



Case Studies of Designing for Ecology: Branding EVEN

I-Wen Wu^(✉), Hsien-Fu Lo, and I-Ting Wang

Graduate School of Creative Industry Design,
National Taiwan University of Arts, New Taipei City, Taiwan
service@even.tw, hsienfulo@gmail.com,
etinw@ms43.hinet.net

Abstract. Ecodesign is an approach of product design with materials and decision-making of process in special consideration for environmental impacts. However, during a design process, as for demands on eco-friendliness, there are many uncertainties and multiple contradictions due to the advancing technology and industry. Therefore, in this paper, a systematic analysis was proposed in order to extend the traditional framework of process design to a green brand that treats environment friendly and makes a sustainable development come true. This study aims to provide a framework of ecological design for traditional process that seeks for a sustainable development or transformation into green design. With research on ecological literature and case study, the study reveals the prospects and difficulties between design and ecology, as well as ecology and industry.

Keywords: Ecological design · Green design · Sustainable design

1 Instruction

Ecodesign is an approach to designing products with special consideration for environmental impacts of product throughout its whole lifecycle. Along with the developing industrialization and global economy, issues such as deficiency in biodiversity, intensifying pollutions and fierce climate change have emerged. Over the past twenty years, technologies and theories in ecodesign have been progressing and shown the urgent needs from society in it. Aiming at fields such as arts and processes, this research carries out case study through ideation, design, development and survey on product innovators, in an attempt to analyze process framework and each ecodesign products made by innovators under this research framework.

Although the cases of designers/innovators in this study are small studios run by individuals, the researcher focus on such process of conceiving and developing ecodesign from owners in order to create more models of ecodesign innovation as reference for more designers and innovations.

2 Literature Review

2.1 Ecodesign

Before fossil fuel started a bright chapter of industrialization in the 19th century, people had been manufacturing things in biological patterns and getting along with Mother Nature in a harmony. Most resources in the past were naturally regenerated with few harmful side effects and safely degraded after discard. Less demand for resources means less damage to the planet, where used to gradually repair itself in natural processes. However today, the earth can no longer afford what have been added onto it; progress and growth are driven by gradually increasing consumptions that result in more and more wastes.

Berman indicates that, for example, as for a dirty factory powered by fossil fuels, manufacturing each kilogram of products would also produce averagely 28 kilograms of wastes. [1] We have thrown out things not because they are worn out or broken, but because they no longer look glamorous. Most consumables turn into wastes in six weeks. Once upon a time, the relationship between mankind and environment tended to be naturally harmonious, but will not come again. The harder we work to improve our lives, the more severe we hurt this world to advance. More products means more damages to environments. In order to solve this imbalance, we have to improve from aspects such as materials and processes in a wish to achieve “sustainability and harmony”. Proctor pointed that, more and more designers have realized that designing products not only requires a sense of beauty, but also an ethic to the environment currently. [2] Thus, such design that emphasizes on environment and nature has gradually become a trend, and that is “sustainable design”.

In addition to caring environment by sustainable design, Tu also put forward that a sustainable design should innovate to reduce material use and waste in order to bring down operating costs and apply green marketing to building a green image for enterprise which enhances its market competitiveness. This also meets the goal and purpose “cleaner, cheaper, smarter” in sustainable development. [3] This visions matches and benefits management and promotion of green designs and brands.

Since every home appliance has an impact on our environment and lives, it is so crucial to have greener, cheaper and smarter designs. Therefore, the “sustainable design” has risen and received more and more attention. But how to choose and tell whether a product is sustainable? Proctor mentioned few simple elements that can help us identify a green design product: biodegradable, fair traded, locally sourced, low energy consumption, less waste in production, non-toxic, recyclable, recycled material, and proper management of material sources. As long as the product meets one or two of above items, it can be called a “product of sustainable design”. [2]

The researcher categorized above nine elements into three aspects: material, process and management, as shown in Fig. 1. The case in this paper will be in exploration of degree in “sustainable design” through the three aspects (see Fig. 1).

Material: biodegradable, non-toxic, recycled.

Process: low energy consumption, less waste, recyclable.

Management: fair traded, proper management of material sources, locally sourced.

