KOMODO

Step-By-Step Guide To The Product Design Process

EV Companion App

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Introduction

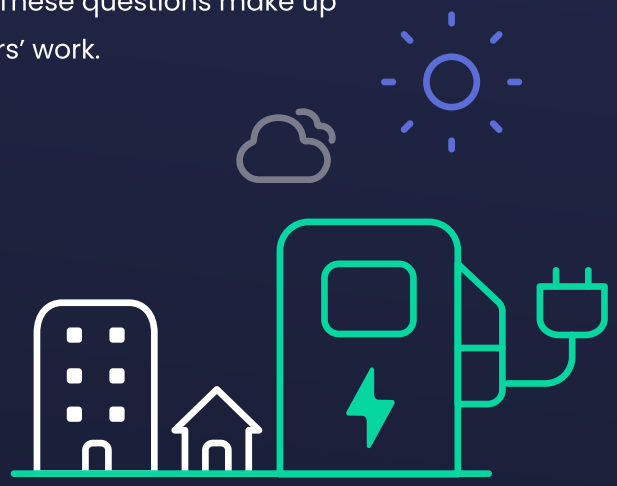
Do you know what's annoying about design? You only ever **SEE** 20% of it.

When you look at a product's design it's easy to get caught up in the looks. Hell, if something looks great you'd think our job was done. However, a lot of what makes good design great is often hidden behind the screens.

For example, do you ever think: When will I use it? What do I do with this? How does it work? Who is this for? Why should I bother? These questions make up 80% of UX and UI designers' work.

Do you know what we love about design? Creating intuitive user experiences and products that work. However, it's difficult to really show 80% of the work that goes into designing exceptional products.

Between NDAs and client-agency agreements, we can always show our processes. So as all good designers do, we came up with a solution.



What's the goal?

By the end of this workbook, we want to give you a window into what a UX and UI design project looks like from start to finish. You'll understand top product studio's design processes - the best practices to get into your user's shoes and create solutions to real problems.

So, get ready to see the creation of an app unfold right before your eyes. **All 100% of it.**

Our challenge

In order to complete the brief, we followed our in-house design approach from the initial research to the final product. The project was split into 4 design sprints, staged over 20 days - 5 days per sprint. These included **Discovery & Research, Analysis & Audit, Wireframing & Prototype, Design & Iterate**. This gave us a clear roadmap for our project and accountability to deliver on each stage.

One of the biggest challenges was establishing a knowledge base on electric vehicles and other EV apps currently on the market. But as with any other project, we took this in our stride. A rolling stone gathers no moss and we're always excited to research new ideas to produce a product that solves the problem.

A final note on design software. The majority of the project was completed with Figma & Miro. The two crucial pieces of software let our design team do their best work. Collaborating and creating the best ideas is much easier when you use the best tools!

What do we need to find out?

- What are the issues with charging apps?
- what is the user flow to charge in public/home?
- Why do users choose an EV?
- What are the pain points users experience?
- Are there any positive takeaways form the current apps?

How do we improve the user experience?

How do we understand users' needs?

All projects start with the user. So to best understand their needs we started with research. By putting ourselves "in their shoes" we began to empathise with their needs, wants and frustrations. Through thinking from their perspective we could map out their characteristics and typical user journey.

In addition, ideating and testing is far easier when you understand their point of view. It allows designers to criticise our own designs and push to create a positive user experience (UX).

Research

Initial research

Competitor analysis

Empathise

Ethnographic research

User persona

User journey mapping

Empathy mapping

Define

Sitemap

User flow

Ideate

Wireframes
(Low fidelity + high fidelity)

UI Designs

Prototype

Testing

What are their current pain points?

In order to create the best version of our product, we needed to find out what causes difficulties, learning common barriers to their success and what negatively impacts the UX.

The outcomes of our research identified several areas of dissatisfaction. The points below stood out as the key pitfalls with the EV charging apps currently available and wider challenges faced by EV drivers. Crucially, these pain points are the springboard for creating design-centric solutions.

- Not enough useful data
- Unreliable service due to data connection issues
- Complicated to set up with home charger
- Dated and unintuitive UI
- Incompatible with car
- Not being able to export usage data
- Lack of ability to make manual adjustments
- Doesn't support all charging networks

App analysis

No matter how many great ideas you have it's always important to look at the competition. What are they doing well? How do they talk about it? What do their users like about their app and why? How can we improve what's already there?

We created a table listing some key features most apps include as well as the ratings they received for a clear competitive overview.

	★ Rating	Covers home and public charging	Charge scheduling	Shows charge status	Remote controls	Power flow management	Usage data	Cost data	Data export	Notifications	Chargepoint map
Easee	5.0	✓	✓	✓	✓		✓			✓	
Monta	4.4	✓	✓				✓	✓	✓	✓	✓
Rolec	4.2		✓	✓	✓		✓	✓			
Ohme	3.8		✓	✓	✓		✓	✓			
EV Box	3.1	✓	✓	✓	✓	✓	✓	✓	✓		✓
Wallbox	3.0		✓	✓	✓	✓	✓	✓		✓	
MyEnergi	2.9		✓	✓	✓	✓	✓	✓	✓		
Podpoint	2.2	✓	✓				✓	✓	✓		✓
Project EV	2.1		✓	✓	✓	✓	✓	✓			
EO Charging	2.0		✓	✓	✓	✓	✓	✓			✓

How do users behave?

