

# Design for Children

The Future OF Chinese Garbage Classification

BOOK 1



Faculty of Art and Design  
Graphic Design  
Master Thesis  
Luo Qian  
2013 Spring



# **Design For Children**

## **The Future of Chinese Garbage Classification**

University of Lapland  
Faculty of Art and Design  
Graphic Design  
Master Thesis  
Luo Qian  
Spring 2013





# Abstract

This research is about using design to educate—design a process to guide Chinese garbage classification. There are 3 steps for the improvement in total: Firstly, a children fitted garbage classification system with teaching material combined will be set; primary school children will be the first educated group to do garbage classification. Secondly, public propaganda will follow up to educate adults as assist. After that, 6-10 years later the adults fitted garbage classification system will be released as well as children fitted system will still be kept for coming young generations.

This research includes a design project and a thesis. Thesis is an explanation to the design. Design work includes two visual identify systems for classification—one descriptive system, and one simplified system; other visual applications: checklist for waste type, and badges are also included.

Before the design process, previous classification system done by the government will be analyzed; track report about Chinese family garbage data will be used as the basic garbage items in the checklist, and the used visual languages in the design work are based on surveys in primary school.

## Key words

Visual Identify, Garbage, Children, Chinese

**1** .....

**2** .....

2

4

9

**11** .....

11

11

13

17

**18** .....

18

23

**28** .....

28

36

**book 2** .....

**42** .....

**43** .....

# TABLE OF CONTENT

---

## Introduction

---

### Waste Disposal In China

Chinese waste disposal methodology and situation  
Public education and propaganda  
How can graphic design help

---

### Case Study—Japanese Waste Disposal

China and Japan  
Japanese waste disposal methodology overview  
Waste disposal in my family – interview  
What we can learn from Japan

---

### Pre-design Research

Disposal visual systems in different countries  
Design for Chinese kids

---

### Waste Disposal Visual Identify Design—Signs

Simplified signs  
Descriptive signs

---

### Outcome

---

### Discussion

---

### References

---



# 1 Introduction

## Introduction

Every individual problem multiplies 1.4 billion will be a great matter. China now has a 1.4 billion population and produces 1 billion tons of garbage for each year. Unfortunately there still isn't any effective classification system to run such a huge business in China. Government tried to set a garbage classification system in several big cities but had little effect back. How can we change such a big amount of people's life habit and make them start to do waste separation?

This research is about using graphic design to help and guide Chinese garbage classification, and trying to make full use of graphic design in garbage system design process to build it familiar and friendly for children. Making a boring and rigid classification system be founded by kids is the main purpose. What a graphic designer's duty here is to help them memorize the information and encourage them to go on with the habit. It's an attempt to solve the Chinese waste separation problem.

I came up with my solution from a video. In this video, one crazy guy suddenly starts to dance in the beach. This weird action makes him a completely idiot in the first few minutes. But after one, two, dozens of people start to join him, he becomes a leader. In the end almost no body keep on sitting on the beach since everyone is dancing. This makes people who still sit there awkward and have to follow them. Coming to this project, if it's too difficult to move such big amount of people to do the great classification work, then it's time for China to set the leader dancer, and this leader, should be just by the side in the daily life. The kids are playing the role of leaders due to Chinese culture emphasizes children very much.

In this research, I will analysis successful cases by using education and good visual identify system to assist garbage classification - Japan, as well as some unsuccessful cases previously done by Chinese government. Then there will be a close observation on Chinese family life style. Daily-generated waste will be recorded, and different kinds of garbage will be selected in the design. The new identify system will be built based on a survey in primary school. In this whole design process, we will find interesting culture phenomenon about life, food, and customs in Chinese family and children study. Then an interesting garbage classification system specialized for children will be built for contributing the younger society.

The design project is just about to set a beginning for Chinese garbage disposal. In plan, when the first trained generations become mature after 6-10 years, simplified classification system for adults will be set to meet their growing up. At that moment, Chinese waste sorting will be completely on the right track. Old system will still be kept for new coming younger generations.



# Waste disposal in China

## Chinese Garbage Classification Methodology And Situation

China, the biggest developing country, astonished the world with its radical changes in the past thirty years. Industrial and economic progress fasters the country's urbanization process, as well as the output of living garbage. From 1979, Chinese urban garbage grows with the speed of 8.9 percent each year on average. Six hundred main cities produce 1.6 hundred million tons garbage per year, and this number grows over 10 percent every year. In this huge quantity, 70 percent is treated as landfill; 10 percent is handled with composing and incineration; the left 20 percent is difficult to be recycled. As we can see here, landfill, composing, and incineration are the three main garbage treatment methods in China. Let's take a closer look at two of them as well as the environment problem they brought to China.



Guangzhou landfill site



Sanya City, Hainan



Changping District landfill site, Beijing

### Landfill

It is the most widely used waste treatment form in the world due to its convenient and low investment. Landfill site occupies mass of land; leachate from waste easily pollutes underground water, making the surrounding environment worse day by day. For example, Guangzhou, one of the biggest cities in China, has already paid enough for the bitter fruit of waste. Till July 2011, 90 percent of the living waste produced in Guangzhou was treated by landfill; by now, Guangzhou city has lost the majority of its waste digestion ability because of the lack of landfill sites. Same situation can be found in many cities of China.

### Incineration

Incineration of waste materials converts the waste into ash, flue gas, and heat. It is the most advocated waste treatment in developed countries such as America, Japan. Even though Chinese government strongly advocated waste incineration treatment, the technical skills and equipment are still the main problems restrict its development. Furthermore, the lack of relative rules and government inspections make garbage incineration in China unqualified, or even become a disaster of toxic gas.

To sum up, Chinese present waste treatment is not an ideal sustainable development way. From the last decades, lots of urban living waste were generated only because the citizen's lack of environmental protection sense. Government imported advanced waste treatment technology, trying to reduce the pressure of land used for landfill as well as environmental problem brought by waste exposure. But the source of Chinese waste treatment problem is from the huge quantity of population. Due to the special living and eating habit of Chinese people, the Chinese style living waste has these features:

- High moisture content from Chinese kitchen waste makes the whole uncategorized waste very difficult be burned.
- The highest plastic portion in the world decides its impossibility of eco-friendly landfill.
- The long existing nonstandard paper recycle channel in the society leads to the low paper content in Chinese waste.

In conclusion, waste classification and disposal from the source is necessarily needed for China even more than any other country. The broader significance of this measure is about reducing waste quantity at the fountainhead, and turning multiple waste compounds into different easy-recycled portions. In this way waste recycle utilization can be raised, cost spent on waste classification can be reduced, pressure on the environment can be released. According to Chinese national condition and habits, living waste in China is separated into four different types: kitchen waste, recyclable waste, poisonous waste and other waste.

There is no absolute garbage, only misplaced resources. For China, one third of its cities are hem in waste, garbage siege is on show. Chinese garbage classification can't be waited any longer.

# Public Education And Propaganda

In fact, government has already set up determination on urban living waste management. Over the years, several big cities are set as the experimental cities to do the waste classification one step earlier. However, the achievement of those model cities is not very obvious as the current situation is still severe. In the coming paragraphs, I will study one sample cities' case: Beijing, to find more clues about the existing problems of why waste classification is difficult making progresses in Chinese big cities.

