Digital Accessibility Centre

Accessibility Audit Report for Cardiff Council – iOS App

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Date	1st June 2021
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Standard	WCAG 2.1

Document Control

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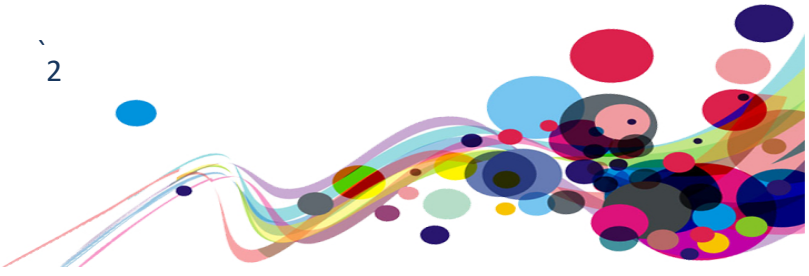
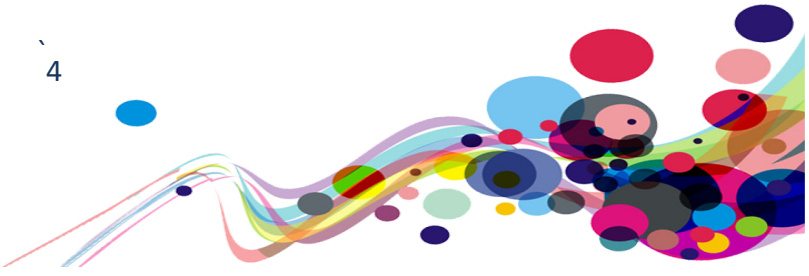


Contents



Executive Summary

An accessibility audit for the **Cardiff Council iOS app** was carried out by the Digital Accessibility Centre (DAC) user/ technical team on **1st June 2021.**

The App was assessed against the Web Content Accessibility Guidelines WCAG 2.1.

This document incorporates the findings regarding any accessibility barriers identified during the testing process.
The issues reported are examples of any assistive technology barriers which were encountered during accessibility testing, and information has been provided detailing how to resolve them.
Please note: additional instances of these barriers may exist in other pages of the app wherever these barriers are present, they will also need to be resolved.

There were a high number of issues identified during the audit process which would present a barrier to accessibility for some user groups.
The issues tended to be repetitive and would mostly impact blind users who navigate with VoiceOver, the inbuilt screen reader with Apple devices.

Most form fields appear to be unlabelled which can be confusing for screen reader users. User interface components such as checkboxes, links and buttons also did not have an appropriate role or trait to allow screen reader users know how to interact with the component.

The menu button will be confusing for screen reader users as it does not announce whether it is expanded or collapsed and there are issues with screen reader focus when the menu is expanded.

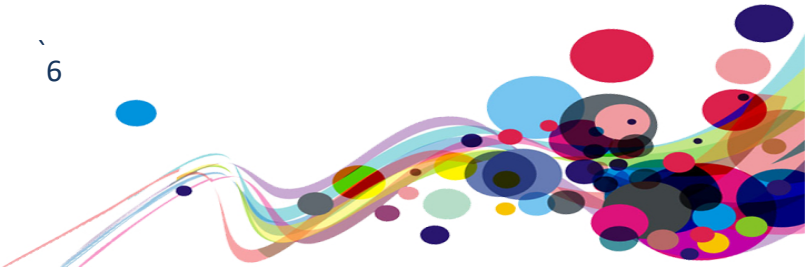
The select pickers used to choose a material and quantity on some pages may be disorientating for screen reader users as focus is reset when a user interacts with the element. There is a select input which work correctly when selecting a time, but most others that were tested had this issue present.

Error messages were difficult for screen reader users to locate, meaning that they were unaware when an error had been committed and there were status messages which were also not announced.

Users with limited vision and colour perception issues only reported a small number of issues, there is a key on the map which relies on colour alone to convey information, the same key may also be difficult for users to see because of the size and colour combination used.

Users were unable to resize text or user interface components using pinch and zoom or display settings.

Issues have been presented in order of the relevant WCAG success criteria with high priority issues first and usability issues towards the end of the report.



Audit Summary

In order for the website to be eligible for a Digital Accessibility Centre certification, and fall in line with WCAG 2.1 requirements, improvements need to be made in the following areas.

A

Non-Text Content
Heading Structure
Meaningful Sequence
Form Controls - Unlabelled
Use of Colour Alone
Focus Order
On Focus
Error Messages
Roles
Expanding Content

AA

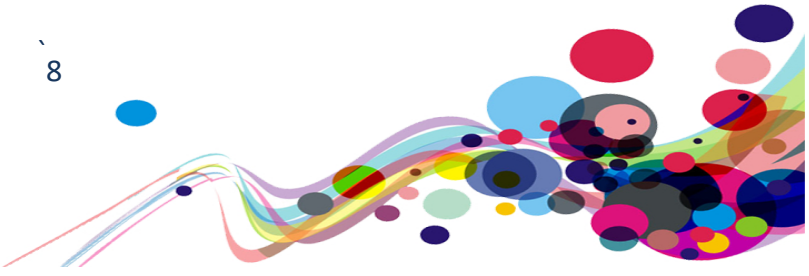
Orientation
Resizing
Non-Text Contrast
Ambiguous Buttons
Status Messages
Character Count

Scope

Tasks

Brief Task and/ or URLs are listed below along with the specific browser and AT set.

See Appendix I for a full list of tasks and instructions.



Browser matrix and Assistive Technology (AT) combinations

Mobile/ Tablet

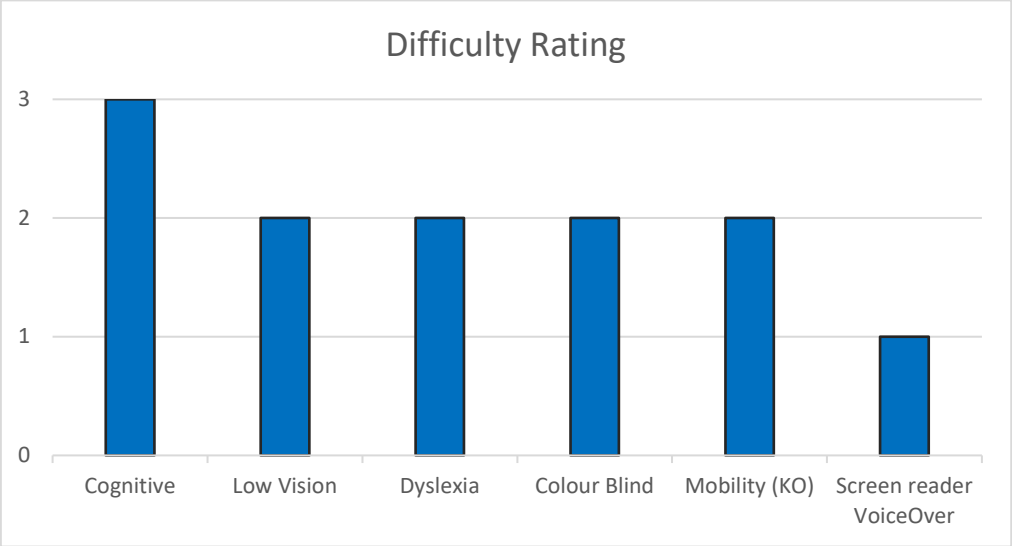
User type	Operating System (OS)	Browser	Assistive Technology
Blind	iOS	Native App	VoiceOver
Mobility	iOS	Native App	-
Deaf	iOS	Native App	-
Colour Blind/ Dyslexia	iOS		-
Low Vision			Magnification
	iOS	Native App	System inverted colours

Summary Graphs

Analyst Feedback

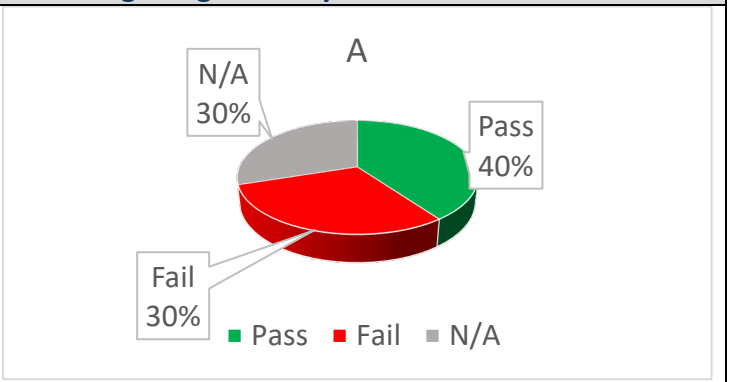
Our analysts provided their overall feedback on the website.
This was rated from 0 – could not complete to 3 – Completed independently, no issues.

