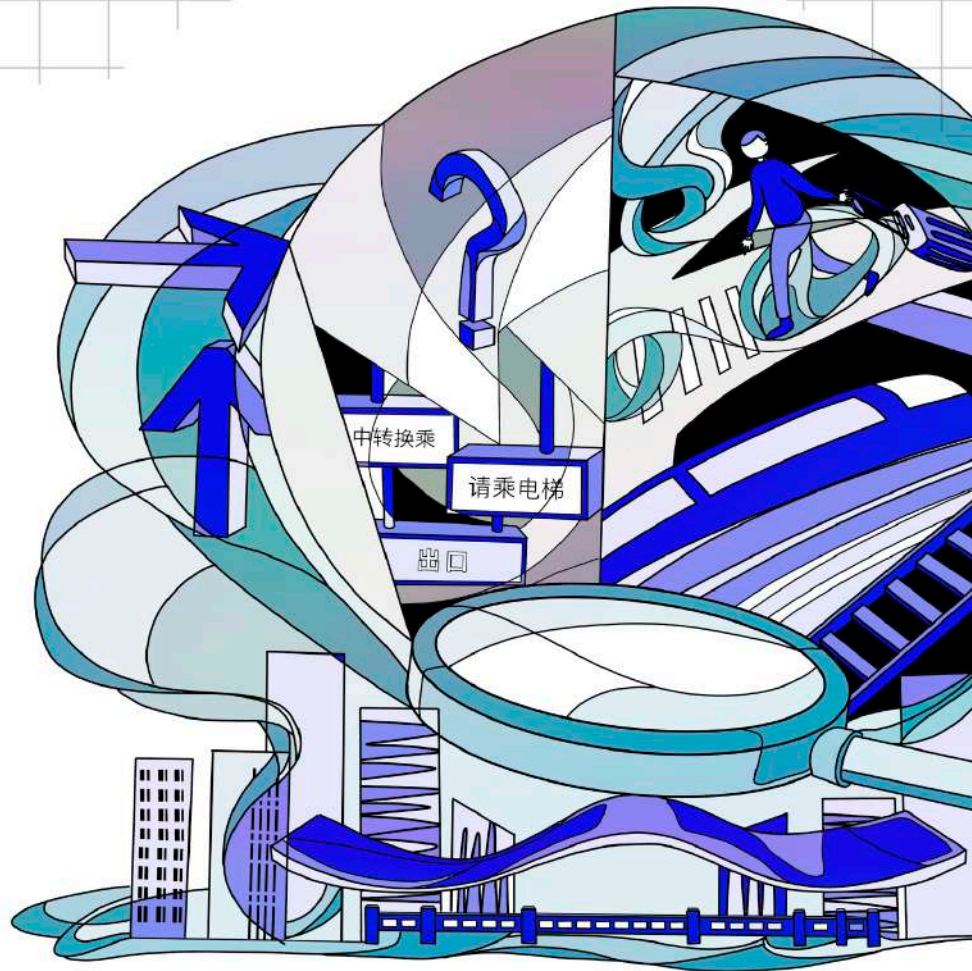# USER EXPERIENCE AND ENVIRONMENTAL GRAPHIC DESIGN

IMPROVING DESIGN OF SHENZHEN NORTH STATION

QIXUAN CHEN

User experience and Enviromental Graphic Design

Improving design of Shenzhen North Station

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Contents

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7. Research of Shenzhen North Station

8. Study case

9. Design process

10. Reference

Abstract

With the aim of the development of the user experience of the northern station of Shenzhen, this project tries to start from the Enviroment Graphic Design and to combine the design of the user experience to study this railway station.
Based on field research and theoretical study, I developed a possible concept to address existing problems.

Con l'obiettivo di sviluppare l'esperienza utente della stazione nord di Shenzhen, questo progetto cerca di partire dall'Enviroment Graphic Design e di associare la progettazione dell'esperienza utente per studiare questa stazione ferroviaria.
Sulla base della ricerca sul campo e dello studio teorico, ho elaborato un possibile concetto per affrontare i problemi esistenti.

Introduction

Shenzhen is an energetic city with various kinds of passion people. For serving a great amount of people from all the country, Shenzhen build a multifunctional train station named Shenzhen North Station. While with a magnificent architecture design and minimalist interior design, this station still can't offer a better user experience. So following this existing problem, author start to study the reason behind these terrible experience and figure out the method to improve this situation.

So User Experience design offers a powerful theory for understanding better how user behaviour in the using process, and the Environmental Graphic Design provides a scientific way to salving this problem.

For starting this project, I did a various of research in Shenzhen North Station, like photographic research following the user and intervewing users in the station. At the same time, I also did some research in Lyon station and Berlin station for understanding better how to design a better way-finding system in train station. City identification research also helps me learn better about other people who lives here thinks about this city and provide me a design reference.

After this serious of research, I come up a possible ideal concept as a Enviromental Graphic design solution for the train station.
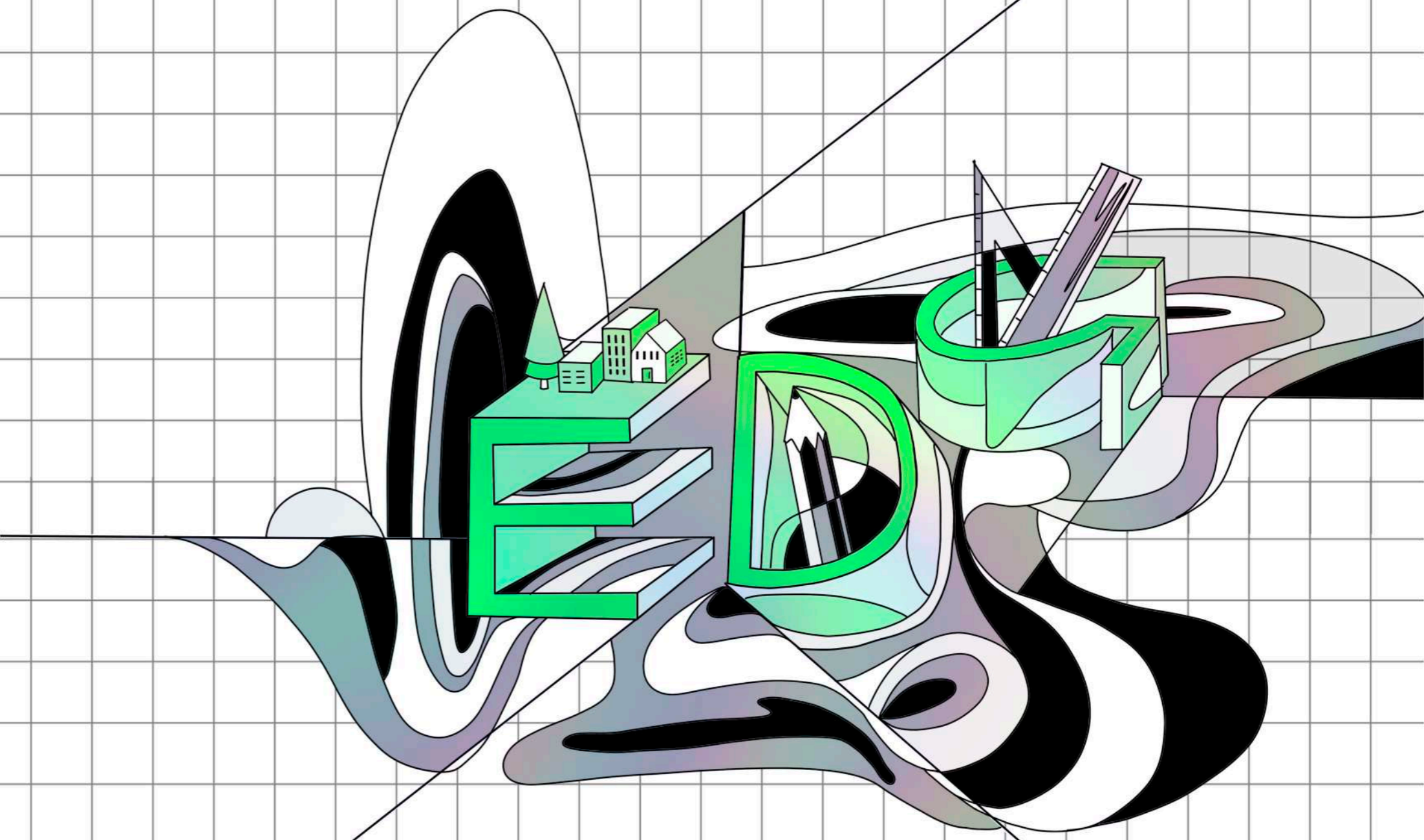
Environment Graphic Design

Fig.1
"Like me-Our Bond with Brands"
an original exhibition designed by Lippincott

1.What is Environment Graphic Design

1.1 A multiple subject

Environment graphic design(EGD), as an important discipline of architecture and environment design, it plays various kinds of role. After about 40 years, a group of designers recognised that EGD is more than signs, so they were formed the Society of Environmental Graphic Design(SEGD) organisation and advocated in expanding the area of communication in the building environment.
It can be described from two aspects: one is technical relevant subject, another is from design psychology factor.

1.2 The rules of using the place

According to the SEGD and currently eduction requirement for Environment Graphic Designer position, EGD more akin to environmental, architecture, graphic, interior, landscape and industrial design. They are all concerned with visual features of way-finding, communication identification, experiential graphic, information guideline and special feature, meanwhile shaping the idea of creating experiences that offer a sense of connection between people and space. Since the architecture defines how the space unfold, and EGD reinforce with the idea of how to use this place and what its relevant story and culture.

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Fig.2
Signage design in front of the library

1.3 EGD plays a key role in storytelling

Form user experience design, EGD improving the quality of using the place, meanwhile integrating a story with the building and creating a beautiful memory for the users. It's a way of engaging users to learning this place. The space is not only functional but also relevant to the user especially in the history museum, in some way EDG helps users to understand better and connect with the place. It values intangible culture as tangible visual. This kind of design strategy shows obviously in public space like various types of museum, plaza and so on.

While for those commercial buildings like corporate headquarters and office building, it act as the engagement with branding and other communication. Nowadays lots of the company use it to express their corporate culture strategically. Because EGD is the touch point of the space, it gives a first impression at the beginning before the guide function, and offer a better experience for visitor. While for the staffs, it creates a sense of belonging and feeling valued for their contribution. EGD application can help the users: office workers understand and become closer to their work space, making those workplace values more tangible via visual competent to tell the corporate culture. So it can be said as a memory creating machine.

Fig.3
Wayfinding design

1.4.The spectrum of EGD

Before human used every kinds of symbol and pattern to orient the place, it can be recognised as the original EGD. And in contemporary, human use signages and way-finding programs give a singular, unified voice to an environment or a site within it. So it established the contemporary EGD activity involve the development of systematic, informationally-cohasive, and visual graphic communication system for given site within the built environment. It can range form complexed city building to public transportation network of city or region. And it has been identify as three main components by Wayne Hunt: signage, Placemaking and Interpretation.

Signage and way-finding which navigate the people to a site or orient them.
Placemaking, creates a distinctive symbol or mark for a site.
Interpretation, telling the story of a site.

Both of them play an important role in Environment Graphic Design, and have a strong connection with each other in various kind of forms, from print way to digital platform.
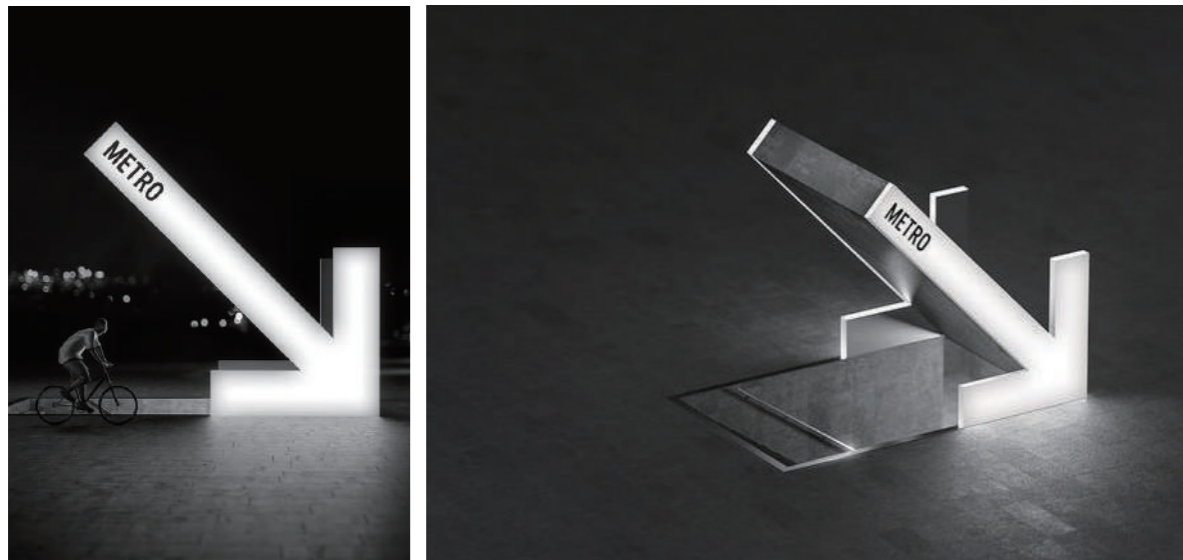
Fig.4-5
Landmark
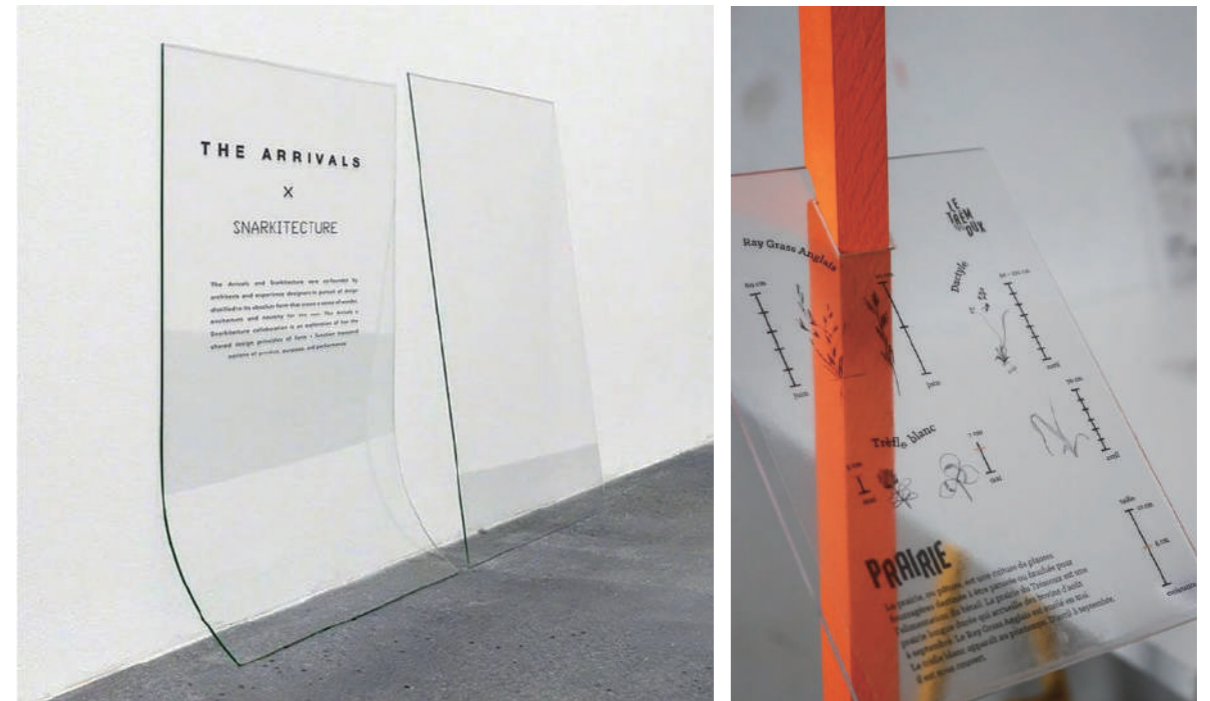
Fig.6-7
Interpretation

Fig.8
Signage design of Umeda Hospital
Photo: Designing design

fig.9
Signage design of Umeda Hospital
Photo: Designing design

Umeda Hospital | Hikari-shi

Umeda Hospital is a gynecological and paediatric hospital, which is located in Hikari-shi. For transforming a soft space experience, designer Kenya Hara created a signage system with white cotton. Although it is easy to get dirty with the white material, while Kenya Hara still use it to present the best clean and sanitary idea of the hospital. Because the white cotton suggests that "we do the clean work frequently. " So all the signatures were designed as a removable cotton and allowed to be took off for cleaning.

This is a case that shows how signature effects the atmosphere of the space. The material also can be used to create an incredible experience, and with the related object, it achieves the transforming from the physical things to a formless feeling via reminding users of their previous experiences.

Fig.10
Signage design of Umeda Hospital
Photo: Designing design

fig.11
Signage design of Umeda Hospital
Photo: Designing design

Katta General Hospital | Hikari-shi

In this hospital, Kenya Hara was more focus on creating a tense atmosphere. Since a hospital with a neighbourhood feeling can't provide a professional and trustful expression. So using the red color as the main color for the navigation system to construct a professional impression. And according to the main users are elders, he scape-up every font, make them obviously and acceptable.

At the same time, it was designed to print on the floor for avoiding the signages beyond the walls and roofs. In this way, the navigation system were presented in a complete visual way and reduce the difficulties of reading.

Navigation system design also considers about the target users, for this case, it shows how design balance the relationship between the users and space. Different place has different functions with the different users, so these different requirements ask for a smart decision that can satisfy the needs.

Perception

Perception
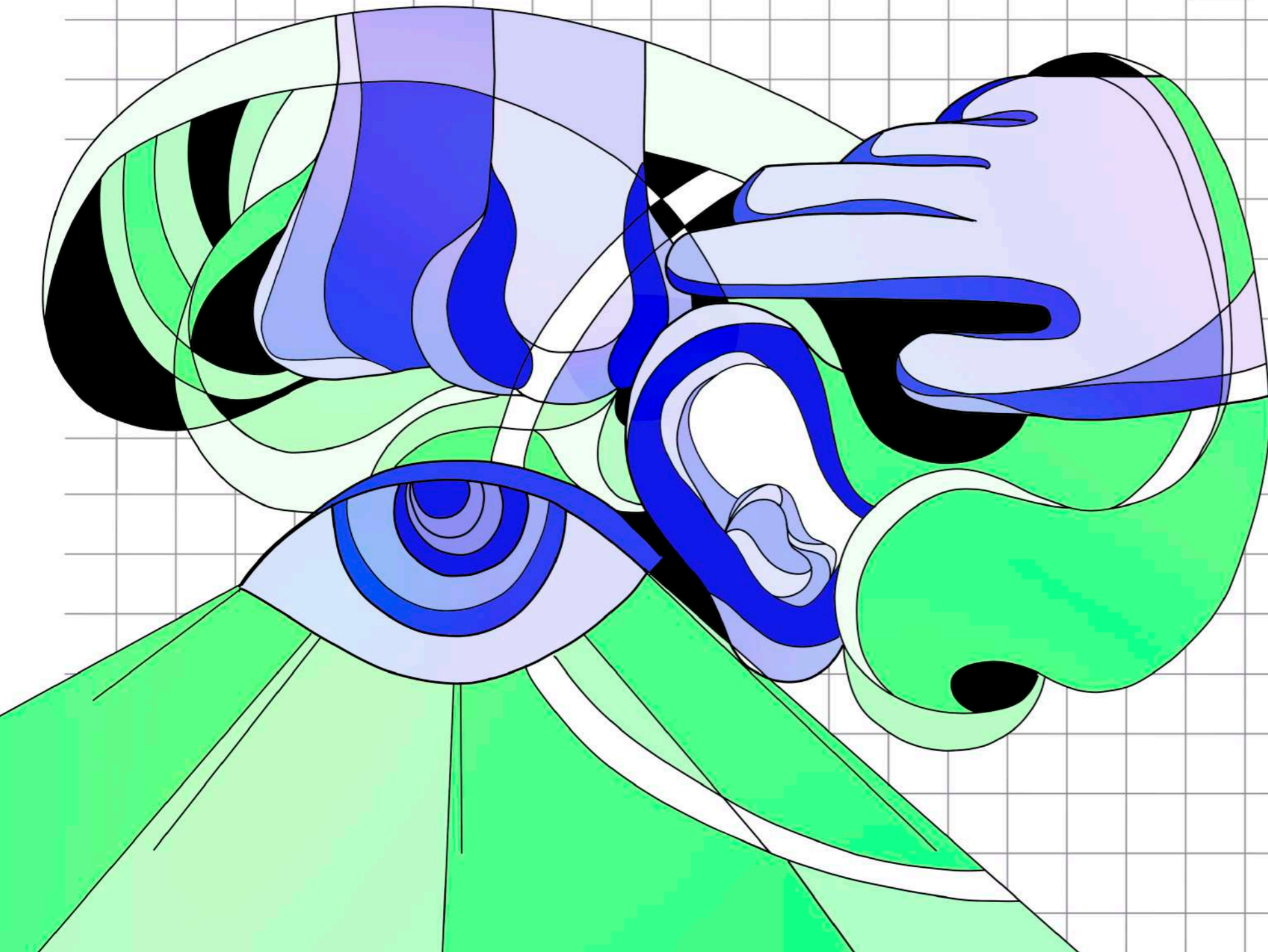
2. Perception

As Maurice Merleau-Ponty considered in "Phenomenology of Perception", perception is the original awareness. This is not about thinking but the human body provide a primary state. So at the beginning, human start to interact with this world through their body instead of the way of consciousness. Their body is the first part that starts to observe, smell and feel the outside world, as the witness of this world. Therefore the perception is the first.

