

**Tableware Design according to the Physical Environment**

by

Haoran Xue

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Approved by

Tin-Man Lau, Chair, Professor of Industrial Design  
Christopher Arnold, Associate Professor of Industrial Design  
Rich Britnell, Associate Professor of Industrial Design

## **Abstract**

Food and water are the most essential things in our daily life. We eat and drink several times a day, which means we use tableware several times through the day. People either eat at home or dine out with friends or families. The frequency times of using tableware improves the requirements and expectations for tableware. There are tons of different designs in the market of tableware, some of their appearances attracting us and some of the materials or designs appear qualified and delicate. But what is important is whether the tableware is easy and pleasant to use, whether the design of it helps enjoy, relax and understanding the food, food culture and the dining environment, and whether it delivers the chef's or the owner's statement successfully.

To meet customers' expectations and maximize their satisfaction, there are several factors that need to be considered thoroughly when designing tableware according to different dining environments. This thesis will develop a guideline of how to analyze and abstract visual clues from the physical environment, and how to apply these visual clues onto tableware design. A set of tableware will be designed using this guideline to prove its availability.

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## Chapter 1 Introduction

### 1.1 Problem Statement

Nowadays, most designers focus on what new functions they can provide to their users, or creative ideas of combining two traditional products or functions together to make products more interesting and useful. With the fast development of technology, new materials and manufacturing skills are being applied during the production process to improve the appearance of products. However, these products may ignore user experience, feedback or emotional part of a product to some degree. The emotional feeling evoked by the first impression of a product is very important to whether the users are willing to explore it more continually. Whether the product is suitable and compatible with the using context, whether it meets the required functions, and whether it can express the right messages from designers should not be ignored. It's a trend that people are looking for more than just a functional good-looking product.

Good look is about visual language of a product. Attractive things work better (Norman, 2002). Not only the appearance of the product needs to be attractive, but also what kind of information it can transmit to customers is important. There is always a red button or a button with a signal symbol on a TV controller to tell users that it is for on and off. A set of light-weighted bone china table set with golden decorated edge and smooth and fine texture stands for its delicacy, well-made nature, and costliness. Those are all what the visual languages of a product can deliver.

Drinking and eating are essential to human beings as basic needs to stay alive. Since large groups of people don't use hands to eat directly, tableware is important to our daily life. Not only is it primary to our lives, but also it represents our physical and spiritual living standards. Tableware is also a symbol of development of society. How the tableware appears, what material

it uses and what technology has been applied to produce it indicates how our society developed and what people want and need.

Think of a set of elegant china tableware been put and used on a corrosive wooden table in the forest, and people having a BBQ next to it. The elements in this picture do not match to each other no matter how delicate that set of tableware is. When dining in Chinese restaurants in the United States, tableware is always the same type - either white simple plate or decaled plastic ones. In order to be a successful restaurant, food quality, staff service, interior design, artifacts and decorations, furniture comfortness, and even plates and bowls matter. They all affect customers satisfaction, dining experience and future behaviors such as revisiting and recommending the restaurant to others. It will definitely lead to success if the owner cares about every detail and tries his or her best to make all things harmonious, for example, to design the interior in one style, using artifacts and paintings of same culture to decorate the dining environment, and choosing furniture and tableware which express the same information as the interior design. All these efforts will help to build the atmosphere the owner or the chef of this foodservice establishment want. Most of these aspects are well considered or even over considered. But tableware, as part of the decorations, which is only 24 inches in front of the customers for most of their dining time, is always in less consideration. Choosing tableware that can represent similar semantic information and visual language of the dining environment should always be part of the service provider's success. Therefore, designing tableware according to the physical environment cannot be neglected.

## **1.2 Need for Study**

A concept that has been mentioned most in recent decades is that designs need to be human – centered. What people need, what they are looking for, and what they care about are surely crucial to designs. Accordingly, whether driven by advertisement and marketing strategies, or by

trends, fashion, and social events, users' expectations from consumer products have been changing as well. Facing the intense changes in the market, a well-designed product should not only satisfy customers' physical requirements but also satisfy their psychological needs (Hsiao & Chen, 1997). To keep pace with the fast development of the economy, products which can help people relax and enjoy their leisure time should be redesigned or at least updated to satisfy people's spiritual life. Thinking about eating in an elegant restaurant, if all the surrounding decorations, furniture and even servants' costume match the food and culture of it, but the plates, glasses, knives and forks are just ordinary ones that can be found in any other restaurant, customers will be disappointed for that the tableware doesn't meet their requirement. It is very likely that the tableware will decrease the dining experience; even worse, they won't revisit again.

There is also a greater need for diversity in the market. Everyone wants something different (Mark, 2000). For foodservice firms, one of the crucial factors that makes it highly competitive is to make it different in a good way. Customers expect to have a different and special dining experience when they come to a new restaurant or cafe. To have unique designed tableware is one of the ways to be different. Though the investment is kind of high to have someone designing special set of tableware for a specific foodservice firm rather than choosing existing ones, the payback is worth the money and effort by improving the sales and customers' dining experience.

As a symbol of standards of people's living, tableware represents the development of civilization. How tableware could influence people is important. A set of properly and well-designed tableware can improve people's appetite, help people build cognition and confidence, and even make people recall their memories. Though it's a set of products that seems to be inconspicuous in the whole dining environment, it indeed affects customers a lot – in both physical and psychological aspects.

Therefore, the goal to design tableware according to physical environment is to meet customers' expectations and requirements. It makes tableware and the physical environment more supplementary to each other in either design and customer perception. Through this, the restaurant can deliver the self-expression of the foodservice firm more precisely. And also, this practice improves sales of the foodservice firm at the same time, influencing customers perception and future behaviors in a positive way.

### **1.3 Objectives of study**

The objectives of this research are to provide the designers a guideline of how to analyze features and elements from a specific physical environment and how to apply these elements into tableware design. The following is a summary of what this research will focus on:

- Research environment and atmosphere of restaurant and identifying the importance of design tableware according to it;
- Research tableware and tableware design;
- Research, analyze and abstract elements from physical environment that can be applied to tableware design;
- Develop a guideline on how to apply these elements abstracted from physical environment to tableware design;
- Execute the design implementation to illustrate the findings of the guidelines.

### **1.4 Definition of terms**

**Customer Satisfaction:** a central concept in marketing because it's crucial to meeting the needs and wants of customers (Spreng, Mackenzie, & Olshavsky, 1996; Yi, 1990). Customer satisfaction

is defined as a post-purchase evaluative judgement concerning the purchase decision (Day, 1984). It's an evaluation that shows whether the experience customers had was good as expected.

**DINESCAPE:** It's a scale that describes how customers perceive man-made physical and human surroundings in the dining area of restaurants, especially of upscale restaurants. Ryu and Jang developed this concept in 2008. It focuses on dining space instead of any external conditions or non-dining internal spaces. DINESCAPE includes six elements in total: facility aesthetics, ambience lighting, table settings, layout, and service staff.

**Physical Environment:** Kotler (1973) first introduced concepts related to "physical environments", which is also known as atmosphere or SERVICESCAPE. He argued that consumers might respond to more than just the tangible products (Ryu & Jang, 2008). Therefore, the place, or the atmosphere of the place, could be generally called the physical environment.

**SERVICESCAPE:** A scale to describe the significance and elements of physical environment of consumption settings, and how these design elements affect ultimate users (proposed by Bitner in 1992). It includes three main categories: ambient conditions, spatial layout and functionality, and signs, symbols and artifacts.

**Tableware:** Dishes, glassware, and eating implements that are used to help serve and eat food are called tableware. It contains three categories: plateware, glassware, and flatware.

**Tactile sensation:** Tactile sensation refers to the sense of touch, specifically the information received from varying pressure or vibration against the skin. Tactile sensation is considered a somatic sensation, meaning it originates at the surface of the body, rather than internally (Howard, 2017). Product tactile sensation includes weight, temperature, humidity, texture, hardness and others. It needs people to touch, feel and use the product and then get the information back.



**Visual language:** The integration of words, images, and shapes into a single communication unit (Horn, 1998). The structural units of visual language include line, shape, color, form, motion, texture, pattern, direction, orientation, scale, angle and proportion.

## **1.5 Assumptions**

This study was conducted based on the following assumptions:

- It is assumed that the physical environment of a restaurant had been designed before tableware design;
- It is assumed that the design of tableware meets ergonomics rules;
- It is assumed that people from the same culture group have a common sense of culture and atmosphere represented by the restaurant;
- This study assumes that the guideline is able to be used across various cultures and for various physical environments;
- Aesthetic sensation, tactile sensation and requirements of food, tableware and eating environment tends to be related to the age, gender, and different culture backgrounds and environments individuals grew up in. This study assumes that people have a consensus of physical environment regardless of all these aspects;
- Emotional feeling will be different depending on different locations, culture, living standard and people's characters. So, this study assumes that people will have same emotional feelings regardless of the above aspects;
- It is assumed that the sources and research used and/or quoted in this study have been proven, and widely acknowledged as true;
- It is assumed that technologies are well developed to produce tableware that are designed based on this guideline;

- It assumed that people who want designers to design tableware according to this guideline are willing and able to afford the price.

## **1.6 Scope & Limits**

This research focuses on developing a guideline of tableware design, based on the physical environment. In this case, other design methods towards designing tableware may not be used or mentioned in this study due to its purpose. But it doesn't mean that other methods are incorrect or not suitable for tableware design.

The primary research conducted for this study is limited to design tableware focusing on dining environment because of its importance, as stated previously. It doesn't cover all aspects that will influence tableware design, like ergonomics. The dining environment of these foodservice firms in this thesis is limited to those who want or need and can afford to design their own, unique tableware. These restaurants might be fancy, costly, or mid-to-upscale.

Furthermore, the owner or the chef may have preferences and requirements for their tableware, wanting their customers to have a better dining experience and to provide a harmonious atmosphere by caring about every detail, including tableware. Owners of these kinds of foodservice firms always have an idea or message that they want to deliver to their customers. And their ideas can be delivered through food, interior design, decorations, furniture, service staff and tableware.

The guideline of this thesis isn't limited to foodservice establishments. It can be applied in other occasions. For example, designers can use this guideline to design tableware for food that already has a specified using environment, such as tableware for picnics in parks, or for those to be used for BBQs in the forest. Designers need to consider other practical aspects more than what has been mentioned in this thesis when doing tableware design for other occasions. For example,

price and manufacturing will influence the material and appearance of the tableware and also influence the selling market.

## **1.7 Procedures and Methodology**

Step 1: Study tableware and environment of foodservice firms from online researches, thesis, and library resources:

- Why is the environment of foodservice firms important?
- Why is the interior and atmosphere important to the design of tableware?
- What types of elements in the physical environment will influence tableware design?
- What is tableware and its classification?
- Why is tableware design important?
- What design elements need to be considered during tableware design?

Describe shape, color, material, texture, pattern, balance and repetition of tableware design;

Step 2: Develop a guideline of tableware design according to the physical environment:

- Summarize collected information
- Develop a method of how to analyze and abstract design information from the physical environment;
- Develop a method of how to apply the design information onto tableware design;
- Conclusion;

Step 3: Apply the guideline to a sample of design work to prove it:

- Select a restaurant environment and analyze its food and culture briefly;
- Ask for owners or the chef for their ideas or statement they want to express to their customers;

- Identify how many pieces and what kind of tableware to design;
- Use developed guideline to design a set of tableware according to the selected physical environment;
- Evaluate this product or this set of products if needed;

#### Step 4: Conclusion

- Discuss how the guideline works;
- Discuss what hasn't been solved when using this guideline to do tableware design;
- Discuss what can be done in the future.

### **1.8 Anticipated outcomes**

This thesis will study existing researches and guidelines about tableware design and how the physical environment influences the design result. This includes why the author choose this topic and why the physical environment is crucial and unavoidable for tableware design.

The primary outcome is a guideline to help designers to design tableware according to the dining environment. Tableware designed by this guideline will make customers believe that the foodservice establishment values their dining experience by even paying attention to design of plates, bowls, glassware and cutlery. Suitable and appropriately designed tableware, along with delicious food, good service and well decorated interior environment, will definitely improve customers' dining experience and satisfaction. Thus, it will determine customers' future behaviors, such as revisiting, positive word of mouth and recommending the restaurant to others.

## Chapter 2 Literature Review

### 2.1 Physical Environment

Kotler (1973) first introduced concepts related to “physical environments” (also known as ‘Atmosphere’ or ‘Servicescape’) more than three decades ago. Kotler argued that consumers might respond to more than just the tangible products (e.g., meal) or service rendered (e.g., promptness) when making a purchase decision (cited in Ryu & Jang, 2008). Indeed, the place, or the atmosphere of the place, could be generally called the physical environment, which may be one of the most crucial factors that will influence consumers’ purchase decision.

Since Kotler first introduced the significance of the store environment in stimulating a customer’s desire to purchase, retailers, marketers, and environmental psychologists have acknowledged the role of physical environment as a central element in understanding consumer responses (Baker, 1987; Bitner, 1992; Turley & Milliman, 2000). Later on, Bitner indicated that the ability of the physical environment to influence behaviors and to create an image is particularly apparent to business service such as hotels, restaurants, professional offices, retail stores, and hospitals (Bitner, 1992). Therefore, the importance of creating an attractive atmosphere has gained growing attention among scholars and hospitality managers as it is a key factor for attracting and satisfying customers in the hospitality industry (Han & Ryu, 2009).

In fact, the physical environment affects the degree of customer’s satisfaction, their perception of quality, and also their subsequent behavior. These three factors can comprehensively describe how consumers feel about their dining experience, so that the restaurant can reevaluate its service (including all tangible and non-tangible parts of a restaurant, e.g., food and staff service) and make some improvements to become more successful.

### **2.1.1 Why is it important**

Customer's responses, experience and satisfaction are more important for the hospitality industry than other factors since customers are the target market and the major determinant of sales. Therefore, the following descriptions will describe how physical environment influences customers.

- **Influence on Customer's Perceptions of Quality**

Several studies identified that the physical environment of a service setting can be used as a clue as to what to expect and a basis for judging the quality of a restaurant, suggesting that the service environment has a major influence on a customer's inferences about quality (Rys, Fredericks & Lurery, 1987; Parasuraman, Zeithaml & Berry, 1988; Baker, Grewal & Parasuraman, 1994; Wall & Berry, 2007). Rys, Fredericks and Lurery concluded in 1987 that environmental components were the most critical cues when customers judge restaurant quality. Later on, Parasuraman Zeithaml and Berry (1988) identified that elements of the physical environment, such as visually appealing facilities or up-to-date equipment, were key components of customers' perceptions of quality. In 1994, Baker, Grewal and Parasuraman also found that environmental factors provide information that customers use to infer quality and store image. Thirteen years later, Wall and Berry identified the effects of the physical environment on customer perceptions of restaurant service quality. All these empirical studies suggest that the physical environment influences customer's perceptions of quality because these environmental factors are part of the consumption experience (Ryu & Jang, 2009). It is obvious that the physical environment of a restaurant influence consumer's evaluation of this restaurant, from a decorated painting to a piece of furniture. Customers care about these details when they dine in. Each of these elements(e.g.,

décor, layout, lightning, furniture) of the physical environment is part of the quality evaluation and managers will never want their customers to have negative responses to these elements.

