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# Brief Summary

Real estate transaction costs are high and often require the assistance of the real estate brokerage industry. Studies have shown that the marketing strategies of real estate agents can influence market outcomes(Allen, Cadena, Rutherford & Rutherford, 2015). With the progress of technology and the renewal of the demand for housing and renting of individuals, virtual tourism has been promoted by more and more real estate dealers. There is a positive correlation between virtual tourism strategy and housing price (Allen, Cadena, Rutherford & Rutherford, 2015). While virtual tourism can help real estate marketing, it can also provide more options for potential customers who have the demand of renting and buying houses . The new model of house viewing breaks the restrictions of the traditional model of house viewing, making it more flexible and efficient.

Based on previous user research, we have briefly summarized two main audiences for virtual tour which is international students who can not inspect the property in person and people who is busy with work and want to find a more flexible way to inspect the house. In the meanwhile, we deifined two main events which will affect the inspection process and experience. First is how to book the inspection and secondly, how to inspect is also of great importance to explore through design.

**We listed the following situations by researching the main frustrations, needs and goals of our audience groups and use these to design our functions.**

## For mobile device

### Situations

- This is my first time using the virtual tour function
- What should I do when the inspection time provided by agency don't suits my schedule ?
- How can I check the inspection detail without memorize it

### Design solutions

Detailed function introduction and intuitive booking entrance.

Provide Request another time function to submit an enquiry for other inspection time.

Provide an in-app calender included all the booking information and also keep the add to IOS calender to give user more notification.

## For PC device

### Situations

- user do not have time to inspect a house, so that they choose to do an online inspection
- user groups usually have 2-3 occupants; they need to make a decision together and share house details and their comments with each other.

### Design solutions

there are four main functions

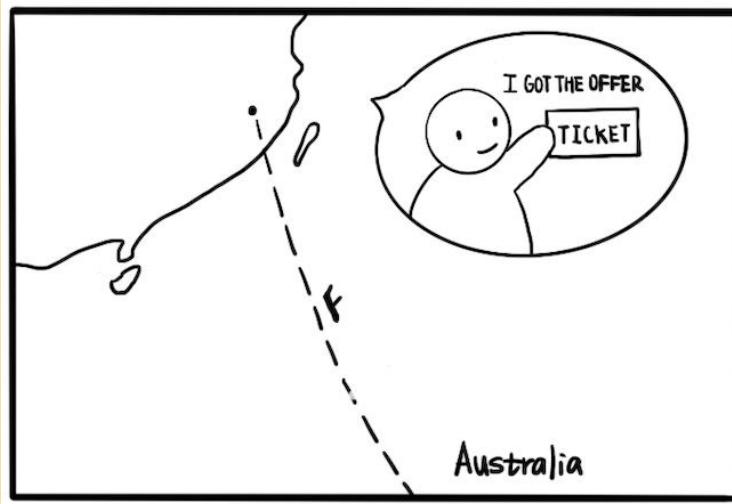
1. Explore rooms
2. take pictures
3. generate posters
4. share with your friends

# How The Design Addresss The Porblem- Persona Based Storyboard

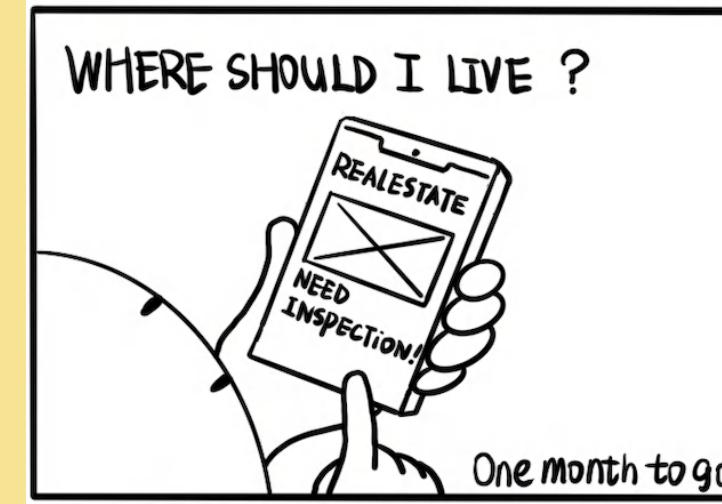
## BRIEF SUMMARY

### How to select and book a time for online virtual tour

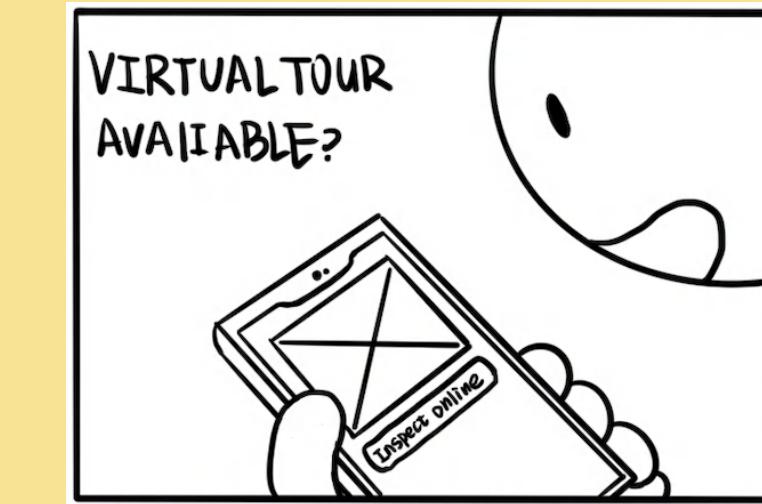
#### Scenrio 1 : Booking A Time For Online Vitural Tour



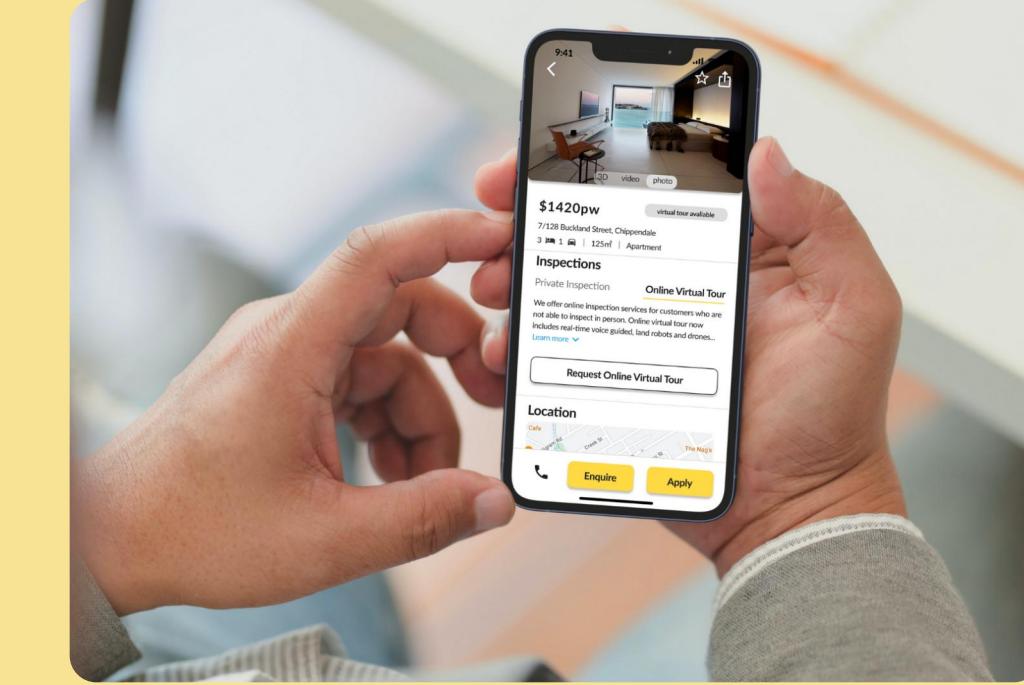
Rory is a student from China and he recently got an offer from USYD. He really looking forward to go to USYD for study and start a new life in Australia where he never been to before.



He need to find a place to live but when he check the realestate app, he found that many of the agencies asked for personal inspections which made rory very excited. He tried to book several online virtual tour based on the time options they gave to him and he finally successfully rent an apartment.



He then found an app called Niamod and they offer online inspections which made rory very excited. He tried to book several online virtual tour based on the time options they gave to him and he finally successfully rent an apartment.



Booking time for online virtual tour

Online inspetcions provides more options for people who cannot see houses on the spot. Book a suitable house viewing time, and user can view the real situation and details of houses remotely which is convenient, fast and efficient.

#### Scenrio2: Booking Another Time For Online Vitural Tour



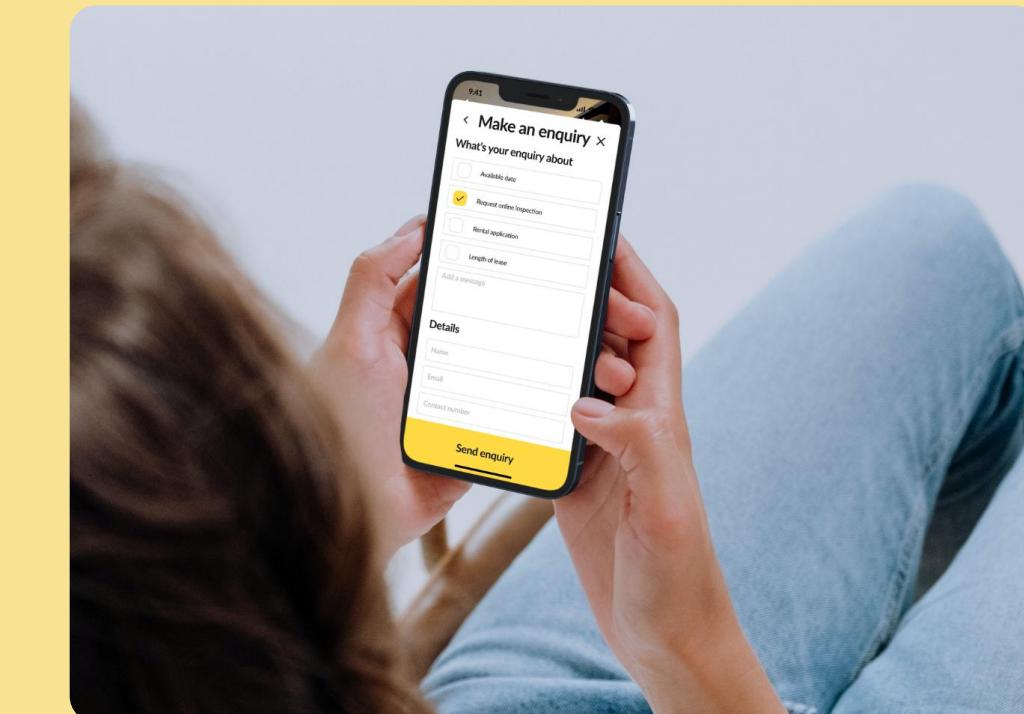
Ruby was an international student but now she graudated and start working at Sydney. Recently, her rental contract is about to expire and she need to find a new apartment.



However, she is really busy with work and can not find an appropriate time to visit the house by herself. She start to consider the online virtual tour.



She found that Niamod offer many virtual tour options. Although she can not inspect the property on weekdays, she still got the option to request another time. Finally she rent a new house successfully.



Request another time

Request another time provide more inspection time options for user, even if the user can't inspect the house in the time period provided by the agency, they can choose their own time through negotiation which let booking online virtual tour become more flexible.

