User Manual For Heriot-Watt's Charge

Checker Application

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The Login Process

Figure 1 - A Login Page for Charge Checker

This is a simple login page for the Charge Checker application. As Charge Checker features passwordless sign-in once a user enters their email address into the field and clicks to log in an email will be sent to the given email with the next steps for the user.

Figure 2 - An example email that will be sent to a user.

When the user enters their email into the login page they will receive an email that looks similar to this. The email contains a prompt to click the contained "Sign in" button which will redirect the user back to the main site.

Checking Into A Charger

Charge Checker allows two different methods of checking into a charger. You may either check-in through a dashboard view or a map view.

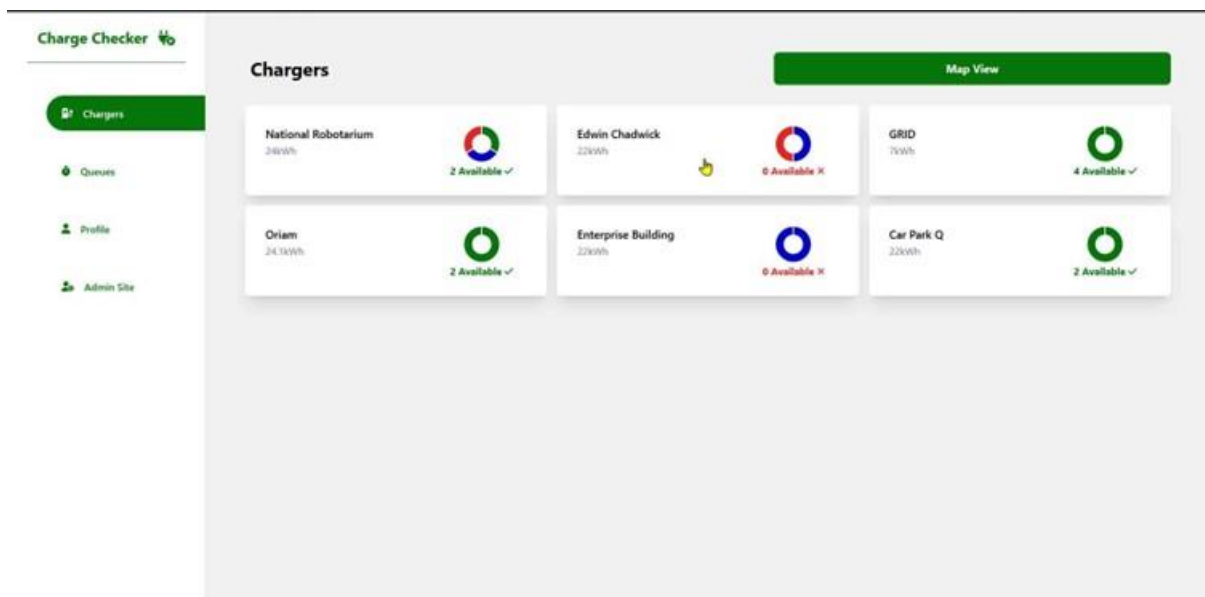## Checking in using the Dashboard View

Figure 3 - The main chargers page of the Charge Checker Application in the Dashboard view.

The user will be redirected to this page from their email provided they did not scan a QR code located at a physical charge point. The main Chargers page allows the user to easily view all available charging points that are located on campus. Each charge point is placed on a card in the application which shows important information. It shows the location name and the wattage of chargers located at that charge point and displays a clear indication of how many chargers at that location are available to be used.
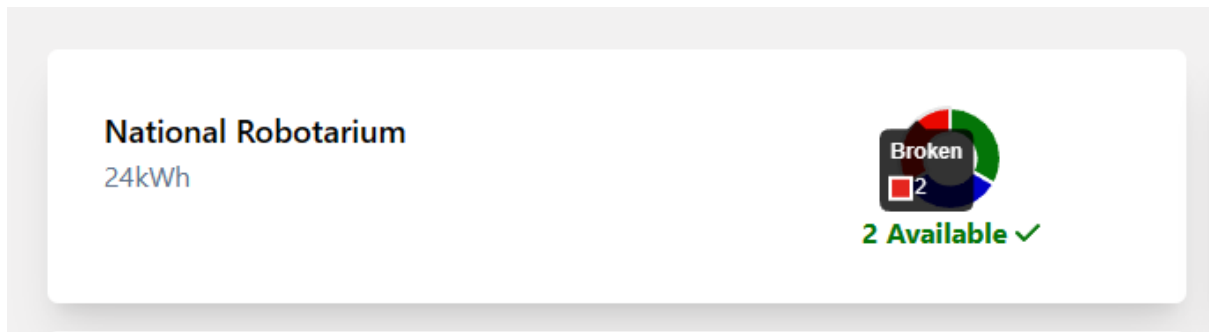
Figure 4 - A close up of a card from the charger's page. The donut charts "broken" segment has been hovered over to show the exact number of broken chargers at the location.

Each charge point card also offers a donut chart which shows the split of chargers at said location which are Broken (Red), in use (Blue) or that are available (Green). The sections within the donut chart can be hovered over to show the exact number of chargers at the location that have the condition hovered over.
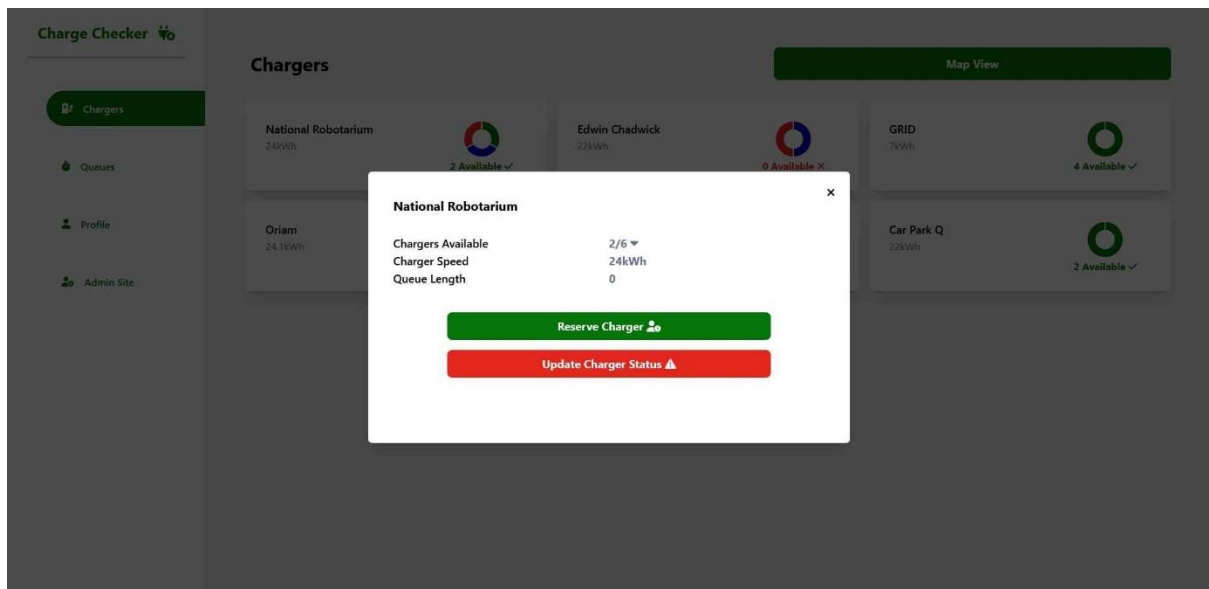

Figure 5 - A focused card showing additional information as well as the ability to reserve a charger or send a report to update their status.

When a user clicks on a location the charge points card will be focused with some additional information displayed. The user will now be able to see the length of the queue at the location if there are no chargers available and one has formed.
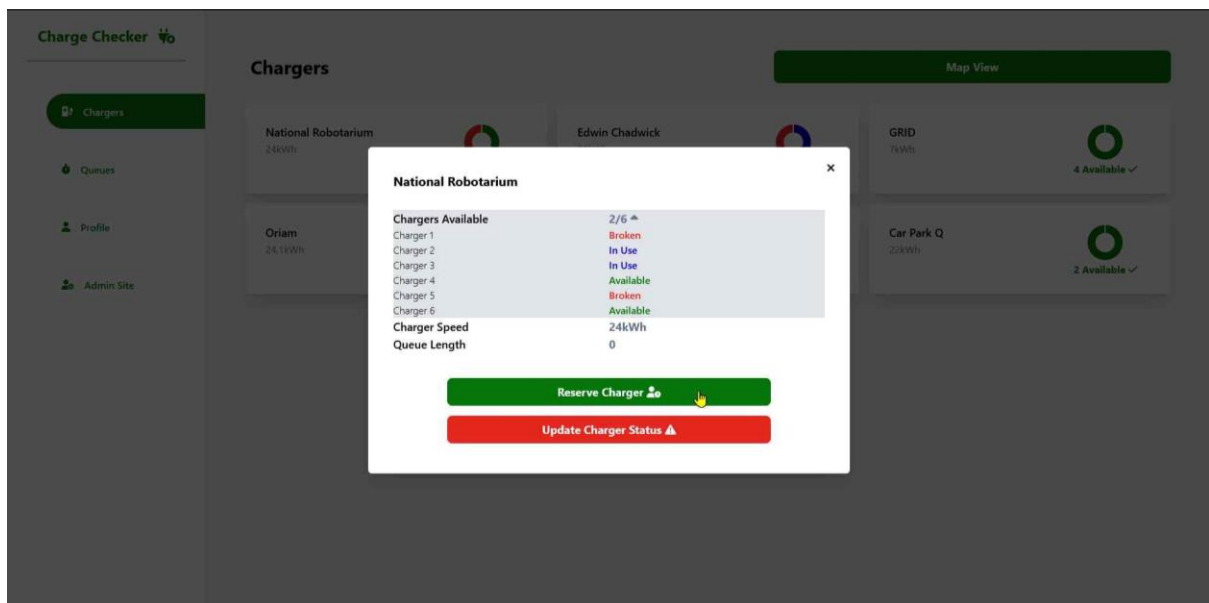

Figure 6 - A focused card with the list of available chargers extended.