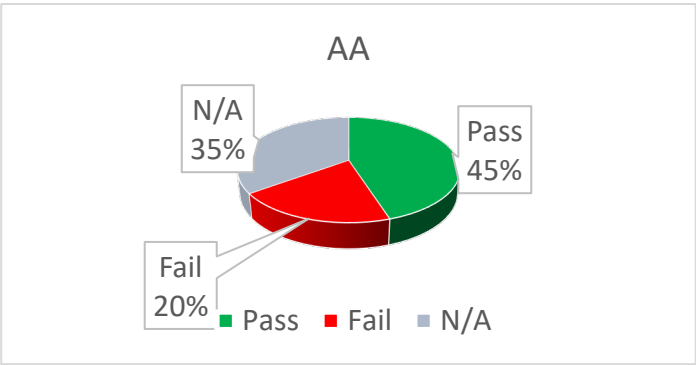
Key:	
0	Could not complete on my own
1	Completed independently but with major issues
2	Completed independently but with minor issues
3	Completed independently, no issues

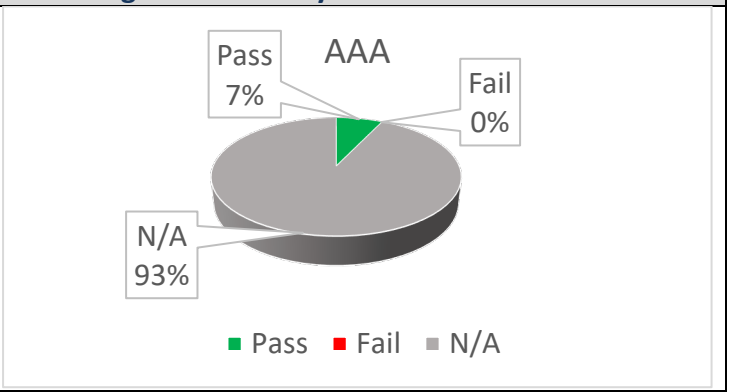


WCAG 2.1 Breakdown

The graphs below detail the number of checkpoints that passed, failed or were not applicable to the website.
Please refer to the Classification of Accessibility Issues for more information.

A		
Priority Level	**Number**	**Percentage: High Priority Results**
Number of checkpoints 'Passed'	12 (40%)	
Number of checkpoints 'Failed'	9 (30%)	
Number of checkpoints 'Not Applicable (N/A)'	9 (30%)	

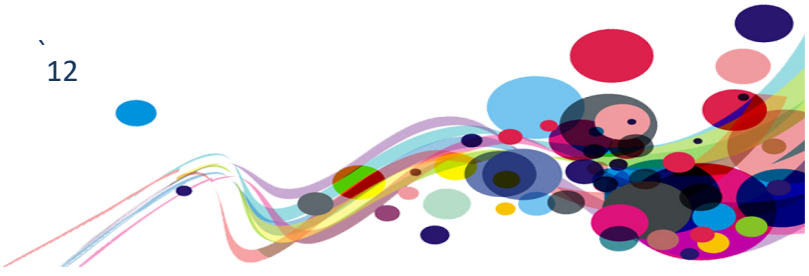
AA		
Priority Level	**Number**	**Percentage: Medium Priority Results**
Number of checkpoints 'Passed'	9 (45%)	
Number of checkpoints 'Failed'	4 (20%)	
Number of checkpoints 'Not Applicable (N/A)'	7 (35%)	

AAA		
Priority Level	**Number**	**Percentage: Low Priority Results**
Number of checkpoints 'Passed'	2 (7%)	
Number of checkpoints 'Failed'	0 (0%)	
Number of checkpoints 'Not Applicable (N/A)'	26 (93%)	

Audit Results

These are the results of the Digital Accessibility Centre accessibility audit by section.

Each area contains a reference to the WCAG success criteria, a brief overview of the issue encountered, a description of issues found along with user testing commentaries and solutions.



WCAG A - High Priority

Non-Text Content

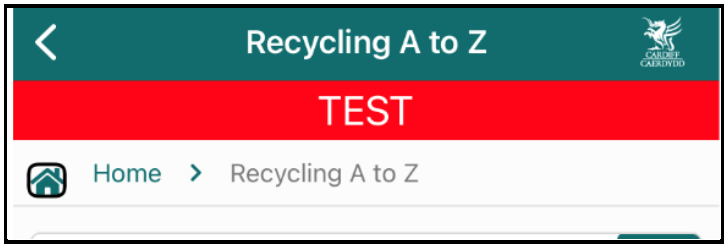
There is non-text content which does not have appropriate alternate text for screen reader users.

WCAG Reference:
1.1.1 Non-text Content
Understanding Non-text Content | How to Meet Non-text Content
(Level A)

Issue ID: DAC_Images_01

Page title: Recycling A to Z
Journey: 2 step 1

Screenshot:



There is a home icon in the breadcrumb section which does not have any alternative text and will register as a blank element for screen reader users.

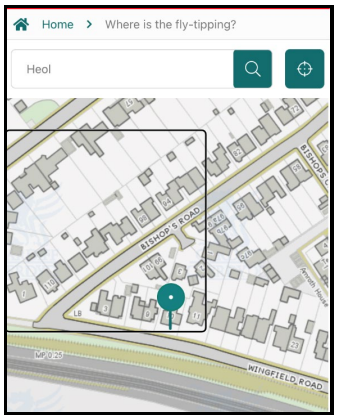
Screen reader comments:
"I encountered difficulties using standard navigation gestures with VoiceOver when moving through the 'Personal Details' screen in context. When navigating between the Breadcrumb section and 'Personal Details' text, VoiceOver emitted an audible beep but did not provide any spoken feedback. This is problematic because although Screen Reader focus may have encountered an element, Screen Reader users will be unable to identify it. Ensuring that all page elements are appropriately marked up should avoid the confusion and frustration that such situations cause."

Solution:
Ensure decorative elements are not focusable using isaccessibilityelement = false

Issue ID: DAC_Images_02

Page title: Where is the fly tipping?
Journey: 4 step 2

Screenshot:



The map reads as a number of images for screen reader users. The images read as 'Service Image' which will be confusing for users. Screen reader users will not be able to use the map to pinpoint their location.

Screen reader comments:
"The map on the 'Where is the Fly Tipping' screen is entirely inaccessible to a Screen Reader user. Screen Readers are unable to independently interpret graphics, so it is impossible for a Screen Reader user to pinpoint the location of the fly tipping and use the map. It would benefit users if a form could be created using accessible form elements."

Solution:
We would recommend that the map is hidden from screen reader users by setting isAccessibilityElement to no or false and allow screen reader users to select using GPS or address entry only.

Heading Structure

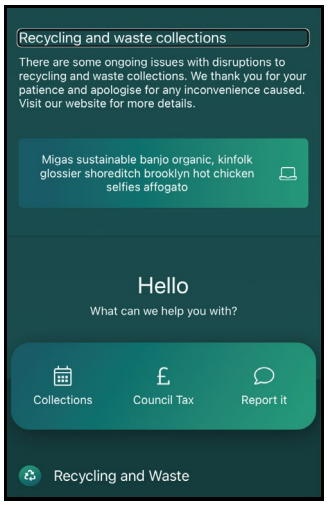
There are heading which appear visually which are not marked appropriately for screen reader users.

WCAG Reference:
1.3.1 Info and Relationships
Understanding Info and Relationships | How to Meet Info and Relationships
(Level A)

Issue ID: DAC_Headings_01

Page title: Home
Journey: 1 step 1

Screenshot:



There are text elements which appear visually as headings but are not announced as heading to screen reader users. Headings are important for screen reader users as they allow users to quickly understand the content of the page and navigate between sections.

Screen reader comments:
"Although I encountered a heading reported by VoiceOver as 'Home' at the top of the screen, there were no other headings on the page, although it sounded as if there are headings present. Headings provide a navigational framework for Screen Reader users to understand the screen and its content."

Solution:
Ensure all headings are marked appropriately with the header trait.

Meaningful Sequence

There are elements which are not read in the correct order when using VoiceOver

WCAG Reference:
1.3.2 Meaningful Sequence
Understanding Meaningful Sequence | How to Meet Meaningful Sequence
(Level A)

Issue ID: DAC_Sequence_01

Page title: Contact
Journey: 4 step 3

Screenshot:

When a user navigates through the page using VoiceOver, the labels for First name and last name are read first before focus goes to the related input fields. This may be confusing as the user will hear First name, Last name and then the edit field for first name. We would assume this issue is caused by the input fields not having programmatically associated labels; however, this should be checked to ensure the order of the components is correct.

This issue is consistent wherever a user has to check contact details.

Screen reader comments:
"When I explored the text fields in context using VoiceOver, I noticed that the on-screen labels for each field was positioned to the right of the edit field to which it referred. This may confuse some users because it is not immediately clear to which field each label is associated. It would benefit Screen Reader users if the on-screen text appeared to the left of each field, making this association clearer."

Solution:
Ensure that the reading order is correct for each page and that all form controls have labels which are programmatically associated.

Form Controls - Unlabelled

There are form controls which do not have a programmatically associated label.

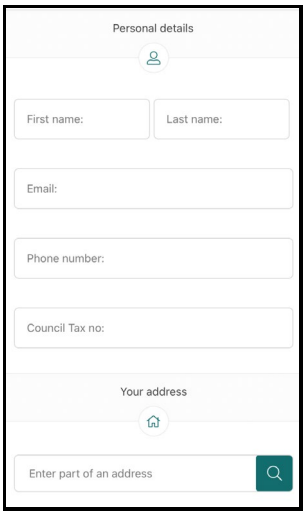
WCAG Reference:
1.3.1 Info and Relationships
Understanding Info and Relationships |How to Meet Info and Relationships
(Level A)

4.1.2 Name, Role, Value
Understanding Name, Role, Value |How to Meet Name, Role, Value
(Level A)

Issue ID: DAC_Forms_01

Page title: Personal Details
Journey: 1 step 4

Screenshot:



The form inputs on the personal details page do not announce their label when focus is placed on the elements. When users swipe past the field, the label is read.

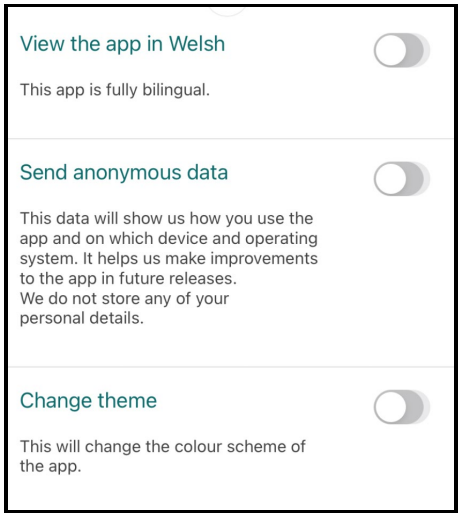
Screen reader comments:
"I encountered unlabelled text fields on the 'Personal Details – Journey 1, step 2' screen. This is problematic because it is not clear which text fields are which nor what information they require. Including appropriately labelled text fields that do not rely on screen labels will make entering information far easier."