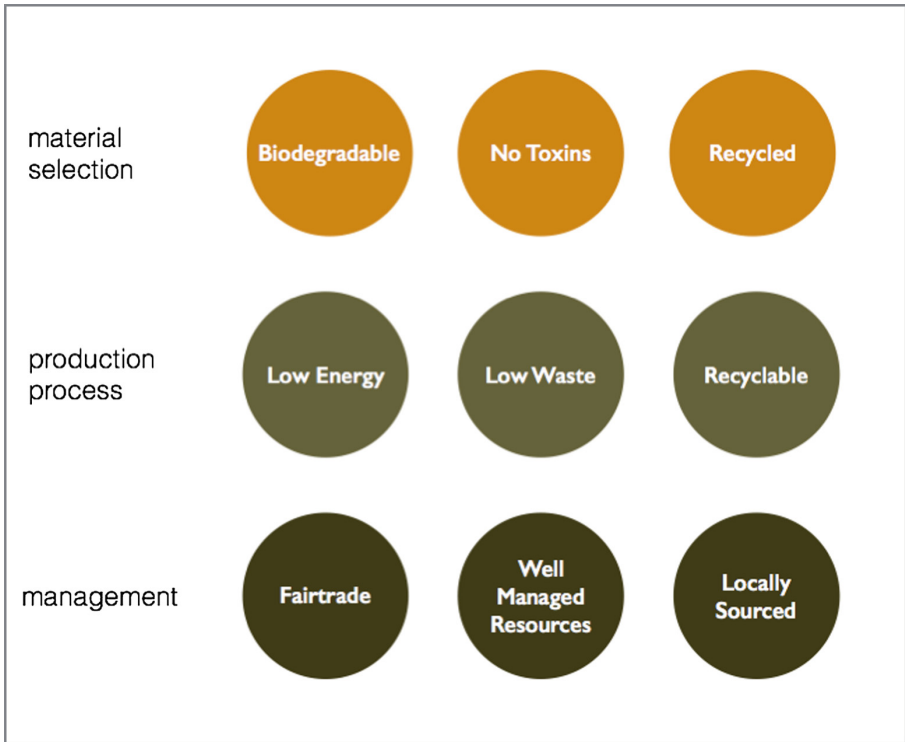


Fig. 1. Classification of ecodesign elements.

2.2 Conceptual Model of Furniture Design

The researcher presents a creation in the form of furniture. In a long history of furniture design, art works in forms of chairs are the most representative subjects. Gier and Buur suggested: “We have chosen to narrow down the wide field of furniture design in order to exclusively on a furniture (chair) must starts from the aspects, form, material and technique”. “This project understands tectonics as the manner in which chairs are joined together and as will be made apparent, along with an understanding of the term tectonics, what must also be considered are materials, form and technique, insofar as these constitute prerequisites for the formation of the architectonic totality”. Moreover, they even suggested that: “Technique prepares and works up the materials and gives form to them and to the joinings, partly through the techniques of adapting and finishing them, but also through modes of joining the constituent elements that have been adapted to the chosen material”. [4]

The three elements constitute the concept model of furniture design in below triangle scale “Tectonics”. This study also adopts this model in developing its creation structure (see Fig. 2).

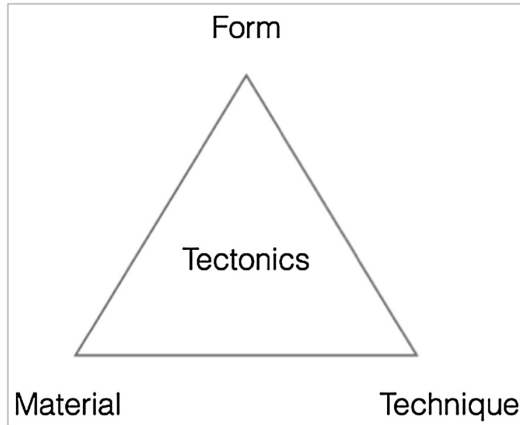


Fig. 2. Concept model of furniture design.

3 Research Method

3.1 Analysis on Conceptual Model of Ecodesign and Furniture Design

This study carries out a self-interpretation by analyzing researcher's own creation. The study has drawn its materials through applying ideas on text analysis aiming at media, techniques, forms, and ideas of work for in-depth self-analysis and interpretation. In order to comply with the idea of ecodesign, as on drawing materials, I adopted the natural and biodegradable material, woods, removed from local old houses or recycled pieces from scrapped furniture in Taiwan. In the process of manufacturing, a mass of handwork consumes less energy, and the use of traditional mortise and tenon techniques makes the structure strong and durable.