## Waste disposal in Beijing

As the capital city, Beijing is necessarily chosen as one of the very first cities to start waste classification. In the last 10 years, many inhabit communities and public space changed the ordinary bins to special made classification bins at the very beginning.



classification waste bins in the street, Beijing  
left bin: not recyclable waste  
right bin: recyclable waste



waste bins in Beijing  
orange bins: not recyclable waste  
green bin: recyclable waste



pingyuan community, Beijing  
gray bin: kitchen waste  
blue bin: other waste



As we can see in the photos, classification bins are applied in public spaces like community and street. But the colours and signs representing different waste are not unity in different places, which takes user longer time to figure out which is the right one to put in.

New visual identify system are also built in order to promote the publicity. They are used in the bins on the street, as well as some domestic used bins, which are distributed by the government.



signs for kitchen waste, recyclable waste, poisonous waste, and other waste

## Waste Disposal In China



bins with new signs, Beijing

Even though the new visual system were built and used in the new bins and other promotional material like website, the use of colours is order less. The grey bin in the first picture is written with other waste, while in the visual system the other waste should represent by yellow; in the second picture the blue was used for other waste and pink used for the kitchen waste, while they suppose to be yellow and green, separately.

In the process of waste classification, the most important link is the fountainhead of the waste: to make inhabitants do the classification right and deeply. In order to educate the citizen, government hold activities to interact with citizens. They sent volunteers into communities to do propaganda; hand out booklets and put posters in the street in the daytime; select a special day for the advocating of reduce living waste, and designed a series visual material for the festival. A website is also build for the propaganda.



Lu Wa, a character designed for the propaganda, appearing in the logo of the Waste Reducing Day, printing material and animations

#### 小引：绿娃进家讲意义

大家好！我叫绿娃，是“做文明有礼的北京人，垃圾减量垃圾分类从我做起”主题宣传实践活动的卡通形象。这一主题宣传活动的目标意义是：提升“人文北京、科技北京、绿色北京”的档次，通过“北京人人参与，社会各界共同努力，广泛开展垃圾减量垃圾分类活动，推进垃圾减量化、资源化、无害化，努力把首都北京建设成为最有人文关怀、最讲文明礼貌、最有文化魅力、最为和谐宜居的世界城市。从今天起，我和大家一起来了解和学习这一主题活动，让我们的家园变得更加美好！

大家好！我叫小悦子，是北京一名六年级的小学生。我代表我的爷爷、奶奶、爸爸、妈妈和小悦，向大家问好。

2010年4月，咱们北京启动了“做文明有礼的北京人，垃圾减量垃圾分类从我做起”主题宣传实践活动，有600个居住小区实施垃圾分类投放试点，我家住的小区就在其中。全家人积极参与这项活动。爷爷、奶奶到街道居委会打听怎么做，居委会阿姨老师请到了我家。



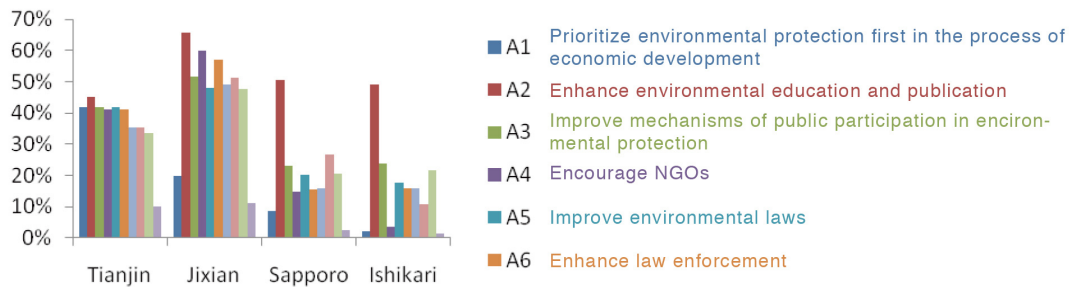


Official website for Beijing waste classification

## Waste Disposal In China

However, the information conveying is inefficiency in the “going into street” propaganda. Target audience is random, they are passengers on the street, in the station, and they can be at any age or gender. The information only has the possibility to be spread by the booklets and posters, if it’s not well designed to attract the audience’s interesting, the knowledge will not arrive at the audience at all or not has the influence on them deep enough. The same situation is in the plan of the Waste Reducing Day. The target audience is not clear, the logo and visual material are designed like for children while this day was actually set for the whole public; information conveys in the promotional material with the childish cartoon style is a little difficult for children to understand and remember.

From 2010 to 2011, 41.1 percent of communities in Beijing still haven’t started to do waste classification, 48.9 percent of them did, only 5.4 percent of them has the real possibility to do the second classification after the collection, that means these community did waste classification basically enough to make the collected waste be recycled. Many citizens give their opinions in the public media that the biggest problem for them to do the daily waste classification is still about the background knowledge of how to do it. There is a survey between China and Japan about the public’s opinion of government’s duty in the environment problem. In the survey, citizens from both two countries both admit education and publication is the most important duty of government to improve the citizen’s environmental awareness and level of behaviour (LIN Yingchao, FUJII Masahiko, 2011).



Even though Beijing is a better example among those model cities, but it still has a long way to go in the waste classification. Thus, we can draw a conclusion from the study of propaganda and citizen education in Beijing waste classification popularizing, which also contributes to understanding the other big cities of China.

First, the visual languages of visual identify system is not unity, which leads to the misuse of following applications, and makes user difficult to memorize and understand. In the four signs, kitchen waste was designed based on the images of waste type, which is easy to understand and remember, it's an iconic sign, which convey the idea of the thing they represent by imitating them, such as a photograph or drawing of something; the logo of recyclable waste and other waste are two abstract and similar icons, they are indexical signs, conveying information by "indicating" their physical connection with the thing they represent, such as smoke to fire (Noble Ian Bestley Russell 2005: 92). They are not easy to understand and memorize, and need the users to develop more habit from using. Poisonous waste sign is more like between iconic sign and indexical sign.



Second, the target audience is not clear. According to Chinese condition and culture, the different groups of people produce different types of waste. The target audience can be separated into woman and man; old people, normal adults and children; and so on. For example, woman and old people mostly produce kitchen waste. Due to this, designing different methods and material to educate different target audience can be a better solution other than doing propaganda randomly.

Last but not least, the propaganda in the society is not systematic. As we can see in the last section, bins in the street use different signs and colours; animation character, website, and other promotional material don't have visual connections. A better visual identify system will greatly help the enhancement of public awareness, making waste classification process easier and more effective.

So what will be the better way for Chinese waste classification development? Is there anything graphic design can change?

## How Can Graphic Design Help

In allusion to the three main problems, the objective of this project can boil down to three main categories:

Chinese waste classification needs a uniform, systematic visual identify system to direct and help the public build the sense of waste disposal, and enhance the sense into a habit. The visual system itself should be sustainability, so that it can meet the future perfection of waste recycle system, as well as has the compatibility of new coming waste items. The designer may also need to be careful not to direct respondents toward present or existing systems since those "conclusions" drawn by designers may not really based on the real demanding of China.