# Common Design Styler

## Colors



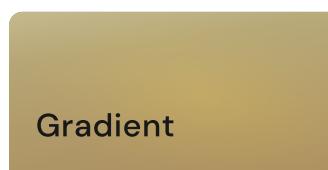
**Primary Color**

Button



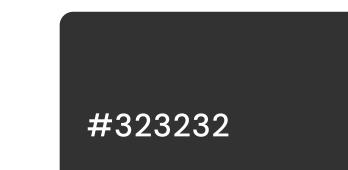
**Grey 400**

time picker



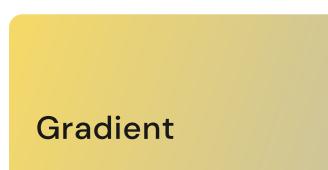
**Secondary Gradient 1**

Web Card background



**Grey 500**

icon



**Secondary Gradient 2**

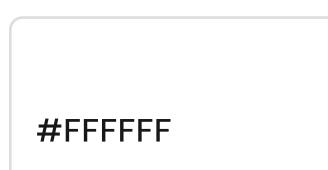
Mobile Card background



**Primary Color Light**

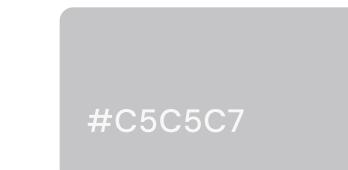


**Text  
Footnote Blue**

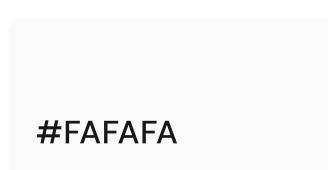


**White 100**

background

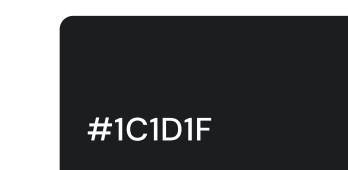


**Text  
Footnote Grey**



**White 200**

card background



**Text  
Paragraph**

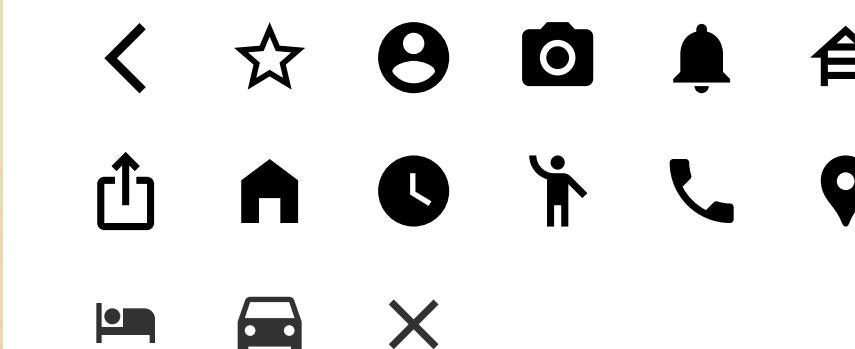


**White 300**

border

## Icon

32\*32



All icons could be find appendix

## Spacing

8 px



18 px



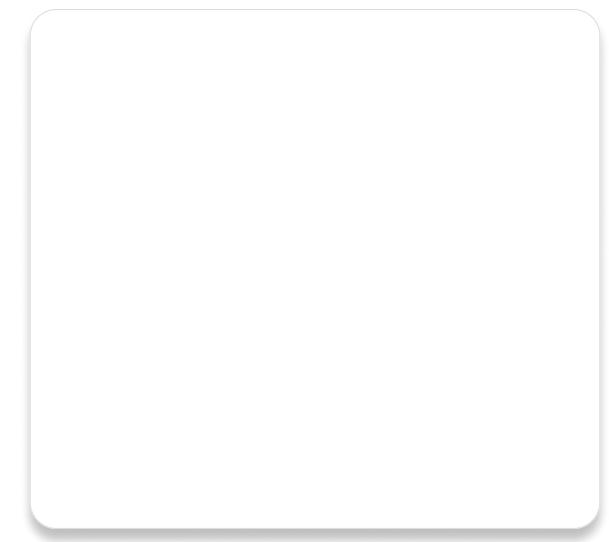
24 px



## Divider

1 px/center/White 300

## Shadow&Radius&boarder



shadow:  
X:0,Y:0,Blur:4,Sprea  
d:0 color: #000,25



stroker:  
0.4px, inside, #DDD

## Button



Button



Button



Button



Button

# Mobile Native Individual Design System

## DESIGN SYSTEM

### Typography

**Lato Bold 32**

Prime Title

**Lato Bold 24**

Second Title

**Lato Bold 18**

Normal Button Font

Lato Regular 18

Subtitle

Lato Regular 14

Paragraph

**Lato Bold 12**

Small Button Font

### Type Pairings

**Prime Title**

paragraph

24 Px

**Second Title**

paragraph

24 Px

### Design Components

#### Checkbox

Available date

Request online inspection

#### Input form

#### What's your enquiry about

Available date

Request online inspection

Rental application

Length of lease

Add a message

#### Search bar

City ▾

Search

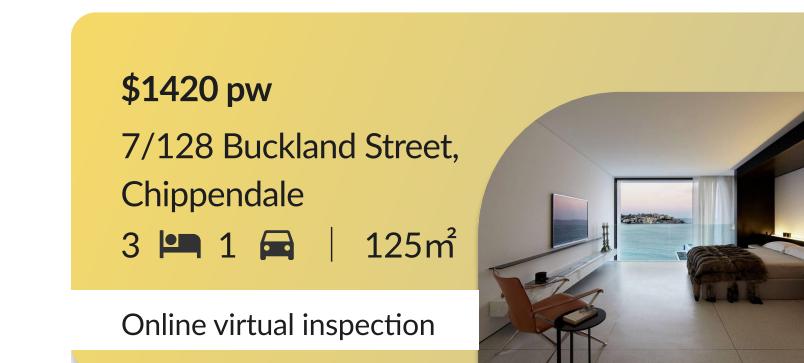
#### Tab Bar



#### Button Group



#### Inspection Time Card

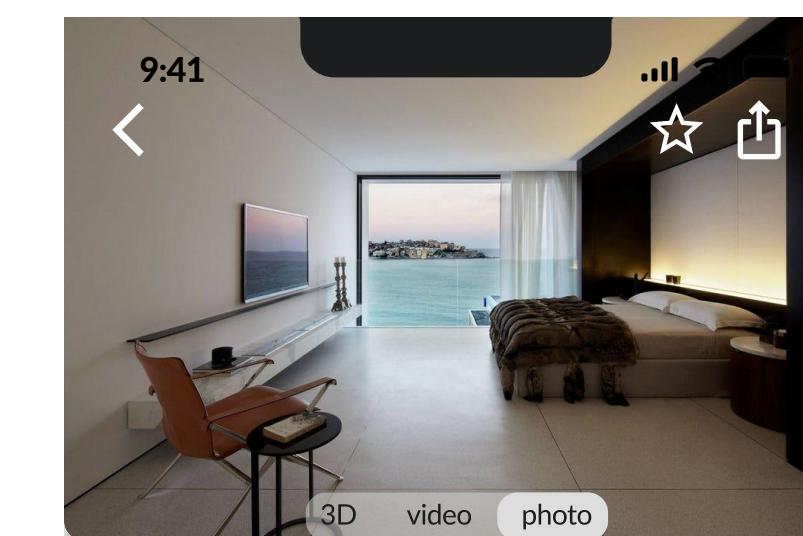


#### Present Card



\$ 2350 pw  
12/138 Buckland Street,  
Chippendale  
4 2 | 125m<sup>2</sup>

#### Carousel



#### Date Picker



#### Inspection Time Picker

##### Select a time

Oct 2022

SUN MON TUE WED THU FRI SAT

< 6 7 8 9 10 11 12

2:00 pm - 2:30 pm

2:30 pm - 3:00 pm

# Destop Individual Design System

## Typography

### Font Style

**Lato Bold 32**

Prime Title

**Lato Bold 28**

Second Title

**Lato Italic Bold 20**

Text Button

**Lato Bold 18**

Normal Button Font

Lato Regular 16

Subtitle

Lato Regular 14

Paragraph

Lato regular12

Small Button Font

### Type Pairings

#### Prime Title

subtitle

24 Px

#### Second Title

paragraph

18 Px

## Design Components

### Checkbox

- the agent connect information
- the price of the house

### Input Form

#### What Are Your Recommand Reseasons?

- the agent connect information
- the price of the house
- the details of the house
- the websites of the states

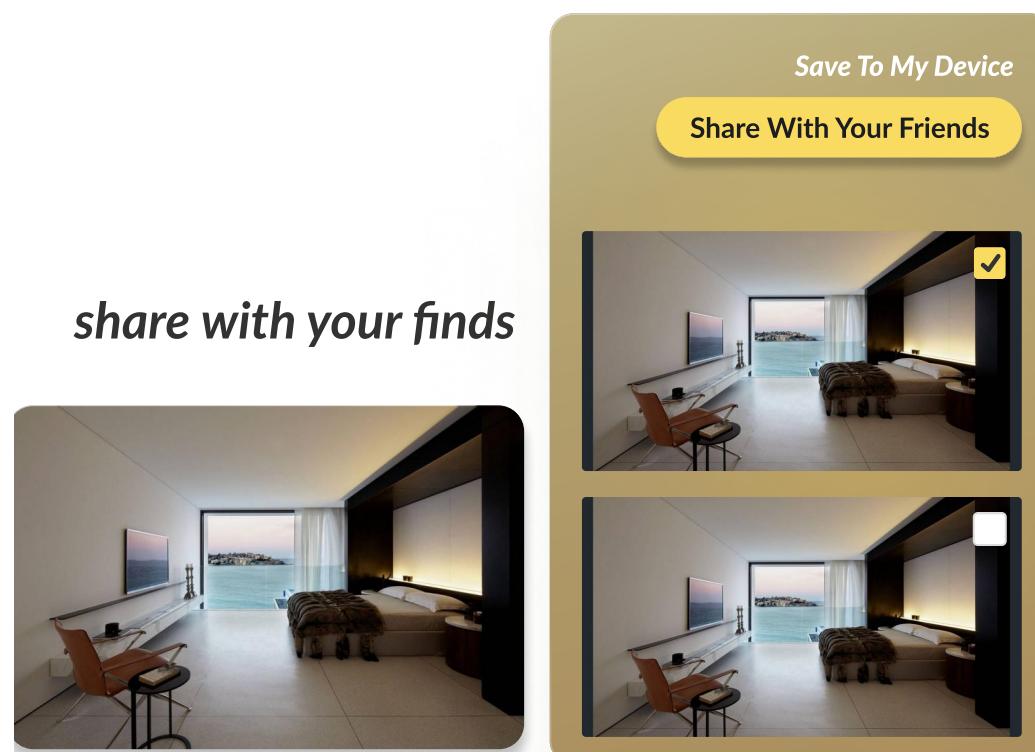
#### What Are Your Recommand Reseasons?

