DESIGN FOR GLOBAL CLIMATE CHANGE

Edited by
Shangning Wang

Content

INITIAL RESEARCH REPORT

1.1 Problem Identification

To begin with, I need to provide a piece of news from CNN: "In Baoding, China, the country's most polluted city, the smog is thick enough to see. It can burn your eyes, what is more, it can leave an acrid taste in your mouth(CNN, 2015)."

China's smog issues have led to many discussions on Chinese media. Why China's air pollution is still around? The main reason is China's major energy supply. China is a country that still treats coal as the main energy supply. Renewable energies only represent 10% of the total energy supply. Chinese people and China's government burns a huge amount of this cheap and efficient traditional source for warmth in winter months. This tradition has never been changed for decades. It causes bad air pollution in China. Meanwhile, it makes China become one of the culprits for global climate change since the emitter of greenhouse gases from coal(NewYork Times, 2015). In search for the questions of how can design and art save global climate change, it is necessary to know what global climate change is. Robert Henson(2014) in his book "The Thinking Person's Guide to Climate Change"explains the global climate change definition as: "An equal warming everywhere on the planet, whereas a few regions may in fact cool slightly, even as Earth, on average, warm up." He continues stated that "The term global change emerged as a way to embrace all modes of large-scale tampering with the planet, including such merging issues." In his opinion, the "global climate change" and the "global warming" have the same meaning, but broke into headlines worldwide at different times.

1.2 What Is Global Climate Change?

In search for the questions of how can design and art save global climate change, it is necessary to do research on global climate change from different points of view. Sharon Spray(2002) in his book "Global Climate Change" states that "Fossil fuels, carbon dioxide, the greenhouse effect, global warming, all of these are concepts tossed about in the media, negotiated by politicians, joked about it by late-night cartoon, and pondered by normal people worldwide." As a very serious topic, the knowledge of global climate change and global warming should be explained more carefully. He continues suggests that "Science can observe, analyse, and make predictions about almost all subjects, and global climate change is no different. Global climate is one of the key areas in which the scientific observations and analyses could have a profound impact on how people everywhere live their lives."

1.3 The cause of Global Climate Change.

When searching for the causes of global climate change, the most important one is the greenhouse effect. When industry releases greenhouse gas to the atmosphere, the gases keep the heat that radiated by the Earth, and releases part of the heat to the outer space. This process makes the atmosphere and earth get warmer and warmer. (Robert, H.2014). Hence, if we can not control the emission of greenhouse gases, we can not control the global climate change. The greenhouse gas includes methane, carbon dioxide, water vapor, nitrous oxide,

and the chlorouorocarbons. As we all know, global climate change is currently a serious problem in our society. It influences human' future. It causes many bad effects on our environment, such as glaciers shrinking, ice on rivers and lakes are melting earlier, plants and animals' ranges shifted, and many species of animal are disappearing. According to NASA's reports, the extreme events around the world have been increased over years. All these effects are evidences of the global warming's negative conditions.
(NASA Global Climate Change,2015).

1.4 Feedback from interviews and surveys

I handed out fifteen pieces of surveys and interviewed fifteen interviewees. The survey was based on the American people and Chinese people's attitude on global climate change. This survey was based on the qualitative research. According to the feedback, most of people believe that we are suffering from the global climate change. However, the survey also revealed that half of my interviewees do not treat global climate change as a very serious problem.

In the survey, I also asked some additional questions, such like can you please explain what you know about global climate change? Can you list all of the potential types of effects and damages that climate change

may cause? How much of global climate change do you think is caused by human activities? How much do you trust the things that scientists say about the environment? Unfortunately, people do not know much about the answers. Although our governments have devoted their-self to educate and influence people with different media for decades, people are still confused of this topic with other topics. There are a lot of wrong ideas and misunderstandings of global climate change. Only people are fully aware of our situation, and they will put their efforts to solve this problem.

1.5 How can design and art save global climate change?

In the past, there was a period that the Earth's climate was more stable. As human society developed, we broke the balance. Regarding the future of our Earth, we need to figure out how to fix the problem. In another word, recovering the stable climate is an extremely urgent topic for us. Not only scientists are working on this topic, designers and artistes should also contribute to it. Taking industrial designers as example, by choosing environment friendly materials, designers can control carbon emissions during the products' manufacturing process. Also, a good product design can help to prevent over waste and pollution. For graphic designers, we can choose environment-friendly papers, such as recyclable papers. We can promote and develop environment-friendly works in the market. Then, we can help to improve

the environment quality. What is a good design? The regular evaluation criteria is based on many factors, such as its functionality, sale, aesthetics and durability(David, B. 2009). Most designers are not required to consider environment-friendly factor as one of the evaluation criteria to judge their design. With the industry developing, we made a lot of landfills, which means we did not make our products easily to be recycled and reused (Conny, B. 2014). For younger generation of designers, all of the factors I mentioned above should be taken into our consideration. There are many strategies of climate change mitigation. Through reducing or preventing greenhouse gas emissions, we can avoid the worse condition of climate. To accomplish this large purpose, designers must prepare some strategies.

1.6 Strategies for Global Climate Change

Circular economy is the primary strategy. Circular economy is a economic development model that is based on resource recycling. Its aim is sustainable development. In order to satisfy people's increasing material demand, industry plunders much resource while ruins our environment. Circular economy is an environment-friendly model, which can richly reuse existing sources, and effectively reduce the rely on nature resources(Natalia, M. 2007)8. As designers, we can involve in different stages in circular economy. Design for circular economy

requires designers to think over on products' life cycle, from manufacture process to sale. Not only make our design fascinating to buy, but also can easily to be recycled, repaired and reused. Designers can make products last longer, since the rate of recycle is not as efficiency as we think. Sometimes, using product longer is better for environment than buying a new one. It can reduce the products' negative effect on the environment.

How to educate people by art works? Can art works and design influence people's attitude on global warming and stable climate? Will art work help on this topic? These questions' answers are doubtless. I will take Chinese activist artist Brother Nut's new art project "smog bricks" as an example. Like I mentioned above, Beijing has a hazardous air pollution in these past years. In order to raise people's awareness of their dangerous situation, the artist whose real name is Renzheng Wang spent 100 days on collecting Beijing's smog with the industrial vacuum cleaner. The activist artist attempting to vanquish toxic smog by sucking it up through a black plastic nozzle. After the smog-collection process, he turned the dust particles into a building brick. This art project has led a huge numbers of discussion in China. He proved to people how bad the air pollution actually was, and appealed for a fight against the pollution.

1.7 Conclusion

Design and art can be efficient strategies for helping control the global climate change. The effort we put on this topic is absolute worthy and significant. It will gradually attracted more attention and influence people's mind on global climate change. We can save the world with our works, and should never give up our powerful weapons and responsibility.

1.8 Bibliography

CNN, Can China's Most Polluted City Lead A Green Energy Revolution?. (2015). Retrieved November 30, 2015 from http://www.cnn.com/2015/11/30/asia/china-pollution-baoding/.

Conny, B. Marcel, H. Ed, H.(2014). Products That Last: Product Design For Circular Business Models.(p49-63). TU Delft Library.

David, B.(2009).Do Good: How Designers Can Change the World.

Robert, H.(2014). The Thinking Person's Guide to Climate Change. (p3-26). American Meteorological Society.

New York Times, China Burns Much More Coal Than Reported, Complicating Climate Talks. (2015). Retrieved November 3, 2015 from http://www.nytimes.com/2015/11/04/world/asia/china- burns-much-more-coal-than-reported-complicating-climate-talks.html?_r=0
Natalia, M.(2007). Climate Action. UNEP/. Earth print

NASA, Global Climate Change - Vital Signs of the Planet.(2015). Retrieved from http://climate.nasa.gov/effects/

Yale, Climate Change Communication-Bridging Science&Society. (2014). Retrieved from http://environment.yale.edu/climate-communication/article/climate_system

Sharon L. Spray.(2002). Global Climate Change"(p3-4). Rowman & Littlefield

David K.(2013). Global Climate Change: Turning Knowledge Into Action. Prentice Hall

Arnold J B. (2010). Global Climate Change: Convergence of Disciplines. Sinauer Associates

Horace M. Karling. (2001). The Global Climate Change

RESEARCH PROCESS & POSTERS

CHAPTER OVERVIEW

2.1 Interview question

1. Could you please tell us a little about yourself? (Where did you grow up?)

2. Can you please explain what you know about global climate change?

3. Can you list all of the potential types of effects and damage that climate change may cause? Please take your time to list these.

4. If climate change will create positive effects for the environment and for human society, what might be these positive effects?

5. How much of global climate change do you think is caused by human activities? If not, what do you think that is the cause of climate change?

6. How much do you trust the things that scientists say about the environment - completely, a lot, a moderate amount, a little, or not at all?

7. If you do not trust the positions about climate change of the major scientific organizations from around the world, can you explain why not?

8. Where have you seen one/them before? What was/were it/they of?

9.You may have heard about the idea that when the ice in glaciers and on the north and south poles melts, it raises the level of the oceans. How serious of risk is this to humans and the environment?

10. Could you please pin your hometown's location in the map? From this map, would your hometown be loaded by rising waters?

11. If the regions that are red in the map above are all permanently flooded by rising ocean levels, what might be some of the consequences of this flooding?

Who is most responsible for making the technologies, policies and behaviours that reduce climate change: the government, industry, or the public? How would you apportion the responsibility in percentages for each group? Why do you think this?