At present, the biggest barrier of Chinese waste disposal is citizen's education. How to explain the complicated, myriad waste classification methodology to the public, and make it easier for them to execute, is necessarily the most important target of this project. If taking the whole society as one class, teaching such a big class with very different kinds of students definitely takes much more energy and time, and the result may also not be very satisfactory. On the contrary, if the teacher choose the cleverest students



to teach firstly, and let them be the helper in the future full class study, the situation turns easier. This smaller group has their unique characteristic, easily to coordinate, they can learn very fast and well. Looking back to the society education, the cleverest, easiest-coordinated “students” are kids in school. They are in the studying age, they are curiosity, and they are easy to be brought together and study together. In this project, children are playing the role of the best students in the society; they are the target audience of the design project.

As long as the audience is clear, design process finally finds its way to follow. In participating in observation at the research phase, graphic designers can bring particular skills to the table. As communication experts, they intrinsically ask questions to reduce complexity and reveal information hierarchy. They continually extract and organize insights in order to ultimately “fit” them into the comprehensive, concise, and compelling deliverables that the “clients” desire (Bennett Audrey Heller Steven, 2006, 309). Based on the survey, observation and innovation, the waste classification visual system can be designed fond by kids, attract them to discover the knowledge behind it and learn them by heart in the end; which is much better than design something for everybody, but fit for nobody. Easy understandable, joyful, playable, educational, ... many key worlds about design for children can be filled here.

Design Target Audience: Seven to twelve years old in primary school, live in Changsha City, China

Design Key Words: Chinese children, educational, and delightful.



## China And Japan

Japan and China, as two historical long existence neighbor countries, share quite many cultural properties and national characteristics. In Qin Dynasty (221BC-207BC), large numbers of Chinese immigrated to Japan and brought farming civilization there. Since then, rice starts to play an important role in cultural development in both two countries; vegetable planting and poultry rising skills are also become a big part in the two countries' civilization communication. Overall, due to the geographic and historical factors, Chinese and Japanese people have similar food culture based on rice; they produce similar kitchen waste if comparing Chinese habits with any country. Same situation may be found in other Asian countries.

Similar eating philosophy breeds analogous ethnic characteristics. Confucianism, as the greatest civilization source of Asian culture, gives us many cultural identities. Thrift is one of the most important principles in Confucianism. This concept was told generation by generation both in Chinese and Japanese culture which we can find many examples from the poetries and stories in the history. Thrift, cherishing every piece of rice, making full use of the material in your hand, ... these are all important characteristics in both of these two countries.

Since China and Japan share such many things in common, we have sufficient reasons to believe if Japan can be successful in waste disposal, China can also do it too. It's only about time and measures.

**Case Study**

## Japanese Waste Disposal Methodology Overview

30 years ago, Japanese government was still plagued by the environment problem. Compared with big countries, Japan doesn't have much land to landfill the trash. In the 1980s, Japan has the biggest amount of waste incineration plants, occupied 70% of total in the world. Poisonous elements in air was far exceeded its allowance. In order to change this situation completely, Japanese government started to do the waste separation and recycling in 1980. Overall, what Japanese government has already done can be outlined into two main ways:

- Educating citizens about how to do the waste sorting, and making the process easier and cheaper to

execute:

Using different color to distinguish different kinds of waste

Marking different colors in different days to help daily waste collection

Printing educational illustrations on waste calendar

Lecturing and providing educational materials in elementary education

Designing different waste bags to sell in supermarket

Printing specialized waste signs on packages

- Encouraging citizens to do the waste sorting, or using rules to constraint citizen's behavior:

Charging for big waste's recycle

Charging fines for citizen's inappropriate behaviors

Printing special signs on products made from recycled material like public toilet paper

Rewarding citizen monthly

Now Japan is known for its success in waste recycling. At present, Japanese has only 410kg waste per capital production, which keeps the lowest record in the world. Garbage classification becomes Japanese national common sense, which doesn't need any supervision any more. We can say that, it's a success of government policy and public education. In the next part is an interview of a normal Japanese undergraduate. From her words, we'll get some more details about waste disposal for Japanese inhabitant, as well as some clues about how her family has changed through two generations' efforts, as time goes by.



## Waste Collection Schedule

Enforced from October 1<sup>st</sup>, Heisei 20 (2008)

Collection District		Recyclable Plastic	Recyclable Items (glass bottles, cans, waste paper, plastic bottles)	Combustible waste	In-combustible waste (Twice a month)
Shiba	1,2 chome	MON	THU	TUE/FRI	SAT (the 2nd, 4th)
	3 chome	THU	TUE	WED/SAT	MON (the 2nd, 4th)
	4,5 chome	SAT	MON	TUE/FRI	WED (the 2nd, 4th)
Higashi-Shimbashi	1,2 chome	MON	THU	TUE/FRI	SAT (the 2nd, 4th)
Shimbashi	1 chome	FRI	SAT	MON/THU	TUE (the 1st, 3rd)
	5,6 chome	MON	THU	TUE/FRI	SAT (the 2nd, 4th)
Nishi-Shimbashi	1-3 chome	FRI	SAT	MON/THU	TUE (the 1st, 3rd)



# Interview

- Where do you live?

Iwakuni (Yamaguchi Prefecture), a city with a population of 142,384, a small one.

- When did your family start to do trash recycle? How did they know those knowledge such as one kind of trash belongs to which recycle type in the beginning?

My mother said for the whole country, she thought the start point of waste disposal really depended on different prefectures. In the middle 1980s, it has already become the mainstream and quite important in Japanese society. My mother told me that she knew how to do the trash recycle since 1989 when she moved to our city. The city posted some bulletins to show residents, and the residents' leader in the community taught them about how to do it.

- Did government make very strict rules on it at the start point? And how many different trash types at that time?

In the past there were not so much rubbish comparing with today; they managed their rubbish all by themselves. They used to burn burnable trash like paper in their land or rice field; the kitchen wastes were used for the vegetables at the field, and local shops bought bottles made by glass. It was not strict to do the recycle. She thinks there were only 2 kinds of disposals at that time.

- Did the signs for the disposal system ever change? What was that like before?

In the past disposal system was much more simple than today. My mother said she almost never saw those disposal signs before. They only use the garbage place to put different garbage on different days in the community; in that case the signs may not be necessarily needed.

- When did the waste disposal start to meet an obvious effect in Japanese society?

In 1980s. It was not long after the Japanese government's advocating.

- How do you usually manage the waste in your hometown? How many kinds do you separate them into? What are they?

In my hometown, we have 14 different kinds of trash: Recycle paper like magazines, newspaper; plastic bottle; metal Can; glass; plastic products like ball pens and folders, metal...

- After you collected the waste from your house, where are you going to send them?

I live in an apartment; there is a space downstairs used for putting the trash. Everyday this place is used for one kind of trash depends on the calendar given by our government. Government collects one specific trash for each day; so in that day inhabitants only put that kind of trash there.

- In schools, do you have different bins in the classroom?

Yes, we have at least 2 different bins in the classroom for burning trash and plastic. After whole day's class the children on duty will bring the trash to the main trash place of school.

- Is the classification in the classroom the same with the domestic garbage?

No, usually the community don't have many waste disposal bins since we send our waste to the same container according to the calendar, for different days that container used for different waste. But in school and other public places, the situation is more complicated; there are always different bins for different trash.

- When did you know how to do the waste disposal?