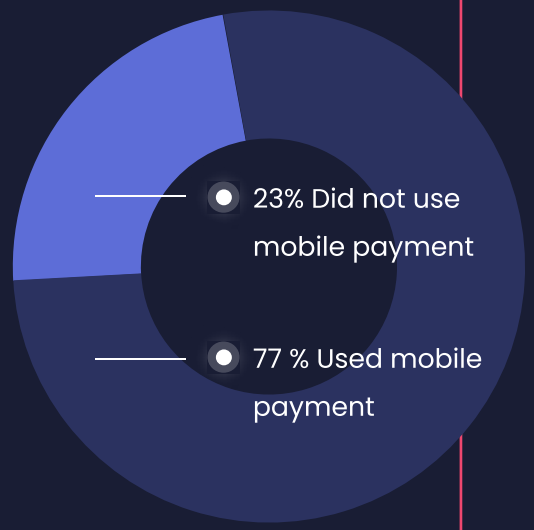
Through ethnographic research, we were able to understand more about drivers' behaviours and habits. By using a range of secondary resources we build a clearer picture of current market demands and trends driving innovation.

Ultimately, all the research we acquire on behaviour allows us to create a solid product that lives up to the users' expectations. In other projects we can access our user research team to talk to real life users to form a repository of primary data.

Source: *https://www.fuelsinstitute.org/Research/Reports/EV-Consumer-Behavior/EV-Consumer-Behavior-Report.pdf*

Payment preference

Percentage of respondents who have used mobile payment (August 2018 - August 2019)



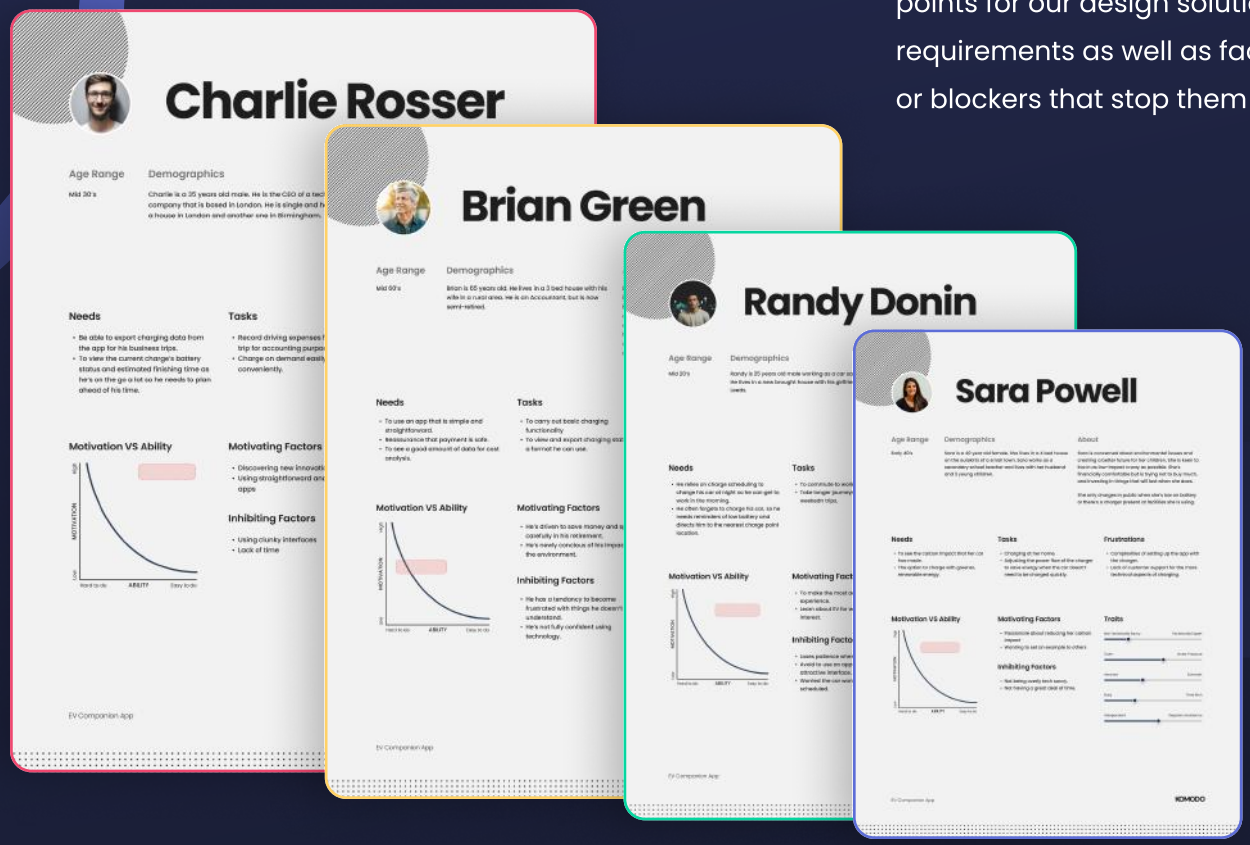
Charging at home vs public

What influences a user's decision?