According to the Maurice Merleau-Ponty's opinion, the first existence is the perception, it is the root of the thinking, science and spirit. Which mean we know this objective world through the perception of our body rather than rational thinking. Under this idea: perception first, it tell the true that people as an existence of sensibility, they will use a sensible method to explain their existence. So people accept the new information through their sensory, rational information always goes behind.

Therefore studying people's perception is primary study for understanding the interaction between user and the space(train station), knowing the users' feeling during their using experience. Meanwhile figuring out how information navigation system lead user to their destination or how user arrive their target point with the signages.

2.1 Distance receptor and direct receptor

Human has two kinds of sensory organ in their daily social scene and outside world experience, following the Edward T.Hall's research in book "Hidden dimension", it can be classified by distance organ: nose, ears and eyes, and direct organ: skin and muscle. Both of this organs accept all the information from outside world and form the sense of feeling we call five senses that will affect our evaluation of the world. These organs are in charge of different functions and aspects in our sensory and deliver messages to our brain to send our body an indication of reaction.

For the study of train station in Shenzhen North, direct receptor has its important meaning. It help us to understand further about how people receive the information from this capacious public space.

2.1.1 Olfactory

Olfactory has a limited functional range: it only work within 1m. In this distance people only can feel the light smell from the other people's clothes or personal object. Even the strong perfume can only be smell inside the 2 m to 3 m distance. Once over this distance, people only can feel a strong odor but without knowing what exactly is.

In the public space (train station) the smell may doesn't work directly in functional aspect, but in a indirect and potential way to affect the decision making. This will be discussed in the following chapter.

2.1.2 Hearing

While the hearing can work wider than Olfactory. Normally people's hearing functional maximal distance is 30 m, once over the 35 m, people's hearing capability become weaker and the information will be deliver in an unclear way. So we only can hear the sound but we can not notify what is it currently. When the distance arrange to 1 km, people only can feel the cannon sound or other extremely loud noise.

In the daily sense, our ears work very well within the 7m. In this distance, we can have an accessible communication.

Normally train station will use broadcast to notify user the train's platform or any sudden situation. Some time it also play the urgent information like helping user looking for something or something un expected. During the design, once sound is used to offer some information or make some comfortable effect, it require thoughtful consideration in users' accessibility.

2.1.3 Vision

About the vision it works with the widest rage inside these three sensors. People can see the plane in the air even they can not hear the sound, like the stars form outside the earth. But when mention the effects of the feeling and clearness, human's vision is still limited.

Even though people can notify the moving object and people within the 0.5-1km, in the social perspective, people's visual distance is only 0 - 100m. They can distinguish the people flow, but when shorten the distance less than 100m, people can tell the exactly target, it becomes a clear person rather a rough person silhouette. and this is what we call social perspective. For example, in the swimming area of the sea, people flow can be distributed as every 100m distance.So in this way they can know their nearby situation, even in the state of the beach.

Then in the distance between 70m to 100m, people can know the attribute of the object, for example they can know a person's age, gender and their behaviour. When it gets closer like 30m, people can tell their specific characters, like their hair style, face even their age roughly. While within the 20m-25m people can know better about what they see, they can tell a person's emotion and a way of expression. Until the distance get closer to 1m-3m, this is our normal social distance, we can experience the basic social details.

In train station such kind of public space which is full of people, so it is important to know the way of putting every information so that users can help themselves to get the useful content quickly. Especially in the entrance with different function, distance and the size of design should be considered to provide an effective and clear information. While in the interior, a best organisation of the distance can guide the people flow orderly and offer a better experience. For example , how to set the visual distance between the users and the navigated information. And the certain distance between each waiting seats and offering a proper distance from the users who seat on the waiting area can catch the importance checking information. Meanwhile queue space is required for the waiting passengers in case the congestion.

2.2 Forward and horizontal perception

Human's sensory organ is ahead to horizon especially the vision, since human being's natural walking way is horizontal advance with the speed of average 5 km per hour. This how the sensory organs develop with a natural evolution. It has the most complete function to assist our needs.

Therefore the horizontal vision is wider than the vertical vision. When we look ahead we can see both left and right sides with 90 degree vision and notify the situation inside this area. While when the vertical vision becomes narrow, especial the up direction, it get less vision compared with other direction. In the daily walking behaviour, people will look upon about 10 degree for watching over the road. So in fact, during this process people only can see the ground and what happen in the floor space. If in the train station, walking people only can see the ground and the horizontal space's situation. This is also the reason why daily necessities products also are set on the horizontal direction in the supermarket. While put those products that we barely buy on the top of the shelf.

2.3 The vision in flowing space

In fact, during the process of using the train station, the situation is more complicated which means there are much more aspects need to be considered.

From the starting point to the destination, users are always in a state of movement. So in a space with most moving people, it form a dynamic space. And in this dynamic space, different people in their different direction, it creates an intricate scenes which mean all the moving people can be one of the interference factors. During this process, from the beginning to the end of the destination, user's attention was distracted by various kinds of moving points easily, even their personal moving speed will affect them to get the crucial information on time.

In this dynamic scene, for assisting vision organ to gain information, these following aspects need to be considered :

a. The size of the design

In fact different people has difference capability of eye sight, especially with the different height. Meanwhile in the crowed scenes like entrance, people flow also will effect user obtain their information effectively. So considering this objective factor, information should be designed with a clear and a scientific hierarchical structure. At the same time considering the integrating of the space and the using state according to different scenes, making a reasonable information layout and set up a certain size with an accurate distance. So users's available vision is the key decision reference.

b. The visual design system

In such a dynamic scenes, there are more than one disturbing feature, so the visual system should provide the assistance rather than becoming another new disturbing.

A successful visual system can offer users to a continuous guidance. It can build up a sense of awareness about the navigation system at the searching point until their arrival. Except a hierarchical information structure, users also need a standard visual system to help them gain the important content right away. Once build up subconscious system, evaluation time will be reduced because of fellowing the same visual system, especially visual content come to users' mind faster than the other kind of information, so that user's mind will have a faster feedback.

c.The information transfer rules

Form obtaining the information, processing information until ordering instructions, our brain needs time to complete this serious works. So if each process can work in advance, it will make a great help of decision making. Therefor it can set up a serious of information form "indication", "prompt"and "suggestion" to build an integrated transfer system. Therefore "indication" tells the exactly location, "prompt" indicate the next step (stop) and the "suggestion" gives a sense of safety and comfortable. From these three aspects, users will know the information in advance, and do a preparation at the same time.

User
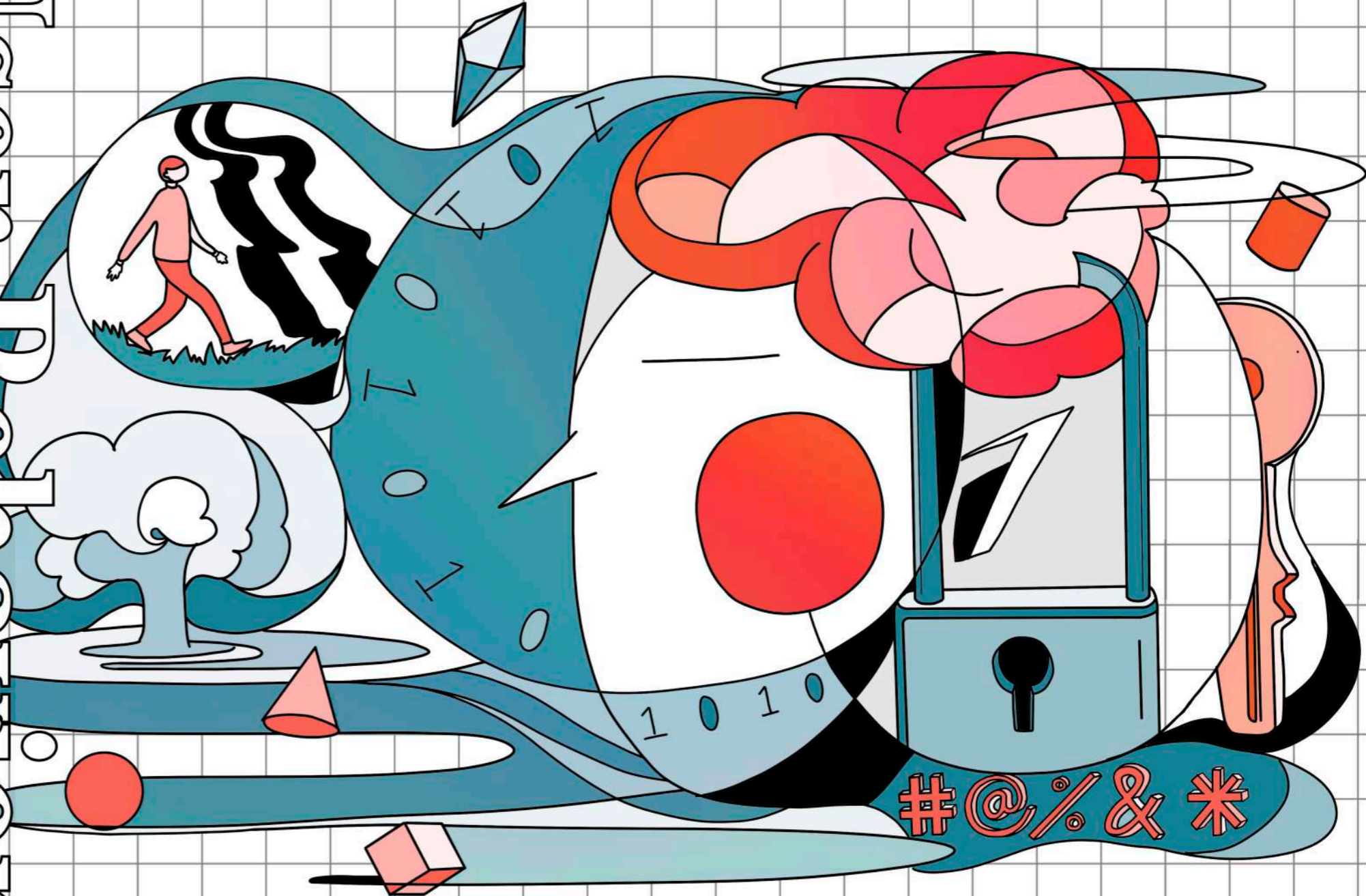
Behavior

3.Users behavior

3.1. The knowledge in mind and the knowledge in outside world

As Donald Arthur Norma said in the "The design of Everyday Things", human being's behaviour is affected by the association of the memory inside the people's mind and the outside environment information. A person who use the metro daily can't tell the exactly way to arrive the platform, when you ask them outside the metro. Obviously everyone know how to walk to their target platform but they can not remind the detail without the help of the environment. While most of the younger people can touch typing but none of them can repeat the each letter precisely without the keyboard. In fact, a serious of accurately operation doesn't all save in person's mind, it just a part of the knowledge and as a memory which was kept in mind, with the part of instruction that stays in a specific environment or situation, and the part which is coming from the limited condition objectively.
So people will remember how to handle different things when they are put in a certain circumstance.

Following the Donald Arthur Norma's theory, the reason of users's accurately operation behaviour was built without a serious of precise knowledge is 4 aspects:
1. The information is saved in the outside world
2. Highly accuracy knowledge is needless
3. Natural limited condition
4. Cultural limited condition

3.1.1 Information is saved in the outside world

People didn't keep everything in mind, in fact, some of the information was left in the outside world. It like a lock, and waiting for a key to open itself in a certain time. For users, when they touch the related place, they will know their next step

directly, because they will use the memory part as a key. For example, in the same bus station but in different destination, user always can walk to their direction under the help of the nearby public structure or the special building. They even don't need to watch the bus routine on the wall, they already know they stand in the right side. For those using this bus station, they record the place with the related feature. They properly don't remember the bus's final destination, but they will know which side will bring them back home.

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3.1.2 Highly accuracy knowledge is needless

With the assistant of the outside world information, there is no necessary for the people to remember everything precisely. Normally people will record some key words or the related messages that would help to touch on a correct operation. So when some metro line like to use the locomotive as their icon, and the train station also use the similar locomotive as their sign's concept, user would easily mistake these two signages. Especially inside the train station, for those who offer a connection with the metro, it needs to navigate the direction to the metro and train platform. In this situation, users would go to the wrong way because in their mind, different people saved it as different messages, some one may consider as train, while for other may think it is on behalf of the metro. The information didn't saved in their mind in precise way, so they only have an attracted memory which can not help them make the decision. Therefor, when this situation comes, users can not handle this issue with the ambiguity information. Since users usually only remember some points of the object.

3.1.3 Natural limited condition

The objective physical condition will restrict people's behaviours. For example, when a person arrive a decision point during his way, even if with two directions, the one with locked iron gate will reduce the selection directly. Obviously, there is not two options anymore, the gate with the locker reject the passing. That is why roadblock always used to restrict the way. As a result users' memory will be reduce this content, and tell the brain there is no cross on this road.

3.1.4 Cultural limited condition

Except the physical limitation, users' cultural background is also a factor that would effect their behaviours. When people will walk to the underground, want to take a metro, because everyone know that metro is a public transportation which exists under the floor. While if they want to take the bus they will go to the ground, since there is no bus running underground. So if the transportation company want to build another transportation method on the viaduct, they should give a new name for it in case mislead users' behaviours. They can't call it metro neither bus, but a name shows the difference between the previous two way, like BRT (Bus Rapid Transit) in Xiamen city.

All of this objective exited conditions limit the users selection, meanwhile it can not promise a right guidance for the user. But it allows user to reduce some unimportant information. And most of people's behaviour occurs in the association with the environment. They can remember roughly what they need to do next, but only under the assistant of the outside related issues, then they can continue to perform their next action.

It is same as the train station, even for those who use the station over and over again, they still need the assistance of the outside environment in the station to indicate their next action. So an ideal environment graphic design would navigate the new users to achieve their goal, meanwhile offering an instruction to support previous users to continue their action. Then following the physical and cultural limited condition, EGD should organised a better solution base on the target users' cultural background.

3.2. Subconscious behaviour and conscious behaviour

In the daily, people has two main behaviours, one is conscious, another is subconscious. But most of the people's behaviours are finished under the subconscious condition.

3.2.1 Subconscious behaviour

As what Donald Arthur Norma said in the "The design of Everyday Things", subconscious thinking is a matching process, it always looking forward the similar mode in the previous experience. Therefore, subconscious thinking activity running automatically in a fast speed. It isn't in a hardworking status. With this human being's advantage, people is good at observe the development and the trendy of the subject, and then base on comparison between the new observation and previous result, they make a conclusion and give out a general rule. But if people running the relative subconscious action under the unexpected experience, like acting in a special condition with a normal condition behaviour, it will occur mistake.

There is a user who use the train station every month, she alway take the train to the same direction. She alway take the train on the second floor, so every time she is ahead to the second floor without hesitation. Until one time, the train change the platform because of the unexpected issue, she still went to the second floor and wait for a long time. At the end she missed her train unfortunately with the following her subconscious behaviour.

3.2.2 Conscious behaviour

The conscious behaviour is quite different with the subconscious behaviour. Conscious thinking is working in a certain step, so it process in a slow speed with a precise operation, and it relies on a short time limited memory. Normally conscious thinking is required to compare difference and give out a certain explanation, and then base on this reasonable analyst, people will perform their action. It takes time from the beginning to the finally behaviour.

Although the whole process following the logical method and conscious thinking can search a matching case from the previous experience, once matching with a wrong case or meeting the unique situation that never happen before, people also would get lost in this process.

Both of the subconscious behaviour and conscious behaviour can occur mistake in users decision process. So for designing the train station environment also should consider the error-tolerant, which mean it allow the user to make mistake meanwhile give them a chance to correct the wrong decision. In the computer system, it always exist a function name "undo operation", in the reality, user properly can not undo their decision, but they need the notification to tell their decision's result, in this way, they can know if they walk on their direction under the feedback that is designed by EGD.
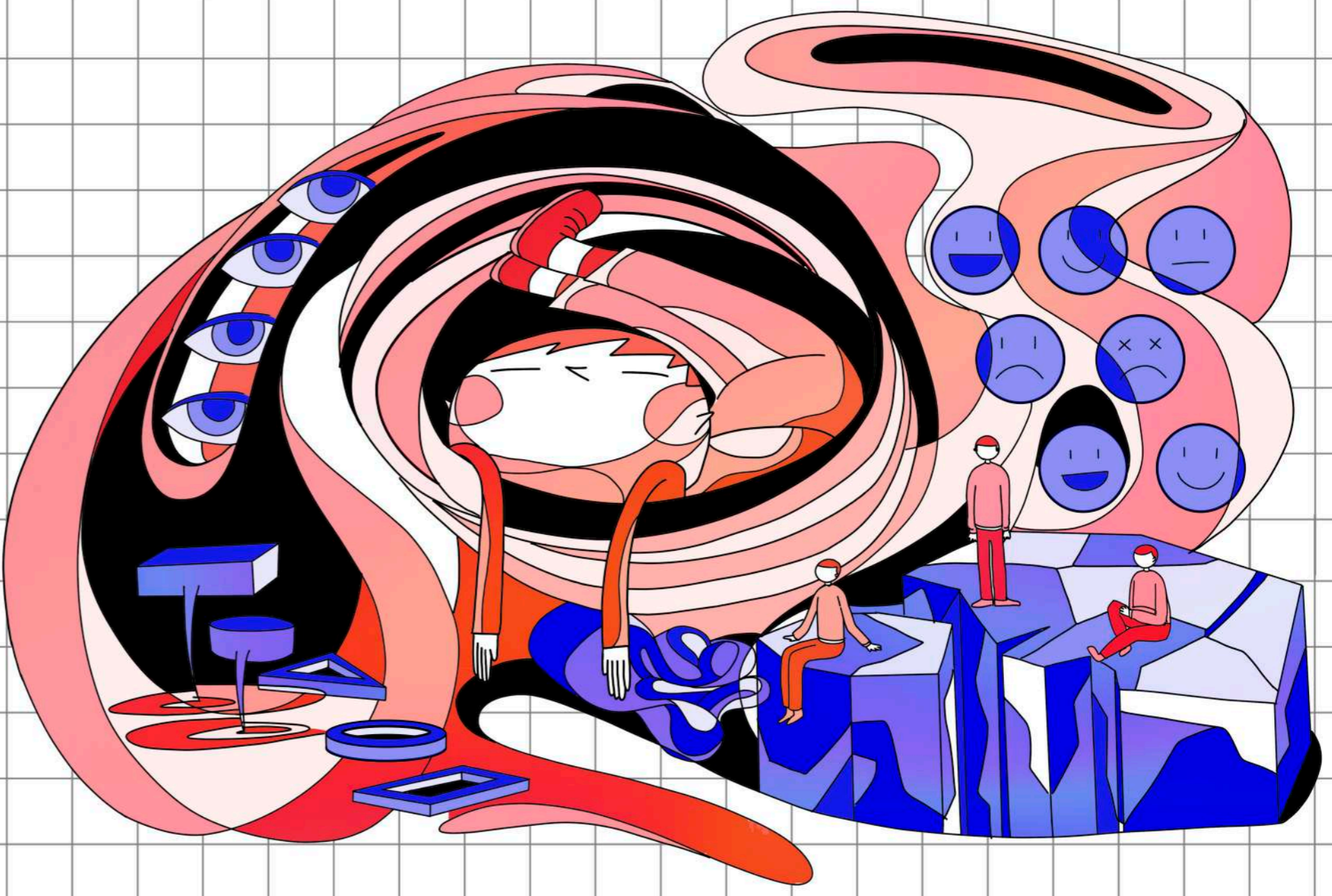
Emotional

Emotional

4. Emotional Design

As Donald Arthur Norman said, emotion change brain's mode of problem solving, emotion is a key point that affect the cognitive system's working model. Since human is the most emotional animal in the natural, especially in the daily life, emotion play an important role. It assists the human's evaluate system to distinguish right and wrong, safe or dangerous. Emotion helps people making the decision. It can be considered as the valuation for the better life.

Everything's process includes the cognitive part and the emotional part: cognition tells the value of the object while emotion value it. Like happiness makes people become more creative. But intense feeling will push people in a concentrated situation automatically. So the emergency using product should be designed more carefully.

As Donald Arthur Norman indicated in the "emotional design", human's daily brain activities have three dimensions: one is the innate part, it called visceral design, one is controlling the body's normal reaction, it named behavioural dimension, another is reflective dimension which contain brain thinking. Every dimension plays a different role in human's holistic behaviour.