Solution:
Ensure all form controls have a programmatically associated label.

Issue ID: DAC_Forms_02

Page title: App Settings
Journey: 1 step 5

Screenshot:



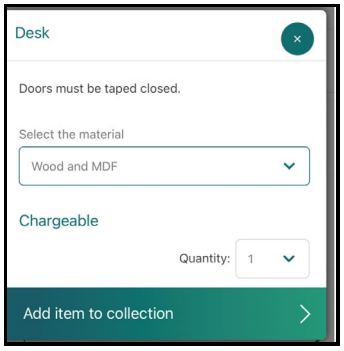
The toggle switches on the setting page are not programmatically associated with the labels which may be confusing for screen reader users as the toggle switches just announce as 'switch button on' and do not inform users of the purpose of the button.

Solution:
Ensure that the label for all switches, buttons and checkboxes is programmatically associated with the form control so that the name and purpose of the control is announced correctly for screen reader users.

Issue ID: DAC_Forms_03

Page title: Search for an item (Bulky waste)
Journey: 3 step 1

Screenshot:



The select picker items to choose a material and quantity will be confusing for screen reader users as the labels are not announced correctly.

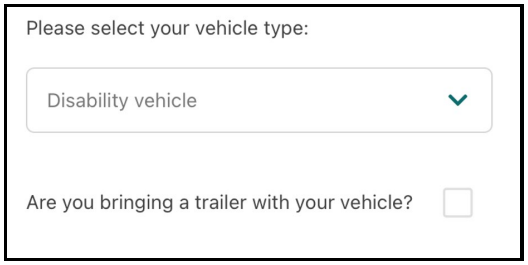
Screen reader comments:
"The Quantity picker item did not contain any contextual information to enable me to work out its purpose. It was reported only as 'actions available'. I only determined its purpose when I happened to find the 'Quantity' text. This may confuse some users because there is no way for them to be sure of the item's purpose until it is activated. It would benefit Screen Reader users if the Quantity picker could be clearly labelled as 'Quantity'. This would allow users to know what the item is and how to interact with it."

Solution:
Ensure all form controls have a programmatically associated label.

Issue ID: DAC_Forms_04

Page title: Vehicle Type
Journey: 7 step 2

Screenshot:



The checkbox to select a trailer is unlabelled meaning that users hear ‘Checkbox, not checked’ before hearing the text on the following swipe, this will be confusing for VoiceOver users.

Screen reader comments:
“I encountered an unlabelled checkbox relating to the addition of a trailer when making a booking for the recycling centre. This was very confusing because there was no way for me to determine the purpose of the checkbox. Including descriptive labels with all form elements will allow Screen Reader users to understand and use such on-screen elements.”

Solution:
Ensure all form controls have a programmatically associated label.

Use of Colour Alone

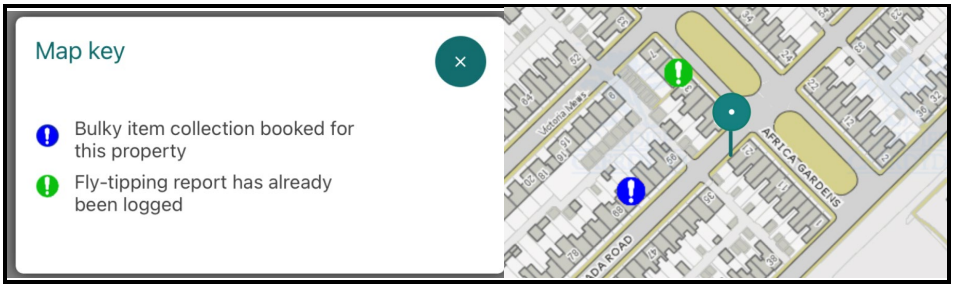
There are elements which rely on the use of colour to convey information.

WCAG Reference:
1.4.1 Use of Color
Understanding Use of Color |How to Meet Use of Color
(Level A)

Issue ID: DAC _Colour_01

Page title: Where is the fly tipping?
Journey: 4 step 2

Screenshot:



There is a map key which has a blue exclamation icon for bulky items and a green exclamation mark for fly tipping. Users who are not able to perceive colour may not be aware of the difference between the two icons.

Low vision user comments:
"There are two exclamation icons within the map key which are hard to distinguish, I was not able to tell which was for bulky waste or fly tipping."

Solution:
We would recommend using a different icon for each element in the key to enable users who are unable to perceive colour to distinguish between the icons.

Focus Order

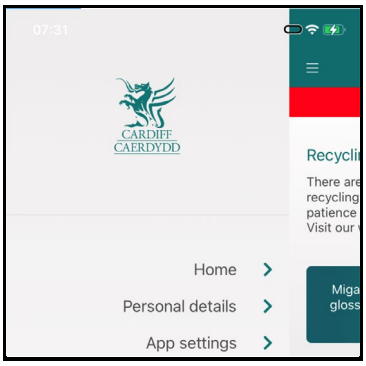
There are elements which have an unusual focus order and may be confusing for screen reader users.

WCAG Reference:
2.4.3 Focus Order
Understanding Focus Order |How to Meet Focus Order
(Level A)

Issue ID: DAC_Focus_Order_01

Page title: Home
Journey: 1 step 1

Screenshot:



When the menu button is selected and the menu expands, focus is not placed on the expanded content, but moves to the status bar. Screen reader users would have to use explore by touch to locate the newly expanded content.

Screen reader comments:
"I found that I had to explore the screen by touch when navigating the menu. Using standard navigation gestures, Screen Reader focus is unable to locate and navigate the menu. It would benefit users if Screen Reader focus was automatically taken to the menu allowing users to navigate the menu far more easily."

Solution:
Ensure focus is managed when a component is expanded. Focus should be placed on the first element within the menu and return to the menu button when the home link is selected.

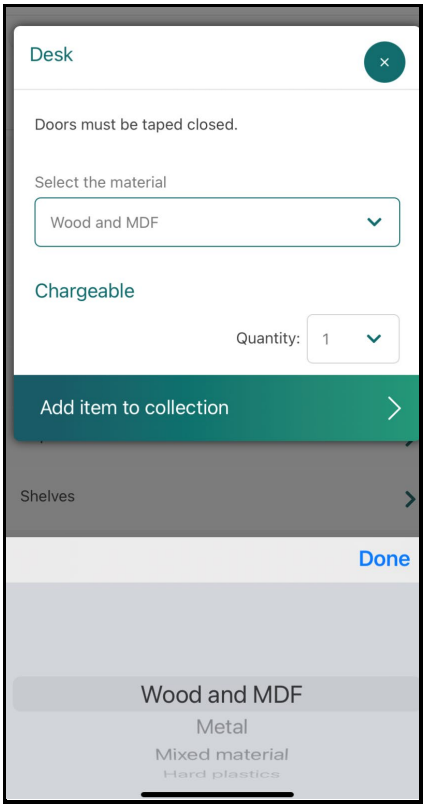
On Focus

There is an input which triggers a change of context when users interact with the component.

WCAG Reference:
3.2.1 On Focus
Understanding On Focus |How to Meet On Focus
(Level A)

Issue ID: DAC_On_Focus_01

Page title: Search for an item (Bulky waste)
Journey: 3 step 1



The select pickers for the item material and quantity update the input field when the user swipes through the picker causing focus to jump to the input field. This will be confusing for screen reader users as they will have to return to the select picker using explore by touch.

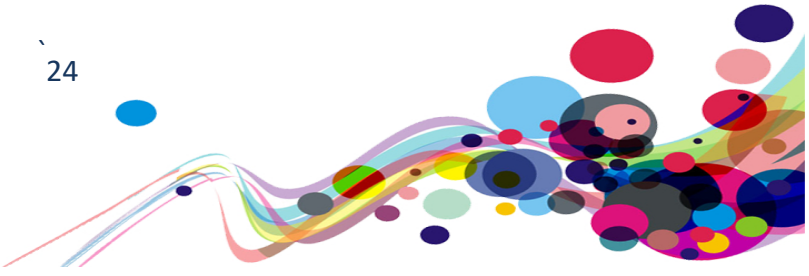
This issue appears to be consistent with other picker components; such as the item location. The picker item to adjust the time of a collection reminder works correctly and does not reset focus.

Screen reader comments:

"It was initially confusing selecting a quantity with VoiceOver. Commonly in these situations, a VoiceOver user uses a single finger to swipe vertically. Using this method, it is not possible for users to easily select because VoiceOver focus does not accurately follow the gesture. Instead focus remains on the previous option while the picker appears to move following the corresponding gesture. The currently selected item is only accessible through explore by touch, but even this is not certain as the behaviour of the picker was not consistent. Ensuring that the picker element follows iOS design guidelines, and that Screen Reader focus follows gestures should make this process much easier for users."

Solution:

Ensure focus remains on the picker element until a selection has been made to allow screen reader users to interact with the component.



Error Messages

Error messages are not presented near the input where the error is committed meaning screen reader users may not be aware that an error has been committed.