I learned some basic stuff from my Mom, she told me when I was young. Then later at 4<sup>th</sup> grade of primary school, we had a class about this topic, and we visited recycle center as a school trip. When I moved to Yamaguchi city to study, the university's teacher told us again and also gave us some material about it since they have different classification system.

- Is there any other way for you to get this knowledge?

I learnt it in the class of my primary school, teacher gave us paper material; I saw posters in public places, and some TV commercials.

- Which way helped most for you to build this knowledge?

The lecture when I was in primary school. And the calendar system is also very convenient.

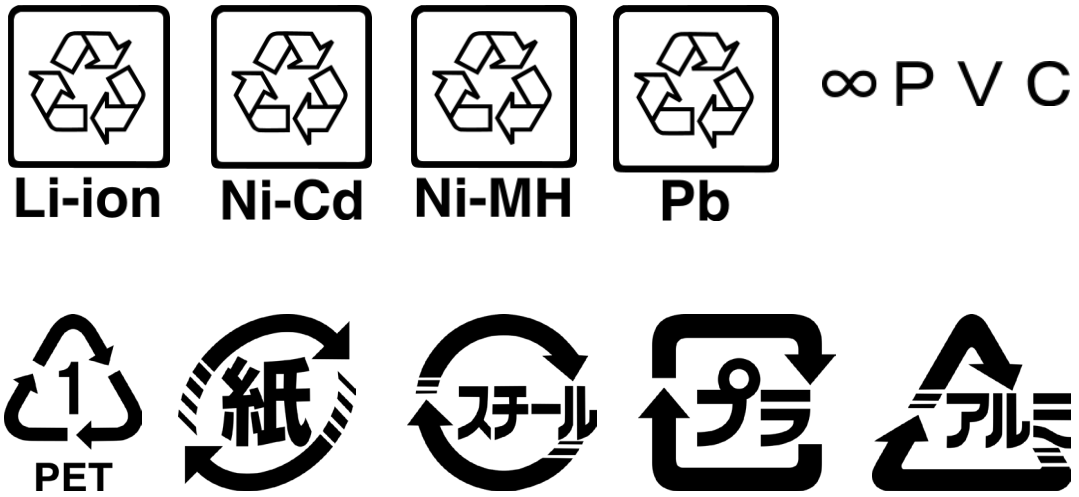
- How do Japanese government propagate those information to the citizen?

There are some posters and commercials, and we also have the website for local people to check the calendar online as well as the classification rules.

- Are they effective? Is there any interesting one impressed you?

Yes, some of them are educational and some are very inspiring. Once there was a very popular Japanese band appeared in the commercial, and it's very attractive for me.





Case Study

first row: lithium-ion battery, nickel-cadmium battery, nickel metal hydride battery, lead-acid battery, polyvinyl chloride  
 second row: polyethylene terephthalate, paper, steel, recyclable plastic, aluminium

- Are the waste signs all the same in different cities in Japan?

Generally they are the same. But some cities may not have so many different kinds.

- How do you think about the Japanese waste disposal propaganda and visual identification?

I think it would be better if I had more lessons about it in the primary school. Yes, the system is easy to understand, and the characters I can read easily even for little children.

# What Can We Learn From Japan

Overall, Japanese government paid a lot of attention on public education especially on the young people in school, and it won great achievement within 20 years after their first try. Their success can be outlined into two main aspects:

The deeply and widely spread waste sorting information supported citizens movement very well, both in education and specification way. Their experience including:

Education starts very early from primary school. Even though citizens still announce the study of waste separation is not enough, it is obviously necessary to teach the kids about waste classification as a basical living skills in school.

The propogation of information is diversity. For example, the Japanese idol commercial show influenced young people in an entertainment way; the appearance of the disposal system signs in the commercial show is humorous and impressive.

Visual identity system, commercial propaganda and other promotional material are highly completed and connected to each other very well; every link in the garbage circulation from the source head of waste to the final digest has already developed into part of a mature system which supports citizen's self-restraint action very well; waste disposal has become a well-developed industry in Japan. Many valuable experiences can be learn from here:

Waste disposal visual identity system is widely adopted in every waste producing-related link: food packages are marked with the specific waste type sign in eye-catching places; garbage bags are designed differently for different waste use; in the end, the using of calendar for waste collections provides a very convenient solution to the final digest, it is a typical example of how graphic and colours in visual system helps human distribute information logically and intelligently. According to this, we can see the significant meaning of a completed visual identity system in an industry. That is also what Chinese waste classification urgent needs contemporarily.

# 4 Pre-design research

## Garbage Disposal Visual System In Different Countries

Before stepping into design process, to know more different solutions in this topic from countries, which can be regarded as successful examples, may provide more valuable experience and idea for the project. In coming paragraphs, three countries' waste disposal system especially waste bins will be studied in both advantage and disadvantage side. By comparing with Chinese situation, we may see what is advisable and what is avoidable in Chinese waste disposal visual system design.

### Rotterdam, Holland



green bin: waste from garden  
blue bin: Paper only  
black bin: bottles (transparent bottle goes to the white multicolor goes to black)  
kitchen produced and other waste goes to the biggest metal bin



This series of pictures show waste disposal bins in a neighborhood of Rotterdam, Holland. Bins for different types of waste are carefully designed from the size to the colour. It gives the impression that



in Holland waste disposal visual identity system relies on the using of colors in a great extent. There are simple texts on the bins for instructions, which can help those users, which have color-blindness problems. Overall, This series of system doesn't have any explanations in detail; it may be enough for regions that don't have much floating population, and the existing long-term residents have already know their recycle system very well without any suggestive information, education about waste separation is abundant enough among the public. We can call it colour and shape - dominated system.

In the case of China, Chinese society doesn't have those similar preconditions, using colour as the main directory of waste disposal visual identity system is clear and preferable, but extra prompt information is also needed in Chinese waste disposal visual system design.

## Rovaniemi, Finland



bigger bin with grey sticker: Unsorted waste, waste not suitable for recycling  
smaller bin with red sticker: Bio waste like food, coffee filter, plants, eggs, napkins, and so on

Pre-design  
Research

These series of Pictures show waste disposal bins in Rovaniemi, Finland. Comparing with Holland, these trash bins are very well designed with wood appearance, and there is no difference in the design of trash bins except the size. Thus, the information and graphics show on the board become very important for delivering separation instructions. Taking a closer look at the boards, waste types which belong to this specific trash bin and which do not are listed very clearly, making it useful and functional. Finnish titles

of each bin are the most outstanding information. Thus, it can be regarded as another typical example of waste disposal design: visual identity system looks in a high degree of harmony, which matches the simple, nature-simulating trash bin's design very well; it almost doesn't use the colour as part of the identity system at all (which may be noticed and added in the sticker after the finishing of original design); the whole identity system relies on the text descriptions of board, and partly size of trash bins. It functions well because Finland has relatively less living waste production with their small population, and the composition of their waste is also relatively simple compared with other non-Scandinavia countries – this factor may contribute to the strong social responsibility of Finnish food and package industry. We can call it text information- dominated system.

When talking about China, the waste type and separation methodology are more complicated. Reading all the describe texts on four different bins and then hesitating for which one should be the right to put is obviously not effective. Descriptive information is apparently needed in Chinese waste disposal visual identity system design, but how to make the information easy reading, and suit for kids are the real challenge for this topic.