12. In the ideal world, how will we solve the problem of global climate change?

2.2 List of interviewees

How much knowledge of global climate change do people know? What information do they want to know? What is their attitude on global climate change? How can we educate people about this topic? To answer them, it is necessary to interview people.

I interviewed nine interviewees. Four of them are Americans. Five of them are Chinese. The interviewees' ages rang from 18 years old to 55 years old.

1. Primary user:
Interviewee one is a master students at Arizona State University. She is an architect major student. She comes from Yiyang China. Her hometown is in Hunan province. She can represent Chinese designers' attitude on global climate change. According to my observations, architectural designers know more knowledge about global climate change. They do a lot research on this topic before they start their actual design. Architectural design and environment change are closely bound up.

Interviewee two is an American artist who focus on animal protection research. She can represent American scholars' attitude on global climate change.

2. Secondary user:
Interviewee three is a PhD student at Arizona State University. He comes from Rizhao China. He is my roommate. According to my own observation, he read online Chinese news everyday. He can represent advanced degree Chinese people's attitude on global climate change.

Interviewee four is an American industrial design major student. He grew up in a big city. He grew up with many neighbourhood kids. His family goes to church every week. He can represent regular American people's attitude on global climate change.

Interviewee five is a industrial student. She comes from Nanjing China. Her hometown is one of the most important cities in China. She can represent regular Chinese people's attitude on global climate change.

Interviewee six is a graphic designer. He grew up in Seattle WA and Phoenix AZ. She can represent regular American student's attitude on global climate change.

Interviewee seven is an American Chinese student. He moved to Phoenix when he was 12 years old. He have already lived in Phoenix for 10 years. He can represent regular American people's attitude on global climate change.

3. Tertiary user:
Interviewee eight is a undergraduate student's mother. She just flew from China in last summer. She is here to look after her daughter. She can represent regular Chinese people's attitude on global climate change.

Interviewee nine is a Chinese worker. She already retired. She like other Chinese order people, watches news paper every day. She can represent regular older Chinese people's attitude on global climate change.

2.3 Description of four potential design directions

1. Amazon package redesign:
In this day and age, people get used to buying things online. Amazon is one of the biggest online retailers. In order to protect the goods in long distance shipment, Amazon's cardboard package is very solid. But at the same time, Amazon's package is a huge waste of money. As we all know, cardboard's recycle rate is very low. Sometime when we order a tiny item from Amazon, we may get a big size of package. In addition, when we buy laptop online, we will get double packages. In order to reduce Amazon's unnecessary waste, redesign the package is necessary. Save Amazon's package, save the world!

2. Information for global climate change:
Global climate change is currently a serious problem in our society. It influences humans' future. Unfortunately, people do not know much about it. Although our governments have devote their-self to educate and influence people through different media for decades, people still confuse

3. Rent Circle:
Rent Circle is a social media website and app that devote itself to help people share their commodities. This website is based on the access business model. The access business model encourage people to share their items which they rarely use in their life. People always buy things that they rarely use. It is a huge waste in our society. Through sharing those items with people who need them, they can make money and new friends. For example,

the customer can download an app and sign up a account. When he own a new item, he can add it to his share list in this app. Other people who need this item can find him by the location. This environment friendly life style can help us reduce our unnecessary waste in daily life.

4. Information design for circular economy:
The circular economy is a new term for industrial economy. When I search information graphic design about the circular economy, I could not find a detailed material. It is very necessary for designers to do research on this topic. Only fully aware of the importance of circular economy, designers can do their best to protect our environment. In order to show a big picture of this important term, it is necessary to depict every fragment of circular economy in one big map.

2.4 Insights from interviews

1. Although our governments have devoted their-self to educate and influence people through different media for decades, people still confuse this topic with other topics.

2. There are many misunderstandings of global climate change. Some people believe global climate change is caused by the sun.

3. Some people do not take global climate change as a serious problem. They believe it is governments' and industries' responsibility.

4. Some people think global climate change is not real. They believe there are no evidence that can prove it.

5. Some people think they can do nothing for global climate change. As a normal people, they are not involving in the issues.

In order to help people to understand the global climate change, it is necessary to depict every fragment of climate changes' consequence in one big map.

2.5 Initial poster configuration
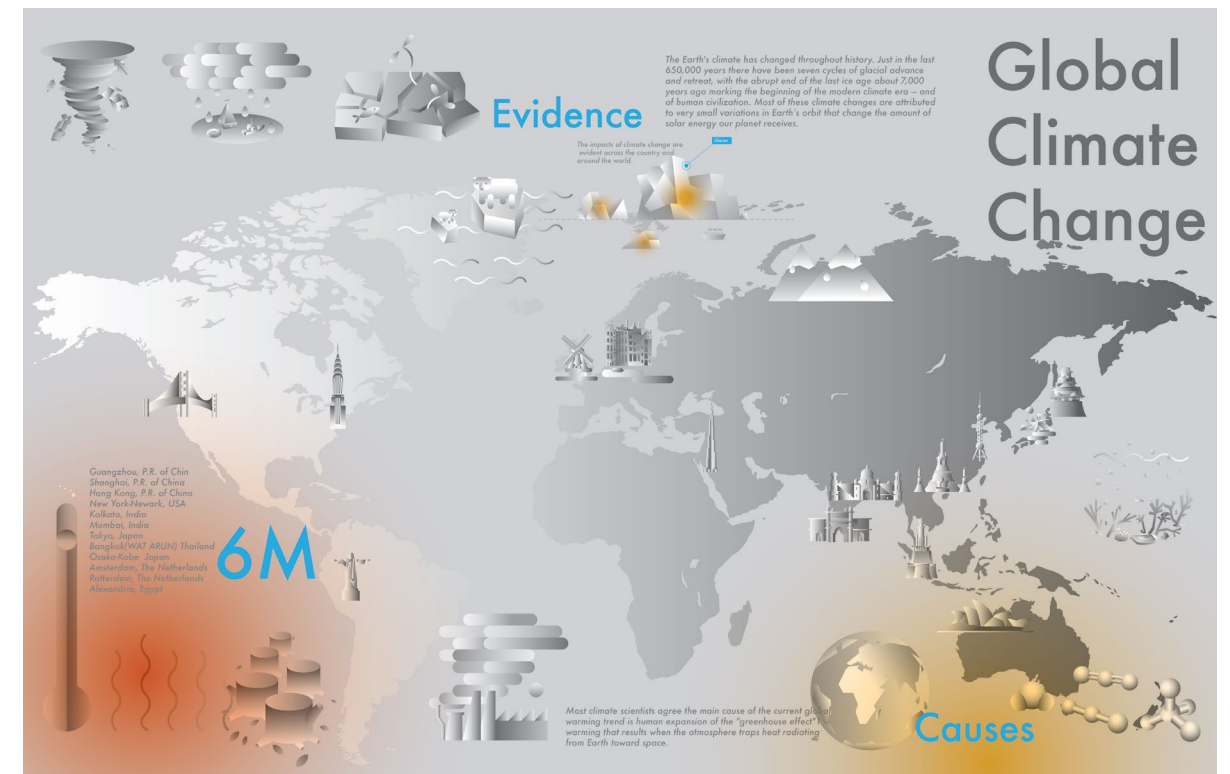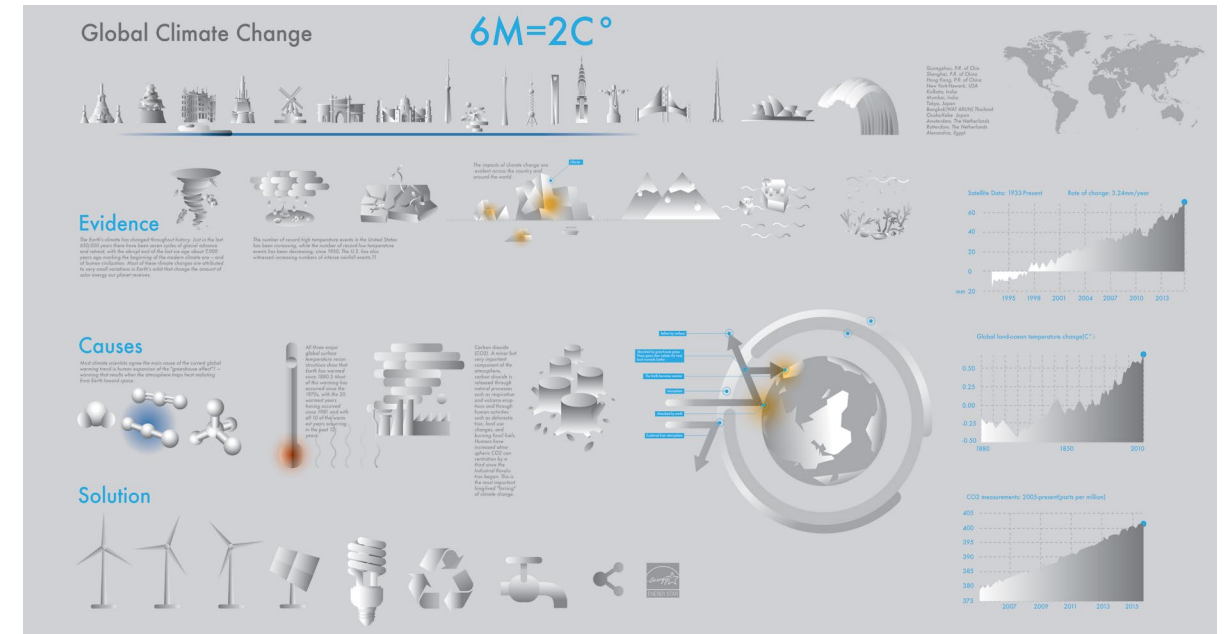
2.6 Evaluative research

1. Which poster do you think is the best? Why? Does it readable? Which section interest you most? Which section do you think need more details?