4.1 Visceral dimension

Visceral dimension reflect the innate behaviour and it across cultural factors and ethnic divides. In this dimension, observation, feeling, sounds and other physiological feature play a major role. Therefore designer try to cheer their user from a pleasure appearance, dulcet sound and so on. For example, car was designed with the curve shape, smooth surface and tough material, because of the favour of users.

Since the visceral dimension is related to the first reaction, most of the design process will do a reaction test base on this: setting the product in front of the user. Even the traditional marketing also pay attention on this dimension.

So the visceral dimension tells the subconscious feeling of the user, normally it reflects on different aesthetic and the appreciation of the beauty.

During using the train station, users and passages have an aesthetic valuation of this facility at the beginning, before using the train station, in the first sight, users already have their fist evaluation which affects their following behaviour in both physical and psychological aspects. So most of the train station in china, they all have a delightful architecture outlook and try to impress the user in the first sight. Every train station was created with an impression exterior under the specific local culture. In this way, train station design matched the first dimension in emotional design theory.

4.2 Behavioural dimension

In the behavioural dimension design process, normally considering the function preferentially, since it is the most important feature. In a series of design standard, designing a reasonable and acceptable function seems that is easy to achieve, but in reality, it is difficult. Some implicit requirements aren't so visible that will be ignored sometime. For the general products, they are always has some similar competitive products that can be analyst. Observer can come out the update function through analyst the users' using feedbacks. While for those new products, there is no compatible products and any reference.

Usually designer will observe the users behaviours and interaction with the product to analyst the effective of this product. A individual function needs a series of test to know if it achieves a specific design goal and satisfy users' demand at the same time. From the beginning until the end of the whole using process, every steps should be considered in the experiment. Because first of all, users don't know what they exactly want, secondary, users can't tell their opinion of a new and unknown product with some unexpected function. Because they don't have any relevant experience before this.

Normally the product research has two features: improvement and innovation. And for this design dimension, first of all is understanding the function well, this also called designers' image or designers' model. Then it is the users's image about this product or issue, and the image of their using which also named users' model. Both of these are identified as an image system. And these two images running the behavioural dimension design process together.

For achieving the functional aspect, except the function itself, it requires a comfortable and acceptable using dimension. Which mean the testing of using this facility or product is necessary. One important aspect is the tactility, this physical touch feeling associates the visual sense to affect users' evaluation. And both weight, texture and outlook are tangibility. For example, the soft touch feeling gives users a pleasure feeling, while the sharp tactility put users in an uncomfortable and uneasy condition. So tactility is also an important factor of evaluating the object's function.

Meanwhile the behavioural dimension is also subconscious, since most of the behaviours are subconscious, users don't know their real reactions and connotative needs.

So in the train station Shenzhen North, it was designed with a powerful functional system to match all the requirement. In the early research, it showed that the train station accept all the transportation (both public and private method), therefore it was build up with 7 floors for achieving this idea. At the same time, for the thoughtful safety consideration and the convince of the users, it divided with the walking streets and driving path, so one floor is only walking allowed. In this way, it's in accord with the design model of the concept, while following the users research, it didn't consider carefully about the users' standpoint.

The user interview indicate that most of them are easy to get lost in such a huge building. For example, one interviewee said that she used to get off on the subway station floor that she haven't been there, later she felt it was hard to find the right way to arrive the entrance of train station. It shows that as for the design of Shenzhen North Station, it didn't stand on the user position totally, so it missed the users' model.

4.3 reflective dimension

As for a person, this dimension is about the meaning or the memory of the object. Reflective dimension always decide people's impression about a specific object. When this dimension works on people, it reminds people's previous memory about this object. They will think about the relevant experience about using this product and the object's attractive point. During this process, many factors will be combined together to affect users' evaluation and judgement. At the same time, some defects will be hidden by the advantage. So overall, in the evaluation process, some small disadvantage may be ignored or be magnified and breaking its original proportion.

Although attraction represent the the visceral dimension, there is a reaction talking about the outlook of the object, mention that

the sense of beauty is coming from the reflective dimension. Beauty is over the outlook itself, it comes from personal conscious reflection and experience, especially it is also influenced by knowledge and culture.

But unattractive appearance also can bring pleasure to people. Because most of time it is hard to identify a certain beauty for the certain person.

So the product itself is not only content the functional aspect but is with the true value that meets people's emotional requirements. One thing is as a platform of the memory and emotion, another is representing as building a personal image and social status.

In the users interview result, most of the users has a sense of happiness about using train, but it is not about the train station itself but it is about they can go to somewhere, like going back home, or they can start their fantastic trip. When asking their feeling of the station's interior, most of the users can't tell a clear impression, one of the interviewee even said that there is nothing difference between every Chinese train station in interior design aspect. Sometime she even doesn't know certainly which station she is. For the most of the users, when they talked about the train station, the only thing they can remember is the crowed environment. But for the memory of the interior or the atmosphere, it is empty.

In a word, no matter from the pictures of interior design or the users interview in reality, the result indicates that, this is no reflective dimension design in this train station interior. It can't content users' emotional need, neither offering them a special memory or personal sense during their experience.

Since only in reflective dimension, it exists conscious and the high level feeling, emotion and perception, and only under this dimension user can experience with the association of thoughts and emotions. While in visceral dimension and behavioural dimension only contain emotion but without explanation nor conscious.

This dimension is influenced by culture, experience, education and individual differences, it is over the other dimension.Every design contains all the three dimensions, and it is barely has only one situation.

In a word, the difference between "Needs" and "Wants" is what people real requirement and what they psychological desire. It is easily to satisfy the "Needs" from functional aspect and aesthetic feature. While for "Wants" this level need more time and patient to learning what people real want.
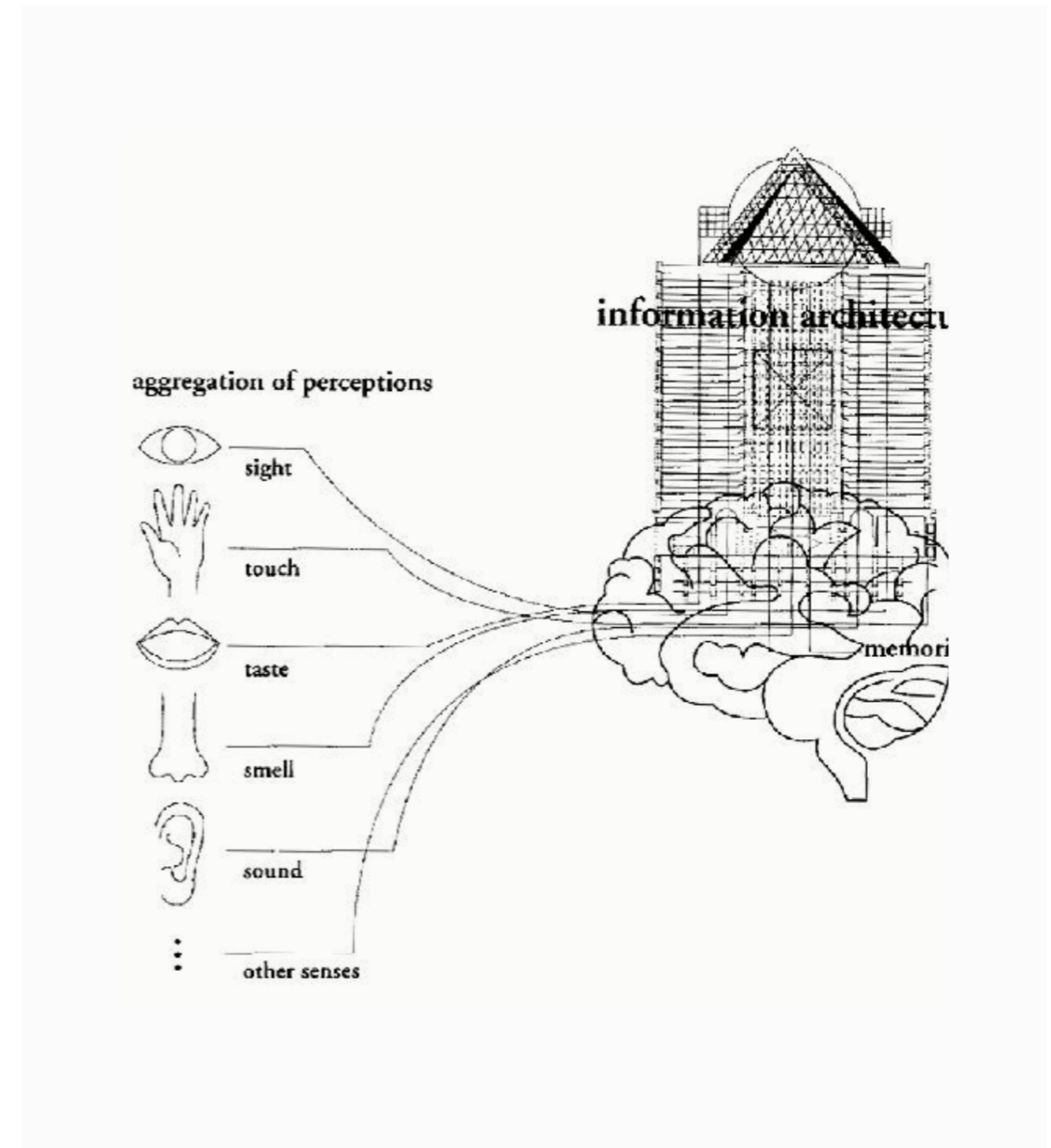

Fig.12
Information architect
Photo: Designing design

5. The association of five sense

Following the theory Kenya Hara said in the "Designing design", above the human perception, it is called five sense: vision, hearing, olfactory, tactile and taste. It comes from the feeling of the eyes, ears, mouth, skin and tongue. It seems that human's sensory can be classify with five different factors, in fact they work in a mutual penetration and mutual connection way.

In the reality, when our sensory organ receive the information from the outside world, before forming a certain image, it always stimulates the memory inside. Like when people see the tress in the picture, it will remind them the forest, at the same time the other sensory like olfactory and hearing may also have some effects about the feeling of the forest. At the end, a final image come out to mind under the affection of various sensory. It is hard to say there is only one sensory cause the perception.

For example when you having the soup, the mouth touch the soup and the nose can smell the fragrance. Both of these two sensory form a taste memory. Or when you eating the watermelon, your mind will come up a scene of summer, for those people live nearby the sea, they even can feel a sense of humid, if they used to eat watermelon on the beach, properly they can hear the sound of wave and the salty smelling from the sea wind. All of these experiences are saved inside our brain, once we see it or touch the word related to this thing, it will cause a serious of previous impression.

The perception works in this way, and people accepts the information which is formed with various kinds of sensory and previous experience. As the mention in previous chapter, behaviour reflects users' previous related memories, at the same time previous memories cause user behaviour, it seem that people is a sensitive memory creator.

Except associating the information from sensory, we also use the previous vision to recreate a new image.

5.1 Information construction

The brain construct an image or a character base on the sensory and the precious impression, in other word this is a process named information architect, as Kenya Hara descried in "Designing design". And the information construction intervene this process on purpose with a certain plan.

It includes two parts, one is the sensory accept the simulation from the outside world, another is the inside memory which is waked up by the outside related objects. So design work can start from these two aspects. Waking up various sensory's memory and causing its related affection to give users a positive feedback.

As metaphor make by Kenya Hara in the "Designing design": if using the Chinese medicine acupuncture map as an example, every acupoint can have a brain, they accept the simulation of the outside world which mean we designer can treat them as our working target and intervene their process.

Like the program manual of Nagano Winter Olympics which was designed by Kenya Hara, he create an unforgettable experience of winter which impress the audience about this Winter Olympics. Therefore he created a special paper which is suitable for winter this topic and at the same time it can wake up people's memory about ice and snow. So with the support of the paper industry, they invented a kind of paper with the sense of ice, and printing the text with the sunken effect. When the hand touch the paper, because of the heat, part of the paper fiber will melt into the translucent effect. It looks like the ice. And the melting paper
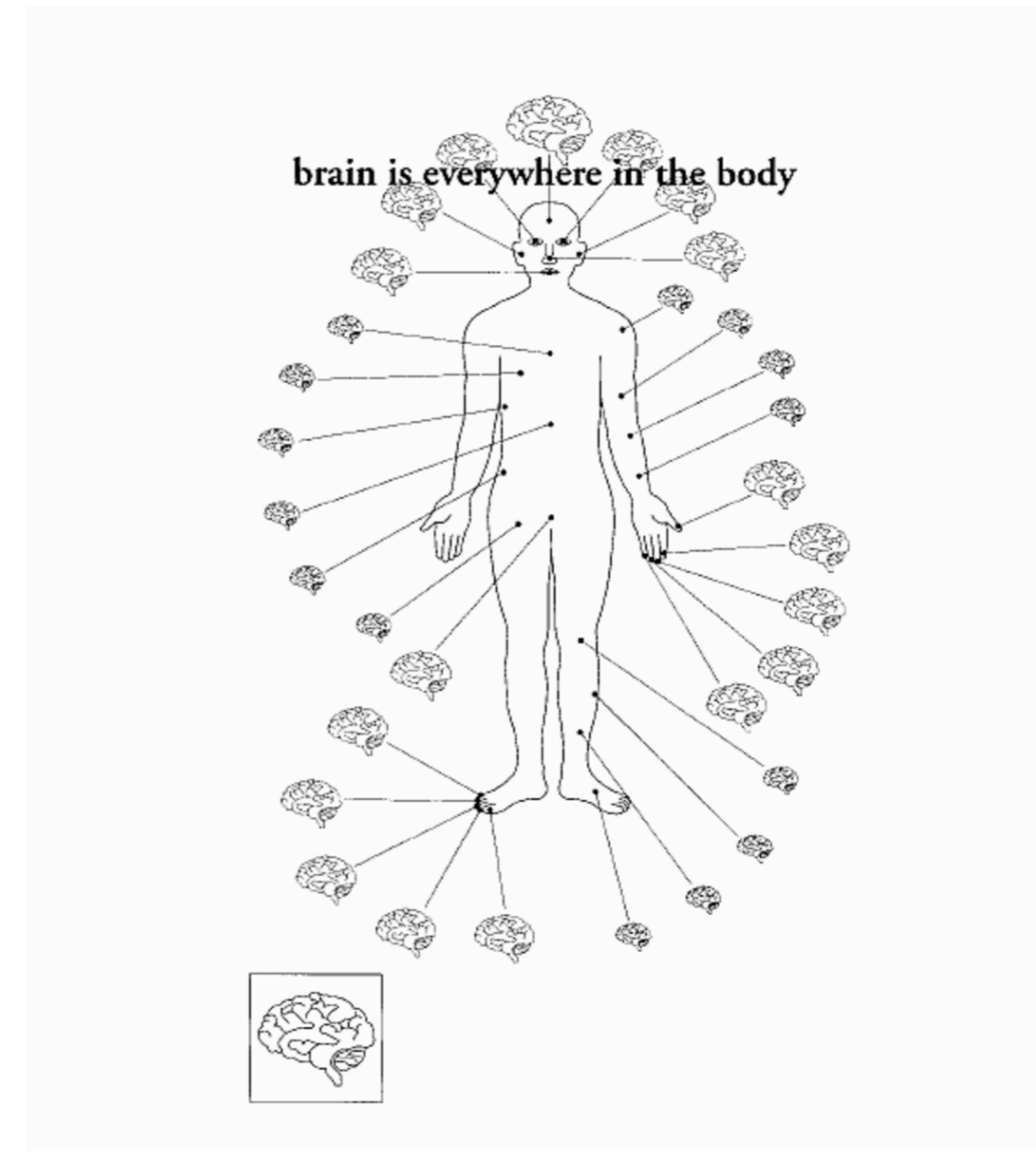

Fig.13
brain metaphor
Photo: Designing design

Fig.14-16
The manual of Nagano Winter Olympics
Photo: Designing design

Fig.17
The manual of Nagano Winter Olympics
Photo: Designing design

with the texts just like the scenes of the footprint in the snow. It starts from the touching and simulate a serious of memory and sensors' reaction. Users can feel the cold of the winter, the smell of the snow and everything related to their winter memory.

Train station as a media between people and the city, it saves different memories from different people. When people arrive this train station, he may remind the first day he come here or one time he used to meet his important person here. Once he enter the train station again, all his sensory organ combine all his memories in deep together to give himself plenty and rich emotion and feeling.

As for a city, train station serves as a method of public transportation, it also is a window or a door for everyone to open this city. It provides the freshmen the first impression about the city, while for the people who used to been here, it is a familiarity and a sense of belonging. At the same time as media of transferring the city's culture, it also a part of the city visual culture, in some way it also can represent this city as a landmark. Therefore for those people who traveling through this train station, a certain city cultural symbol should provide a sense of comfortable and familiarity.

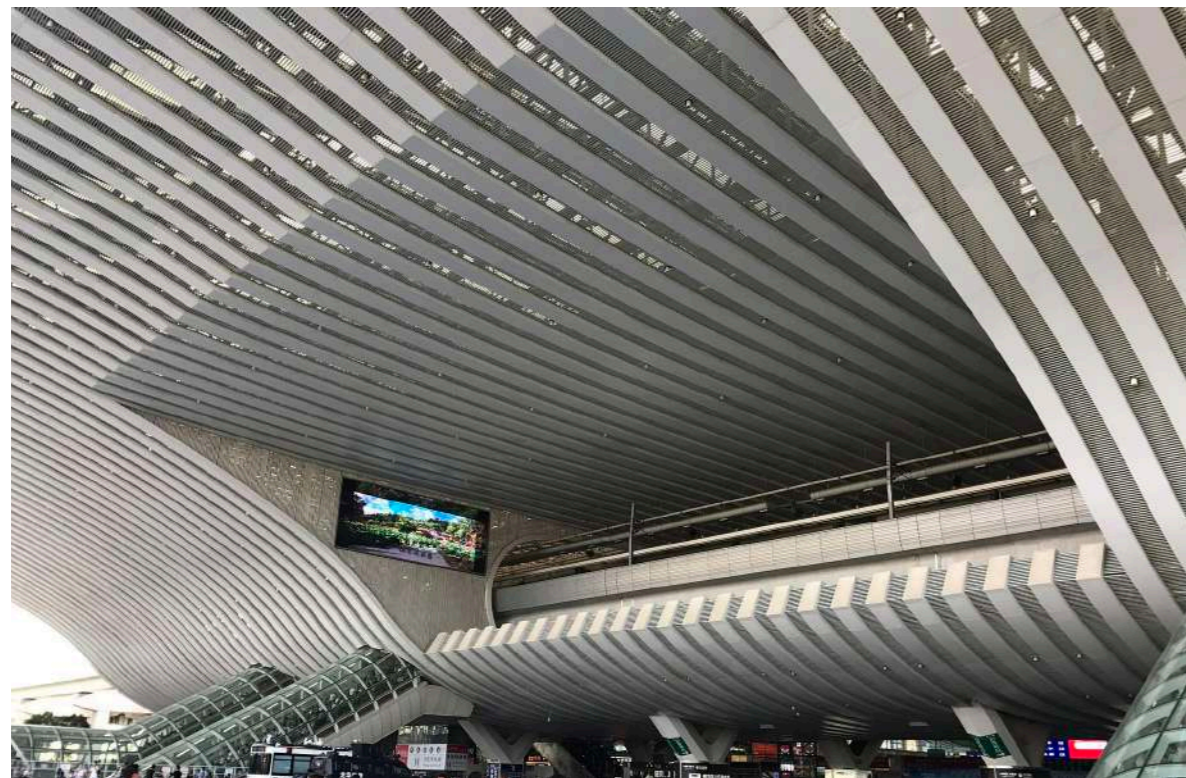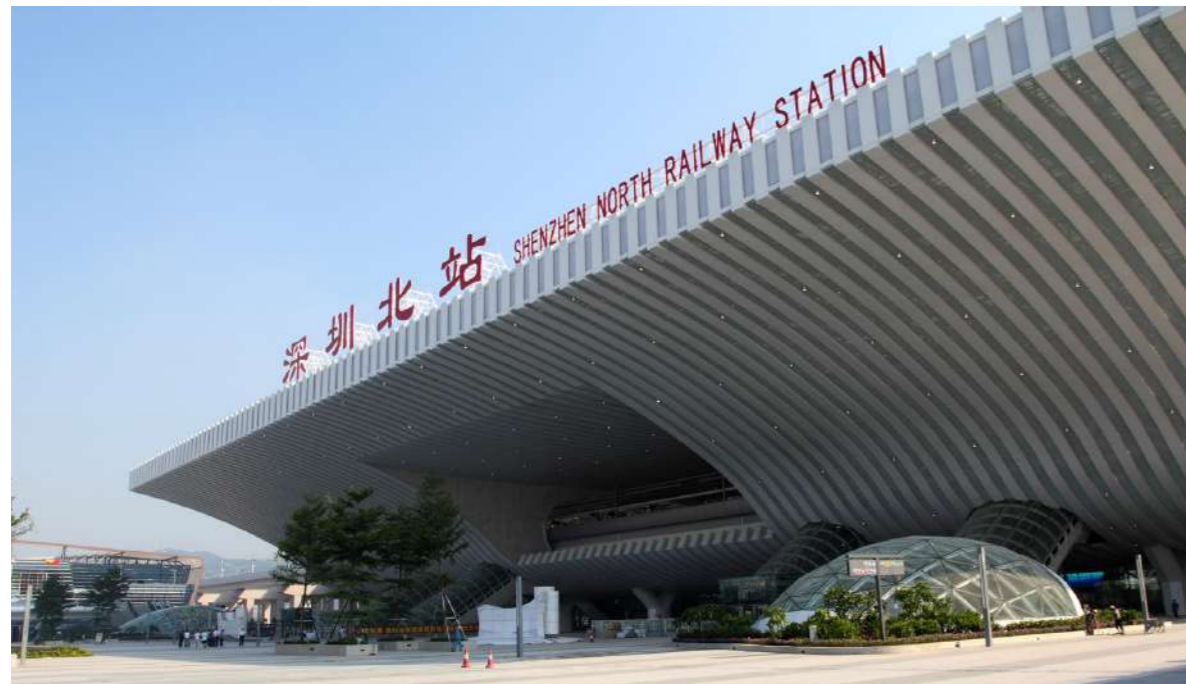# Shenzhen North Station