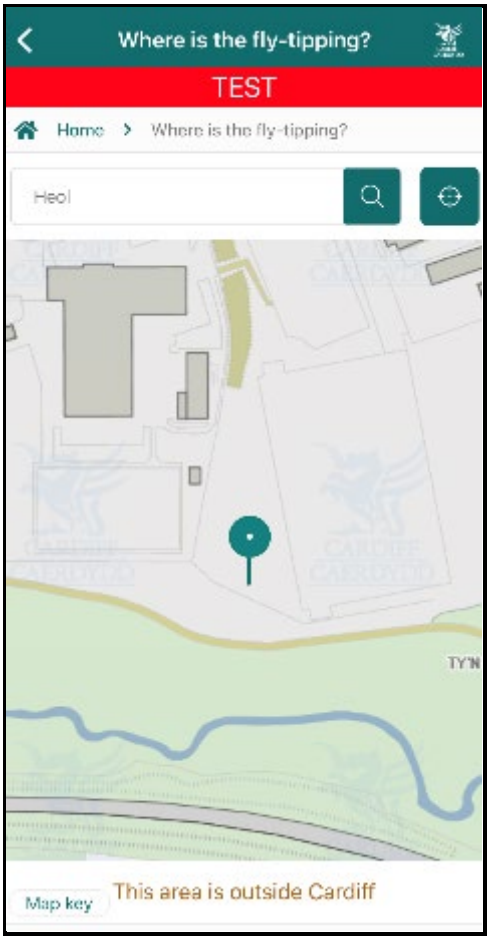
WCAG Reference:
3.3.1 Error Identification
Understanding Error Identification |How to Meet Error Identification
(Level A)

4.1.3 Status Messages
Understanding Status Messages |How to Meet Status Messages
(Level AA)

Issue ID: DAC_Error_Handling_01

Page title: Where is the fly tipping?
Journey: 4 step 2

Screenshot:



Error messages are not presented near the field or input which triggers the error meaning screen reader users may not be aware that an error has been committed without searching for the error.

This issue applies to all error messages.

Screen reader comments:
"When I tried to move on to the next step in the booking process, I found that I need to enter part of an address. However, VoiceOver did not announce the presence of an error on the screen. I eventually found it by navigating in context to find the problematic text field. This was confusing and time-consuming. Ensuring that the Screen Reader announces the presence of errors on the screen and that focus is moved to the part of the form containing the error should allow users to correct the issue quickly."

Solution:
Ensure error messages are presented in a way that screen reader users are aware that an error has been committed. Either display an error message at the start of the form and move focus to the error when the form is submitted or use an alert box to ensure screen reader users are aware.

Roles

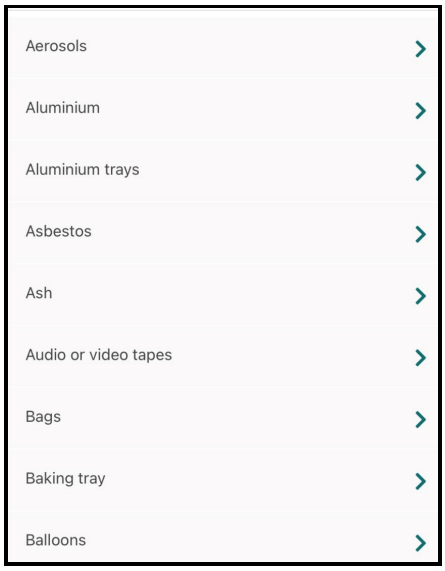
There are elements which do not have a specified role which means screen reader users may not be aware how to interact with the elements.

WCAG Reference:
4.1.2 Name, Role, Value
Understanding Name, Role, Value |How to Meet Name, Role, Value
(Level A)

Issue ID: DAC_Role_01

Page title: Recycling A to Z
Journey: 2 step 1

Screenshot:



The links within the recycling a to z have no specified role to allow screen reader users how to interact with the elements.

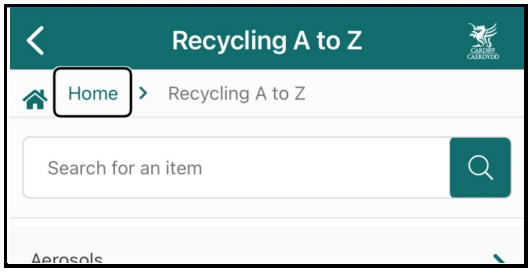
This issue also applies to the item selection links on the bulky waste collection page.

Solution:
Ensure all interactive components have a specified role; such as link or button. See Structure NSAccessibility.Role for more information.

Issue ID: DAC_Role_02

Page title: Recycling A-Z
Journey: All pages

Screenshot:



The links within the breadcrumb trail have no specified role meaning screen reader users may be unaware that the elements are selectable as links.

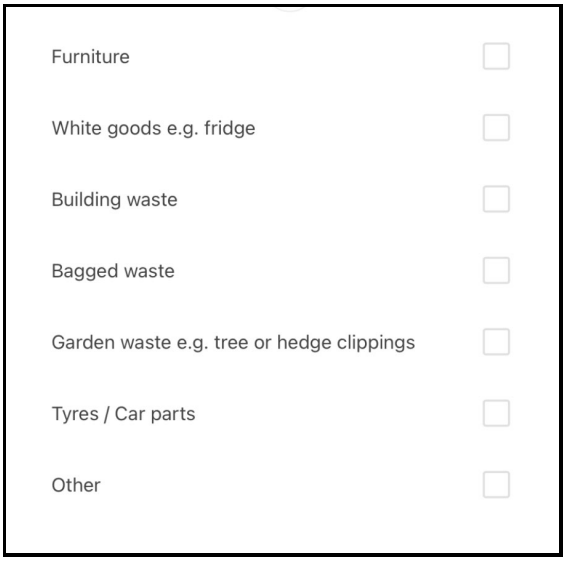
Screen reader comments:
"When navigating in context using standard navigational swiping gestures, I encountered elements that appeared to be part of a Breadcrumb Trail. Usually, such elements are links but I was unable to determine the element type with VoiceOver. This makes navigation extremely time-consuming and may be confusing for some users due to the elements being reported as regular text. Including appropriately marked up element types and exposing them to the Screen Reader will allow users to navigate more efficiently and effectively."

Solution:
Ensure all interactive components have a specified role such as link or button. See Structure NSAccessibility.Role for more information.

Issue ID: DAC_Role_03

Page title: Dumped Items
Journey: 4 step 3

Screenshot:



The checkboxes to select a dumped item do not announce as checked to VoiceOver users when selected. This can be confusing for screen reader users as they may not be aware if an element has been selected correctly.

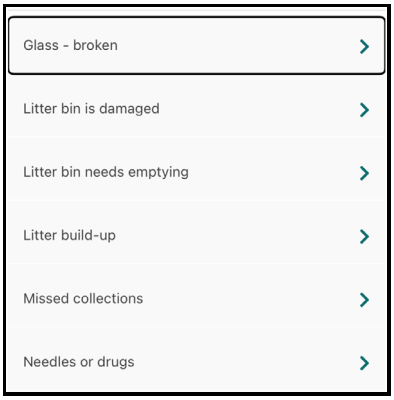
Screen reader comments:
"I could not determine when I had selected a dumped item with VoiceOver. This is likely to confuse many users because, aside from moving to the next screen, there is no way for a Screen Reader user to determine when an item has been chosen. Ensuring that elements expose their changing state to the Screen Reader will allow users to be certain that their selection has been made."

Solution:
Ensure all elements have an appropriate role and that their state is announced correctly.

Issue ID: DAC_Role_04

Page title: Report it
Journey: 5 Step 1

Screenshot:



The elements on the report it page do not announce as selectable elements to screen reader users. There is no associated role such as link or button. Users may not be aware that the elements are selectable as they will just read as text.

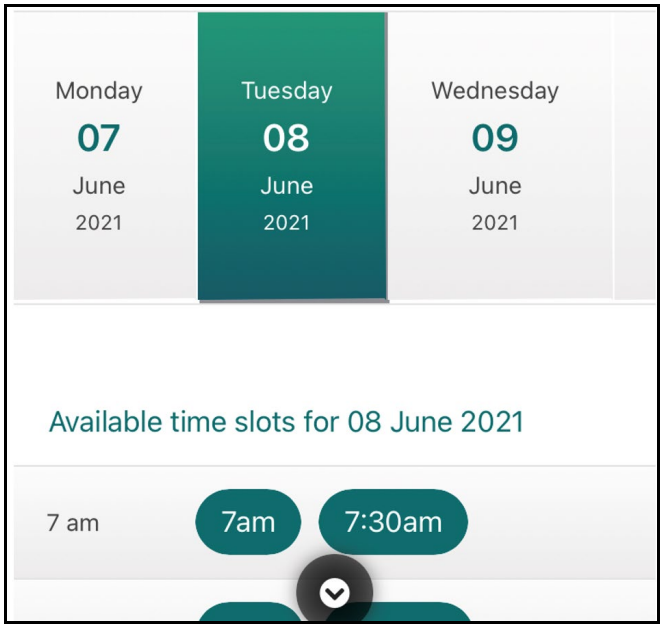
Screen reader comments:
"When selecting the 'Littering' filter from the available options, VoiceOver did not inform me that the filter had been selected. The only way to determine this was by viewing available choices below the search field which also contained the name of the chosen filter. Not knowing if the filter has been selected was confusing and time-consuming to work out. Exposing the selection to VoiceOver should make it clear to users which filter has been selected so that users can get on with the business of reporting littering issues."

Solution:
Ensure all interactive components have an appropriate role or trait specified to allow screen reader users to understand that the element is selectable and how to interact with the element.

Issue ID: DAC_Role_05

Page title: Date and Time
Journey: 7 step 1

Screenshot:



The date picker elements do not announce as selectable elements to screen reader users. There is also no announcement when a date is selected. This issue also applies to the time slot buttons.

Screen reader comments:
"VoiceOver did not inform me that I had selected a date when I made my choice in the calendar. This is confusing because the only way to determine if the date was selected was to try and move to the next screen. Ensuring that the element expose it changed state to VoiceOver will give VoiceOver users confidence that their chosen date has been selected successfully."