APPLY

### Dropdown Navigation

Living room ▾

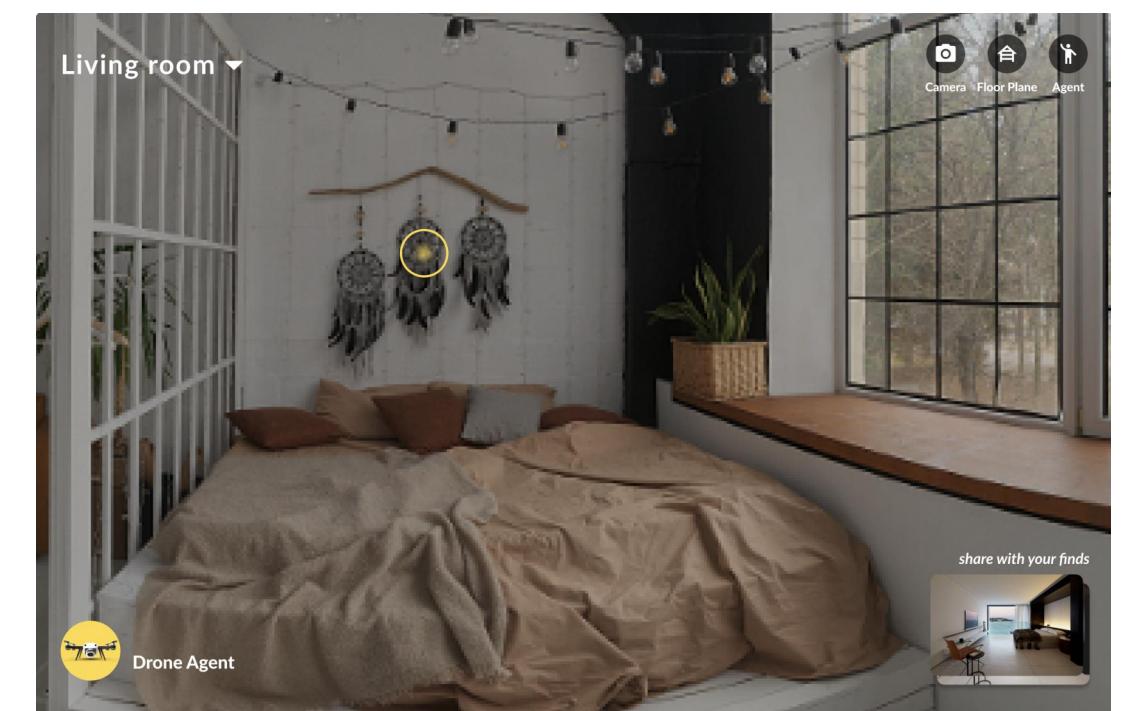
### Photo Collector



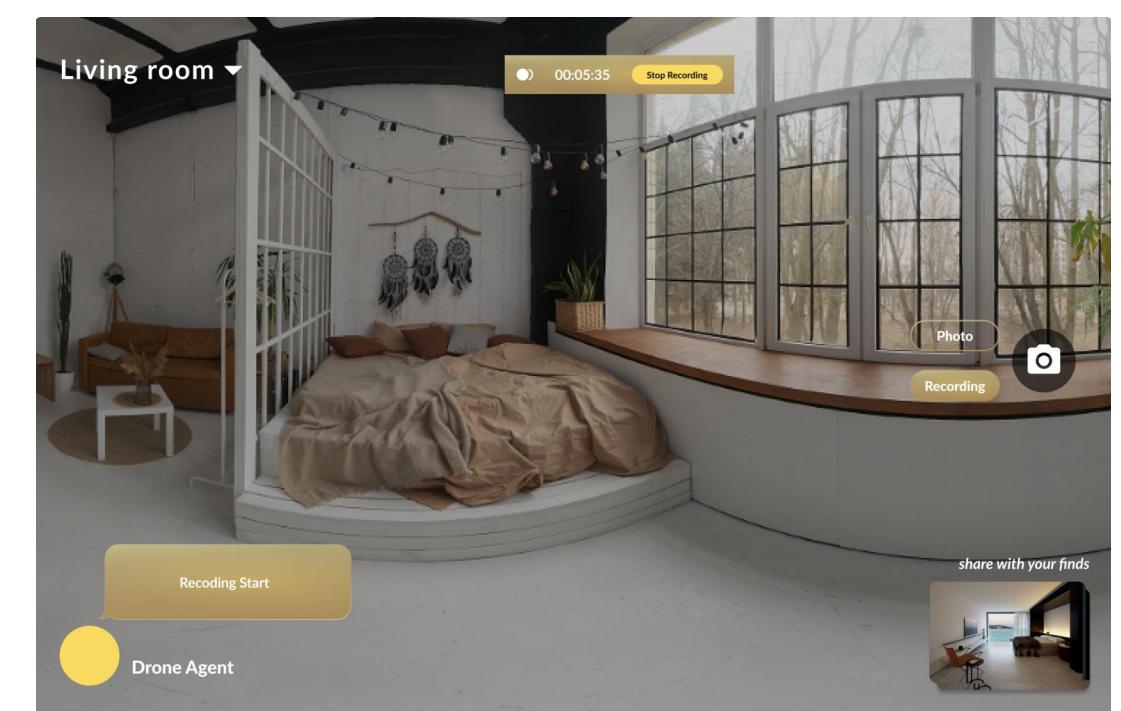
### Bubble



### 3D Scence Movement Design Pattern



### Camera Shooting Design Pattern



# User Testing For Mobile Interface Round 1

## USER TESTING

The first round of user testing applied the think-a-loud method based on digital workflow. Three participants were invited to complete two different tasks (select a time for online inspection & enquiry another time for online inspection) by describing the use process through looking at the digital workflow and giving feedback on the usability.

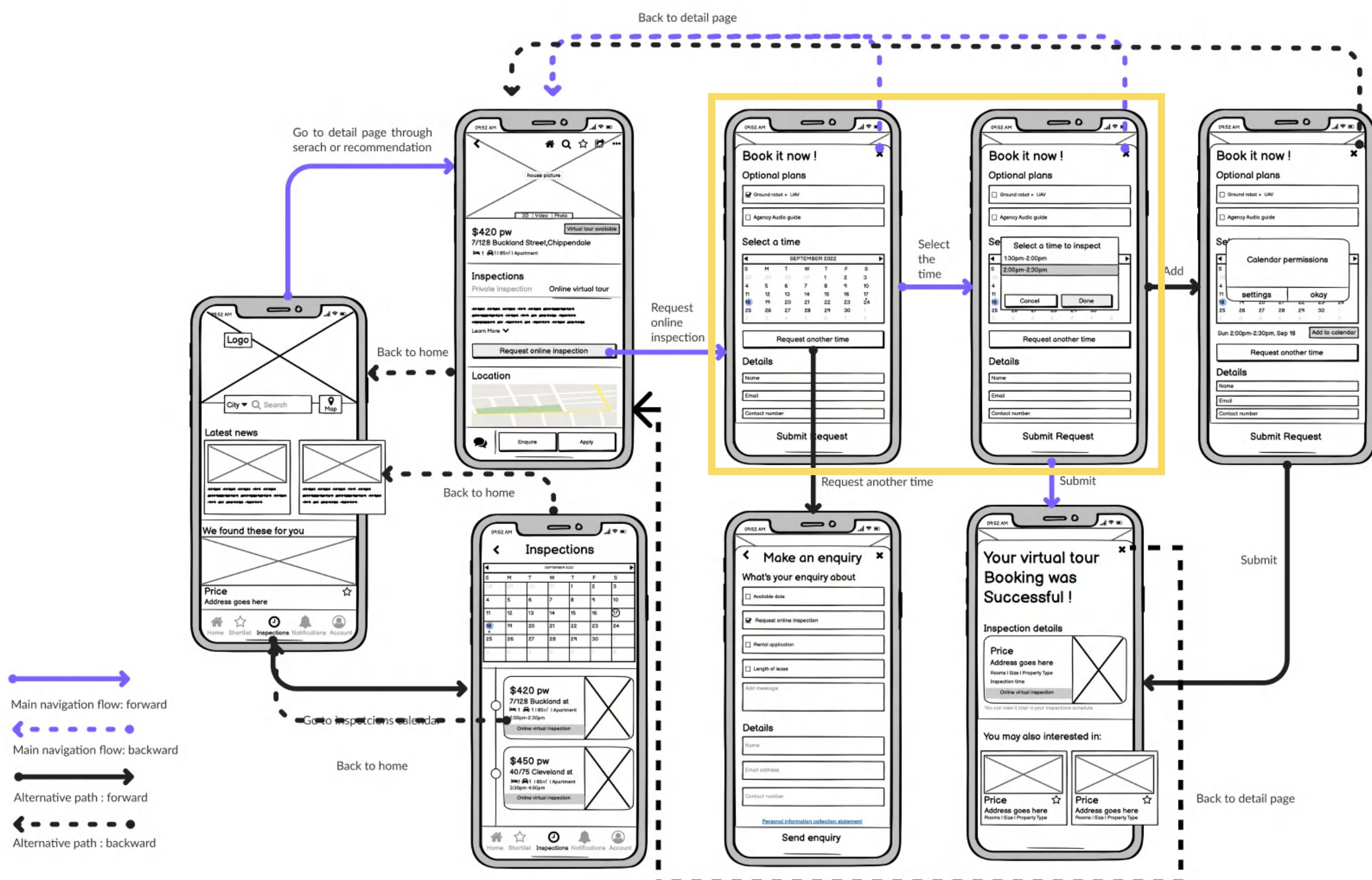


Figure . Wireframe Workflow From A2

## Think A Loud Feedback

### Positive findings

- The interface is clear and easy to understand
- The main function is clear to navigate and can easily go back to the previous level
- The in-app inspection calendar is convenient to check all the booking information
- It is good to give user feedback when they successfully booked an inspection

### Problems to be solved

- the touch area of each selection is too small when select a time
- The process is somewhat complicated when select a time
- The home page icon that appears on the details page is small and seemingly unnecessary
- The enquiry and enquire another time seems a little confused since they can do the same thing