2. Which poster do you think is more helpful f or you to learn this topic?

3. Which format do you like? Landscape? Or portrait format?

4. Is anything in the poster that you do not understand?

5. The full size of this poster will be 40cm by 60cm. Is it too small or too large for you?

2.7 Feedback from posters

Interviewee 1:

1. *The third poster is the best. It has a clear layout. Yes, it is readable. The sea level rise section interests me most. I would like to see more informations for these cities.*

2. *The third poster. It shows the specific data for global climate change.*

3. *I like portrait poster. When I read a big poster with a lot details, the vertical posters are easier to read.*

4. *The greenhouse effect graph is hard to understand. The texts are too small. I think you should make them larger.*

5. *May be it is too small. But it based on how much information do you want to show.*

Interviewee 2:

1. *I think the second poster is the best. The title is larger. Also, it has a map which can help me to locate these cities. It need more information. I would like to see more in the solution section.*

2. *The third poster helps me more. I think you can put more details in the second poster.*

3. *Landscape poster. Both your landscape posters are beautiful.*

4. *Why the red color in your second poster is larger than other posters'. Also, you did not give enough information in the first one and the second one.*

5. *Too small for me.*

Interviewee 3:

1. *I like the third one more than others. It shows more details. It is readable. I want to know more evidences of global climate change.*

2. *The first one. It has a bigger graph of greenhouse effect.*

3. *I like vertical poster design. It is because when you read info-graphic design on screens, vertical posters can be showed larger.*

4. *I do not understand the sea level rise section. Why you show these cities? Why are they vulnerable?*

5. *It is too large for me. Half of the full size is good enough for me.*

Interviewee 4:

1. *I like the third poster most. It has more information than the other two posters. It is readable. The data section interests me most. I want to know more data of global climate change.*

2. *The third one.*

3. *I like vertical poster.*

4. *All of them are confusing. You need a good layout design.*

5. *Too small for me. According to your statement of your next step, you need a larger poster.*

Interviewee 5:

1. *The first one is my favourite. It is more simple. Actually, it looks like unfinished. But I can see it will be a good poster. Keep more space in your poster, it will help people to read the contents. You need details for each section.*

2. *For now, the third one is more helpful. But the problem of the third poster is obvious too. I can not find the most vital information.*

3. *I think the vertical format will help you explains this topic.*

4. *Why you chose blue, red, and orange for your poster?*

5. *Too small. In order to help readers fully understand your topic, you need to make it larger.*
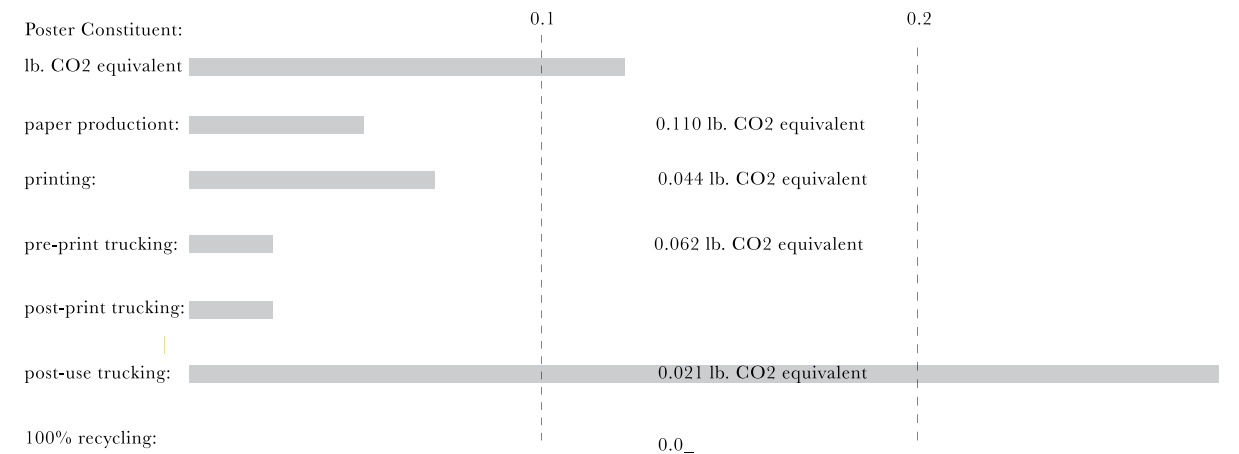
2.8 The final poster
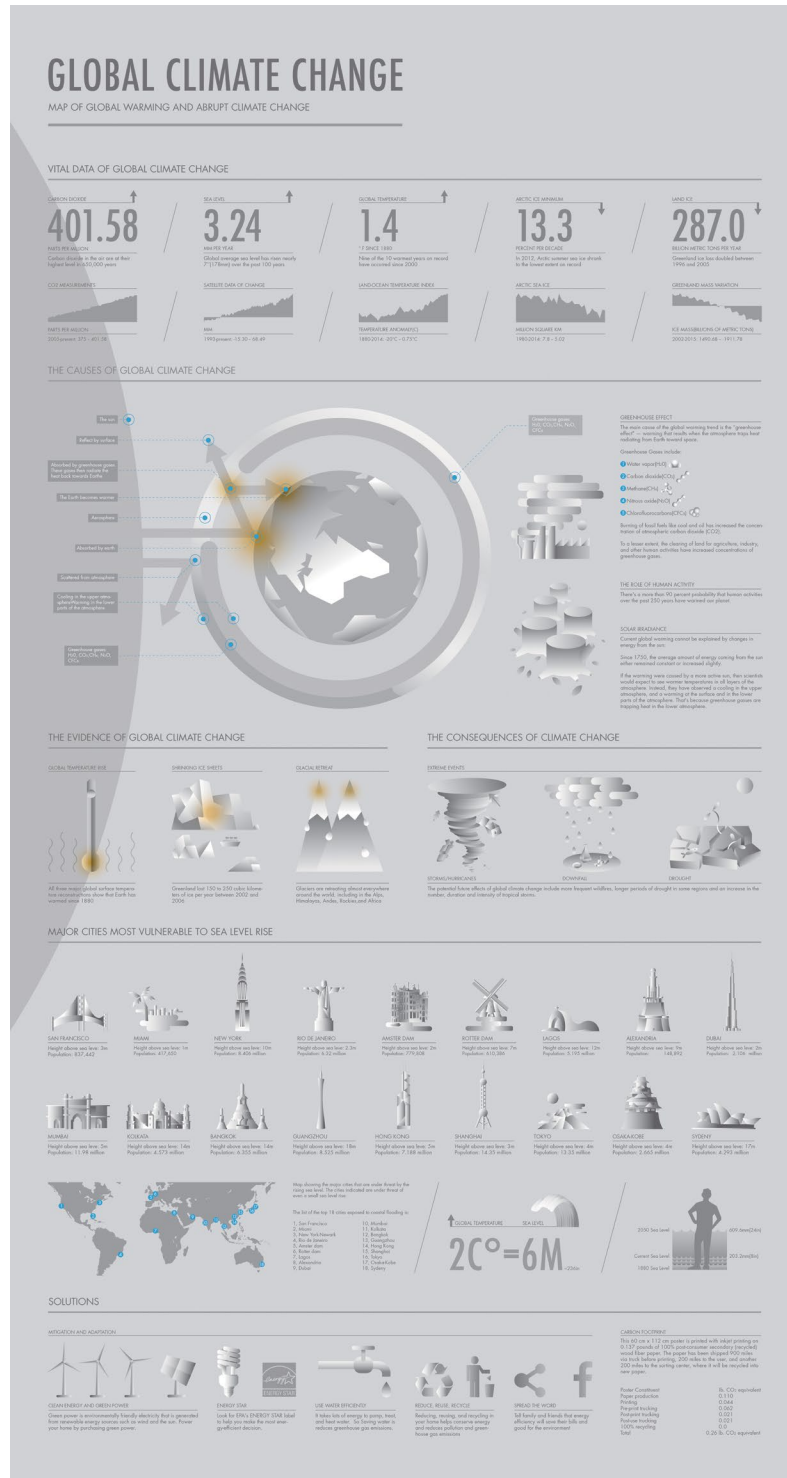
2.9 Carbon footprint of the final poster

The carbon footprint of this poster was calculated to include all climate change emissions over the life cycle.