中转换乘
请乘电梯
出口
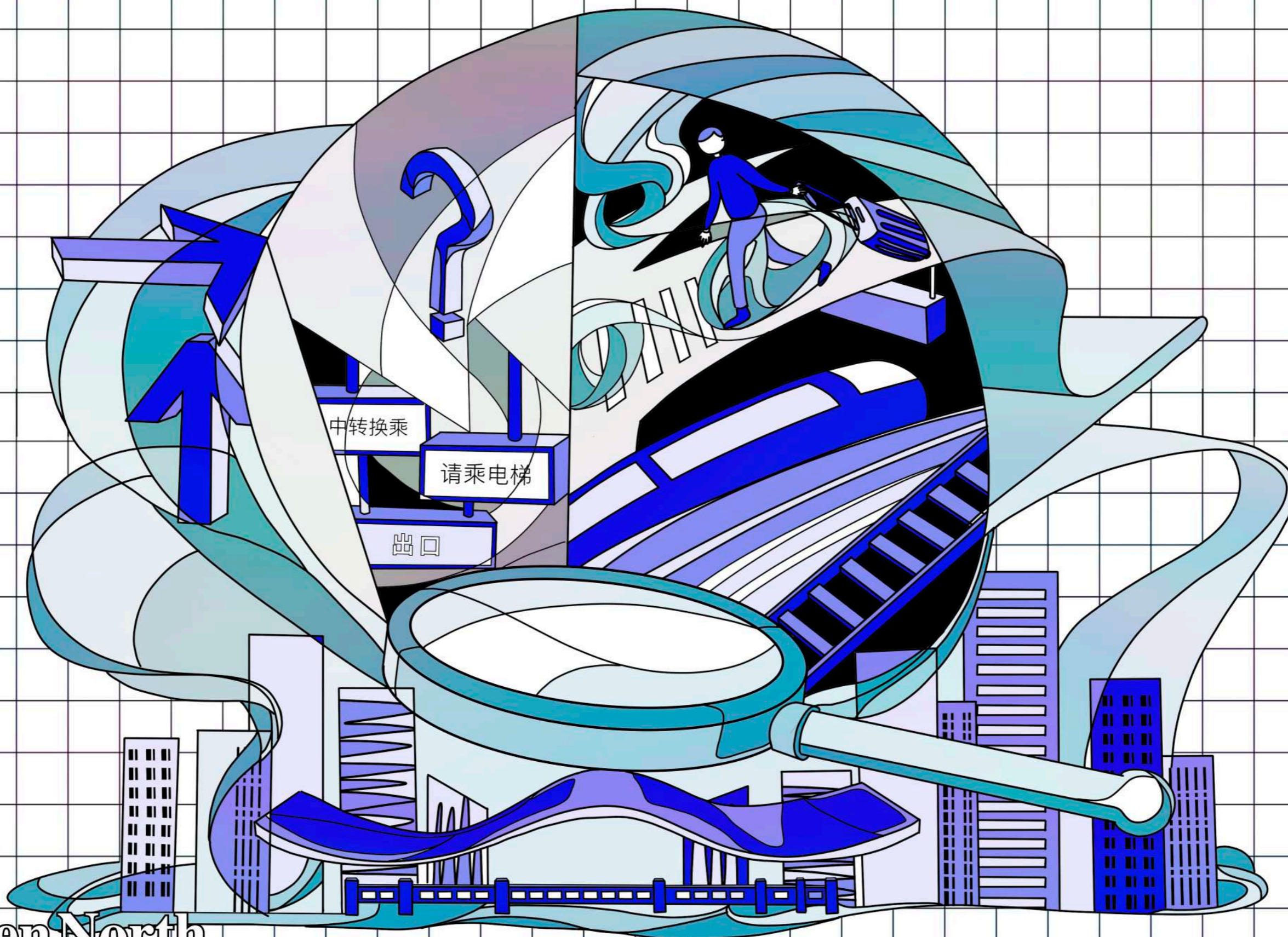
Fig.18-19
Outlook of the architecture
Photo: Wikipedia

6. Shenzhen North Station

6.1 The city identification

Shenzhen North station as a city landmark, it was designed as the important representation of the Shenzhen city. With the cube outlook, while the station's interior space was designed with the curve line to create a feeling of ocean, because Shenzhen is a seaside city. At the same time it was famous as its traffic flow and people flow design. It spited the people and the traffic to achieved the goal of 5 mins to transfer. Meanwhile for developing the surrounding commercial values, in the underground also built a commercial mall that provide entertainment function. So as a public station, Shenzhen North Station acts as a diversity role and offers people more than convenient service but also an incredible experience through improving the citizen's life quality.
In a word Shenzhen North Station as a city identified architecture, it provides citizen a better lifestyle, and stimulates the possibility of the nearby areas in both economic development and other potential opportunities.

As for the city transportation, Shenzhen North Station is a comprehensive traffic pivot, and as a public infrastructure, it connects the cities between the Northern China like Beijing and other southern China cities like Xiamen, meanwhile it is an important transportation point which links Hong Kong and the Mainland since Shenzhen is next to the Hong Kong city. For supporting such a large function, it built up 20 track for offering hundreds of trains everyday. So obviously, it also undertook more than hundreds of thousands of people per day. In this point it comes out an idea of splitting the people flow and traffic flow with the streamline organisation. And for connecting complexed city transportation, it designed as a cross structure: it combines with metro, road, elevated road and underground tunnel . As a new train station which was start to run in 2012, it allows diversity traffic methods to link the city urban and this new district.
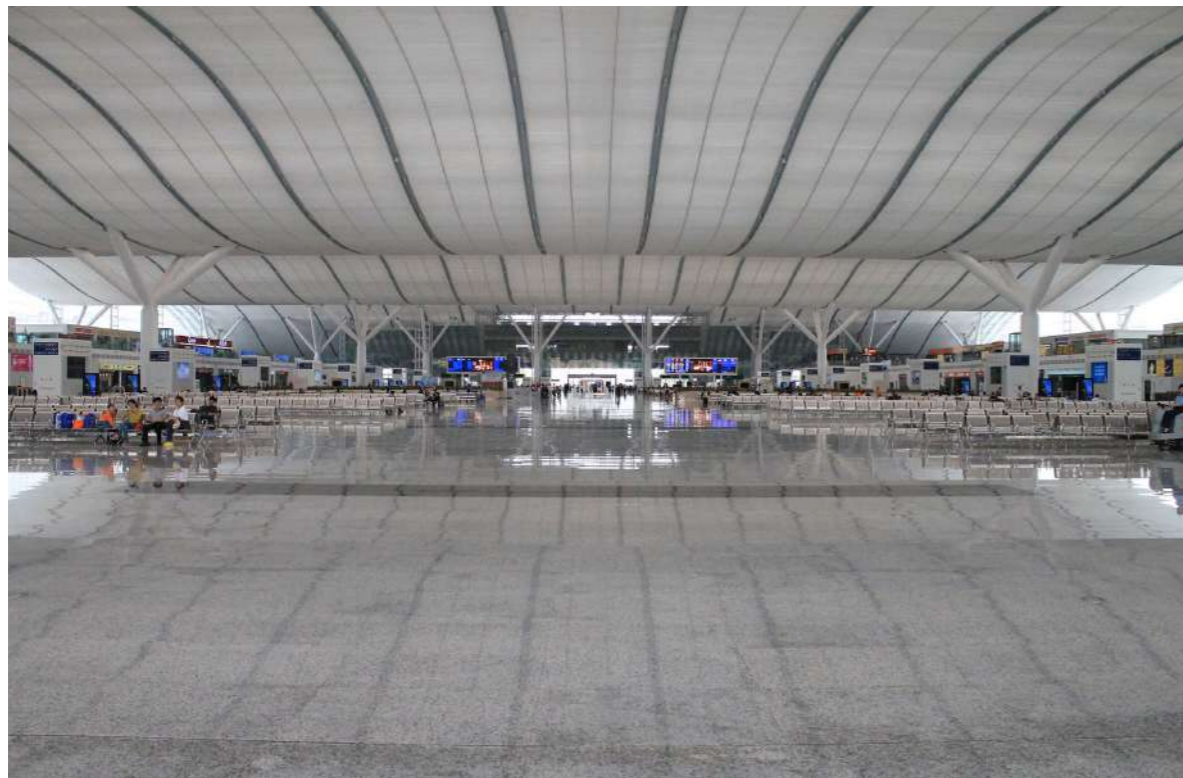
First of all, for optimising the large traffic flow and people flow, it built with 7 floors huge architecture to support complexity requirements in both transportation function and the entertainment function like shopping mall. And all of these floors are divided as different pubic and private transformations. Meanwhile setting the different floors as the entrance and exit for the traffic flow to avoid traffic jam. Although it created a complexity system but it is effective.

Then for splitting the people and traffic totally to improve the whole station's running system. It uses only second floor for pedestrians, and at the same time it is also used as the entrance and main waiting area. Aim at optimising the train station organisation. So as a main architecture body, the waiting room hall was separated as area A and B with 20 checking gates for entering different position of the train. So totally, it is 40 gates in one floor. For saving user's time to find their platform, each checking gate only lead to two platform, like A1-2 will take passengers to the platform1 or 2. But it also gathers all the people in a same huge space.

The final, it builds a comprehensive commercial mall for providing users a relaxing place to spend their waiting time, but as an additional part in the outside of the station.

For running all of these complexity services, various kinds of signages are used to navigate both traffic and people in different decision point. So it was set in each important connecting nodes of every floor, and forms a reasonable guiding circulation.

Meanwhile for city identification and allow the station become a landmark, it is necessary to use environment graphic design to create abundant visual experiences and iconic using sensation.

Fig.20
Platform of Shenzhen North Station
Fig.21
Interior design of Shenzhen North Station
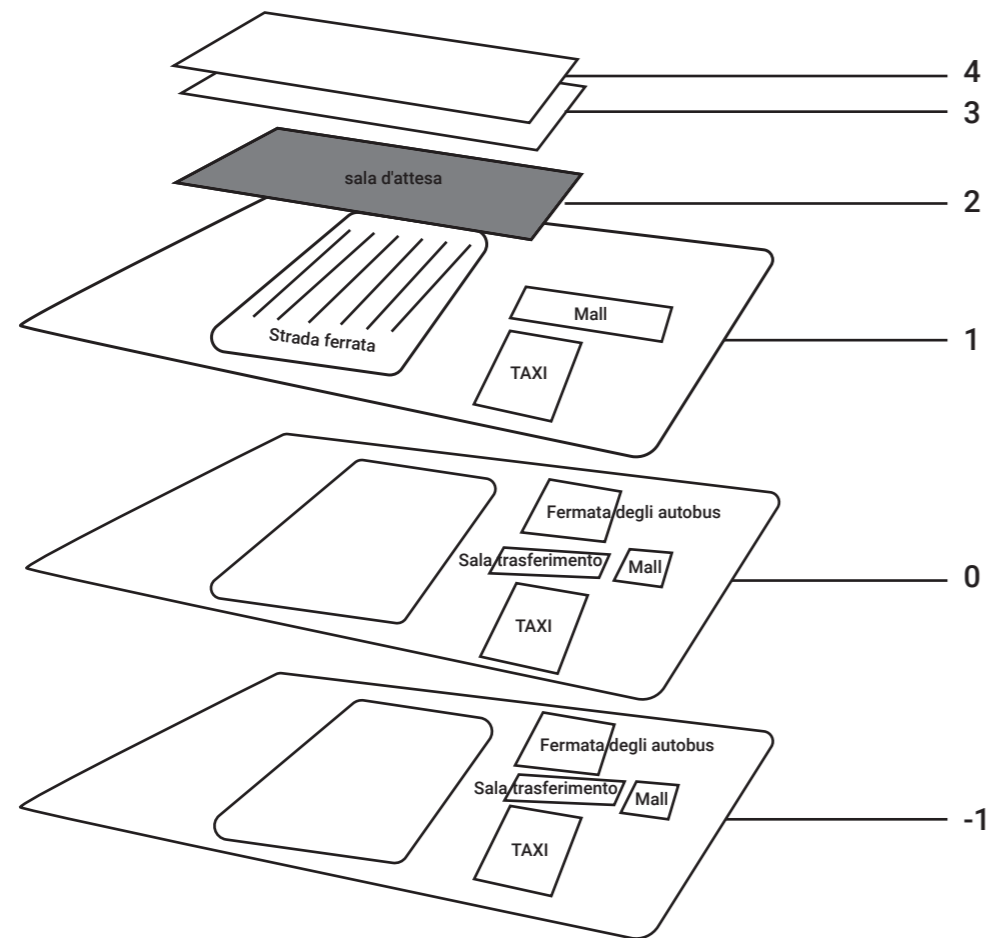Photo: Wikipedia

Fig.22
Floor plan of the station
Photo: Qixuan Chen

6.2 Traffic division

Considering diversity urban transportation, it designed with 7 floors to accept different traffic methods. It is divided as east plaza and west plaza around the main station body which is set in the center. On this basis, it identified west plaza as parking lot, and the wast plaza was divided into three parts, for using for taxi, bus and transfer. As it shows on the fig.12. This is the fist layer of the traffic division: setting them in different space for preventing them away interfering their routine and suffering with chaos.
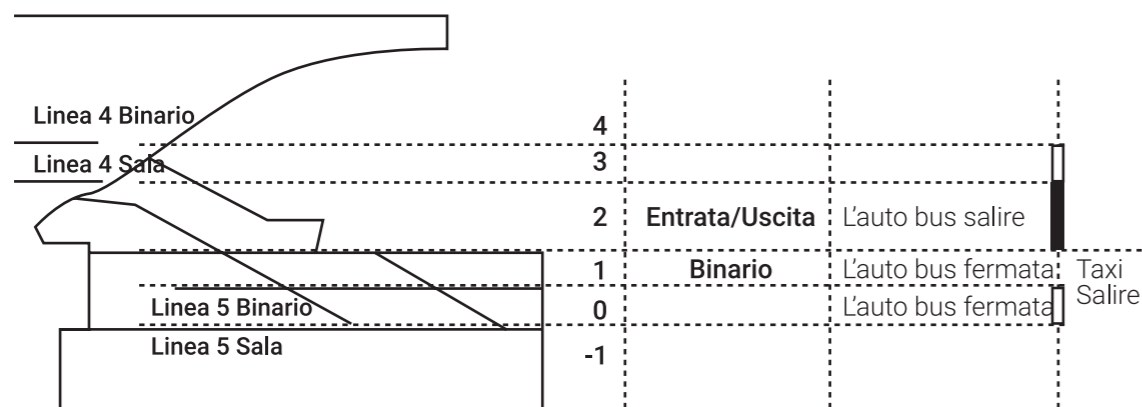
In this way, for people who need to take the taxi, they can easily walk to the specific place and find their needed service. And for avoiding the driving conflicts between the bus and taxi, bus station and the taxi road are in the different floors.

Then it utilises the different floors to control the traffic's access and departure. For example, the taxi left their passenger on the ground floor, then goes down to the next floor for taking their next passenger (-1 floor). It also offers 144 parking places for taxi which want to take a rest or wait for their clients. And 16 places are used to pick up passengers. At the end they will leave the station via -1 floor or -2 floor according their destination.

While for the bus it is more complicated. Base on the bus routine, they are identified as long distance bus and short trip bus. For the long distance one, they enter on the 0 floor and leaves off their passenger then go to the -1 floor to pick up their next passengers. As for the short trip one, they all enter and leave on the -2 floor.

For the west plaza, it only allows personal car to enter through -1 floor and -2 floor.

fig.23-24
l'elevazione del Stazione

Linea 4 Binario

Scala mobile

Linea 5 Sala

Linea 5 Binario

Linea 4 Binario	4			
Linea 4 Sala	3			
	2	Entrata/Uscita	L'auto bus salire	
	1	Binario	L'auto bus fermata	Taxi Salire
Linea 5 Binario	0		L'auto bus fermata	
Linea 5 Sala	-1			
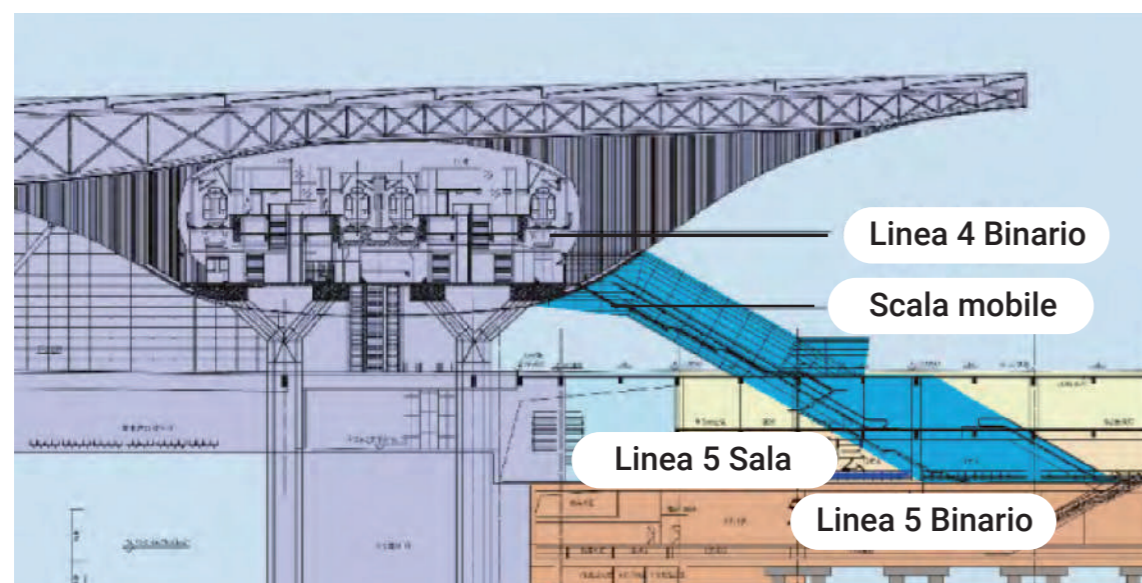
6.3 Metro & Light railway

In this station, it has connected with three lines and two kinds of metro. One is on the 0 which named light rail, and another one is subway which is on the -1 floors. The Metro's main waiting hall is set in the center of this huge station, because of its heavy footfall, passenger get off from the metro can exchange with another other transportation way or go to the trains' entrance.

