

DECO3200

Concept Proposal



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Proposal Brief

Issue: The experience of pedestrian traffic light is frustrating, including the pedestrian button, flashing red light and the warning sound.

Target audience: pedestrian in Sydney

Since our issue is focused on pedestrian traffic light, in this case, our target audience is all the pedestrian in Sydney.

- Pedestrian council chairman Harold Scruby said the way Sydney prioritises car movements over people was at odds with international best practice. (Nigel G, 2018) In this way, we need to focus more on pedestrian and improve the experience of pedestrian traffic light.
- Without a timer, people do not know when the light will turn to red. According to time perception, people will feel time goes slowly when they are waiting. Numerous studies have shown that if pedestrians are forced to wait more than a minute to cross the road, it results in more illegal crossings. (Ben G & Victoria C, 2018)
- No lead time, beg buttons, no enough time and no countdown are the four worse things about pedestrian traffic lights. (Julia K.C., 2017) Traffic light is very common now, pedestrian meet them usually, bad traffic light experience may affect people's mood or waste people's time.
- Pedestrian button is part of pedestrian traffic light, the button do not have reaction when you press it. According to U.S. Department of Transportation, pedestrian may cross the sidewalk early if they believe that the button does not work and the Walk signal will not appear. (U.S. Department of Transportation, 2001) It is dangerous.

Interviews



6 out of 8

When people unsure it was work they will press the button multiple times.

5 out of 8

People often interfere with sound prompts

5 out of 8

Flashing red light make people feel nervous

Allen: "Many people in a hurry tend to strenuously press the button, but it will not accelerate the transition of traffic light."

Louisa: "If the waiting time is too long, I will press the button a few more times."

Jessica: "It is hard to check whether the button is pressed or not and I will press it multiple time."

Allen: "Yes. It happens frequently. When I play with the phone and hear the sounds prompt, I will consciously move forward as I think that the red light has turned green light."

Allen: "The sounds prompt which signals the transition of light easily misleads people."

Alexis: "It's prompt tone can be changed one, not like a time bomb, a little scary."

Alexis: "It will make me feel a bit flustered. Sometimes it's especially fast, I'm still in the middle of the road, which makes me feel very unsafe."

Amelia: "I am so confused about the flashing red light. I thought the flashing red light should occur when it turns to the red light soon."

Jessica: "Yes, when I cross the street and I don't know when the flashing red light will stop, I feel stress. Sometimes I will run through the street when it is red flashing light, it makes me feel nervous."



Questionnaires (39 participants)

- 61.5% people have waited the green light for a long time, because no one pressed the button.
- 74.4% of people will press the button on their own initiative
- 53.8% people will anxious when the red light flashing.
- The traffic light warning sounds make 66.7% people misjudge.
- 53.8% people satisfied with the pedestrian traffic lights in Sydney.
- 61.5% people think the traffic light can have a countdown system.
- 33.3% people think waiting for traffic light is boring.
- 53.8% people think the button can have some interaction when their press it.

Observation (Broadway & City Rd & Cleveland Rd)

Waiting: Most of solitary pedestrians choose to **play their mobile phones** or stare at the opposite light. Some pedestrians are also playing mobile phones while crossing the road.

Button: Most people will press the button **several times** in a row. Some people will press the button again after seeing someone does it. **As the waiting time increases**, the number of time the pedestrian presses the button will increase. When people carry shopping bags or hold some others things, most of them **won't actively** press the button.

The Flashing Red Light: Some pedestrians choose to **pass through** the intersection when they see the red light flashing at the intersection. At this time, they generally choose to **run** to cross the intersection. For longer intersections, the red light often starts to flash when people walk to the **middle of the road**. This will create a feeling of **urgency** for pedestrians.

Questionnaires & Observation

Market analysis



Traffic light pedestrian crossing buttons

Drawbacks:

- There is no reaction when people press it. People may not know whether they press or not.
- The shape of the button is easier to overlooked.
- People often interfere with sound prompts.



ActiWait - a smart traffic light button

Drawbacks:

- Not very friendly to some people with disabilities.
- Limited participation.

Market analysis



Sydney's in-ground street signals

Drawbacks:

- During the day time, the ground lighting is not very Visible.
- Intense lighting can affect driver's view at night.



Traffic light with countdown system

Drawbacks:

- No interaction with pedestrian.
- Not very friendly to some people with disabilities.

Result

Through investigations and research, we discovered some problems encountered by pedestrians when they waiting for traffic lights and some defect regarding the existing design of traffic lights.

Interview : We were able to conduct 8 interviews. We find people are not satisfied with the existing button design.

Questionnaires : Based on the data collected from 39 through online. We determined that most of people have experienced waited the green light for a long time, because no one pressed the button.

Observation: We have drawn six road map. This is beneficial for us to know the activities of people when they crossing intersections with traffic signals at different times. We discover flashing red light make people nervous and run to cross the road. People also like play phone in their waitting process.

Solution

From online research, pedestrian countdown timers (PCTs) is **effective** in terms of **reducing pedestrian violations**, pedestrian-vehicle conflicts as they provide information about the time left for a particular phase. Some studies also show **perceived pedestrian safety increased** with the installation of the countdown timers.

According to U.S. Department of Transportation, pedestrian may cross the sidewalk early if they believe that the button does not work and the Walk signal will not appear.

Use of Animation in LED Pedestrian Signals to Improve Pedestrian Safety.

In the **subsequent design**, we will improve the function of the traffic lights based on the research results to improve the pedestrian experience.

Summarise

Shiny Shiny

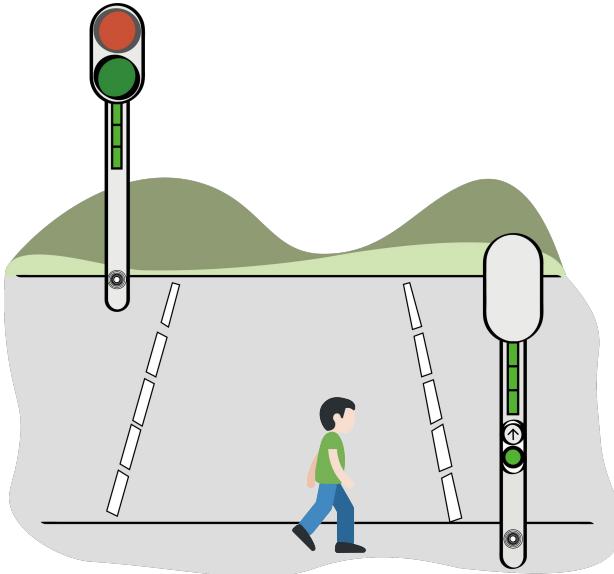
There is a need to improve the traffic light button, because it is never known if a person standing next to it has pressed it. One may also feel **unsure** if he **still needs to push it**. Therefore, we propose to have the traffic light button be redesigned. A **green light will appear** if someone **already pressed** the button, and **none if otherwise**.

LED light plates should be added to traffic lights so they can show countdown signals. Each plate has a **10-second timeframe**. The LED panel will flash at a **30-second countdown** as the **three panels** gradually **decrease** according to the light being flashed.

While waiting, pedestrians will see the LED plate turn red when the red light is on. This light will gradually **decrease at a 30-second countdown**.

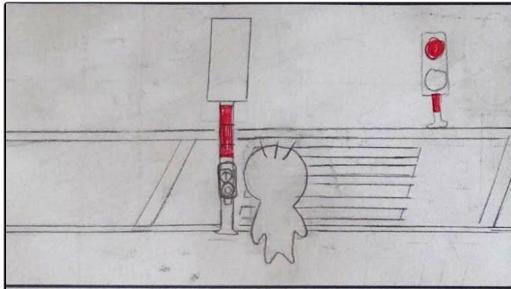
Similarly, the **LED plate will turn green** when the **green light is on**, and will also gradually **decrease** at a similar countdown.

An audio system is set on the pillar of traffic lights. It **plays soothing and mellow music** while the **red light is on**.



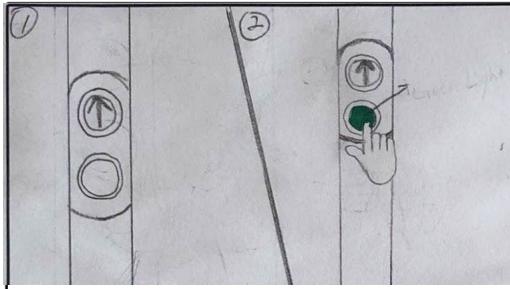
Shiny Shiny

Scene: 1



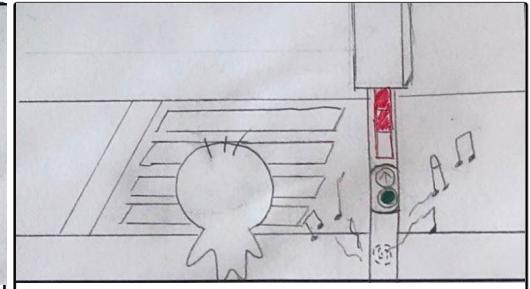
Allen wants to cross the road, so he's waiting for the red light.

Scene: 2



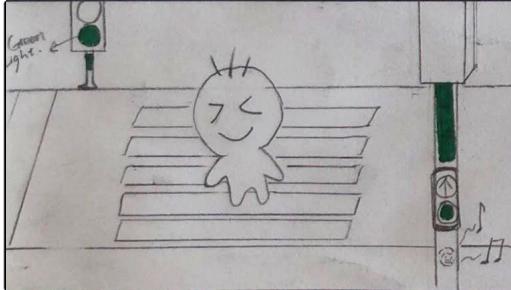
Allen pushes the button and it turns to green.