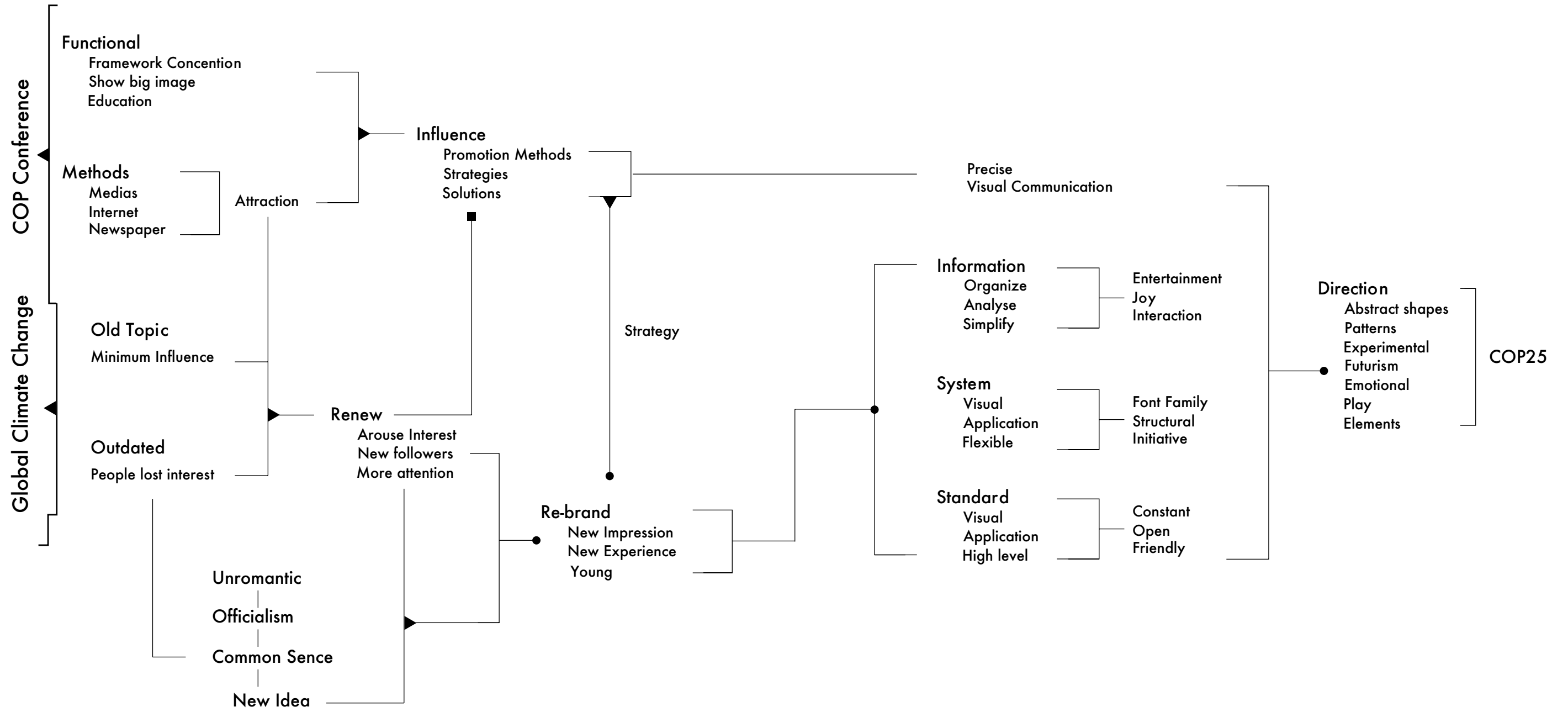This 60 cm x 112 cm poster is printed with ink-jet printing on 0.137 pounds of 100% post-consumer secondary (recycled) wood fiber paper. The paper has been shipped 900 miles via truck before printing, 200 miles to the user, and another 200 miles to the sorting center, where it will be recycled into new paper.

Poster Constituent:	0.1	0.2
lb. CO_2 equivalent		
paper production:	0.110 lb. CO_2 equivalent	
printing:	0.044 lb. CO_2 equivalent	
pre-print trucking:	0.062 lb. CO_2 equivalent	
post-print trucking:		
post-use trucking:	0.021 lb. CO_2 equivalent	
100% recycling:	0.0_	

REBRAND UN CLIMATE CHANGE CONFERENCE

CHAPTER OVERVIEW

3.1 Research Diagram

COP Conference

Global Climate Change

Functional
Framework Concention
Show big image
Education

Methods
Medias
Internet
Newspaper

Attraction

Influence
Promotion Methods
Strategies
Solutions

Old Topic
Minimum Influence

Strategy

Outdated
People lost interest

Renew
Arouse Interest
New followers
More attention

Unromantic

Officialism

Common Sence

New Idea

Re-brand
New Impression
New Experience
Young

Precise
Visual Communication

Information
Organize
Analyse
Simplify

Entertainment
Joy
Interaction

System
Visual
Application
Flexible

Font Family
Structural
Initiative

Standard
Visual
Application
High level

Constant
Open
Friendly

Direction
Abstract shapes
Patterns
Experimental
Futurism
Emotional
Play
Elements

COP25

3.2 Introduction and Intention

Global Climate Change is not a new topic. Our governments have plans to resolve it for years, but they did not have many actions. Most of people gradually lost their interest on this topic. As designers, we have the ability and responsibility to arouse people's interest again.

The United Nations Climate Change Conferences are yearly conferences, with more than 23 countries hosting it in the past. Its aim is to serve as the formal meeting of the United Nations Climate Change Conferences Parties to assess progress in dealing with climate change. But when I reviewed these years' branding design of the conference, those designs are too common and boring. Hence, I decided to rebrand the conference's identity design.

The objective of this project is to create an attractive branding that can reflect the connection between the different weather and the global climate change. The first step is to build the identity's visual system. The visual system is made by 25 dots which relates to the 25th COP Conference. My aim is to create a smart system that can be applied on different media. I abstracted the media's characteristics and fitted them to the system. From printings to screens, each individual design can reflect the media's character. In order to create a scalable and flexible identity, I explored composition on the weather icons. All the icons are developed in the system.

The identity communicates the conference's goals and the concept of weathers mixing, Since the weather conditions are never independent. In addition, different weather conditions are mutual conversions among each other. Through designing a simple visual system, I can make these icons reasonably visible at the same time. The main logo is composed of the four basic elements of nature, which are air, water, earth, and fire. Except for the square made of 25 dots, the four elements are the foundation for the system. All the weather icons are developed from the four basic elements. In the process, I also developed a typeface family that can be combined accurately with the whole visual system. For the secondary logo, I chose Futura Medium.

The new identity design is more friendly and interesting for younger generations. It is good for the conference's promotion and influence. A right design strategy can help the conference attract more followers.

I hope this project can inspire other designers. Design can save the world!

3.3 Brand Research

4.4 Icon Research
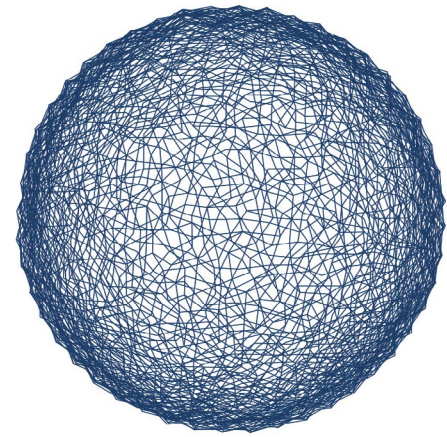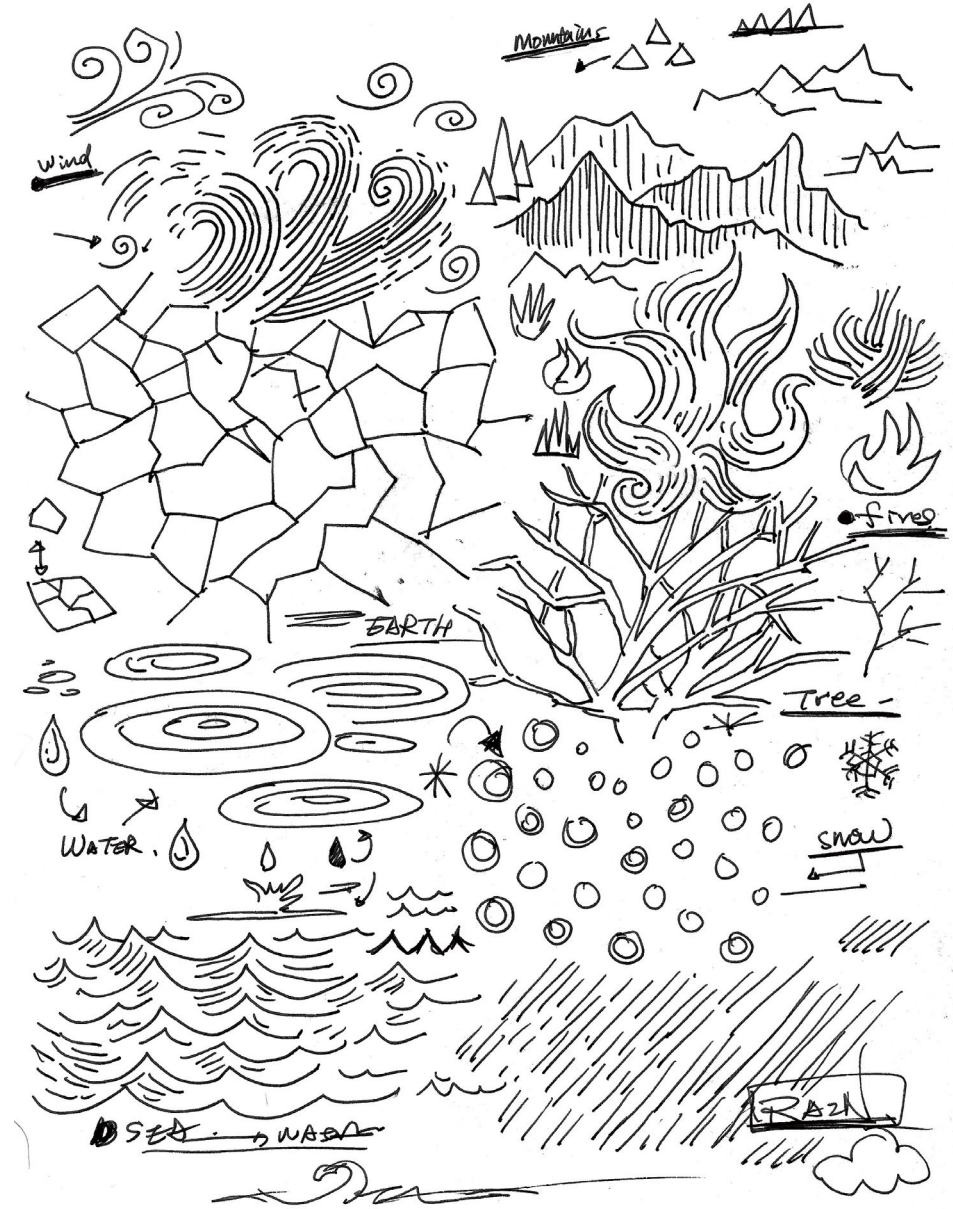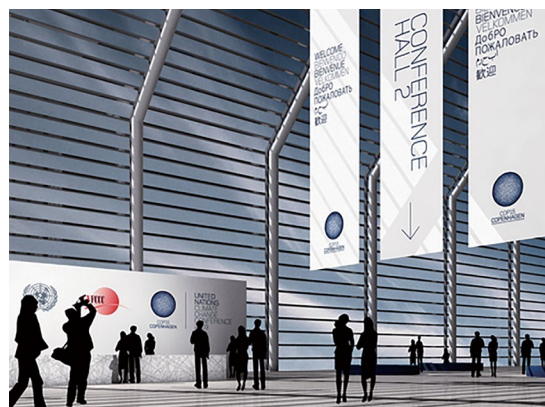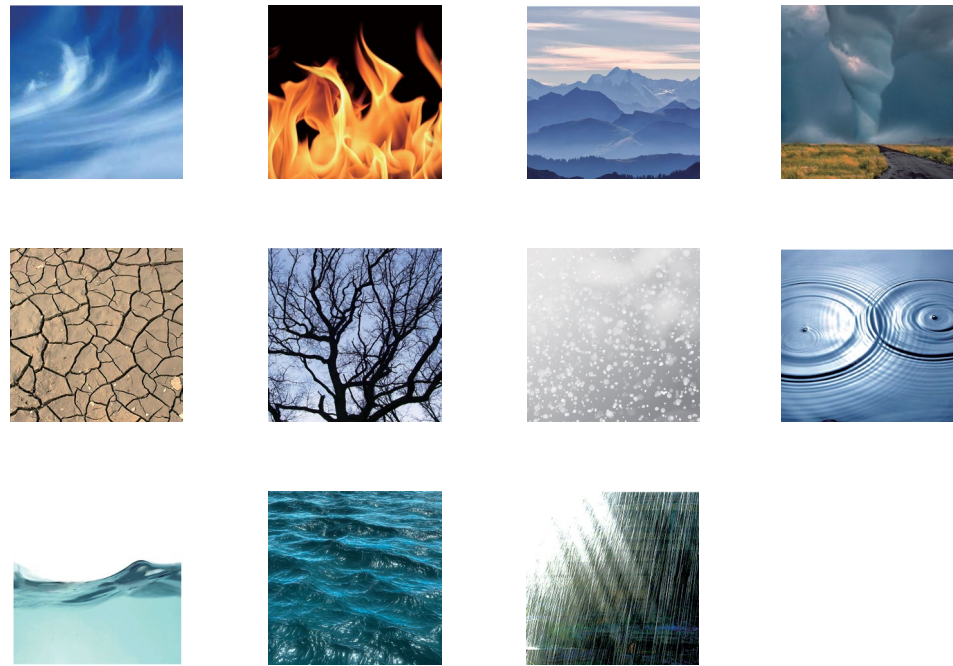
Sketch