# Main Function To Be Improved After User Test

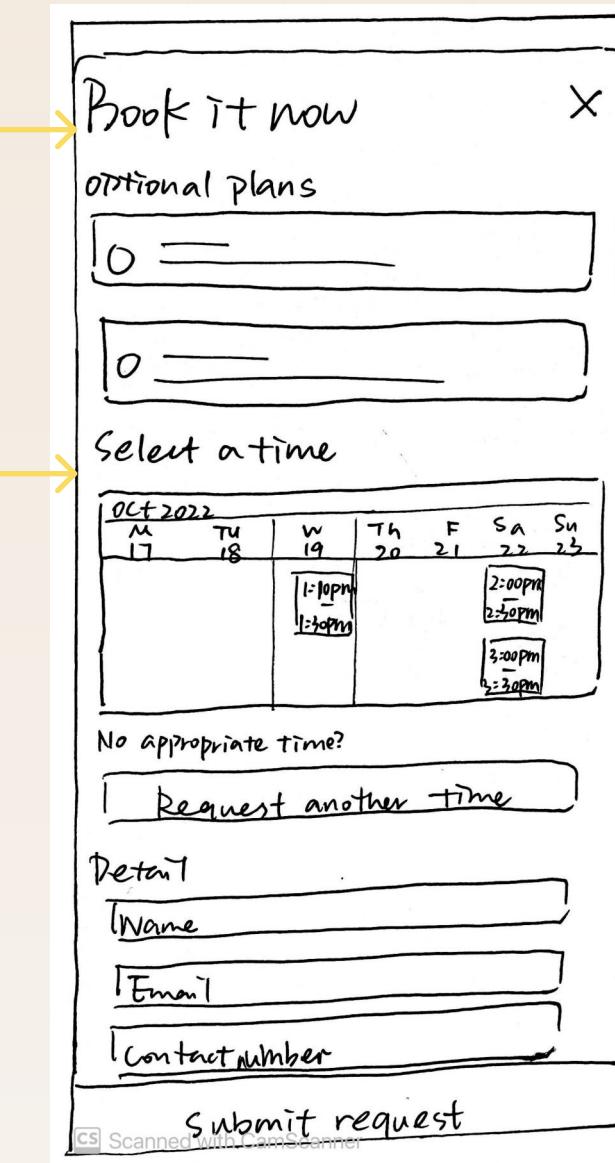
## INTERACTION 1

### Previous Versions Of Select A Time (From A2)

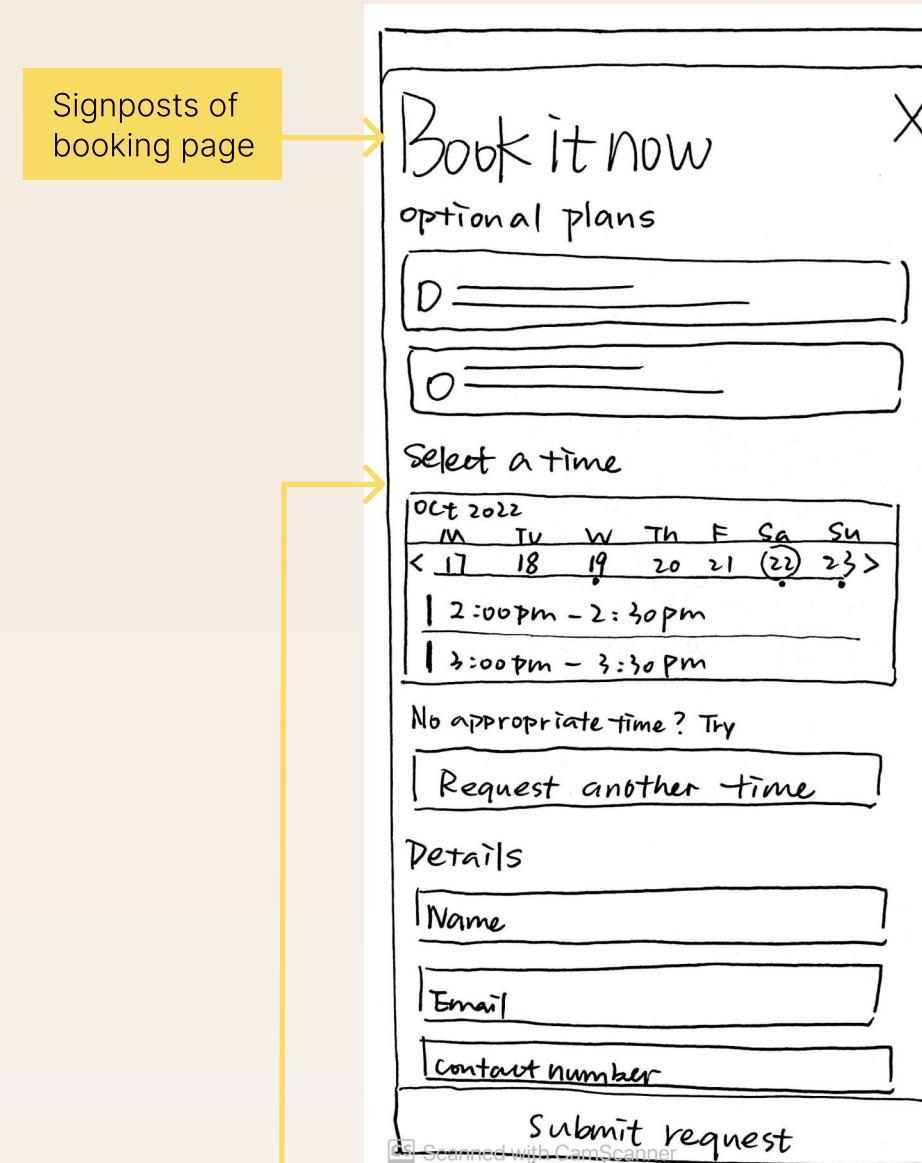


### Wireframe Sketches

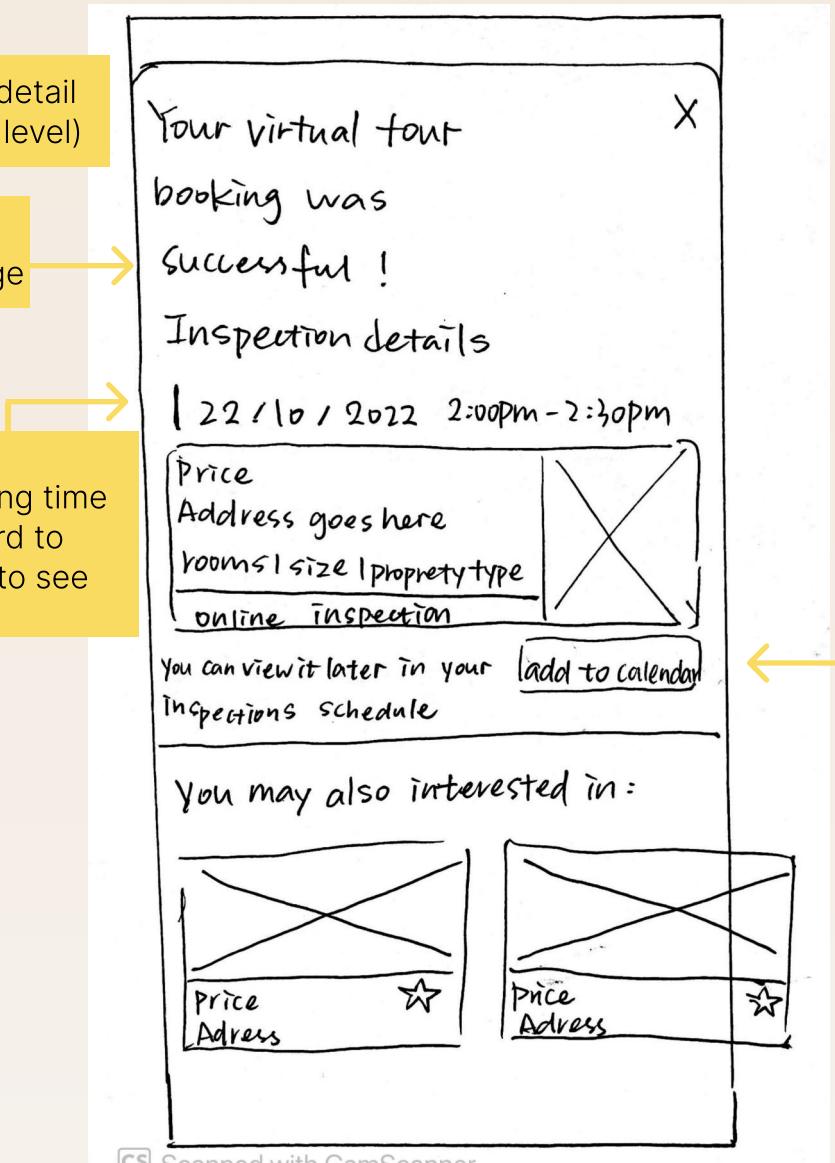
Booking Page IDEA1



Booking Page IDEA2



Booking Successful Page



### Aims

- Simplify the selection process
- Expand the selection area to facilitate users to choose more accurately

Reduce a month's calendar to one week, and make available time to be options under available dates

Reduce a month's calendar to one week, and listed available time under the dates and make it available to slide down to see more time

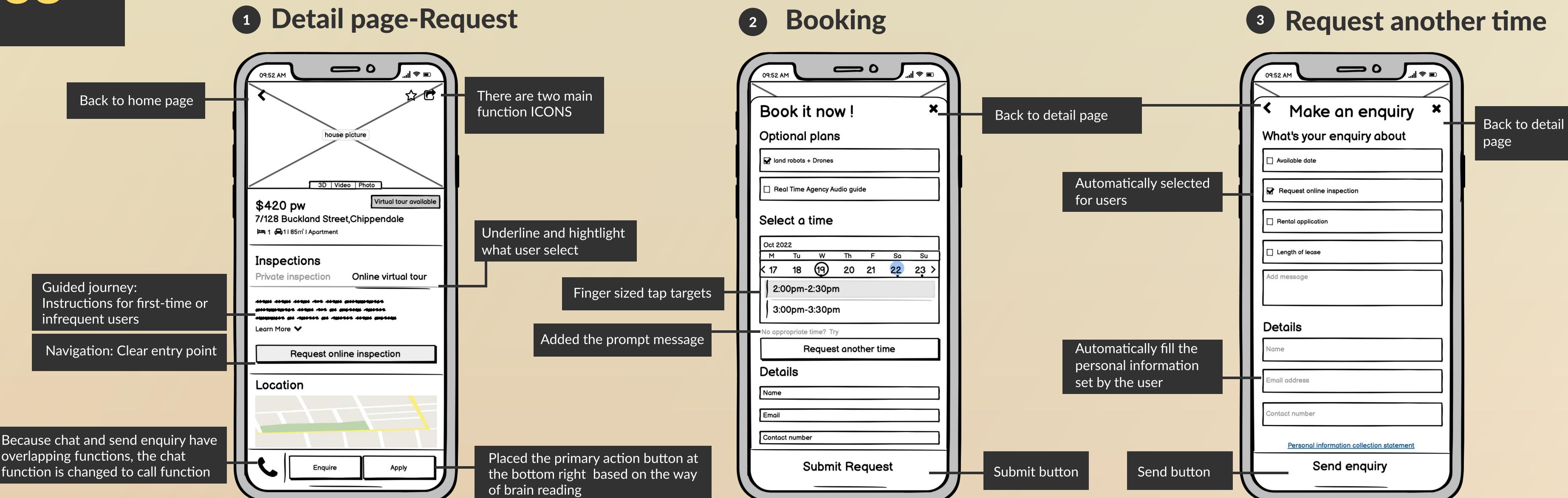
Transfer the add to calendar function to successful page, prevents the trouble caused by the user changing their mind halfway through the reservation time

# Digital Wireframes

## INTERACTION1

### Major changes

- Remove unnecessary ICONS (navigations) from the details page
- Apply IDEA2 to the select a time function
- Simplify the time selecting process
- Remove add to IOS calender to the successful page
- Built-in calendar adds a timeline of events
- Added prompt message to guide user operations



# High Fidelity Model

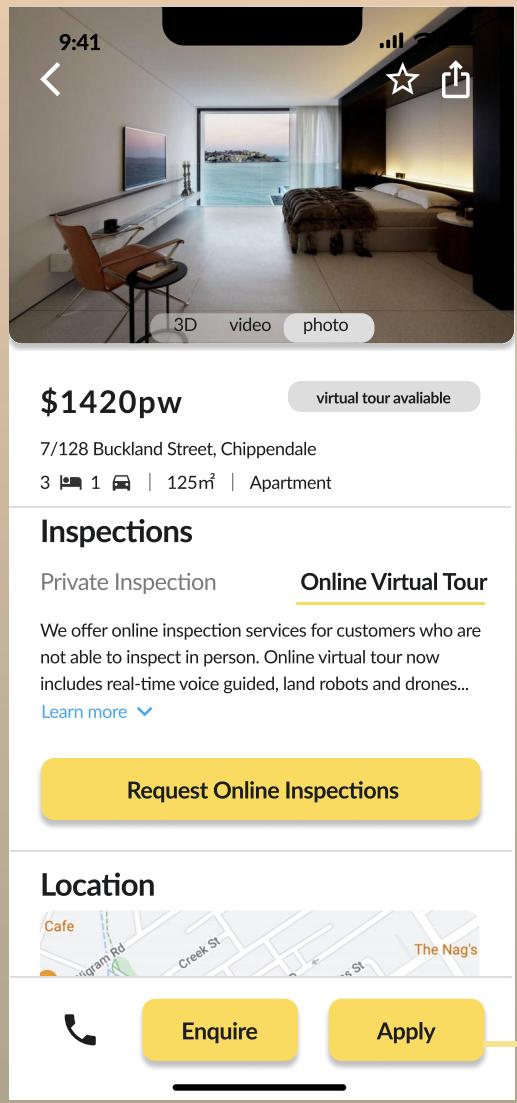
## The color selection

Yellow represents brilliance, wealth and brightness, warmth, is a hopeful color, realestate app want to send users good expectations to move into a new house and open a new life, so we choose yellow as our main color