- Non-Availability of At-home charger
- Running out of battery range
- Accessibility
- Value
- Convenience

User personas

To get a better overview of different user groups we began to flesh out personas. To cover the main identified user types and demographics, we arrived at four unique personas. It is essential that our research is reflected in the personas for them to be true to life and effective focal points for our design solutions. We include details on users' key requirements as well as factors that motivate them to complete a task or blockers that stop them from taking action.

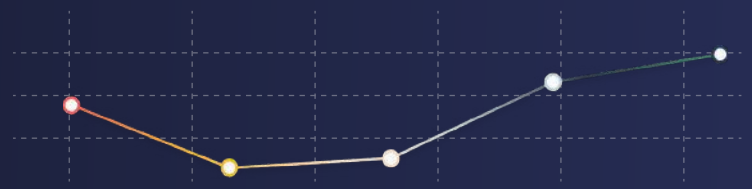


Take a closer look?

User journeys

Take a closer look?

Mapping out user journeys is crucial to creating an effective product. User journeys go beyond standalone personas and allow us to be meticulous in our approach to design. The main goal of a user journey map is to consider each step a user might take to complete a task. By doing this we identify key touchpoints to action improvements and decide what features need to be included to create a complete user experience.



User journeys also identify emotions a user might feel while using the product. The empathetic nature of user journeys helps tap into where we can really make a difference to their overall experience with the product.

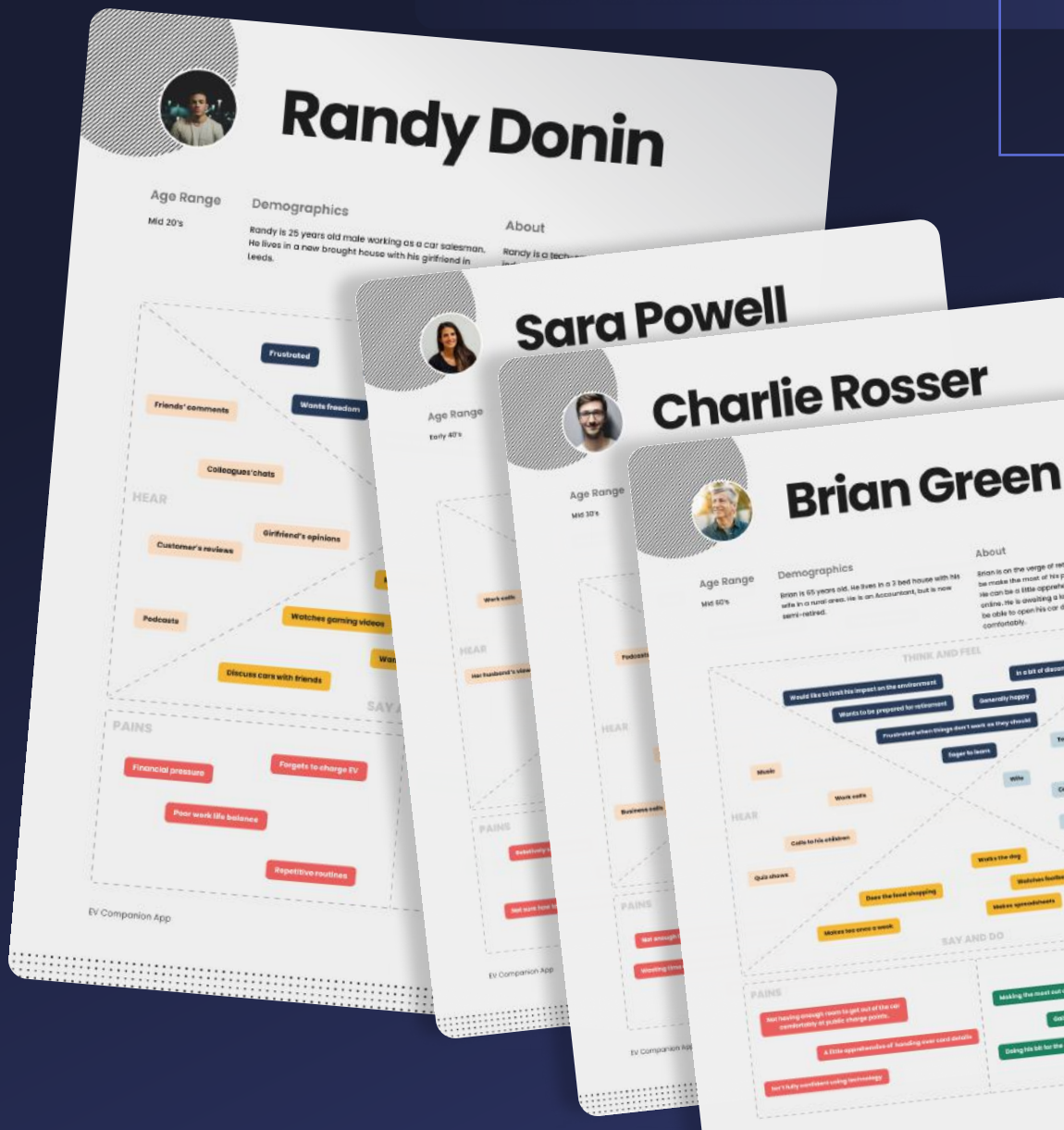
Take a closer look?