Elements research
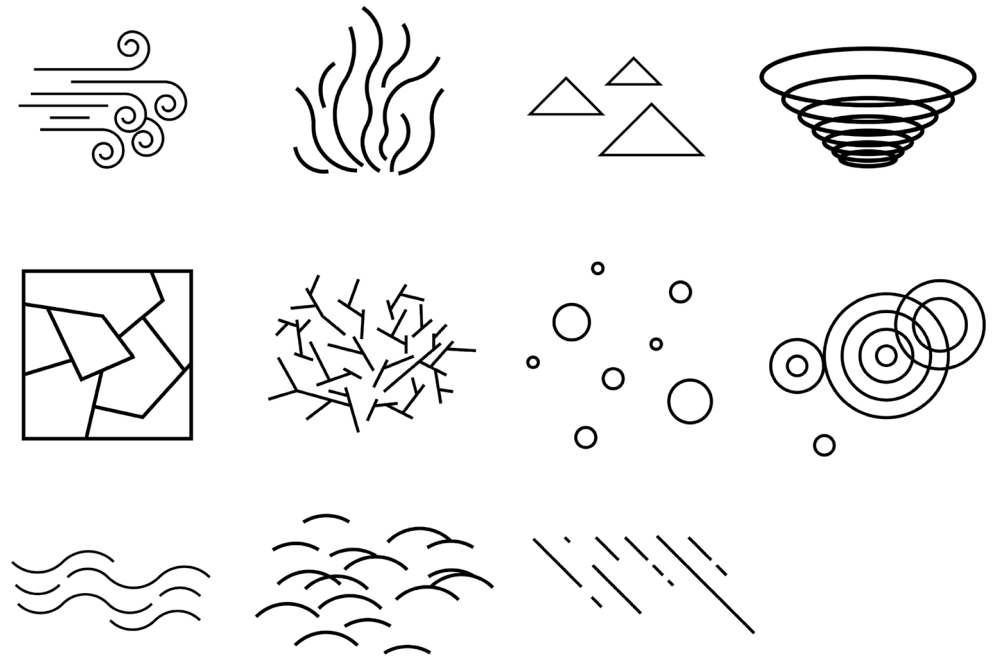
Elements illustration overview

3.5 Brand build- Research

● = earth

Direction
Abstract shapes
Patterns
Experimental
Futurism
Emotional
Play
Elements

COP 25TH — 25 dots

+

Four elements:
Fire
Water
Earth
Air

=

System
Visual
Application
Flexible

Font Family
Structural
Initiative

Tricolor+light blue

+

Icon Design
Weathers
Abstract shapes

Colors   Obey the system

New Impression
New Experience
Young

Main logo?

C: 0%	C: 60%	C: 0%	C: 85%
M:90%	M:0%	M:10%	M:50%
Y:85%	Y:3%	Y:95%	Y:0%
K:0%	K:0%	K:0%	K:0%

=

Flexible — Rational

Application
Print
Digital media

Interaction

3.5 Brand build- Typeface

System for

typeface design
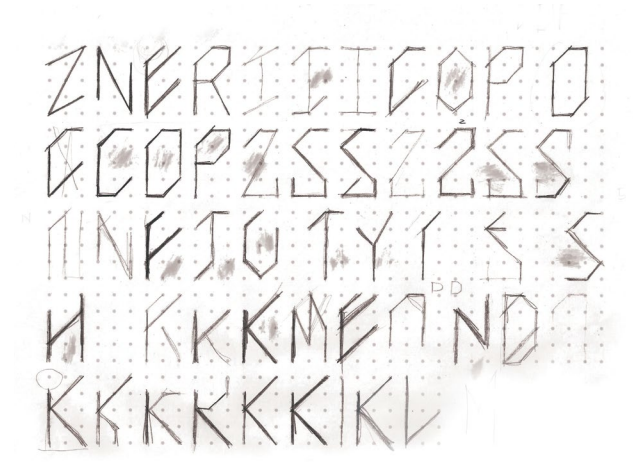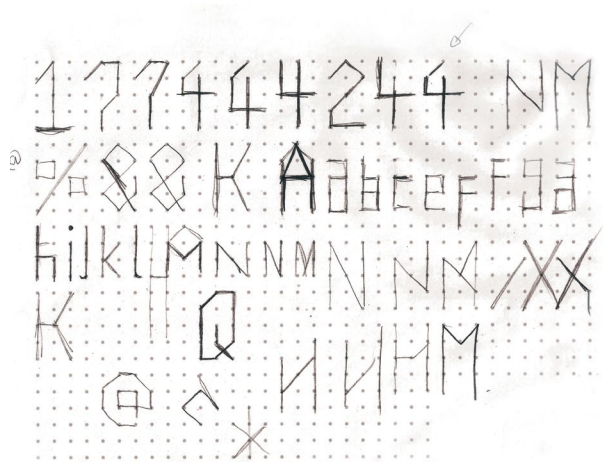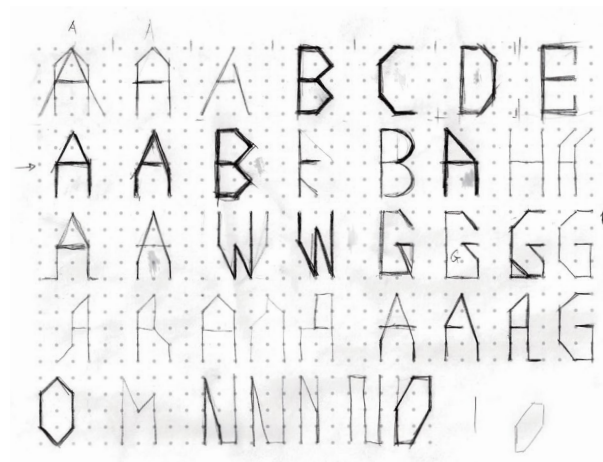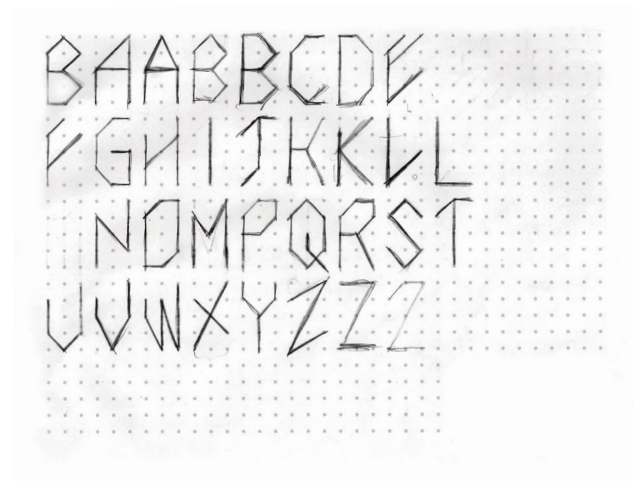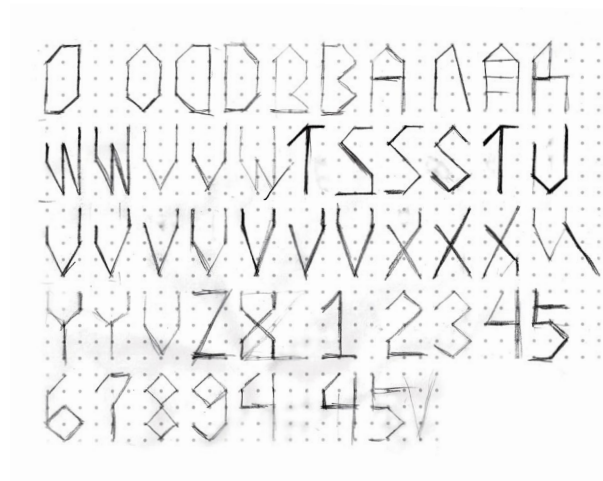
Sketches