In the stage of painting after the work is completed, due to the stable quality of wood that is hard to deform, it does not need recoat it again. Therefore, regular furniture has removed the secondary undercoat that contains organic agent and adopts natural coating from wood preservation oil that is eco-friendly and nontoxic. It is natural and nontoxic, so you can feel the mild texture and quality of natural wood.

Moreover, since I adopted natural wood, if the work has broken after many years, it can be naturally decomposed after discard, so the creation will not create impact to environments. Above mentioned ecodesign elements are summarized in below:

- (A). Material: biodegradable, non-toxic, recycled
- (B). Process: consume low energy, waste reduction, recyclable
- (C). Management: locally sourced

In the conceptual model of furniture design aforementioned, "Tectonics" is constituted by techniques, forms, and materials. As on material, I put the concept of ecodesign into it and started the creation with the point of recycling wood. This is also the core idea of ecodesign, so I used "Tectonics" triangle framework as the basic model

and extended the material as creation concept to construct a design model of techniques, forms, and concepts.

3.2 Creation Framework

Ideation

Each piece of art or creation contains creator's inspiration and creativity, so does mine. Because I was born in an environment that was more in needs compared with other same-aged children, under a restrictive father, my childhood was full of regret and imagination, so I always attempt to use childlike creation to fill up the fear and emptiness in my heart in the past. Therefore, a lot of inspiration of creation came from my childhood memories. As for every piece of wood collected from different places, they are bonded with their own histories to be told. There are many factors to inspire a creation work, including childhood memories, recycled wood, cultural reflection and the focus onto environment; all of them are sources of my creation.

Creation Model

Integrating the ecodesign elements and design connotation constructed by techniques, forms and concepts, the follows illustrate my creation model:

- (A) Techniques: the process of integrating ecological elements.
- (B) Forms: Furniture designed in creative shapes.
- (C) Concepts: EVEN (Empathy Value, Eco Nature)

Because my name is "I-Wen", so I gave myself a harmonic English name "Even". It means smooth, uniform, reciprocity, even, equal, balance and steady, so I determined to put the idea of "even" into my creation. I hope I can extend such concept of "even" as smooth, equal and balance into a ecodesign idea of "an equality among all creatures", so in addition to the reflection of care in environment during aforementioned manufacturing process, I hope to do more for the environment. My materials were all sourced from Mother Earth, and I sensed a responsibility to pay back to earth for what I borrowed from it. Therefore after I complete each piece of work, I will plant a tree to reflect my idea of ecodesign in contribution to the environment.

From ideation, ecological process, to reflection of the "even" concept, I completed the following ecodesign creation framework: (see Fig. 3)

4 Case Study

In this chapter, the researcher picked one piece of work for each of the four approaches in drawing materials for inspiration. Although the source of inspiration for each work might not be the same, I chose the work that has higher proportion of such inspiration approach as an example.