Scene: 3



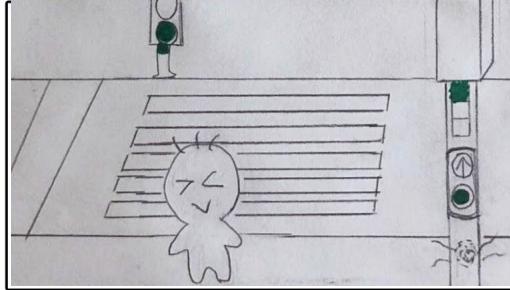
Allen continued to wait for the red lights and listened to the music from the traffic lights. The red LED lights on the traffic light pillar are gradually decreasing.

Scene: 4



The red light turned green and Allen crossed the street happily.

Scene: 5



When Allen crossed the road the green light countdown was only ten seconds left.

Scene:



Shiny Shiny

While waiting to cross the street, pedestrians can **easily** determine whether someone has **already pressed** the button through the **color of its light**. Thus, the problem of repeatedly pressing the button can be solved.

The countdown signals are designed to solve the **confusion** caused by the **flashing red lights**. Compared to the **current traffic light** that only shows **green** and **flashing red light**, countdown gives pedestrians an **idea of how many time they can pass through**.

Research shows that countdown traffic lights make people more **psychologically secure** and can help them make **more reasonable judgments** (Barbara, 2018). LED countdown signal lights are also more **visible at night**, hence the proposal for them to be **attached** on the traffic light pillars.

Soothing music can make people **feel pleasant** (Fried & Berkowitz, 1979). Most pedestrians may get **anxious** while waiting for the green light to appear. Playing **soft music** can stabilize their **mood** as they wait.

Strength:

- The button illuminates to help the pedestrian identify whether it works
- The countdown signal can solve the confusion caused to pedestrians when the red light flashes.
- Playing soothing music can help pedestrians feel pleasant.

Limitation:

- The cost of LED lights is too expensive.

Hardware:

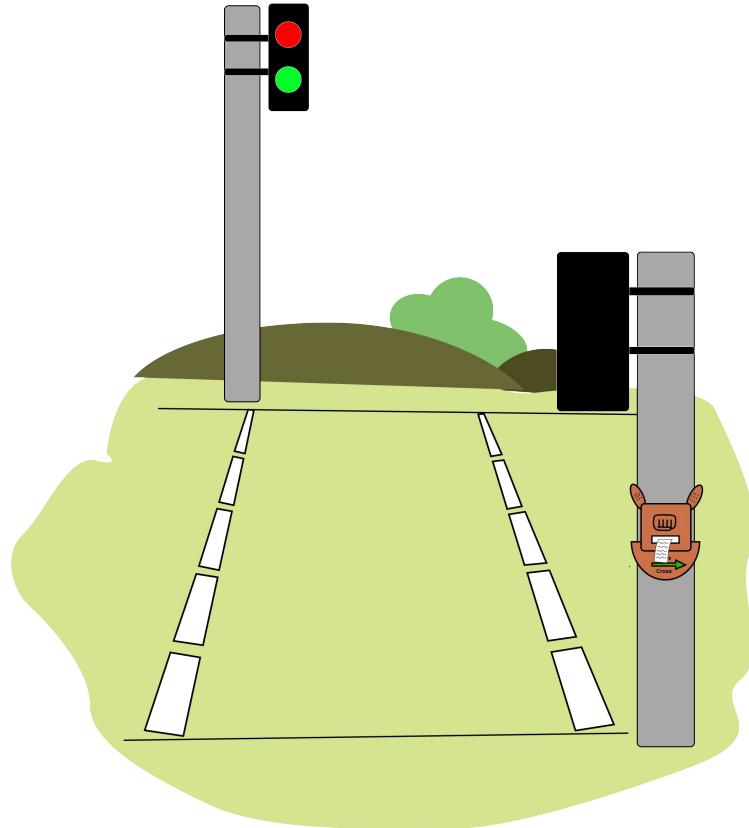
- 3D printing, LED light plates, Audio electronics

Software:

- 3Ds max, C, java

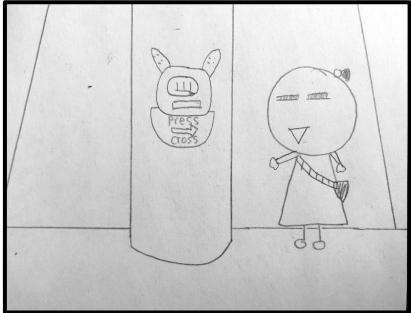
Fist Bump

- Similar as “**cashomat**”. When someone press the button, there is a **notepaper** come out from the hole under the button. The notepaper has a date, weather, location and random inspiring quotes.
- Kangaroo's ears are a **voice player**. If someone press the button, a **voice prompt** will tell people that the button have been pressed.
- When the pedestrian traffic light turns to green, there is a **voice prompt** on the button tells people that it is time to cross the street.
- The shape of button is kangaroo's **fist**. If someone pushes the button, the button pops out. On the contrary, it is flat.

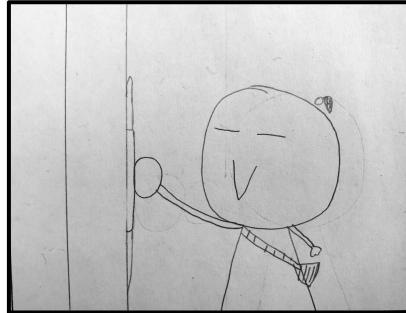




Fist Bump



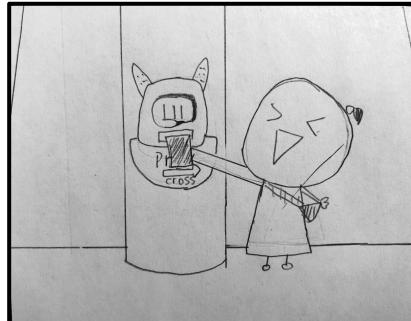
One day, Jessica walks to and wait for the pedestrian traffic light..



She uses her fist to push the button with a kangaroo's fist.



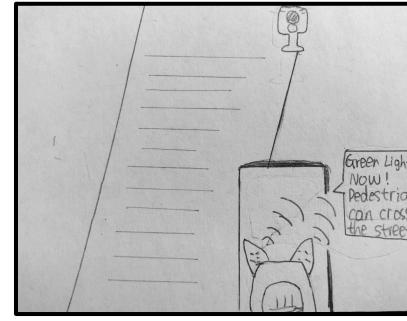
After she pressed the button, the fist pops out a bit. At the same time, a notepaper comes out under the fist. A voice prompt sound from the kangaroo's ears.



Jessica takes the notepaper.



On the notepaper, there are date, weather, location, some sentences and quotes .



The pedestrian light turns to green, the prompt sounded again and Jessica who looking at the notepaper crosses the road without missing the green light.

Fist Bump

Compared to the current button shape in sydney, using kangaroo's fist as the shape of the button can make the button **more interesting and eye-catching** which can attract more people to push the button. According to our questionnaires and interview, we found that most of people are not satisfied with the shape of the pedestrian button. Most of them feel that the button is **inconspicuous and common**. Kangaroo is an **iconic Australian animal** (Australian museum, 2018) and its style of kangaroo fighting is generally characterized as boxing (Animal.mom).

The voice prompt can help pedestrian know that they **pressed successsed**. According to our interview, some of our interviewers claim that it is **annoying** to press the button more time since they do not know whether they press the button successfully. They also feel that the warning sound is **frustrating** and making pedestrian feel **nervous**. Moreover, voice prompt can also remind blind people.

The function of note is also a way to tell people that they **successfully pressed the button**. More than a reminder, people can also get information about the day through the note.

Strength:

- The shape of button is kangaroo's fist which is attractive and interesting.
- Note Paper makes people feel surprise and it is a innovative way for pedestrian to know whether they have pressed the button successfully.

Limitation:

- Voice prompt will mislead pedestrian because pedestrian does not which light has turned to green.

Hardware:

- 3d printing, voice player, Raspberry Pi

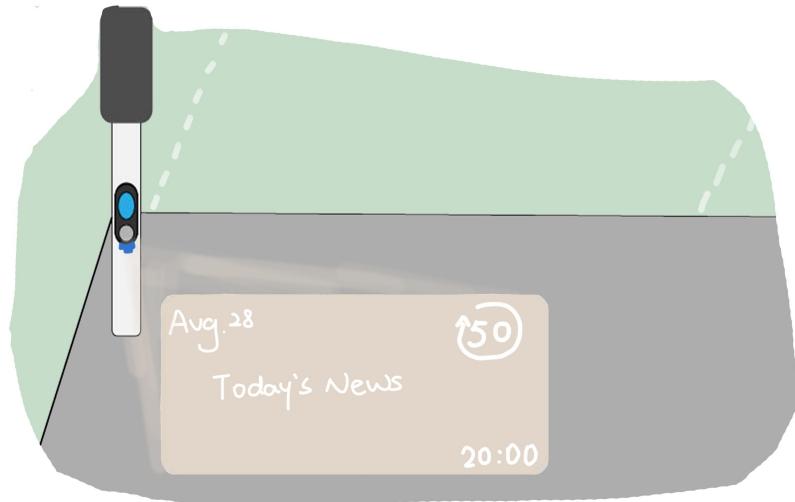
Software:

- 3ds max, AI, PS
- C, java

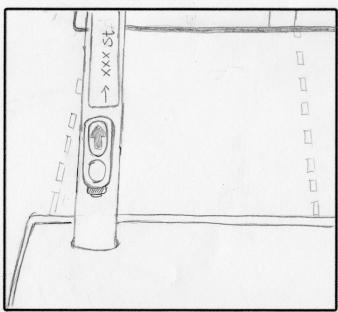
Ground Projection

Ground projection(animation, Visualizing a projection onto a plant)

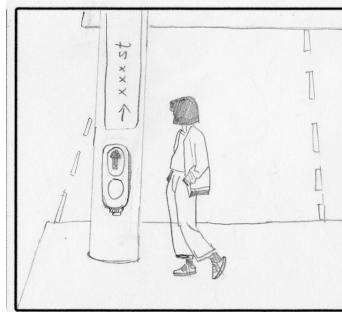
- When the pedestrian presses the button of the traffic light, the ground will display a projection screen.
- In the upper right corner of the screen is a countdown system of waiting time.
- In the middle of the screen is a daily news.
- At the end of the countdown, a traffic arrow indicating the direction of the traffic light will be displayed.