3.5 Brand build- Icon
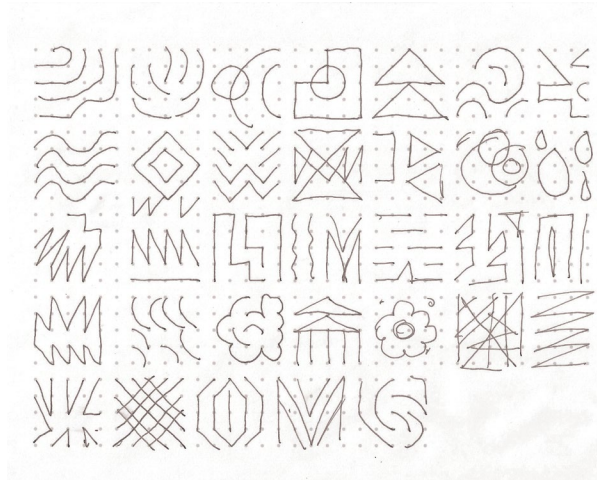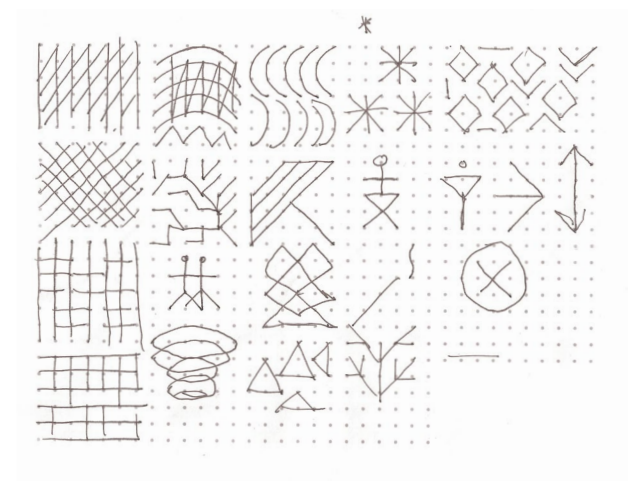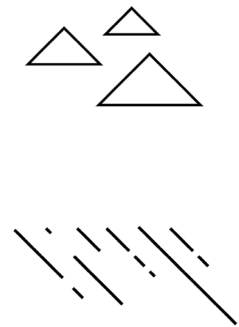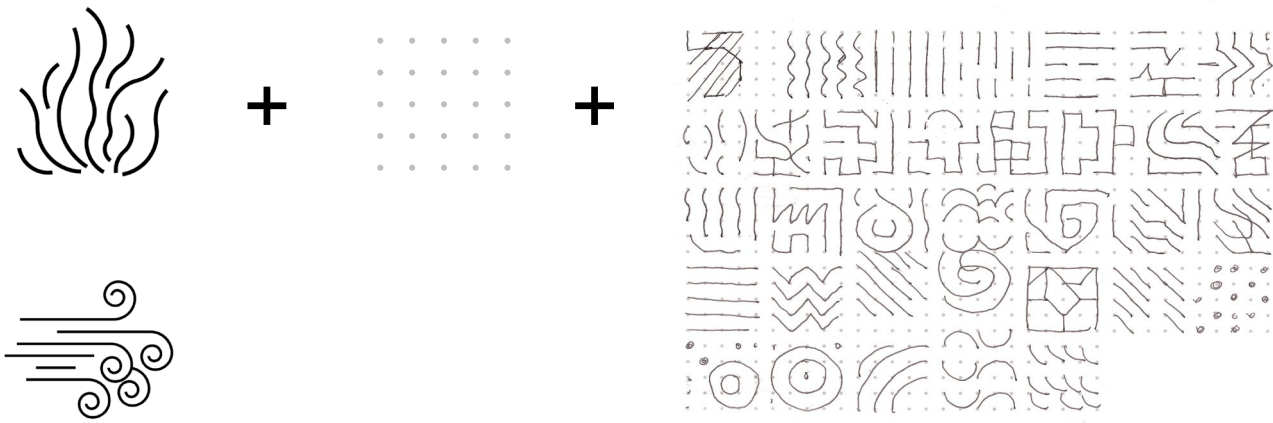
Sketches
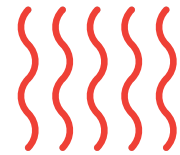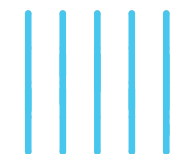
Fire	Flame	Flame	
Air	Cloud	Wind	Typhoon
Earth	Crustal plate	Crust land	Mountain
Water	Drop	Rain	Snow	River
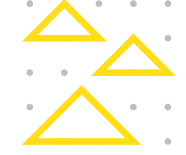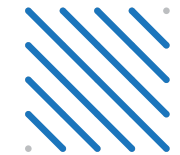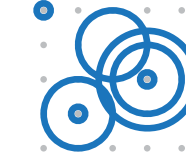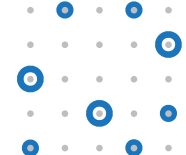
3.5 Brand build- Main Logo

X4
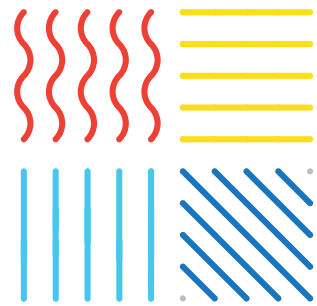
X9
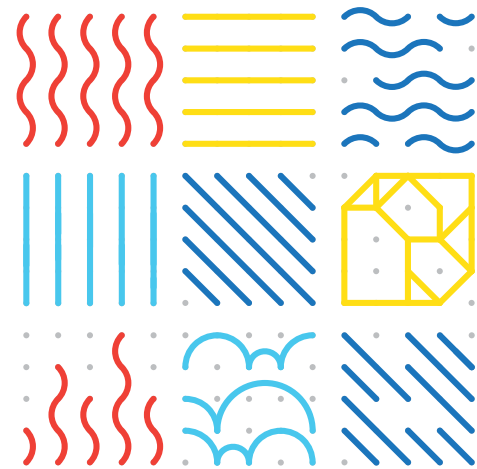
X16

Logo-1

Logo-2

3.6 Application

1.