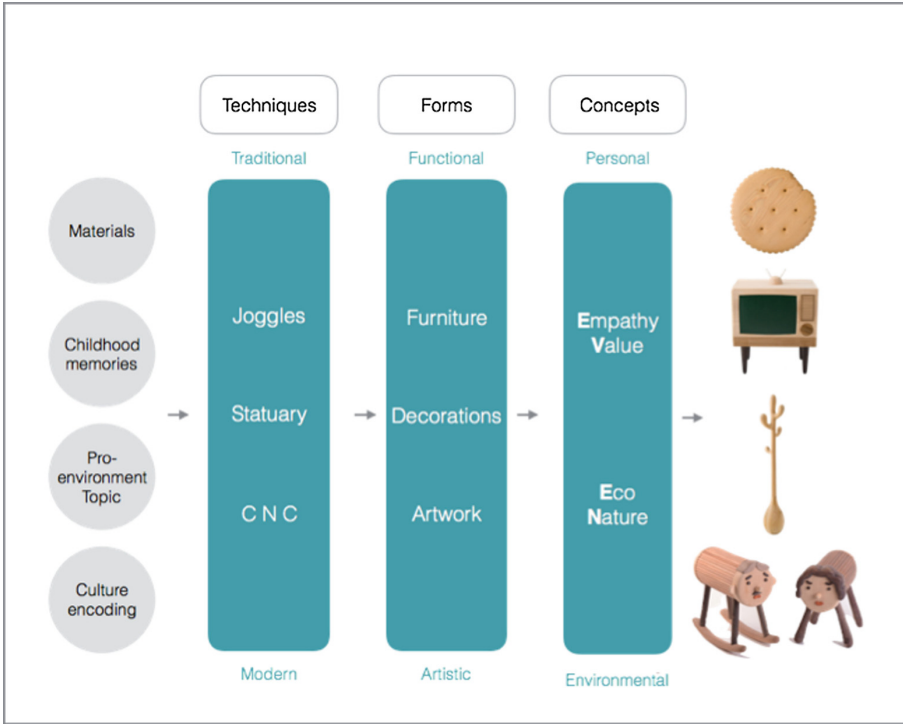


Fig. 3. “EVEN” - ecodesign creation framework

4.1 Materials, Shapes, and Colors: Cookie Stool

Inspired by the colors, textures, traces, appearances and other features of material itself as the design ideation, cookie stool was thus born (see Fig. 4).

Recycled old wood is very different from ordinary wood; their surfaces are often full of dirt that covers the original colors. When I first came into picking recycled wood, I could not tell the type of wood quickly from appearance, and I had to shave it with a blade to clean it. On one occasion, I brought back an old board full of grime and dirt, but after I shaved it, it was a great contrast of colors and textures, showing an orange and yellow luster just like a crisp cookie oily baked! At that time, I started using woods that have similar colors to cookie and built my cookie stools. These stools in cookie shape recall my memory of tasty milk cookies at elementary school.

4.2 Childhood Memories: Kid’s TV

Kids fed up by TV shows

In my childhood, I was often beaten by my father, not because I did something wrong, but just because my father was not happy. My dad was a taxi driver who does not work in regular hours, so he often gambles and drinks when he was free. When he returned



Fig. 4. Taste in memory – Cookie Stool

home, he was often not on a good mood, and a little disobedience might have caused an abuse from him. However, I put myself in TV shows, although I grew up in such a restrict family that if I did not catch my father's call, I will be beaten. Living in under such intense and terrifying pressure, I could only be bombarded with messages from TV whenever I got a chance to immerse myself in TV and feel no interference from outside (see Fig. 5).



Fig. 5. Kid's TV – a locker

Therefore, this work is the object I intent to convert messages I received; I created a locker in TV shape: antenna is a piece of chalk, screen is the blackboard; after opening the screen panel, there are two drawers inside that you can place things in. When you

use it, you can write, paint, and place things that are all actions of sending out messages and the TV is one to receive them.

4.3 Pro-environment Topic: Clothing Tree

This work is a round shaped tree baby wrapped in a diaper (see Fig. 6), giving a personification to a coat and hat hanger. It gives life imagination onto the work in order to express the idea that a tree will be planted after completing a piece of work.



Fig. 6. Clothing Tree (shaped tree baby wrapped in a diaper)

4.4 Culture Encoding: Cattle & Horse for Kids' Ride

Kids are not riding on cattle or horse, but their parents. The work plays a humor on a Chinese idiom through literal translation into three-dimensional images. Generally, in the market, you only see Trojan toys made in animal shapes, but I replace the symbol with parents in the shape of toys, wishing to create a sarcastic connotation on cultural implication, in a hilarious way (see Fig. 7).



Fig. 7. Cattle & Horse for Kids' Ride

I planted a tree for each of above works when they were completed.

5 Conclusion

Through case analysis, this paper establishes an ecodesign model and finally spreads the core concept through operating brands (see Fig. 8).



Fig. 8. “EVEN”’s brand concept

Even = all are equal
 Respect the natural environment
 Use recycled wood
 No mass production
 Only callous hands
 Here are only art works

And furniture in design
It's kind of humorous
You can use it for a long time
In the end,
Each work is finished, a tree will be planted.

Keeping an ecological balance has always been a contradiction and conflict in the development of human history. "Design" seems to only serve for the industry, so can we save the world by design? Perhaps ecodesign is would be a solution, but at best it only slows down the ecological impact and destruction. Therefore, I hope to share my ecodesign and creation mode, attempting to not only slow down the ecological impact and destruction, but also contribute to the environment as reference for traditional process to create sustainable developments in the future.

References

1. Alan, B.: *Green Design: A Healthy Home Handbook*. Frances Lincoln, London (2008)
2. Rebecca, P.: *1000 New Eco Designs and Where to Found Them*. Laurence King Publishing, London (2009)
3. Jui-Che, T.: *Product Sustainable Design*. Ya-Tai Tu-Shu, Taipei (2002)
4. de Nicolai, G., Stine Liv, B.: *Chairs' Tectonics*. The Royal Danish Academy of Fine Arts school of Architecture Publishers, Copenhagen (2009)