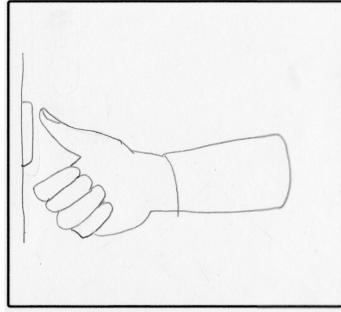
Ground Projection



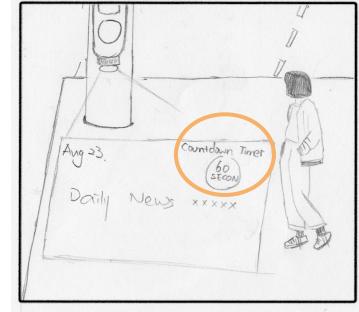
One of the Pedestrian traffic light intersection in Sydney.



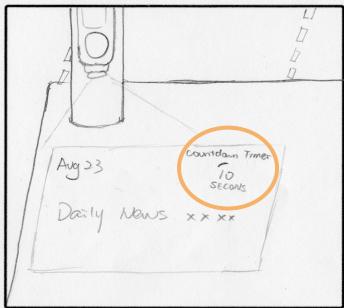
There is a pedestrian coming over, and she wants to cross the road



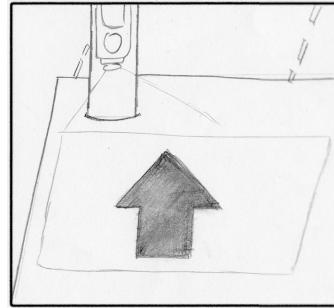
He pressed the button.



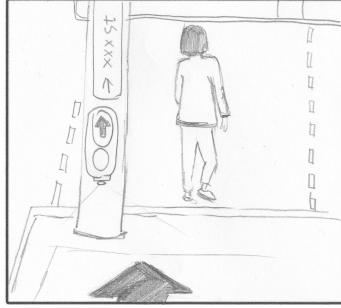
After she pressed the button, a projection with a countdown appeared on the ground and there was a daily news for him to read. She was surprised.



When he was about to finish reading the news, the countdown was just 10 seconds left.



At the end of the countdown, a green arrow appeared on the ground to remind her of the direction of walking.



She followed the direction of the arrow and walked happily across the road.

Ground Projection

In this idea, a ground projection, which will provide pedestrians with a **high identification at night**, and an **interaction** when pressed the button. At the same time, a countdown device was designed, with a daily newsletter and an indicator arrow. **Compared** to the current button in Sydney, the ground projection is clearer at night, while at the same time adding interactivity and fun, which can attract more people to push the button.

The **countdown device** solves the problem that pedestrians don't know how long they need to **wait** for the traffic lights, and the **daily news** can solve the problem that pedestrians are **bored** while waiting for the traffic lights. At the end, an **arrow** is added to indicate that this can serve as a **reminder**, because according to the survey, many people choose to play the phone while waiting for the traffic light.

In addition, the **advantage of this scheme** is that it does not need to change the public habits. The process is simple to avoid the long construction period and the budget is low.

Strength:

- Do not need to change the basic operating mechanism of the original equipment.
- High **identification** at night.
- An **interaction** when pressed the button.

Limitation:

- The projector's power can only last for several hours.

Hardware:

- Projector, Infrared acquisition system, 3d printing, Raspberry Pi

Software:

- 3ds max, AI, PS
- C, java

Reflection

From our research and feedback, we found some strengths and limitations of our concepts.

Next step, we are going to do user testing and decide which concept we want to do at the end. We will make our decision based on the feedback we get from the user needs and our ability.

Group Chart

Design research:

Mengyu Li, Jiayu Ye

Visual Communication:

Yiqi Liu, Siying Ma

Programming:

Yiqi Liu, Mengyu Li, Siying Ma, Jiayu Ye

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Appendix

Name: Allen

1.How long have you been in Sydney?

I have been here for 4 years. I came to Sydney when I was still in senior high school.

2.Have you ever noticed the traffic light button when you first crossed the street in Sydney? How do you think about its appearance? Is there any space of further improvement?

I still remember that when I first came to Sydney, I felt quite strange why everyone pushed a round button while waiting for traffic light.

3.Do you know the function of such traffic light button?

I didn't know what it was used for before, so I asked my homestay.

4.How do you think about the traffic light design in Australia?

I felt it very strange when I was still a newcomer, as no such control button could be found in China. But now, I really appreciate such design. Many people in a hurry tend to strenuously press the button, but it will not accelerate the transition of traffic light.

5.Will you proactively push the button while waiting for the traffic light?

Certainly. If someone else does not push it, I will do it or otherwise it will stay red.

6.Will you push it again when you see someone else do it? Why?

No. I don't have to pay such fruitless effort if someone else has pushed it. After all, it won't help transit the traffic light.

7.Have you pushed the button for few times because you are unsure if you make it?

Sure. In case of a rush, I will press the button again if the waiting time for red light is so long.

8.Have you ever waited for the red light for a long time when you thought other passengers next to you had pushed the button but one did it?

Yes, I have run into such occasions for few times. When I was busy playing with the phone, I thought that my friend had pushed the button, and so did she. However, we later found that neither of us had made it. We didn't notice it until passengers from the other side walked to us.

9.When you are waiting for the traffic light, have you mistaken the red light as green light because of voice prompt?

Yes. It happens frequently. When I play with the phone and hear the voice prompt, I will consciously move forward as I think that the red light has turned green light. Fortunately, I am always dragged back by my friend. Many of my friends also have such experience. I dislike such design.

10.What are you doing while waiting for the traffic light? How do you feel about the flashing red light?

If I am about to go to school, I will keep staring at the traffic light, check the time on the phone and rush to the school after it turns green because I am going to be late. In ordinary days, I will kill time by watching phone. As you know, it sometimes takes a long time of waiting. When the red light blinks, I even have the impulse to rush to the opposite side.

11.Will you wait for the light or rush to the opposite side of street after seeing the blinking red light?

It depends. If I am going to be late for school, I often rush to the opposite side of street once the green light turns red. But I do not dare to do so if the red light is blinking. I prefer traffic light with countdown.

12.Do you have any suggestion for improvement?

The design that I want to improve most is button. It is much better if the button can display whether it has been pushed so that passengers will not keep pressing it while waiting. At times, I even feel annoyed by the button pushing noise made by others. Secondly, the voice prompt which signals the transition of light easily misleads people.

Name: Sarena

1.How long have you been in Sydney?

I have been here for 5 years (Sydney). I lived in Perth until I grew up to 6 years old and then go back to China.

2.Have you ever noticed the traffic light button when you first crossed the street in Sydney? How do you think about its appearance? Is there any space of further improvement?

Yes I have, because Perth's traffic light also has such a button. I never think of this problem before. But its appearance is indeed very ordinary. While, I do not have any means to turn it special yet.

3.Do you know the function of such traffic light button?

Sure. If you don't push the button while waiting for traffic light, it will stay red all the time.

4.How do you think about the traffic light design in Australia?

It is great.

5.Will you proactively push the button while waiting for the traffic light?

Sure. I habitually press the button by myself because I worry the waiting time will be longer if other passengers forget it.

6.Will you push it again when you see someone else do it? Why?

It depends on the circumstances. Sometimes, I may do so because I habitually push the button when I see it. Especially when I rush to school, I always feel that the traffic light will turn faster as long as I push the button for more times. In reality, it won't speed up the transition.

7.Have you pushed the button for few times because you are unsure if you make it?

I have such experience. I mostly do so when I am in a hurry. If I am not in a hurry, I will not press it repeatedly.

8.Have you ever waited for the red light for a long time when you thought other passengers next to you had pushed the button but one did it?

It happens from time to time. At times, I will not push the button because I think that passengers on the opposite side have pushed it, and I do not realize it after waiting for a long time. I used to play with the phone while waiting for the traffic light, but I do not do so now. It is said that passengers will be fined by policemen of the city when they are being discovered playing with the phone while crossing the street.

9.When you are waiting for the traffic light, have you mistaken the red light as green light because of voice prompt?

Yes. Probably everyone has such experience. I have complained about the voice prompt design to my friends before.

10.What are you doing while waiting for the traffic light? How do you feel about the flashing red light?

I tend to listen to some songs while waiting for the traffic light. I often wear the headset to listen to music when I am alone. Sometimes, I may lower my head to watch the phone. For fear of being late for school, I habitually check time on the phone. I feel anxious about the blinking red light, especially when I am really impatient.

11.Will you wait for the light or rush to the opposite side of street after seeing the blinking red light?

I mostly wait for the traffic light, and only take the risk if I have any emergency. The reason is that I am not sure about the blinking time of red light.

12.Do you have any suggestion for improvement?

In my opinion, I want to improve its voice prompt and button. Can the button be designed in a better way? For instance, can it indicate whether it has been pushed, and the time for the red light to turn green?

Name: Gary Yang

Q1: How long have you been living in Sydney?

I have lived in Sydney for about three years.

Q2: Do you know the usage of the button for the Sydney pedestrian traffic light?