## London, UK



recycle bin in London

London, one of the biggest cities in the world, seems have the simplest waste disposal methodology. As we can see in the picture, almost all the recycle waste: paper, cans, plastic and glass bottles all go to the same trash bin. It is surely easy to remember and execute. They instructive information on the bin shows in a nature way, designer put the real image from every type of waste to call the users' perceptions. The goal in information and instruction design should always be clarity of communication. The message must be accurately developed and transmitted by the sender or information provider and then correctly inter-



preted and understood by the receiver or interpreter (Wildbur Peter, 1999, 45). Here it works very well; no matter among British or foreigners, colour-blinding or not, children or adults. This biggest advantage attributes to their simple and clear waste disposal methodology; users can easily find the listed waste in one image and follow it. The using of real image in instructive information is advisable, but for a more complicate waste disposal methodology, this kind of order-less image listing may become an information hodgepodge in practice.

The interesting thing is, comparing with British official waste disposal visual system, independent recycle industry companies in London has a highly tacit understanding of visual style.



Recycle bins in the street of Wandsworth, London.



Truck of Any Junk, the largest junk removal company in UK.

It may be a coincidence that all those bins are designed in a very delightful and lovely way even though different organizations or companies operate them. They use similar red colour to keep in the same tone, and make a lot of using with illustrations both in the info graphics and decorations, which conveys infor-

mation very clear in a heart-warm way. Through **their design, we can realize the recycle industry is originally environmental friendly as well as humanistic concerned**, and existing love in the society: people are sharing things in a harmonious way. They are also good teaching material for children.

Those three countries are more like the future China in different process. In the start point, a society which begins to carry out waste disposal need a visual identity system, like Great Britain, that gives users instructions in detail by presenting information on the waste bins; later, when the society gets mature in waste disposal, most of the citizens have already known about the separation methodology, the information shown on the bins can be simplified, like Finnish waste disposal system; or even only colour-dominated like Rotterdam. These steps are the ideal evolution process, in terms of real practice, designers need to consider about colour-blinding users, foreign users, and so on. At this stage, we need a waste disposal visual system that can help China to take its first step.

# Design For Chinese Kids

I came up with the five key words based on my design philosophy – a good design gains its inspiration from existing culture essence, makes contribution to contemporary users' beneficial development, as well as promises a rewarding progress to the future society. In short, it roots in the existing culture; by changing human's living style and habits, which can also be understood as generalized education, offers delightful and easier life for contemporary generations, and form a better future systematic operation mechanism.

## Chinese + Children

In creative thinking, a word of a region refers more to culture background of the specific area; here, Chinese children means children raised under Chinese culture including traditional culture, pop culture, local culture, borrowed culture, and so on. Here I will do the analysis on my project base, Changsha City, Hunan Province. The reason I'm doing the audience background analysis is to set a "code" in the design project, which can easily to be "decoded" by the audience – children from Changsha City. Since the structural characteristic of target audience is clear, here we study particularly on the behavioural and cultural features (McQuail Denis, 1997).

## Behavioural Study

Target: to explain and predict the selection, reaction and effect audience will make

Main data: motivation, selective behaviours and reaction of audience

Methodology: survey, experiment, psychological test

## Colour-shape study

In order to find the visible clue from the decisions made by children, and form the special "code", a survey among children can be a good start point. In the traditional waste disposal VI system we analyzed in previews sections, the "code" used by designers are usually colours, abstract graphics, as well as literal information. But mostly the specific used colours and shapes are decided by designer's understanding of the meaning of colour, or borrowed from other existing systems. I will also use the colour-shape methodology in this project, but in order to know the children's real intuition, the feeling of colours and shapes in their world, I will ask themselves to make their own decision.

Colour-shape survey. I chose a group of children around twelve years old, who are in their final year of primary school as my testers. There are forty-three of them in total. They are like the most sophisticated adult-like kids; a perfect connection from a kid's world to an adult world. The purpose of the survey is to know which colour they think can best cover a specific waste type; when talk about this waste, what are the most possible goods come to their mind. In order to make sure they have a clear idea of each waste type's definition, I gave them explanations one by one, and the most common goods they may see from every daily life.

READ FIRST

**Kitchen Waste:** Food waste from kitchen, fruit peel, and so on.

**Recyclable:** High value to be recycled and reused, and possible to do so.

**Harmful Waste:** Waste includes toxic or harmful substances.

**Other Waste:** Other waste except all the three above.

---

Chose the ones you think belong to Kitchen Waste: (chose 3 of them)



A Ginger



A Bone



A Peach Kernel



A Chinese Cabbage



An Eaten Cake

Chose the ones you think belong to Recyclable Waste: (chose 3 of them)



A Beer Bottle



A Tin Can



A Magazine



A Juice Box



A Plastic Mug

Chose the ones you think belong to Harmful Waste: (chose 3 of them)



An Old MP3



A Bulb



A Used Battery



Overdue Medicines



A photo

Chose the ones you think belong to Other Waste: (chose 3 of them)



A Plastic Bag



A Throwaway Spoon



A Cigarette End



Toilet Paper



An Old Sweater

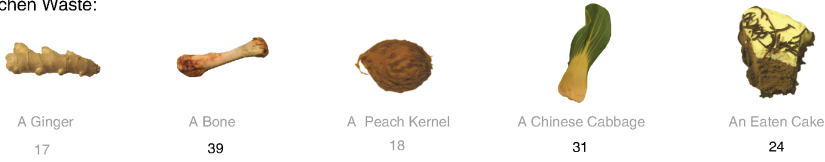
---

Link the waste to a color that you think can represent this kind of waste: (one waste matches one color)

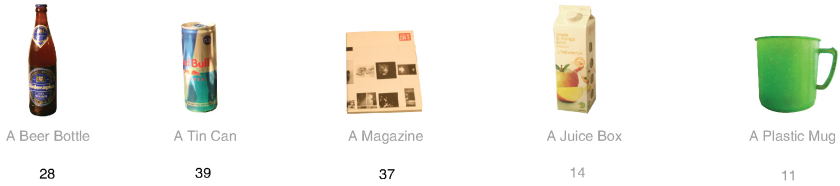
Kitchen Waste   Recyclable   Harmful Waste   Other Waste



**Kitchen Waste:**



**Recyclable Waste:**



**Harmful Waste:**



**Other Waste:**



Link the waste to a color that you think can represent this kind of waste: (one waste matches one color)

	Kitchen Waste	Recyclable	Harmful Waste	Other Waste
●	10	0	22	3
●	3	32	0	1
●	9	4	3	4
●	10	3	1	8
●	4	3	2	5
●	7	1	15	5
●	0	0	0	17

test paper and result

As we can see, the objects and colours they chose are obvious:

Kitchen Waste, the mostly chosen representative goods are bone, Chinese cabbage, and cake; most representative colours are black and yellow.

Recyclable Waste, the mostly chosen representative goods are tin can, magazine, and beer bottle; most representative colour is green.

Poisonous Waste, the mostly chosen representative goods are battery, medicine, and bulb; most representative colour is black.

Other Waste, the mostly chosen representative goods are cigarette end, sweater, and plastic bag; most representative colour is grey.