## Design pattern related to cognitive and behaviour

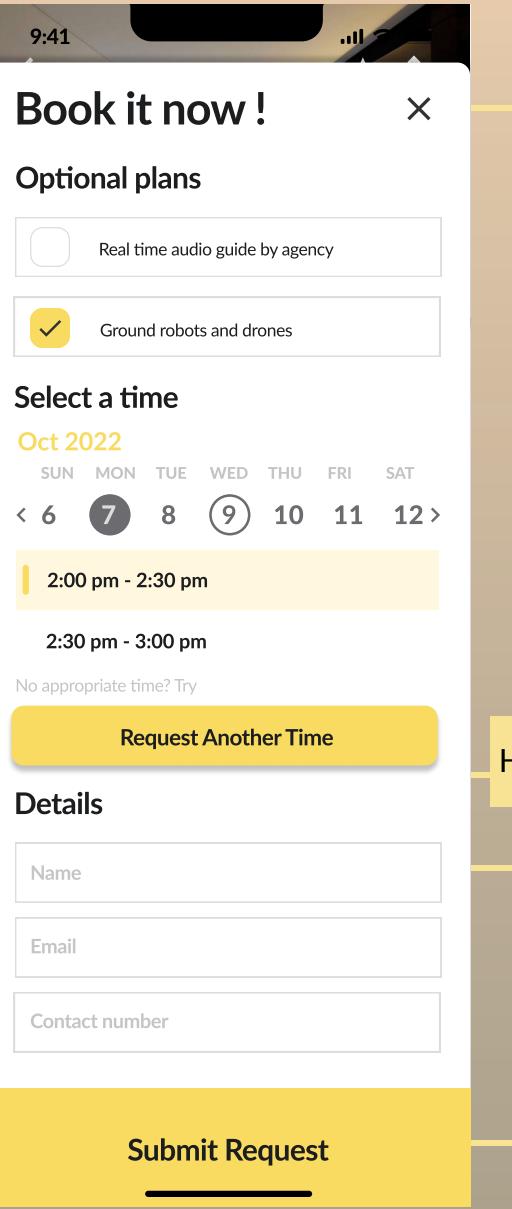
Several design pattern was applied to achieve a more human-centered design such as spatial memory, safe exploration, instant gratification, streamlined repetition, changes in midstream and prospective memory design.

### 1 Detail page-Request



Applied Spatial Memory design pattern and make the main button at the end of the screen to attract user attention

### 2 Booking



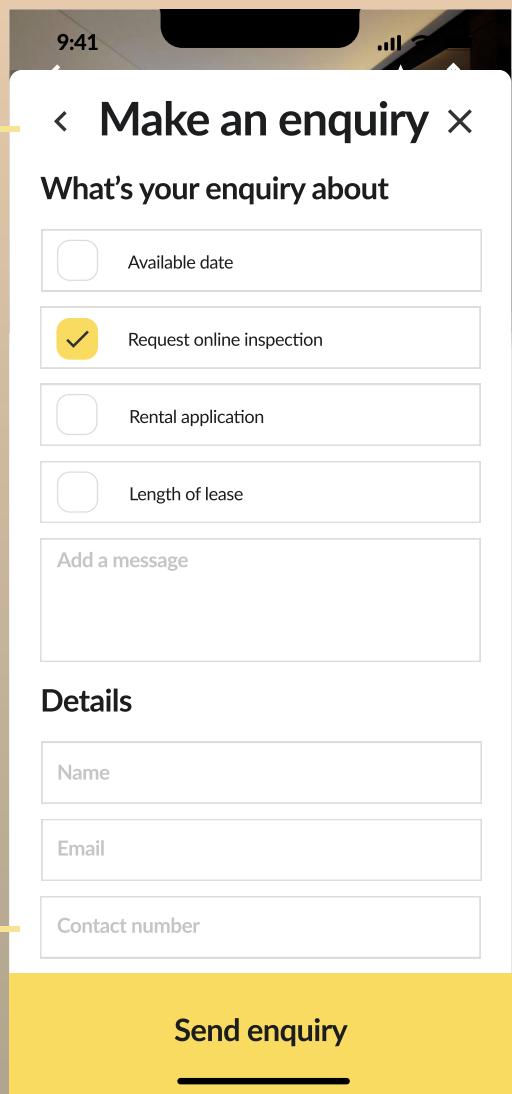
Applied safe exploration design pattern which user can always go back to the previous page and give user more control and freedom when switching between pages.

Highlight Request another time button

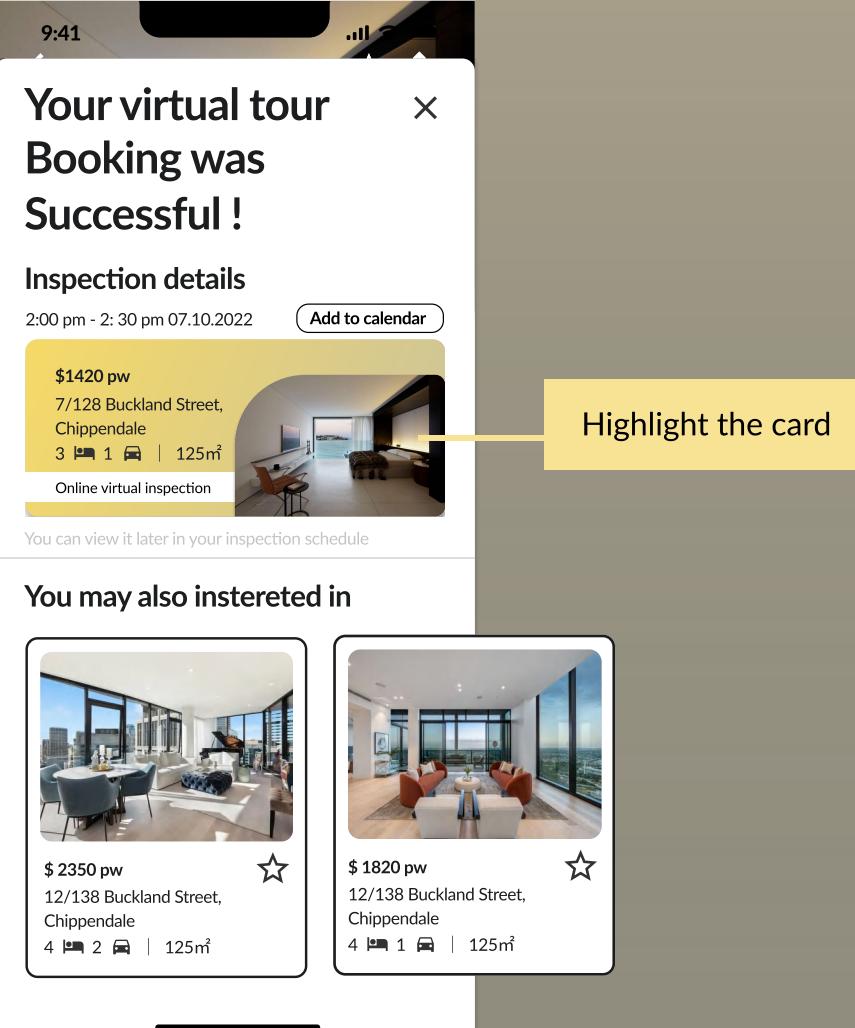
Applied instant gratification &streamlined repetition design patterns here which automatically fill in the details user set before to let the user do this task effectively

Highlight Submit Request

### 3 Request another time

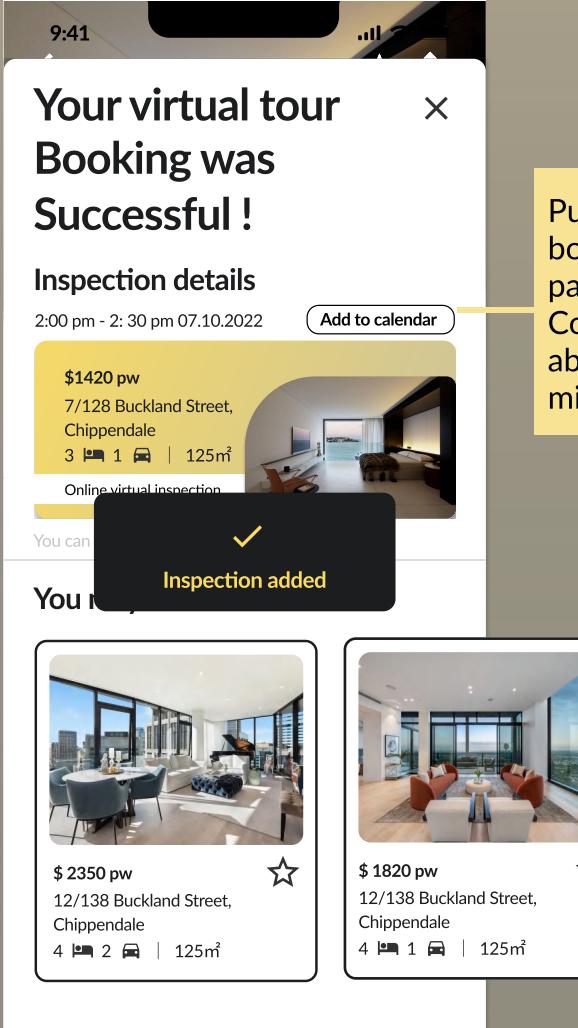


### 4 Successful



Highlight the card

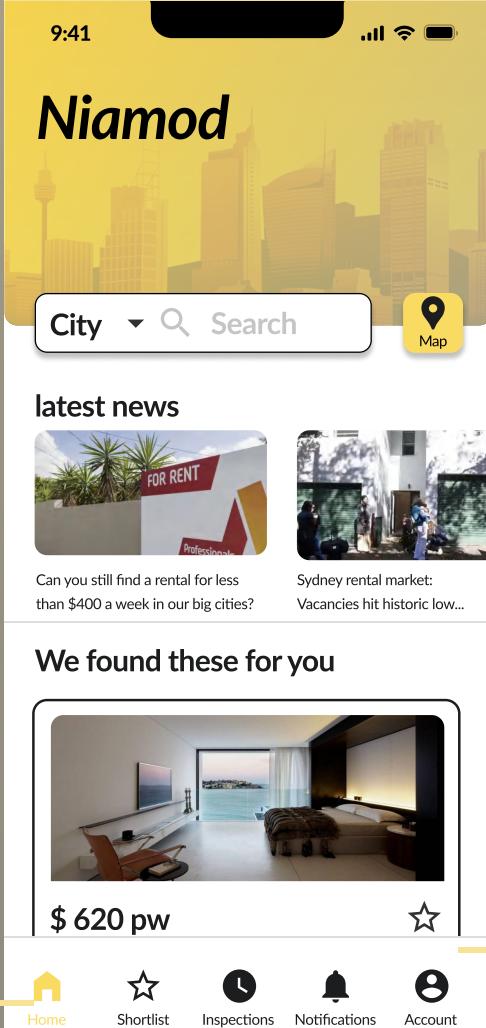
### 5 Add to IOS calendar



Put add to calendar at the end of booking process applied the design pattern of "Changes in Midstream". Compared to before, users will not be able to change their minds and mistakenly add time to the calendar

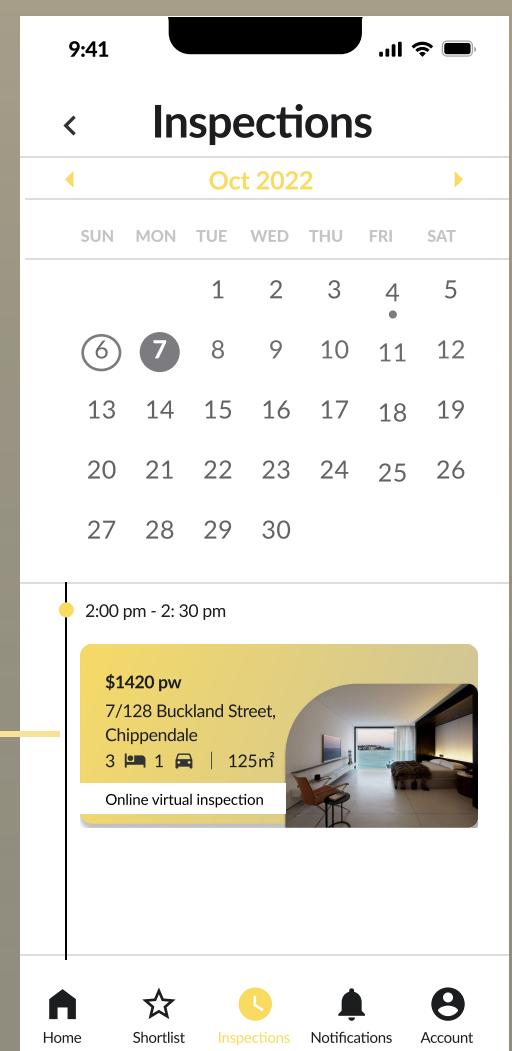
Highlight when selected

### 6 Home page



Apply prospective memory design pattern here which the in-app calendar could become a memory aid to help people recall their booking infomation in a time line.