When I first came to Sydney, I knew the usage of this button, because this button is similar in my hometown. But at the beginning, I thought that pressing the button once would shorten the waiting time, and the more times you press, the shorter the waiting time. However, Recently i found that the number of presses and the waiting time did not matter.

Q3: What do you think of the Australian pedestrian traffic button design?

Very convenient, because it gives the impression that as long as I press the button, the signal light will turn green.

Q4: Will you actively press that button?

I will press the button. Even if someone else presses it, I will press it myself.

Q5: Have you ever encountered this situation, you think that someone else pressed the button, but in fact no one pressed, and thus waited for a long time.

I have not encountered such a situation. Because I don't trust others lol.

Q6: When the red light flashes, will you choose to speed up to cross the road, or will you choose to wait for the next green light?

I will choose to speed up and run because I think the flashing red light reminds me to go fast.

Q7: What do you usually do when waiting for a traffic light? Do you feel anxious or bored?

While waiting for the traffic lights, I will choose to see the vehicles that are coming and going. I don't feel bored or anxious.

Q8: When you are waiting for the traffic lights, have you ever experienced it, heard the voice prompt and then mistakenly think that the signal light at your location is green?

There is no such experience, because I usually walk with headphones to listen to music, so I will not use sound to judge whether the traffic lights turn green.

Q9: If you can improve the Sydney pedestrian traffic light button, what do you want to improve?

The button design can be a little better. Maybe design a reminder light to see if anyone has pressed the button.

Name: Walter

Q1: How long have you been living in Sydney?

I have lived in Sydney for about one year.

Q2: Do you know the usage of the button for the Sydney pedestrian traffic light?

I think this button can alleviate the traffic pressure, and can maintain the traffic of the main line and improve the driving efficiency when no pedestrians pass.

Q3: What do you think of the Australian pedestrian traffic button design?

I think that design highlights democracy and freedom, pedestrians choose when they want to cross the road and the logic of design is simple and easy to operate.

Q4: Will you actively press that button?

Yes, sometimes I will press the button with the rhythm of the music.

Q5: Have you ever encountered this situation, you think that someone else pressed the button, but in fact no one pressed, and thus waited for a long time.

If I just walked on my own, I have never encountered this kind of situation; but when I go out with my friends, we sometimes think that the other has already pressed the button, so this will often happens.

Q6: When the red light flashes, will you choose to speed up to cross the road, or will you choose to wait for the next green light?

It depends on whether there is a car or not. If there are a lot of vehicles, I will choose to wait for the next green light.

Q7: What do you usually do when waiting for a traffic light? Do you feel anxious or bored?

When I wait for the red light, I will count the sheep; boring or not depends on the mood of the day.

Q8: When you are waiting for the traffic lights, have you ever experienced it, heard the voice prompt and then mistakenly think that the signal light at your location is green?

Maybe one or two times. Basically does not happen, because I can tell the location of the sound.

Q9: If you can improve the Sydney pedestrian traffic light button, what do you want to improve?

I think it change the button to press the non-rebound mode. After pressing, it stays in the pressed state, not only can remind pedestrians to reduce invalid pressure; After turning to green light, the button returns to the unpressed state. The advantage of this scheme is that it does not need to change the basic operating mechanism of the original equipment, and does not need to change the public habits again. The process is simple to avoid the long construction period and the budget is low.

Interview

Q: Hi, are you free now? Can you spare me a few minutes for a interview?

Amelia: Sure, about what?

Q: About the pedestrian traffic lights.

Amelia: Wow, cool. What do you want to ask?

Q: How long have you been Sydney?

Amelia: 2 years.

Q: Did you notice the pedestrian traffic light button when the first time you waited for the traffic light in Sydney?

Amelia: I can't remember...

Q: Do you think the shape or the exterior of the button conspicuous?

Amelia: I don't think so. For me, I think it is easy to ignore since the color and the size is inconspicuous.

Q: I see. What do you think the function of the pedestrian traffic light button is?

Amelia: I am not sure, maybe accelerate the time of the green light?

Q: Haha, actually it is a reminder. When you press the button, it means the light knows someone is waiting there.

Amelia: Really? I didn't know that. Why not just change to the green light automatically. No wonder I was curious that sometimes it can be pass, but the light never turns to green. It is waste of time, isn't it?

Q: Yap, people may not know whether the button have been pressed or not. Have you ever doubted whether the button really do anything when you press it?

Amelia: Yes, because sometimes I feel the waiting time doesn't change when I pressed it.

Q: Do you usually press the pedestrian traffic light button?

Amelia: Sometimes? If I'm in a rush since I thought the time will be accelerated if I pressed the button.

Q: Will you press the button after you saw someone already pressed?

Amelia: Sometimes? It according to my mood. Sometimes I feel interesting to press the button, but sometime I just talk to my friends or play on my phone and the button never cross my mind at that time.

Q: Haha, I see. Do you usually talking to your friends or playing on your phone when you are waiting for the traffic light?

Amelia: Yes, and sometimes I will stare blankly as well.

Q: Haha, me too! Have you ever been misled by the sound of the traffic light?

Amelia: What do you mean?

Q: Actually, another sidewalk that is accessible, but you thought is the one you are going to pass.

Amelia: Yes, I did and my friend stopped me.

Q: It is dangerous, isn't it?

Amelia: Yes, and fortunately, there were no cars at that time. It reminds me the flashing red light! I am so confused about the flashing red light. I thought the flashing red light should occur when it turns to the red light soon. However, in Sydney, when the pedestrian traffic light turns to green, it suddenly turns to flashing red light.

Q: I was confused as well when I first time came to Sydney.

Amelia: That is right. If I hadn't waited at the intersection, I didn't know if it was just flashing or not and can I go through?

Q: It is annoying and confusing.

Amelia: Definitely.

Q: What do you think the light or the button can be improved?

Amelia: I think it should have a countdown. It is really really important for me!

Q: Certainly! Anything else?

Amelia: Maybe it has an instruction to tell people the function of the button? Because it is really confused when the people see it.

Q: I see. Thank you for spending time to take this interview.

Amelia: No worries.

Interview

Q: Hey, may I interview some questions about the pedestrian traffic light button?

Jessica: Sure.

Q: How long have you been Sydney?

Jessica: Around eight years.

Q: Wow a long time, isn't it?

Jessica: Yap.

Q: Do you know the function of the pedestrian traffic light button?

Jessica: The pedestrian traffic light will turn to green if you press it. Otherwise, it will always stay at red.

Q: Correct! Do you usually press the button?

Jessica: If no one press it then I will do it. But if someone pressed it, then I will not press again.

Q: Why?

Jessica: Because I am lazy haha and the light will not be changed if you press more times.

Q: True! If you not sure whether the light have been pressed or not, then will you press it?

Jessica: If there are only a few people waiting for the light, then maybe I will. However, if there are a lot of people waiting for the light, then I think someone have pressed.

Q: How about everyone think on this way but actually no one press.

Jessica: Yap, yap, it happened. And everyone just waits there for another round.

Q: That may waste of time.

Jessica: Exactly, it is frustrated.

Q: Is it hard to check whether the button is pressed or not. Will you press the button more time when you are not sure whether it have been pressed?

Jessica: Yes, sometimes I will do that. I think the button should has some reaction when you press it.

Q: Yap. How about the flashing red light, did you confuse about the flashing red light?

Jessica: Yes, when I cross the street and I don't know when the flashing red light will stop, I feel stress. Sometimes I will run through the street when it is red flashing light, it makes me feel nervous.

Q: Yap, it doesn't have a countdown or something.

Jessica: Yes, it should have.

Q: Have you ever been misled by the sound of the traffic light? Like another sidewalk that is accessible, but you thought is the one you are going to pass.

Jessica: No, I will focus on the light when I wait for it.

Q: Wow, you such a good citizen!

Jessica: Haha!

Q: What do you usually do when you are waiting for light?

Jessica: Just wait...haha. Look at the car or people on the street, maybe?

Q: I see. Oh, do you think the shape or exterior of the button is noticeable? Should it be improved?

Jessica: I don't think it is noticeable, I think it can be improved and make it more conspicuous.

Q: What else do you think the button or the light can be improved?

Jessica: I think there should have a reminder or countdown to tell pedestrian how much time left.

Q: Yap, otherwise it maybe dangerous when you cross the street and the light suddenly change to red.

Jessica: Definitely!

Q: Thank you for spending time to answer my questions.

Jessica: No worries.

Name: Alexis (UTS student - Bachelor of Commerce)

1. How long have you been living in Sydney?

4 and a half years.

2. When you first cross the road in Sydney, will you notice the traffic light button? Do you think its shape needs to be improved?

Yes, its buttons are obvious. The appearance of the button is too rudimentary.

3. Do you know the function of the traffic light button?

Press the button to pass the road. It is to restrict pedestrians from crossing the road. When I first came Sydney, I didn't know what it was doing. My classmate told me to press the button before crossing the road.

4. What do you think of the design of the traffic lights in Australia?

It feels not bad. But need a time display.

5. When you wait for the traffic lights, will you actively press that button?

Not necessarily, it has a time limit. It will turn green when it is the set time.

6. If you see someone else pressing the button, will you still press it again?

No, I think I can just wait.

7. Do you press the button repeatedly because you don't know if the button is running?

Yes. Sometimes I will press it repeatedly. Because I am annoying it does not show time. I don't know how long I have to wait.

8. Have you ever encountered this situation? You think that the person next to you pressed the button, but it didn't, and it caused you to wait for a long time.

I have. Sometimes, when I saw someone standing next to the traffic light, I felt that I didn't need to press it.

9. When you are waiting for the traffic light, have you ever experienced it, the voice prompt mislead you, and let you think the red light that you are waiting for turn green. The truth is the traffic lights next to it.

I have. But I was pulled back by someone next to me.