Since the black colour is mostly chosen to represent poisonous waste as well, the kitchen waste turns to be yellow automatically. In the next step, I can use the elements and colours they decided for me to form the information code.

#### Motivation study

Next is finding a way to convey the information. Normally the public think it is only a matter of “style”, which means designers decide every detail according to their personal professional literacy. This is partly true. However, this “style” is whether on the basis of audience or the creator tells the biggest difference between artistic work and design. What is an understandable and enjoyable style that most children may be fond of?

Kids are naturally creative and open-minded. They see right through everything, and they have little or no baggage to colour their perceptions; there is no more sophisticated audience than kids. They love stories and everything for them is fictional (Design Dialogues, 220, Heller and Pettit). Telling them a meaningful as well as interesting story is always much better than teach them what to do. To deliver educational information in VI system, being fictional can be the original inspiration to solve this problem. By reading the signs on the bins, they must be attracted immediately, and have an idea about what they are supposed to do in a very short time.

#### Cultural study

Like any other countries in the world, children here love story and fairy tales. They wish they have longer in front of the television even for one more minute animation before their homework. But the different situation may be Chinese children get much stronger pressure from schools comparing with children grow up in western world. They don't have much time to have fun, topics in their class-break conversations are usually about TV especially animations, that is the easiest fun thing for them to achieve. For this task, combining VI system with cartoon can be a way to educate children they like and familiar with.

Combining VI design and cartoon doesn't mean to create some identical shapes with bright colours, nor

some cute-looking shapes. First, children like animations not only because they are well produced, colourful and eye-catching, more important, they are fictional. Animation gives the traditional story telling a non-boundary and visible format, that's the amazing point why it attracts audiences even like adults-to make images tell stories.

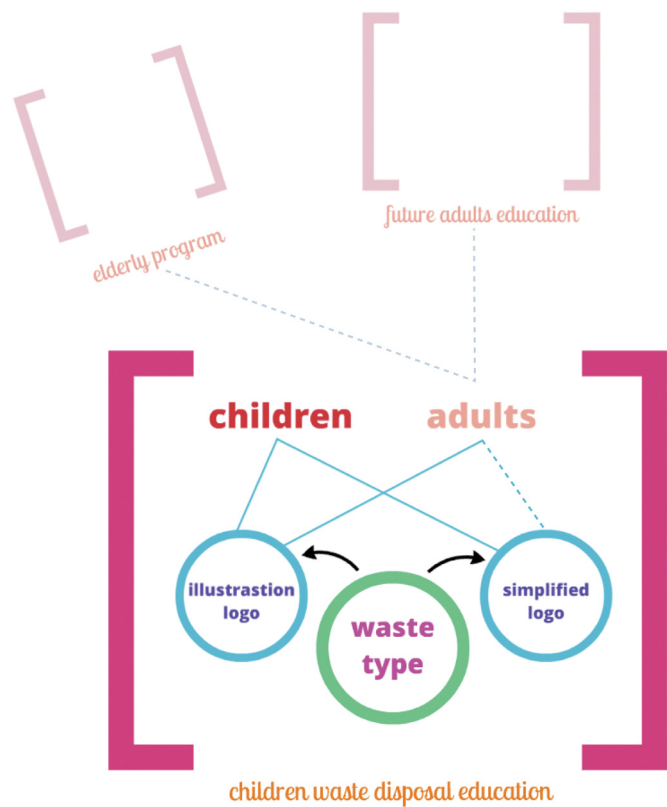
Colour system. The local drama Huaguxi in Hunan Province, which means Flower Drum Song is now in the danger of dying out. It is famous for its special local accent and tones as well as corny but interesting costumes. This high purity colour collisions can be regarded as one typical local culture features, and I chose the colours appeared in Flower Drum Song as the basic colour panel, to keep a little blood from the local dying out drama, and pass it down to our new generations.

# 5

# Waste disposal visual identify design—signs

## Signs On Packages

In addition to the descriptive illustration signs, there is also a series of simplified logos that can be easily used on packages with less colors as well as concise structures to help children transit from narrative signs to normal mature signs. By using this double-sign-system, products can deliver the waste disposal information easily in little printing area, at the same time children won't have big gap in understanding the meaning since they can easily connect two signs in mind; meanwhile, adults may also notice the sign, being prepared for the next campaign which may target on adults specifically.



Graphics and colors used in simplified logos are designed based on the voting results of children. In pursuit of a cleaner image, only one representative item will be used to stand for the specific waste type.



## Kitchen Waste

The candidate objects are bone, cabbage, and an eaten cake. Color for kitchen waste should be yellow. Bone as a design element of logotype is widely used in pets or dog related industries, it may lead to ambiguity in some extent; there are many different kinds of cakes, and everybody has his or her own shape of ideal cake based on their favorite flavor. The image of cake is variety and complicate enough let alone an eaten one, it is not iconic and stable to support sufficiently such an informative sign. In this case the image of cabbage may be a better choice.

cabbage & yellow  
graphic impression



CHINESE CABBAGE  
TRADITIONAL CULTURE  
LUCKY CLOUD PATTERN  
CLEAN ENVIRONMENT



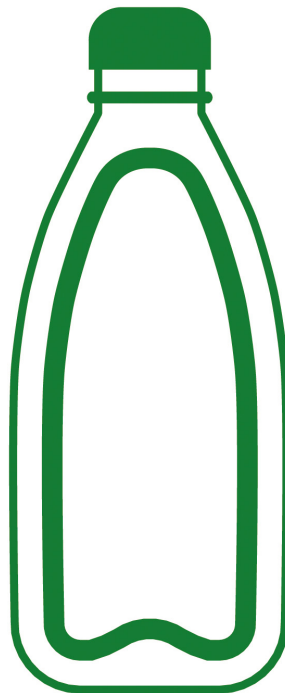
## **Recyclable Waste**

Compared with tin can and magazine, bottle has more distinct shape; it is much easier to recognize with a distance. Sign of recyclable waste is designed with bottle shape and the chosen green.

bottle & green  
graphic impression



MINERAL WATER BOTTLE  
BEER BOTTLE

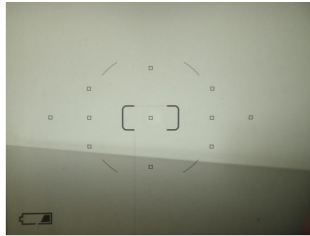


Sign

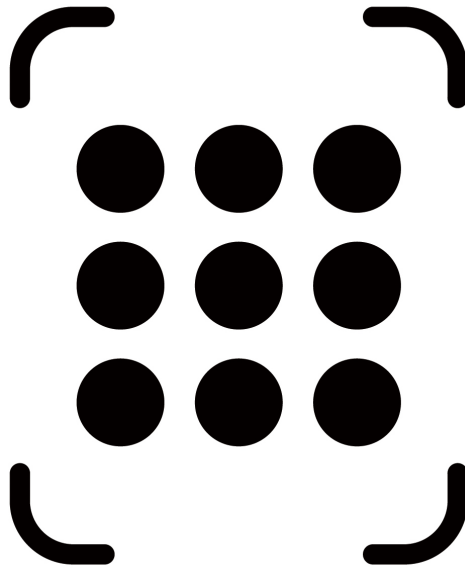
## Poisonous Waste

The most voted objects for poisonous waste are battery, medicine, and bulb. These three candidates are all have very identified appearance; all of them can meet the standard of being iconic. But in a long-term thinking, considering about other countries experience, batteries are going to be collected in a specified channel is a mainstream trend since batteries may be leached as well in ordinary waste bins. Bulb is also highly recommended to do some special treatment before throwing away like wrapping. Subdivisions and pre-throw treatment are definitely coming soon in the future China. In order to avoid misleading children's activity, medicine is used as the design element, and the color is black.