### 7 In app calender



# Usability Testing For Mobile Interface Round 2

We did a heuristic evaluation of our interface design based on both digital workflow and interactive live prototypes. Four participants were invited to do the user test and we mainly applied the empirical usability inspection method to help the team seek potential improvements from user feedback and refine the final concept.

## Heuristic - Select an inspection time

Heuristic	Notes	Severity
Visibility of system states	1. The success page is not obvious after the reservation is successful 2. There is no prompt when successful submit enquiry	3- medium
Flexibility & efficiency of use	1. I wanna click the information card when i successfully booked the inspection	1- low
Aesthetic and minimal Design	1. Some of the tip text's color is too light which make the text hard to notice 2. successful page is a little cluttered with content	3- medium
Error prevention	1. I accidentally pressed the request another time button when I select a time	5- high
User control and freedom	1. The 3D, photo and video button is very close to each other 2. When enter booking page, I can only go back to detail page first then go back to home page	1- low
Match between system and the real world	No comment	
Consistency and standards	1. the online virtual tour sometimes also called online inspections	1- low
Recognition over recall	No comment	
Help user recognise, diagnose and recover from errors	No comment	
Help and documentation	1. same as the problem with aesthetic design which the hint is not so obvious	1- low

## Positive findings

- The time selection area is expanded to prevent the occurrence of false selection
- The color of the interface is quite simple and bright
- Add to IOS calendar function at the end effective solve the problem when user change their mind and do not want to continue the booking but already added to the calendar.

## Problems to be solved

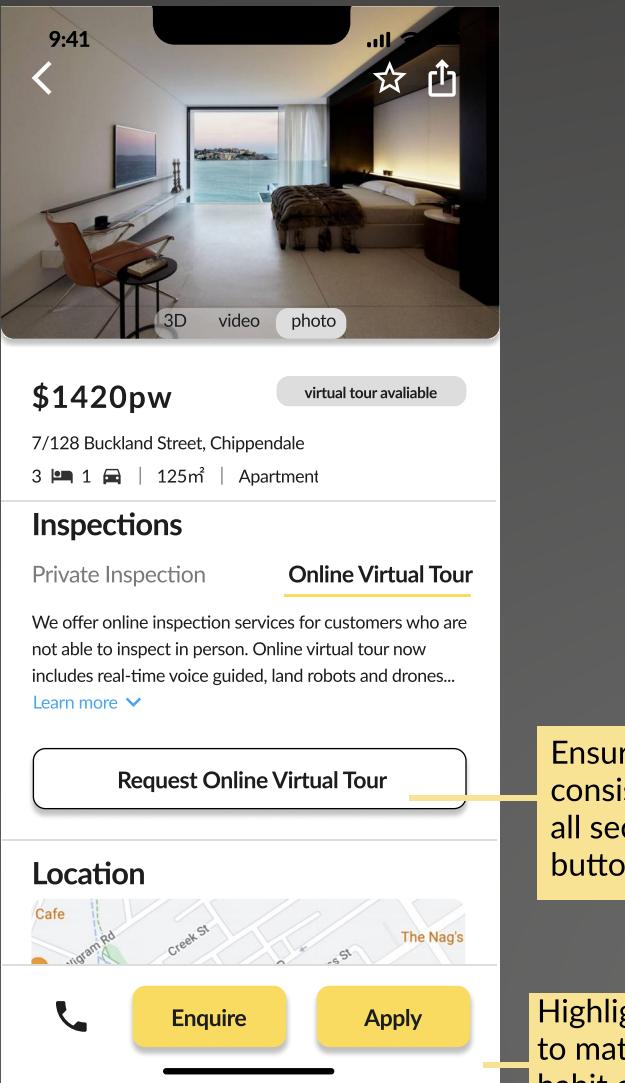
- It is better to have less than one primary action button on the screen at a time
- Visually differentiate Primary and Secondary actions
- When require another time, although the previous design did not want to mislead the user into thinking they had successfully booked a new time, the team can still consider to have a notification for successfully sending the required message

# High Fidelity Model

## Major changes

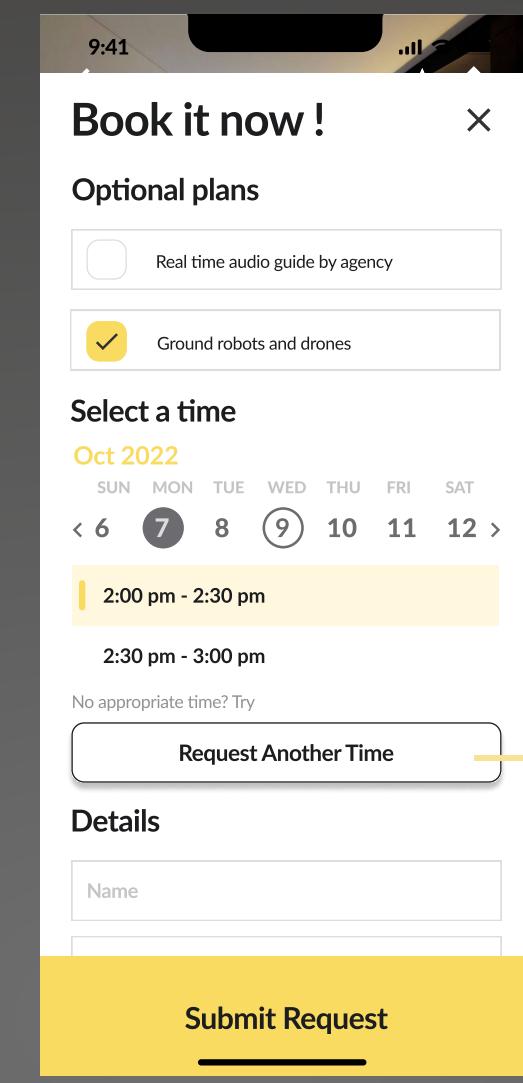
- The hierarchical relationship of time booking page is replanned, Simplification the color of the request another time button to set it as optional event.
- feedback message was added when sent enquiry
- The stroke of the recommendation card is removed to make the whole interface look cleaner
- The success screen has added more obvious prompts
- Highlight the add to calender button to make it more clear to see

### 1 Detail page-Request



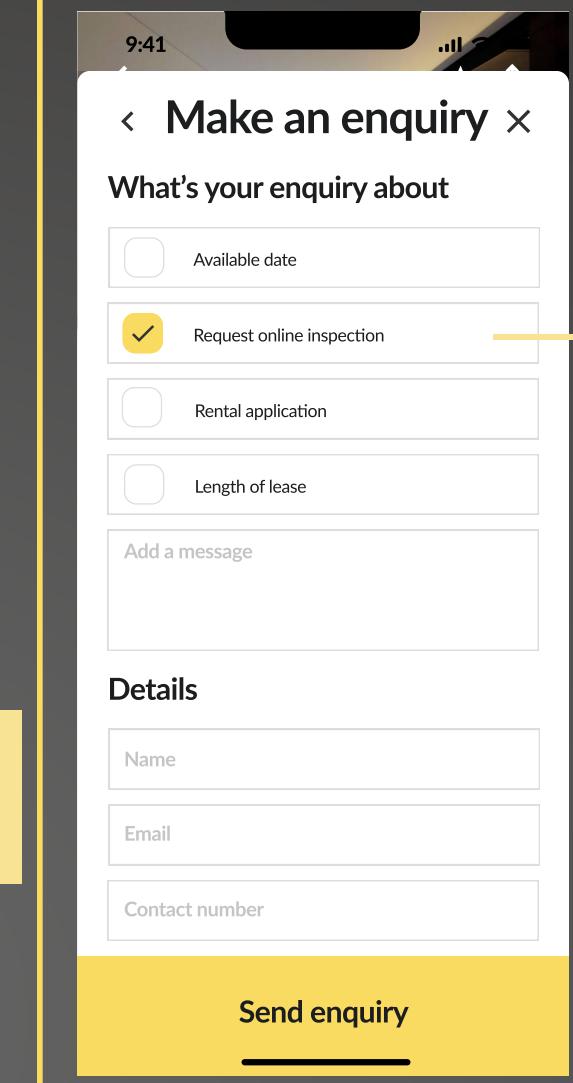
Ensure design consistency and make all secondary action buttons white  
Highlight the main button to match the reading habit of people

### 2 Booking



define require another time as a secondary action and change the button color to white