2.
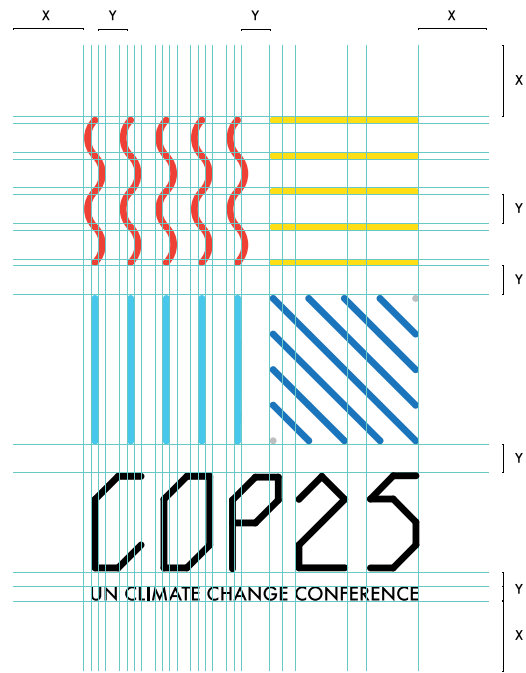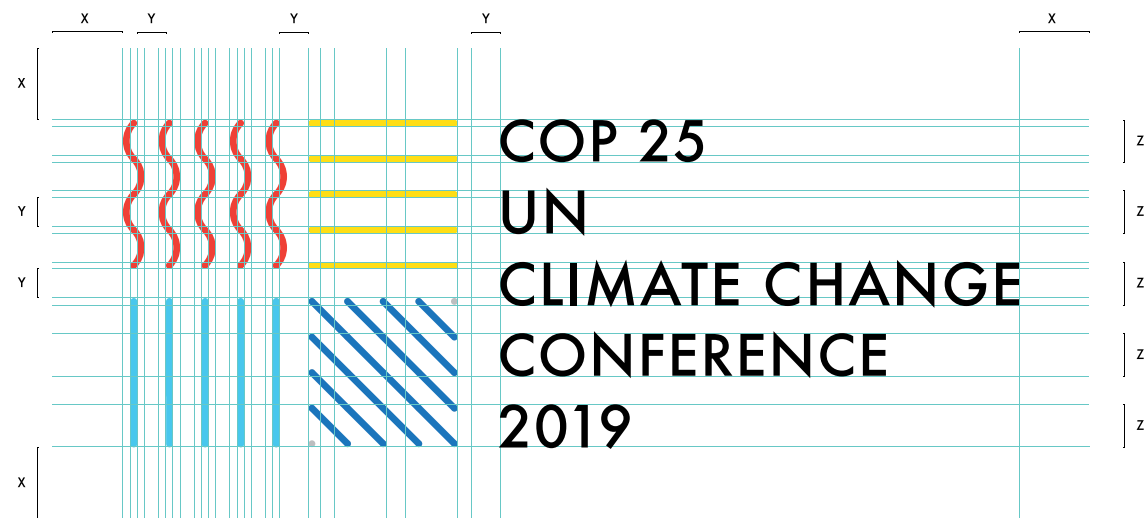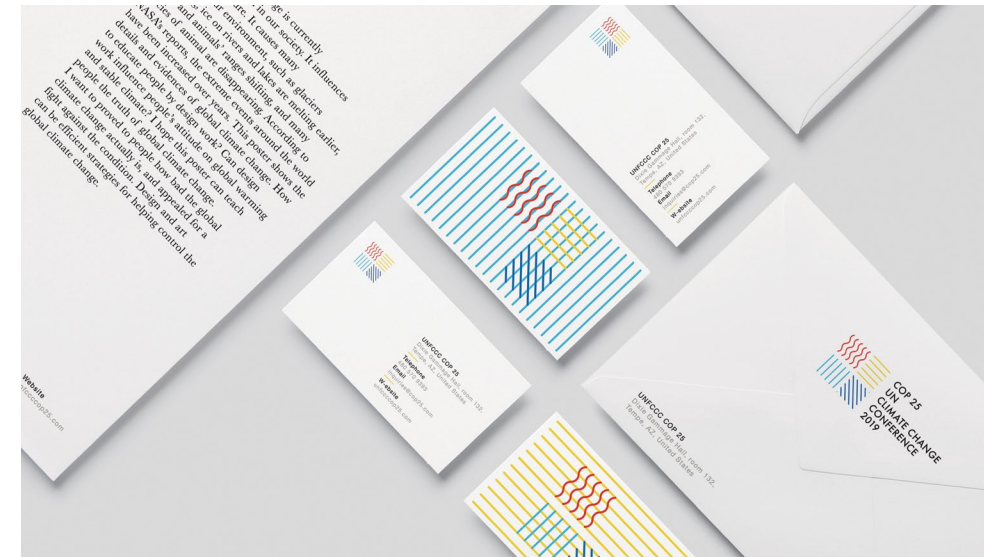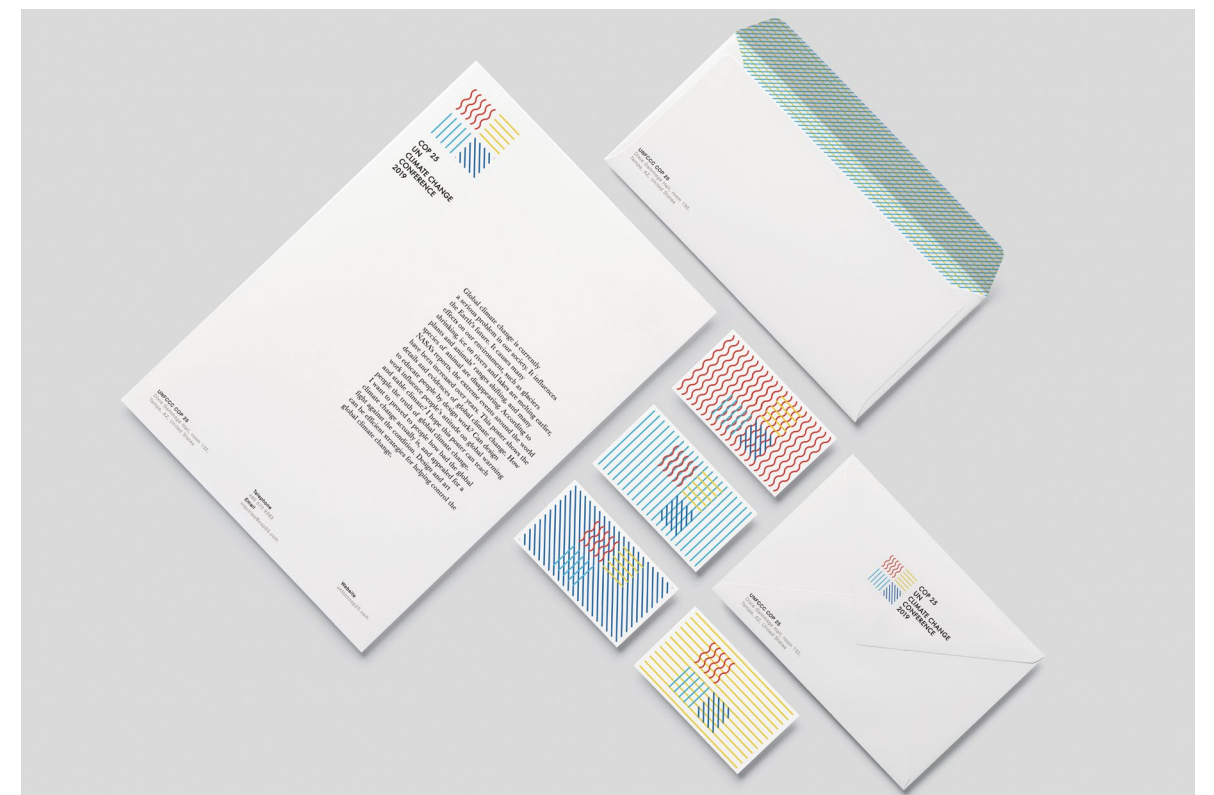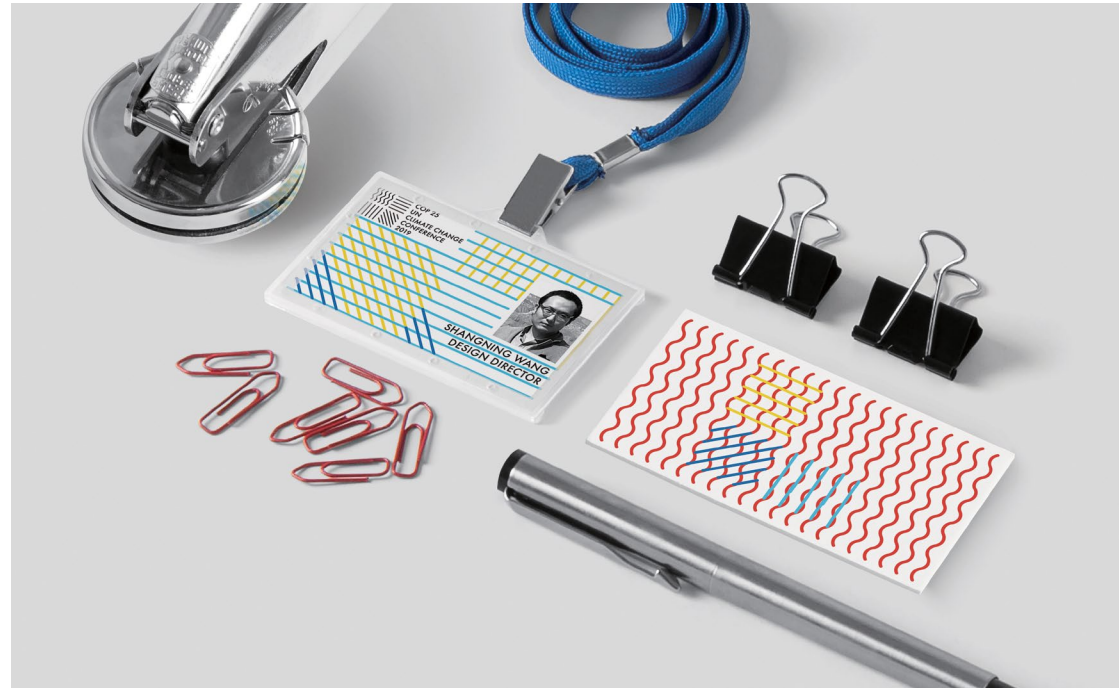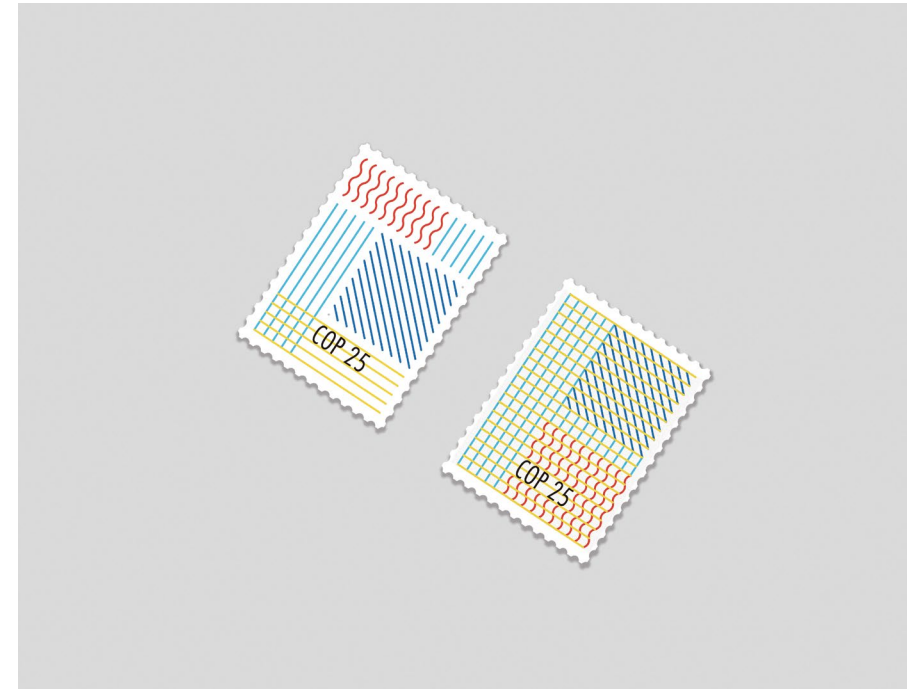
1. Id card
2. Stationery
3. Post stamp
4. Website