medicine & black  
graphic impression



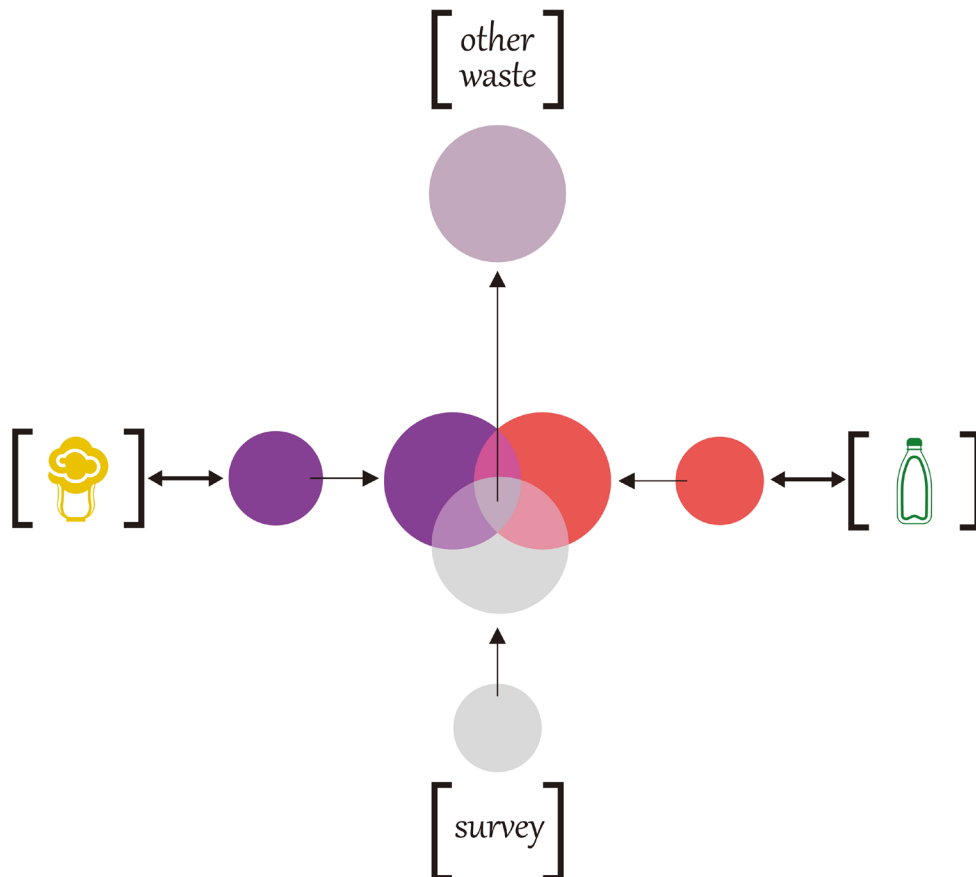
TABLETS  
CONCENTRATE FRAME



## Other Waste

The most voted objects are cigarette end, an old sweater, and plastic bag. As we all know, in China, plastic bags are the number one environmental killer since the vast majority sellers give them for free. Plastic bag is used in the sign design of Other Waste.

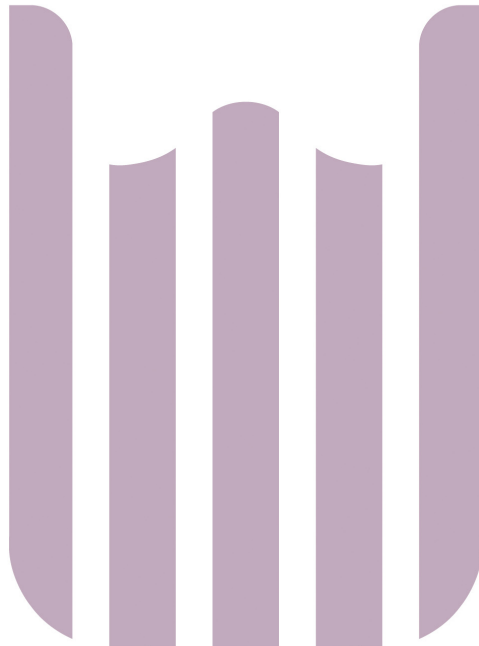
In the survey, most children select grey to represent this waste type. Considering grey is not very easy to see when use in packages, and also it is going to be used in the later logo combination, the “grey” of Other Waste sign is going to be put a colour trend in it other than perfect grey, in this way it still complies the rules of survey, as well as be kept in basic grey. In last three designs, green and yellow are used; this color trend in grey can be between red and purple, to separate each of them better.



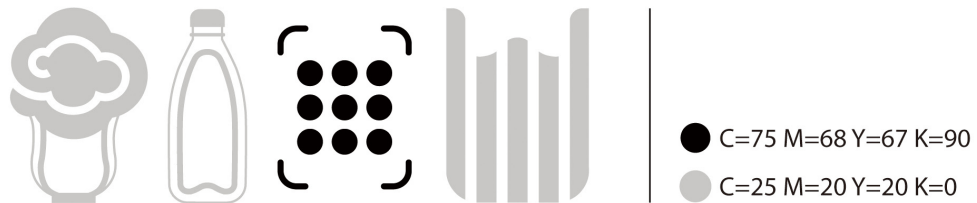
plastic bag & purplish red grey  
graphic impression



PLASTIC BAG  
COMMON PATTERN OF PLASTIC BAG



For enhancing the waste disposal family, these four signs are going to be used together. When printing this sign on a package, the related sub-sign will be in the original color, while other three will be fade into grey.



# Descriptive Signs

The purpose of making this descriptive signs is to help children understand the deep meaning and source of waste types. Four different situations will be constructed according to the waste meaning, and these four situations should be familiar to a 12-year-old child.





**Sign**

Scene one: Kitchen Waste

Actor: Mom

Place: Kitchen

Props: cooked carrots, beans, Chinese pan, stove, seasonings, bowl...

Story board: In a typical Chinese kitchen, Mom is pulling out over cooked dish (carrots with beans) into a waste bag, it's about dinner time, she is busy with cooking, waiting for her families come home. A big pot is heating with steam rice inside; range hood is working.

Message to deliver: kitchen waste is usually generated in the kitchen.



Scene two: Recyclable Waste

Actor: Xiao Ming (boy around 12)

Place: Xiao Ming's room

Props: books, magazines, newspaper, table, bookshelf, desk, window, lamp, chair...

Story board: On a weekend day, Xiao Ming is collecting recycle paper from old books and magazines, he spreads out every piece of paper and sorts them carefully.