- **Influence on Customer Satisfaction**

It's been noticed that firms providing service and products care about customer satisfaction more and more nowadays. Customers won't be satisfied with good quality products only. Quality is important. But of two products which almost have the same quality, customers are more willing to spend their money to buy the product for which they can have better a experience of consumption. Discreet and high-level service has been desired and can attract much more buyers, especially in the service industry. A restaurant is one of them. Restaurant owners and managers are eager to understand what their customers desire more than before. They make every effort based on customers' desires to keep them to stay longer and increasing the overall sales and profits.

Research suggests that ultimately, customer satisfaction is strongly influenced by physical surroundings and price perception (Dube, Johnson, & Renaghan, 1999; Knutson & Patton, 1995; Ryu, 2005; Varki & Colgate, 2001). Unlike buyers of tangible products, service customers are limited to a small number of cues to evaluate their overall experience because of the intangible nature of service (Nguyen & Leblanc, 2002; Reimer & Kuehn, 2005). In many cases, price and the physical environment (e.g., décor and artifacts, spatial layout, and ambient conditions) are the only tangible cues available (Bitner, 1992; Zeithaml, 1981). Thus, the physical environment is one of the most important factors that determine and improve customer satisfaction, from the point of view of service providers, based on the statements above.

- **Influence on Customer Behavior**

High quality employee service produces higher level of customer satisfaction, which in turn leads to higher levels of positive consumption behaviors, such as revisiting, positive word of

mouth, or recommending the restaurant to others (Chow, Lau Lo, Sha, & Yun, 2007; Cronin et al., 2000; Oliver, 1999). According to research in environmental psychology, human behavior is strongly associated with the physical environment (Mehrabian & Russel, 1974; Russel & Pratt, 1980). Specifically, Mehrabian and Russel's (1974) theory indicated that individuals generally react to the environment in two opposite ways: approach and avoidance. Approach behaviors means positive responses to physical environment, such as being willing to stay, spend money, and come again. Avoidance behaviors are negative responses, shown as not desiring to stay, explore, or come again. Firms want to enhance individual approach behaviors and decrease avoidance behaviors (Bitner, 1992). Foodservice industry is similar. In recent years, the importance of the physical environment in influencing behaviors has been verified in many consumer behavior studies (Reimer & Kuehn, 2005; Wakefield & Blodgett, 1996). For example, Booms and Bitner (1982) proved that the role of physical environment in influencing customer behaviors and in creating a provider's image is especially pertinent in a service industry such as the restaurant industry. From the results of this research, it is evident that making an enjoyable, pleasant and creative physical environment is crucial for a restaurant to succeed.

The role of the physical environment in influencing customer behaviors and in creating a provider's image is especially relevant in a service industry such as the restaurant industry (Booms & Bitner, 1982). In fact, customers consciously or unconsciously sense the surrounding environment from the first step when they come into the restaurant until after the meal. As a food supplier, food quality and service should be up to standard; however, compatible and pleasing décor, furniture, layout, tableware, and even background music will affect customers' dining experience, satisfaction and subsequent behavior. That is, customers may respond to more than just the quality of the food and service when evaluating their experience and building their attitudes



toward the service provider. Kotler (1973) indicated that, in some situations, the atmosphere of the place can be as important as the product itself (e.g., foods and services) in purchasing decision making (Han & Ryu, 2008). According to these statements, to design physical environment creatively can help realize marketing goals (e.g., positive attitude, better dining experience and higher consumption perception).

In her investigation of the impact of physical surroundings on customers and employees, Bitner (1992) used the term *servicescape* to describe “the built environment” or, more specifically, “the man-made, physical surroundings as opposed to the natural or social environment” (p. 58). In her study, physical surroundings included all of the objective physical factors that can be controlled by service firms to enhance customer (or employee) internal and external responses (cited in Han & Ryu, 2008). Internal responses refer to cognition, emotion and satisfaction, and external responses refer to staying longer, repatronage and recommending to others.

In sum, physical environment is one of the most important factors that will influence customer’s perception of quality, behavior and satisfaction, based on all the above statements. Therefore, tableware, as part of the physical environment, should be designed creatively according to the entire physical environment - to make all elements (e.g., décor, furniture, artifact and culture) in the environment become one harmoniously. Service industry firms should care about each part of the physical environment to improve their competitiveness in the whole market and therefore win more loyal customers and enhance overall sales and profits. In a French restaurant, it is weird to see bowls from Egypt, plates from Japan, furniture of Ming dynasty and décor and artifact from Africa. A successful restaurant will integrate all these essential elements of the dining environment harmoniously to provide customers a pretty image of food internality and culture, and also a

comfortable atmosphere which can make customers think they were in the place where the food from.

The diagram below clearly depicts the relationship between physical environment and customer's quality perception, behavior and satisfaction. Since physical environment influences these three elements and will eventually affect customers' dining experience, subsequent behaviors and the sales of the foodservice firm, it is enough to prove that physical environment is important and cannot be ignored for foodservice firms to succeed.

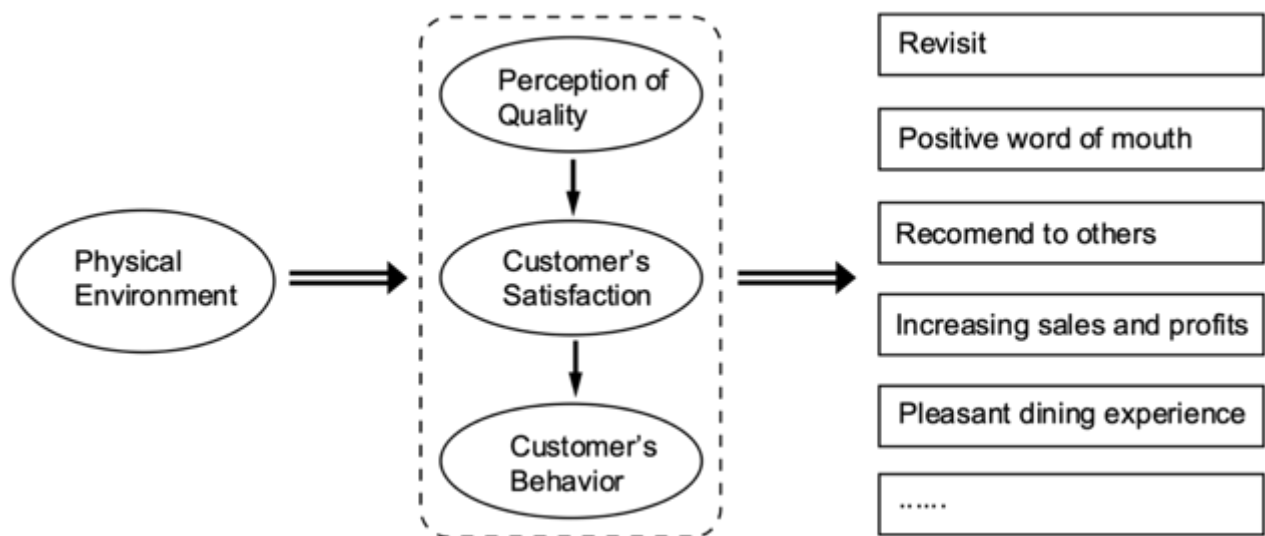


Figure 2.1.1.1 Factors Influenced by Physical Environment

### 2.1.2 Scales of Physical Environment

Research to date have proposed several dimensions of physical environment (not only for restaurant, but also for some other service industries). The most known one is SERVICESCAPE, proposed by Bitner in 1992. Many other scales related to physical environment occurred according to different focuses. Table 2.1.2.1 (Ryu & Jang, 2008) shows most of the scales' content,

terminology, and authors. In the following, the author will provide a detailed description of SERVICESCAPE and DINESCAPE, since SERVICESCAPE is the best known one and has been proposed firstly, therefore carrying a large influence, and DINESCAPE is focused on upscale restaurant and man-made interior dining areas.

<b>Authors</b>	<b>Terminology used</b>	<b>Dimensions</b>
Baker (1987)	Atmospherics	Ambient Factors Design Factors (aesthetics & functional) Social Factors
Bitner (1992)	SERVICESCAPE	Ambient Conditions Spatial Layout and Functionality Sign, Symbol and Artifacts
Baker, Grewal, &Parasuraman (1994)	Store Atmosphere	Ambient Factors Design Factors Social Factors
Berman & Evans (1995)	Atmospherics	External Variables General Interior Variables Layout and Design Variables Points of Purchase & Decoration Variables
Stevens, Knutson, & Patton (1995)	DINESERV	Reliability Responsiveness Empathy Assurance Tangibles
Wakefield & Blodgett(1996)	SERVICESCAPE	Layout Accessibility Facility Aesthetics Seating Comfort Electronic Equipment/Displays Facility Cleanliness
Wakefield & Blodgett(1999)	Tangible Service Factors	Building Design & Decor Equipment Ambience
Turley & Milliman(2000)	Atmospherics	External Variables General Interior Variables Layout and Design Variables Points of Purchase & Decoration Variables Human Variables
Raajpoot (2002)	TANGSERV	Ambient Factors Design Factors Product/Service Factors
Kisang & SooCheong(2008)	DINESCAPE	Facility Aesthetics Ambience Lighting Table Settings Layout Service Staff

Table 2.1.2.1 Scales related to physical environment (Ryu & Jang, 2008)

### **2.1.2.1 SERVICESCAPE**

In 1992, Bitner pointed out that the effect of atmosphere, or physical design and décor elements, on customers and workers is recognized by managers and mentioned in virtually all marketing, retailing, and organizational behavior texts. At the same time, she found that there is little research and few frameworks based on established research and theories that describe the significance and elements of the physical environment of consumption settings. Managers continually plan, build, change, and control an organization's physical surroundings, but frequently the impact of a specific design or design change on ultimate users of the facility is not fully understood (Bitner, 1992).

Also, Bitner (1992) stated that the factory (or the place where the service is produced) cannot be hidden and may in fact have a strong impact on customers' perceptions of the service experience, as described in previous section of this thesis. Consumers always look for cues of the firm's capability and quality before purchasing, and the physical environment is full of such cues. In the meantime, Bitner noticed that physical environment also influences the employees of the firm, based on earlier research of Baker, Berry and Parasuraman in 1988. Research in organizational behavior suggests that the physical setting can influence employee satisfaction, productivity, and motivation (e.g., Becker, 1981; Davis, 1984; Steele, 1986; Sundstrom & Altman, 1989). But in this thesis, the author won't talk about the influence of physical environment on employee; the project only focuses on the influence on customers.

The purpose of this thesis is to take a first step toward integrating theories and empirical findings from diverse disciplines into a framework that describes how the built environment (i.e., the manmade, physical surroundings as opposed to the natural or social environment), or what is referred to here as the "servicescape", affects both customers and employees in service

organizations (Bitner, 1992). Bitner first worked out a topology of service which can illustrate variables of form and usage of the SERVICESCAPE. And then she proposed a conceptual framework to illustrate the environment-user relationship of service organizations, which is well-known as SERVICESCAPE later on.

There is a complex mix of environmental elements that constitute the SERVICESCAPE; thus, the scale of the physical environment contains all objective physical factors which have been controlled by the service organizations to influence customer's and employee's feeling and actions. Based on reviews of diverse literature and research, Bitner concluded three dimensions of the physical environment: ambient conditions; spatial layout and functionality; and signs, symbols, and artifacts. The framework for understanding environment-user relationship in service organizations is shown in Figure 2.1.2.1.1 (Bitner, 1992). There are countless physical factors belonging to these three dimensions, such as color, temperature, wall paint and décor, ceiling design, finishing materials, furnishing style and so on.

- **Ambient conditions**

Ambient conditions influence the five senses of human beings, which include background characters of the physical environment, for instance, temperature, background music, noise, scent and so on. Sometimes these ambient factors may be imperceptible, and Bitner believed that employees who stay longer in the environment are the most influenced. For customers, these ambient factors became noticeable when they are extreme.

- **Spatial Layout and Functionality**

Spatial layout includes how the machinery, equipment and furnishings are arranged, size and shape of those items, and their spatial relationships. Functionality indicates to how well those items perform and reach goals. Bitner pointed out that spatial layout and functionality are salient

when the environment is in self-service settings, when the tasks are complex, and when employees and customers are under time pressure.

- **Signs, Symbols, and Artifacts**

The third dimension includes many items in the physical environment which provide implicit or explicit information to customers about the image of the service settings. It's about the first impression on most occasions. These items can help communicate new service concepts, repositioning a service, and differentiating the organization in highly competitive industries.

This framework proposed by Bitner is well-known and has been cited most often in other researches of scale of physical environment. Bitner encouraged scholars to consider other novel approaches to measuring responses of customers and employees. And indeed, there are many different scales of physical environment that have been proposed. Though many scales exist, their foci are different. Bitner's scale of physical environment provides a better understanding and the direction to research how factors of the environment affect customers and employees.

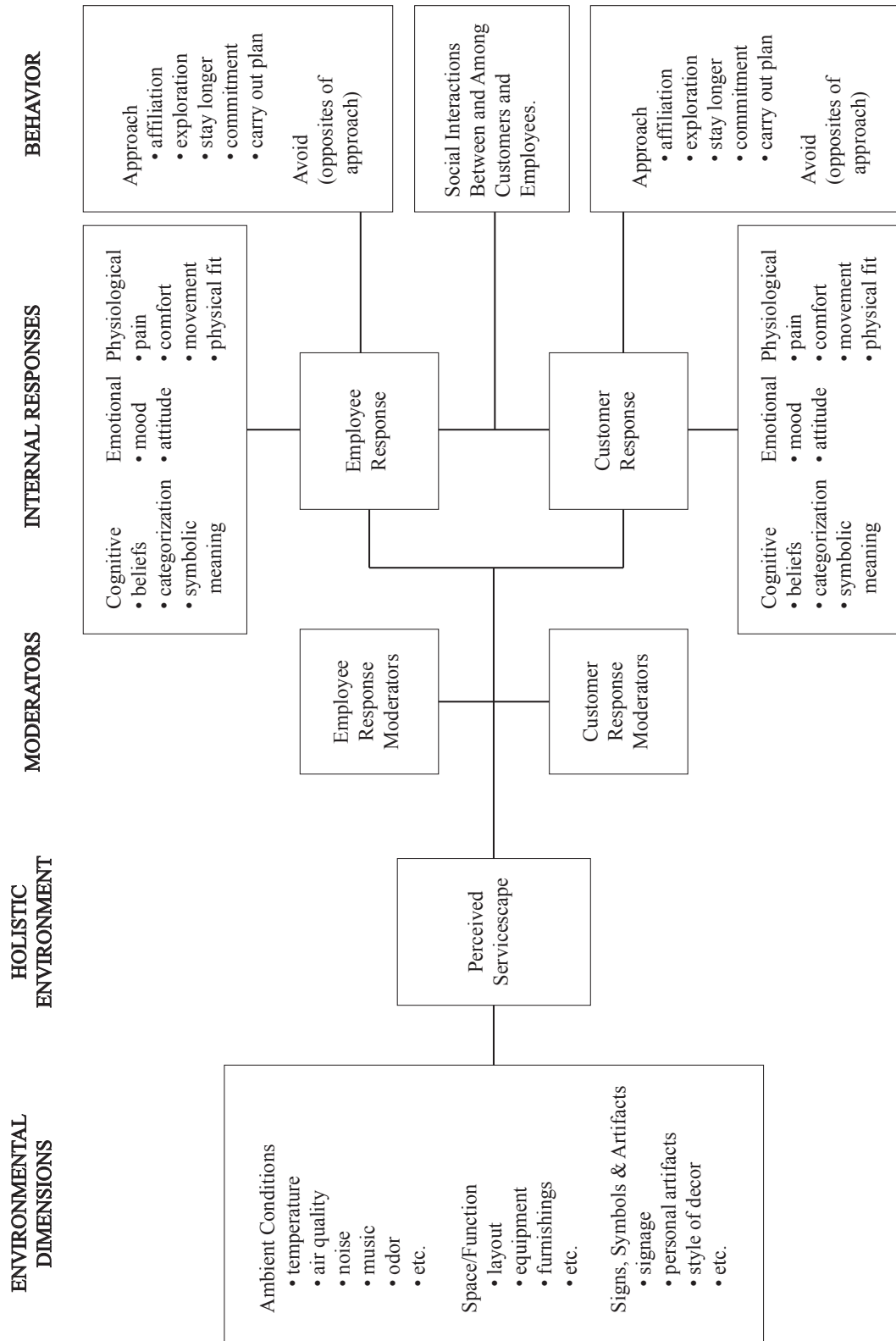


Figure 2.1.2.1.1 framework for understanding environment-user relationship in service organizations (Bitner, 1992)