Solution:
Ensure that all user interface components have appropriate traits and announce their state to screen reader users.

Issue ID: DAC_Role_06

Page title: Collection Status
Journey: 8 step 1

Screenshot:

The links on the collection status page do not announce as selectable elements to screen reader users. Users may think that the elements are just text.

Screen reader comments:
"When I tested the collection status page, there are text elements such as 'Recycling Bags', 'extra-large general waste bin' and 'food waste' which read as text elements, there is no indication that this text can be selected to reveal further information."

Solution:
Ensure all selectable components announce a role; such as link or button to allow screen reader users to interact with the elements.

Expanding Content

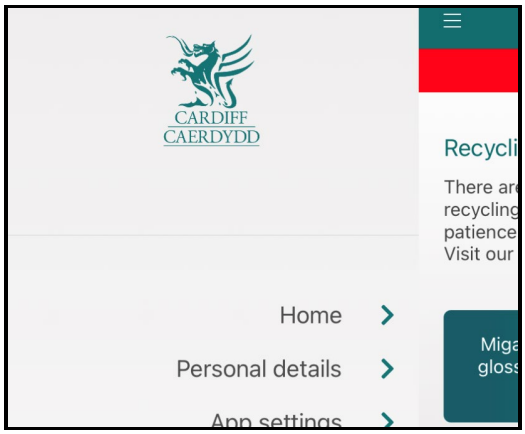
There is content which expands that does not announce its state to screen reader users.

WCAG Reference:
4.1.2 Name, Role, Value
Understanding Name, Role, Value |How to Meet Name, Role, Value
(Level A)

Issue ID: DAC_Expanding_Content_01

Page title: Home
Journey: 1 step 1

Screenshot:



The menu button does not inform screen reader users when the element is expanded or collapsed. This may be confusing for VoiceOver users.

Screen reader comments:
"When I activated the 'Menu' button with VoiceOver, the main menu was not announced on opening. This may confuse and disorientate users because there is no way of knowing, at least initially, that anything had changed on-screen. Ensuring that such menus exposed their changed state to the Screen Reader will allow users to understand that a new element had appeared on-screen."

Solution:
Ensure that the state of expanding components is announced to screen reader users.

WCAG AA – Medium Priority

Orientation

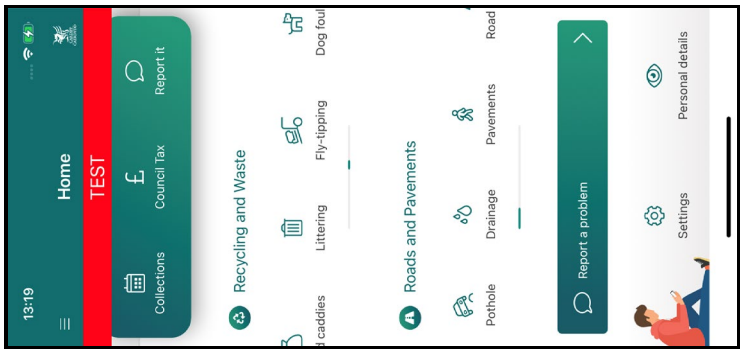
The orientation of the app is fixed in portrait mode which may cause issues for some users.

WCAG Reference:
1.3.4 Orientation
Understanding Orientation |How to Meet Orientation
(Level AA)

Issue ID: DAC_Orientation_01

Page title: Home
Journey: 1 step 1

Screen Shot:



The app is fixed in portrait mode which may cause issues for users with limited mobility or dexterity impairments who use their devices in alternate orientations; such as wheelchair users with a fixed amount.

Solution:
Ensure that the app can be viewed in landscape and portrait mode.

Resizing

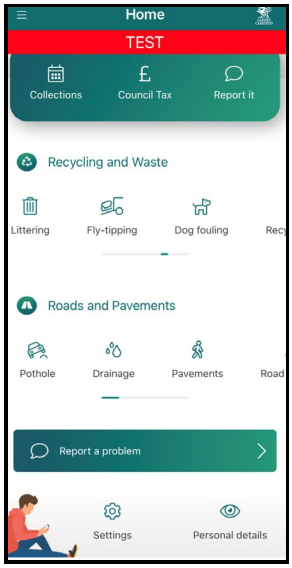
Users are unable to resize the text of the app with pinch and zoom or adjusting text size.

WCAG Reference:
1.4.4 Resize text
Understanding Resize text | How to Meet Resize text
(Level AA)

Issue ID: DAC_Text_Resizing

Page title: Home
Journey: 1 step 1

Screenshot:



Users are not able to change the font size of the app with pinch and zoom or via changing the text size in display settings. This may cause issues for users with limited vision.

Low vision user comments:
"I was not able to adjust the size of the text, or the icons using pinch and zoom or from the display settings. The text in the app is very small and hard to read.

Solution:
Ensure that font size and user interface controls can be adjusted on all pages.

Non-Text Contrast

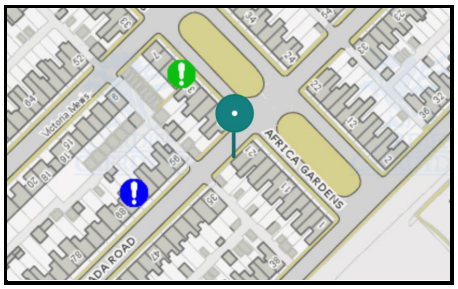
There are non-text elements which may be difficult for some users to see due to the low contrast ratio of the element

WCAG Reference:
1.4.11 Non-text Contrast
Understanding Non-text Contrast |How to Meet Non-text Contrast
(Level AA)

Issue ID: DAC_Non_Text_Contrast_02

Page title: Where is the fly tipping?
Journey: 4 step 2

Screenshot:



The green exclamation point may be difficult for some user with limited vision to identify clearly due to the low contrast ratio of the white exclamation point on the green background.

Foreground: #07BF0B
Background: #FFFFFF
The contrast ratio is: 2.5:1
1.4.11 Non-text Contrast (AA)
Fail for UI components and graphical objects

Low vision user comments:
"The green exclamation point was hard to see because it is so small and the colour contrast makes it hard to identify. I would prefer a larger icon with a darker background."

Solution:
Ensure that the contrast ratio of all non-text elements exceeds 3:1 to allow all users to see the elements clearly.

Ambiguous Buttons

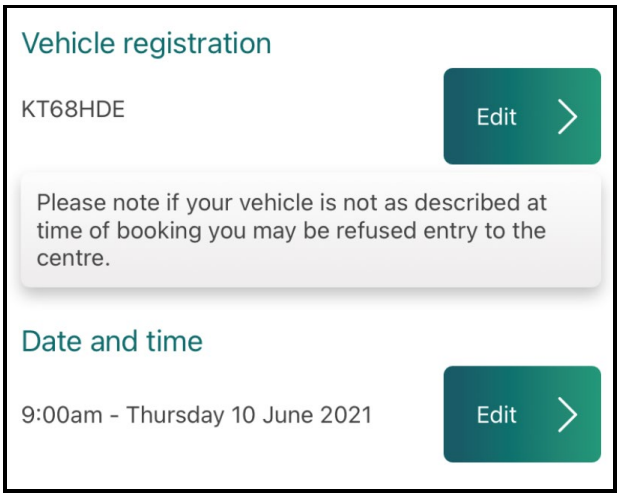
There are buttons which have duplicated text that may be confusing for screen reader users.

WCAG Reference:
2.4.6 Headings and Labels
Understanding Headings and Labels | How to Meet Headings and Labels
(Level AA)

Issue ID: DAC_Buttons_01

Page title: Edit my booking
Journey: 7 step 3

Screenshot:



There are two edit buttons on the page which may be confusing for screen reader users. The text of the button is not clear what will be edited.

Screen reader comments:
"I found elements with duplicate text when attempting to edit my booking. VoiceOver reported each of these elements as 'Edit'. This was very confusing because I could not determine which part of the booking each element referred to. Including a reference to the part of the booking such as 'Edit date' would help users to more easily and quickly make alterations."

Solution:
Ensure buttons are uniquely descriptive. The labels should read 'Edit Vehicle Registration' and 'Edit Date and time' to prevent screen reader users from being confused.

Status Messages

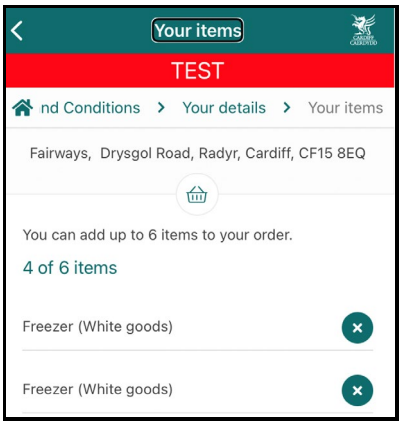
There are status messages presented visually which are not announced to screen reader users.

WCAG Reference:
4.1.3 Status Messages
Understanding Status Messages |How to Meet Status Messages
(Level AA)

Issue ID: DAC_Status_Message_01

Page title: Your items
Journey: 3 step 1

Screenshot:



When an item is added to the bulky waste collection, the total updates to visually inform users how many items have been added. This is not announced to screen reader users. Users would have to navigate through the page content to find the number of items which have been added.

Screen reader comments:
"Once the quantity of bulk items was selected, there was no way for me to verify the number of bulk items, aside from successfully moving on to the next screen. It would be helpful if Screen Reader users could independently verify the number of items added."

Solution:
Add an alert which will be announced to VoiceOver users to inform how many items have been added.