A user may also expand a dropdown by the "Chargers Available" field which shows a list of all individual chargers and each of their status.
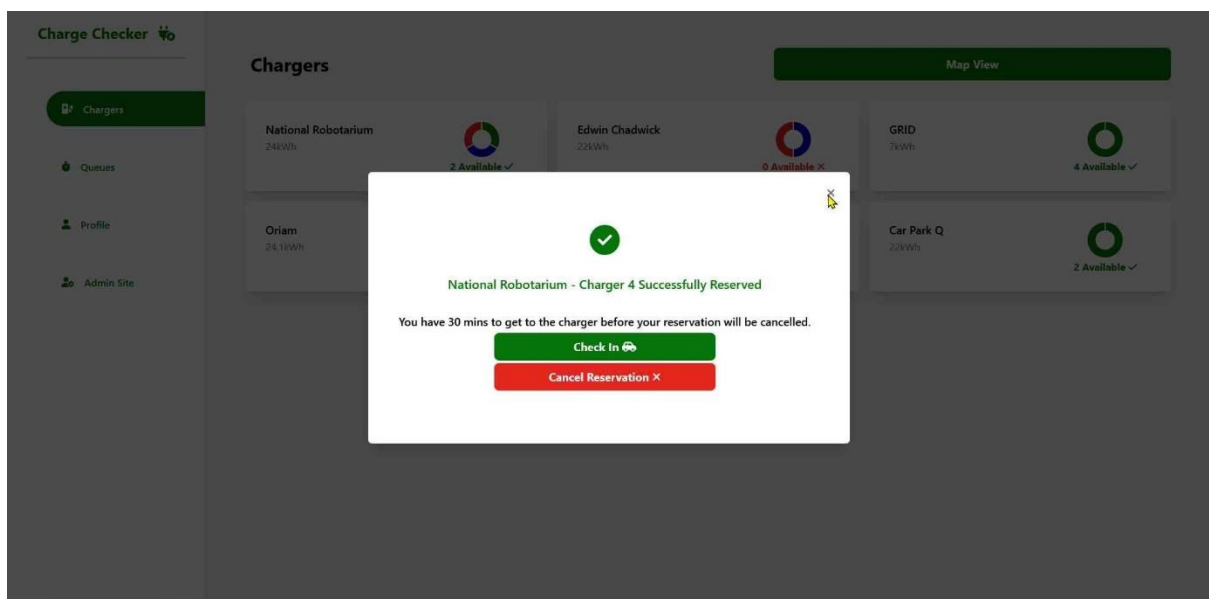

Figure 7 - A focused card showing a reservation confirmation.

When a user clicks to reserve a charger the popup will change to a confirmation showing the location and which charger has been reserved, and it notifies the user that they have a 30-minute window to move their car to the charger and "Check In" which will confirm that they are at and using the charger they booked. If the 30-minute window lapses then the reservation will no longer be valid and the charger will become available to be booked again. From this screen the user can confirm their check in or cancel the reservation however it is also possible to do this from the queues page.
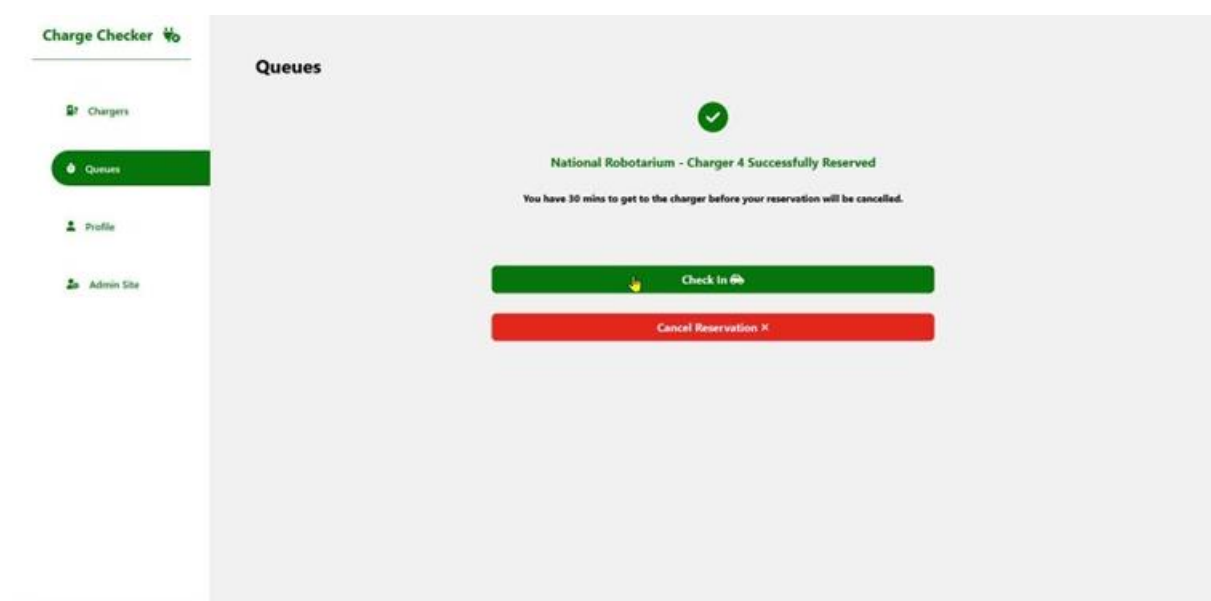
Figure 8 - The queues page of Charge Checker showing a reservation confirmation.

When a user has navigated to their space and has begun charging their car if they have not already checked in then they can navigate to the queues page of Charge Checker which will show the same confirmation previously shown on the card. Here a user may click to check in which will then show a check-in confirmation as well as the option to check back out.
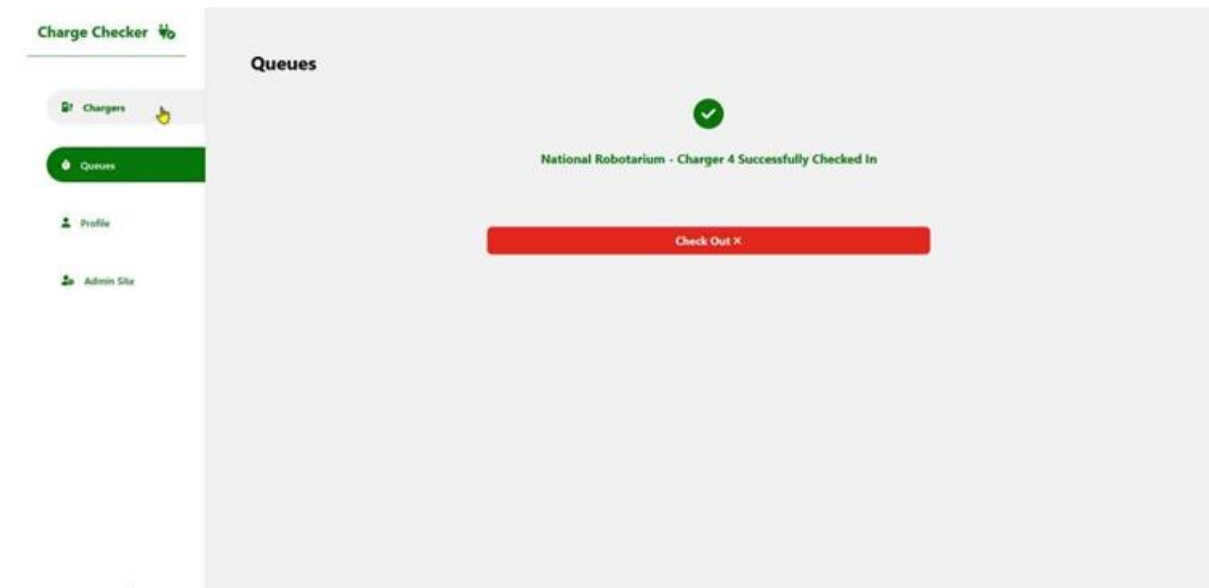
Figure 9 - The queues page of Charge Checker showing a check in confirmation.
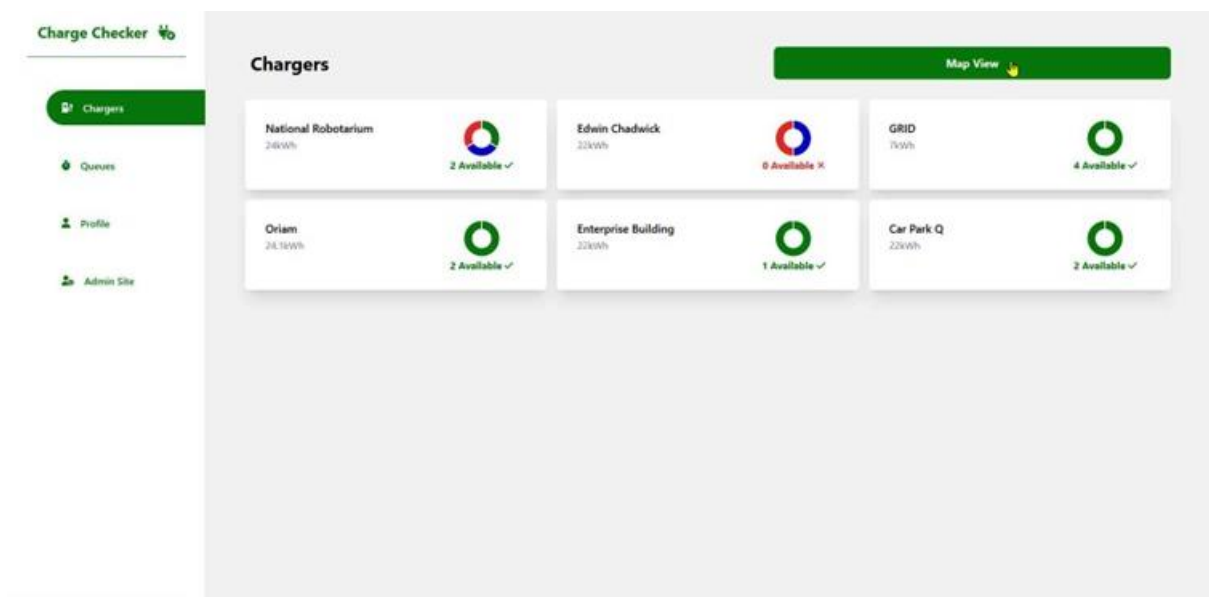
Checking in using Map View

Figure 10 - The chargers page of Charge Checker with the cursor over Map View

To reserve a charger using the map view first it must be navigated to using the "Map View" button found in the top right of the dashboard view.