So the 0 and the -1 are used for the subway line 5 as the metro hall and platform. And the 3 floor and 4 floor are used for line 4. For those who only transfer with another line, it satisfied them with two ways: stars and elevators. So they can take elevator to
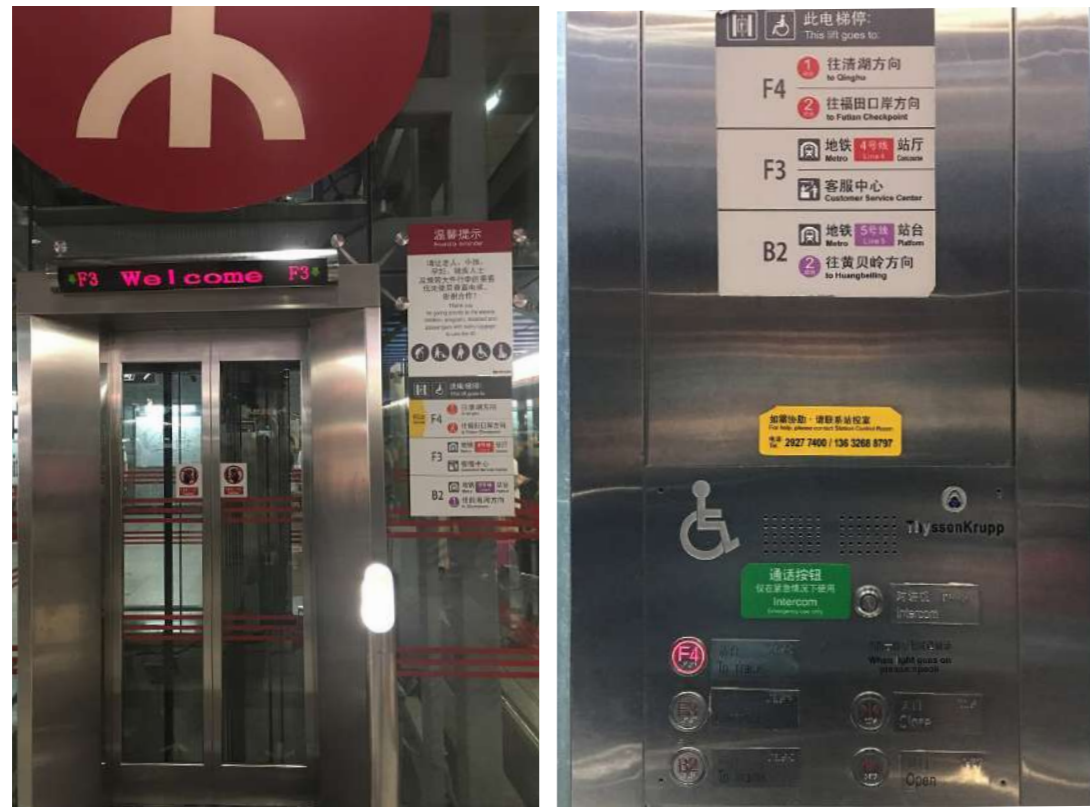

Fig.25
Entrance of the Line 4 (urban train)/(2 floor)
Photo: Wikipedia

Fig.26
Entrance of the Line 5 (urban train)/(-2 floor)
Photo: Wikipedia

Fig.27-28
Station's elevator
Photo: Wikipedia

Fig.29
People flow of waiting hall and platform
Photo: Qixuan Chen
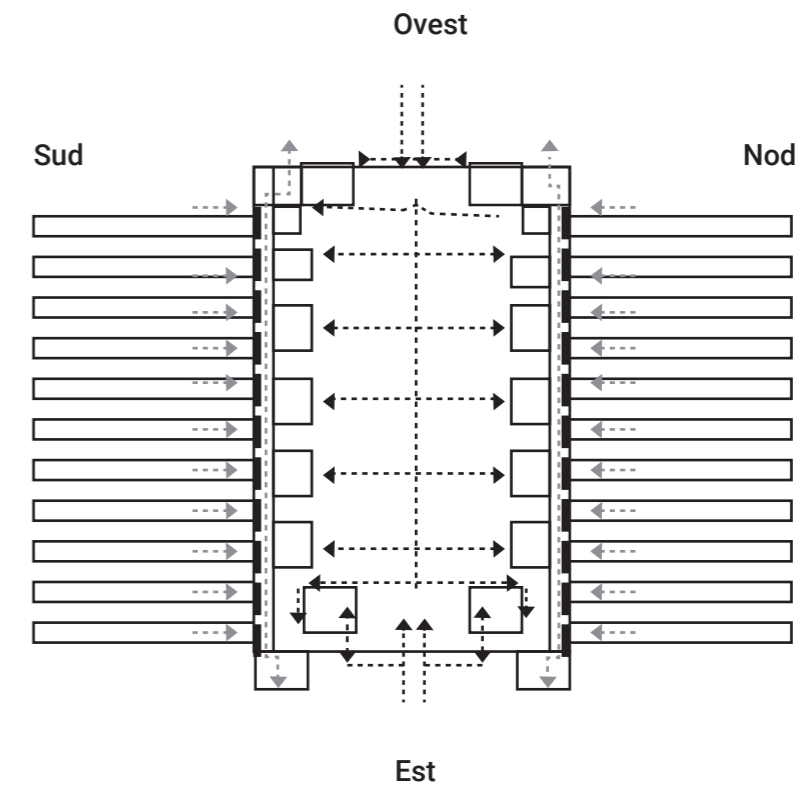
Piano 2: Entrata & Uscita

arrive directly, or go through the first floor Mall to the 2 floor and take the escalator to the hall of line 4.

And there are the three kinds of main public transportations.

In a word, the station is a complexity and comprehensive functional building. It satisfies various kinds of requirements meanwhile increases the difficulty of arriving the main hall of the train station. Like the distance from underground to the ground. From the overview of the building layout, user can understand the space successfully, but they still easy to get lost when walk inside the interior, especial as the increasing of the other infrastructure and additional installation, it raises other difficulties of arriving their destination. And as what we can see, it is like a big maze. In this point, the whole environment need a set of complete navigate system, so users are able to find their location.

6.4 People flow

To avoid the conflict between people and traffic under this heavy station work, it planed the second floor as the main hall of the entrance, waiting space and pedestrian floor. It closed all the entrance of any traffic, therefor the whole floor can accommodate more people and prevent any possible traffic accident happen, especially during the peek time.

Above this, the second design layer the station is setting the general entrance, waiting hall and checking space on the same floor. Compared with the airport which putting the entrance on one floor, and the waiting area and checking gate in another floor, obviously walking on the same floor to find the gate offer a more convenient experience. In this way, the station station release the using steps with similar airplane taking process. (In china, the original idea of taking train is from the airport system).

Fig.30
Before, the waiting hall
Photo: Wikipedia

Fig.31
Now, the waiting hall
Photo: Wikipedia

And the original interior ceiling was design with the idea of sea wave shape, it created a relax and comfortable atmosphere to offer a wonderful user emotional experience. But as the increasing of the other additional facilities, the waiting hall lost its particular aesthetic design. In other way, these meaningless facilities put the whole space into disorder conidtion.

It designed two passages beside the main hall in both north and south side. So it allows user to exit or transfer to another train easily. After getting off the train, they can arrive the 2 floor

Fig.32
The signage board in exit passage
Photo: Wikipedia

Fig.33
Entrance of subway
Photo: Wikipedia

through the stair or elevator and decided to enter the main hall for the next trip or leave the station. As the fig.12, grey line is the exit flow and the black line is the entering flow. This an another meaningful design in reducing the time of transfer, but at the same time it need the assistant of the effective signage.

Meanwhile in the exist, it has a serious of navigate signages are all put together without any information classification. From the picture, we can see, it become big bulletin board totally. And from this point, it starts another information searching process, depend on the users' target goal.

6.5 Summary

In a word, Shenzhen North station was build with a powerful system for achieving its great ideal concept. It accepts user to arrive with various kinds of transportation, and base on this ideal to design the other structures like organising the hierarchy of each function. And it increasing the difficulties of using this station at the same time.

No matter the passengers will arrive with which transportation, they all need to walk through several floors, then they can arrive the station entrance. For leaving, it is also the same. Every time when they want to go to somewhere nearby this station, they always need to go through every floor. So this is the annoying aspect which need to be considered.

But during the first shooting research of this project, it can be saw, the navigation system is not that effective. Because most of the navigation signs were put together intensively. It may did on a high decision nodes, but without the thoughtful consideration of the information level according to the users' reading habits. So passenger will miss some important information frequently.

Especially under the developing of this station's commercial part, it starts to cover with diverse billboard or meaningless slogan flags. For example, from the fig.19 and fig,20, when the station just built up, inside the waiting hall only with the necessary information board that shows the train schedules noticeably. Well on now, more than one red digital screens were hanged on the top, and what they play on just some divertissement. Even on the every installation which was only use for landmark information and navigate sign, now its nearby also was full with various useless ads digital screen. Therefore, those important signages are easy to be mixed with other meaningless information or imagine.

Another aspect can be notice form this research, now the station acted like a cold building without any thoughtful emotional design. And about the meaningful landmark, it can't show its cultural value but only as a transportation station.

At the beginning, the architecture was designed with a meaningful concept: using the curve shape roof to represent the sea wave, identifying it as a city landmark. While now it achieves the exterior outlook construction but without the environment graphic design aspect. This most important part will interact the whole space with using passengers. So for arriving a landmark building target, it can be more.

What's more, this station is the first sight for the visitors or tourists who go to Shenzhen with train. It tells them what Shenzhen is, and confirm them via their experience in this station. While with only the consideration of strong functional service, train station lost its meaningful culture transmit function. It should offer impress the user with a special local culture or experience, especially for those who gonna to leave, this is also a best place to make them remember the image of this city. . As a witness of various kinds of reunion or leaving, this station didn't contain all of these diverse emotional memories. No matter the physical aesthetic aspect: billboard offer nothing visual experience, at the end no one will remember how the station is. Therefor after finishing the powerful functional system, it requires a meaningful environmental experience and atmosphere which present through environment graphic design.

It is not exclusively only signage and way-finding serves, it also brings user an incredible experience and a forgetful identification with the meaning from the local culture and psychological thinking.

Fig.34
Platform of ShenzhenNorth station
Photo: Wikipedia

7. Research of Shenzhen North Station

7.1 Photo research

This research was aimed at capturing the users' behaviours randomly at the train station and relying on this, taking the street photography

a. Pictures capturing
During this process, I captured the pedestrians' behaviours under the setting conditions with the phone's camera. And below is the condition of the scenario:

Starting point: the exit of metro;
Time: non-peak time;
Marking place: the main intersection with road markings on the road to the station (-1 floor up to zero floor);
Frequency: 5 pics/2min.

Following the entire train's track route, checking every decision point until arrival the platform. In the absence of some important moments, I also recorded some short videos with an average 30 seconds to help analysis and get the useful result.

b. Analysis
After the above process, I get 8 points to determine the direction. Then analysing all the facial expressions, their body language and the other potential behaviours of the passengers inside the images.From these three aspects to describe the photo of each point. So listing all the behaviours and making a conclusion about the finding of this part.

Fig.35-37
Metro exit
photo: QixuanChen

7.1.1 Normal behaviours of the passengers

During the random photograph of user behaviours, users would like to look left or right to exploring their destination habitually, even if they already saw the signage at the beginning when they were still far from the navigation signages. And three typical examples are listed by the above chosen images which are from the search for street shots.

As the fig 35, this passenger looked at the left sides before turning left, and similar behaviour also showed in fig 36, the user who wear a white shirt. While in fig 37, it is another case, passenger looked around with curiosity without any potential information checking facial expression.

All of them were in a no hurry condition. They had enough time for their journey.

Above these cases, it can be roughly considered that if passenger has a behaviour of looking around to check their situation, even if they already know their direction. For those users who have enough time, they are full of curiosity for everything. So for these users, they like to learn more about this place.

Fig.38
Metro exit
Photo: QixuanChen

Fig.39
Metro exit
Photo: QixuanChen

7.1.2 Impostazione dei parapetti irragionevoli

In this case, some metal guardrails are used with a blocking function which try to lead users use the elevator correctly: choosing the left side for passing quickly and taking a slow speed in the right side. At the same time, there is a relative staff who works for providing necessary information and organising the situation.

Mentre nella realtà, le persone scelgono semplicemente il lato vuoto o ne scelgono uno casuale. E quando ci sono poche persone che passano l'ascensore, questa persona che mantiene l'ordine resta lì annoiata e osserva il passaggio dei pedoni.

Nella fig.5, possiamo vedere che gli utenti possono venire da varie direzioni e riunirsi all'ingresso dell'ascensore.
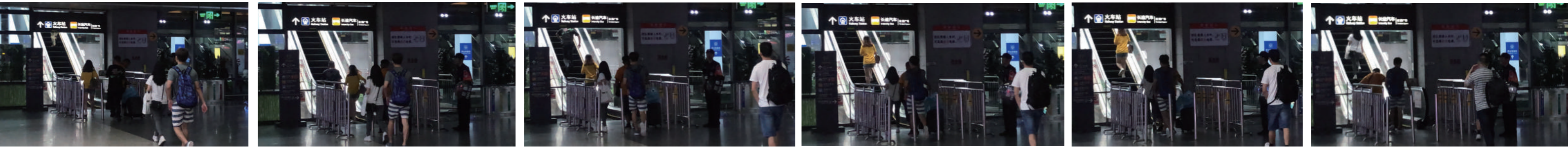
7.1.3 Unreasonable parapets setting

The people wearing the yellow shirt can be used as an example to explain how users use the lift with these guardrails.
At first, he entered from the left side, because someone was on the right path. And then he stopped on the right side of the elevator after entering the elevator.

Obviously the guardrails didn't work for achieving its goal, in fact it slows down the people who use this lift.

We can also see from these images, during this period, the elevator itself is quite empathetic compared to the entrance that is full of people who waiting for it. What's more for those who carry a suitcase, it's worse, it needs more time to pass the guardrail with the big suitcase. It asks this user to take more time. Imagine when there is a peak moment, it will reduce the flow speed and could cause some unexpected problems.

Fig.46
Pasage with multi directio
Photo: QixuanChen

7.1.4 Signage board mix with billboards

After going out from the underground, I choose the passage with multi exits as research's no4 postion.

In the part, the signals start to be covered with some other colourful billboards. From the side that I took these photos, obviously, my sight was easily attracted by the body-fitting advertisement. They are side by side and with a similar color as the signage board.

At the same time these signals are placed on each column, it mislead people to go with them, even if there is no important information need to be notified. In fact they only needs to turn left and then the entrance will come out.

We can use this woman who dresses in white as an example to demonstrate the chaos of signal setup.

In fig.49, she starts looking around and tries to find a useful sign of navigation. She taken the one on the left side and then finds more information in front of her. Then she went ahead to read the content carefully. At the same time she discovered that on the left side which is not far away, there were some signs existed...

During this period, this lady slowed her speed and observed everything around her, she lost her way in front of these "useful signals".

In figure 50, we can see that in one sense, it had two opposite directions of flow. The whole road was separated as two directions to access the flow, as we see on the surface of the road, it has a yellow line to divide the people flow from different directions.

While the yellow line is ignored by the people, and they just walk wherever they want. It can't imagine what will happen in peak time.

Fig.51
Auto check-in machine
Photo: QixuanChen

7.1.5 Information is without hierarchy

In point 5, it is located at the entrance to the station. It allows people to pass the ticket inspector machine with their identity card. And once again, some guardrails have been used to push users to follow the queue.

In front of the machine, we can see many sings with various types of information. The nearest signage tells people that there is a machine for self-checking, then a bit far away in the picture center, there is another long board, the left word indicates the name of the entrance, and the right side is a irrelevant slogan which was set by the local government.
At the end, there is a huge screen showing the train time and its waiting gate.

It seems that every information follows the hierarchy, but it has not reached its original objectives and people is only concerned about when it will be their turn to enter the station.

Fig.52-55
The second enter door
Photo: QixuanChen

7.1.6 Only one door in using

The original entrance A has three doors while for some unknown reasons it only opens one for entering.

When people comes from all directions and try to enter the door, it cause a chaos. Whats more there is another security control machine inside the door, which mean for entering the real door it take time!. At the same time, for those who hurry to enter, no one will follow the queue. Then this small group of people will blocks the door totally.

So at the beginning there wasn't much crowded and allowed people to enter one by one, even there is no queue. But later, when more and more people come from all directions, the sense was mentioned before will be seen.

We can see, at one moment there was a girl (maybe she was in a hurry), she ran to the door, while the entrance was already blocked by the crowd, she was stopped near the door and tried to find a space to slip into the door.

Fig.56-58
Waiting hall
Photo: Qixuan Chen

7.1.7 Uncomfortable colourful waiting space.

In questo punto, è la sala d'attesa con ampio spazio, e le porte di controllo sono su entrambi i lati. Nel bel mezzo di questo posto si trovano diversi grandi schermi digitali con l'orario dei treni. Dovrebbe sembrare perfetto, ma come lo sviluppo del commerciale, su entrambi i lati della sala d'attesa sono coperti con vari tipi di piccoli negozi. E tutti hanno un evidente segno colorato. Una volta che entri, puoi sentire come se i tuoi occhi fossero occupati con quantità di informazioni e non sapere da che parte guardare. Sebbene lo schermo della timeline dei treni sia progettato il più grande possibile, ma meno di un terzo spazio

It seems that using for presenting the train schedule while most of the space for announcements and ads. No matter the the below navigation signs, they loose their attention completely.

In fig.57 and fig.58, the man in the grey t-shirt with the blue suitcase spent a couple minutes, standing there for checking the departure time of his train. In fact, at first he was passing and tried to take information quickly, but he was failed and needed to stop there and read carefully.

Fig.59-64
Checking gate
Photo: QixuanChen

7.1.8 The signage on the floor

Before the checking time, there was already a long queue in front of the entrance. When people become more, the queue turn around and so people stand on the signals that was placed on the floor. Following the people flow, at the end, the sign was covered totally by the crowd. Although they were doing this in a natural and unconscious way.

The single sign is easy to hide and loses its significant navigation.

7.1.9 Inclusion

From this part, users' behaviour reflect the unreasonable design of the signage, meanwhile their facial expression also can tell the feeling of this station. So in the next step it will be focus on the users' personal experience to analyst the possible improvement and redesign some specific aspects of this station, at the same time confirm the target users.

At the same time, when typing the key word "Shenzhen North" "signage" through google searching, the association method will come out the result with " disorder navigation system", "mislead navigation" "unreasonable design". It also proved that the needy of redesign the environment graphic design.

7.2 Interviews

For further learning the users opinions and feeling about the train station, I interview 8 people who use Shenzhen North station or other similar train station. Interviewees includes different aged group and occupation.

This interview is more focus on the first time experience, the feeling of the interior and environment, the evaluation of the navigation system and interviewees' general using habit. From these aspects, coming out the general interview question setting.

Then base on the interviews' recording, it was summarised as following personal profile.

Traffic engineer (35 years old)

"I live in Guangzhou, and because of taking lessons, I need to depart to Shenzhen with train from time to time. The first time I arrive in train station, I felt so good with the train station! The station is so big and wide. I get the help of signature to arrive the waiting room. But because of the large people flow, most of time it take me some time to arrive there."

"When I am waiting for the train, I would like to reading books or checking my social media application, sometime I also get some food because of the hunger."

"In fact, during my travel around the domestic city, I have to said our train stations inside is similar, there is nothing special or city identify when I stay inside the train station. If the trains train's interior can act like the airport, it will be perfect! For example the Guangzhou's new airport terminal, it contain a lot of Guangzhou local culture and characteristics. I also remember when I visit the Mexico, their subway station is so interesting! It shows us the destination with the illustration, they even use color to identify different stops! It is quite easy for us! Even we had no idea about Spanish!"

"Actually I quite like signatures! It is very easy to understand quickly. But I hope Chinese signatures can be better, like using some color to tell the different"

"In a word, a train station is also a city's id card!"

Graphic designer (25 years old)

"The first train station I have been is Beijing South Station. At that time I think it was an airport, because it was so huge but also because I am just a kid at that time! So obviously I was lead by my family "

"In fact I don't like spending any time inside the train station! So normally I just catch the time and arrive on time when the train gonna to depart! Maybe because I am so proud of myself about managing the time. Except one time I miss the train because I walk to the wrong gate."

"So I don't have any impression about the train station itself especially the interior. What I remember just the crowed people. But Suzhou station for me it is quite special because of its outlook, and I heard that it already become one tourist attraction. But the interior is normal. This is our country's train station style right? They are the same"

"About the signature, normally I would read the additional word, you know a lot of icon just confuse you! Especially the metro's icon, who will know it navigate you to the metro or train? They all use locomotive this element. Properly only the toilet icon will be care?! So this habit even drive me to looking forward the Chinese character in Japan when I travel there, and then guess what does it mean."

White collar (25 years old)

"Normally I use the train when I go back home in vocation. The first time I use the train I am not that clear about the signature, since it was too wide for me. But later I will follow the people flow, they will lead you to the right direction (laugh)."

"Sometime I felt its too big for me the train station. So normally I just stay inside the waiting area and looking forward the snack bar. Eating can release my pressure"

"I hope it can have more seats, and the interior can be better. Because it is too much people inside"rno possa essere migliore. Perché ci sono troppe persone dentro "

Retired teacher (56 years old)

" When I visit my son I will take train in Shenzhen north! And I like to go on the morning! The fist time I arrive there, I was so curious and excited, because I heard that a new train station was built up but have'n been. So in case, I departed more early than before! After I arrive the train I will walk around and look around because it was fresh for me at that time!"

"In a word I am quite satisfied with the train station, especially about the server aspect."

" Even if the signature is clear for me, but one time I get off in front of the metro entrance, I still get lost and it take me some time to ask people the way. "

" About the interior, although it was crowed but in order."

"For me icon is good, but maybe word is more clear foe me."

Architecture (29 years old)

" I will take the train when I go back home at my vocation. The first I use Shenzhen north station I remember it was a few days before the new year! I was so excited because I already one year haven's been home since I started to work here."

"About the train station? It crazing crowed, already I can arrive the waiting room with the signature but sometime I still needed to ask other person. While the interior, I think our train stations' inside are the same between each cities, except the big people flow I don't remember any thing about them."

"Normally I don't like catch the time, while I would like to save time for change the ticket if the time is limited. So I will spend my waiting time in the waiting space, like playing phone and have a meal. "

"Although there is big screen for train schedule inside the train station, while it take me some time to read the information. Sometime I feel difficult to read it and find my train's information. But at least in the space itself it is effective, and functional. About the whole interior, there is nothing about aesthetic, because it is more focus on function."

"And maybe you don't know, the navigation system and the architecture design are separated, we are not responsible with navigation system. But sometime our architecture will be their supervisors! "

" And about the signature, I prefer icon more, you know it is more effective to get the information. But now I am confused with a lot of icon, they look so similar and some of them were designed for unique but without navigate function. About these unique signatures, I totally don't understand! "

Freelancer (48 years old)

" I go for business trip or personal trip by train. So for catch the train on time, I will arrive before and follow the navigation sign. I feel ok with the whole system. An after couple time, I even don't need the signature! I will find the way via my memory! But I remember the first time to the train station I even drive to there one day before to check everything. See I am this kind of person."