### **2.1.2.2 DINESCAPE**

In the year of 2008, Ryu and Jang developed another concept called DINESCAPE by exploring the physical environment of upscale restaurants. They believe that a few different consumption characteristics lead to different levels of importance of the physical environment. There are two reasons why they feel the physical environment is important in an upscale restaurant. Firstly, if a service is designed for purpose of hedonic more than utilitarian consumption, the influence of the physical environment to customers' affective responses becomes pronounced (in the case of dining in an upscale restaurant). Hedonic consumption seeks pleasure or emotional fulfillment, as opposed to functional usefulness, from the service experience (Babin, Darden, & Griffin, 1994). Because of this hedonic nature, customers of upscale restaurants may be more sensitive to the aesthetic qualities of their surroundings (Wakefield & Blodgett, 1994). Secondly, how much time people spend in the physical environment affects the extent of how physical environment influences customers' perception of service. The physical environment may have limited impact on fast-service encounters, as for fast food restaurants (Wakefield & Blodgett, 1996). Customers pay more attention on the time it takes to have their meal. Therefore, since customers spend a longer time in experiencing upscale restaurant's surroundings, the importance of physical environment is more obvious.

Though SERVICESCAPE has been proposed years ago, Ryu and Jang (2008) thought researchers didn't prove the validity and reliability of these concrete concepts. They felt like little has been done on how customers perceive the upscale restaurant environment. Thus, there was an urgent need, from the academic and practical perspectives, to develop a reliable and valid scale to measure the physical environment in the restaurant setting. Therefore, they developed a scale of

customer perception of the physical environment in the restaurant, especially in the upscale restaurant, to fill the research gaps.

DINESCAPE is similar to SERVICESCAPE in that they are both used to describe characteristics of physical environment. But DINESCAPE focuses on the upscale restaurant environment and is restricted to only inside dining areas. Conceptually, DINESCAPE is defined as the man-made physical and human surroundings in the dining area of restaurants (Ryu & Jang, 2008). It doesn't deal with external environments (e.g., parking and external building design) and non-dining internal environments (e.g., restroom and waiting area) in attempt to provide more useful information exclusively for dining spaces (Ryu & Jang, 2008).

After a series of research and questionnaires, Ryu and Jang (2008) concluded that the dimension of DINESCAPE includes six elements, which are facility aesthetics, ambience lighting, table settings, layout, and service staff. Table 2.1.2.2.1 (Ryu & Jang, 2008) shows factors that are contained in each element of DINESCAPE, and these factors are defined below.

Facility aesthetic is result of architecture design, which includes interior design and décor, for example, paintings/pictures, wall décor, plants/flowers, color, furniture, and all elements that can help to create a whole aesthetic atmosphere. It took 16.06% of the total variance of DINESCAPE, which takes the largest percentage.

Ambience refers to intangible characteristics of the surrounding environment that tend to affect people's invisible senses (Baker, 1987). As shown in Table 2.1.2.2.1, it includes 4 parts: background music relaxes me, background music is pleasing, temperature is comfortable, and aroma is enticing. Background music, temperature and aroma are all intangible factors but indeed influence customer perception of the entire dining environment.

Lighting, as the third factor, decides the illumination of the dining environment, and also influence on people's feelings such as warmth, relaxation, and comfort. Ryu and Jang (2008) listed two reasons why they didn't conclude lighting into ambience factors. Firstly, if one dimension is particularly important to customers, it can be broken into sub-dimensions, according to Carman's (1990) claim. Secondly, lighting can influence other factors such as ambience/atmosphere and color (facility aesthetics).

Table settings, which are related to this thesis the most, refers to products that are used to serve customers. It contains three elements: tableware (e.g., elegant glass, silver cutlery, and well painted china), linen (e.g., table cloths and napkins), and overall table setting (e.g., attracting candles). It was worth noticing that table settings were delineated separately from facility aesthetics in customer perception of DINESCAPE (Ryu & Jang, 2008). This is distinctly different from earlier dimensions of physical environment. The main reason is that in an upscale restaurant, a prestigious image is important to customer perception, which leads to this difference. It can also prove that tableware design according to physical environment is important in restaurants that want to pay attention to these kinds of details and can afford high quality designed tableware.

Layout, the fifth factor of DINESCAPE, refers to seating arrangement of the dining environment. In their study, the factor contains "seating arrangement gives me enough space", "seating arrangement makes me feel crowded", and "layout makes it easy for me to move around". It relates to both physical and psychological properties in the dining area. And the author of DINESCAPE believed that layout should be understood as a separated factor from the others.

DINESCAPE factors (Reliability alpha)	Factor loadings	Eigen – values	Variance explained	Item means
<b>F1: Facility Aesthetics (.87)</b>		3.37	16.06	
Paintings/pictures are attractive.	.83			5.59
Wall décor is visually appealing.	.81			5.69
Plants/flowers make me feel happy.	.76			5.58
Colors used create a warm atmosphere.	.68			5.82
Furniture (e.g., dining table, chair) is of high quality.	.66			5.66
Grand mean				5.67
<b>F2: Ambience (.83)</b>		2.77	13.18	
Background music relaxes me.	.87			5.73
Background music is pleasing.	.85			5.63
Temperature is comfortable.	.67			5.81
Aroma is enticing.	.62			5.50
Grand mean				5.67
<b>F3: Lighting (.92)</b>		2.56	12.19	
Lighting creates a warm atmosphere.	.85			5.76
Lighting makes me feel welcome.	.83			5.91
Lighting creates a comfortable atmosphere.	.82			5.94
Grand mean				5.87
<b>F4: Table Settings (.85)</b>		2.43	11.55	
Tableware (e.g., glass, china, silverware) is of high quality.	.83			5.76
The linens (e.g., table cloths, napkin) are attractive.	.82			5.73
The table setting is visually attractive.	.77			5.71
Grand mean				5.73
<b>F5: Layout (.86)</b>		2.35	11.20	
Seating arrangement gives me enough space.	.86			5.80
Seating arrangement makes me feel crowded.	.83			5.59
Layout makes it easy for me to move around.	.76			5.69
Grand mean				5.69
<b>F6: Service Staff (.80)</b>		2.18	10.36	
Attractive employees make me feel good.	.87			5.87
An adequate number of employees makes me feel cared for.	.80			5.98
Employees are neat and well dressed.	.71			6.18
Grand mean				6.01
Total Variance	74.55%			

Table 2.1.2.2.1 Exploratory factor analysis for DINESCAPE factors (Ryu & Jang, 2008)

Service staff, the last factor, is closely related with social environment. In their study, it only concerns employees of the restaurant, not including other customers. Service staff contains three elements: attractive employees, adequate number of employees, and neat and well-dressed employees.

### **2.1.2 Food and Culture**

Food is inevitable when talking about tableware design. We use tableware to serve and eat food. Especially for service industries like restaurant or café, the size, shape, quality, material, finish and even the pattern of a plate matters to both customers and food providers. It's one of the factors that will influence customers' impression of their dining experience. For some kinds of food, it's better to serve on a kind of tableware that can keep its temperature for better taste and eating experience. For example, tofu stew in Korean restaurant is always served in a hot stone bowl, which keeps the temperature longer than normal bowls. The tofu stew actually will keep boiling in the hot stone bowl for several seconds. Ice-cream has been incorporated in dessert for a long time. In some high-level restaurants, if you order a dessert that has ice-cream in it, the chef will serve it on a cold plate, which will keep the ice-cream in shape longer. Though it is indeed a small detail, tableware actually significantly influences customer perception of quality of the restaurant and how well the chef can control food quality.

No one can say food and culture are independent for sure. When people mention where they traveled before, food is part of experiencing the local culture of the place they traveled to. When we go to a new city or town, local food may in fact belong to one of the most representative things that we should not miss. And even more, some cities are famous for their special type of food or the way local people cook the food. For example, Inner Mongolia (a province in north

China) is famous for grassland and lamb. Lamb cuisines are delicious, and people cannot say they have gone to Inner Mongolia without tasting it. The way Inner Mongolians cook lamb is different from people from other provinces of China. They use a lot of ginger and numb pepper instead of putting many other seasonings, to keep the lamb's original flavor. Also lamb in Inner Mongolia tastes different from lamb from other places even if cooked in the same way.

In sum, food is one of the representatives of culture, and culture affects food. They have intimate relationship and influence on each other for many years. As Conran said in 1990, "Table manners and table objects say a lot about us – the cultures to which we belong, the economic systems to which we adhere and our sense of our own style and status" (p. 6). When we design tableware according to the physical environment, we can see a lot of culture elements belonging to that type of food which we need to consider. Also, the eating habit/culture of the restaurant location needs to be considered if there is a lot of difference in tableware.

## **2.2 Tableware**

Drinking and eating is one of the most essential things people do every day to keep alive. We need vessels to hold food and drink. And the vessels are what we call tableware. We use a set of tableware each day several times and it can influence us considerably.

### **2.2.1 Definition of Tableware**

Dishes, glassware, and eating implements that are used to help serve and eat food are called tableware. It contains three main categories: plateware, glassware, and flatware. Some research includes some other items used for decorative purposes. This thesis won't talk about the design of these items since they are not a necessary part of tableware even though they can be included in tabletop settings; and they may use different materials than the three main categories of tableware.

- **Plateware** refers to the dishes used to serve food and hot beverage (Katsigris & Thomas, 1999), for example, bowls, plates, soup cups, and saucers. The material could be porcelain, stoneware, vitrified glass, glass, stainless steel, plastic, and wood.
- **Glassware** refers to containers used for serving water and beverages. Different shapes or sizes of glassware have different names, including tumblers, stemware, mugs, or footed glasses. In institutional or very casual settings, these are often made of plastic instead of glass; in more expensive eateries, they may be made of crystal (Katsigris & Thomas, 1999).
- **Flatware** refers to forks, knives, spoons, chopsticks, in all different sizes and shapes. The material could be wood, stainless steel, plastic, and even true silver.

### 2.2.2 Why Tableware is Important

As the pace of our life gets faster and faster, people choose to eat out more and more than before. At the same time, dining together becomes a fundamental social activity not only among young people, but also among elder coworkers and families. Therefore, food service has expanded largely in recent years, and many creative and modern restaurants have been born all around the world to meet the requirements and desires of the society nowadays. Therefore, there will be further need or even customized need for tableware, not only on quantities, but also on design.

For instance, as we know, avocado has become more and more popular in the United States and many other countries in the world. It is rich in several B vitamins and K vitamin, and has good content of vitamin C, vitamin E, and potassium. It also contains phytosterols and carotenoids, such as lutein and zeaxanthin. Avocado is a good source of saturated fat, which is a good fat that people should obtain from food for health. A group of smart people figured out a good business opportunity and started avocado restaurants which only serve avocado dishes. Avocaderia is

representative of this kind of restaurants. It located in Brooklyn, New York, and uses 3,000 pounds of avocado a month. Avocaderia get packed quickly after open each day (Montag, 2018). Figure 2.2.2.1 shows some avocado dishes provided in Avocaderia.

When you put every effort into something, you must want it to be presented perfectly. The same goes for people who cook food. That makes it needed for those in the restaurant and hospitality industries to provide quality, suitable, and good-looking tableware for their guests. Chefs have put great deal of time and effort into their dishes, so serving their dishes on carefully picked or creatively designed tableware can help highlight the food and make the dish and tableware become one. As Katsigris and Thomas said in 1999, “As restaurant owners and chefs try to gain an edge in a fiercely competitive industry, more of them are developing “signature” dishes and serving them on distinctive plateware to add more panache to the presentation” (p. 435). We can tell from Figure 2.2.2.1 that food provided by Avocaderia looks differently than normal burgers, sandwiches or toast. And being put on attractive plateware makes them look even better. Plates shown in Figure 2.2.2.1 are different from normal white plates. They have a vertical rim instead of the rim on most-seen plates. One of the plates even has been painted with bright colors which is similar with the color tone of the sandwich on it. All these features of these plates add color to the food. It’s like if the chef is an artist, and food is their painting, then tableware is like the canvas. It helps to present the painting and to deliver what the artist wants to express better.





Figure 2.2.2.1 Avocado Dishes Provided by Avocaderia (Retrieved from <https://www.instagram.com/avocaderia/?hl=en>)

Success of a foodservice establishment relies on a large range of factors. Site selection, entire atmosphere, space allocation, interior design, management, staff performance, furniture comfort degree, and even menu design count, not to speak of tableware. Some people think tableware is just a vessel for food. But it can be seen as part of the décor of the restaurant. The plates, glasses, and silverware also help display foods and beverages to the best advantage. This display function is just as important to a restaurant as the artfully decorated display windows of a department store; it adds to the ambience and attractiveness of the place. The dinner plate and its accessories are the focal points of the entire tabletop, contributing to the décor of the eatery and helping to deliver the promise of a first-rate meal (Katsigris & Thomas, 1999). Tableware, together with other dining accessories – such as tablecloths, napkins and condiment containers - constitute

a whole view of the tabletop. They decorate the tabletop and should provide an aesthetic visual effect. And this visual effect should match the one provided by the physical environment to reach aesthetic harmony. That means, to design tableware and decorate tabletops along with the physical environment is necessary to create an unbroken ambience and atmosphere.

Tableware can also be thought of as having a point-of-sale function. It reinforces the theme or concept, as well as any advertising or promotion, and it tailors diners' expectations of what's to come. In fact, the "right" plateware can actually build sales by up to 25 percent, without any other operational change. It is capable of adding color and drama to the dining experience (Katsigris & Thomas, 1999). Though tableware seems to be such a tiny part of the entire restaurant environment, it relates to the success of a foodservice firm. For instance, it relates to customer quality perception, the entire sales, the display of food and also the integrated atmosphere.

When customers sit down in front of the table, what they mostly spend time and interact with is the 24-inch space directly in front of them. As Katsigris and Thomas (1999) depicted in their book, "Anything you can do to make that space more visually appealing will go a long way toward enhancing the dining experience" (p. 434). That means, to choose and buy interesting and attracting tableware is obligatory and necessary. And for those who have already paid a lot attention to the interior design, logo design, food preparation and major idea expression, appealing tableware shouldn't be neglected. Tableware tells us something, not only about itself – how to use and how it looks, but also the owner of it – the attitude, value, style and hardwork of the restaurant. Therefore, visual languages of tableware and the physical environment should provide customers same quality perception, esthetic experience and value statement.

