menu bar will be on every page. It can be frustrating for keyboard users if they have to navigate through a menu every time they get to a page. Adding a skip link would help these users.
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">2.4.1</a> Bypass Blocks (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	Users who use keyboard controls to navigate the page will have to traverse repeating blocks multiple times across the site to get to the main content.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Ensure a skip link is provided to bypass repetitive blocks             <ul style="list-style-type: none"> <li>○ <code>&lt;a class="a11y-skip" href="#main"&gt;Skip to main content&lt;/a&gt;</code></li> <li>...</li> <li>○ <code>&lt;main id="main"&gt;...&lt;/main&gt;</code></li> </ul> </li> </ul>

The focus and read order is logical

<b>Consideration:</b>	Users who can't see the page need it to be in a logical order when they navigate though it sequentially with a screen reader.
<p><b>Examples:</b></p> <p>On the page there are several different sections, including side elements, main body content and quotations. It is important to consider the focus and read order of this content so that it is in a logical and consistent manner.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.2</a> Meaningful Sequence (Level A)</li> <li>● <a href="#">2.4.3</a> Focus Order (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	<p>Screen reader users who can't see how the content on the page is arranged may be confused by an illogical order of content.</p> <p>Additionally, non-mouse users who rely on a keyboard or accessible hardware switches for moving around a web page may have difficulty following the current focus.</p>
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Do not use a tabindex of 1 or higher             <ul style="list-style-type: none"> <li>○ <code>&lt;button class="..."&gt;Button text&lt;/button&gt;</code></li> </ul> </li> <li>● Consider the order of the page and how a user logically moves from one section to another.</li> <li>● Ensure the reading order of content is correct</li> </ul>

## Name, role and value

Ensure a mobile menu has the correct ARIA markup

<b>Consideration:</b>	A mobile menu that does not have the correct ARIA markup will not communicate its various elements and options to screen reader users.
<p><b>Examples:</b></p>  <p>There is a menu at the top of the screen. It is important to consider how the menu operates. Part of this consideration is ensuring that the menu has the correct ARIA markup so that its purpose can be clearly understood by screen reader users and other assistive technologies.</p>	
<b>WCAG 2.1 ref(s):</b>	<ul style="list-style-type: none"> <li>● <a href="#">1.3.1</a> Info and Relationships (Level A)</li> <li>● <a href="#">4.1.2</a> Name, Role, Value (Level A)</li> </ul>
<b>Affected users:</b>	<ul style="list-style-type: none"> <li>● Blind</li> <li>● Low vision</li> <li>● Cognitively impaired</li> </ul>
<b>Impact on users:</b>	Users of assistive technology may be unaware of the exact purpose of the button, how it functions and its current state and as a result have difficulty navigating the site.
<b>Suggested solution(s):</b>	<ul style="list-style-type: none"> <li>● Ensure mobile menus convey role, state and relationships to assistive technology             <ul style="list-style-type: none"> <li>○ <pre>&lt;button aria-controls="navigation" aria-expanded="false"   &lt;i class="fas fa-bars" aria-hidden="true"&gt;&lt;/i&gt;   &lt;span class="visually-hidden"&gt;Menu&lt;/span&gt; &lt;/button&gt;  &lt;nav id="navigation" tabindex="-1"&gt;</pre></li> </ul> </li> </ul>

	<pre>... &lt;/nav&gt;</pre> <p>Note: Also ensure focus is moved to the navigation container when activated and back to the menu button when closed, tabindex of -1 is provided for this reason</p>
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## Standards and methodology

This audit measures web products against the [Web Content Accessibility Guidelines \(WCAG\) 2.1](#). The level of [conformance](#) tested in this document is AAA.

We also include any additional information that we feel that may go beyond conformance to further reduce risk of pages being inaccessible to some groups of users. One example of this is where we recommend that a transcript of video is always provided to ensure access by people who are deaf-blind. WCAG 2.1 AAA conformance does not require this.

Our audit process is based on a sample pages that are thoroughly checked for all AAA non-conformances. It is important that these pages are chosen to include all the main content types that a person may encounter elsewhere on the website. We will liaise with a member of your team to ensure that sufficient pages of the right type are chosen that truly representative of the site.

The audit process begins with a detailed page-by-page analysis of all the pages in the sample to ensure that all non-conformances are detected. We use browser tools, assistive technologies such as screen readers, and code inspection to test the site against WCAG requirements.

We don't use automated tools in our audits to "spider" large numbers of pages as they are typically wildly inaccurate and of very limited use. We estimate that only 5% of accessibility issues can be detected accurately without any form of manual verification.

We then consolidate that information into this document and provide examples and screenshots to illustrate where the non-conformance occurs and suggest how it should be fixed.

It is very important to us that you get the most out of our report, so we always recommend that we follow up the report with a call to walk you through our findings, or if you prefer we can present the report to you on-site. Whichever you choose, this follow up call provides an opportunity for you and your team to ask about anything that might be unclear, or ask for advice on how an issue can be resolved.

## What happens next?

### Help desk support

We provide comprehensive help desk support for all our customers. This makes a Dig Inclusion accessibility consultant available during normal office hours to answer any queries you might have about making your website more accessible. We can provide general advice and support, clarification of WCAG guideline requirements and even write new code for you.

If you are interested in finding out more about our help desk support, please get in touch.

### Component library test

Typically, designers will use a component library; a folder consisting of different components, such as buttons and forms. These components can be selected and placed into a page as an author requires.

Testing the component library will save time as components that may appear on several pages can be tested at once. Likewise, if an error is found, a component used on multiple pages can be corrected and fixed.

If you are interested in having your component library tested, please contact the Dig Inclusion team.

### Website audit

Once your website is in a testing stage, we are able to test pages and their features. We recommend this occurs before the website goes live, in case changes are required. Dig Inclusion will be able to test a variety of pages and make sure that they work in an accessible way.

Following a website audit, we will send a spreadsheet and a written report to show the areas of non-conformance. This will help you to know the specific areas where issues occur and provide examples of how they can be rectified.

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