10. What do you usually do when you are waiting for a traffic light?

Check the phone, or watch the traffic lights in a daze.

11. What kind of feeling does it give you when the red light flashes? Then will you choose to wait or run over?

It will make me feel a bit flustered. Sometimes it's especially fast, I'm still in the middle of the road, which makes me feel very unsafe.

12. What advice do you have for improving it?

I need to see the time of it. And its prompt tone can be changed one, not like a time bomb, a little scary.

Name: Louisa (Usyd student - Master of Interaction Design and Electronic Arts)

1. How long have you been living in Sydney?

10 months.

2. When you first cross the road in Sydney, will you notice the traffic light button?

No, I didn't notice it.

3. Do you know the function of the traffic light button?

Probably when you press the button, it will know that someone is going to pass the road and the light will turn green.

4. What do you think of the design of the traffic lights in Australia?

I think it is ok. Because it is compared to the case without buttons, the button will give me psychological feedback. I pressed the button. The light will turn green.

5. When you wait for the traffic lights, will you actively press that button?

Yes, I will press it many times. Because sometimes I wait a long time, there will be a little irritating emotion. Why is it still green?

6. If you see someone else pressing the button, will you still press it again?

Generally not. But if the waiting time is too long, I will press the button a few more times.

7. Do you press the button repeatedly because you don't know if the button is running?

Yes, because it does not have enough feedback.

8. Have you ever encountered this situation? You think that the person next to you pressed the button, but it didn't, and it caused you to wait for a long time.

I don't have. When I am not sure, I will press directly the button.

9. When you are waiting for the traffic light, have you ever experienced it, the voice prompt mislead you, and let you think the red light that you are waiting for turn green. The truth is the traffic lights next to it.

I have. Sometimes it's very close. I may play with a mobile phone and not be paying attention to it. When I was prepared to go, I found out that it was not on my side. I have encountered this situation many times.

10. What do you usually do when you are waiting for a traffic light?

Listen to music, chat, or keep looking at the opposite lights.

11. What kind of feeling does it give you when the red light flashes? Then will you choose to wait or run over?

The red light will make me very tangled. I don't know if I should pass it. In the process, the light turns red. But in fact, time is enough for me to pass the intersection.

12. What advice do you have for improving it?

I hope it will give me feedback on the length of time. I don't know how long I need to wait. Sometimes it's long, sometimes it's short. Too long waiting time will make me think the button is useless.

When people first came to Australia, they didn't know the traffic light button.

Allen: "I didn't know what it was used for before, so I asked my homestay."

Allen:"I felt it very strange when I was still a newcomer, as no such control button could be found in China."

Pedestrians know the role of the traffic light button

Allen: " Sure. If you don't push the button while waiting for traffic light, it will stay red all the time."

Pedestrians will notice the traffic light button when they cross the road for the first time in Sydney.

Allen: "I still remember that when I first came to Sydney, I felt quite strange why everyone pushed a round button while waiting for traffic light."

Sarena:"Yes I have, because Perth's traffic light also has such a button."

When people are in a hurry, they will press the button repeatedly

Allen: "Many people in a hurry tend to strenuously press the button, but it will not accelerate the transition of traffic light."

When pedestrians are waiting for traffic lights, most people will habitually press the button.

Allen: "Certainly. If someone else does not push it, I will do it or otherwise it will stay red."

Sarena:"Sure, I habitually press the button by myself because I worry the waiting time will be longer if other passengers forget it. "

Sarena:"Sometimes, I may do so because I habitually push the button when I see it. "

When people unsure it was work they will press the button multiple times.

Allen: "Sure. In case of a rush, I will press the button again if the waiting time for red light is so long. "

Sarena:"I have such experience. I mostly do so when I am in a hurry. If I am not in a hurry, I will not press it repeatedly."

They think the pedestrian next to them has pressed the button. But in reality no one pressed

Allen: "Yes, I have run into such occasions for few times. "
Sarena:" It happens from time to time. At times, I will not push the button because I think that passengers on the opposite side have pushed it, and I do not realize it after waiting for a long time. "

People often interfere with voice prompts

Allen: "Yes. It happens frequently. When I play with the phone and hear the voice prompt, I will consciously move forward as I think that the red light has turned green light. " "The voice prompt which signals the transition of light easily misleads people."

Sarena:" Yes. Probably everyone has such experience. I have complained about the voice prompt design to my friends before."

Pedestrians will check the time on the phone while waiting for the traffic lights

Sarena:" I habitually check time on the phone. I feel anxious about the blinking red light, especially when I am really impatient. "

Allen: "If I am about to go to school, I will keep staring at the traffic light, check the time on the phone and rush to the school after it turns green because I am going to be late."

Pedestrians often cross the road when the red light flashes

Sarena:"Some times, when I am going to be late for school."
Allen:"I mostly wait for the traffic light, and only take the risk if I have an emergency."

Pressing the button will shorten the waiting time	Button can alleviate the traffic pressure	People will actively pressing the button
Gary: "I thought that pressing the button once would shorten the waiting time, and the more times you press, the shorter the waiting time."	Walter: "I think this button can alleviate the traffic pressure, and can maintain the traffic of the main line and improve the driving efficiency when no pedestrians pass."	Gary : " I will press the button.Even if someone else presses it, I will press it again." Walter: "Sometimes I will press the button with the rhythm of the music."

Speed up when the red light is flashing	Thought that someone else has pressed the button and don't press it	Wait for the next green light when the red light is flashing.
Gary : I will choose to speed up and run because I think the flashing red light reminds me to go fast.	Walter: "When I go out with my friends, we sometimes think that the other has already pressed the button, so this will often happens."	Walter: "It depends on whether there is a car or not. If there are a lot of vehicles, I will choose to wait for the next green light."

Things when waiting the traffic light.	Suggest for improve the button (add a reminder light).	It is convenient to have a button at the pedestrian traffic light.
Gary :"While waiting for the traffic lights, I will choose to see the vehicles that are coming and going. I don't feel bored or anxious." Walter: "When I wait for the red light, I will count the sheep; boring or not depends on the mood of the day."	Gary : "Maybe design a reminder light to see if anyone has pressed the button." Walter: "I think it change the button to press the non-rebound mode.After pressing, it stays in the pressed state, not only can remind pedestrians to reduce invalid pressure; After turning to green light, the button returns to the unpressed state."	Gary : Very convenient, because it gives the impression that as long as I press the button, the signal light will turn green.

Logic of button design is simple and easy to operate	Multiple voice prompts of traffic lights do not affect the judgment
Walter :" I think that design highlights democracy and freedom, pedestrians choose when they want to cross the road and the logic of design is simple and easy to operate."	Walter :"Basically does not happen, because I can tell the location of the sound."

Pressing the button will accelerate the time of waiting

Amelia: "I am not sure, maybe accelerate the time of the light?"

The shape of the button is inconspicuous

Amelia: "I don't think so. For me, I think it is easy to ignore since the color and the size is inconspicuous."

Jessica: "I don't think it is noticeable, I think it can be improved and make it more conspicuous."

People will not press the button usually

Jessica: "If no one press it then I will do it. But if someone pressed it, then I will not press again."

Amelia: "Sometimes? It according to my mood. Sometimes I feel interesting to press the button, but sometime I just talk to my friends or play on my phone and the button never cross my mind at that time."

People will be misled by the warning sound of the traffic light

Amelia: "Yes, I did and my friend stopped me."

Flashing red light make people feel nervous

Amelia: I am so confused about the flashing red light. I thought the flashing red light should occur when it turns to the red light soon."

Jessica: "Yes, when I cross the street and I don't know when the flashing red light will stop, I feel stress. Sometimes I will run through the street when it is red flashing light, it makes me feel nervous."

It is hard to know if anyone has pressed it

Amelia: "No wonder I was curious that sometimes it can be pass, but the light never turns to green. It is waste of time, isn't it?"

Jessica: "It is hard to check whether the button is pressed or not. And everyone just waits there for another round."

People playing on their phone and talk to their friends while waiting for the light

Amelia: "Sometime I just talk to my friends or play on my phone and the button never cross my mind at that time."

People looking at the things on the street

Jessica: "Just wait...haha. Look at the car or people on the street, maybe?"

It is difficult to know the button has been pressed

Jessica: "It is hard to check whether the button is pressed or not and I will press it multiple time."

Long wait without countdown is irritating	Flashing red light will affect people's emotions	The prompt tone of traffic light is a little scary
<p>Alexis: "I am annoying it does not show time. I don't know how long I have to wait."</p> <p>Louisa: "Sometimes I wait a long time, there will be a little irritating emotion. Why is it still green?"</p>	<p>Alexis: "It will make me feel a bit flustered. Sometimes it's especially fast, I'm still in the middle of the road, which makes me feel very unsafe."</p> <p>Louisa: "The red light will make me very tangled. I don't know if I should pass it."</p>	<p>Alexis: "It's prompt tone can be changed one, not like a time bomb, a little scary."</p>

There is no clear indication to show the button works, I need to press it repeatedly	The shape of the button is not good	Sometimes the tone will cause a wrong judgment on the traffic light
<p>Louisa: "If the waiting time is too long, I will press the button a few more times."</p> <p>Louisa: "When I am not sure, I will press directly the button."</p>	<p>Alexis: "The appearance of the button is too rudimentary."</p>	<p>Alexis: "When I hear the tone and prepare to cross the road, I was pulled back by someone next to me."</p> <p>Louisa: "Sometimes it's very close. I may play with a mobile phone and not be paying attention to it. When I was prepared to go, I found out that it was not on my side. I have encountered this situation many times."</p>