In sum, tableware can help display chef's "artwork". With suitable and attractive plateware, customers can enjoy the food and understand the hardwork behind it better. As part of the tabletop,

tableware is part of the decoration in the restaurant, and can provide customers confidence of a first-rate meal and service. Not only can it improve the charm of a foodservice firm, the right tableware can improve sales without any other operations. Therefore, choosing tableware designed according to the physical environment can help build the atmosphere of the restaurant, attracting customers and induce positive behaviors, transfer the statement of the chef or the owner and add more chance of success.

### **2.2.3 Tableware Design**

Tableware design includes several aspects. This thesis will go through basic categories of tableware: shape, color, material, texture, pattern, repetition, and balance.

#### **2.2.3.1 Shape**

The shape of tableware is one of the most important aspects of semantic communication of tableware. The shape of a product is the exterior expression of its inside essence. It includes outside shape of the product and shape languages which affect user's emotions (Zhao, 2009). The outside shape is about ratios of length, width and height of a product, which is physical, substantial and rigid. Shape language, also known as morphological language, influences feelings and emotions of human beings, which is spiritual, cultural, soft and alive. Shape is the perfect combination of these two aspects. Therefore, to unite shape and function concordantly cannot be neglected when doing tableware design.

The function of tableware is not limited to dining tools but can be a carrier of emotional communication. Shape language is a reflection of information of the tableware itself, such as grade, quality and fashion. Furthermore, with proper use of shape of tableware, designers are able to

evoke user's specific emotions and past experiences, and even to express designers' emotions through tableware.

Shapes of modern tableware can be classified into three categories based on its shape characters: geometric shape, bionic shape and organic shape (Zhao, 2009).

- Geometric shape: It means tableware has a shape of inerratic geometric shapes, such as circle, square, rectangle, polygon and so on. It has features of simplicity, compactness and ease of use.
- Bionic shape: It means shape of tableware mimics other objects, such as a butterfly, petal, shell and plant leaf. Tableware of this category meets the aesthetic requirements of different groups of customers. These interesting, delicate, unconventional shaped tableware improve the aroma and atmosphere of people's dining experience.
- Organic shape: It means shapes follow organic, natural and spontaneous shapes, such as a wave shape and streamlined shape. These kinds of tableware are unique, stylish, and modern.

### **2.2.3.2 Color**

Color is key to the understanding of our world. We experience, interact and understand our specific environment through color (Gutsch, 2011). It is an essential and important factor of our life and we use it as a way of expression from an early age. Colors have been assigned meanings and connections which can be used to design products to reach goals. It can evoke different kinds of feelings such as happiness, sadness, relaxation, excitement, attraction and even danger. The meaning and function of products can be communicated, emphasized or hidden only with the use of color (Gutsch, 2011). For instance, the design of a fire extinguisher is always coordinated with

the color red. It arouses people’s attention when they see it and tells them to use it when there is danger. Baby showers in the United States are familiar. When the majority color of decorations is pink, it’s obvious that it’s a baby girl coming; and if the majority color is blue, everyone knows it’s a boy.

The understanding of color though, is different from civilization to civilization and from one culture to another (Gutsch, 2011). The meanings we assign to colors depend on our culture, so use of them must be carefully considered. Itten argues that the expression of color is both subjective and objective depending on the context (Sunde, 2017). Red color in China always makes people think of happy events like weddings and Chinese lunar new year. It promotes a happy, joyful and get-together emotion which leads to happiness. But people from other country won’t have the same feeling if they see the same products or are in the same environment with red. Therefore, designers need to be aware of this and use color properly based on target user’s background and culture. Table 2.2.3.2.1 (Gutsch, 2011) shows some color associations in the western context.

white	clean, quiet
black	powerful, heavy
red	intimate
green	Natural, unrefined
blue	Reliable, trust
purple	elegant
yellow	happiness

Table 2.2.3.2.1 Some Color Association in The Western Context (Gutsch, 2011)

Color also has a dimensional aspect; it will change hue or shade according to the shape or texture it is applied to. In this way color can be used to accentuate or negate the shape of an object. Colors also change characteristics by combination with other colors. Complementary colors intensify each other and may appear darkened or lightened depending on combinations (Sunde, 2017). That means, the same color applied on smooth ceramic and on rough stoneware leads to different perception of shape. Thus, color application should be made under thoroughly consideration depending on what kind of material and texture the product is.

Color of tableware also matters. Since color can arouse different feelings of people, it also affects their feelings when they eat. As Merly Rothstein wrote in 2012:

We've already told you that the color of the foods on your plate matters. Turns out that the color of your actual plate matters, too - at least when it comes to how much you eat. A recent study showed that people served themselves more food if there was little color contrast between the food and the plate it was served on (Think "white on rice", or vice-versa.).

This statement indicates that the color of a plate influences how much food people will eat, which means it will influence sales of a foodservice firm indirectly. Other than that, color has effects on people's other feelings. For example, white porcelain plates with an Indigo blue pattern evoke people's feeling of elegance and delicacy. Some plateware for kids with bright colors and interesting patterns attract them to fall in love with eating. Stoneware with light lake blue or earth brown arouse people's emotion of natural, inartificial and pure. Examples are shown in Figure 2.2.3.2.1.



Figure 2.2.3.2.1 Examples of Tableware (Retrieved from <https://www.instagram.com/porcelanaschmidt/>, <https://www.instagram.com/badaboum.eghezee.belgium/> & <https://www.instagram.com/mettreatable/>)

Tableware with colors are more interesting and attractive. But why white plateware still takes majority of the market? Amy Wax (2018) lists five reasons that may helpful: they go with everything; they make food look great; mixing and matching dishes is oh-so-easy; they are season neutral; they can never go out of fashion. These five reasons showed that white tableware is better choice to match your food and other stuff on your tabletop. Therefore, for tableware of foodservice firms, to keep the items clean and simple will never go wrong.

Huiying Zhao said in 2009, in order to promote people's appetite and to improve dining atmosphere and physical environment, color design of tableware should be harmonious with product's characters, function and decoration style; and the emotional connections of color should be emphasized at the same time. And she stated later in her article that color design of tableware shouldn't focus on shape and shape design. The place of using tableware is an environment in which the color of tableware should not be independent of the color tone of the using environment.

That means, for foodservice firms, it is necessary to design tableware harmoniously with the physical environment; not only color design, but also the entire design of tableware.

In summary, colors on tableware impact emotional feelings of human beings. But it needs to be fully considered when applying color to tableware because people with different backgrounds and cultures have different feelings of the same color perception. It is necessary to know target users when designing tableware. Also, the right color contrast on tableware and food and proper color combination can promote people's appetite. A designer should try to keep the color of tableware simple and neat so that it won't distract from the food it serves, and the right color also makes people eat more. At the same time, color design of tableware should be united with the dining physical environment to improve dining experience and decorate the environment.

### **2.2.3.3 Material**

From the moment people started to use utensils to serve food, the material of these utensils experienced several generations and has been significantly developed. Plant leaves, wood, bamboo, shell, animal bones, and even silver and gold have been used to make utensils. Nowadays we won't see tableware made of these materials very much because some of them are too precious, some of them are easy to break and not durable, and some of them are difficult to clean and keep sanitary. Therefore, some types of material become obsolete, and so some types of material have taken the majority of the tableware market as technology developed, since they are easy to manufacture, durable, affordable, and easy to clean and store. Table 2.2.3.3.1 (Han, 2017) lists the mostly used materials for tableware at present, and their advantages and disadvantages for use. And Table 2.2.3.3.2 (Han, 2017) shows the features of these material when used to manufacture tableware.



<b>Material</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Porcelain &amp; China</b>	Durable; Non-porous; Delicately constructed; Easily sculpted; Crisp, exquisite and glossy texture; Upscale appearance; makes life elegant; Heat and Corrosion resistance; High Hardness; Easy to clean	Very fragile; Not portable; Some colorful decoration may contain heavy metals
<b>Stoneware &amp; Earthenware</b>	Usually cheap; Easily sculpted; Heat and Corrosion resistance; Variety of textures: Shiny, satin, matte; Durable; Stoneware easy to clean	Very fragile; Heavy; Can not sustain in sudden or extreme temperature change; Earthenware is often porous
<b>Glass</b>	Usually extremely clear; Transparent; Glossy; Corrosion resistance; Easy to clean;	Not easy to shape due to heat forming; Extremely fragile; May go mouldy (chemical reactions $\text{Na}_2\text{SiO}_3$ , $\text{H}_2\text{O}$ and $\text{CO}_2$ may result in white precipitates) (Howse & Rawson, 1971)
<b>Vitrified glass</b>	Extremely durable; Non-porous; Usually light; Appears like porcelain, but very indestructible; Easily colored; Easy to clean; Corrosion resistance	Not easy to sculpt; Not as glossy as fine china; May melt or explode if microwaved
<b>Plastic</b>	Usually lightweight; Mechanical toughness; Melamine is easy to be colored; Acid and alkali resistance	Weak thermal stability; Not easy to clean; Usually monotonously shaped (Stamping molding); Cheap feel (High-volume product)
<b>Wood &amp; Bamboo</b>	All natural environmentally friendly; Beautiful natural texture; High value of art and collection; Some are exquisitely carved	Easily susceptible to microbial contamination; Some are painted during production, which is unhealthy; Not durable
<b>Stainless steel</b>	Metal corrosion resistance; Extreme mechanical strength; Durable; Variety of shapes; High temperature resistance	Cold feel of metal; Not stable in strong acid and alkali; Can not contain salt, soy sauce nor vinegar for a long time

Table 2.2.3.3.1 Advantages and Disadvantages of Tableware Materials (Han, 2017)

<b>Material</b>	<b>Design inspiration Features</b>	<b>Manufacture Complexity</b>
<b>Porcelain &amp; China</b>	Shiny; Crisp exquisite and glossy texture; Upscale appearance; Makes life elegant	Easily sculpted; Three ways to be colored
<b>Stoneware &amp; Earthenware</b>	Various textures: Shiny, satin, matte porous and opaque; Usually thick and rustic appearance	Easily sculpted; Stoneware is glazed earthenware; Stoneware is more colorful than earthenware
<b>Glass</b>	Usually extremely clear; Transparent; Glossy; Grand glass is opaque	Modeling in a real high temperature; Usually used for drinking
<b>Vitrified glass</b>	Usually opaque; Glossy, shiny and appears like porcelain	Easily to color; Not easily sculpted
<b>Plastic</b>	Melamine is glossy; Polypropylene is a somewhat transparent	Usually monotonously shaped (injection molding); Cheap feeling (High-volume product); Easily colored
<b>Wood &amp; Bamboo</b>	Beautiful natural texture; High value of art and collection	Could be exquisitely carved; Suitable for making chopsticks, spoons, and other small items
<b>Stainless steel</b>	Metallic luster	Good material for forks and knives

Table 2.2.3.3.2 Material Features of Manufacture (Han, 2017)

The material for most plateware is ceramic, which is made of baked clay. The clay will go through a high-temperature process called vitrification and be glazed to protect it from moisture and food stains.

Materials for flatware are generally silver-plate or stainless steel. But for heavy use in restaurants, silver is not suitable for it is not hard enough and it can be scratched and bent easily. Stainless steel is a good choice and when adding different alloy elements, cutlery will present in different colors and hardness. It's a good choice for designers since it meets the requirements of both durability and decoration. Different materials can be put together to add interesting features and to elicit expected feelings.

#### **2.2.3.4 Texture**

Texture of tableware depends on what kind of material it is made of and the finishing steps of its manufacture process. Ceramic tableware has a smooth and fine texture, expressing a delicate and costly feeling. Stoneware without glaze gives a rough texture. But with fine glaze, it creates a much smoother tactile feeling. Users can feel the wood texture on some wooden tableware and that truly elicit emotions of nature and relaxation.

There are several texture methods: embossing, impressing, painting, hollow and so on. Most glass products have a tactile feeling of smoothness and silkiness. With different methods of decoration, it could have some embossed parts or impressed parts that give a different texture.

Thus, it can be seen that texture of a tableware is decided by three factors: material that has been used, texture method that has been applied, and finishing step that has been put on. It is better for designers to fully understand the relationship of material and texture, and also ways of decoration and processes of manufacture.

### 2.2.3.5 Pattern

Decorative design is the surface enrichment of structural design. The decorative design of tableware is called “pattern” (Gatchell, 1943). As Zhao stated in 2009, “ Pattern, as one of the mostly used and important elements of decoration, provides multiple possibilities to express theme, style, emotion and culture through modern tableware design” (p. 119). Patterns on tableware could be geometric, floral, animated and other kinds. Geometric patterns use abstract points, lines and shapes as a design language to transmit a clean, simple, relaxing and modern view. Floral patterns express flower designs realistically or abstractly, providing feelings of warmth, sweetness, fanciness, elegance or luxuriousness. Other than these three categories, there are more kinds of pattern that are used on tableware, such as the logo of a foodservice firm.

There are mainly four formats of putting patterns on tableware:

- *Edging decoration*: It means there will be inerratic, band shaped and continuous patterns on the rim of the tableware, promoting visual effects of clean, simple, and sometimes elegant.
- *Full decoration*: It means that patterns have been put on the entire surface of tableware according to a regular composition. Although the surface is full of patterns, it is not random and out-of-order. It has a strong ornamental feature and always provides a noble and luxurious feeling.
- *Partial decoration*: It is an important choice for modern tableware decoration. It only puts patterns on part of the surface, or only use points and lines on a partial surface of the tableware. Partial decoration gives strong contrast of density and spacing, leading users to develop their imagination and making them want to explore more. Views of modern, simple or clean are expressed visually.

- *Combined decoration:* It combines full decoration and partial decoration at the same time. Usually it's symmetrical, displaying a decent, elegant, luxuriant and costly feeling.

Choosing the pattern and patterning carefully and innovatively will add lots of fun and attractive elements on the tableware. Figure 2.2.3.5.1 shows examples of edging decoration, full decoration, partial decoration, and combined decoration.



Figure 2.2.3.5.1 Examples of edging decoration, full decoration, partial decoration, and combined decoration of tableware pattern (Retrieved from pinterest.com)

### 2.2.3.6 Balance and Repetition

Balance, the essential component of any design work, is the equal distribution of visual weight (Anwar, Abidin & Hassan, 2015). Generalized balance is about whether the color, shape, size, proportion, decal, repetition of a product assembles properly and decently. In a narrow sense, balance is about how an element distributes on a product. There are three types of balance: symmetric, asymmetric and radial balance (Arnheim, 1956). These three balance methods are used largely and widely on tableware design. See Figure 2.2.3.6.1 for examples.

Repetition is one of the techniques to approach balance in tableware design. In tableware design, repeating a single object is a common method to enhance the aesthetic value” (Arnheim, 1956). According to this, repetition is a method not only to highlight the element which has been repeated to express semantic meanings, but also help to reach the goal of balance. It may be a type of pattern or just colored dots.