Character Count

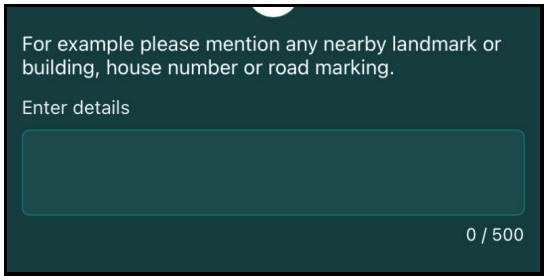
There are input fields which have a character limit which is not announced to screen reader users.

WCAG Reference:
4.1.3 Status Messages
Understanding Status Messages |How to Meet Status Messages
(Level AA)

Issue ID: DAC_Character_Count_01

Page title: Contact
Journey: 9 step 1

Screenshot:



There are text areas which have a 500-character limit. Visually there is a counter to inform sighted users how many characters have been used, but this is not announced to screen reader users until after the field meaning users may not be aware of the limit.

Screen reader comments:
"When I was entering text into the text area, it was only after I left the field that I found that there is a character limit on the field. This may have been confusing if I had exceeded the limit."

Solution:
Users should be made aware of any fields which have a character limit before the field. This can be included in the label. Accessibility traits can be used to announce character limits to users.

Usability Issues

Non-Text Contrast

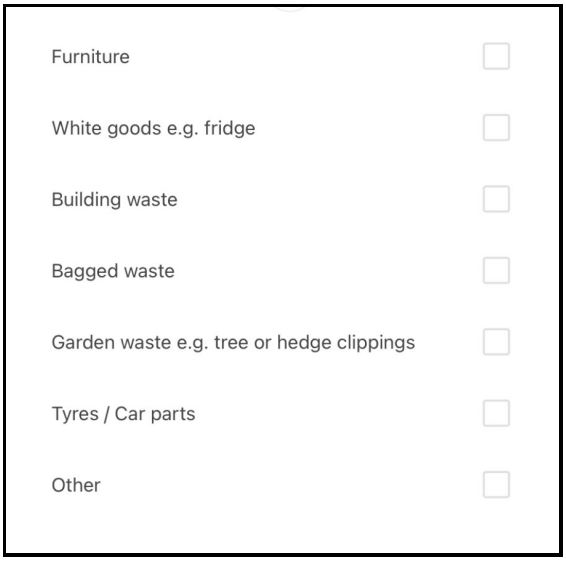
There are non-text elements which may be difficult for some users to see due to the low contrast ratio of the element.

WCAG Reference:
N/A - Usability

Issue ID: DAC_Non_Text_Contrast_01

Page title: Dumped Items
Journey: 4 step 1

Screenshot:

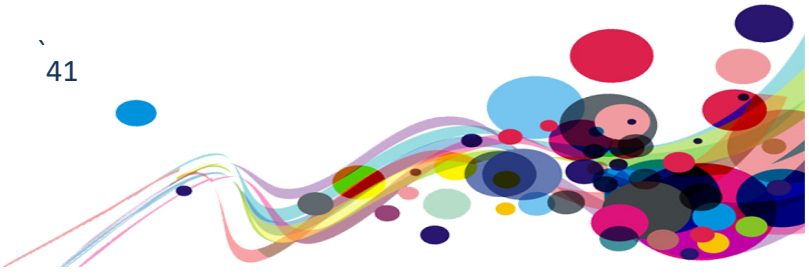


There are checkboxes present which may be difficult to see due to the low contrast of the grey border on a white background. This may force users to switch to high contrast mode.

Low vision user comments:
"The checkboxes are really difficult to see because of the pale grey border on a white background. There is a high contrast mode which makes the inputs easier to see, but some users may not be aware of this or may prefer the white background."

Solution:
Ensure that the colour contrast ratio of all non-text elements exceeds 3:1, we would recommend using a darker border for all input fields. Although the dark mode improves contrast, controls should be visible in all states. We would recommend that all user interface controls have a contrast ratio of 3:1 in both modes.

End of Report



Appendix I

Journeys

1 - General

1. Download and accessing the app
2. Updating user preferences
3. Providing feedback / suggestions around app
4. Changing address / personal details
5. Check both themes

2 - Waste

1. Recycling A-Z
2. Search for item in search box
3. Search for item by scrolling list

3 - Bulky Items

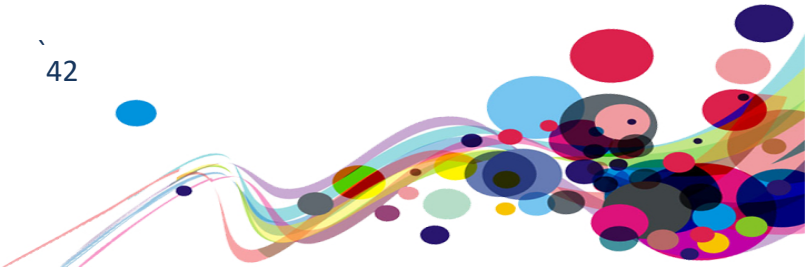
1. Make a new booking – search for item via search box and enter text, progress to booking, confirmation email
2. Edit an existing booking
3. Cancel a booking

4 - Fly-Tipping

1. Report Fly-tipping – dumped sofa
2. Progress using GPS or map
3. Progress with or without uploading an image

5 - Littering

1. Report litter build up
2. Progress using GPS or map
3. Progress with or without uploading an image
4. Order bags
5. Using a Cardiff address order food waste bags



6 - Collection Calendar

1. Checking collection day for Cardiff address
2. Setting up notifications to receive collection day reminders

7 - Recycling Centre's

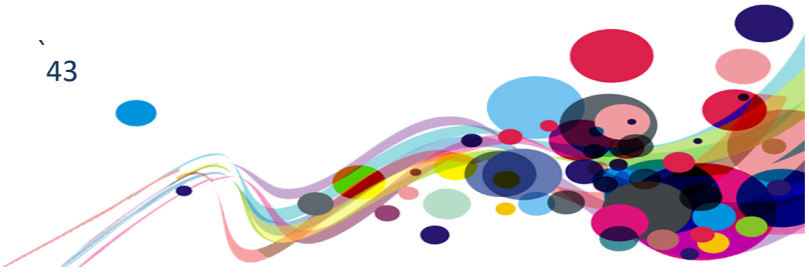
1. Make a booking for a car / van / adapted vehicle
2. Make a booking for a car with a trailer
3. Edit a booking
4. Cancel a booking

8 - Missed collections

1. Check collection status
2. Report a missed collection

9 - Report It - Paving damaged

1. Report using menu scrolling
2. Report through search box
3. Report through using tabs are the top of the page

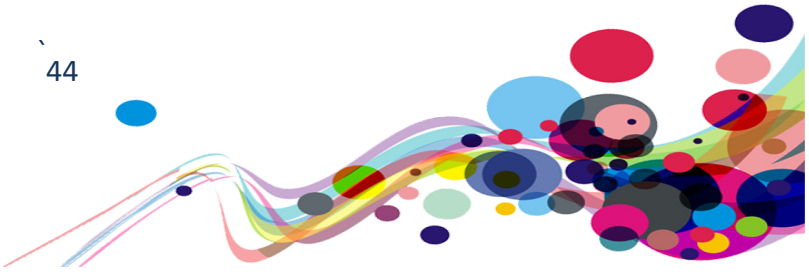


Appendix II

Classification of Accessibility Issues

The following scoring system was used to indicate the status of the sites with regards to each W3C WAI checkpoint up to and including Level AAA:

Status	Description
Pass (H) **Pass (M)** **Pass (L)**	The site meets the requirements of the checkpoint.
Fail (L) Low Priority	The site almost meets the requirements of the checkpoint. Only a small number of minor problems were identified. The site fails to meet the requirements against AAA criteria measured against WCAG 2.1
Fail (M) Medium Priority	The site fails to meet the requirements against AA criteria measured against WCAG 2.1
Fail (H) High Priority	The site fails to meet the requirements against A criteria measured against WCAG 2.1 and more severe accessibility issues were identified.
Not Applicable (N/A)	No content was found on the site to which the checkpoint would relate.



Principle 1: Perceivable – Information and users interface components must be presentable to users in ways they can perceive.	
Non-text Content: 1.1.1 All non-text content that is presented to the user has a text alternative that serves the equivalent purpose. **(Level A)**	**Fail (H)**
Audio-only and Video-only (Pre-recorded): 1.2.1 For pre-recorded audio-only and pre-recorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labelled as such: Understanding Success Criterion 1.2.1 • **Pre-recorded Audio-only:** An alternative for time-based media is provided that presents equivalent information for pre-recorded audio-only content. • **Pre-recorded Video-only:** Either an alternative for time-based media or an audio track is provided that presents equivalent information for pre-recorded video-only content. **(Level A)**	**(N/A)**
Captions (Pre-recorded): 1.2.2 Captions are provided for all pre-recorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labelled as such. **(Level A)**	**(N/A)**
Audio Description or Media Alternative (Pre-recorded): 1.2.3 An alternative for time-based media or audio description of the pre-recorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly labelled as such. **(Level A)**	**(N/A)**
Captions (Live): 1.2.4 Captions are provided for all live audio content in synchronized media. **(Level AA)**	**(N/A)**
Audio Description (Pre-recorded): 1.2.5 Audio description is provided for all pre-recorded video content in synchronized media. **(Level AA)**	**(N/A)**
Sign Language (Pre-recorded): 1.2.6 Sign language interpretation is provided for all pre-recorded audio content in synchronized media. **(Level AAA)**	**(N/A)**