Figure 11 - The main Chargers page of Charge Checker in Map View

Once on the map view page a map will be shown with indicators for each charging location or

Charge Points located across the campus. These are colour and symbol coded with the

following meanings :

- Green (Charger Icon) means that there is at least one available charger at this Charge Point.

- Blue (Hourglass with Arrows Icon) means that all chargers at this location are in use.

- Red (X Symbol) means that all Chargers at this location are broken.

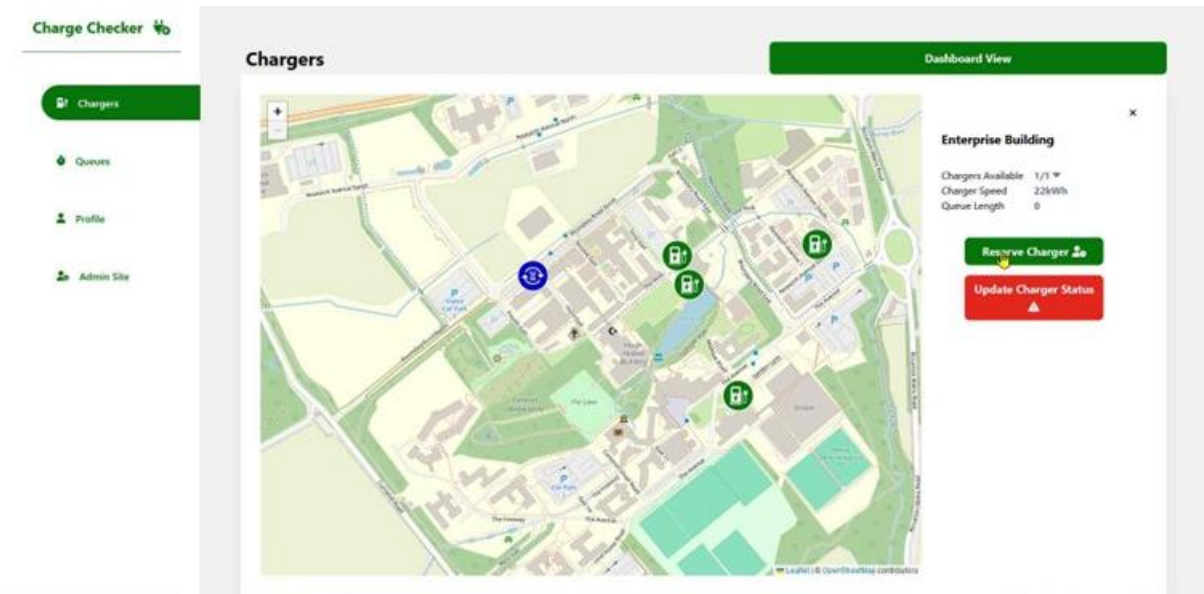A user will then need to click on one of these indicators to continue.

Figure 12 - The map view with a charge point indicator selected.

When the user selects which charge point they would like to reserve for then a popup will show

more information for that Charge location as well as allow the user to Reserve or update charger
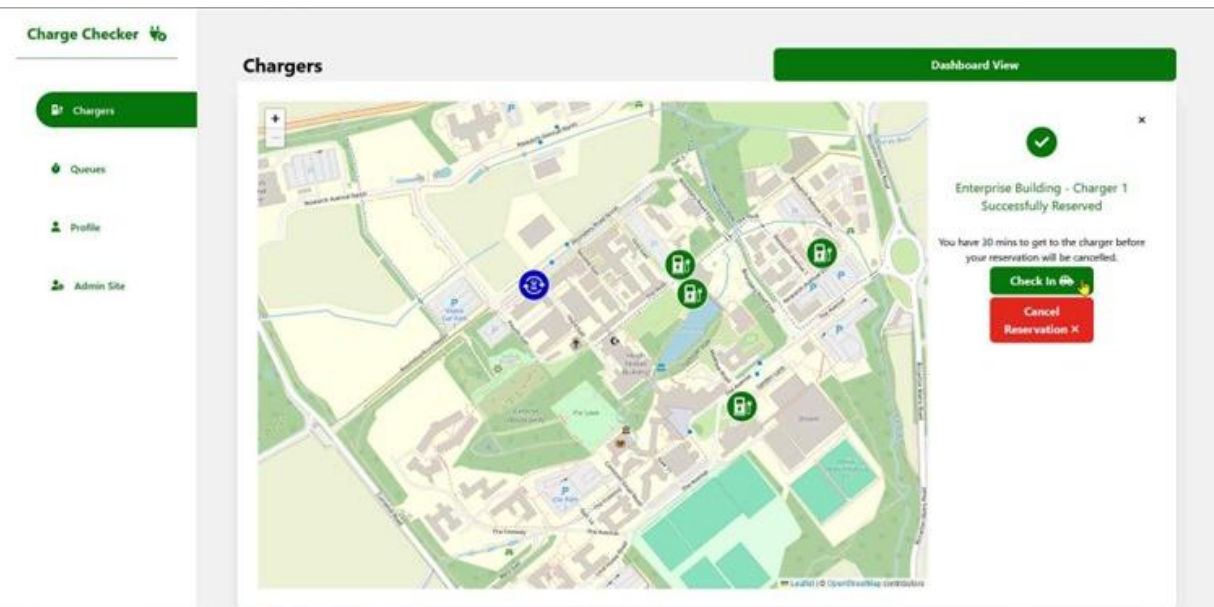
status just like in the dashboard view.

Figure 13 - The map view with a charger reserved

After the user reserves the charger, the information will update to give the user confirmation on which charge point and specific charger they have booked and give the user the option to check in once they have moved their car to charge or to cancel their reservation. The user can also perform this function on the queues page identically as was shown in the dashboard view example.

Joining and Leaving Queues

If a user tries to reserve a charger at a charge point but there are no available chargers at said charge point the user will be invited to join a queue instead.

Joining a Queue
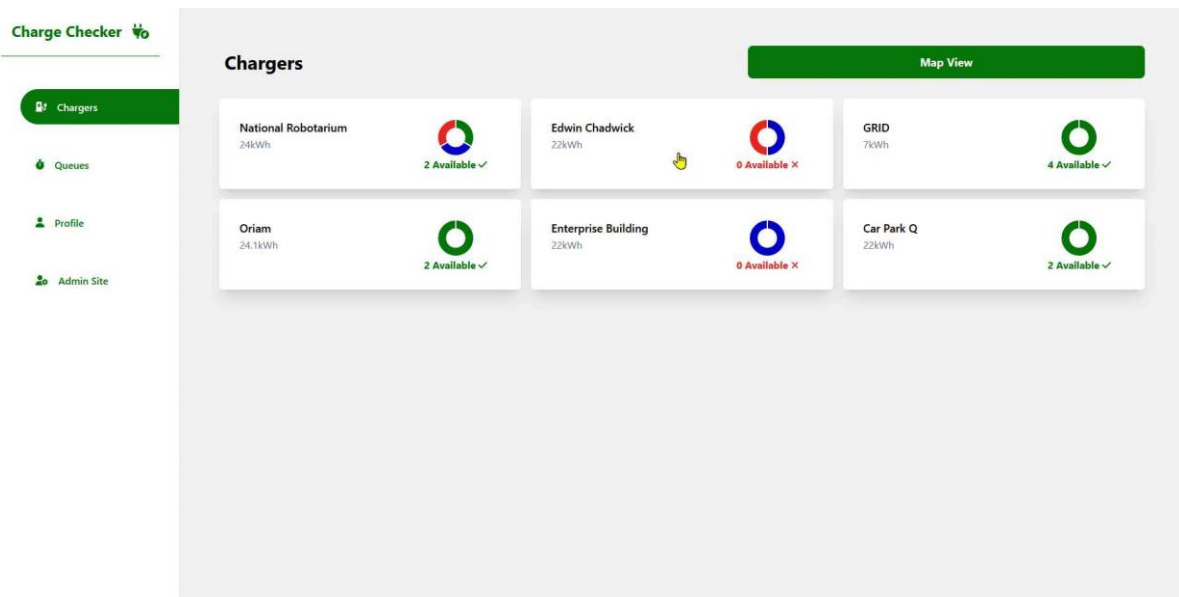
Figure 14 - The chargers dashboard view with the hovered charge point having 0 available chargers.