Figure 2.2.3.6.1 Examples of Balance of Tableware (Retrieved from [instagram.com](https://www.instagram.com))

## **2.3 Brand Identity**

### **2.3.1 What is Brand Identity**

Karjalainen stated in 2003, that “ The metaphorical use of the notion of “identity” in the corporate contexts suggests that, similarly to human beings, also companies can be described through specific characteristics. This “character” gives meaning to the company and its artefacts by evoking specific associations that are attached to the corporate brand name”. That means, brand identity is a series of characters that are applied on product design, which can express, represent and explain the brand of a company, and communicate with customers.

### **2.3.2 Why is it important**

In developed product categories where technical differences between products are diminishing, the focus is shifting towards communicative product qualities that represent the symbolic domain of the product (Karjalainen, 2003). These communicative product qualities are associated with some specific messages usually, and these specific messages refer to the brand that the product represents. In contemporary marketplace, it is important and competitive to evoke connections and associations through multiple methods of communication with customers. And to build a brand successfully is one of those communicative methods.

Developing and maintaining a consistent brand statement is an important aspect of developing a successful product (McCormack, Cagan, & Vogel, 2004). This means that recognition and identification of specific brand identity references in product design, in other words, brand-specific design language, is an issue of high relevance for companies that either live or die through the volume of their product sales (Karjalainen, 2003). Tiffany is a successful luxury

jewelry and specialty retailer which is famous worldwide, headquartered in New York City. Many gentlemen choose Tiffany's rings to propose to their lovers. And many girls want to own one piece of jewelry of Tiffany to show a good aesthetic taste and their identities. Products of Tiffany have a set of obviously consistent brand languages to be recognized easily, thus stand out from products of the same category.

There are three main features that strongly connect with brand Tiffany. The first one is the blue color, known as Tiffany blue, which is the most evident brand language. In western tales, the bird named robin is the symbol of romance and happiness – Jack shall have Jill, all will be well. That's the reason why the founder of Tiffany chose the color of robin eggs to be the brand color to express "love". And the color is also called forget-me-not blue. Nowadays, Tiffany blue is so famous that people connect with the brand Tiffany the moment they see this blue color. Figure 2.3.2.1 shows the robin blue eggs. The second one is the Tiffany® Setting (Figure 2.3.2.2), which is how workman inlay the diamond. This inlay method was created by Charles Tiffany in 1886, using six claws to hold the diamond tightly, which raise the diamond upon the ring circle and best show the pretty and shininess of the diamond. Since its so famous, if people type in diamond ring in Chinese in an iPhone, there will be a six-claw inlayed light blue diamond ring show up. This is the best demonstration of how Tiffany® Setting influences people's understanding of diamond rings and how popular Tiffany is. The third one (Figure 2.3.2.3) is the blue gift box of Tiffany. It's one of the most discernable and popular packages in the world – a quadrate Tiffany-blue box that is wrapped with a white satin ribbon, embossed with Tiffany & Co. on top, whose blue-coated paper material is produced by Pantone specifically for the company. People even put non-Tiffany gifts in to the Tiffany Blue Box® to improve the grade of the gifts. It can only be received when purchasing a Tiffany product and is unable to be bought in store or online.





Figure 2.3.2.1 Robin Blue Eggs (Leonard, 2017)



Figure 2.3.2.2 Tiffany® Setting (Flight, 2017)



Figure 2.3.2.3 Tiffany Blue Box® (Klara, 2014)

For a company, to embody correct messages – that support strategic brand identity – into design elements is thus an essential matter (Karjalainen, 2003). The example of the success of Tiffany proves that. Tiffany successfully built its brand identities and maintains these identities through their product portfolio. Therefore, products of Tiffany are easy to recognize and became popular world-wide. It is essential and important for companies to define brand identity to stay in consistent interaction with customers, which can be seen as competitive associations – the basis of a company's competitive advantage. For customers, brands generate choice, simplify purchase decisions, offer quality assurance, and reduce risks involved in purchase (Kathman, 2002). That large numbers of people choose to buy Tiffany products is because not only are products of Tiffany

are appealing to people, but also the brand – Tiffany – provides high quality insurance for every product which is bought from them. Therefore, to build and maintain consistent brand identity is an essential aspect for both companies and customers and result in a win-win consequence.

In contemporary decades, food is not the only product of a foodservice company. Service is also part of its product, which including staff service, dining environment and the atmosphere created by its physical environment. As the first impression when enter in a restaurant, it is the physical environment that interacts with customers to express and represent the company's statement, features and quality, which is the company's brand identity. Therefore, to have constant interaction with customers through objects in the physical environment is important and is one of the methods to help build a company's brand identity.

### **2.3.3 How to Build and Express Brand Identity**

An important quality of a strong brand is the presence of a clear, well-defined brand identity. The brand identity is the set of desired associations with the brand that strategists working with the brand wish to establish and maintain (McCormack, Cagan, & Vogel, 2004). The brand identity uses the physical qualities of the product as well as the company's mission statement, corporate identity, customer experience, and the perceived success of the company by others to represent what the brand stands for (Cagan & Vogel, 2002). According to above statements, brand identity is built, expressed, and represented through product design. Product functions into practical functions and product language functions (Karjalainen, 2003), as shown in Table 2.3.3.1. This thesis mainly focuses on the communicative product functions, which is listed under interactive functions. Identification of a brand is the consequent mission of product's semantic functions.

Brand message are built into product design elements to communicate with customers and that's the semantic product function.

<b>FUNCTION CLASS</b>	<b>FUNCTION TYPE</b>			<b>Descriptive words</b>
<b>Technical functions</b> (internal product functions)	<b>Operative</b>	<b>Primary</b>	<i>Transforming</i>	Transform Transmit Rotate
		<b>Secondary</b>	<i>Communication Interface Power Control Protection</i>	Regulate Convert Supply
	<b>Structural</b>			Connect Support Restrain
<b>Interactive functions</b> (human-product interaction)	<b>Ergonomic</b>			Protect Enable Facilitate Fit/suit
	<b>Communicative</b>	<b>Semantic</b>		Express Describe Identify Exhort
		<b>Syntactic</b>		Refer Connect Unite Discern Balance

Table 2.3.3.1 Product functions (Karjalainen, 2003)

Products functions as manifestations of brand identity by evoking certain associations that, in an ideal situation, are aligned to strategically define message of the brand (Karjalainen, 2003). It requires knowledge of the product for designers who want to transmit defined brand messages. Semantic product functions should be used to achieve the goal of brand message transmission. Figure 2.3.3.1 shows a general framework for analysis semantic profile of a product. These semantic product functions connect to physical product characters directly. Product characters give qualitative descriptions to a product. These characters are design elements whose function is to express particular meanings when being linked to a brand. Semantic product features have

symbolic function that are physical manifestations of its brand. And by having these semantic functions a product can realize identification of its brand.

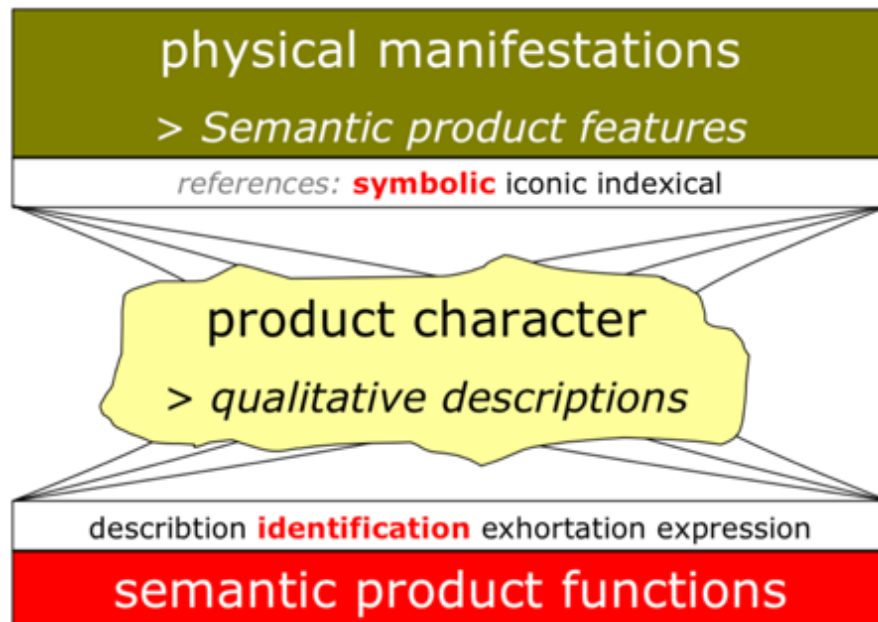


Figure 2.3.3.1 Framework for Analyzing Product Semantic Profile (Karjalainen, 2003)

It is essential to recognize and define the actual product qualities that may have high semantic relevance in terms of specific brand associations (Karjalainen, 2003). Different product qualities – such as dimensions, features, and characters – are often expressed by adjectival construction (Krippendorff, 1989). People may say that a table looks modern, stable, and durable. These are the characters given by design elements of this table. Descriptive characters can be manifested directly or indirectly by physical manifestations of a product, such as color, shape and material. Hence, to recognize those certain elements that are typical for the brand is important, so that these elements can be used in other products of the brand to build and maintain a set of clear clues that identify the brand.

Some of the tangible attributes that are specific to a brand may be explicitly defined (Karjalainen, 2003). What is obvious that there is a tendency to own a set of corporate colors for

companies as a crucial brand activity and to stress brand identity. Coca Cola uses red as brand color, Facebook uses blue, FedEx uses purple and orange, and UPS uses brown and yellow. What is worth to mention that the express delivery trucks of UPS are painted in the same brown and yellow, which is easy to recognize even several meters away. That's a good use of explicit design element of a brand. In terms of industrial design, interest may be focused on recognizing and creating so-called "traceable", explicit design elements (Karjalainen, 2003). Interpretations of the design elements are always subjective, which require them to have strong and clear connection to brand identity. That means, it is important to provide customers with consistent and related rules so that the elements can be interpreted into intentional associations. Brown and yellow on a truck could mean multiple things or have multiple meanings, but on a UPS truck they will be interpreted as an identification of this particular brand.

In terms of knowledge explication, it is important to try to identify the central attributes and characters of the brand's products. These are product aspects that the customers supposedly link to the brand. Regarding product design, the analysis of identity domain involves physical design elements ("design cues") together with qualitative descriptions of the brands "design language" in terms of brand history and heritage (Karjalainen, 2003). These elements may be identified among various 'stylistic attributes', such as form elements, joining relationships, detail treatments, materials, color treatments and textures (Chen & Owen, 1997).

There appear to be different methods to analyse products and product families in reactive manner (to find and define brand-specific cues) or in proactive manner (to create brand-specific design language). By performing such an analysis, a list of brand-specific references (and perhaps their relative weights) may be formed (Karjalainen, 2003). In other words, in order to find what kind of brand cues have been used among the product family, a list of design elements of the

product family should be made, and their relative weight should be calculated to find out the mostly used ones, which might be the constant product language leading to brand manifestation and identification. With the creation of a constant product language for a brand, it stresses the attention on the entire product portfolio of that brand. The intention of numerous companies (not of everyone though) is to create and maintain harmonious portfolios including products with notable “family resemblance” (Karjalainen, 2003). For instance, Tiffany created the Tiffany® Setting and later on many of their diamonds were inlaid on the rings using this six-claw inlaid method, and by doing this Tiffany developed a harmonious portfolio of diamond rings.

Nonetheless, brand-specific design language cannot be wholly or explicitly reduced to specific (traceable) elements; there also exists non-traceable characteristics in terms of company’s design culture and brand heritage (Karjalainen, 2003). Meanings relevant to products are sometimes implicit. We may say that in practice one product looks like a product of a certain brand, and it indeed is of that brand. But we may not be able to explain in an explicit manner what makes it look like to be of that brand. It is a sub-conscious feeling that tells us so. These are the semantic product functions that transmit the brand message.

The relationship between physical design elements and their qualitative descriptions (and brand identity attributes) may be conceptualized through semantic analysis (Karjalainen, 2003). Figure 2.3.3.2 shows the triadic structure according to the Peircean view, which is applied to a Volvo case. It shows a relationship among the representamen (embedded in design element), the object (of reference, brand identity), and the interpretant (users or customers). The design of the backlight and boot of this Volvo car can be seen as an index or a symbol, which represents safety in the case of Volvo, and customers get interpretation of safety under the Volvo context. In other

words, non-traceable characters might be interpreted into correct associations within the context of the specific brand.

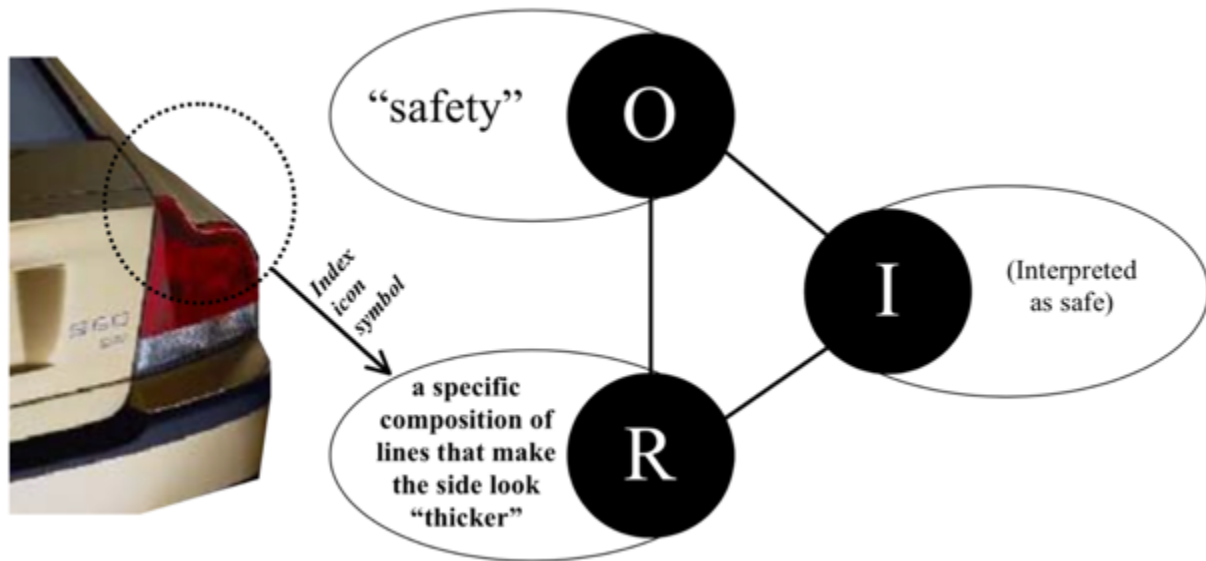


Figure 2.3.3.2 Triadic structure of Semantic References (Karjalainen, 2003)

Regarding tangible design elements and their interpretation, there appear various reference relations that are rather stable, even universal, as being either inherent to human nature or culturally established "codes". While symbolic signs (non-traceable elements) get their strongest meanings predominantly within the target group of the product (or the brand), they may be arbitrary or even meaningless outside the target group (Karjalainen, 2003). Groups with different culture backgrounds may understand the same object differently. For example, people from China have strong emotional feelings when they see red, since it means celebration, family reunion, fortune and happiness. And even a color named "China red" was created to express the strong relevance. But red in some African countries is related to death. As Karjalainen stated in 2003, "On the symbolic level, a brand with a strong and consistent set of associations may over time even become an entity that is most resistant to different value perceptions in different cultures". Janlert and Stolterman also said in 1998 that, characteristic refers to a coherent set of characteristics and



attributes that apply to appearance and behavior alike, cutting across different functions, situations and value systems. Therefore, with application of constant brand-specific design elements, semantic references would be perceived correctly within the target group of a brand instead of being interpreted differently due to various backgrounds.