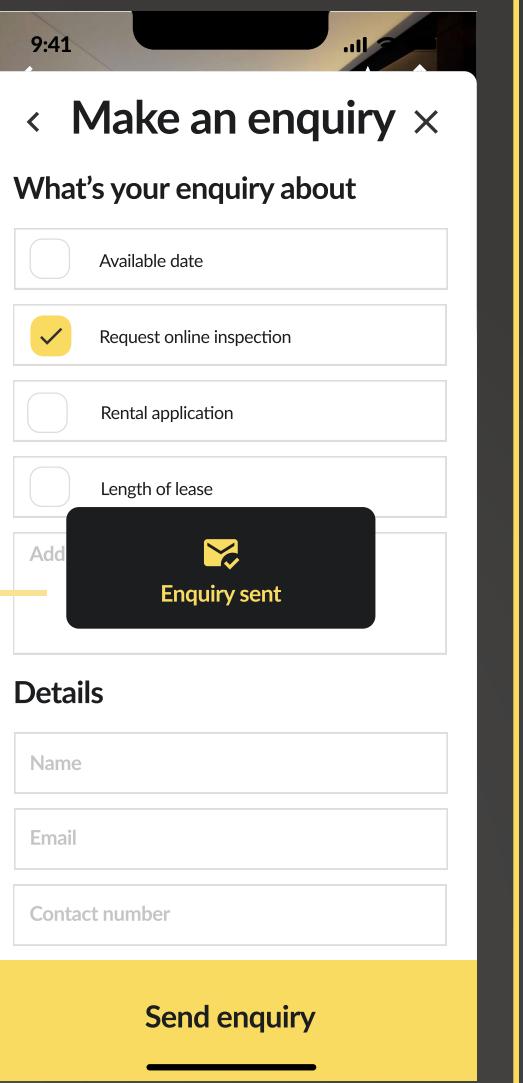
### 3 Request another time



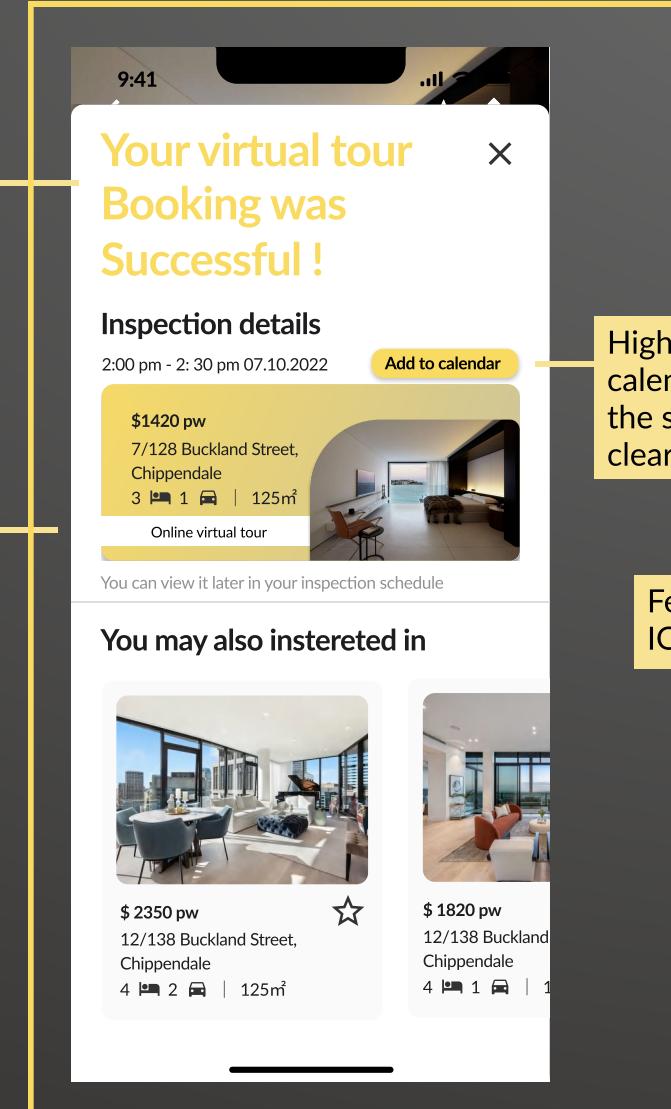
Different from enquire function in the detail page, the system will help users automatically select

Add feedback when user successful send enquiry

This page will automatically close when successful sent enquiry



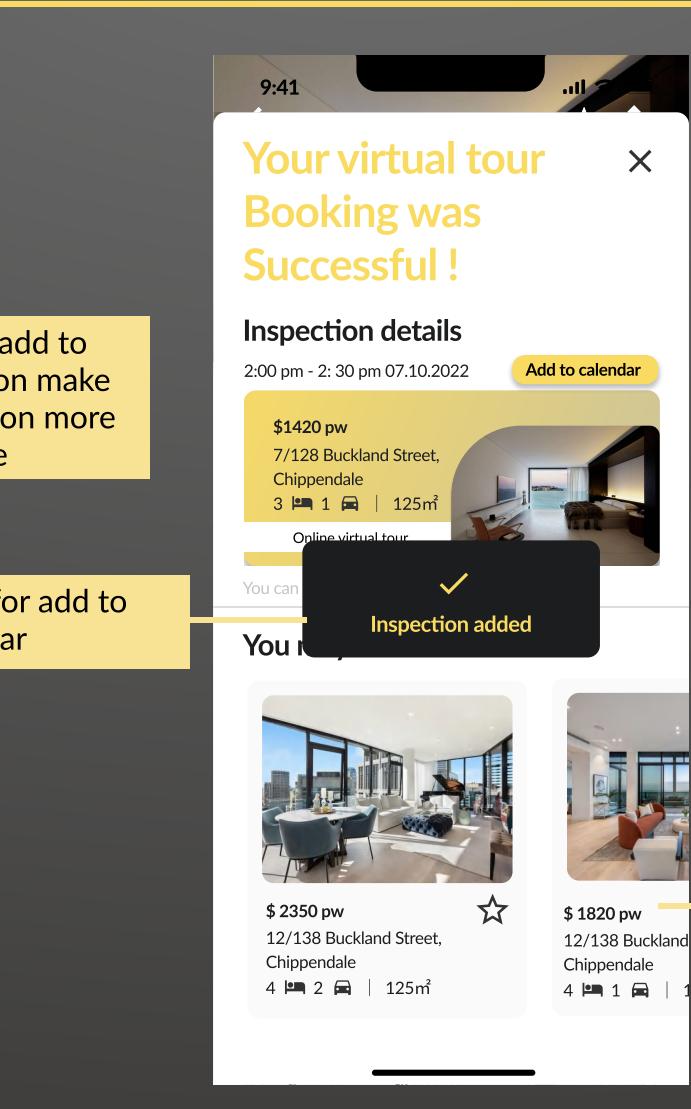
### 4 Successful



Highlight the color of the successful feedback to make it seems bright and happy

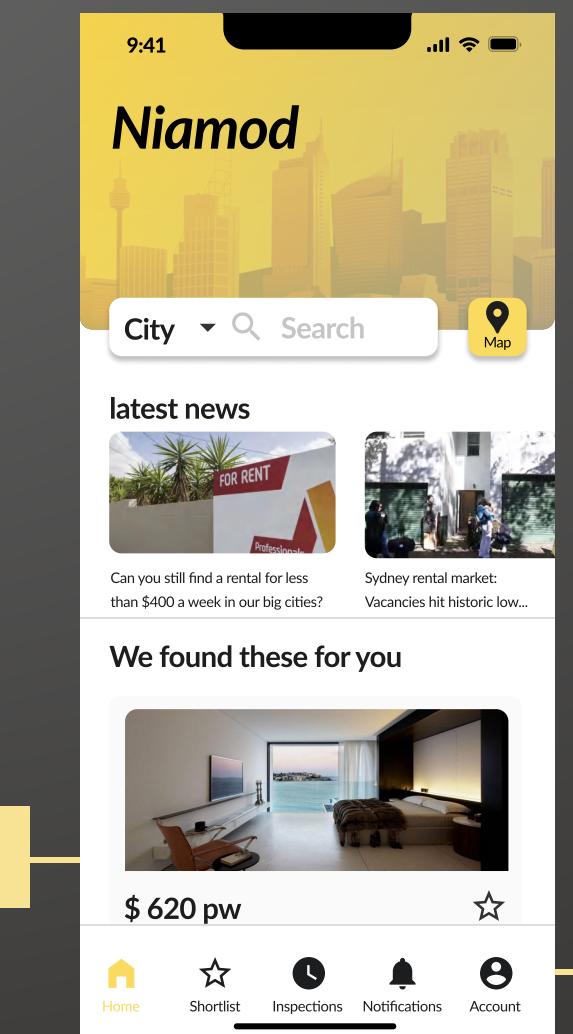
Change online inspections to online virtual tour in consideration of consistancy

### 5 Add to IOS calendar



Feedback for add to IOS calendar

### 6 Home page



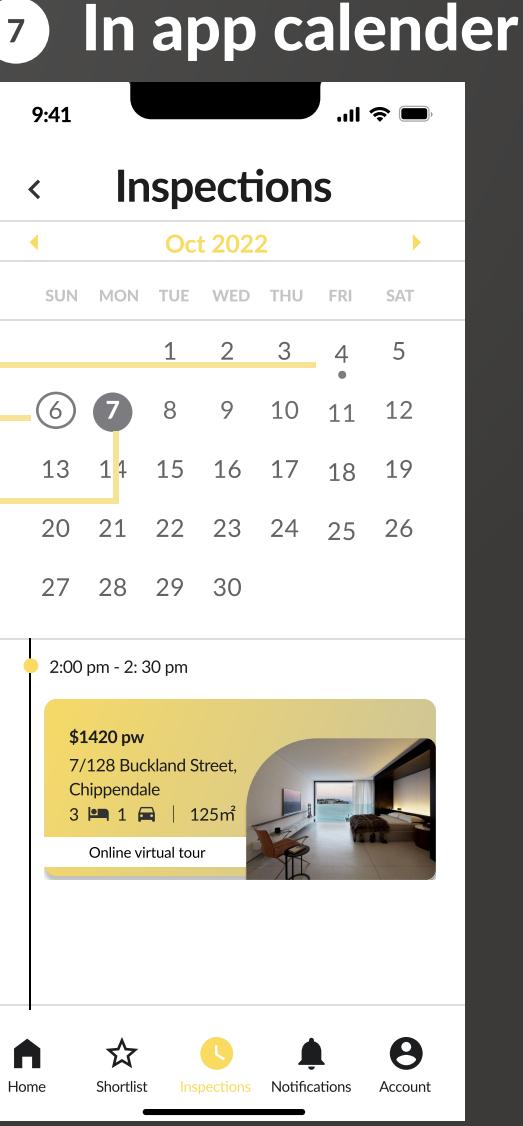
Current date

Date have inspections

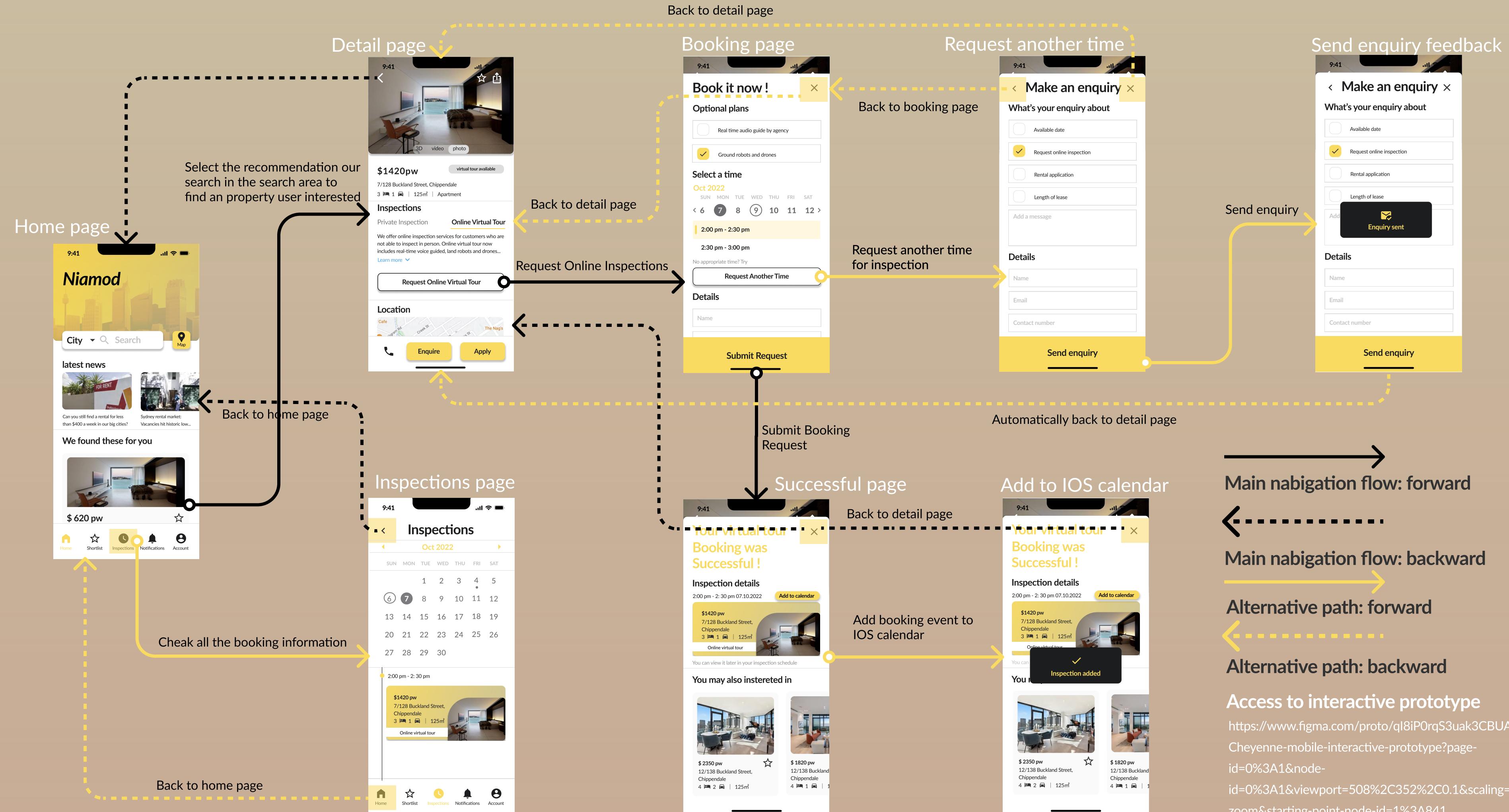
Date user selected

Timeline for inspections

Main navigation bar which an always visible menu at a fixed position on the page.