When viewing the Chargers page if a charge point has no available chargers then it will be shown on the charge point with the text updated to state "0 Available X".
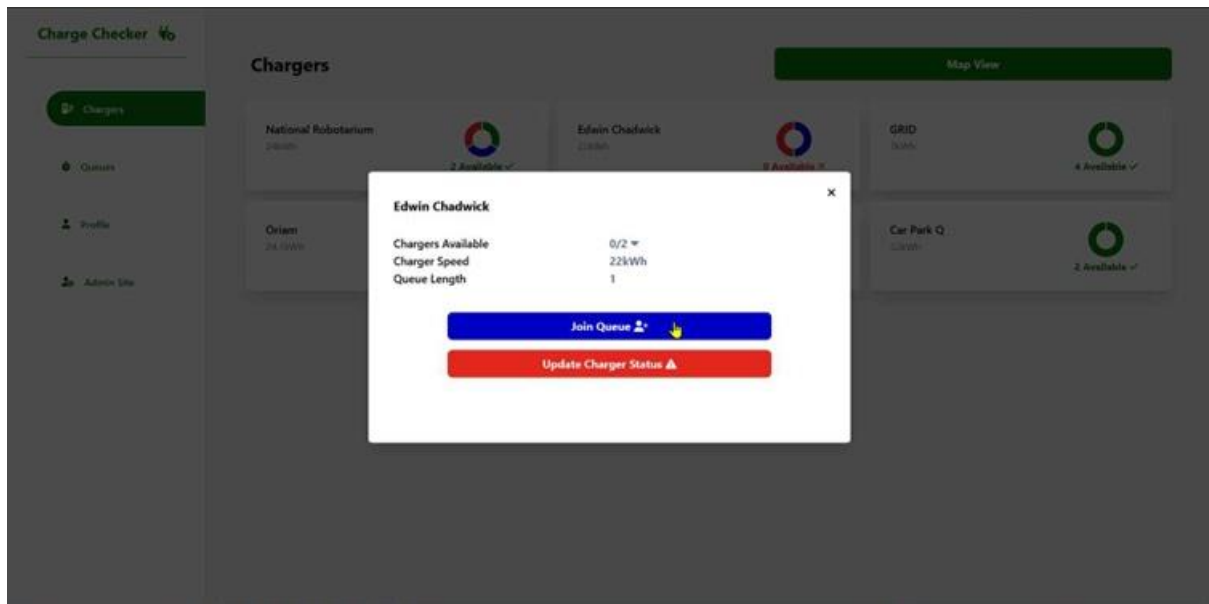
Figure 15 – A focused charge point of a location with no available chargers.

Upon selecting a charge point with no available chargers the user will be given the option to either join a queue for the location or to update the status of a charger at that location.
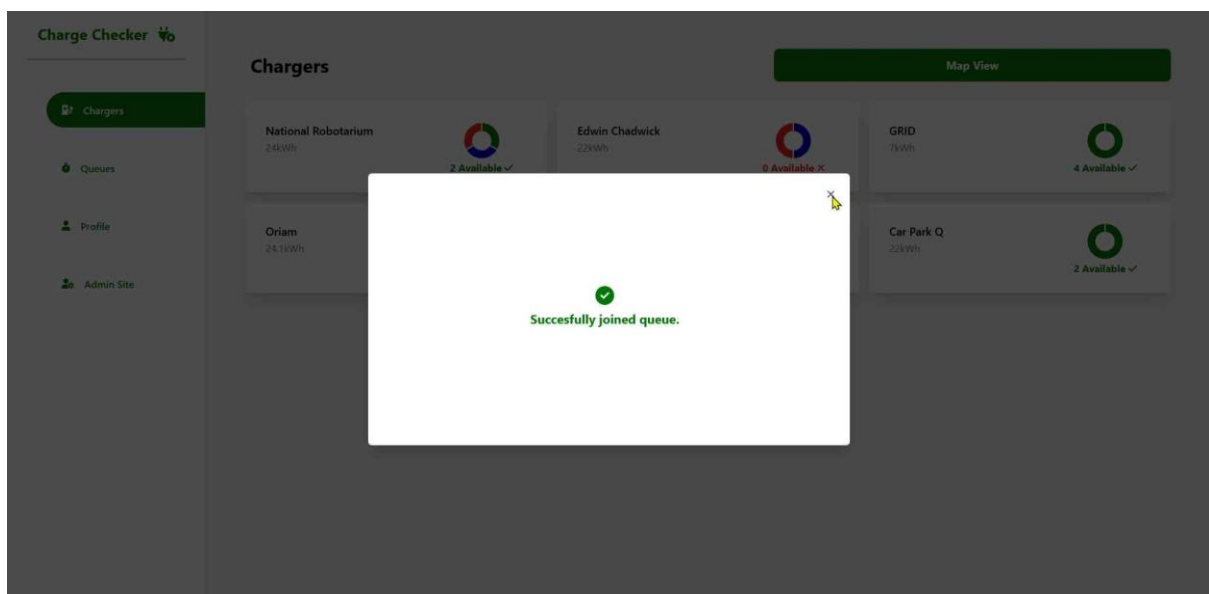

Figure 16 - A confirmation of joining a queue.

After clicking to join a queue the user will be given a success notification to confirm that they are now in the queue. A user is not limited to joining one charge point queue and they can select other charge points to queue for simultaneously.
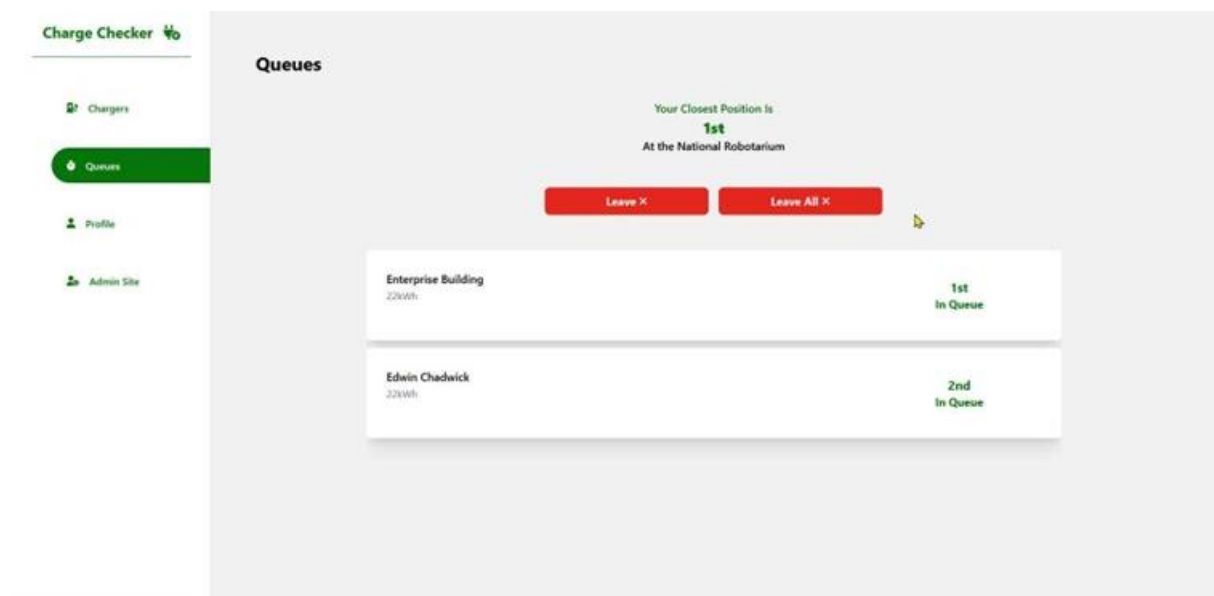
Figure 17 - The queues page with the user in 2 queues.

The user can check which queues they are in by navigating to the queues page which will list all queues the user is in. There is also an indicator of which charge point the user is furthest forward in the queue so that they know where they are likely to get a reservation first. The list of charge points being queued also shows the user's position in each of the queues to let the user know how far forward they are in each queue. There are also two buttons related to leaving queues. The leave all button will cause the user to leave all of the queues that they are in. The leave button will allow the user to leave individual queues.

Figure 18- The email a user will receive if they are first in the queue and a free charger becomes available.

When a charger becomes available at a location that the user is queueing for they will be sent an email notification telling them that they now have a charger reserved at that location and have a 30 minute window to check in.
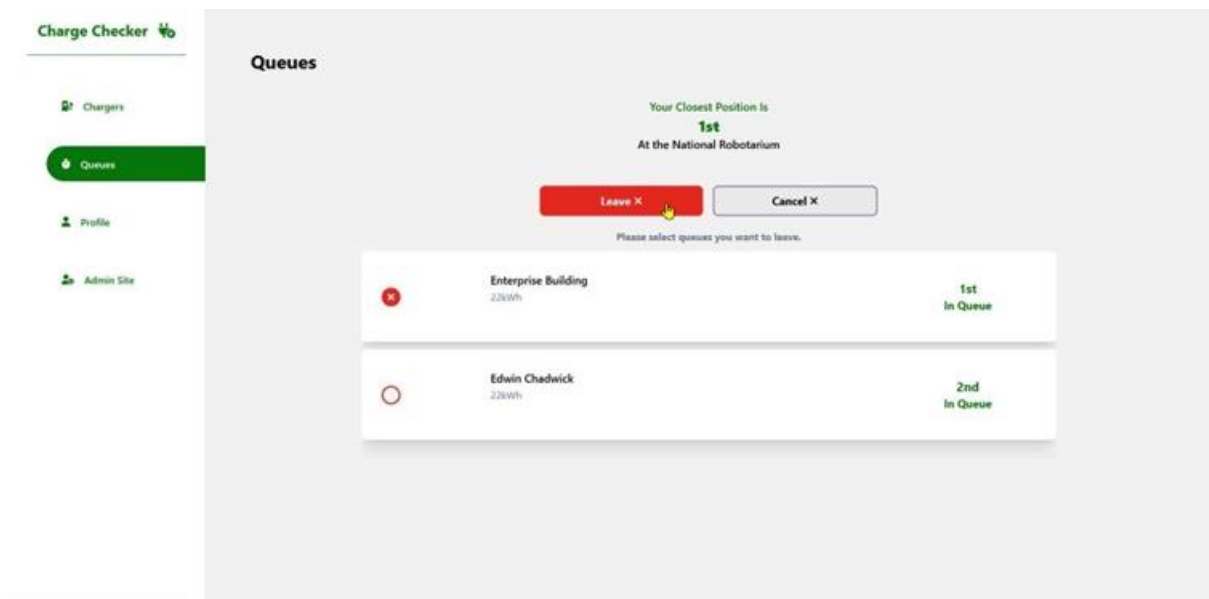
Leaving a Queue

Figure 19 - The queues page with a queue selected to be left.