1.

3.

2.

4.

1.
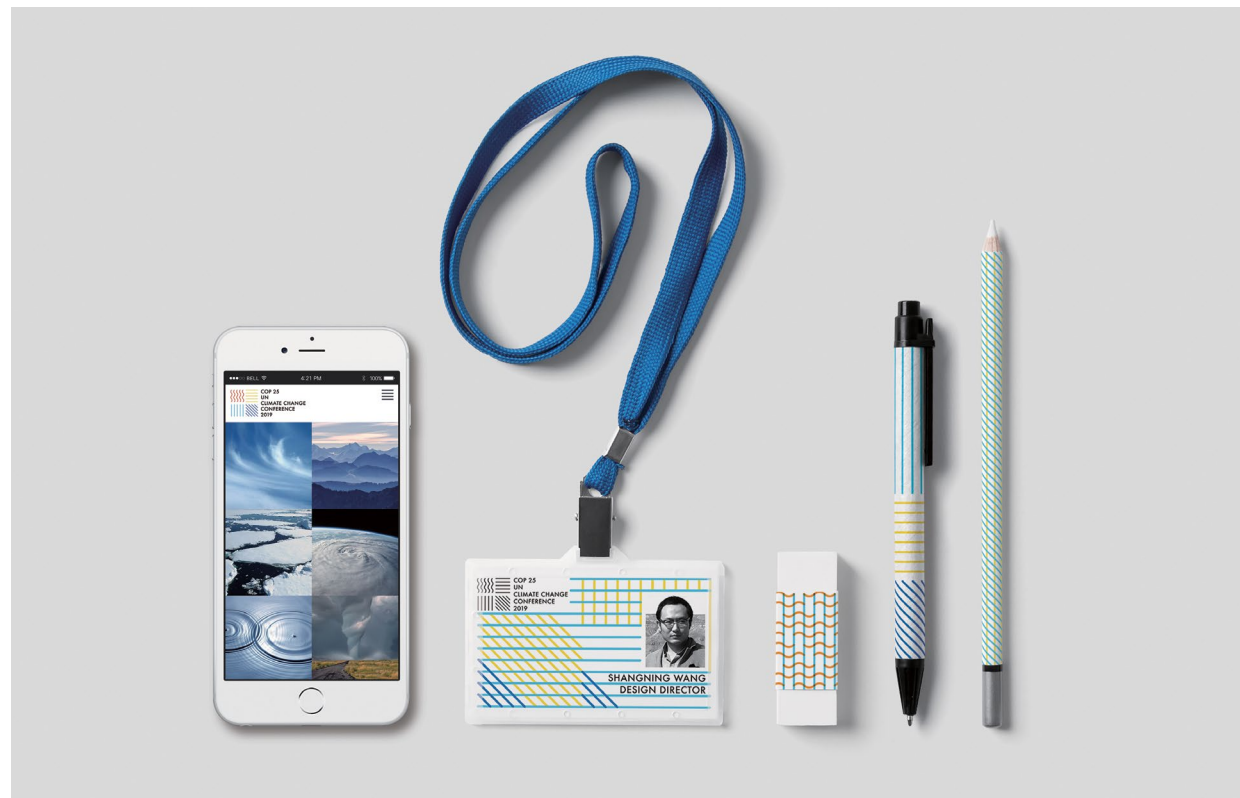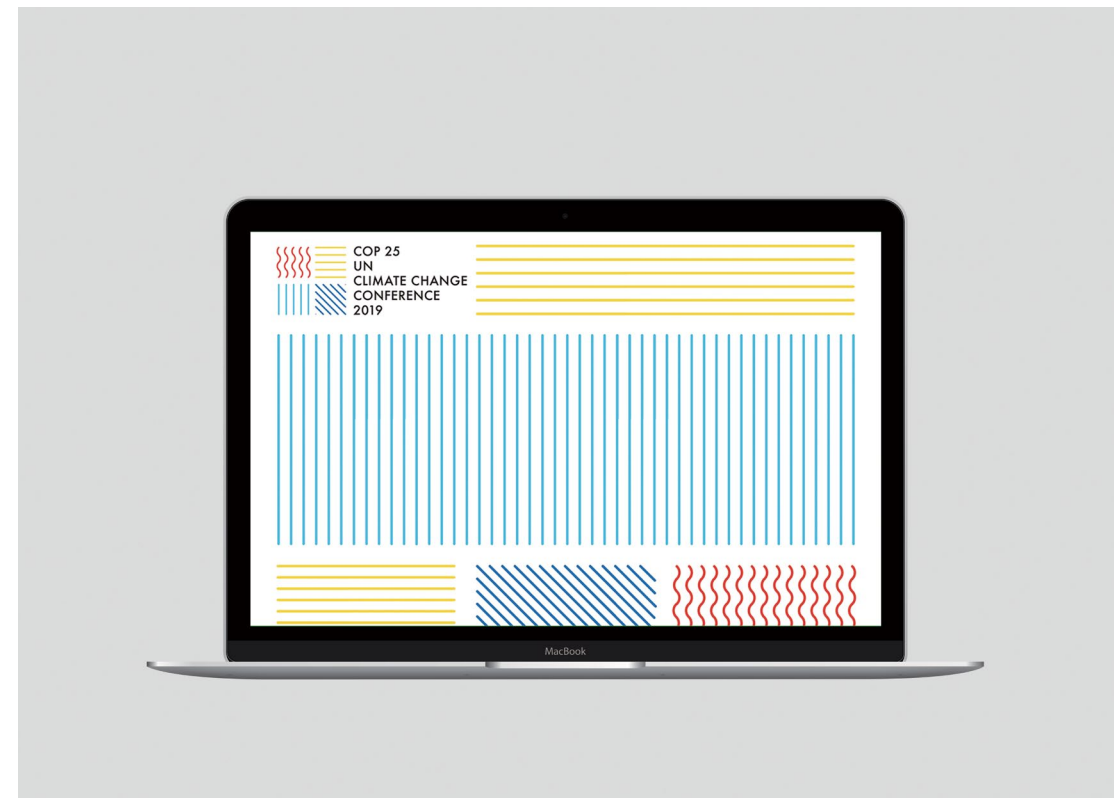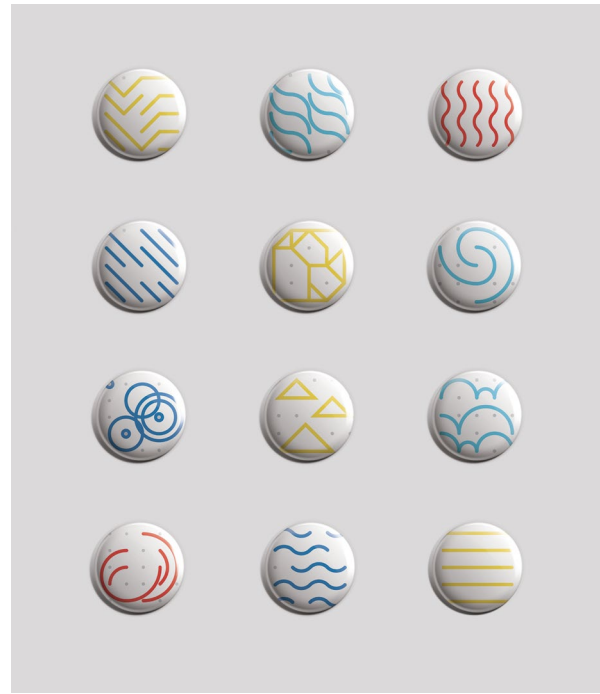
1. Badge
2. Mug
3. T-shirt
4. Eco bag
5. Eco bag

3.

2.

4.

5.

1. Stamp
2. Stamp
3. Bus advertisement
4. Street flags

1.

2.

3.

4.

1.

1. Billboard
2. Billboard
3. Window sign
4. Billboard

3.

2.

4.

5.