# High Fidelity Wireflow & Prototype



# Reflection About The Process

## CONCLUSION

### Limitations

We ran two rounds of user tests, but our number of user tests was small which may lead to some limitations in the iteration process. Therefore, we plan to have more user test in the future. In the meanwhile, more innovation should be added to our design. Although the real time virtual tour is a relatively new experiment at the moment, we need more designs to impress our customers compare with other realestate applications. Besides, some interface elements such as button in the design may change due to different device so we need to do more consideration on element adaptability.

### The Most Useful Method During the Iteration Process

Heuristic evaluation and interactive prototype is cosidered to be two of the most useful method during the iteration process. The interactive prototype allow user to do the useability test visually and received more real experiences. What is more, the heuristic evaluation process allow the design team to record the actual operating experience of users according to a very systematic set of standards, and make it easier to improve based on the comments. Besides, it is also worthful to mention the client meeting which brought us a lot of useful feedback as well.

### What did we learned & How we overcome the challenges

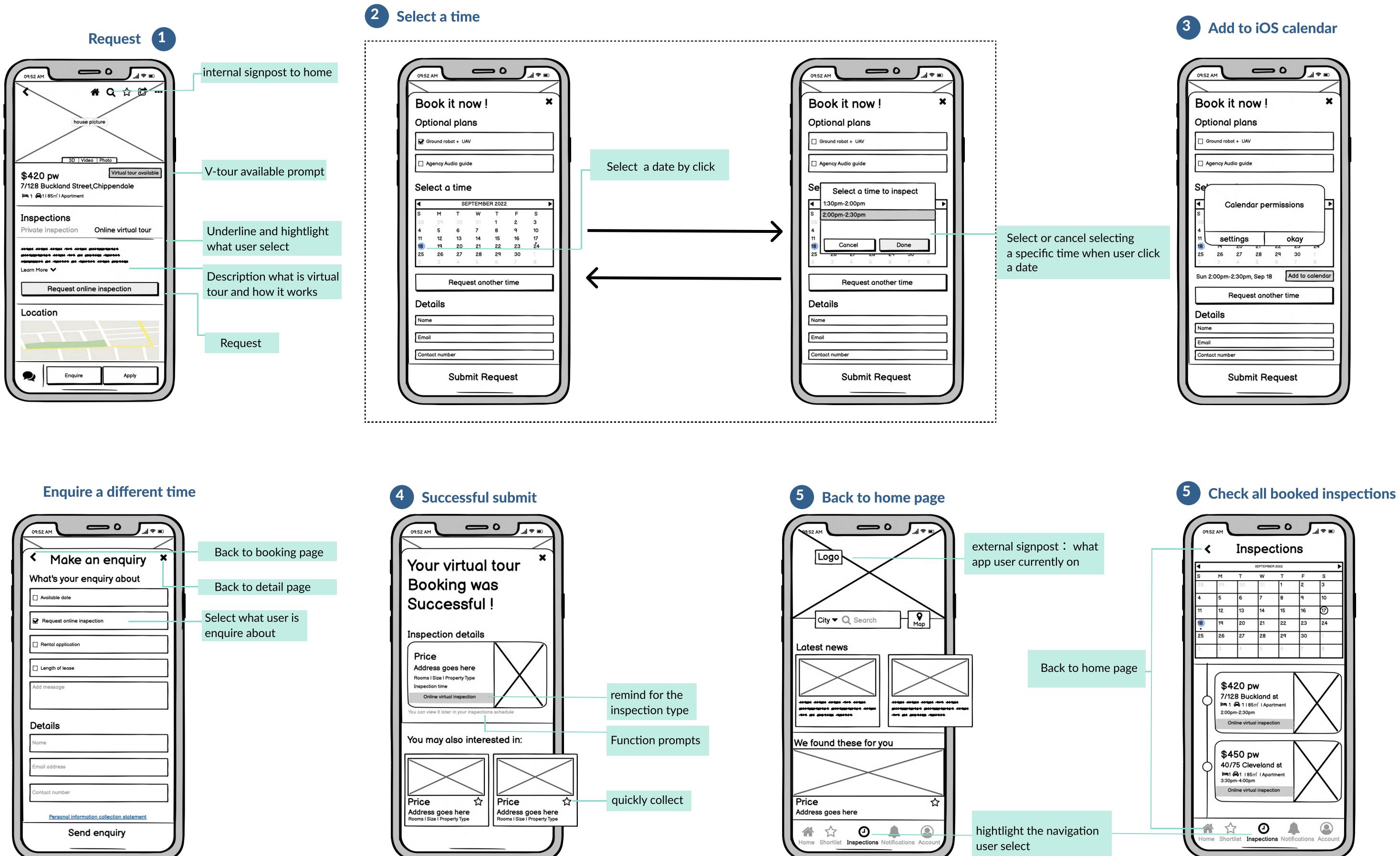
Through the design process, we experienced the flow of interface design in real work. Begain with the user research, we generate the user need and based on the user need we set our design plan. From sketches to wireframes, and completed the the final high-fidelity model after several round of user testing. In the process, we not only learned the importance of user testing, but also learned many useful design patterns from research and study. We also help each other through cooperative learning, and try our best to develop the advantages of each team member, so that to make sure the final design is more human-centered, more aesthetically pleasing and more practical.

# References

- Allen, M. T., Cadena, A., Rutherford, J., & Rutherford, R. C. (2015). Effects Of Real Estate Brokers' Marketing Strategies: Public Open Houses, Broker Open Houses, MLS Virtual Tours, And MLS Photographs. *The Journal Of Real Estate Research*, 37(3), 343–370. <Https://Doi.Org/10.1080/10835547.2015.12091422>
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- <Https://Www.Domain.Com.Au/Property-Profile/12-Notts-Avenue-Bondi-Beach-Nsw-2026>
- <Https://Www.Realestate.Com.Au/Property-Apartment-Nsw-Sydney-435494291>
- <Https://Www.Realestate.Com.Au/Property-Apartment-Vic-Melbourne-435324011>

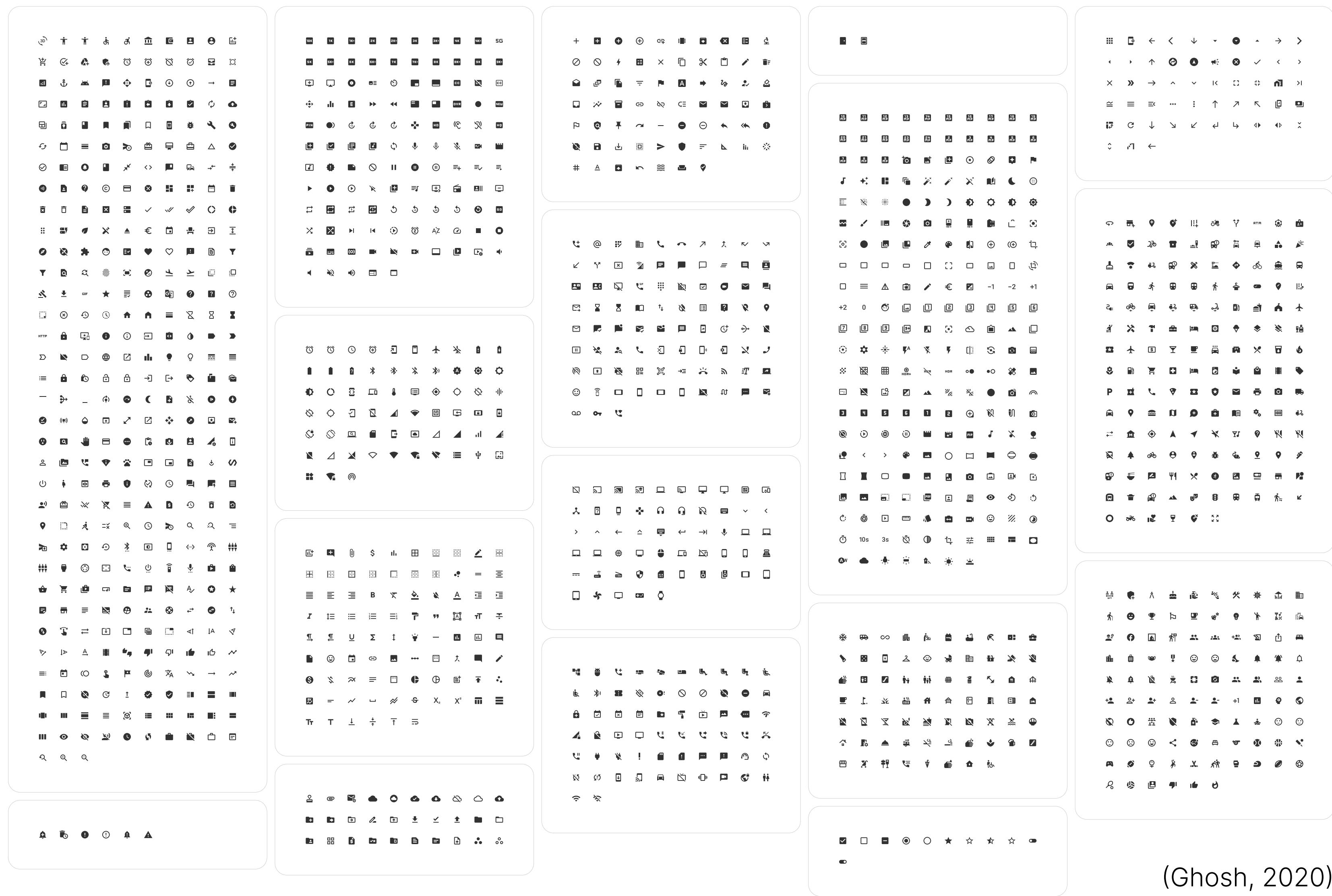
# Appendix 1

## Client Meeting Feedback For Mobile Interface Design From A2



1. The home icon on the detail page is small since it is a main navigation to the home page it needs to be placed better
2. The select a time function need to be improved due to the touch area is so small and it is unconvience for user to select a time. It will cause some touch error when select with a whole month calendar.
3. The in app calendar setting is good but consider to have a more surprising function. How this app is better than other realestate app?
4. the changes should be described more clearly and how it apply the design pattern

# Appendix 2 Material Design Icons



(Ghosh, 2020)