When the leave button is clicked an indicator appears beside each queue which when checked will mark that queue to be left upon clicking the leave button again.
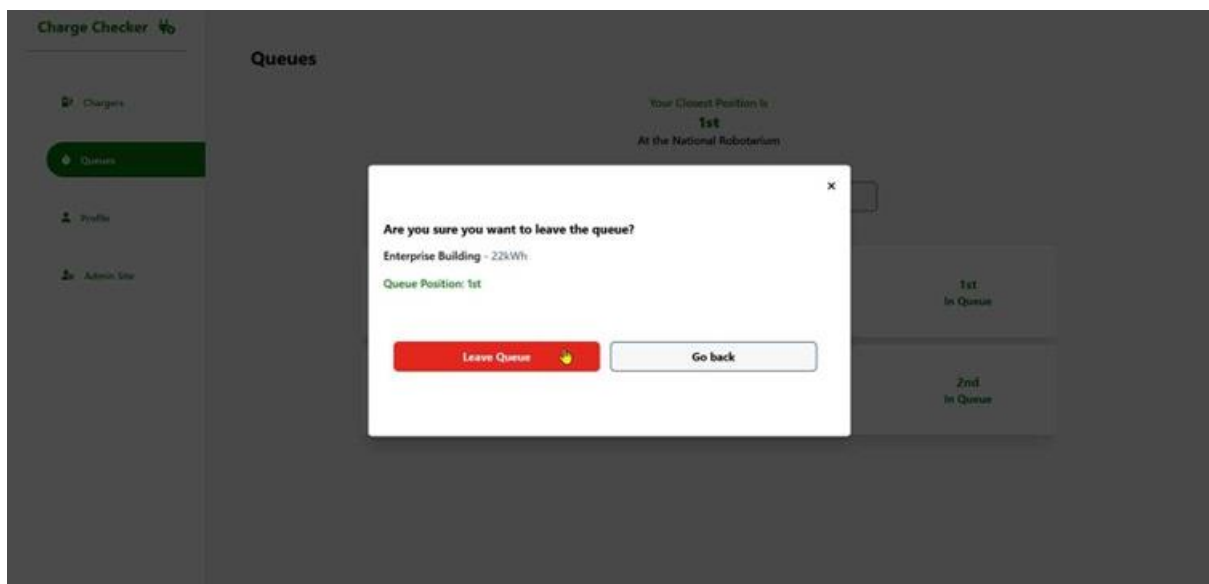
Figure 20 - A Confirmation check for leaving queues.

After the user confirms that they want to leave the queues they have selected then the queues page will update to display the queues the user is still in, if any, as well as their new closest position in queues.
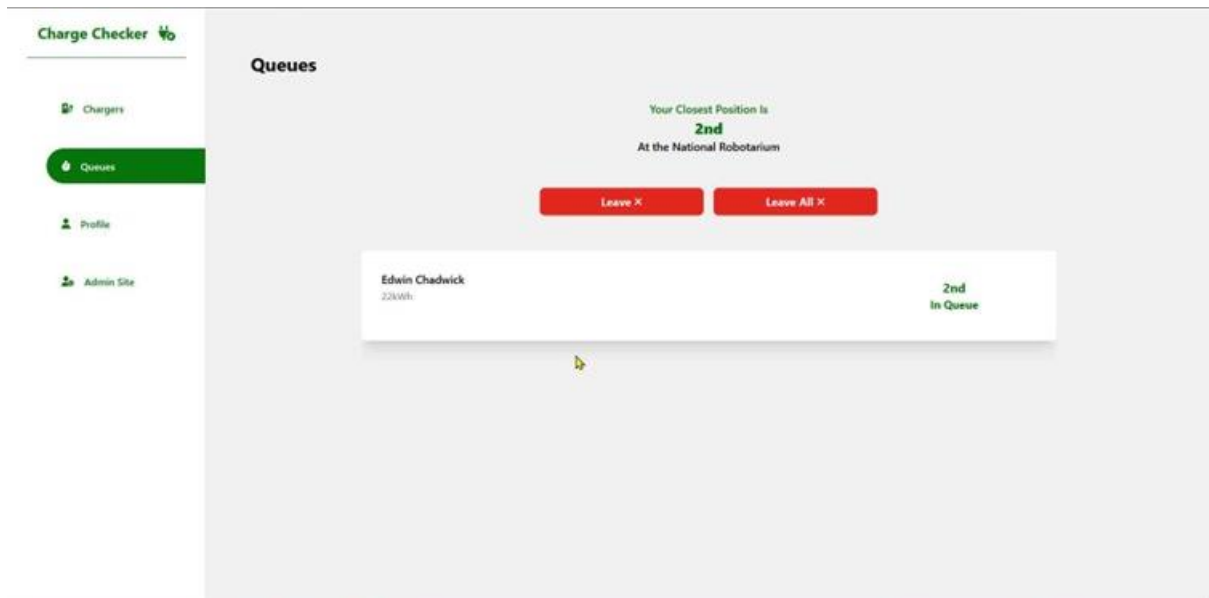

Figure 21 - The Queues page with updated information after leaving a queue.

Report a charger as broken

When a charger is reported as broken there are two steps. First the user must report the charger as broken and then an admin user must confirm the report to be true.

Reporting a charger as a user
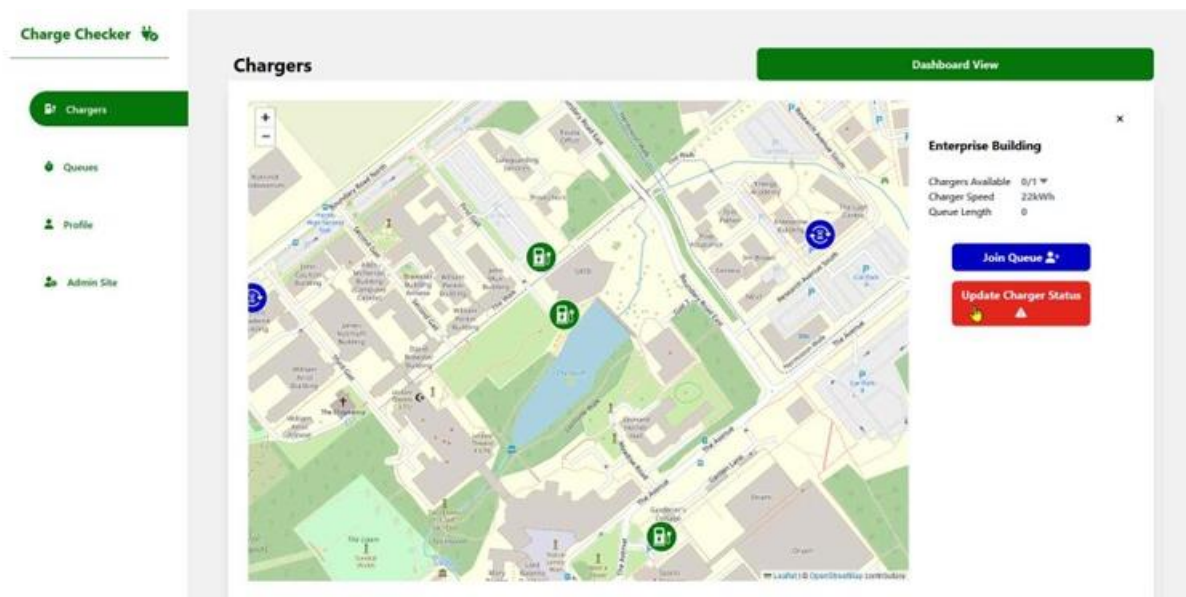
Figure 22 - The chargers page for Charge Checker map view with focus on the "Update Charger Status" button.

To report a charger as a user first they must select the charge point that they wish to report an individual charger for just like they were going to queue for it.
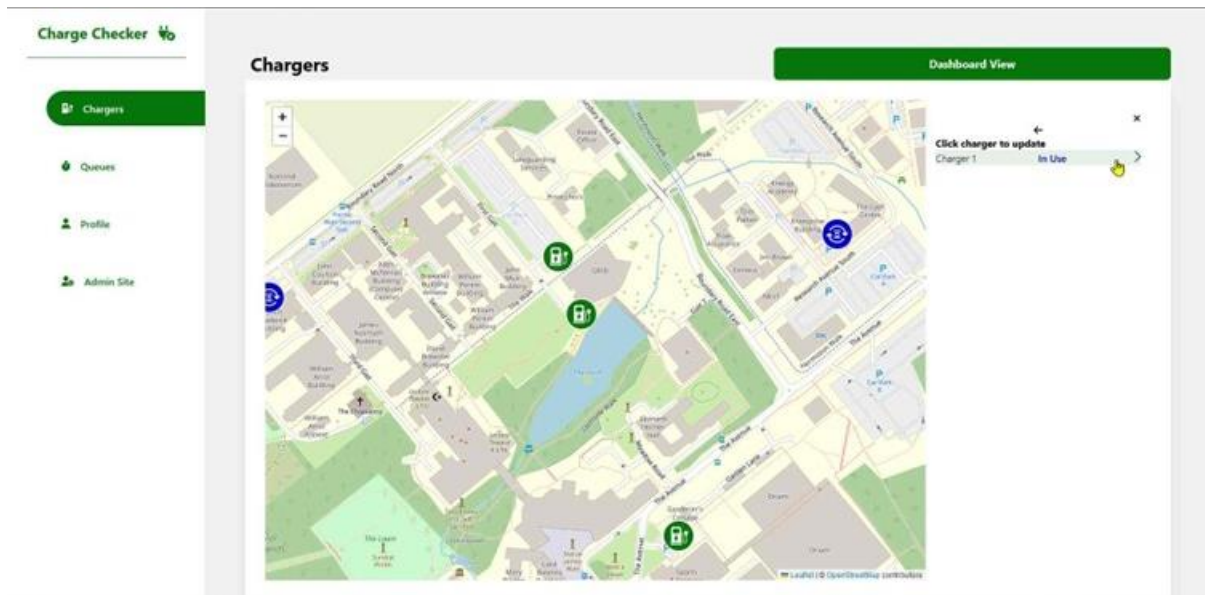
Figure 23 - A list of individual chargers at a charge point to be selected for reporting.