Empathy maps

Going a layer deeper from an emotional perspective, we use empathy maps to add extra layers to our understanding of user behaviour. Empathy maps focus on four key areas:

- **What they see**
- **What they hear**
- **What they say and do**
- **What they think and feel**

By considering all of these different emotional states, we start to colour in our personas and make them feel human. In combination with previous research methods, we now have a solid idea of the type of people we're trying to help.



Sitemap & userflow

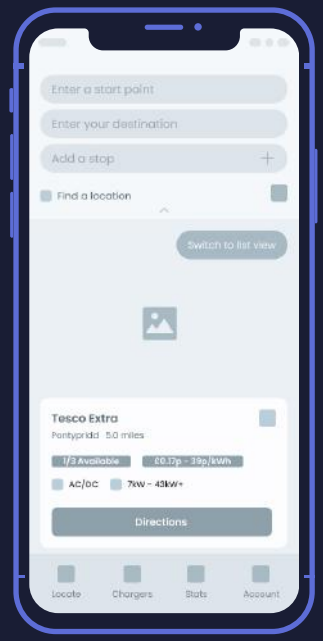
It's time to become experience architects by defining the process. We begin by drafting a sitemap. There are two reasons for this: First, it builds an understanding of the information architecture by developing a visual overview of the app. Second, it allows a design team to identify key features and prioritise workloads.

With the sitemap complete, we begin to test the user flows. The flows highlight elements that would work effectively and expose flaws in initial thinking. Building the user flow is an iterative process that tests the logic of the designs. They challenge our own design decisions but in the end, they show the bigger picture. By being rigorous, we identify what's truly valuable to users.

Wireframes • Low fidelity

With the bulk of the UX work completed, it's time to start deciding how to shape the User Interface (UI). Through analysing UI from existing apps, we can decide what elements work well and not so well - using our user research, of course.

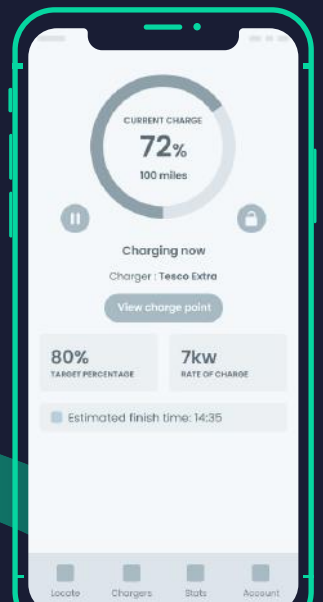
Initially, you start with sketches. The benefit of drafting low-fidelity wireframes is that you quickly move through various ideas. The good and the bad. They can be messy but it saves us time to focus on perfecting the ideas that are worth taking forward. In an ideal world, you test these on the actual user and get their all-important feedback.

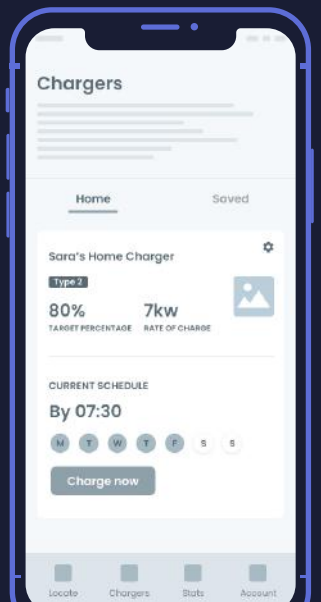


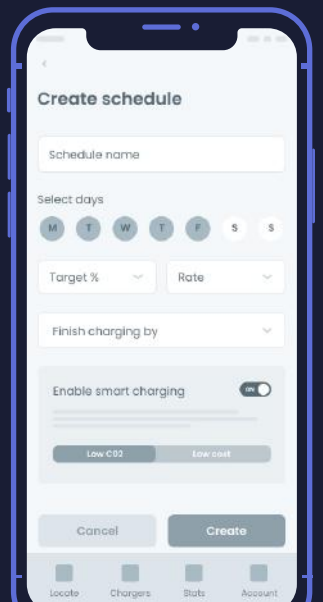
Wireframes

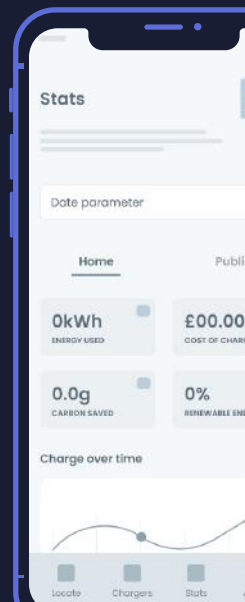
- **High fidelity**

A high-fidelity wireframe is where you start to give shape to the product. You begin to focus on tidying up messy ideas and carrying your best ideas forward. Key considerations include choosing component types, how buttons are formatted (toggle vs. dropdown buttons), and if the element hierarchy works effectively.