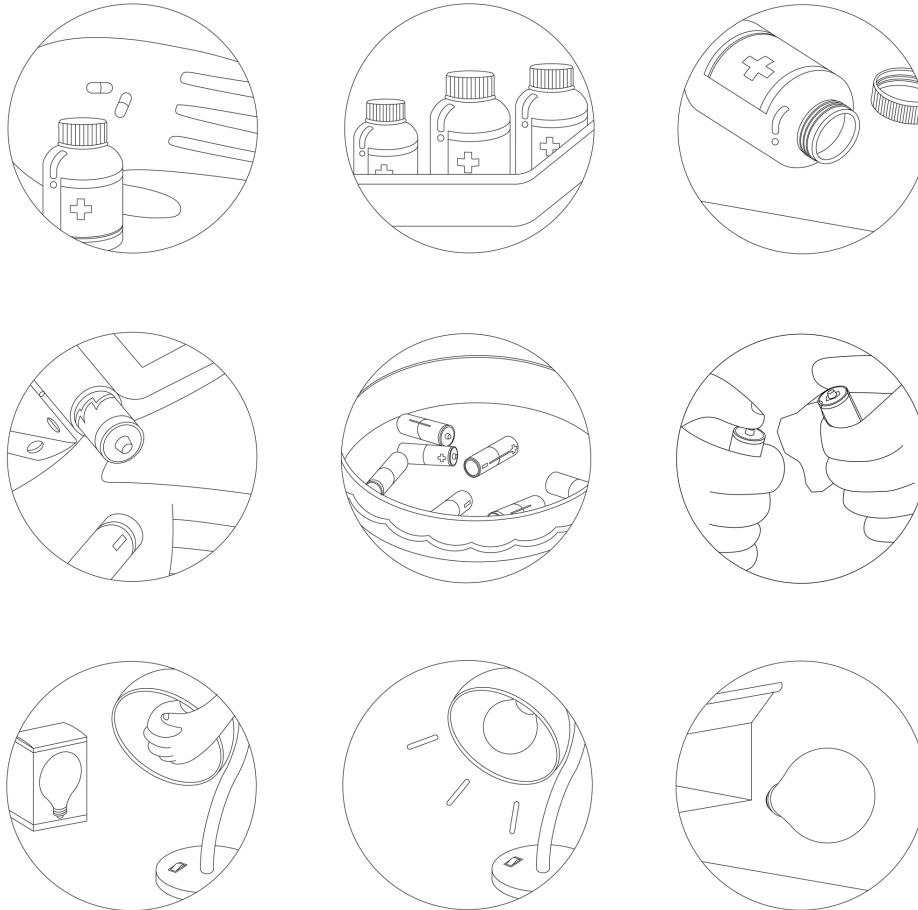
Message to deliver: Recycle waste is something like paper that has been used but still has the potential to be developed into other use.



Scene three: Poisonous Waste

Props: capsules, empty bottle, battery, digital dictionary, container for batteries, table lamp, new bulb, new bulb package, used bulb ...

Story board: there are three of them over all. First, a person holds capsules in hand and about to take them, after he or she finished the whole bottle, the empty capsule bottle is left. Second, a student is changing the batteries of his or her digital dictionary. The old batteries are put in the same container for collection. Third, table lamp is not working, a person switches the old bulb out and put a new one instead, the used bulb is left as the poisonous waste.



#### Scene four: Other Waste

Actor: grandpa

Place: street market place

Props: vendors, fish, plastic bags, white carrots, Chinese cabbages, (different kind of vegetables)...

Story board: In the morning, grandpa goes to the street market to buy some fresh cooking material for the lunch of today. It's a traditional busy street market with many different sellers and customers. He finished his shopping with a lot of bags in his hand which all of them are plastic.

Message to deliver: The biggest component of other waste is plastic bag.



Colour panel Inspired by Huagu Drama

Both of these two sign systems are based on the exploration of this colour panel.

Sign



# Discussion

In this short project, what has already done is quite limited. As long as the visual system is settled, many other interesting design based on it can grow naturally. For example, waste bag can be redesigned with new color systems; animation based on the characters and stories in those four descriptive signs can follow up in the future propaganda; the design of badge series can also grow when new waste type coming... What this project about, is a try of make visual system in human's daily life more interesting and meaningful, especially when something is done for children.

# 8 References

- Tufts. Edward R** (1994) *Envisioning information* Cheshire (Conn.): Graphics Press
- Witzgall Susanne, Matzner Florian, Meder Iris, Wien Küntlerhaus** (Hrsg./Eds.). (2010) *(Re)designing nature* Ostfilden : Hatje Cantz Verlag, cop.
- Evans Poppy.** (1997) *Complete guide to eco-friendly design* Cincinnati (OH): North Light Books, cop.
- Mono** (2002) *Branding: from brief to finished solution* Crans-Prés-Céligny: Rotovision, cop.
- Sherin Aaris** (2008) *SustainAble: a handbook of materials and applications for graphic designers and their clients* Beverly Mass: Rockport Publishers, cop.
- LIN Yingchao; FUJII Masahiko; WANG Peng** (2011). *Management Science and Engineering*, 5(3), 126-131
- Noble Ian / Russell Bestley** (2005) *Visual research: an introduction to research methodologies in graphic design* Lausanne, Switzerland: AVA Academia
- Bennett Audrey** (editor) **Heller Steven** (2006) *Design studies: theory and research in graphic design* New York : Princeton Architectural press
- McQuail Denis** (1997) *Audience Analysis* SAGE Publications, Inc; 1 edition
- Heller Steven** and **Pettit Elinor** (1988) *Design Dialogues* New York: Allworth, cop.
- Li Zhuo** (2010) *DA GUAN Weekly* Vo1505 N9 46
- Wildbur Peter, Burke Michael** (1998) *Information graphics: innovative, solutions in contemporary design* London: Thames and Hudson, cop.
- Pettersson Rune** (2002) *Information design: an introduction* Amsterdam: John Benjamins Pub. Co; Philadelphia, cop
- Visocky O'Grady Kenneth Jennifer** (2006) *A Designer's Research Manual: Succeed in Design by Knowing Your Clients and What They Really Need* Beverly (Mass.): Rockport, cop.
- Lidwell William, Holden Kritina, Butler Jill** (2003) *Universal principles of design: 100 ways to enhance usability, influence perception, increase appeal, make better design decisions, and teach through design* Beverly (Mass.): Rockport, cop

<http://www.anyjunk.co.uk/>

<http://zt.bjwmb.gov.cn/ljjfl/>

[http://www.china.com.cn/news/txt/2011-02/28/content\\_22021799.htm](http://www.china.com.cn/news/txt/2011-02/28/content_22021799.htm)

[http://tech.ifeng.com/gundong/detail\\_2011\\_05/16/6429666\\_0.shtml](http://tech.ifeng.com/gundong/detail_2011_05/16/6429666_0.shtml)

<http://wenku.baidu.com/view/51ea1cf6ba0d4a7302763a03.html>

<http://www.city.iwakuni.lg.jp/www/contents/1321596624549/files/iwakuni.pdf>

[http://www.youtube.com/watch?v=H3BNldwcZ\\_E&feature=related](http://www.youtube.com/watch?v=H3BNldwcZ_E&feature=related)

[http://www.umwelt.jp/umwelt/abfall\\_2/Abfall.html](http://www.umwelt.jp/umwelt/abfall_2/Abfall.html)

<http://ja.wikipedia.org/wiki/リサイクル識別表示マーク>