After the user presses "Update Charger Status" then a list of all individual chargers at a location will become available and then the user must select which individual charger they would like to update the status of.
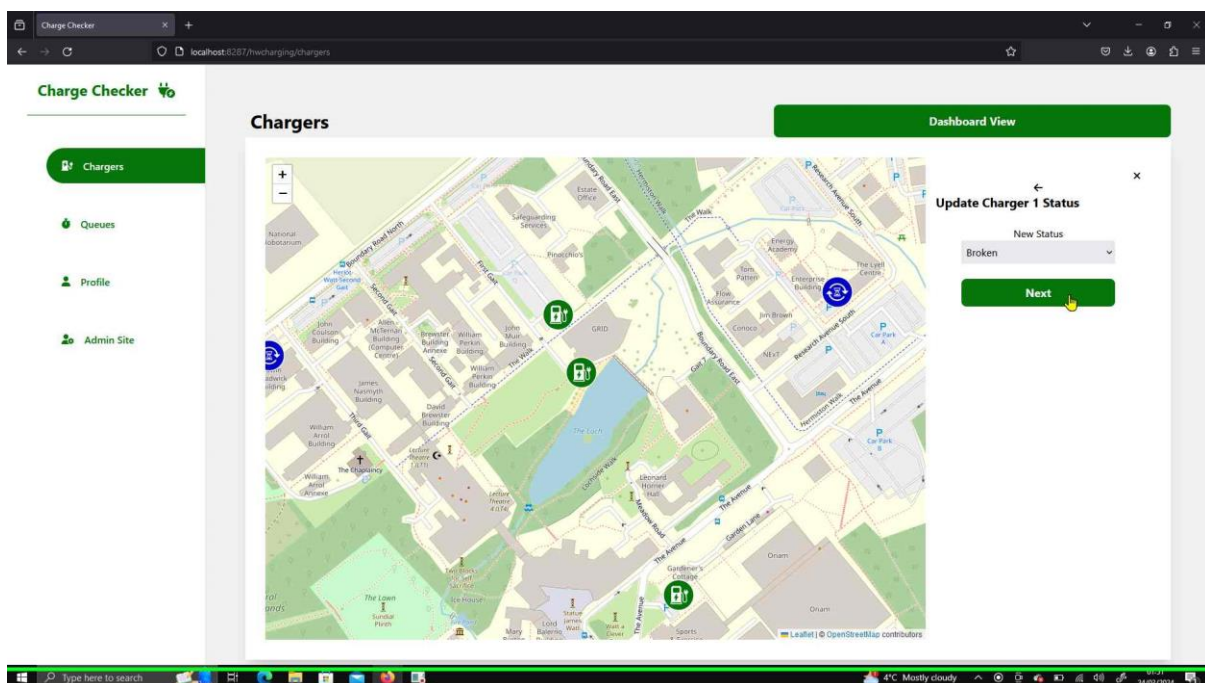
Figure 24 - The reporting feature for a single charger featuring a drop-down field with options.

When updating an individual charger status there will be a dropdown menu allowing the user to report the status of the charger as either "In use", "Available" or "Broken".
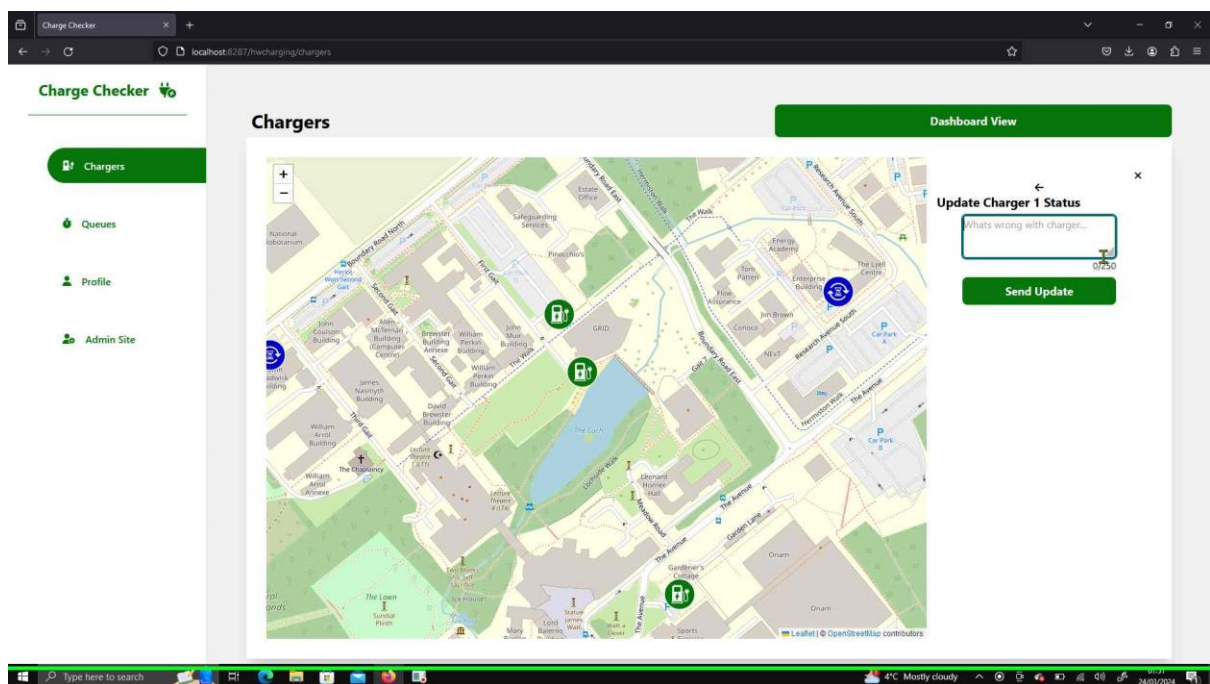
Figure 25 - The reporting features text box allowing for a user to give details about their report.

After confirming the status of a charger the user will be prompted to fill in a text box which will give the user a chance to explain in detail why the charger needs to have its status updated.
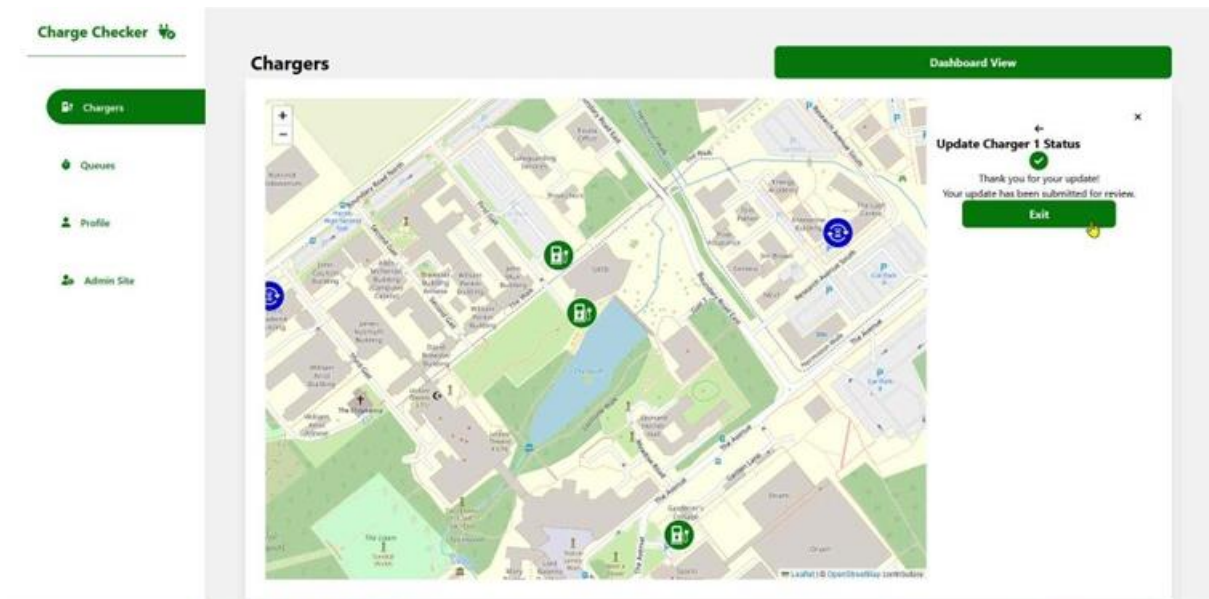
Figure 25 – A Confirmation screen for report being sent.

After the user clicks to send the report then the screen will be updated with a confirmation sentence to let the user know their report has been submitted for review and will be dealt with.

Confirming a report as an admin
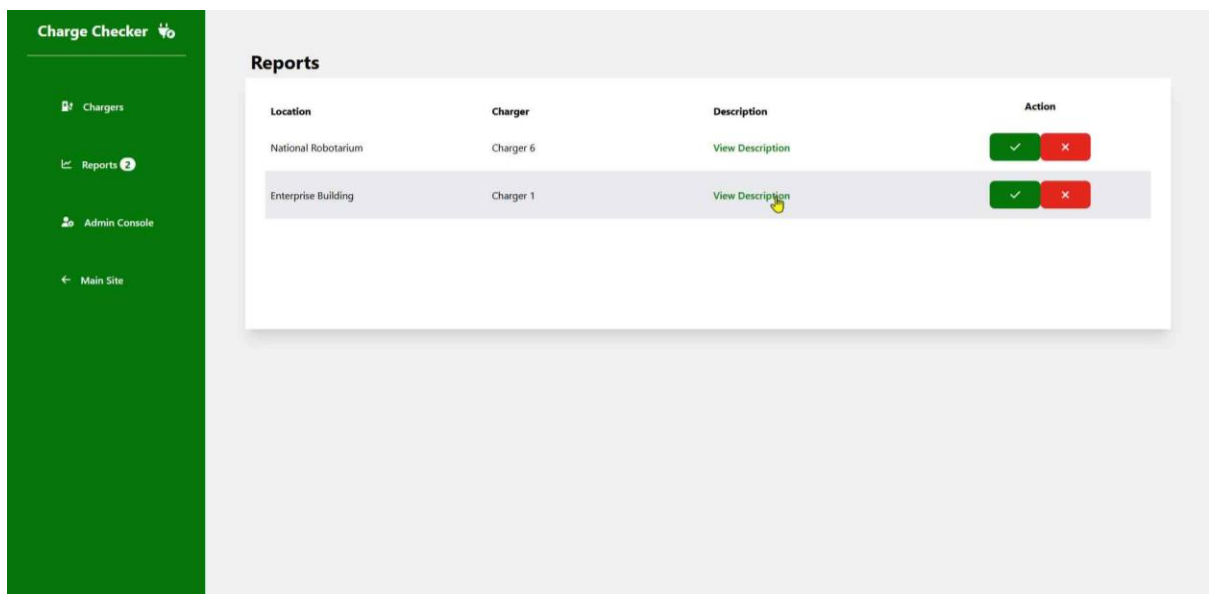
Figure 26 - The Reports page with focus on the "View Description" button