" Although now I am quite familiar with the train station, but I still like to walk around when I am waiting the train station."

"Yes, I read icon, I can understand them, but sometime it is better with some word! Make it more clear right? "

Conclusion

So base on the collection and analysis of the interview, it can be see, users expect a more discernible station, especially in the interior aspect. While when they talked about the motion related to the station, all the unforgettable memories they can reminded is hometown, family, friendship and some other thing without any relation with the station itself. Although the train station can be over a public transportation, like playing a role as a memories storing container. The interaction between passengers and the space is one direction. People only can give it a meaning when the station also show some feedbacks. So for users, they only treat it as a place to take the train! Or we can say those things that user mention about the station, it's only about user himself, there is no connection between people and the space. So the meaning of the station is only its function without any other cultural aspects.

Obviously users want more from this station. They expect any possibility of identification of this station, something about station itself or related to the city.

As one interviewee said, a station is not only a place for waiting the train, but also represent the city itself. It should offer a soft sense of home for those homesick people , and a welcome and warm environment atmosphere for the new arrival . Meanwhile the station can comfort those who gonna to leave with blue mood.

It should be designed to remind what Shenzhen is. leaving passengers a wonderful experience and allowing them forget the crowed for a while! In this way, for the new people who just arrive with train, they can feel the vive atmosphere, cultural spirit and characteristics of this city. That is what we call the identification of a city. While for the people who born in here or used to live in here for a long time, it could like a door on their home way, once opening, they can catch familiar scenes and find their personal special memory of this city from here. So the train station as an emotion container and a related object, it store everyone's mood and feeling, and gives it back when they touch it.

This is what we call reflective dimension, the connection between user and station, it aroused their memories in deep which is about this place. And the visceral dimension and behavioural dimension are weak. Interviewees require an aesthetic consideration to represent station, it can be a set of visual system. So it also can transferred their attention of the other objective situation (like crowed situation).
Even the station has a powerful function, while it increases the usage difficulty. Like the interviewee said, they are still get lost frequently.

From the emotional design aspect, it requires the designer to understand the users better, instead of doing the roughly user research, studying the using process and analysing their feeling is also needed. Then figure out their potential requirement and wanted, since user would not tell you what they want. Because they don't know what they really want. In a word, designer is required to learn the users and help them know themselves better.

StudyCase

Study
Case

8. Study case

Study case includes two aspects, one is about the related case like place identification alongside with the navigation design, another is about the study of train station. For this I selected several ideal city center train stations for study target.

Related environment graphic design project is providing the method of place identification, it shows different ways of telling the story or value of the space. It may associate the usage of the color, study deeply the culture of the place then create a perfect pattern to show its story or it uses different material to build up a unique five sense experience.

While train station study is try to analyst the space organization, interior visual design and information hierarchy of the station. So this aspect is more special on the train station itself, and from these case try to find out a feasible method to solve the Shenzhen North station's currently issues. At the same time it also aims at figuring out some star points which can be used to provide a better user experience.

So from what it can be and what it should be, it helps to clear up next step's idea to develop a better design decision.

Fig.65
DZEN : Design of the building's interior.
Photo: Brigida Gonzalez, Steffen Vogt (fotografia)

8.1 DZNE Navigation system design

DZNE (German Centre for Neurodegenerative Diseases)
is the only research institute in Germany that dedicated to
dementia and all its facets. The task for büro uebele visuelle
kommunikation was to create an overall atmosphere, to develop
the identity of the place alongside planning a wayfinding system.

Fig.66-67
DZEN
Photo: Brigida Gonzalez, Steffen Vogt (fotografia)

The original building is mainly white and clean space, for maintaining a friendly working environment. And considering when suffering from Alzheimer's, the ability people retain longest is their color recall. Color and writing not only help building users' capability of finding their way, they also communicate the research that's undertaken here. So büro uebele visuelle kommunikation harmonized the space partly with color.

And for the design of the way-finding system, they use the giant brushstrokes which they called the ancient image of human encounter with color. And base on this, it uses brushstrokes to code different areas and is split as three individual buildings with several departments.

These hand drawn brushstrokes, some are more than 40 meters high, are contrasting the hand-drawn signage in original size. Handwriting is one of the first things to change for people with Alzheimer's. Therefore, more than a thousand words have been hand-drawn onto the walls. The way-finding system with all its department codes, 200 arrows, pictograms and room labels was literally written on the walls—about 10,000 words.

From this way it creates a unique and suitable space for those Alzheimer's, help them get better in their treatment.

Fig.68
DZEN
Photo: Brigida Gonzalez, Steffen Vogt (fotografia)

Fig.69
DZEN
Photo: Brigida Gonzalez, Steffen Vogt (fotografia)

Fig.70
City Point
Photo: Martin Seck / Pentagram(fotografia)

8.2 City Point

City Point is the largest food, shopping and entertainment destination in the center of Downtown Brooklyn, also known as "DoBro." Located at the corner of Flatbush Avenue and Fulton Street, the 1.8-million-square-foot mixed-use development is poised to dramatically transform the area.

Fig.71-72
City Point
Photo: Martin Seck / Pentagram(fotografia)

For shaping the program to express Brooklyn's diversity and inclusiveness. Pentagram use permanent identity and way-finding elements and changing temporary graphics, they designed a bold and uniquely Brooklyn identity for the project, including its brand positioning, advertising, signage and large-scale environmental graphics. The identity is focused on a proud and loud declaration—BKLYN BORN—celebrating the project's significant local engagement in a borough that prides itself on deep-rooted authenticity.

Bold font is a unique identify of this project, it try to use font style, color to code the Brooklyn culture, as we know is vibrant and young. So the full screen fonts show its atmosphere with the exaggerated effect. Especially the neon color, it tells its diversity and full of unknown and possibility .

Fig.73-75
City Point
Photo: Martin Seck / Pentagram(fotografia)

Fig.76
Here East Wayfinding
Photo: Tian Khee Siong, Rory Gardiner, dn&co(fotografia)

8.3 Here East Wayfinding

Designed by dn&co, this project represents an innovative and bespoke signage and way-finding program for Here East, London's home for making. Here East is a 1.2 million-square-foot tech and creative industries campus on the Queen Elizabeth Olympic Park in East London.

Fig.77
Here East Wayfinding
Photo: Tian Khee Siong, Rory Gardiner, dn&co(fotografia)

In an environment that reflects contemporary thinking in technology and business models, way-finding was not only a functional necessity but an opportunity to connect people, build a sense of community and create a memorable experience.The way-finding was designed to celebrate the disruptive nature of the work that happens at Here East.

The vast size of the campus, with multiple entrances and businesses of very different scales needed a comprehensive program across the site from dn&co. so they use the lit edges, sheer scale and unique profile of the monoliths to make sure the every user would not get lost in this huge building.

Fig.78
Here East Wayfinding
Photo: Tian Khee Siong, Rory Gardiner, dn&co(fotografia)

Fig.79
Here East Wayfinding
Photo: Tian Khee Siong, Rory Gardiner, dn&co(fotografia)

Fig.80-82
Here East Wayfinding
Photo: Tian Khee Siong, Rory Gardiner, dn&co(fotografia)

Internally, a custom-made signage system uses the language of technology and electronic circuit diagrams common to Here East's community of makers, encouraging visitors to make the connection and take their own journey through the building. All the circuit line can get users to arrive their destination. And it allows users to spend a little longer lingering in the space, and allowing them to engage with the space for a moment and enjoy the environment themselves.

Users even can pick up postcards at reception that reveal the hidden meaning of the symbols.

Fig.83
Google Wayfinding
Photo: William Wright, Studio Matthews

8.4 Google Wayfinding

Google's Kirkland campus was set to dramatically expand, so that they needed a new way-finding scheme for both Googlers and visitors. The desire was a design approach that was innovative in the way that reflects the company's values and attitude.

Fig.84-86
Google Wayfinding
Photo: William Wright, Studio Matthews

To that end, the design team discovered that Google's founders are strong believers in the Montessori method of learning and working, which emphasises making use of all of the five senses. This ideology inspired the design solution: each building in campus can be identified by a different texture, letter, shape and color related to Google's brand.

The signs' tactile quality invites touch feeling. As the light shifts from day to day and season to season, the dimensionality of the signs creates a changing shadow play, making them highly memorable.
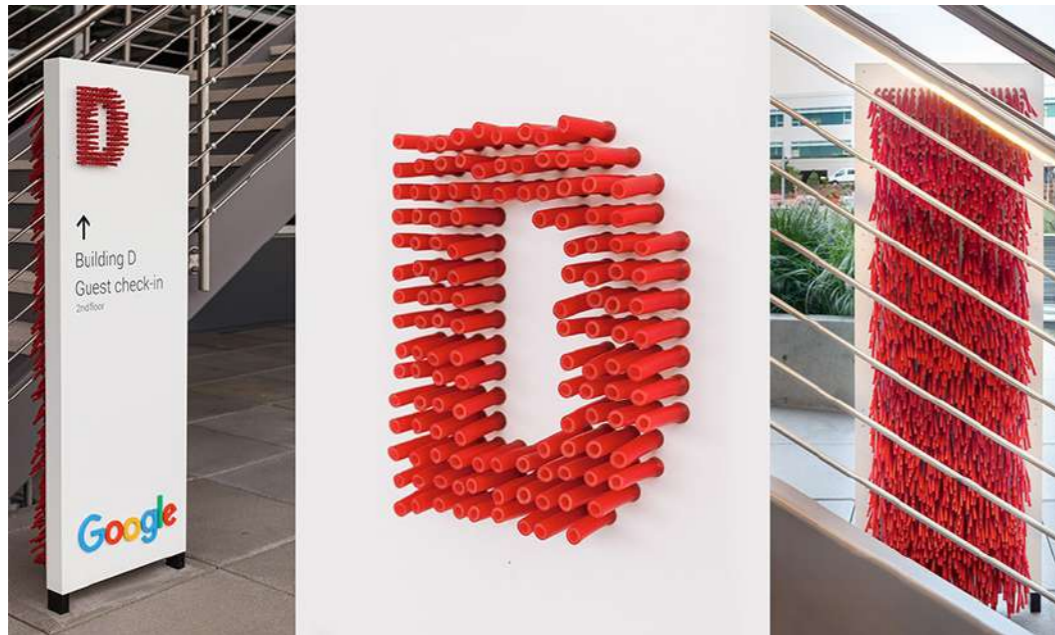
Fig.87-89
Google Wayfinding
Photo: William Wright, Studio Matthews

Fig.90
Google Wayfinding
Photo: William Wright, Studio Matthews

8.5 Parigi-Gare de Lyon

Paris-Gare de Lyon is Lyon station. As a station it works as train station and the passing canale which allows passengers to pass by without using train. Since it contains a big people flow per days, it uses color to clear out these two functions. One color: blue to point out the way to the train's platform, and another color: yellow leads uses to cross the station from entrance to exiting.

After setting this main rules for the whole navigation system, blue color is used for all the signs which guide the passengers to platform and know their trains' schedule. While the yellow presents all the other useful information, like ticket service, left luggage, toilet and so on. So during the whole process, passenger can easily find their needs and know their direction.

8.5.1 The classification of information

Base on users needs, the system make a clear information category. One type of information is mainly about the train, another is about other services' information. So in the layout, different types of information is put on various sides. For example, left side is for general service and the right side is about train related information.

In the platform, the signage is only refer to existing and other platform's direction. In this way, reducing useless information can improve the reading efficiency. In this case, color design play an important role in classifying information, which assist user to get information in a rapid way.

Fig.97
Lyon train station wayfinding system
Photo: Qixuan Chen

Fig.98
Lyon train station wayfinding system
Photo: Qixuan Chen
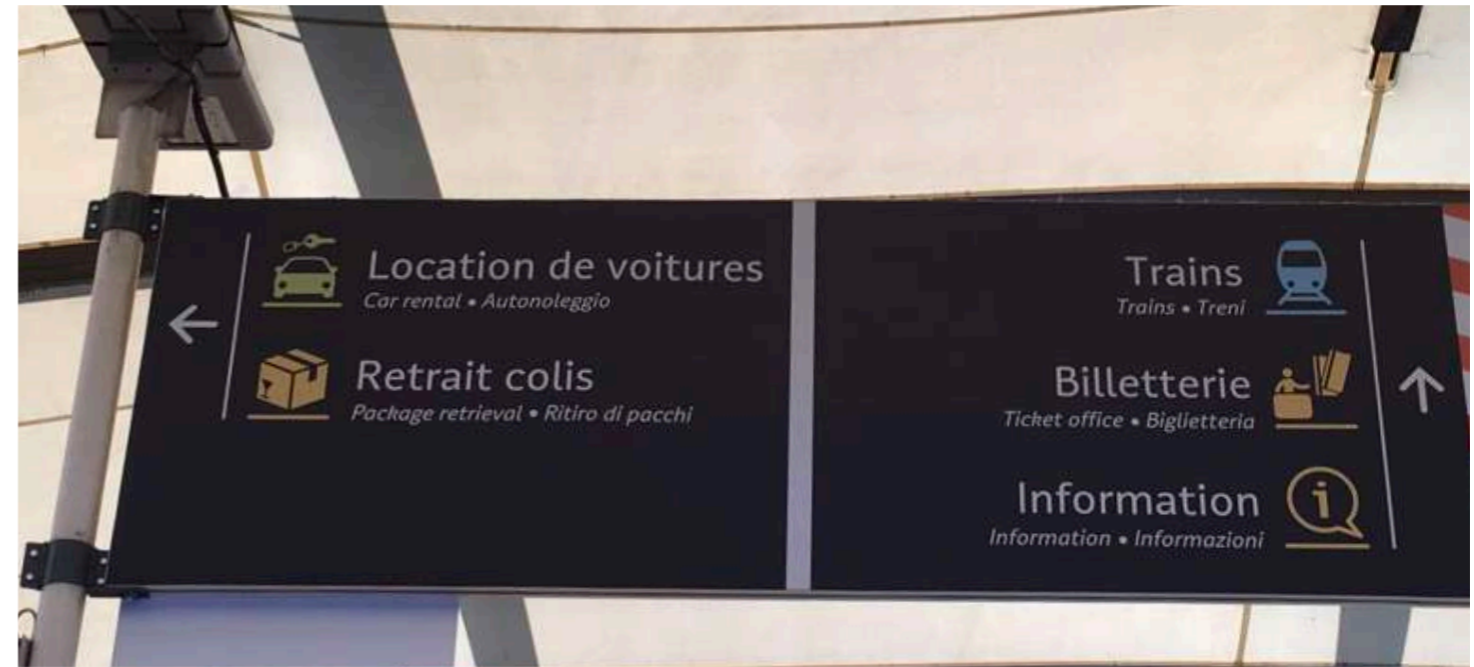
Fig.98-104
Berlin central station's
signage design
Photo: Qixuan Chen

8.6 Berlin station

Berlin station's navigation system has a thoughtful design in signage position. Base on the users behaviour, it sets the signage in each important decision point. For example, it sets the signage in every existing or transfer key point like elevator entrance, metro exit and so on.

At the same time it considers well in where user stands on and which direction user would face to, then setting a serious of sign to help users find their way better.

Fig.105
Signage design (Berlin centrel station)
Photo: QixuanChen

Berlin station also works well in information classification. Considering users demands, set the platform information as the most important info level, because taking train is the main aim of the users in the station. And then setting existing as the secondary level, for the users who get off the train and want to leave. These are the two typical users in the station, and for the other users who meet some urgent issues or arriving early, it is set as the third important level. So tickets office, toilet, package, parking and other transportation sign are set as third level.

Fig.106
Signage design (Berlin centrel station)
Photo: QixuanChen

Fig.107
Train schedule board (Berlin centrel station)
Photo: QixuanChen

Another impression design is the schedule board. It presents clearly with the train timeline, destination, information of the trains' carriage(dinner carriage, bike carriage and normal carriage). It uses a perfect information classification method to show uses an overview of train.
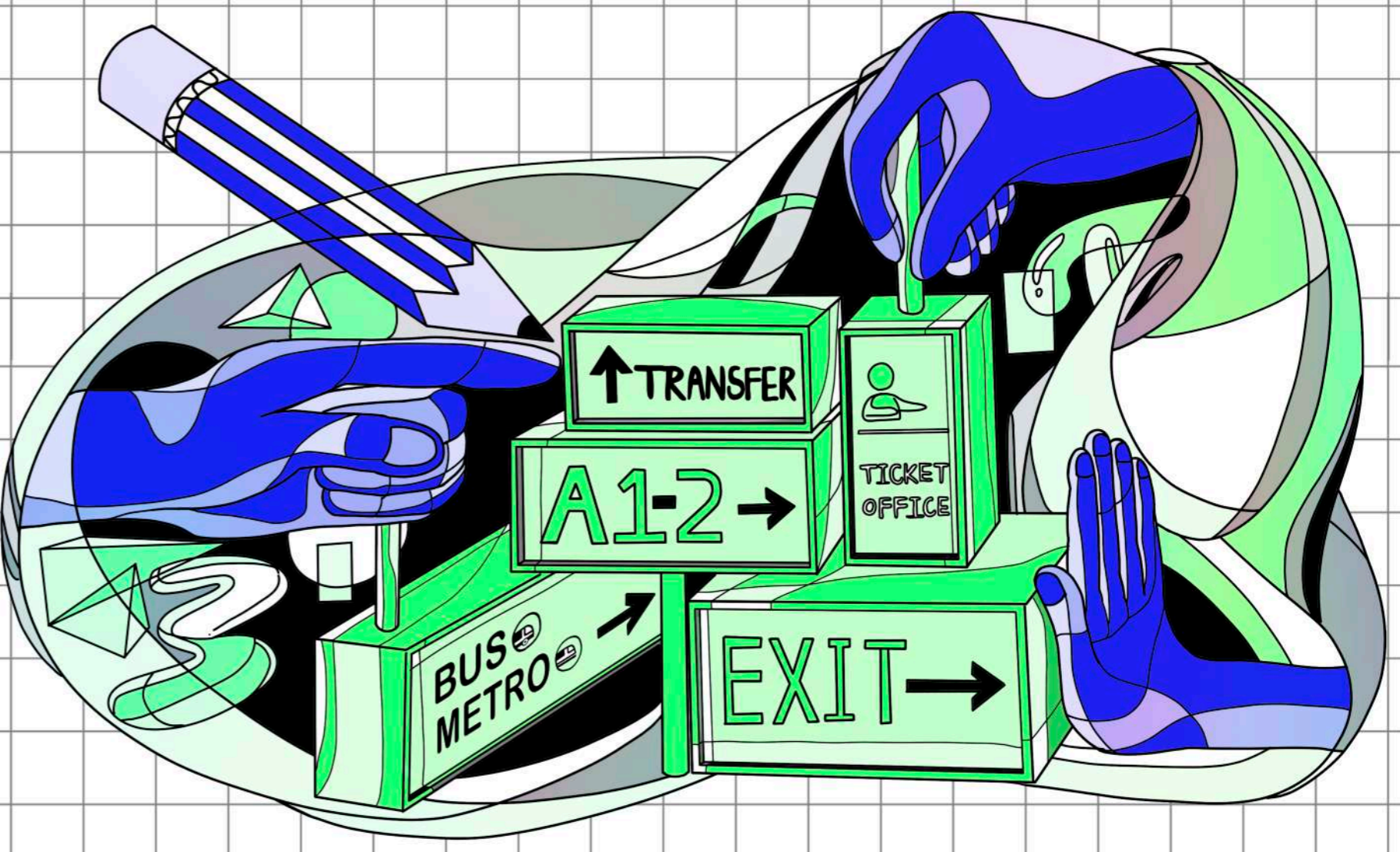
Design Design Process

9. Design process

After the interview and photography research, it shows that except the disorder navigation system, users also expects some city identification for this train station which can represent this city and give them a sense of belonging. According to the research result, the design will aim at those main users who arrive the station with public transportation. And the design goal will associate the way-finding design and city identification design.

9.1 Target user

For building up a clear design process, this project aim at those users who arrive this city with public transportation like metro and bus. They may live here for a long time, they may just arrive this city for tourists or starting a new life. They have an open mind to accept every new things, they may even looking forward more creative things to tell this city's story.