People will look at the opposite lights when they wait	A flashing red light will make people wonder if they should pass	When people see someone else standing near the light, they will don't press the button
<p>Alexis: "Watch the traffic lights in a daze."</p> <p>Louisa: "Keep looking at the opposite lights."</p>	<p>Louisa: "I don't know if I should pass it. In the process, the light turns red. But in fact, time is enough for me to pass the intersection."</p> <p>Louisa: "When I am not sure, I will press directly the button."</p>	<p>Alexis: "Sometimes, when I saw someone standing next to the traffic light, I felt that I didn't need to press it."</p>

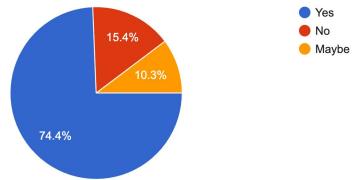
People will look at the opposite lights when they wait
<p>Alexis: Watch the traffic lights in a daze.</p> <p>Louisa: Keep looking at the opposite lights.</p>

Confusion	Pressing habit	irritating without instruction	Sound prompt	Annoying flashing red light	Waiting habit	Cognition of button	Shape of button
<p>When people are in a hurry, they will press the button repeatedly</p> <p>Allen: "Many people in a hurry tend to strenuously press the button, but it will not accelerate the transition of traffic light."</p>	<p>When pedestrians are waiting for traffic lights, most people will habitually press the button.</p> <p>Allen: "Certainly, if someone else does not push it, I will do it or otherwise it will stay red."</p> <p>Serena: "Sure, I habitually press the button by myself because I worry the waiting time will be longer if other passengers forget it."</p> <p>Serena: "Sometimes, I may do so because I habitually push the button when I see it."</p>	<p>They think the pedestrian next to them has pressed the button. But in reality no one pressed</p> <p>Allen: "Yes, I have run into such occasions for few times."</p> <p>Serena: "It happens from time to time. At times, I will not push the button because I think that passengers on the opposite side have pushed it, and I do not realize it after waiting for a long time."</p>	<p>People often interfere with voice prompts</p> <p>Allen: "It happens frequently. When I play with the phone and hear the voice prompt, I will consciously move forward as I think that the red light has turned green light."</p> <p>"The voice prompt which signals the transition of light easily misleads people."</p> <p>Serena: "Yes, Probably everyone has such experience. I have complained about the voice prompt design to my friends before."</p>	<p>Pedestrians often cross the road when the red light flashes</p> <p>Serena: "Some times, when I am going to be late for school."</p> <p>Allen: "I mostly wait at the traffic light, and only take the risk if I have an emergency."</p>	<p>Pedestrians will check the time on the phone while waiting for the traffic lights</p> <p>Serena: "I habitually check time on the phone. I feel anxious about the blinking red light, especially when I am really impatient."</p> <p>Allen: "If I am about to go to school, I will keep staring at the traffic light, check the time on the phone and rush to the school after it turns green because I am going to be late."</p>	<p>Pedestrians will notice the traffic light button when they cross the road for the first time in Sydney.</p> <p>Allen: "I still remember that when I first came to Sydney, I felt quite strange why everyone pushed a round button while waiting for traffic light."</p> <p>Serena: "Yes I have, because Perth's traffic light also has such a button."</p>	<p>The shape of the button is inconspicuous</p> <p>Amelia: "I don't think so. For me, I think it is easy to ignore since the color and the size is inconspicuous."</p> <p>Jessica: "I don't think it is noticeable, I think it can be improved and make it more conspicuous."</p>
<p>When people ensure it was work they will press the button multiple times.</p> <p>Allen: "Sure. In case of a rush, I will press the button again if the waiting time for red light is so long."</p> <p>Serena: "I have such experience, I mostly do so when I am in a hurry. If I am not in a hurry, I will not press it repeatedly."</p>	<p>People will actively pressing the button</p> <p>Gary: "I will press the button. Even if someone else presses it, I will press it again."</p> <p>Serena: "Sometimes I will press the button with the rhythm of the music."</p>	<p>When people see someone else standing near the light, they will not press the button.</p> <p>Alexis: "Sometimes, when I saw someone standing next to the traffic light, I felt that I didn't need to press it."</p>	<p>People will be misled by the warning sound of the traffic light</p> <p>Amelia: "Yes, I did and my friend stopped me."</p>	<p>A flashing red light will make people wonder if they should pass</p> <p>Louise: "I don't know if I should pass it. In the process, the light turns red. But in fact, time is enough for me to pass the intersection."</p>	<p>Things when waiting the traffic light.</p> <p>Gary: "While waiting for the traffic lights, I will choose to see the vehicles that are coming and going. I don't feel bored or annoyed."</p> <p>Walter: "When I am not sure, I will press directly the button."</p>	<p>Pedestrians know the role of the traffic light button</p> <p>Allen: "Sure, if you don't push the button while waiting for traffic light, it will stay red all the time."</p>	<p>The shape of the button is not good</p> <p>Alexis: "The appearance of the button is too rudimentary."</p>
<p>There is no clear indication to show the button works, I need to press it repeatedly</p> <p>Louise: "If the waiting time is too long, I will press the button a few more times."</p> <p>Louise: "When I am not sure, I will press directly the button."</p>	<p>People will not press the button usually</p> <p>Jessica: "If no one presses it then I will do. But if someone presses it, then I will not press again."</p> <p>Amelia: "Sometime it according to my mood. Sometimes I feel interesting to press the button, but sometime I just talk to my friends or play on my phone and the button never cross my mind at that time."</p>	<p>Long wait without countdown is irritating</p> <p>Alexis: "I am annoying it does not show time. I don't know how long I have to wait."</p> <p>Louise: "Sometime I wait a long time, there will be a little irritating emotion. Why is it still green?"</p>	<p>The prompt tone of traffic light is a little scary</p> <p>Alexis: "It's prompt tone can be changed one, not like a time bomb, a little scary."</p>	<p>Wait for the next green light when the red light is flashing.</p> <p>Walter: "It depends on whether there is a car or not. If there are a lot of vehicles, I will choose to wait for the next green light."</p>	<p>People will look at the opposite lights when they wait</p> <p>Alexis: "Watch the traffic lights in a class."</p> <p>Louise: "Keep looking at the opposite lights."</p>	<p>Pressing the button will accelerate the time of waiting</p> <p>Amelia: "I am not sure, maybe accelerate the time of the light?"</p>	<p>Logic of button design is simple and easy to operate</p> <p>Walter: "I think that design highlights democracy and freedom, pedestrians choice when they want to cross the road and the logic of design is simple and easy to operate."</p>
<p>It is hard to know if anyone has pressed it</p> <p>Amelia: "No wonder I was curious that sometimes it can be pressed, but the light never turns to green. It is waste of time, isn't it?"</p> <p>Jessica: "It is hard to check whether the button is pressed or not. And everyone just waits there for another round."</p>	<p>Thought that someone else has pressed the button and don't press it</p> <p>Walter: "When I go out with my friends, we sometimes think that the other has already pressed the button, so this will often happens."</p>	<p>Sometimes the tone will cause a wrong judgment on the traffic light.</p> <p>Alexis: "When I hear the tone and prepare to cross the road, I was pulled back by someone next to me."</p> <p>Louise: "Sometimes it's very close, I may play with a mobile phone and not be paying attention to it. When I was prepared to go, I found out that it was not on my side. I have encountered this situation many times."</p>	<p>Speed up when the red light is flashing</p> <p>Gary: "I will choose to speed up and run because I think the flashing red light reminds me to go fast."</p>	<p>People playing on their phones and talk to their friends while waiting for the light</p> <p>Amelia: "Sometime I just talk to my friends or play on my phone and the button never cross my mind at that time."</p>	<p>Pressing the button will shorten the waiting time</p> <p>Gary: "I thought that pressing the button once would shorten the waiting time, and the more times you press, the shorter the waiting time."</p>	<p>It is convenient to have a button at the pedestrian traffic light.</p> <p>Gary: "Very convenient, because it gives the impression that as long as I press the button, the signal light will turn green."</p>	<p>Button can alleviate the traffic pressure</p> <p>Walter: "I think this button can alleviate the traffic pressure, and can maintain the traffic of the main line and improve the driving efficiency when no pedestrians pass."</p>
<p>It is difficult to know the button has been pressed</p> <p>Jessica: "It is hard to check whether the button is pressed or not and I will press it multiple time."</p>	<p>Multiple voice prompts of traffic lights do not affect the judgment</p> <p>Walter: "Basically does not happen, because I can tell the location of the sound."</p>	<p>Flashing red light make people feel nervous</p> <p>Amelia: "I am so confused about the flashing red light, I thought the flashing red light should occur when it turns to the red light soon."</p> <p>Jessica: "Yes, when I cross the street and I don't know when the flashing red light will stop, I feel shives. Sometimes I will run through the street when it is red flashing light, it makes me feel nervous."</p>	<p>People looking at the things on the street</p> <p>Jessica: "Just wait...haha. Look at the car or people on the street, maybe?"</p>	<p>Flashing red light will affect people's emotions</p> <p>Alexis: "It will make me feel a bit fluttered. Sometimes it's especially fast, I'm still in the middle of the road, which makes me feel very unsafe."</p> <p>Louise: "The red light will make me very tangled. I don't know if I should pass it."</p>	<p>People will look at the opposite lights when they wait</p> <p>Alexis: "Watch the traffic lights in a class."</p> <p>Louise: "Keep looking at the opposite lights."</p>	<p>When people first came to Australia, they didn't know the traffic light button.</p> <p>Allen: "I didn't know what it was used for before, so I asked my homestay."</p> <p>Allen: "I let it very strange when I was still a newcomer, as no such control button could be found in China."</p>	<p>The shape of the button is inconspicuous</p> <p>Amelia: "I don't think so. For me, I think it is easy to ignore since the color and the size is inconspicuous."</p> <p>Jessica: "I don't think it is noticeable, I think it can be improved and make it more conspicuous."</p>

Questionnaire

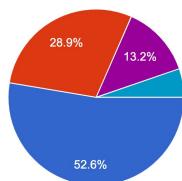
Will you press the button on your own initiative?

