



Pain Point Analysis

1. Limited feedback from hearing and touch makes it difficult for blind people to effectively perceive changes in their surroundings.

2. The feedback of the blind cane to the ground texture and surface is not precise enough, which may lead to blind people being unable to accurately judge road conditions.

3. The lack of modern technology has caused blind people to lack necessary external information support when traveling.



General Cane Structure

Anti-slip handle

Materials: plastic, rubber

Anti-falling wristband

Material: Plastic

Red reflective strip

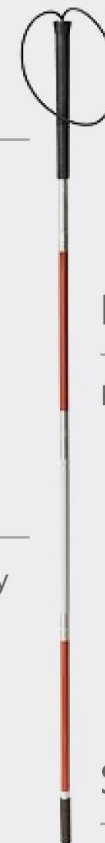
Materials: plastic, polyester

Folding rod

Material: Aluminum alloy

Slip-resistant dock mat

Material: Rubber



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Psychological analysis

Sense of Security:

Blind people often experience anxiety when traveling due to the lack of a sense of security. They need to have trust in their surroundings, transportation, and the behavior of those around them. This causes them to rely more on their senses such as hearing and touch to perceive the environment around them.

Emotional perception:

During travel, the emotions of blind individuals may be influenced by environmental changes such as weather and crowded crowds. As a result, their emotions may be affected and there is always a barrier between blind and sighted individuals.

Memory perception:

Perceiving the world through memory is an important way for blind individuals to perceive. This physiological feature makes blind individuals especially sensitive to sounds, textures of materials, smells, tastes, and more.

Conclusion

In designing a barrier-free environment for blind people, the focus should be on improving their perception of the environment through auditory and tactile cues, making it easier for them to remember the travel environment, reducing obstacles in their daily lives, and further enhancing the convenience and comfort of travel.



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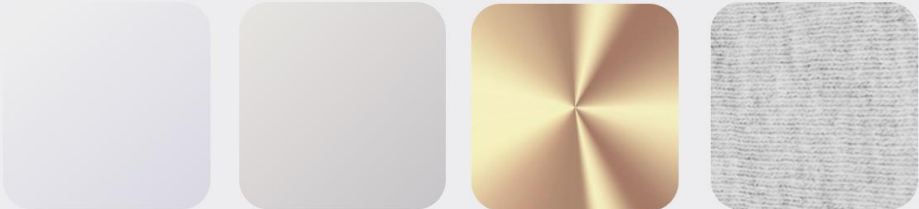
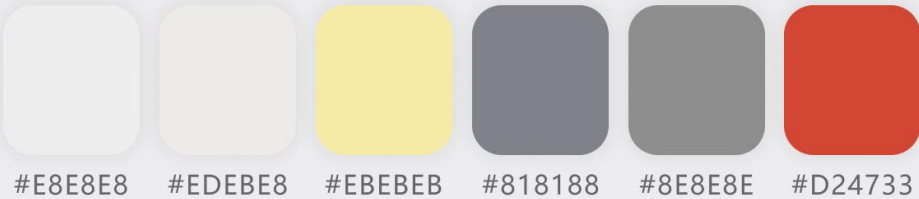
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CMF analysis

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BUILT-IN DEDICATED BLUETOOTH HEADSET

The handle of the white cane can rotate, pulling out the earphone compartment inside, where a dedicated earphone is built-in. To prevent the earphones from falling out due to accidentally opening the compartment while using the cane, a concave button was designed above the compartment, reducing the inconvenience caused by the user's mistakes during use.



The headphones are made of lightweight materials (such as polymer or aluminum alloy), with a compact design to ensure a good fit for the ears. They also use silicone earplugs to achieve noise-cancelling effects and can be connected to a cane via Bluetooth technology to transmit real-time environmental information. The following are the features of the headphones:



Call
Hold the call



voice
Communicate with family members



connect
Connect with the cane



Touch
Touch control (volume)