From the admin perspective, they must navigate to the "Reports" page from the navbar where they will be shown a table of all reports that have been made, showing the location and specific

charger of said location/charge point that the report has been made for. The admin can also

click to view the text description of the report that the user sent by clicking "View Description",

or they can update the charger immediately with the buttons on the right.
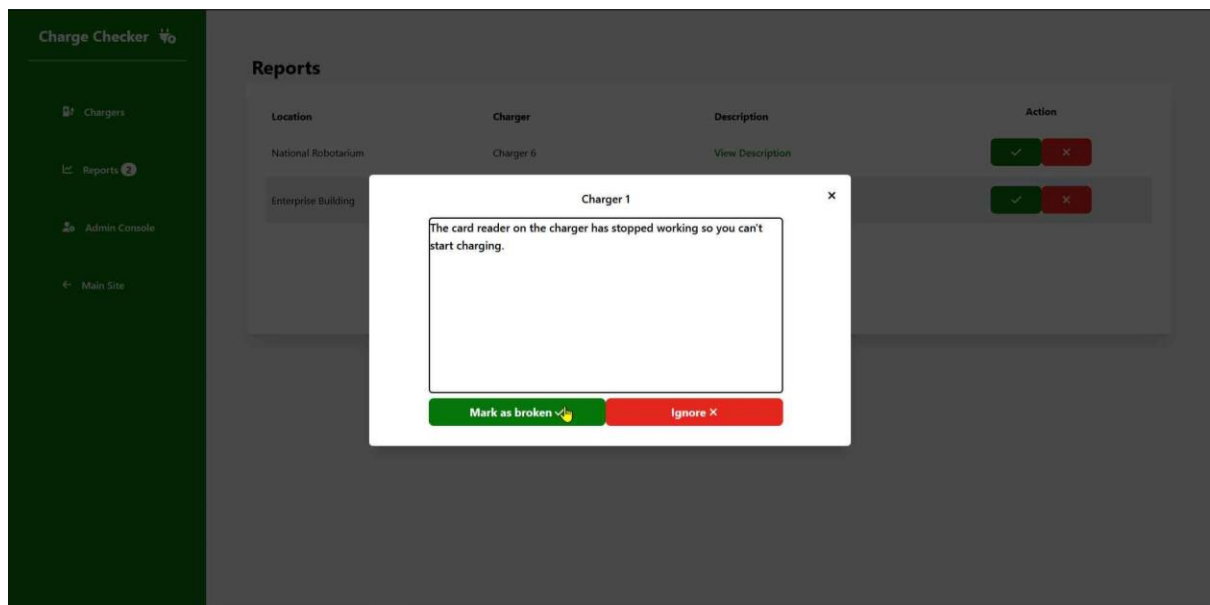
Figure 27 - The text description of a report that a user has sent.

An admin viewing the text description of the report can also mark the change as correct from
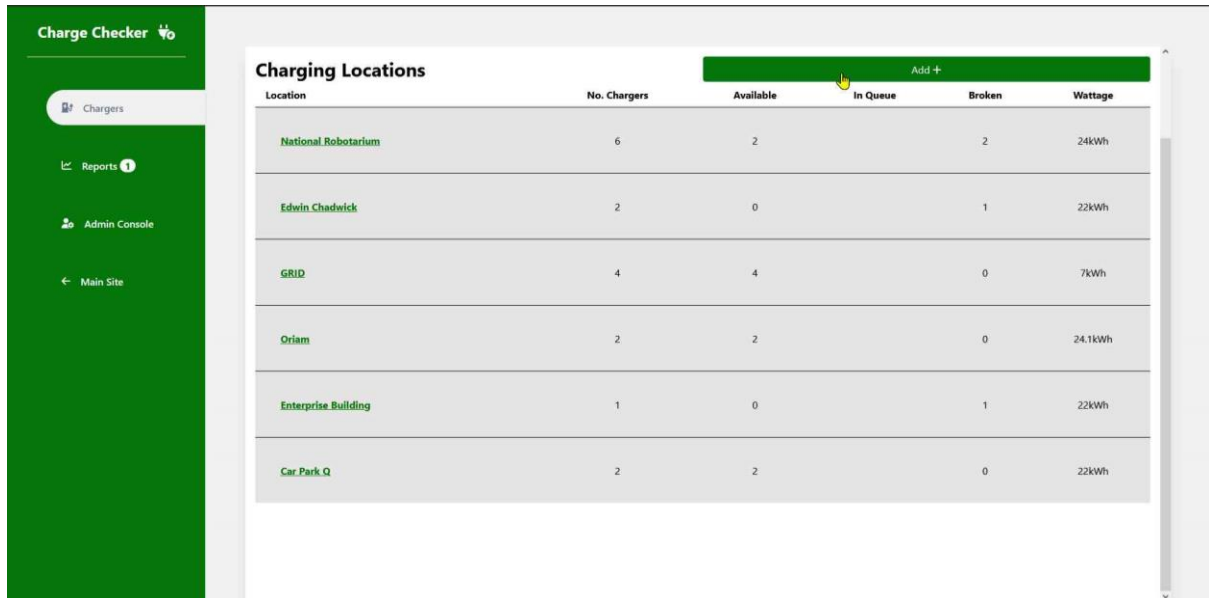
the popup it produces.
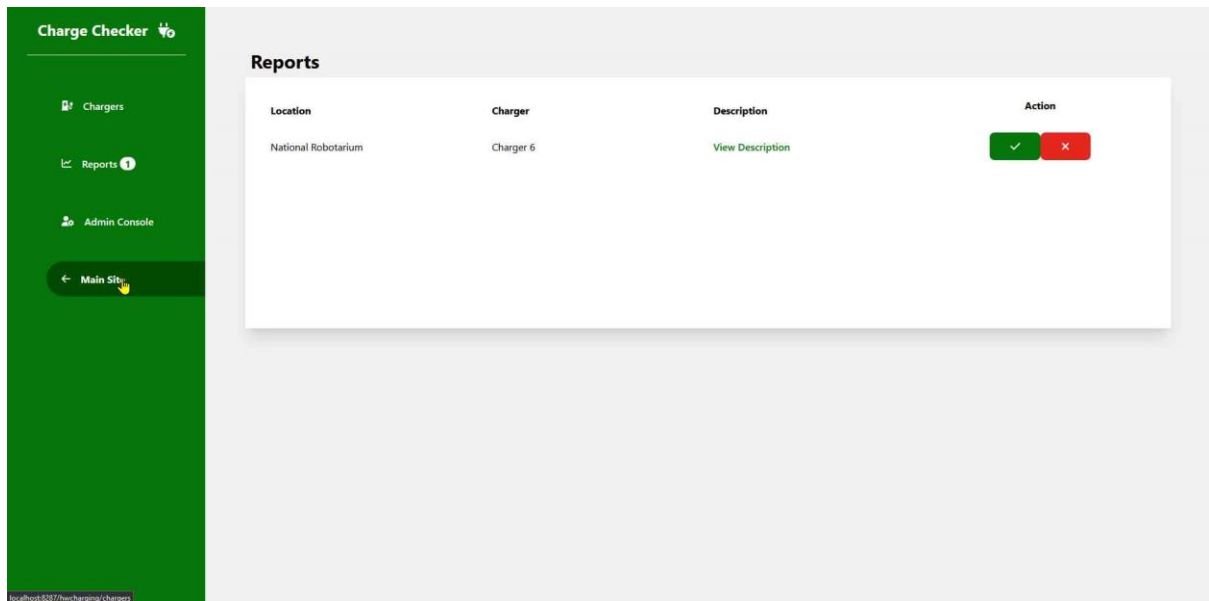
Figure 28 - The updated reports page after confirming a report

The confirmed or denied report will be removed from the list after a decision is made, and the charger at the charge point will be updated accordingly.

Adding , Editing and removing a location

Adding a location

Figure 29 - The chargers page for Admin users with focus on the "Add +" Button.

To add a charging location the user must be an admin. Then on the admin sites chargers page

the admin must click the add button in the top right of the page.

Figure 30 - A pop out for the admin to fill in information about the new location.

After pressing the add button a pop-up card will appear and offer multiple fields which relate to relevant information about the new location being added. The number of chargers specified will relate to how many individual chargers will be created for the location.

Editing or deleting a location

Figure 31 - Viewing the added locations information.

Once the location has been created it will appear in the list of charging locations, clicking on it will display all the information of the location. From this page an admin can make any changes to a location such as the status of each of the chargers or the wattage of the chargers if they have been changed.

It is here a user can also add a new charger to a location by clicking the "Add Charger" button, this will add one new charger to the location. These changes can be saved by hitting the "Update Location Info" button.

On this page if an admin wants to delete a singular charger then they can press the "Delete Charger" Button which will delete an individual charger from the location.