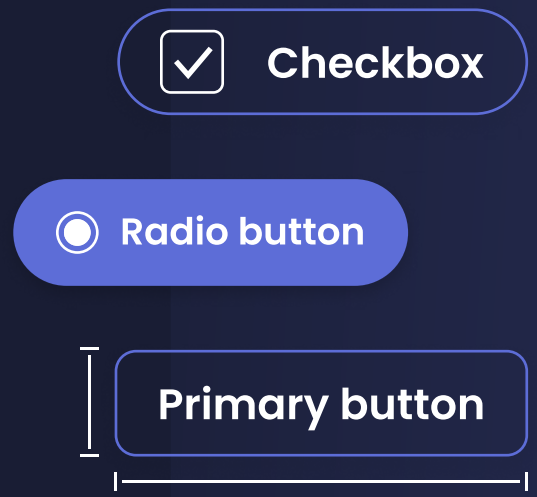




Prototype

Prototyping was a key stage during the wireframing process. Taking ideas from low fidelity to high fidelity presents unique challenges and there is often a lot of back and forth. You have to continuously test ideas to make sure the layout is functional and you are shaping a better user experience with each iteration.

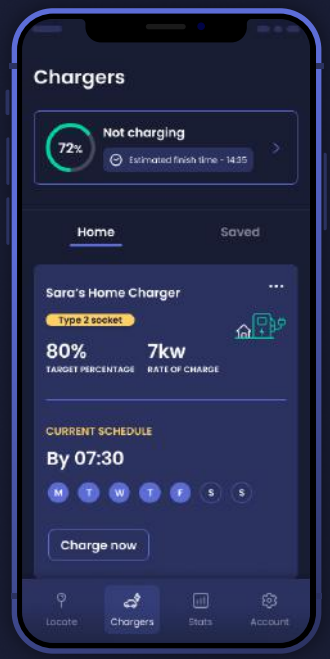
For our EV app, we constantly questioned: are the users able to navigate smoothly around the app? Would radio buttons create confusion? What is the best UX practice for a button size? Does the design align with user needs uncovered in research?

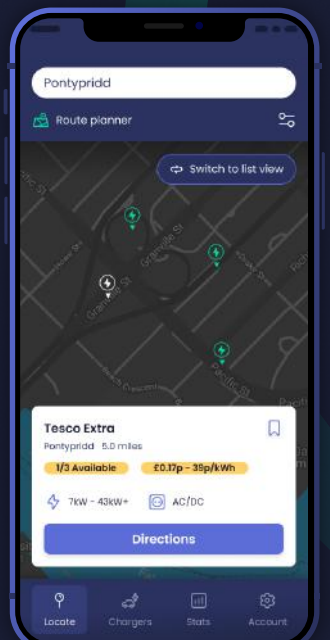


Designs

Finally, after completing the foundations, we could start to assemble the final designs. There are a few different requirements here. First, we started testing the styles and the tone of voice. Essentially, how do the micro-copy and app-styling talk to the user? These are usually dictated by the branding of the client, but in this case, we had room to wiggle.

Second, we tested the best way to create consistent and appealing visuals - this includes selecting supporting imagery and iconography. We have summarised the key design and features in our EV app on the following pages.