Extended Audio Description (Pre-recorded): 1.2.7 Where pauses in foreground audio are insufficient to allow audio descriptions to convey the sense of the video, extended audio description is provided for all pre-recorded video content in synchronized media. **(Level AAA)**	**(N/A)**
Media Alternative (Pre-recorded): 1.2.8 An alternative for time-based media is provided for all pre-recorded synchronized media and for all pre-recorded video-only media. **(Level AAA)**	**(N/A)**
Audio-only (Live): 1.2.9 An alternative for time-based media that presents equivalent information for live audio-only content is provided. **(Level AAA)**	**(N/A)**
Info and Relationships: 1.3.1 Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text. **(Level A)**	**Fail (H)**
Meaningful Sequence: 1.3.2 When the sequence in which content is presented affects it's meaning, a correct reading sequence can be programmatically determined. **(Level A)**	**Fail (H)**
Sensory Characteristics: 1.3.3 Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound. **(Level A)**	**Pass (H)**

Orientation: (WCAG 2.1) 1.3.4 Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is essential. Note: Examples where a particular display orientation may be essential are a bank check, a piano application, slides for a projector or television, or virtual reality content where binary display orientation is not applicable. **(Level AA)**	**Fail (M)**
Identify Input Purpose: (WCAG 2.1) 1.3.5 The purpose of each input field collecting information about the user can be programmatically determined when : • The input field serves a purpose identified in the Input Purposes for User Interface Components section; and • The content is implemented using technologies with support for identifying the expected meaning for form input data. **(Level AA)**	**Pass (M)**
Identify Purpose: (WCAG 2.1) **1.3.6** In content implemented using mark-up languages, the purpose of User Interface Components, icons, and regions can be programmatically determined. **(Level AAA)**	**(N/A)**
Use of Colour: 1.4.1 Colour is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. **(Level A)**	**Fail (H)**
Audio Control: 1.4.2 If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level. **(Level A)**	**(N/A)**

Contrast (Minimum): 1.4.3 The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following: • **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 3:1; • **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement. • **Logotypes:** Text that is part of a logo or brand name has no minimum contrast requirement. **(Level AA)**	**Pass (M)**
Resize text: 1.4.4 Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality. **(Level AA)**	**Fail (M)**
Images of Text: 1.4.5 If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text except for the following: Understanding Success Criterion 1.4.5 • **Customizable:** The image of text can be visually customized to the user's requirements; • **Essential:** A particular presentation of text is essential to the information being conveyed. **Note**: Logotypes (text that is part of a logo or brand name) are considered essential. **(Level AA)**	**(N/A)**

Contrast (Enhanced): 1.4.6 The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following: • **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 4.5:1; • **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement. • **Logotypes:** Text that is part of a logo or brand name has no minimum contrast requirement. **(Level AAA)**	**(N/A)**
Low or No Background Audio: 1.4.7 For pre-recorded audio-only content that (1) contains primarily speech in the foreground, (2) is not an audio CAPTCHA or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true: Understanding Success Criterion 1.4.7 • **No Background:** The audio does not contain background sounds. • **Turn Off:** The background sounds can be turned off. • **20 dB:** The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds. **Note*:*** Per the definition of "decibel," background sound that meets this requirement will be approximately four times quieter than the foreground speech content. **(Level AAA)**	**(N/A)**

Visual Presentation: 1.4.8 For the visual presentation of blocks of text, a mechanism is available to achieve the following: Understanding Success Criterion 1.4.8 1. Foreground and background colours can be selected by the user. 2. Width is no more than 80 characters or glyphs (40 if CJK). 3. Text is not justified (aligned to both the left and the right margins). 4. Line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing. 5. Text can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window. **(Level AAA)**	**(N/A)**
Images of Text (No Exception): 1.4.9 Images of text are only used for pure decoration or where a particular presentation of text is essential to the information being conveyed. **Note:** Logotypes (text that is part of a logo or brand name) are considered essential. **(Level AAA)**	**(N/A)**
Reflow: (WCAG 2.1) **1.4.10** Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for : • Vertical scrolling content at a width equivalent to 320 CSS pixels; • Horizontal scrolling content at a height equivalent to 256 CSS pixels. Except for parts of the content which require two-dimensional layout for usage or meaning. **Note:** 320 CSS pixels is equivalent to a starting viewport width of 1280 CSS pixels wide at 400% zoom. For web content which are designed to scroll horizontally (e.g. with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1024px at 400% zoom. **Note:** Examples of content which require two-dimensional layout are images, maps, diagrams, video, games, presentations, data tables, and interfaces where it is necessary to keep toolbars in view while manipulating content. **(Level AA)**	**(N/A)**

Non-text Contrast: (WCAG 2.1) **1.4.11** The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent color(s): • **User Interface Components** Visual information required to identify user interface components and states, except for inactive components or where the appearance of the component is determined by the user agent and not modified by the author; • **Graphical Objects** Parts of graphics required to understand the content, except when a particular presentation of graphics is essential to the information being conveyed. **(Level AA)**	**Pass (M)**
Text Spacing: (WCAG 2.1) **1.4.12** presentation of graphics is essential to the information being conveyed. In content implemented using mark-up languages that support the following text style properties, no loss of content or functionality occurs by setting all of the following and by changing no other style property: • Line height (line spacing) to at least 1.5 times the font size; • Spacing following paragraphs to at least 2 times the font size; • Letter spacing (tracking) to at least 0.12 times the font size; • Word spacing to at least 0.16 times the font size. Exception: Human languages and scripts that do not make use of one or more of these text style properties in written text can conform using only the properties that exist for that combination of language and script. **(Level AA)**	**Pass (M)**

Content on Hover or Focus: (WCAG 2.1) **1.4.13** Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true: • **Dismissible** A mechanism is available to dismiss the additional content without moving pointer hover or keyboard focus, unless the additional content communicates an input error or does not obscure or replace other content; • **Hoverable** If pointer hover can trigger the additional content, then the pointer can be moved over the additional content without the additional content disappearing; • **Persistent** The additional content remains visible until the hover or focus trigger is removed, the user dismisses it, or its information is no longer valid. **Exception:** The visual presentation of the additional content is controlled by the user agent and is not modified by the author. **Note:** Examples of additional content controlled by the user agent include browser tooltips created through use of the HTML title attribute. **Note:** Custom tooltips, sub-menus, and other nonmodal popups that display on hover and focus are examples of additional content covered by this criterion. **(Level AA)**	**(N/A)**

Principle 2: Operable – User interface components and navigation must be operable.	
Keyboard: 2.1.1 All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints. **Note:** This exception relates to the underlying function, not the input technique. For example, if using handwriting to enter text, the input technique (handwriting) requires path-dependent input but the underlying function (text input) does not. **Note:** This does not forbid and should not discourage providing mouse input or other input methods in addition to keyboard operation. **(Level A)**	**Pass (H)**
No Keyboard Trap: 2.1.2 If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away. **Note:** Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. **(Level A)**	**Pass (H)**
Keyboard (No Exception): 2.1.3 All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes. **(Level AAA)**	**(N/A)**

Character Key Shortcuts: (WCAG 2.1) 2.1.4 If a keyboard shortcut is implemented in content using only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true: • **Turn off:** A mechanism is available to turn the shortcut off; • **Remap:** A mechanism is available to remap the shortcut to use one or more non-printable keyboard characters (e.g. Ctrl, Alt, etc); • **Active only on focus:** The keyboard shortcut for a user interface component is only active when that component has focus. **(Level A)**	**(N/A)**
Timing Adjustable: 2.2.1 For each time limit that is set by the content, at least one of the following is true: • **Turn off:** The user is allowed to turn off the time limit before encountering it; • **Adjust:** The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; • **Extend:** The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; • **Real-time Exception:** The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; • **Essential Exception:** The time limit is essential and extending it would invalidate the activity; • **20 Hour Exception:** The time limit is longer than 20 hours. **Note:** This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with Success Criterion 3.2.1, which puts limits on changes of content or context as a result of user action. **(Level A)**	**(N/A)**

Pause, Stop, Hide: 2.2.2 For moving, blinking, scrolling, or auto-updating information, all of the following are true: Understanding Success Criterion 2.2.2 • **Moving, blinking, scrolling**: For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and • **Auto-updating:** For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential. **Note:** For requirements related to flickering or flashing content, refer to Guideline 2.3. **Note:** Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. **Note:** Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so. **Note:** An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken. **(Level A)**	**(N/A)**
No Timing: 2.2.3 Timing is not an essential part of the event or activity presented by the content, except for non-interactive synchronized media and real-time events. **(Level AAA)**	**(N/A)**

Interruptions: 2.2.4 Interruptions can be postponed or suppressed by the user, except interruptions involving an emergency. **(Level AAA)**	**(N/A)**
Re-authenticating: 2.2.5 When an authenticated session expires, the user can continue the activity without loss of data after re-authenticating. **(Level AAA)**	**(N/A)**
Timeouts: (WCAG 2.1) **2.2.6** Users are warned of the duration of any user inactivity that could cause data loss, unless the data is preserved for more than 20 hours when the user does not take any actions. **Note:** Privacy regulations may require explicit user consent before user identification has been authenticated and before user data is preserved. In cases where the user is a minor, explicit consent may not be solicited in most jurisdictions, countries or regions. Consultation with privacy professionals and legal counsel is advised when considering data preservation as an approach to satisfy this success criterion. **(Level AAA)**	**(N/A)**
Three Flashes or Below Threshold: 2.3.1 Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds. **Note:** Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. **(Level A)**	**Pass (H)**
Three Flashes: 2.3.2 Web pages do not contain anything that flashes more than three times in any one-second period. **(Level AAA)**	**(N/A)**