(39 条回复)



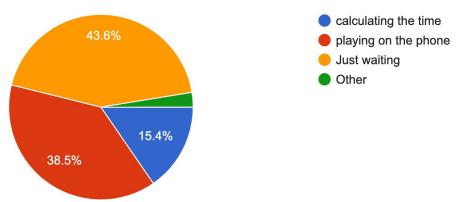
Do you know the function of the Sydney pedestrian traffic button?

(38 条回复)



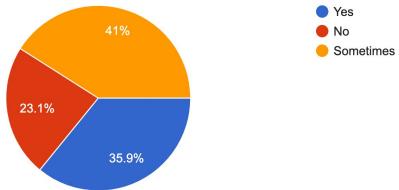
What do you do when you are waiting for the green light?

(39 条回复)



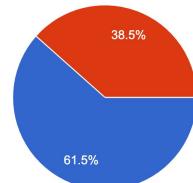
Will you choose to pass when the red flasher appears?

(39 条回复)



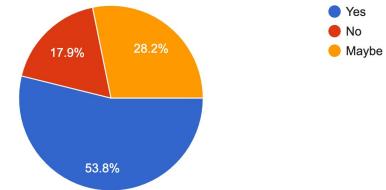
Have you ever waited the green light for a long time because nobody pushed the button?

(39 条回复)



Will the flashing red light make you anxious?

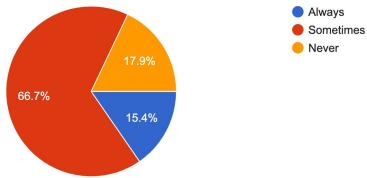
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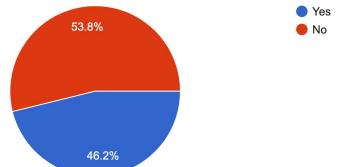
Questionnaire

At the intersection with multiple traffic lights, will the traffic light warning sound make you misjudge?

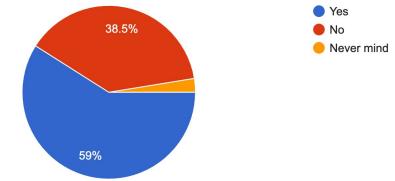
(39 条回复)



Are you satisfied with the pedestrian traffic lights in Sydney?
(39 条回复)

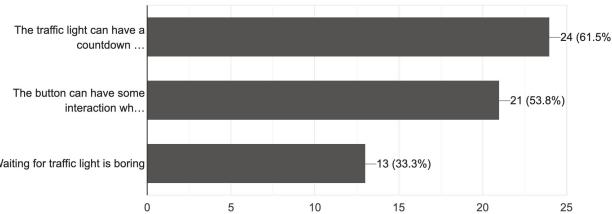


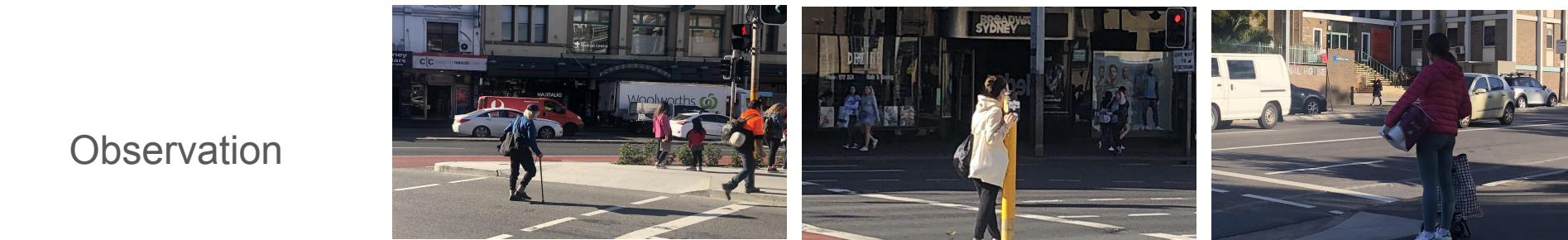
Are you satisfied with the shape of the Sydney pedestrian traffic light button?
(39 条回复)



How do you think the pedestrian traffic lights in Sydney can be improved?

(39 条回复)

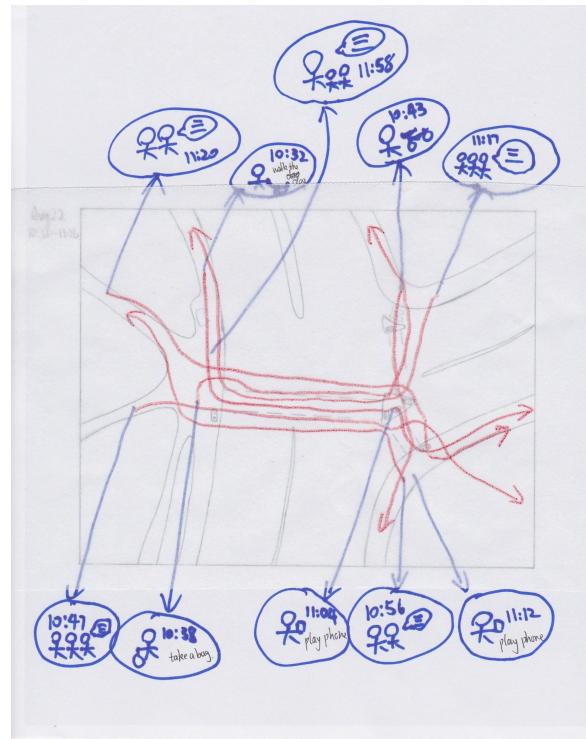
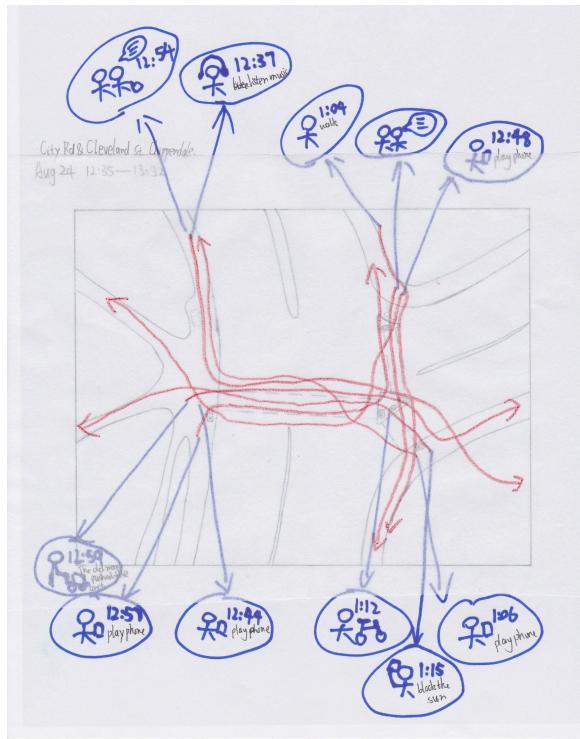
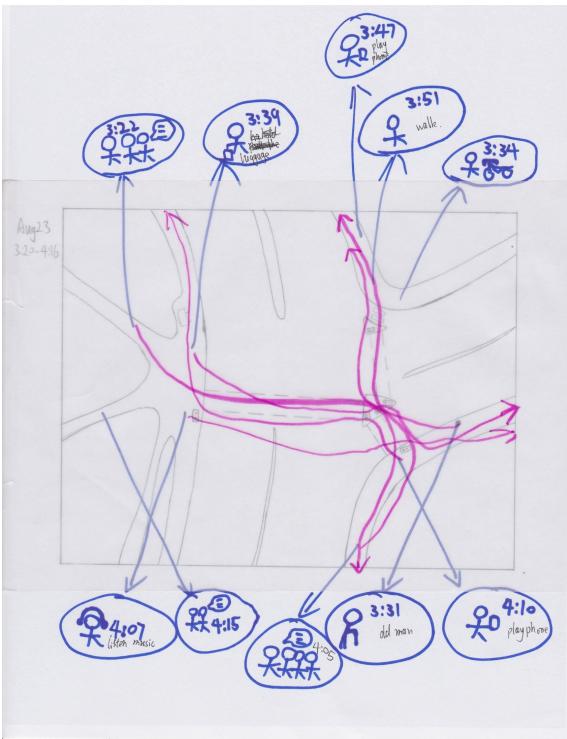