In order to understand and identify brand-specific design elements, designers need to collaborate with others, like marketing and engineering. Designers need to research and study about the brand products thoroughly, and other members, such as managers, should support designers by sharing desired brand statement, communicating about the brand culture or history, and working together towards how to relate design with the brand. Engineers, or workers who are responsible to manufacture products, must express production constraints, and designers need to come up with a product concept containing brand-specific elements that can express and communicate with customers through intentional associations, as the result of teamwork.

In sum, to develop and maintain a constant brand statement is important to the success of a product or a company. Brand statement, the same as brand identity, can be physical manifested through brand-specific design elements of a set of products of a company. In addition to technique function of a product, communication function can be realized by semantic product function. Brand language can be found on product' characters directly or indirectly, which are called traceable elements and non-traceable elements. In order to identify and analyse how products express and manifest a brand identity, a list of brand-specific references should be formed and also their relative weights need to be calculated to find out which design elements are central attributes having high relevance in terms of specific brand associations. When traceable elements are not obvious, the triadic structure could be used to identify which product characters enable customers to make intentional associations with the brand. Teamwork is needed if necessary, to

get fully understand of the brand identity. And different situations, cultures and backgrounds can be largely disregarded if customers are being provided with strong and consistent brand-specific brand languages (product characters) within a particular context, so that they may perceive and interpret the brand identity correctly.

#### **2.3.4 Signature Elements of VBL**

Brand identity is usually expressed through visual brand language, which is VBL for short. Ansett said in 2010 that, global ‘Branding’ is the homogenization of brand visual language that people have seen occurring in brand identity design. That means, visual brand language can be used as a design method to distinguish a company from its competitors and build a strong and lasting impression in the minds of customers. And signature elements are the translation of VBL through several design toolkits. As the articulations of design principles (Tian, 2017), they include all brand-specific design elements such as color, shape, material, as well as logo. Since products can be divided into tangibles and intangibles (goods and service), a structure of design principles is formed, shown in Figure 2.3.4.1. It will help designers to identify brand-specific design elements clearly.

In Tian’s research, she mentioned that visual brand languages are more like design symbols or guides that may not show on every product. It is a principle that ensures products of one brand to have the ability to express same brand identity. In other words, designers still have certain amount of freedom to apply and modify these signature elements in their designs, based on some manufacturing restrictions for example.

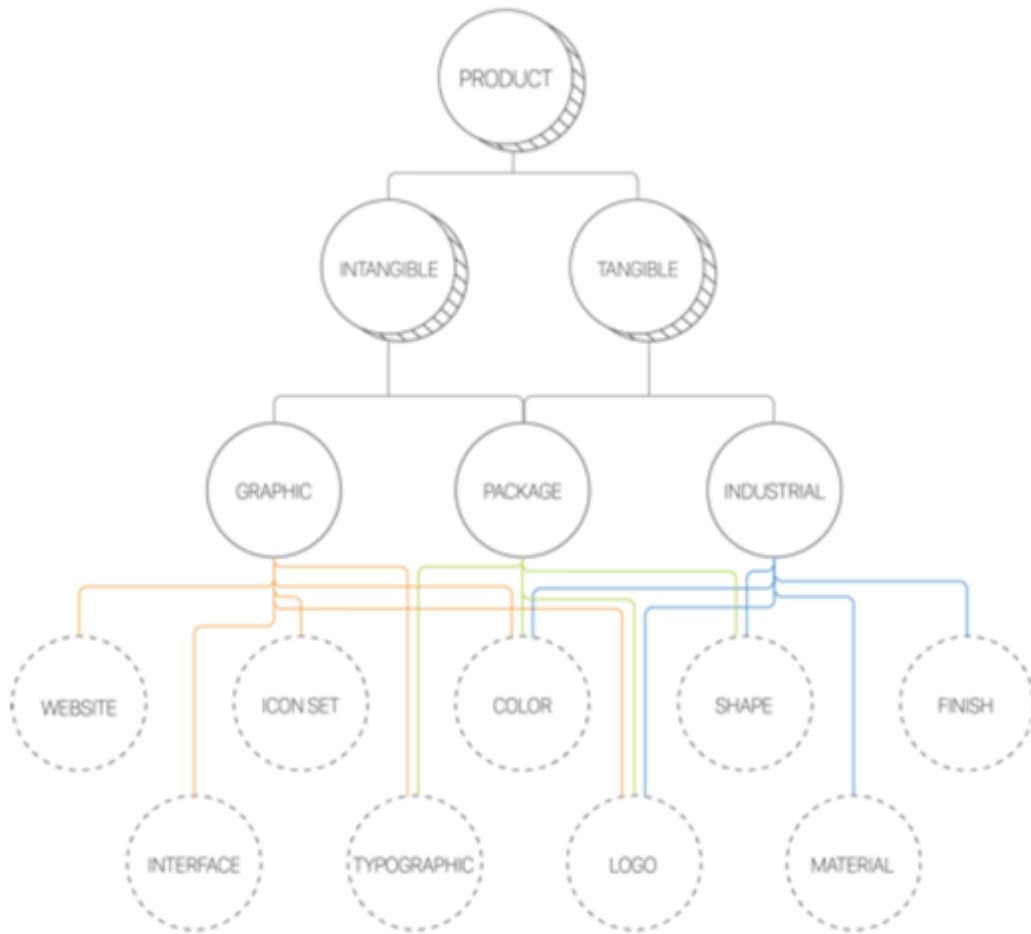


Figure 2.3.4.1 VBL Signature Elements (Tian, 2017)

## Chapter 3 Case Study

In order to show availability and adaptability that brand identity is important to the success of a foodservice company and should be expressed and represented through products of this company – food and service (mainly focusing on physical environment), two case studies will be conducted here.

### 3.1 EL&N Café

With the full speed development and spread of information, social media is one of the most effective ways to learn about the world. People love to share what they do and what happens in a day. It is easy to find an interesting place to hang out with friends and a popular place to eat and relax. EL&N in London is one of these places that is famous and popular on Instagram and thousands of people want to be there, enjoy the food and drink, and take pictures to show that they are following the trend.

*The Handbook*, an online press of UK, described this café in the article “The Most Instagrammable Restaurants in London” on 18<sup>th</sup> March 2019. The writer said, “Élan - it means style, flair and exuberance. It also means smashing it on your socials, because Élan Café (rebranded as EL&N) is arguably the most Instagrammable place in town, perhaps due to its insatiable flower and love heart walls. Élan started out on Park Lane and quickly became the influencers’ hangout of choice thanks to more pink than you’ll find in Elton John’s walk-in wardrobe. Seriously. The walls: pink, the floors: pink, the ceiling, yep, slime green. Only kidding. They’re pink too. And they quickly took over spots in Selfridges, Oxford Street, The Knightsbridge Estate and, as of February, Belgravia” (Hulme, 2019).

*Evening Standard*, the No. 1 magazine for international visitors for 60 years, reported on EL&N’s expansion on August 10, 2018. It said, “Popular London spot the Elan Café, which is

known for its wall of flowers, is expanding...Its current Park Lane cafe is well known amongst Instagrammers and social influencers alike and draws the crowds with its dainty decor and food. As per the original cafe, there's no doubt the new sites will retain the ever-so-pink aesthetic and will feature floral walls and pastel decor. While they are remaining tight-lipped on the details, expect picturesque pastries as well as popular brunch dishes” (Thomson, 2018).

Not only did these two presses report about EL&N, many other websites and magazines published articles about this distinctive and fast expanding café. They all mentioned EL&N cafes’ attractive interior design characteristics and how popular they are. EL&N has 307k followers on Instagram, and there is no better way to describe the image of EL&N’s Instagram page other than a sea of pink. The most outstanding features of this café is the extensive applications of pink colors and similar colored flowers in its dining environment. But just because of its unusual, elegant, and well-designed interior environment, EL&N can expand in such a marvelous speed that it has already opened in six spots in no more than three years. And on their menu, you can see a sentence says that “Please note that the maximum stay is 45 minutes”, which proves that how popular and busy they are that even the time to stay needs to be limited.

On EL&N’s website, it introduces its story as a journey:

“EL&N is Eat, Live & Nourish.

At EL&N, we have a taste for the very best. We create coffee with passion and temerity and food that is elegant and modern. We have an unswerving dedication to producing exceptional fare.

Founded in August 2017 by Alexandra Miller, EL&N opened the doors to its first branch located right in the heart of Mayfair, Park Lane. Fast forward 17 months, numerous new site openings and a fresh new re-branding, EL&N London has become one of the most

Instagrammed destinations in the city with our iconic flower walls, pink interiors and alternative lattes taking social media by storm.

Her story has taken her from Miami to Jamaica to the Middle East to London – she is a fervent proponent of healthful eating and living, and the concept she has created for EL&N embodies these passions. Alexandra’s background is in fashion and her meticulous attention to detail shines through in the beautiful styling of all EL&N’s food and coffee offerings. Creativity and well-being are where her heart lies and now she brings this lifelong focus to EL&N along side her dedicated team of creatives and industry experts.”

(Our Journey, n.d.)

The major slogan of EL&N is “Eat, live and nourish”. According to the above descriptions, it is easy to find characters of its brand identity of is elegant and modern - since they are passionate and dedicated to providing customers with dainty food and unusual, creative, elegant, modern, and bold physical environment design. Their coffee beans are from South America, and they only use freshest ingredients to make stunning Mediterranean-inspired dishes. Not only is creative and stunning food what they want customers to have, but also a fantastic journey in the unique and stunning interior.

Meanwhile, EL&N created a lot of slogans to embody its brand identity, for example, “Eat, live and nourish”, “Coffee and friends, the perfect blends”, “Adventure awaits but first, coffee...”, “I love you a Latte”, “All you need is love and coffee”, “You’re the sweetest”, “Coffee is the new black...”. Although EL&N continually emphasize their efforts on the drink and food, especially on coffee, what attracts people’s attention most is the unique, distinctive, unusual, stunning, attractive, and bold design of the dining environment.

### 3.1.1 Design Elements of the Physical Environment of EL&N

Let’s take a glimpse of EL&N’s distinctive physical environment, shown in Figure 3.1.1.1. It is obvious that pink has been used a lot on the factors of its physical environment, more than other foodservice companies. Instead of only one kind of pink, their interior designers also use some other colors like different shades of pink/purple, ivory-white, gray, blue, and green. Actually, it is interesting that some purple and gray colors used in the physical environment of EL&N are similar to some colors in the shades of pink, shows in Table 3.1.1.1.

Shades of Pink						
Amaranth pink	Baker-Miller pink	Blush	Brilliant rose	Brink pink	Carnation pink	Cherise
Deep pink	Fairy Tale	French rose	Fuchsia	Heliotrope	Hollywood cherise	Hot magenta
Magenta	Mexican pink	Mimi Pink	Misty rose	Mountbatten pink	Orchid pink	Pale Dogwood
Puce	Raspberry	Red-violet	Rose	Rose pink	Rose quartz	Salmon pink
Cherry blossom pink	Coral pink	Cyclamen	Hot pink	Lavender blush	Lavender pink	Persian rose
Phlox	Pink	Seashell	Shocking pink	Tea Rose	Thulian pink	Ultra pink

Table 3.1.1.1 Shade of Pink (“Category: Shades of Pink”)

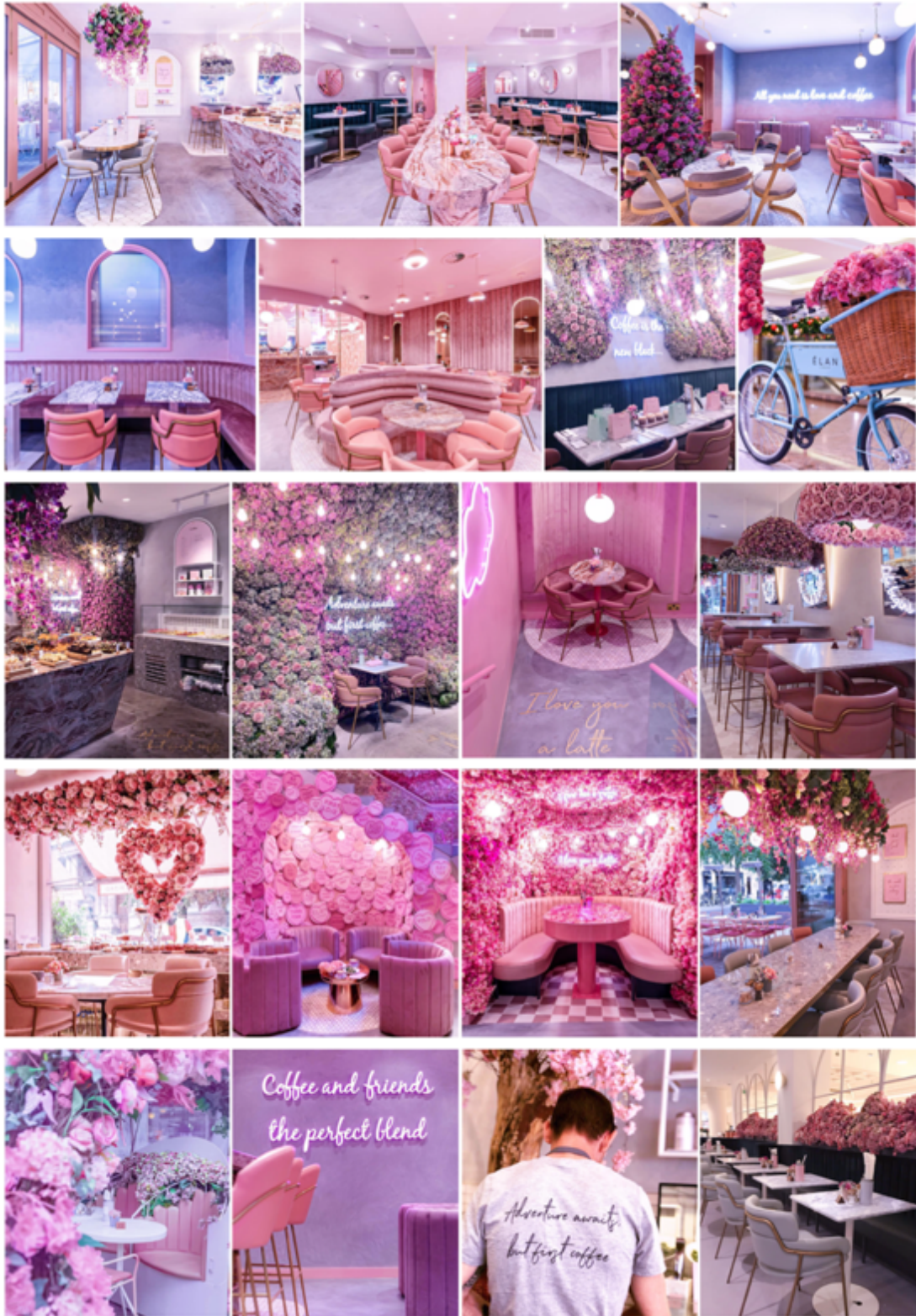


Figure 3.1.1.1 Physical Environment of EL&N (source from Instagram of Elan:

[https://www.instagram.com/elan\\_cafe/](https://www.instagram.com/elan_cafe/))



Logo



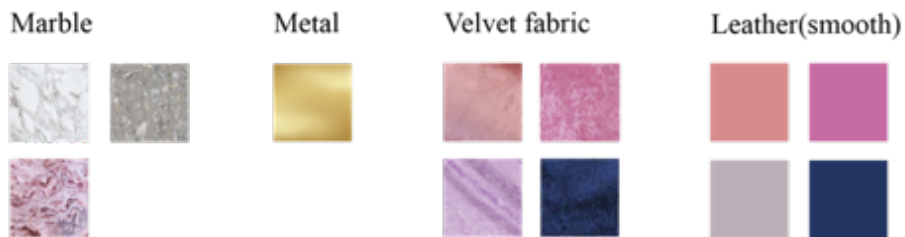
Some of EL&N's logo are in gray color, some are in gold color, both with pink background. And in some cases, the logo is on a round board (like some hanging logo in stores).