Animation from Interactions: (WCAG 2.1) 2.3.3 Motion animation triggered by interaction can be disabled, unless the animation is essential to the functionality or the information being conveyed. **(Level AAA)**	**(N/A)**
Bypass Blocks: 2.4.1 A mechanism is available to bypass blocks of content that are repeated on multiple Web pages. (**Level A**)	**(N/A)**
Page Titled: 2.4.2 Web pages have titles that describe topic or purpose. **(Level A)**	**Pass (H)**
Focus Order: 2.4.3 If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability. **(Level A)**	**Fail (H)**
Link Purpose (In Context): 2.4.4 The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general. **(Level A)**	**Pass (H)**
Multiple Ways: 2.4.5 More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process. **(Level AA)**	**Pass (M)**
Headings and Labels: 2.4.6 Headings and labels describe topic or purpose. **(Level AA)**	**Fail (M)**

Focus Visible: 2.4.7 Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible. **(Level AA)**	**Pass (M)**
Location: 2.4.8 Information about the user's location within a set of Web pages is available. **(Level AAA)**	**Pass (L)**
Link Purpose (Link Only): 2.4.9 A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general. **(Level AAA)**	**(N/A)**
Section Headings: 2.4.10 Section headings are used to organize the content. **Note:** "Heading" is used in its general sense and includes titles and other ways to add a heading to different types of content. **Note:** This success criterion covers sections within writing, not user interface components. User Interface components are covered under Success Criterion 4.1.2. **(Level AAA)**	**(N/A)**
Pointer Gestures: (WCAG 2.1) 2.5.1 All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential. **Note:** This requirement applies to web content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology). **(Level A)**	**Pass (H)**

Pointer Cancellation: (WCAG 2.1) 2.5.2 For functionality that can be operated using a single pointer, at least one of the following is true: • **No Down-Event** The down-event of the pointer is not used to execute any part of the function; • **Abort or Undo** Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion; • **Up Reversal** The up-event reverses any outcome of the preceding down-event; • **Essential** Completing the function on the down-event is essential. **Note:** Functions that emulate a keyboard or numeric keypad key press are considered essential. **Note:** This requirement applies to web content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology). **(Level A)**	**Pass (H)**
Label in Name: (WCAG 2.1) 2.5.3 For user interface components with labels that include text or images of text, the name contains the text that is presented visually. **Note:** A best practice is to have the text of the label at the start of the name. **(Level A)**	**Pass (H)**

Motion Actuation: (WCAG 2.1) 2.5.4 Functionality that can be operated by device motion or user motion can also be operated by user interface components and responding to the motion can be disabled to prevent accidental actuation, except when: • **Supported Interface** The motion is used to operate functionality through an accessibility supported interface; • **Essential** The motion is essential for the function and doing so would invalidate the activity. **(Level A)**	**(N/A)**
Target Size (WCAG 2.1): 2.5.5 The size of the target for pointer inputs is at least 44 by 44 CSS pixels except when: • **Equivalent** The target is available through an equivalent link or control on the same page that is at least 44 by 44 CSS pixels; • **Inline** The target is in a sentence or block of text; • **User Agent Control** The size of the target is determined by the user agent and is not modified by the author; • **Essential** A particular presentation of the target is essential to the information being conveyed. **(Level AAA)**	**(N/A)**
Concurrent Input Mechanisms (WCAG 2.1): 2.5.6 Web content does not restrict use of input modalities available on a platform except where the restriction is essential, required to ensure the security of the content, or required to respect user settings. **(Level AAA)**	**Pass (L)**

Principle 3: Understandable – Information and the operation of user interface must be understandable.	
Language of Page: 3.1.1 The default human language of each Web page can be programmatically determined. **(Level A)**	**Pass (H)**
Language of Parts: 3.1.2 The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text. **(Level AA)**	**(N/A)**
Unusual Words: 3.1.3 A mechanism is available for identifying specific definitions of words or phrases used in an unusual or restricted way, including idioms and jargon. **(Level AAA)**	**(N/A)**
Abbreviations: 3.1.4 A mechanism for identifying the expanded form or meaning of abbreviations is available. **(Level AAA)**	**(N/A)**
Reading Level: 3.1.5 When text requires reading ability more advanced than the lower secondary education level after removal of proper names and titles, supplemental content, or a version that does not require reading ability more advanced than the lower secondary education level, is available. **(Level AAA)**	**(N/A)**
Pronunciation: 3.1.6 A mechanism is available for identifying specific pronunciation of words where meaning of the words, in context, is ambiguous without knowing the pronunciation. **(Level AAA)**	**(N/A)**

On Focus: 3.2.1 When any component receives focus, it does not initiate a change of context. **(Level A)**	**Fail (H)**
On Input: 3.2.2 Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behaviour before using the component. **(Level A)**	**Pass (H)**
Consistent Navigation: 3.2.3 Navigational mechanisms that are repeated on multiple Web pages within a set of Web pages occur in the same relative order each time they are repeated, unless a change is initiated by the user. **(Level AA)**	**Pass (M)**
Consistent Identification: 3.2.4 Components that have the same functionality within a set of Web pages are identified consistently. **(Level AA)**	**Pass (M)**
Change on Request: 3.2.5 Changes of context are initiated only by user request or a mechanism is available to turn off such changes. **(Level AAA)**	**(N/A)**
Error Identification: 3.3.1 If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text. **(Level A)**	**Fail (H)**
Labels or Instructions: **3.3.2** Labels or instructions are provided when content requires user input. **(Level A)**	**Fail (H)**
Error Suggestion: 3.3.3 If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content. **(Level AA)**	**Pass (M)**

Error Prevention (Legal, Financial, Data): 3.3.4 For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true: • **Reversible:** Submissions are reversible. • **Checked:** Data entered by the user is checked for input errors and the user is provided an opportunity to correct them. • **Confirmed:** A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission. **(Level AA)**	**(N/A)**
Help 3.3.5 Context-sensitive help is available. • Provide instructions and cues in context to help inform completion and submission. **(Level AAA)**	**(N/A)**
Error Prevention (All): 3.3.6 For Web pages that require the user to submit information, at least one of the following is true: • **Reversible:** Submissions are reversible. • **Checked:** Data entered by the user is checked for input errors and the user is provided an opportunity to correct them. • **Confirmed:** A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission. **(Level AAA)**	**(N/A)**

Principle 4: Robust – Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies	
Parsing: 4.1.1 In content implemented using mark-up languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features. **Note:** Start and end tags that are missing a critical character in their formation, such as a closing angle bracket or a mismatched attribute value quotation mark are not complete. **(Level A)**	**Pass (H)**
Name, Role, Value: 4.1.2 For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies. **Note:** This success criterion is primarily for Web authors who develop or script their own user interface components. For example, standard HTML controls already meet this success criterion when used according to specification. **(Level A)**	**Fail (H)**
Status Messages (WCAG 2.1) **4.1.3** In content implemented using mark-up languages, status messages can be programmatically determined through role or properties such that they can be presented to the user by assistive technologies without receiving focus. **(Level AA)**	**Fail (M)**

Appendix III

The Process

The website is measured against the Web Accessibility Initiative's (WAI) Web Content Accessibility Guidelines 2.1 (WCAG 2.1) to give an accurate feedback on any non-compliant issues. To attain our standard accreditation all A and AA criteria must be achieved.

To give a more accurate review of the website the DAC team employ two differing testing processes.

The first is a manual technical audit using automated tools and the second a dedicated team of user testers with differing disabilities test using a range of adaptive technologies. The findings of both testing teams are then combined to give the client far more accurate feedback on the website.

By using the testing team in conjunction with an automated procedure a more accurate set of results are made available.

This report combines technical auditing with disabled user feedback. The test does not list each specific area that requires change but highlights patterns of problems where they exist. Each section of the report includes a qualifying statement of pass, fail or recommendation to help developers quickly identify which parts of the website need the most urgent attention.

CRITERIA

High

The digital product has one or more issues that urgently need remediation. There will be a list of actions that the developers need to address to make sure that the product is functional for users of assistive technology.

Medium

The digital product has one or more issues that need remediation before meeting the WCAG 2.1 AA Standard. There will be a list of actions that the developers need to address to make sure that the product meets the expectations of the DAC testing team.

Low

The digital product has one or more issues that would cause minor barriers to users of assistive technology. While not necessary to meet the WCAG 2.1 AA Standard, these issues affect users negatively and should be remediated.

Usability

The digital product may have one or more issues that could cause minor difficulties to users of assistive technology. While not necessary to meet the WCAG 2.1 AA Standard, these issues were found to hinder users.

DAC Testing Procedure

The website is tested by a team of experienced auditors and analysts, many of who are disabled individuals and users of adaptive technology. The combination of subjective pan-disability user feedback and comprehensive technical auditing allows us to measure how the website performs technically and practically, thereby offering an essential added dimension to our test results that other methods of testing cannot provide.

User Testing

Manual accessibility checking was conducted by a team of disabled individuals, using a range of adaptive technologies (hardware and software designed to facilitate the use of computers by people with disabilities). This may include:

NVDA: a screen reader and application used by those who are blind.
ZoomText: a magnification application used by those with low vision.
JAWS: a screen reader used by blind people to access pages.
Dragon Naturally Speaking: voice activated software used by those that do not use a conventional input device such as a keyboard or mouse.
Switch Access: used by those with severe mobility impairments to input commands to a computer.
Keyboard Only: some users with mobility impairments have difficulty making precise movements required by pointing devices such as a mouse; therefore, a keyboard is used as the exclusive input device.
Readability: Manual checks were made to assess the suitability of a page for those with colour blindness and dyslexia.
Deaf/Hard of hearing: Manual checks were made to assess the suitability of a page for those with hearing impairments.
Learning difficulties: Manual checks were made to assess the suitability of a page for those with learning difficulties.

Technical Auditing

Technical auditing involves the experienced application of a number of technical auditing and standards compliance assessment tools. This combined with an extensive knowledge of WCAG, its application and wider global practice provides the DAC website with further credibility and quality.