Noise reduction
Reduce the impact of noise on communication



Warn
Road condition warning



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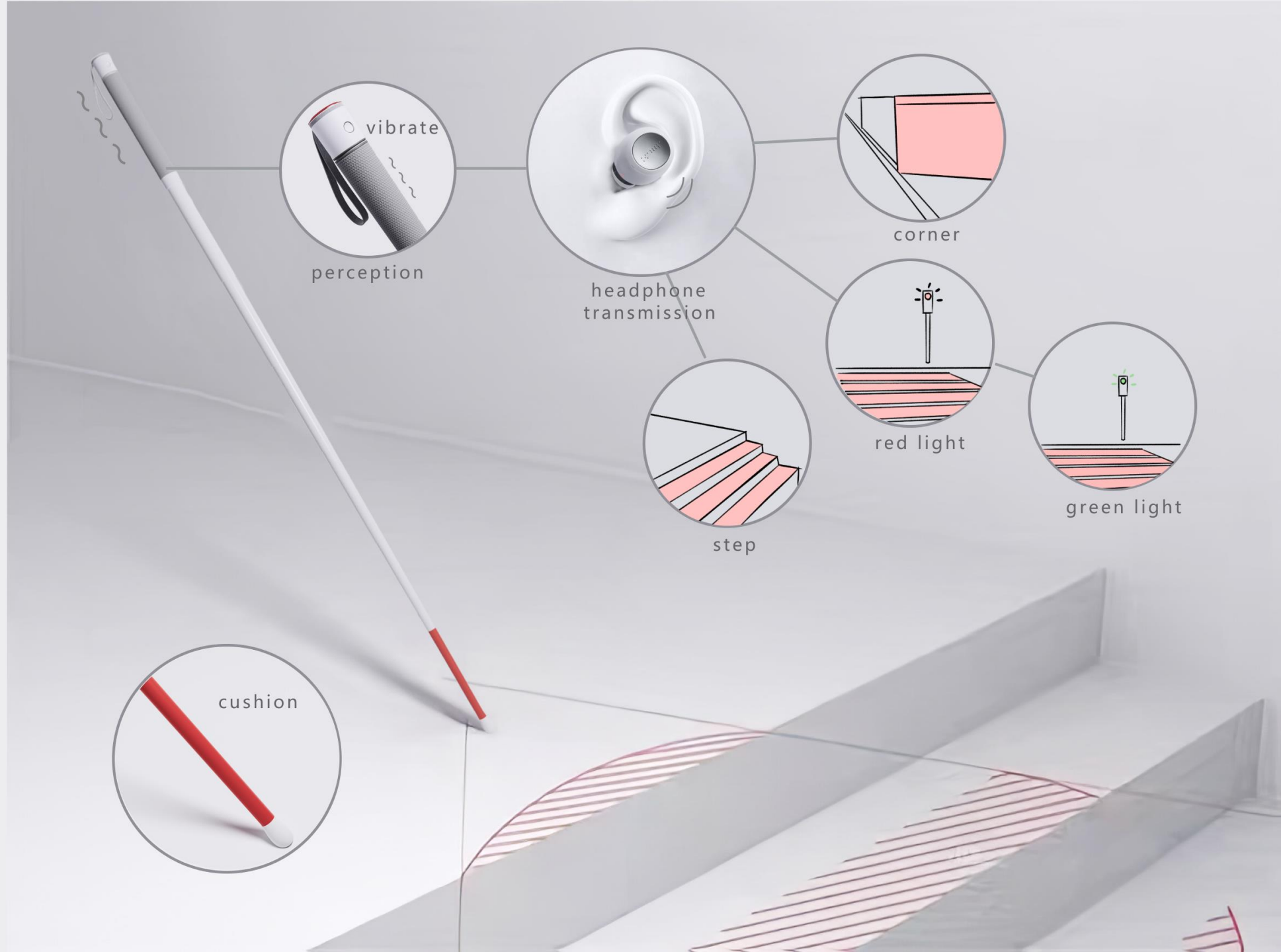
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CMF ANALYSIS

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01 The front end of the
02 cane is equipped with an
03 ultrasonic sensor, which
04 can detect obstacles in
05 front, including
06 pedestrians, buildings,
07 and other obstacles. The
08 sensing information is
sent to the headphones,
ensuring that the blind
can receive environment
information in a timely
manner. In addition, the
handle of the cane can
also provide information
feedback to the user
through vibration,
enhancing the sensory
experience.

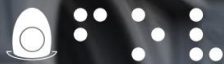




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FIELD OF VISION