To delete the entire location the "DELETE LOCATION" button must be pressed which will then change to a "CONFIRM DELETION" button which must be pressed again to prevent accidental deletion of a location.
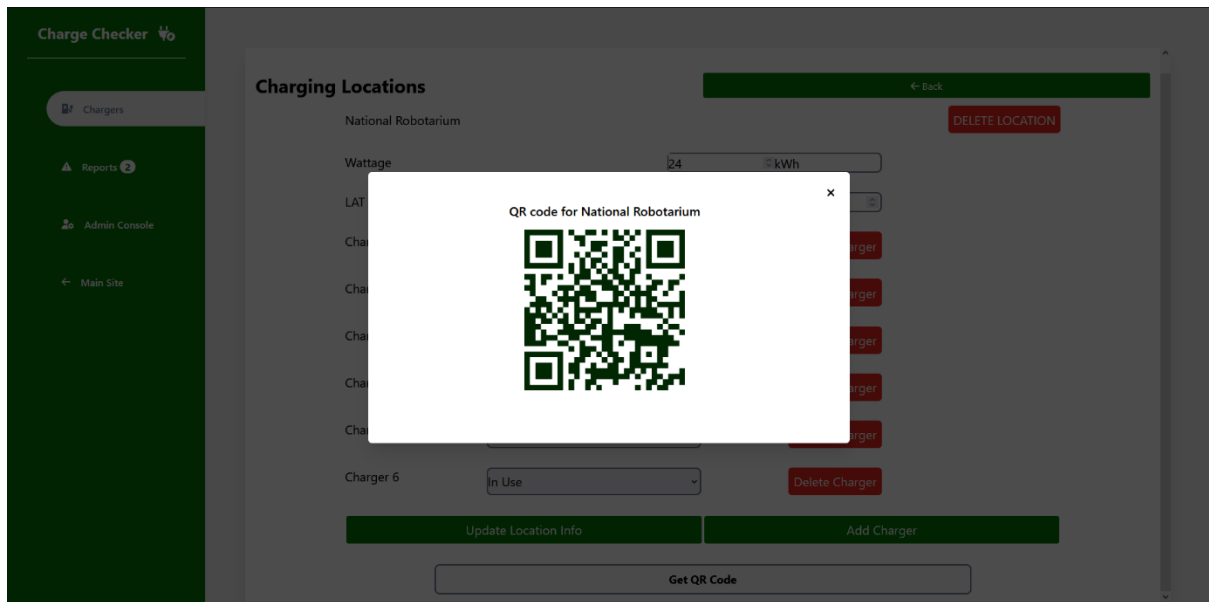
Figure 32 – The QR code displayed after clicking "Get QR Code"

A user can also get the QR Code for a location at the bottom of the page, so they can scan to

check in remotely.

Figure 33 – The Charging location list after deleting the library location.
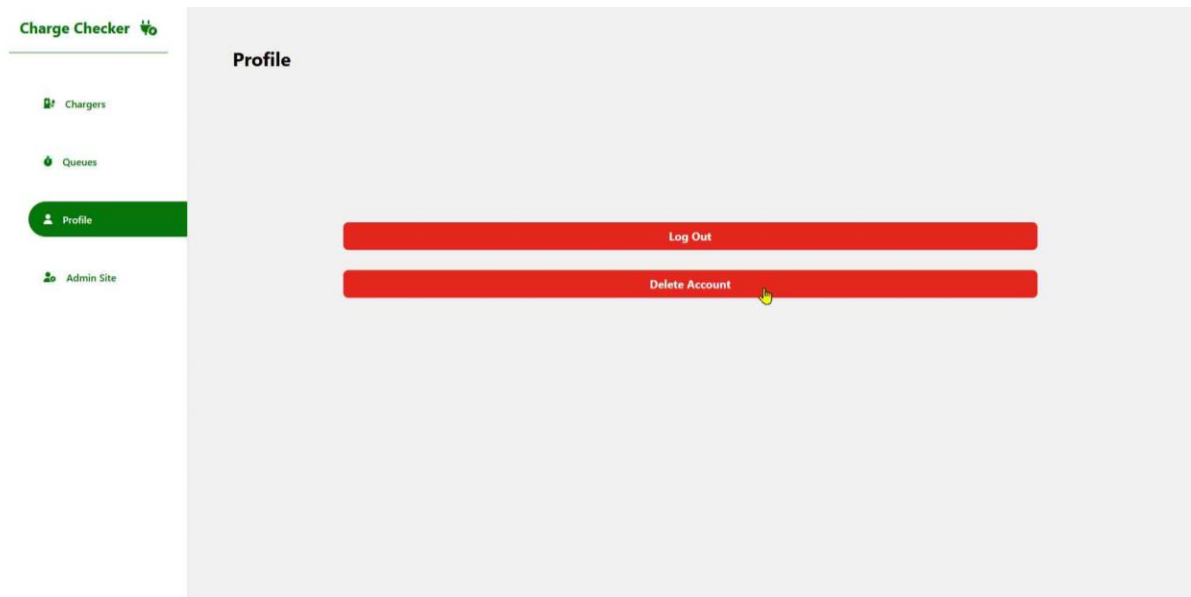
Logging out or Deleting your account.

Figure 34 – The user profile page allowing them to log out or delete the account.

When the user navigates to the profile page then two buttons will be available. The "Log Out"

buttons will log the user out and redirect them back the log in page.

The second button named "Delete Account" will start the process of deleting a users account
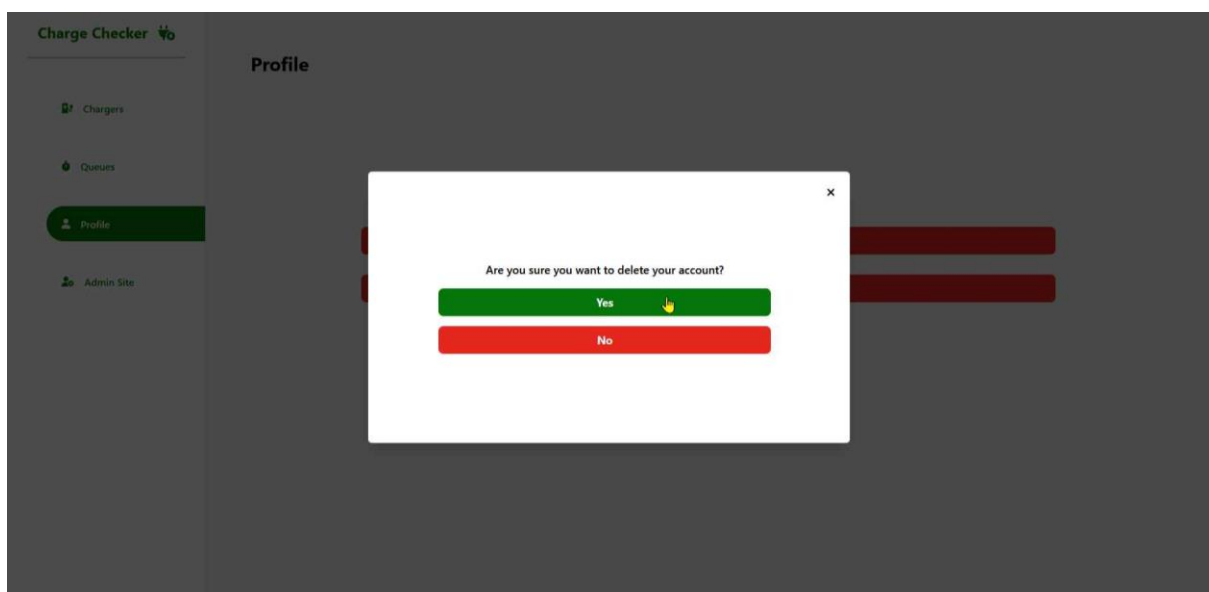
from the system.

Figure 35 – The Account deletion confirmation Pop up.

After clicking the account deletion button a pop-up will appear which will ask the user if they are sure they want to delete, to avoid accidental account deletions. If the user confirms they want to delete their account then it will be deleted and removed from the system and the user will be sent back to the login page.
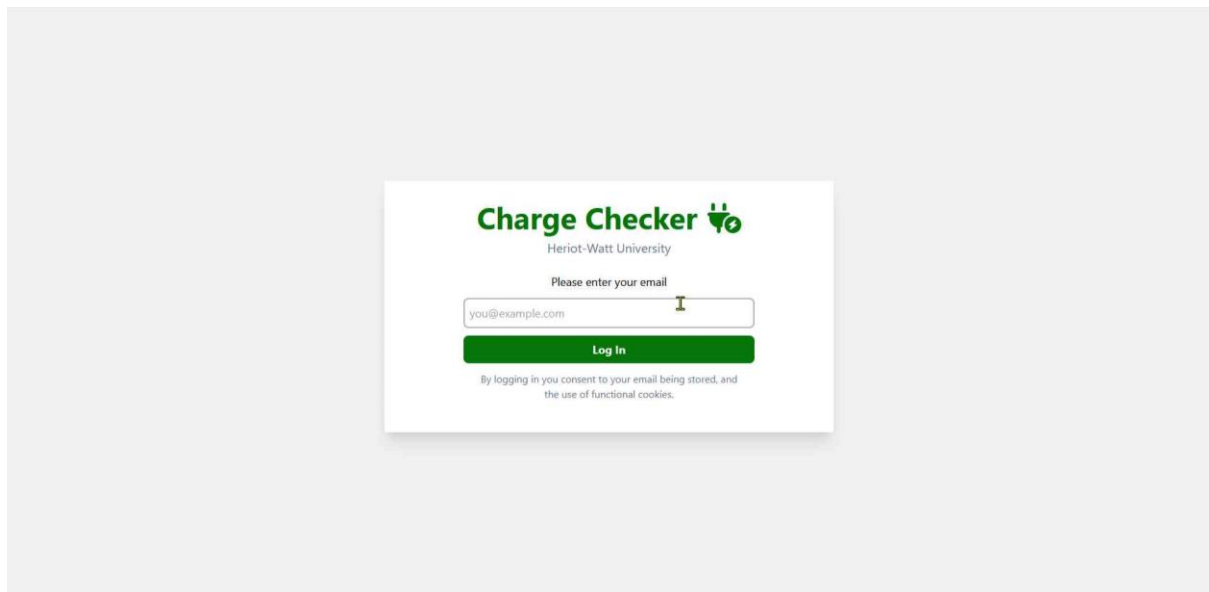
Figure 36 – The main login page after the user has been redirected.