Color



The classic color is the logo background color, and basic ones are logo word colors. Color options are some examples that will be noticed in some degree in the physical environment other than the logo pink/gray/gold.

Material  
Finish



Paint



Shape

Circle & Curves



Most of the shape in EL&N's physical environment are round or curved, like ball-shape lights, round tabletop, curves on leather chairs/sofa/booth, curves of some booth layout, etc.

Table 3.1.1.2 Signature Elements of EL&N's Physical Environment

Table 3.1.1.2 shows signature elements abstracted and concluded from the physical environment of EL&N according to the categories classified by Tian's design principles of VBL signature elements. She classified the tangible products' signature elements into five categories for industrial design as logo, color, shape, material, and finish, in accordance to identify the brand. Therefore, Table 3.1.1.2 was formed with the same five categories. According to the pictures of EL&N's physical environment, the design elements of these five categories are classified into different groups due to how many times one element is used in the physical environment, how much area one element takes, and how remarkable or attractive one element is. The method of how to pick a design element as a signature one is inspired by how Han's and Zhao's abstract design inspirations from a folktale or a novel (Han, 2017; Zhao, 2011). They concluded and analyzed the frequency of each element, picking the highest frequency ones as design inspirations for their final product designs.

EL&N has strong brand identity, and its brand identity was built and manifest through not only drinks and food, but also the design of its physical environment. The logo of EL&N is written in a dark gray with pink as background color. In some cases, like the Facebook of EL&N, some hanging logos in physical stores, and the menus of EL&N, the logo is written in a gold-yellow color with same pink background, as shown in Table 3.1.1.2. Hence, the classic color is the logo pink, which has been used in large area and many times. The basic colors are the logo gray and gold, which also been used a lot like gray leather chairs, gray marble tabletops, etc.

Other than these three colors, different shades of pink, purple, blue, white, gray, and green are used in different proportions to support its elegant and modern brand identity, so that the entire color mood of the physical environment won't be monotone and boring, and become more balanced at the same time. And the choice of the color pallet is not at random in that these colors

and their combination delivers same brand identity. Large number of flowers are used as decoration in EL&N's physical environment, and the colors of the flowers are similar with colors shown in Table 3.1.1.2.

Materials selected in Table 3.1.2 are typical, that all of them have the ability to present products in an elegant and modern way that express the owner's attitude towards EL&N's food and service – dedicated, passionate, and elaborative. Marble is the main material of tabletops and countertops, and the colors of the texture of these marbles are gray and pink, which are of the signature colors. Gold colored metals can be found on almost every chair and booth (Although metal appears on many products, it only takes a small proportion of these product. It was listed in Table 3.1.1.2 to show how the design of EL&N's physical environment use constant brand-specific design elements to express brand identity, since gold is one of the logo colors). Velvet fabric is typical to express identity of luxury and elegance, and it's on the trend of fashion. Fabric chairs and booths use different color of velvet fabric, and these colors are all in the signature color pallet. Leather is a material that seems never out of fashion, and it can express modern quality well. Other than velvet fabric chair and booth, the rest chair, sofa and booth use leather materials of some signature colors. Finish is always connected with applied material. The finish of these materials is smooth and satin. Paint is the major finish method in EL&N cafe. And the colors of paints are all signature ones.

In the physical environment of EL&N, as shown in Figure 3.1.1.1, many round and curve shapes exist, for instance, ball-shape lights, round hanging logo boards, round mirrors, round tabletops, semi-circle sole sofas, curved-back chairs, as well as curved-lined layout. Round and curved lines or shapes deliver feelings that are warm, welcome, as well as elegant and modern.

All these selected signature elements represent and express the brand identity quite well and produce an atmosphere of elegance, modernism and captivate.

### **3.1.2 Tableware Design of EL&N**

Some of EL&N's tableware and food are shown in Figure 3.1.2.1. All of these pictures were taken with the background of the physical environment of EL&N café, and we can find that these tableware and food look harmonious without discordance. It's a subconscious feeling of "match" when looking at these pictures. And what leads to the "match" is that the tableware and even food and drinks represent the same identity with the physical environment. Signature colors of EL&N's physical environment are applied on its tableware, and even can be found on drinks and food. Though round shape is common for tableware, the design of EL&N's tableware incorporates round shape in almost every piece to match the signature shape element. The original material of its tableware is clay, which can be easily shaped and painted. EL&N designed or chose simple round plates, glasses and cups, and these pieces of tableware are painted in signature colors with the same smooth and satin finishing glaze. Signature material elements are not applied to its tableware because of manufacturing constraints, but other signature elements were used as many as possible to create harmonious atmosphere, which result in constant brand identity built.

All these details above show that the tableware of EL&N possess consistent EL&N-specific design elements with other products in EL&N's physical environment, expressing and manifesting the brand identity of EL&N successfully. In other words, the tableware of EL&N is designed or chosen correctly and meaningfully. It doesn't mean that the success of EL&N is only because of the harmonious and brand-expressed tableware and physical environment, but it is still one of the crucial factors that contribute to the success of a foodservice company.



Figure 3.1.2.1 Food and Tableware of EL&N (source from Instagram of Elan:

[https://www.instagram.com/elan\\_cafe/](https://www.instagram.com/elan_cafe/))

Also, tableware used in EL&N are not in only one type – same color, same size, same shape, same pattern, and same material. There are three reasons why foodservice companies keep their tableware diverse. Firstly, if all the table wares are the same, it will be so boring and monotone for customers, especially in a dining environment which has been designed thoughtfully. Secondly, since most of the foodservice companies provide more than one kind of food, differently designed tableware should be used so that each dish has its own specific “canvas” to become a better one (one unity combines food and tableware perfectly). As restaurant owners try to gain an edge in a fiercely competitive industry, more of them are developing “signature” dishes and serving them on distinctive plateware to add more panache to the presentation (Katsigris & Thomas, 1999). For example, a chef would prefer to put a colorful dish on a white plateware, so that the plateware won’t rob the focal point, which should be the food. But even the white plateware could be distinctive by making it with pretty stone texture and more weight so that users won’t think it as a cheap one. Furthermore, there are some special needs of some food which require special-made tableware, like temperature. Korean tofu stew is always served in a hot stone pot to keep boiling, because not only the taste is good when the stew is hot, but also reflects the eating habits of Korean people. Some fresh seafood or ice-cream desserts needs to be kept cool for freshness, better mouthfeel, and in shape. Without the normal way of putting them on ice in a tableware, placing these kinds of dishes on cold tableware is more interesting and giving customers a feeling of high-level and better quality. Therefore, it is reasonable, meaningful, and necessary to have various tableware in one foodservice company.

In sum, EL&N café London, as a foodservice company, built its brand identity successfully through great drinks and food, and more distinctive, the brand-specific design of every factor of its physical environment. It doesn’t mean that to stand out of the market, each foodservice

company must to design their physical environment differently and unusually, or one must have an obvious and special brand identity. The key is to create a harmonious unity, including food and service, to express uniform company statement. This case study also shows that to build brand identity, the design of each factor of the physical environment needs to be considered carefully and brand-specific design elements should be applied constantly and often as many as possible to become a whole (within consideration of manufacture constraints). And the method which is used to figure out the signature elements (same as brand-specific design elements) is proved to be feasible and appropriate since signature elements in Table 3.1.1.2 can be found in the design of EL&N's tableware indeed.

### **3.2 Noma**

Noma, serving Nordic cuisine, is located in Copenhagen, Denmark.

“Noma had it all: four-time winner of the title of World’s Best Restaurant, two Michelin stars, a destination for diners from around the world, fame, acclaim. And then chef Rene Redzepi shut it down last February” (Vines, 2018), an article on Bloomberg that was written by Richard Vines, the chief food critic of Bloomberg (a website Connecting decision makers to a dynamic network of information, people and ideas, Bloomberg quickly and accurately delivers business and financial information, news and insight around the world), said. Noma actually moved to a new site and was already reopened in 2018. Vines (2018) said that before the new site was open, reservations for the first 10 weeks were sold out in hours in November 2017. Although dining in Noma will cost more than 300 dollars per person, it is so popular that even a seat is hard to book. Vines (2018) also stated that, “If you think Noma’s popularity is exaggerated, there was a self-reported waiting list of 27,000 when Redzepi opened a 10-week pop-up version in Sydney in 2016. That was dwarfed only by the 62,000-strong list in Tokyo a year earlier”.

What makes Noma so popular is that they provide customers with creative cuisines using farm-to-table ingredients, and also awarded interior design which creates a cosy, natural, and relaxed atmosphere. Here are some rewards Noma has won: Wallpaper Design Award 2019 for “Best Restaurant”, “Best Gastronomy” in 2018 by AOK Byens Bedste, 2019 Institute Honor Awards for Interior Architecture, etc. These awards prove again that to be successful in the fiercely competitive foodservice industry, both food and the design of the physical environment need to be considered and designed great (could be creative, natural, dainty, attractive, distinctive, stunning, unusual...), and in the meantime, to express the same established statement (brand identity).

Although Noma doesn't have an announced brand identity, but it is shown clearly and obviously through what atmosphere Noma creates, how its physical environment has been designed, what furnishings and decorations they chose, how they source ingredients for the cuisines, how these ingredients are cooked and presented, and what kind of tableware they use. All these factors symbolize and express a statement of naturalness, simpleness, creativeness, and coziness.

Here is some visual evidence. Figure 3.2.1 shows pictures of the interior environment of Noma. And Figure 3.2.2 shows pictures of some food and tableware of Noma. Most of the materials used in the physical environment are natural without too much treatment and ornament: Naked brick walls, wooden support structure, stone, brick and wood floors, wood work area and tables, wooden chairs with hemptwist back and leather seat, and clay lampshades. Even the wallpaper is wood patterned. The ambience includes lot of natural lights coming through many big French windows and skylights. Customers can enjoy warm sunlight, blue sky, beautiful natural views, and maybe the moon and stars at night, which are outside the restaurant, even though they



are sitting inside. Green plants can be seen in many places in Noma. All these factors contribute to manifest the company statement and that is what Noma want to express to customers.

Meanwhile, Noma expresses its idea through the creative cuisines. They plant vegetables and food ingredients are farm-to-table. With the reopening of Noma early this year, they changed the way they work with seasons and divided one year into three: seafood season from January 9 to June 1, vegetable season from June 25 to September 21, and game and forrest season from October 15 to December 21. The menu will change dramatically to match the type of ingredients that are at their peak at any given time of the year (Noma Menu, n.d.).

Chef Redzepi tries to cook and present food in its original shape and color, in company with many creative and interesting ideas. And just because they use the freshest ingredients in their seasons, color, taste and texture of the ingredients are in perfect conditions, which allows Redzepi to cook them in a more original way. The first dish in the left in the second row in Figure 3.2.2 looks like bryophyte, and actually it indeed is. It is fried Reindeer moss with sour milk aged for three days, which is not common on our table. The second left picture of the last row of Figure 3.2.2 is not a pot of flowers; it's actually a rose scented cake with fresh herbs and the right picture shows the inside of the cake after being cut in the middle. Rose flower petals are also used to improve the appearance and taste of a dish.



Figure 3.2.1 Physical Environment of Noma

(retrieved from <https://big.dk/#projects-noma> and <https://www.instagram.com/nomacph/>)

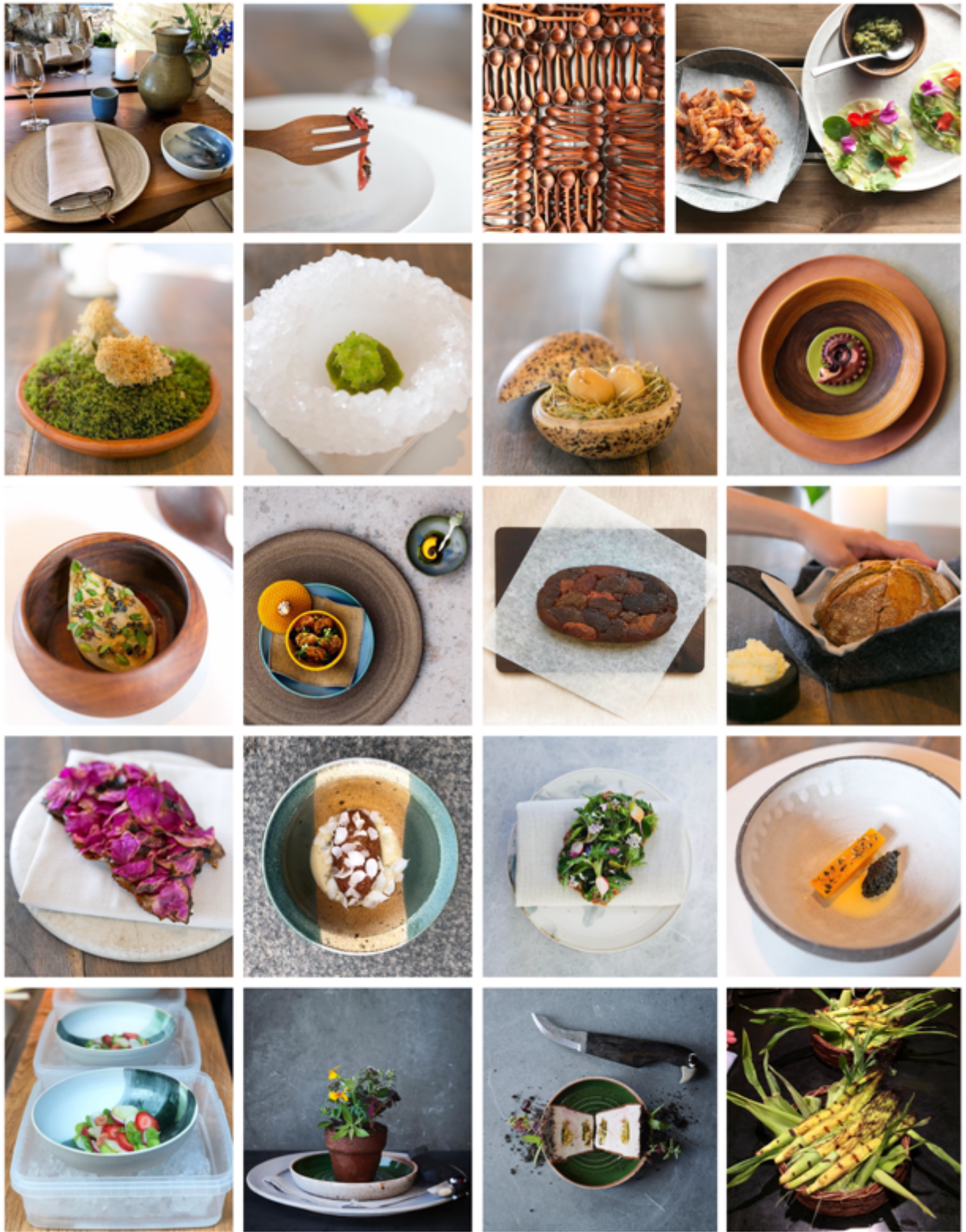


Figure 3.2.2 Food and Tableware of Noma (retrieved from <https://www.instagram.com/nomacph/tagged/>)

Tableware used in Noma is distinctive and interesting. They are in many different colors, shapes, materials, and textures. Though many of them don't contain directly constant design elements with designs of other factors of the physical environment, they express the same idea through semantic product function. Materials like wood and clay symbolize naturalness. The finish of these ceramic tableware is so simple which shows the original clay; therefore it symbolizes simpleness as well as naturalness, like the last one in the second row, and the second and last one in the fourth row, from left to right in Figure 3.2.2. In the same figure, the tableware shown in the right end of the last row is made with straws, serving grilled baby corns. The quail eggs are served in a man-made quail egg shell. And an ice bowl is used to keep freshness and best temperature of taste. Some tableware are natural marble pieces, and some are made of stone pieces. Some of the cutlery is wood, and the container of bread is made of felt. These design ideas and aspects of these tableware might mean differently in other occasions, but they all symbolize naturalness, simpleness and creativeness in this specific using context.