9.2 City branding

About city identification, it has several rules describe a city and create a city branding. In this case, I try several methods to figure out the best way to present Shenzhen. From the design reference, city identification design has these key elements to tell an impression of a city:
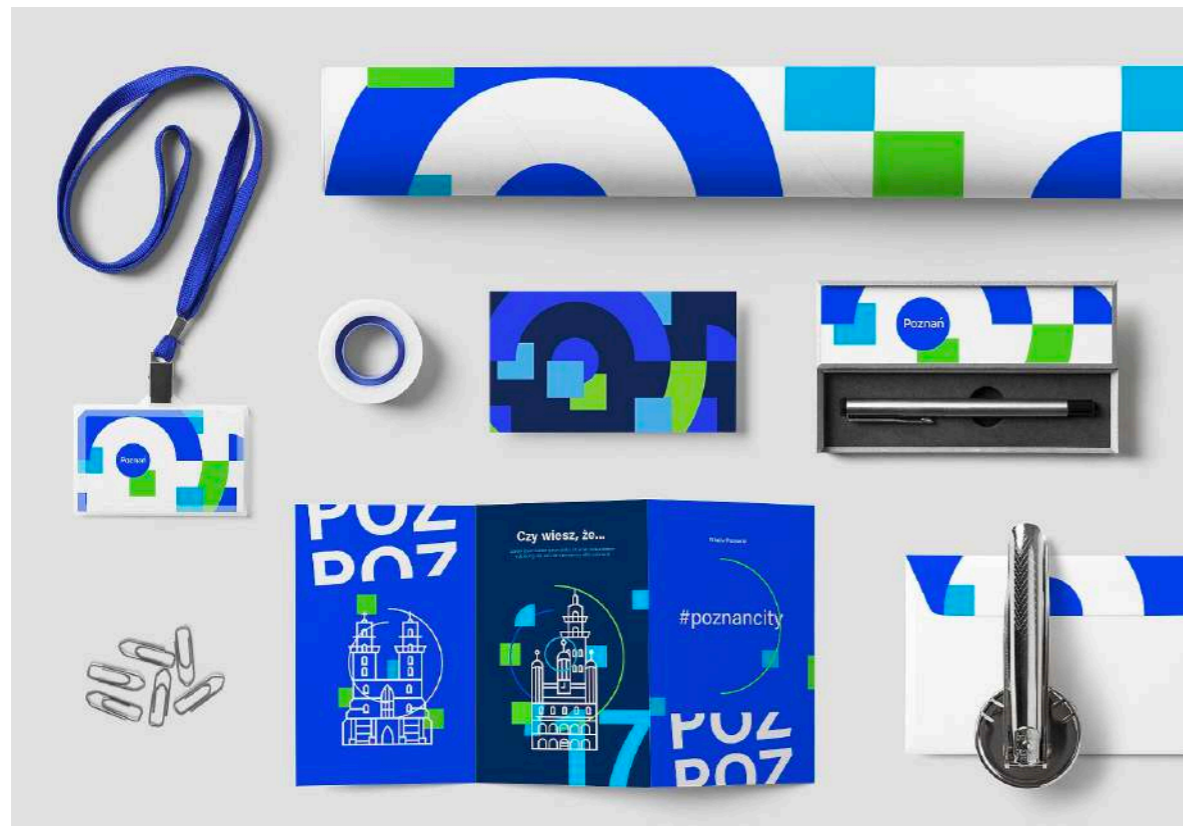
Fig.108
City branding reference
Photo: Pinteres

Fig.109
City branding reference (Paris)
Photo: Pinteres

1. Architecture.
Human city is constitute with various architecture, from ancient and classical style to modern style, building can tell the city's history precisely. So the city's landmark buildings are alway used as main inspired element to help build up an abstract image of the city.

2. People
City as products of the human's cultural development, people is a main component of the city, their behaviours and activities also will describe how a city is. Some city identification also try to design from this aspect, for example, collecting people's ideas about this city, figuring out the main constituents of the city and so on. Using these relevant aspects to tell the image of city from the people's eyes.

Fig.110
City branding reference (Genova)
Photo: Pinterest

Fig.111
City branding reference (Lisbon)
Photo: Pinterest

3. Slogan
Most of the city has their own slogan to impress people, it is a short sentence to describe this city, and a catchy word, it impress people every time when they hearing. This also can be a key starting point!

4. Typography
Typography design is a popular way to represent a modern city. Using font(type) design to show a city's impression through an abstract sense. Normally content is the name of the city or the capital letter of the name. In another way, the words tell where is it directly and design polish it a with a dramatic feeling.

From these four ways, it started a serious of design sketch to find out what is Shenzhen.

Fig.113
Pablo Picasso x Thomas Scheibitz
Photo: Museum Berggruen

9.3 Design of the City identification

The city branding design start with the "architecture" concept. In this process I collected a serious of city photos. And base on this photograph, some geometric figures come out and give a preliminary city impression. Curve line and straight line show a dramatic and magical city image. Meanwhile using the night captured pictures to find the city color: some investing neon color, which also show the dramatic aspect of Shenzhen.At the end neon color was taken as consideration of the color palette.

And an artistic exhibition was also taken as reference of style design. Since its minimalism figures with colourful neon color created a modern and dramatic sculpture which also match the idea of Shenzhen. It uses the interesting way to build a three dimension project to tell what's modern. It is also an ideal way to represent a city.

But the whole scene is missing the most important part: people. As a most important part of the city, people warm up a city and bring life to it. For relating more people element, I stated to search different people's story and grab their experience in Shenzhen from Chinese two social media. At the end picking out the most concise comment and interesting feeling. After this a scene of city impression was built up.

Fig.112
Pablo Picasso x Thomas Scheibitz
Photo: Museum Berggruen

Magia
Sognare
Vecchio e Nuovo
Industrie Mondiali
Super Città
Deserto Culturale

Contenere

Fig.112
The screenshot of research
Photo: Qixuan Chen

144

In the research of collecting information, these two main social media are personal blog platform: Weibo and Douban, it can see that such a big population come here to earn their life with their dream. For them there is a city where is full of possibility and energy. Especially the previous story happen in this city also confirm their belief: After 1998, with the economy police, Shenzhen under the support of Beijing government, it had a fast speed of development. Everyone knows that Shenzhen make a dramatic change from a small fishing village to a modern city. It attracts the people from the whole china to come here with their golden dream. Someone even called it as a super city. Also for the previous developed history, now Shenzhen is a city which content various kinds of people from various city, it is so containable that as it says to people: All the people who lives here is Shenzhen citizen. There is no outsider, everyone is local.
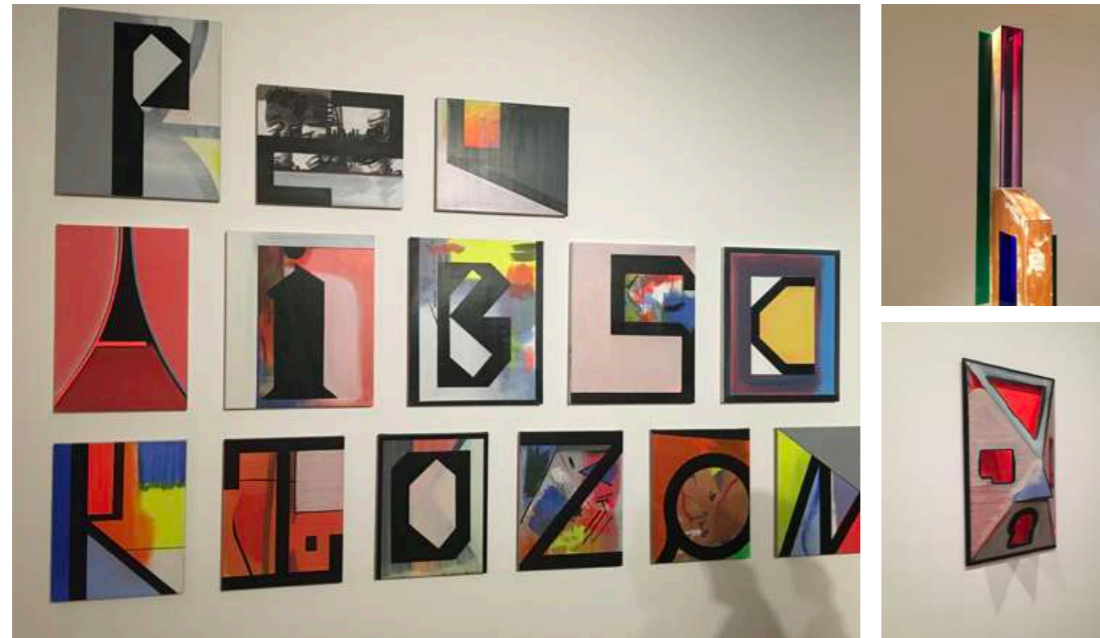
But as a young city, compared with the other developed city like Beijing, Shanghai and Canton, it doesn't have any shining history and with no historical building. Everything is new. So people says" Shenzhen is a cultural desert." This sentence even make a big discussion in Chinese Quora: Zhihu.

In this point, using people as main design element seems present better this city.

And at the end several key words were selected as the design inspiration and meaning: magical, super, modern and everyone in Shenzhen is Shenzhen citizen.

145

Fig.113
Pablo Picasso x Thomas Scheibitz
Photo: Museum Berggruen

Fig.114
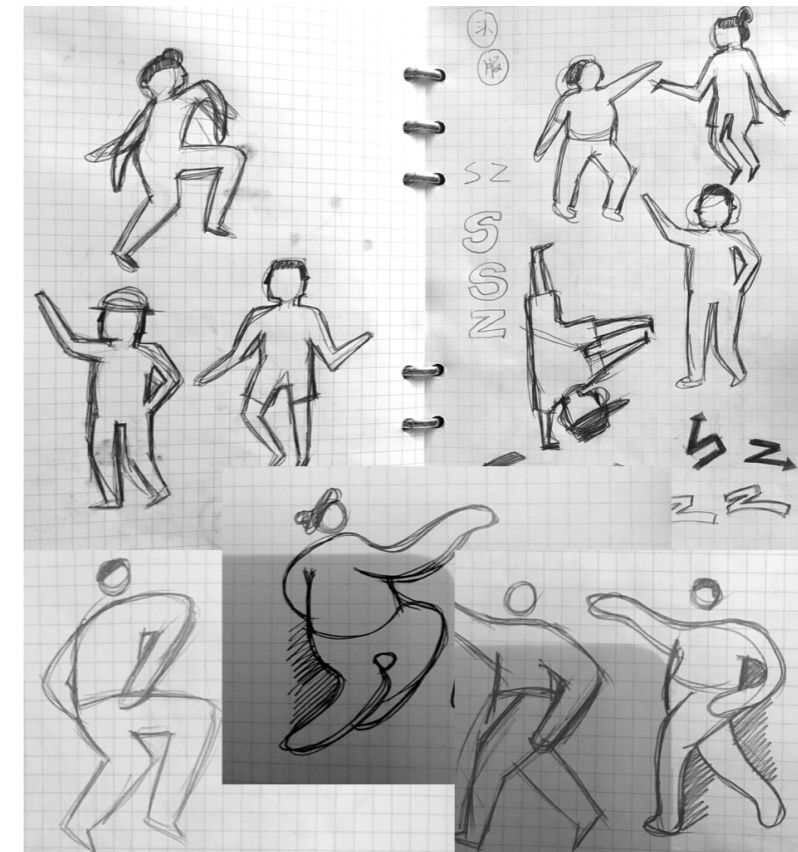Design sketch
Photo: QixuanChen

The moodboard of design try to create an active and playful visualisation scene. Neon color and contrast color will used to sharpen the graphic design.

The color palette includes 10 color which can be used in creating different persona and represent various kinds of people who live here.

And the popup color like blu and neon green will used in signage design. For a better visualisation effect.

The Icon design reduces all the useless detail and try to describe the object with minimalism style. At the same time following the general icon shape, try to do the design without any misleading.
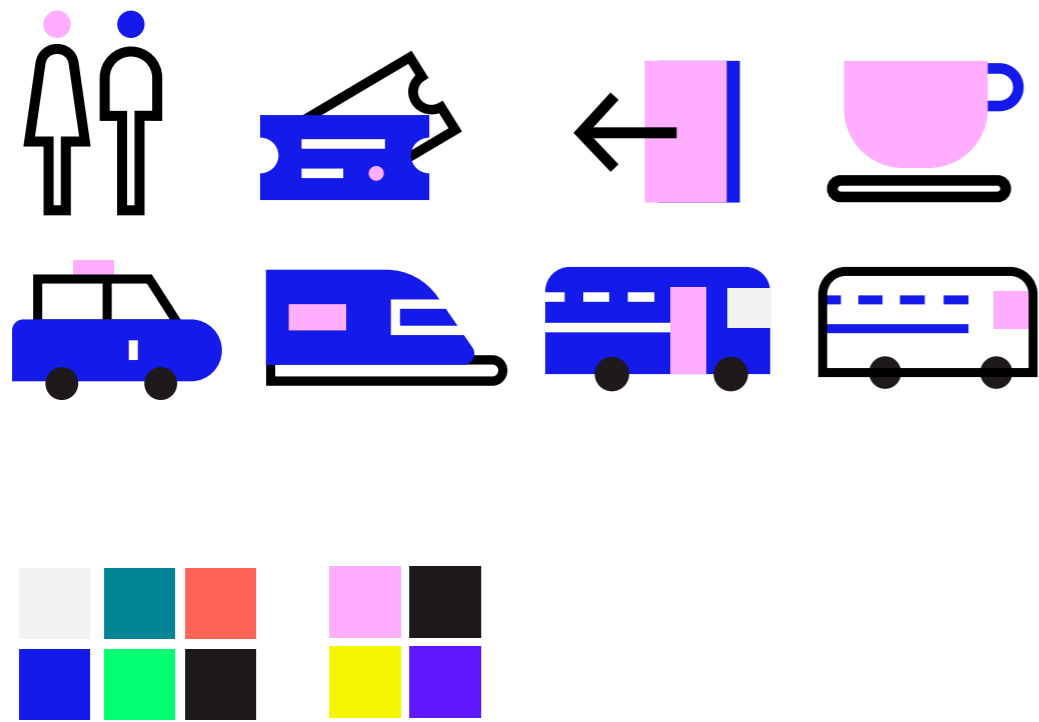
Fig.115
Icon design
Photo: QixuanChen

Fig.116
City identification design
Photo: QixuanChen

9.4 Navigation system

As the important part of this project, for a better solution, I also do some research of other train stations by using and experience the station. The research result points out the using of color, the information hierarchy and the position of the sign are the three key design aspects which will help users to find their destination easily. And with the consideration of the users' behaviour, I make the decision of using four types of signage.

9.4.1 The process of taking train

Compared with the European way, Chinese method is more like taking the airplane. It can be concluded as four steps:

1. Enter the station through the font door;
2. Finding the the checking gate base on the train number;
3. Enter the checking gate 15 mins before the train's department;
4. Go down the stair and find the train platform.

 * Normally, the one checking gate has 2 numbers like A1 and A2, it only will lead user to two platforms 1 and 2.

 * The types of train have two, one is have 8 coaches and another one is with 16 coaches. So for taking this longer train, it set as A, B checking gate to help passenger to arrive their coach faster. Gate A is used for arrived the coach 1-8 and Gate B is used for arrived the coach 9-16.

Fig.117
Signages of Shenzhen statione
Photo: QixuanChen

9.4.2 Four types of signage.

Navigation system design was designed as 4 types of signages base on the using process and user behaviours.

Tipo1: Indicating the direction.
- Direction of the train
- Direction of the subway, bus, parking lot and other public transportation
- Exit
- Other service

Tipo2: Indicating the location: checking gate
- Platform number
- Other service

Tipo3: Indicating the trains' information
- Trains' schedule
- Trains's coach info

Tipo4: Indicating the direction of the exit.
- Exit
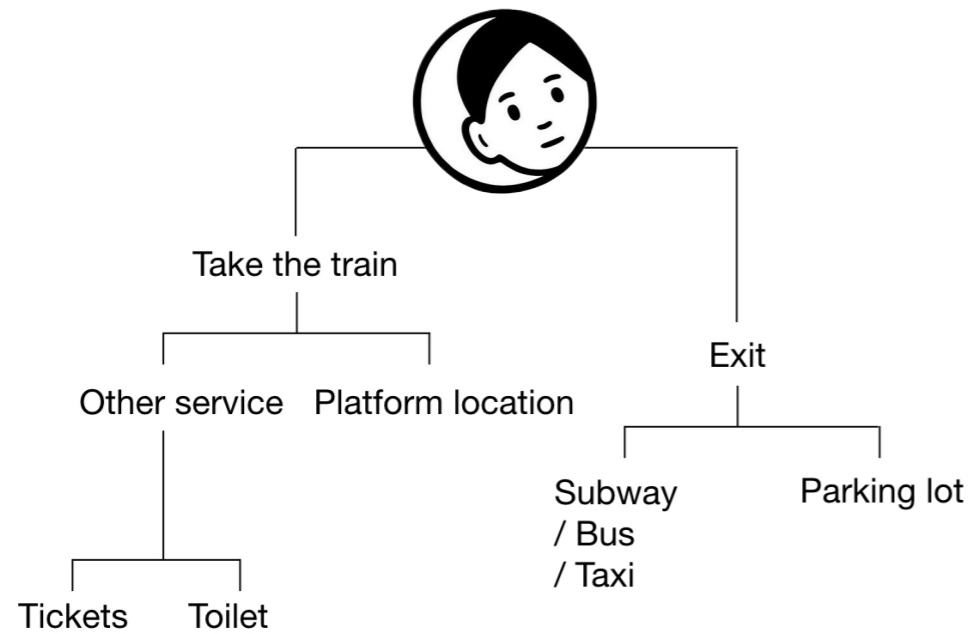- Transfer
- Public transportation
- Service information

Fig.118
Analysis graphic
Photo: QixuanChen

After collecting the necessary signage information, another design decision point is the users behaviours analysis. It help to set up the hierarchy of the signages' information. Through learning the users' main behaviour and way-finding goal during their experience in this station, it come up an idea of which is more important and the information need to be get right away. The analysis help to improve the effectivity of getting and reading information during the whole way.

And from the conclusion, it shows that the main reason users stay in station is taking train or leaving the station. For those who come to take the train, they may go to platform or due to unexpected issue they need to find the ticket office or toilet. While for those who want to leave the station, they also need the guideline to find the exit or entrance of the public transportation. And for the car owner they will need the navigation to the parking lot.

The level of the information improves the reading speed and also offer a better users experience.

First of all, those who want to take the train, they may in a hurry situation, so platform number is the first hierarchy. Then is the exiting that services for the people who want to leave. After solving these two main issues, the rest of demands were set as the secondary level, like ticket office, metro direction, bus and so on. Meanwhile according the types of the service, it was classified as two part: transportation service and other service. So it is the category of the metro, bus, taxi and the category of the tickets and toilets.

Base on this solution, it gives out this following design layers.