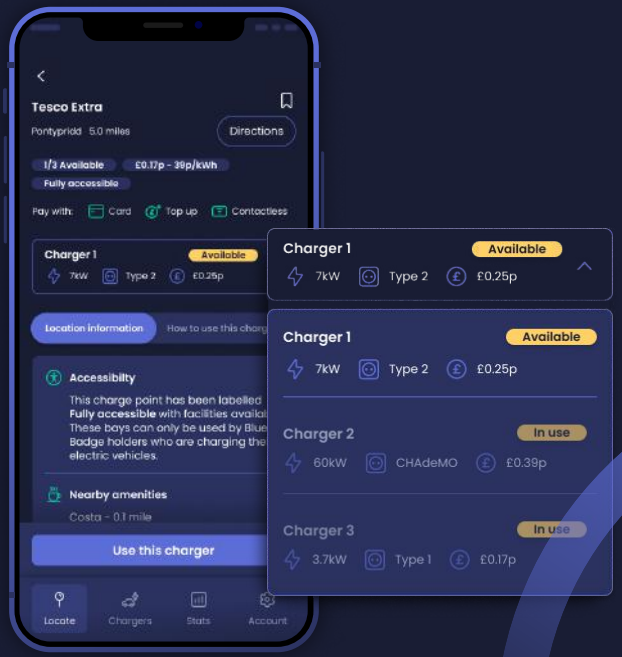


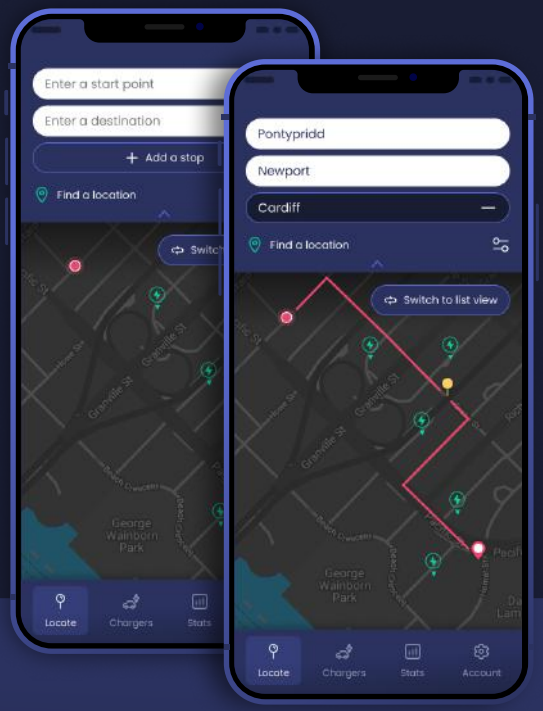
Public + home charger all in one

Home | Public

Select your prefered charger

View charge point information including availability, accessibility details etc.