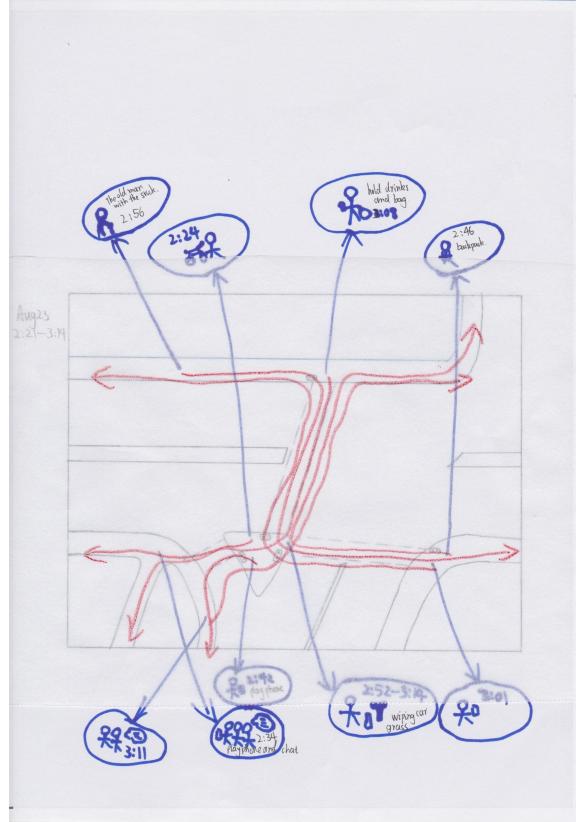
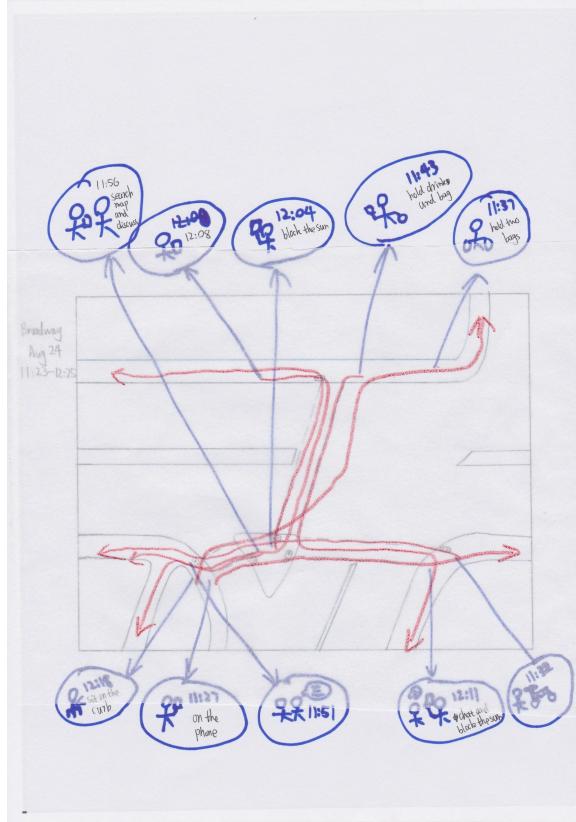
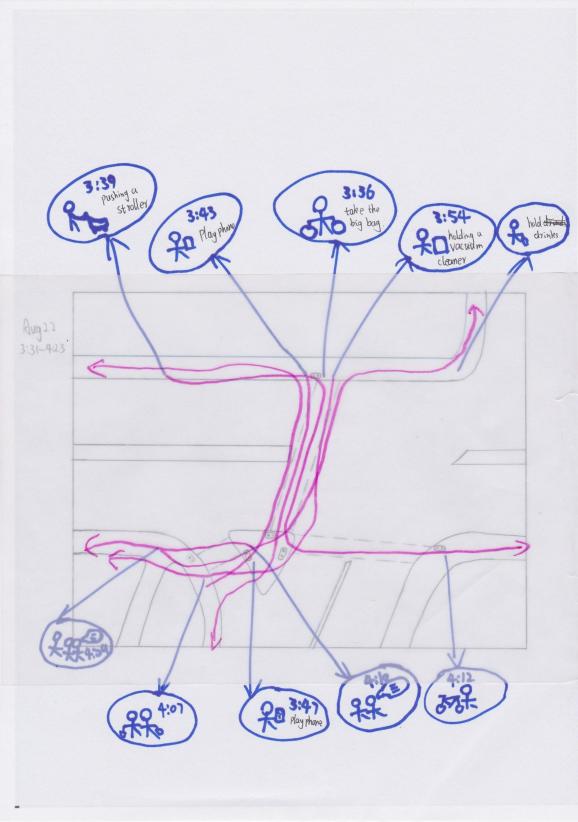
Observation

1. For short distance intersections, a part of people pass after observing that there is no car, even if a red light is on.
2. Some people will press the button again after seeing someone does it.
3. When people pass intersections that have two consecutive traffic light, the length of time on the green light at the first intersection is generally longer, the second one is shorter, and the red light flashes quickly after that. This will make the passing pedestrians nervous and run in order to cross the road.
4. When the traffic light on the sidewalk is green, the vehicle stops waiting for a red light. At this time, someone will shuttle between the vehicles and ask the driver if they need to wipe the front windshield. These people make money in this way.
5. The ray of the sun is strong at noon and afternoon, and some pedestrians will use something to block their face when they wait for the red light.
6. People who have friends walk together with them usually choose to chat, when they waiting for the traffic light.
7. For solitary pedestrians, most of them choose to play their mobile phones or stare at the opposite light.
8. Some pedestrians are also playing mobile phones while crossing the road.
9. Probably because of the shopping malls and restaurants near the observation site(broadway), some pedestrians hold the lunch boxes and coffee in their hands when passing through the intersection. They generally do not actively press the button again.
10. At 12:11 on Saturday, the number of people who cross the road began to increase from other directions to the direction of the broadway.
11. Some pedestrians may search and discuss nearby routes while waiting for red lights. Because they do not understand the route.
12. While waiting for the traffic light, some pedestrians will sit on the side of the road or lean against the lamppost.
13. Due to the shopping malls and supermarkets near the observation point (broadway), some pedestrians carry supermarket shopping bags or hold things. Most of them won't actively press the button.
14. As the waiting time increases, the number of time the pedestrian presses the button again will increase.
15. Some pedestrians choose to pass through the intersection when they see the red light flashing at the intersection. At this time, they generally choose to run to cross the intersection.
16. Generally, people who ride bicycles will not press the button again when someone is next to the traffic light.
17. When people press the button, most people will press it several times in a row.
18. On working days, the number of people crossing the intersection increased after the whole point. The direction is from the University of Sydney. The reason may be that the student's class is over.
19. It takes more time for the old man and the person pushing the stroller to cross the road.

Observation



Observation--City Rd & Cleveland Rd



Observation--Broadway

Persona 1_Sarena



I hope the traffic lights will show the countdown signals.

Demographics

Age: 22

Nationality: China

Gender: Female

Occupation: University Student

Location: Sydney

BIO

Sarena is a international student who is currently in the third year of her university in USYD. She studying a Bachelor of Arts, majoring in Economic. She needs to go to school four days a week. Every time she gets to the uni, she needs to cross the street to get to her classroom building. She was late many times because no one pushed the button.

Sarena is often anxious about being late for class, especially when the traffic lights need to wait a long time. When the red light turns to flashed, she did not know whether she should run. Sometimes the red light flashed for a long time but sometimes very short, which made her very confused.

Goals & Needs

- Display the prompt if someone pressed the button
- Countdown signals
- Play music
- Date and time display on the traffic light

Behaviours

- Understand the function of pedestrian button
- Initiative of pressing the button
- Satisfaction with the shape of pedestrian button
- Satisfaction with the pedestrian traffic light

Persona 2_Amelia



I hope the shape of the button can be more attractive.

Demographics

Age: 22

Nationality: Singapore

Gender: Female

Occupation: university student

Location: Sydney

BIO

Amelia is a international student who is currently in the first year of her university in USYD. She did not notice the pedestrian button when the first time she waited for the traffic light in Sydney because she feels the shape of the button is common and inconspicuous. Moreover, she was confused about the function of the traffic button. She has waiting for the traffic light for a long time due to nobody pressed the button.

In Singapore, pedestrian had better not to cross the street when pedestrian light turns to flashing red light. While in Sydney, sometimes the flashing red light is up after 2 seconds of green light, it makes Amelia feel confused, she does not whether she can cross or not.

Goals & Needs

- Clear instruction for the pedestrian button
- Countdown
- More attractive and interesting button shape
- Reaction when someone press the button

Behaviours

- Understand the function of pedestrian button
- Initiative of pressing the button
- Satisfaction with the shape of pedestrian button
- Satisfaction with the pedestrian traffic light

Persona 3_ Gary



I hope there will be some interaction when i press the button.

Demographics

Age: 21

Nationality: ChangChun, China

Gender: Male

Occupation: university student

Location: Sydney

BIO

Gary is a international student who is currently in the second year of her university in USYD. He knew the usage of the traffic light button, because this button is similar in his hometown. But at the beginning, He thought the more times he press, the shorter the waiting time. However, he found that the number of presses and the waiting time did not matter. So he was confused about the function of the traffic button. He has waiting for the traffic light for a long time due to nobody pressed the button. In addition, he thinks that waiting for the traffic lights is very boring.

Most of the pedestrian traffic lights in China are equipped with a countdown system that allows pedestrians to clearly know the waiting time and the time they can cross the road. However, most of the pedestrian traffic lights in Sydney did not have a countdown system, it makes Gary feel confused, he does not know how long he need to wait for the traffic light and how much time he got to cross the road.

Goals & Needs

- More interaction when waiting the traffic light.
- Countdown system.
- More attractive and interesting when pressed the button.
- Reaction when someone press the button.

Behaviours

- Understand the function of pedestrian button

[]
- Initiative of pressing the button

[]
- Satisfaction with the shape of pedestrian button

[]
- Satisfaction with the pedestrian traffic light

[]

Persona 1_Louisa



I hope that after I press the button, it can be clearly reflected.

Demographics

Age: 23

Nationality: China

Gender: Female

Occupation: University Student

Location: Sydney

BIO

Louisa is a student of Master of Interaction Design and Electronic Arts in USYD. She often chooses to walk to school. In the process, she needs to pass five intersections. She often presses the button of the traffic light repeatedly because she doesn't know if it works.

Goals & Needs

- Pedestrian countdown timers
- More interaction of button
- The reflection of button
- New shape of button

Louisa thinks it is compared to the case without buttons, the button will give me psychological feedback. I pressed the button. The light will turn green. But sometimes she doesn't know if it works. She is also confused about the flashing lights. She didn't know if she should cross the intersection at this time. She hope it will give her feedback on the length of time.

Behaviours

- Understand the function of pedestrian button
- Initiative of pressing the button
- Satisfaction with the shape of pedestrian button
- Satisfaction with the pedestrian traffic light