Type 1

A1-A2

Exit
Bus/Metro
Ticket office
←

↑
Exit
Metro - Line1
Bus
Ticket office/Toilet

B1-2 →
Exit
Metro -Line 2,3,11

A1-A2
出口
公交车/地铁
售票处
←

↑
出口
地铁 - 1号线
公交车
售票处/洗手间

B1-2 →
出口
地铁 - 2,3,11号线

Fig.119
The sketch of signage (Type 1)
Photo: QixuanChen

Type 2

↑
A1-A2
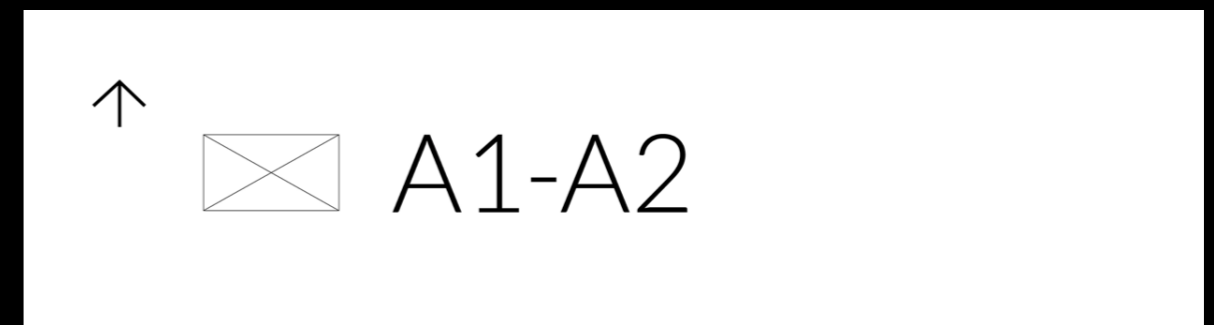
Fig.121
The sketch of signage (Type 2)
Photo: QixuanChen

Type 3

19:00 G6535	Futian — **GuangzhouSouth**	↑
		8-16
13:00	C2366	Xiamen
13:15	C2766	GuangzhouEast

19:00 G6535	福田 — **广州南**	↑
		8-16
13:00	C2366	厦门
13:15	C2766	广州东

Fig.122
The sketch of signage (Type 3)
Photo: QixuanChen

Type 4

EXIT A	EXIT B →
Transfer	Transfer
Bus/Metro/Taxi	Hongkong Bus
← Ticket office	Bus/Parking lot
	Toilet

出站 A	出站 B →
公交/地铁/出租车	换乘
	前往香港大巴
← 售票处	公交/停车场
	洗手间

Fig.123
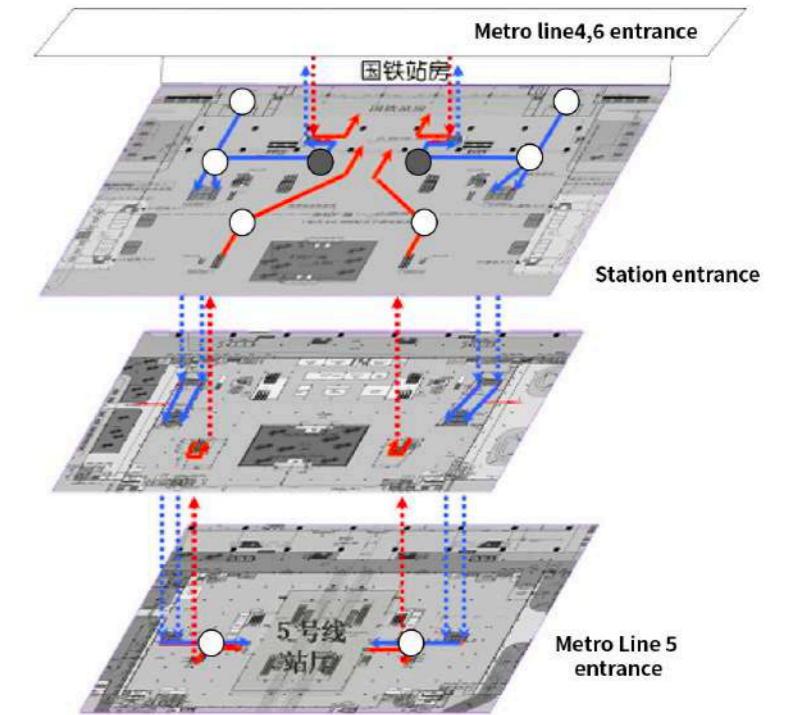The sketch of signage (Type 4)
Photo: QixuanChen
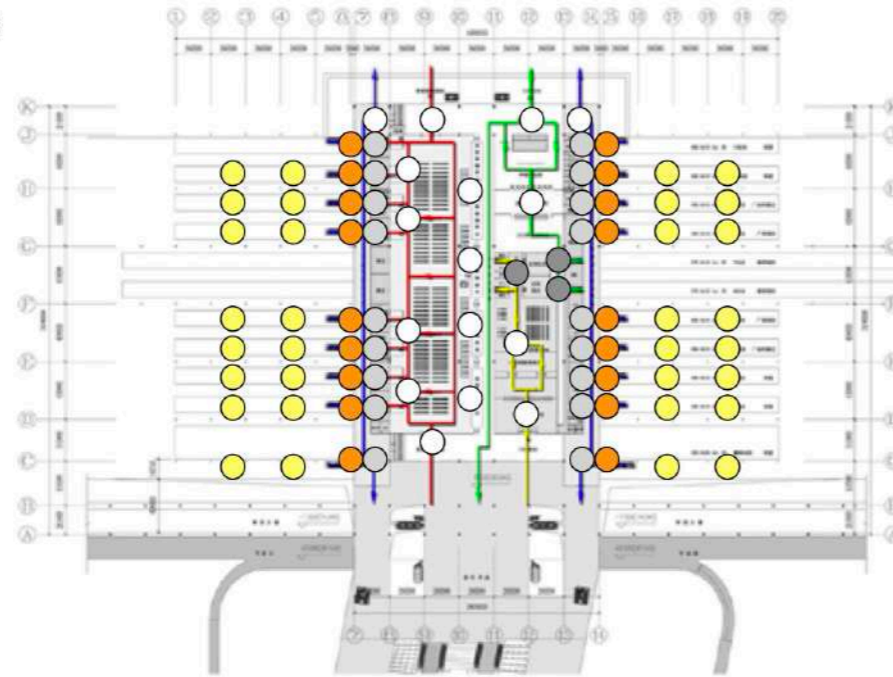
Fig.124
Map of Signage position(waiting room-train platform)
Photo: QixuanChen

Fig.125
Map of Signage position(metro-train station)
Photo: QixuanChen

9.4.3 Flow chart and signage position setting.

Signages position was decided by the flow chart, base on the 4 main flow routes. In this way, users can find their way in every important decision point, so that they would not get lost in the train station.

One map is about the way to enter the train station platform area, or leave it. Another is about the route from Metro to train platform. According to different situation, setting the position of the navigation. In the map, the straight lines shows the people flow during this area, while the dots tell which kind of signage will be put on there.

Wayfinding　**Position**

Indicate　Indicate
the direction　where is it
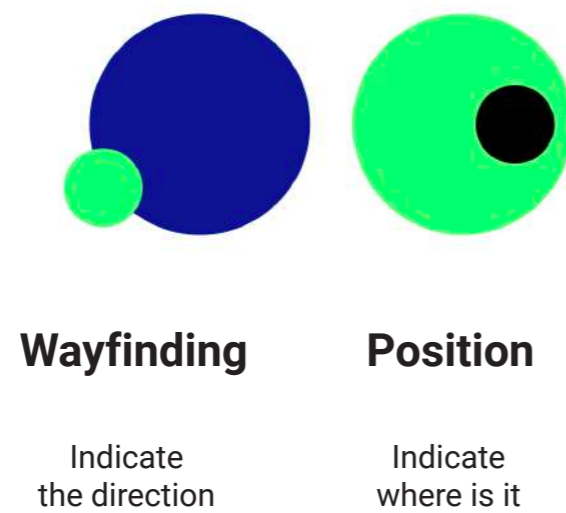
9.5 Signage color design

In the signage design, the using of the color's percentage is considered. Color is not only for information hierarchy but also as a part of using experience feedback design. All the previous signage design, the board with different function were design with the same color.

While for giving user a clear mind in the function of the signage, In this design, color are also used in separating the functions. And through a little color change to cheering the users and giving them a memorial train using experience.

A1-A2

公交车/地铁

售票处

Fig.126
Signage design / left side one (Type 1)
Photo: Qixuan Chen

↑
出口

地铁 - 1号线
公交车

售票处/洗手间

Fig.127
Signage design / Middle one (Type 1)
Photo: Qixuan Chen

→
B1-2

地铁 - 2,3,11号线

Fig.128
Signage design / Right side one (Type 1)
Photo: Qixuan Chen

9.5.1 Signage design: direction indication

Associating the icon design, information hierarchy design, layout design and the branding style, coming out the following 4 types of signage design. As it shows on the following pages.

This is on the way to the train station, it was designed to set on the way from metro to train station, or inside the waiting area. In this situation, users have three directions, go straight, turn left or turn right. For a clear information guiding, white is put in the middle to notify the three directions information. So that users would not be confused with a bunch of information.

In the blue with neon green design solution, the green color is used to emphasise the the first hierarchy word with the pop up effect. While in the white board, only the limited green in used since neon green in white background will distract the reading experience.

Whats more, the signage and work are separated on left side and right side on one board for different types of information reader: icon reader and word reader. In this way, different readers can gain their information in their referent way

Fig.129
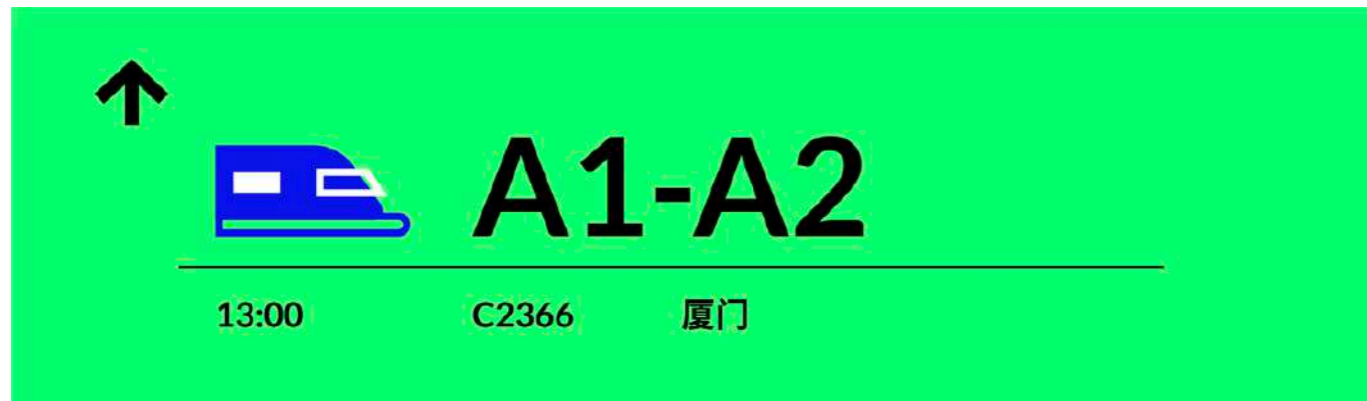Signage design / Indicate location (Type 2)
Photo: Qixuan Chen

Fig.130
Signage design / Train Schedule (Type 3)
Photo: Qixuan Chen

9.5.2 Signage design: location indication

When users arrive the checking gate, the signage will use the cheering neon green tell them their location. Meanwhile different color is used to classify the type of signage: direction board or location board. At the same time psychology design also was used as design consideration, like blue was used in indicating the location, since blue can make people clam down, especially for those who in hurry situation and be in anxious. While using the cheering Neon green to tell users their location and offer them

a sense of relax. In this way to tell them: Don't worry you are already arrived the platform entrance.

And the this train schedule board, black color as background and neon green is used on green. In the layout, the latest train is oversize, and only two following trains are showed on the board. Meanwhile putting the the cabin number on the right side.

Fig.131
Signage design / Wayfinding (Type 4)
Photo: Qixuan Chen

Fig.132
Signage design / Wayfinding (Type 4)
Photo: Qixuan Chen

On the exiting route, blue signage is using again for indication the leaving direction. Following the same design logic as the type 1 signage.
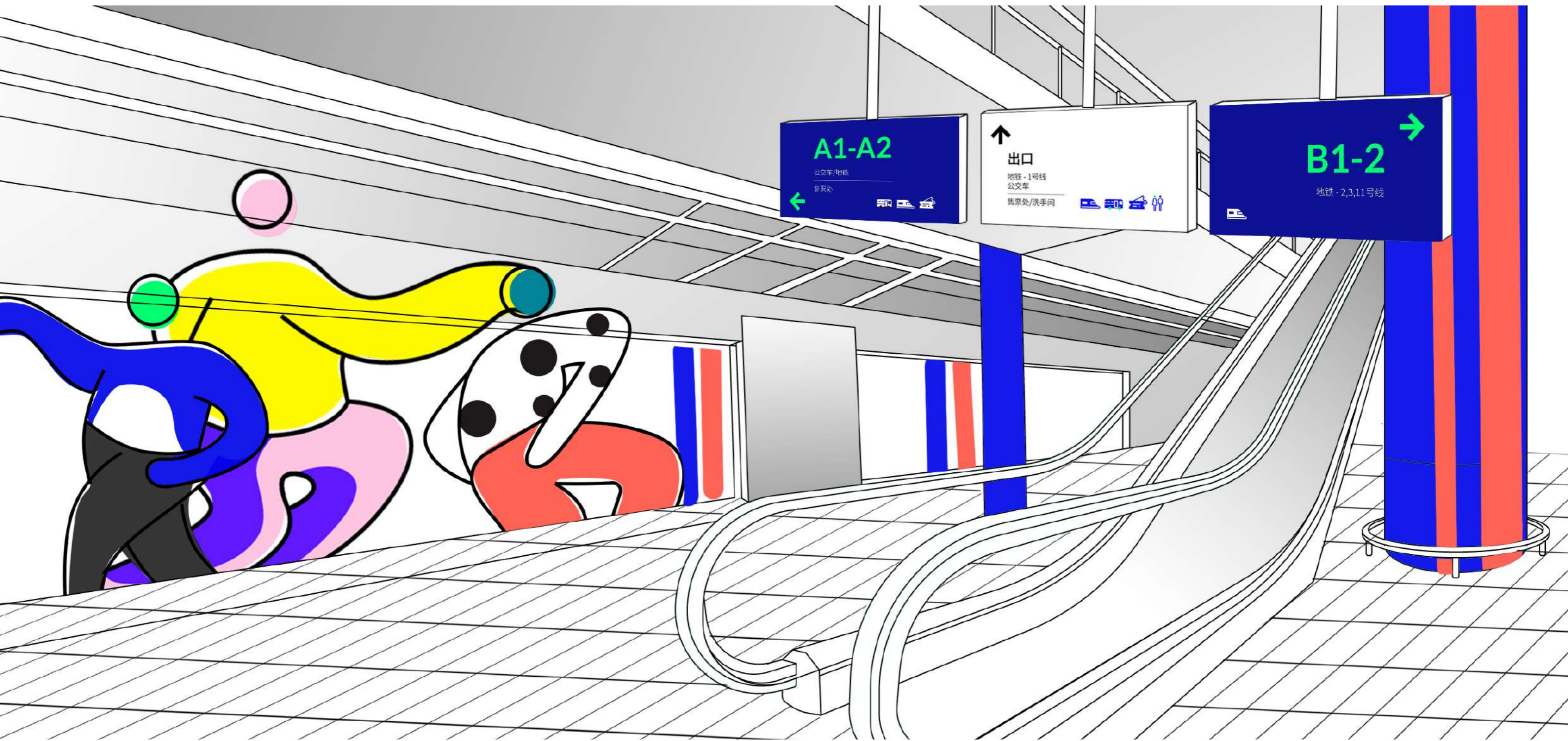
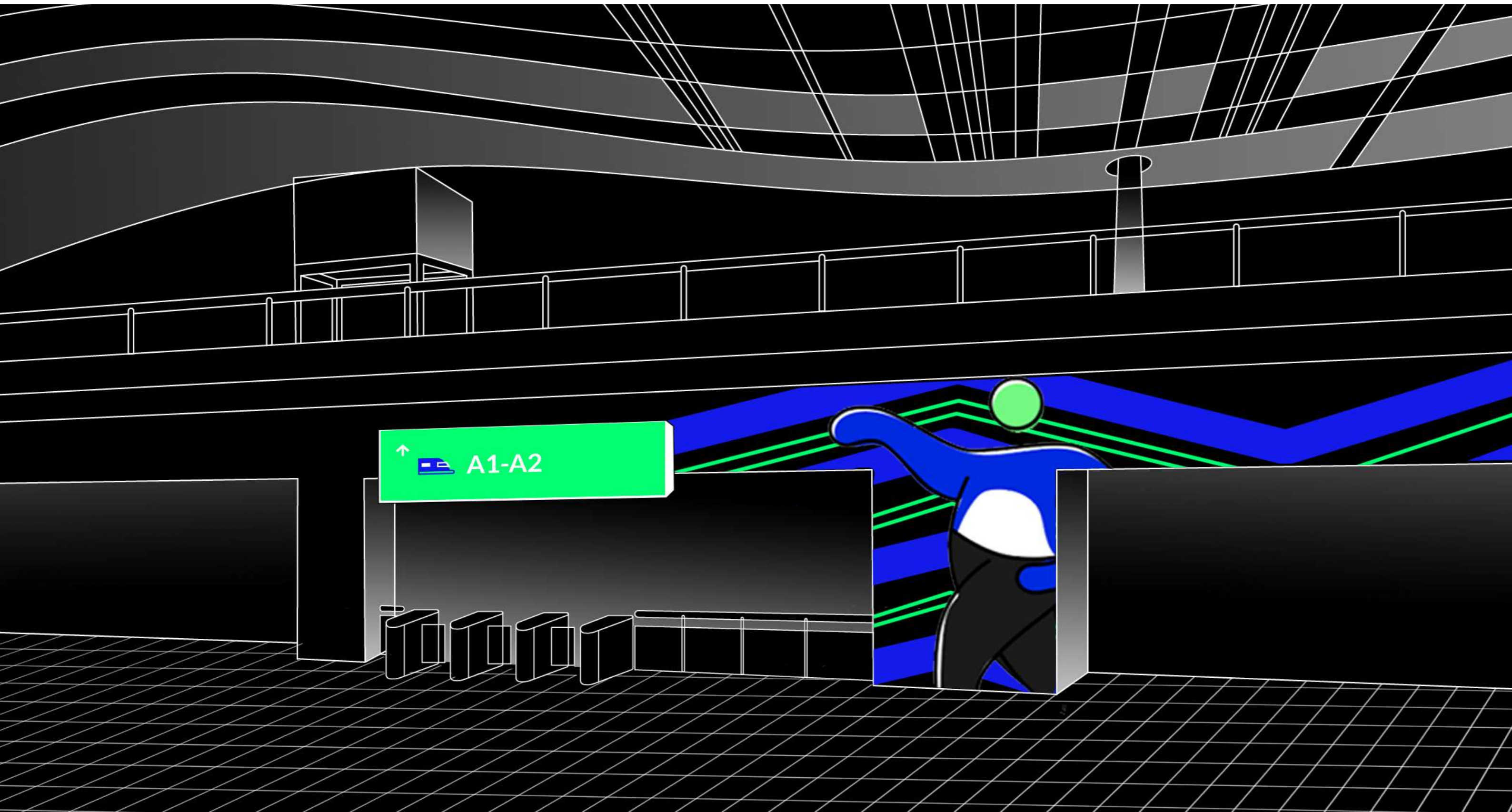Fig.133
Design effect drawing1
Photo: QixuanChen

Fig.134
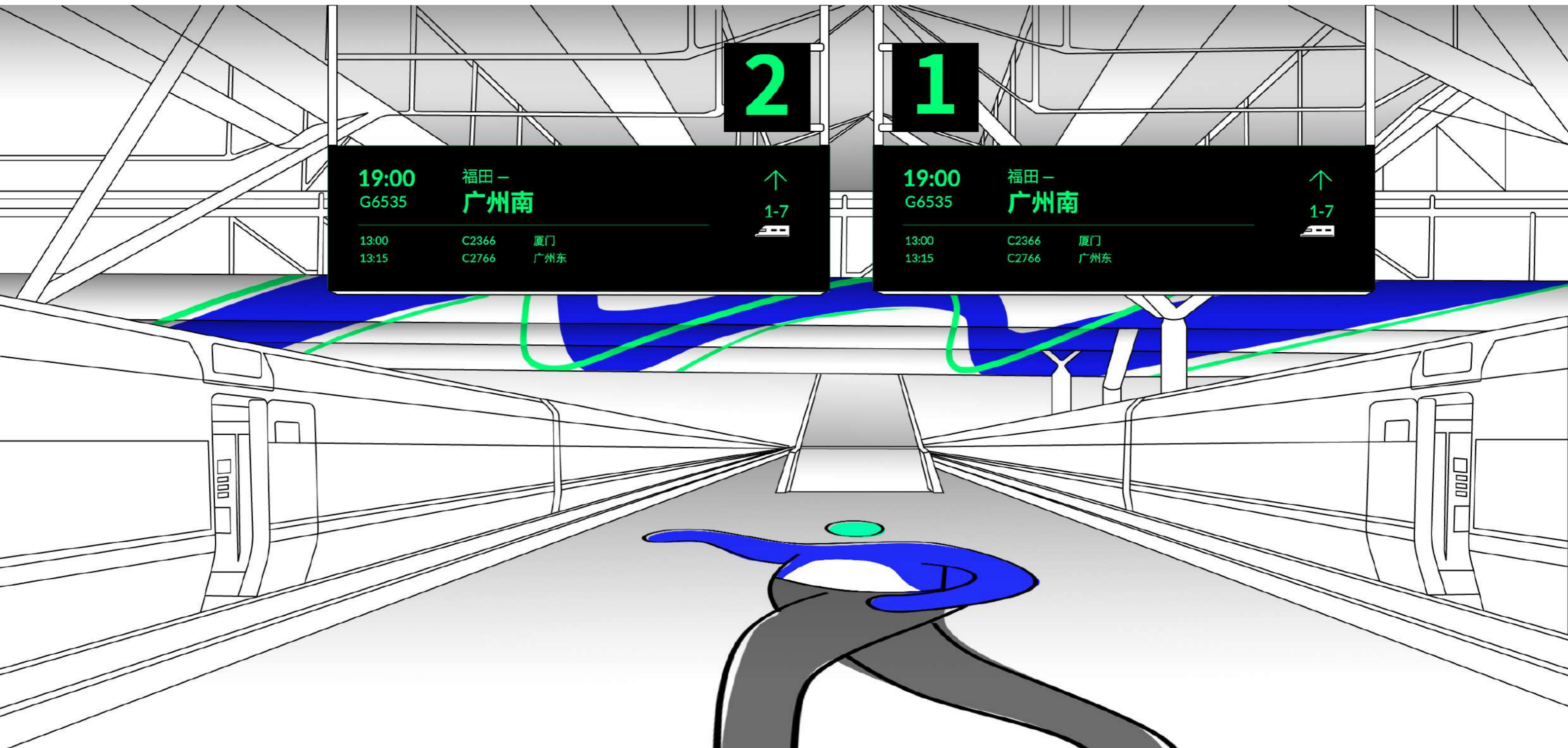Design effect drawing 2
Photo: QixuanChen

2 **1**

19:00	福田 —		↑
G6535	**广州南**		1-7
13:00	C2366	厦门	
13:15	C2766	广州东	

19:00	福田 —		↑
G6535	**广州南**		1-7
13:00	C2366	厦门	
13:15	C2766	广州东	

Fig.135
Design effect drawing 3
Photo: QixuanChen

Fig.136
Design effect drawing4
Photo: QixuanChen

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"With the aim of the development of the user experience of the northern station of Shenzhen, this project tries to start from the Enviroment Graphic Design and to combine the design of the user experience to study this railway station.
Based on field research and theoretical study, I developed a possible concept to address existing problems."