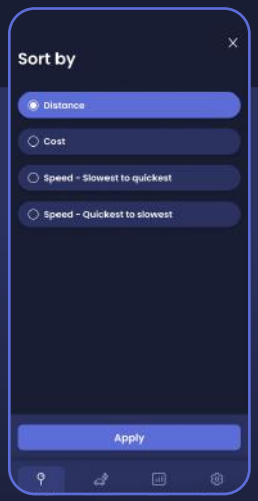




Plan your journey

Finding charge points on your route

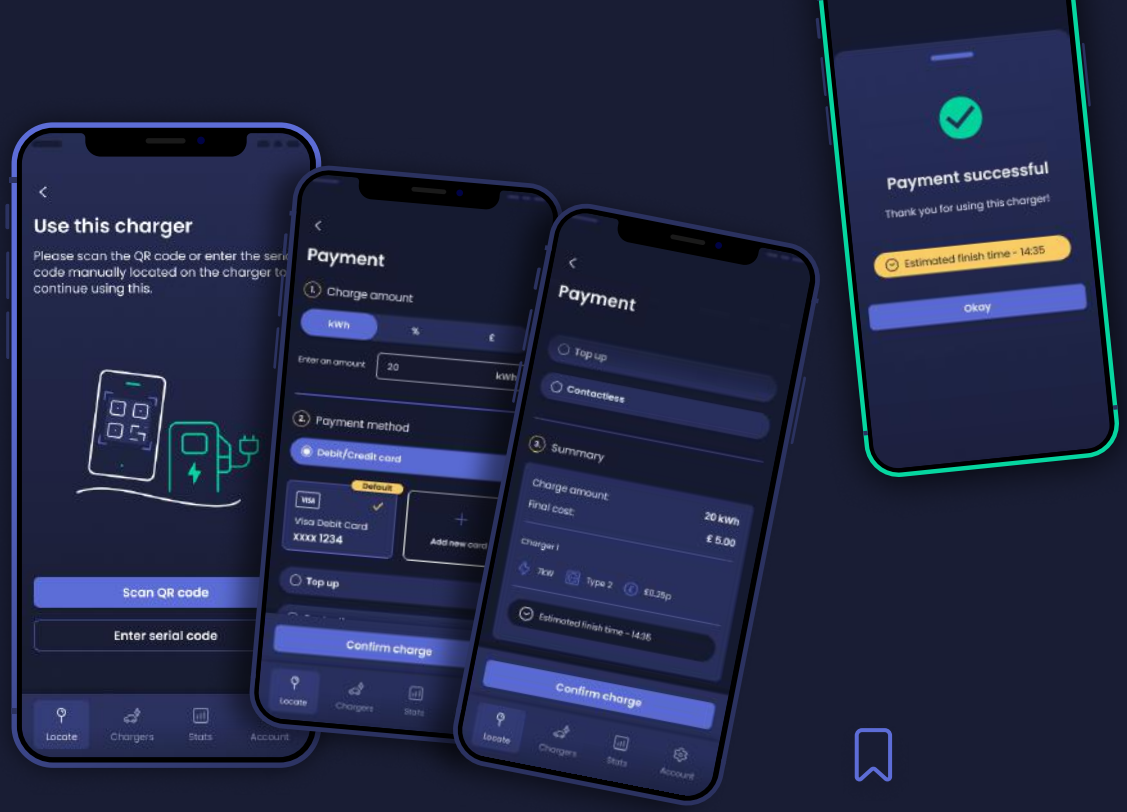
Configure your search



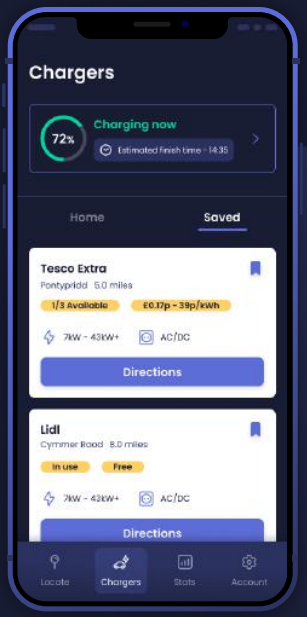
See more functionality

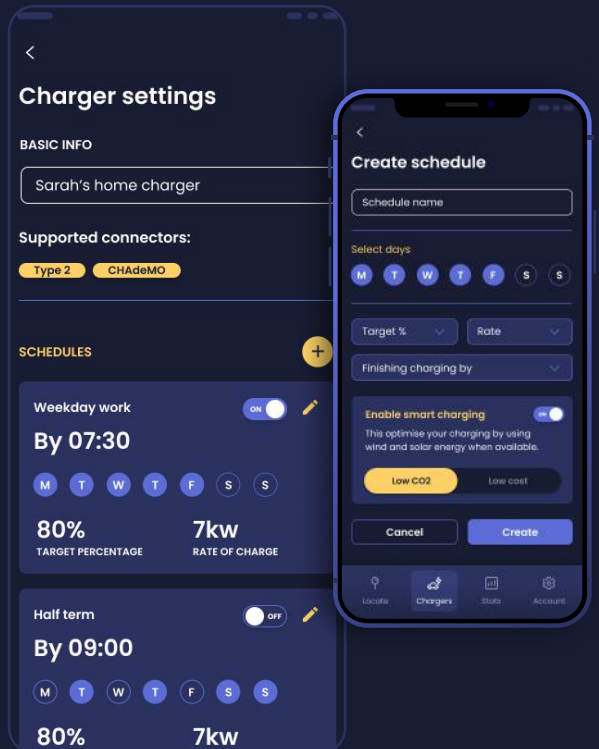
Using a public charger

Straightforward process for quick and easy charge



Access your saved chargers





Home charger settings

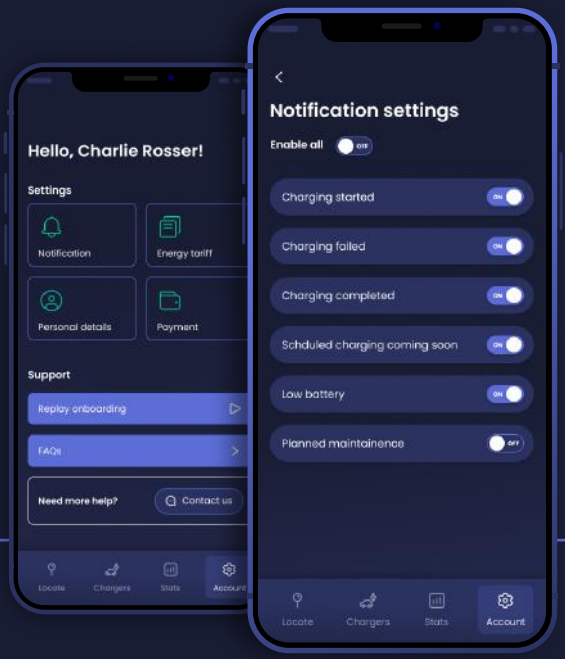
Create charge schedule with the ability to optimise your charge with greener energy and lower cost.

See more functionality

Export data

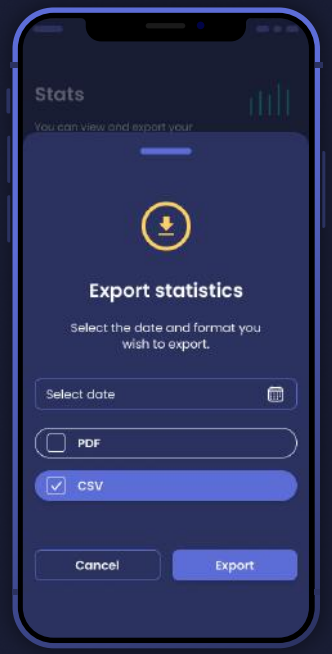
Review charging history

You can view charging data to save energy in your future charges and see your carbon footprint.



Notify me when...

Configure notification settings to give you updates of a charge status.



Export data

Select a date and format to export your data effortlessly.

Colour palette & Typeface

An exciting challenge for our project was selecting a colour palette. We wanted it to have a strong visual identity with a bold and vibrant colour palette. The contemporary styling fits well within the modern vision of EV charging.

Beyond looking good, there's much more going on behind the scenes. Above all the design is rigorously tested against accessibility standards. Considerations like colour contrast and font size are crucial, it's not a functional product if the text isn't readable.

Poppins - 40px

Poppins - 25px

Poppins - 18px

Poppins - 16px

Poppins - 14px

Poppins - 12px

Poppins - 11px

#191D34 #2B3260 #5D6DD7 #FFD166 #06D6A0 #EF476F #FFFFFF

Grid system

Using a grid system keeps designs consistent across all screens in the app. It gives a clear visual hierarchy so users are able to easily scan app screens in the user interface. The human eye loves this as it reduces cognitive load. The consistency also reaffirms branding and creates a robust visual identity in the app.

8 Point grid

4 columns - 16 px gutter

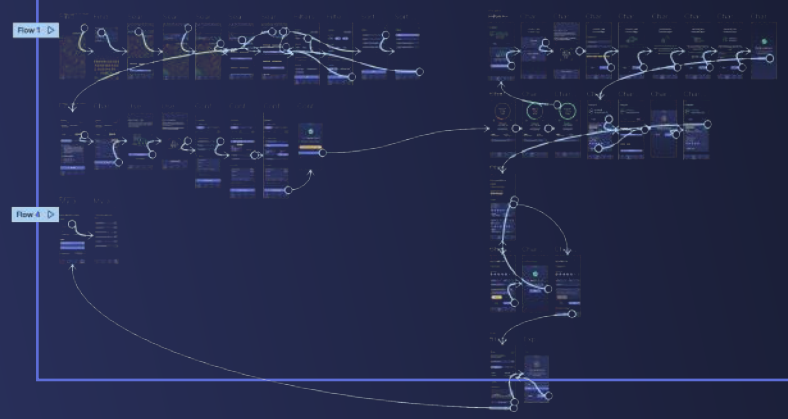
Final version

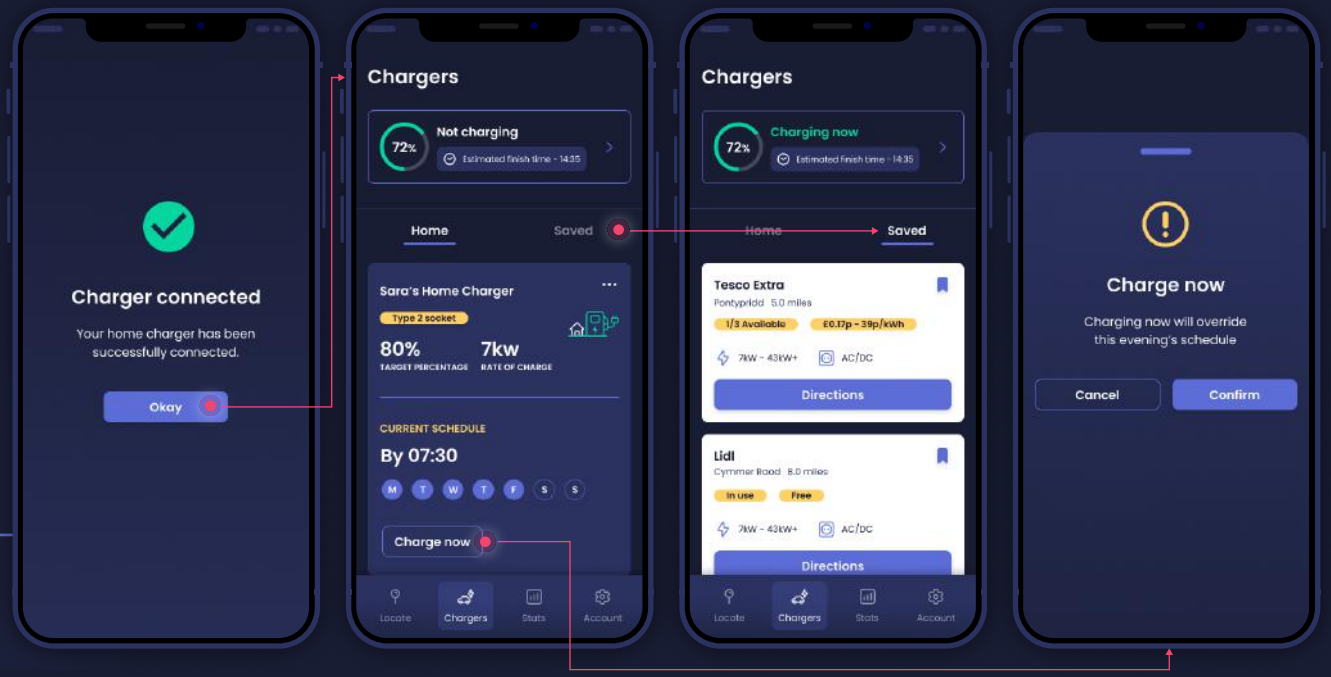
At this stage, we were happy with the design of the product. Marrying the complete user experience with an intuitive user interface, you could say the app was done - for now. In the next stage, we would complete a development handover providing a style guide and design details for a software engineering team.

Click through to see a prototype demo of our final designs to show the flow of the app including the micro-interactions which bring the app to life and communicate the status of each action.

Walkthrough our prototype

View prototype





Summary

99%... Complete. Easy, right?

Setting aside us flexing our design capabilities, we hope this was insightful!

Design can be daunting when there's so much to consider. You want to provide as much value as possible to your users, but how can you be sure it will pay off? That's where KOMODO comes in.

For over 18 years we've been researching, designing and building exceptional digital products. We've refined our **product mentality** through experience across a wide range of industries and disciplines for both private and public sector organisations.

By working with us, you'll benefit from our collaborative approach and original thinking. While delivery is the end goal, the processes woven throughout a project is what really makes your product exceptional. To establish your product's purpose we ask the right questions to understand your users and leverage our external perspective. The products we build are borne out of creative problem-solving and not just a string of working parts.

The processes detailed in this workbook is what deliver real ROI. Working across web and mobile, you can be confident that our approach covers all the bases; to ensure you hit your business objectives and deliver exceptional digital products.

KOMODO

Let’s have a chat!

Got a project in mind? Get in touch with KOMODO now.

Give us a call

0191 228 6555

Drop us an email

hello@komododigital.co.uk

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