The table setting at Noma usually contains plates, cups, napkin, wine glasses, a candle, and a vase with floral ornament. A detail picture is shown in Figure 3.2.3. As is shown that the entire table setting has the same style with the physical environment of Noma, which is full of physical manifestations of the brand identity of Noma. Candles are used to generate original and romantic feelings with soft-glow candlelight, which is always used in fine dining restaurants to keep privacy and help relax customers. The simple designed vase, which has similar color with the table, together with dry floral ornament, expresses simpleness and naturalness. Mugs are made of clay with a simple cylinder shape and simple finish method. Colors of the mugs are different, but both belong to the color pallet of Noma's physical environment design. Napkins are made of light warm gray burlap – gray is a color of delicateness and burlap symbolize simpleness and naturalness. The

plate is handmade speckled ceramic dinnerware, and it looks like that it was made of natural stoneware clay. The color of this plate is similar to the wallpaper and the table; the speckles, and random and indistinct circle pattern build an identity of naturalness and simpleness, the same with other objects in the physical environment. The reason to discuss the tableware of the table setting specifically is because Noma includes them in their table setting, which is part of the fixed members (fixed factors of the physical environment) that interact with customers during their entire dining time. And more times, they are of high-level importance since well-designed table settings could raise customers' expectations of coming dishes; and brand-expressed table setting makes it easier for customers to catch and understand the brand identity of the restaurant. The plate included in the table setting of Noma contains direct and obvious brand-specific design elements: the color and material. It means that though tableware of a foodservice company is diverse, the ones including in the table setting should contain more direct brand-specific design elements, since they belong to the fixed members of the physical environment and communicate with customers more directly and longer.



Figure 3.2.3 Table Setting at Noma

(retrieved from <https://www.instagram.com/nomacph/tagged/>)

### 3.3 Conclusion

As is shown in both of these two cases studies, EL&N and Noma keeps their tableware various, in aspects of materials, shape, color, texture, pattern and size, to present various dishes in a better way. Even though they are different, the tableware still conveys the main idea of these two foodservice companies pertinently.

The difference between EL&N and Noma is that the former one has a “pretty loud” brand identity and many constant brand-specific design elements can be obviously found between tableware and its physical environment. There is no slogan or company vision that can be seen on Noma’s website or other introductions, but, the main idea, or statement of chef Redzepi, can be found easily through the semantic meanings symbolized by the quality and appearance of its cuisines, design of its physical environment, and the aim and the way Noma serve their customers. That is Noma’s straightforward unspoken brand identity, and it is indeed expressed and manifested by both the physical environment and the tableware, which were designed with design elements that contain constant brand-specific semantic meanings.

In sum, for a foodservice company, no matter if its brand identity is spoken or unspoken, to design its physical environment in a brand-expressed way with constant brand-specific design elements is one of the most important factors of success. As an important part of a physical environment, it is crucial and necessary to design tableware with consistent brand-specific design elements, which lead to the same brand identity communication directly with customers. When there exist some limits like funds and manufacture, constant brand-specific semantic meanings should be delivered by tableware design. But tableware belongs to the table setting should contains direct brand-specific design elements no matter other ones express the brand identity through direct design elements or semantic meanings.

## Chapter 4 Design Guideline

### 4.1 Brand Identity of a Foodservice Company

In foodservice industry, food is the main product of the company. In earlier years, foodservice industry focused more on food itself, because people were seeking to fulfill their physiological needs. As the material basis of our society develops, people are asking more for further psychological needs. The market of catering grows at a full speed, with various kinds of foodservice companies providing customers with all kinds of choices. As the industry develops, to live and to stand out in the industry is crucial for a foodservice company to succeed. Managers and owners become aware that, instead of food alone, service is the second major product, or equally important product, that needs to be taken much account of. Therefore, learning from successful establishments (not only in the foodservice industry), more and more foodservice establishments notice that the importance of having their own style, company culture, or even brand, is one of the key factors to be distinctive, attractive, and successful in this huge and fast-growing industrial market, along with high quality food and service. Thus, brand identity is important to make customers more impressed, remember the establishment well and become more willing to recommend it to others.

As was stated in previous chapters, to develop and maintain a constant brand statement is important for the success of a product or a company; the same is true of foodservice companies. Thus, food and service are the products that need to manifest the company's brand identity physically. Food is the core of a foodservice place and is part of the essence of the "brand"<sup>1</sup>.

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<sup>1</sup> The reason to have double quotation marks here, is that not every foodservice company have an announced brand identity, like Noma in Chapter Three, but companies who have a company vision or statement must want their customers to sense the same statement. And that can be a generalized brand or brand identity. The entire physical environment, together with food and staff service, acts as a "brand" to show customers the company's statement. In the following, double quotation marks won't be used but "brand identity" of foodservice companies should be seen as a generalized concept in this thesis.



Nonetheless, the first scene that comes into sight for customers is the dining environment. Each product in the physical environment and the atmosphere are the initial objects which customers will sense to get first-hand information and interpretation about the foodservice company, and also about the company's brand identity. As discussed earlier, the physical environment is so important due to its influence on customer satisfaction, quality perception and future behavior. It is one of the most important parts of service provided by a company, as with the performance of service staff, such as attitude, professionalism and passion. For these reasons, food and service should present the same company mission statement, and this is the brand identity.

McCormack et al. stated in 2004, that the brand identity uses the physical qualities of the product as well as the company's mission statement, corporate identity, customer experience, and the perceived success of the company by others to represent what the brand stands for. In the dimension of the physical environment of a foodservice company, it contains lots of factors such as layout, background music, lighting, wall décor, furnishings and table settings. Hence, in order to build, maintain and express a company's mission statement consistently, all these factors of the physical environment should have similar physical characteristics, or can express the same semantic messages through non-traceable design elements. From another point of view, designers should study and understand the brand identity of a foodservice company and design products to fulfill the vision of its brand. Or, the owners or the manager should select products for its environment, including tableware, to show the same brand statement.

In sum, the communication of the entire physical environment should correspond, including the communication of tableware (importance of tableware has been shown in former chapters). Within the same using context, customers with different backgrounds may have the same perceptions if they interact with products, like tableware, which have coherent characteristics

with other products in the same physical environment. And these coherent characteristics are expected to show up on products, like tableware, to indicate that this product belongs to this specific brand. Hence, features of tableware, such as shape, color, material, texture or repetition may directly manifest the brand identity of the foodservice company. Nonetheless, indirect manifestations should be used when traceable physical characters are not appropriate or not sufficient for this type of product. Therefore, to design tableware according to the physical environment, an approach to analyze products of the physical environment in a reactive manner (to find and define brand-specific cues from an already designed physical environment) should be formed in order to find out brand-specific design elements and apply them into designs.

#### **4.2 Scale of Physical Environment**

In Chapter Two, two scales of physical environment were recited in detail among all the scales listed in Table 2.1. Since Bitner noticed that there are few research studies and frameworks that describe the elements of physical environment, in 1992, she proposed a scale named *SERVICESCAPE* to fit the gap. She used this scale to describe how physical environment influences both customers and employees of a firm. *SERVICESCAPE* is the first scale of physical environment and is well-known by other researchers who are interested in this area. This author finds that this scale is not exactly appropriate to be used directly since it also represents influences of the employees of the firm.

Later on, more scales of physical environment had been proposed due to different reasons and situations. In 2008, Kisang and SooCheong developed a scale called *DINESCAPE*, which is mainly for environments of upscale restaurants. People seek pleasure and emotional fulfillment more in upscale restaurants, and they stay longer in there than in fast-service establishments. Therefore, customers get more chances to experience the physical environment and will be

influenced by it more. DINESCAPE is restricted to man-made physical and human surroundings in the dining area of upscale restaurant, without external area or non-dining interval area, since customers usually interact with the former ones longer.

Thinking of which group of customers will expect brand-telling designed tableware, most of the times, high level foodservice companies might want and can afford special design service, since their customers have higher expectations for emotional fulfillment such as pleasure, joyfulness and relaxation other than fulfillment of physiology only. But it doesn't mean that other foodservice firms don't need a set of tableware which express the same brand identity. Those companies who cannot afford or don't want their tableware to be specially designed can still use this guideline to help choose tableware that can express and manifest their brand identities, as needed. This thesis will only analyze the inside, man-made physical and human-surrounding environment of a foodservice company since customers spend most of their dining time there. For these reasons, the author will firstly review factors of both SERVICESCAPE and DINESCAPE, and then develop a valid way to analyze and abstract visual clues from the physical environment of a foodservice company.

Table 4.2.1 lists all the factors of SERVICESCAPE and DINESCAPE according to Chapter Two and divides these factors into three sections to show their similarities and differences. These two scales of physical environment both include ambience conditions, and factors belongs to interior design of a foodservice firm. DINESCAPE has one factor called service staff which SERVICESCAPE doesn't have. The reason is that DINESCAPE is for upscale restaurants, and the attitude and service quality of service staff influence customers' dining experience in those high-level restaurants. But this thesis won't include service staff because the author will only abstract visual clues from the man-made physical and surroundings of the dining environment.

Even though the costume of service staff might have same style or similar design elements with the design of the physical environment, the latter one can represent the former one to a very high degree when doing product designs to express same brand identity.

When looking through Table 4.2.1, it is easy to find that most of the factors can be divided into two groups: tangible factors and intangible factors. Tangible factors refer to objects that are physical and touchable, such as a chair, a piece of painting or a drinking glass. These factors contain bunch of visual clues which can be abstracted, and after analyzing these abstracted visual clues, brand-specific design elements will be defined that should be used to design other products, such as tableware, to maintain consistent brand identity. Intangible factors refer to elements that can be sensed by human beings though the eyes, ears, noses and mind. Although these factors are untouchable, they are experienced by customers and they indeed affect customer's perceptions and emotions. Table 4.2.2 is an updated version of Table 4.2.1 which points out tangible factors and intangible factors of these two scales.

SERVICESCAPE	DINESCAPE
<p>Ambient Conditions</p> <ul style="list-style-type: none"> <li>• temperature</li> <li>• air quality</li> <li>• noise</li> <li>• music</li> <li>• odor</li> <li>• etc.</li> </ul>	<p>Ambience</p> <ul style="list-style-type: none"> <li>• background music</li> <li>• temperature</li> <li>• aroma</li> <li>• etc.</li> </ul>
<p>Space/Function</p> <ul style="list-style-type: none"> <li>• layout</li> <li>• equipment</li> <li>• furnishings</li> <li>• etc.</li> </ul> <p>Signs, Symbols &amp; Artifacts</p> <ul style="list-style-type: none"> <li>• signage</li> <li>• personal artifacts</li> <li>• style of decor</li> <li>• etc.</li> </ul>	<p>Facility Aesthetics</p> <ul style="list-style-type: none"> <li>• painting</li> <li>• wall decor</li> <li>• plants/flowers</li> <li>• furniture</li> <li>• color</li> <li>• etc.</li> </ul> <p>Table Setting</p> <ul style="list-style-type: none"> <li>• tableware</li> <li>• linens</li> <li>• tabletop decorations</li> <li>• etc.</li> </ul> <p>Lighting</p> <ul style="list-style-type: none"> <li>• design and pattern</li> <li>• light</li> <li>• etc.</li> </ul> <p>Layout</p> <ul style="list-style-type: none"> <li>• sitting arrangement</li> <li>• feelings of layout, like crowded</li> <li>• etc.</li> </ul>
	<p>Service Staff</p> <ul style="list-style-type: none"> <li>• adequate number</li> <li>• costume</li> <li>• attitude</li> <li>• etc.</li> </ul>

Table 4.2.1 Comparison of SERVICESCAPE and DINESCAPE

SERVICESCAPE	DINESCAPE
<p>Ambient Conditions</p> <ul style="list-style-type: none"> <li>• temperature</li> <li>• air quality</li> <li>• noise</li> <li>• music</li> <li>• odor</li> <li>• etc.</li> </ul>	<p>Ambience</p> <ul style="list-style-type: none"> <li>• background music</li> <li>• temperature</li> <li>• aroma</li> <li>• etc.</li> </ul>
<p>Space/Function</p> <ul style="list-style-type: none"> <li>• layout</li> <li>• equipment</li> <li>• furnishings</li> <li>• etc.</li> </ul> <p>Signs, Symbols &amp; Artifacts</p> <ul style="list-style-type: none"> <li>• signage</li> <li>• personal artifacts</li> <li>• style of decor</li> <li>• etc.</li> </ul>	<p>Facility Aesthetics</p> <ul style="list-style-type: none"> <li>• painting</li> <li>• wall decor</li> <li>• plants/flowers</li> <li>• furniture</li> <li>• color</li> <li>• etc.</li> </ul> <p>Table Setting</p> <ul style="list-style-type: none"> <li>• tableware</li> <li>• linens</li> <li>• tabletop decorations</li> <li>• etc.</li> </ul> <p>Lighting</p> <ul style="list-style-type: none"> <li>• design and pattern</li> <li>• light</li> <li>• etc.</li> </ul> <p>Layout</p> <ul style="list-style-type: none"> <li>• sitting arrangement</li> <li>• feelings of layout, like crowded</li> <li>• etc.</li> </ul>

Tangible Factors
  Intangible Factors

Table 4.2.2 Tangible and Intangible Factors of SERVICESCAPE and DINESCAPE

Table 4.2.2 shows that all the factors of ambient conditions are intangible, and layout, emotional feelings towards layout, style of décor, mood made by light, and all factors that cannot be touched but affect human beings' senses and perceptions belong to intangible factors. And all other factors are tangible factors. Table 4.2.3 regroup these factors in this new method of classification.

Category	Factors	
Tangible Factors	Equipment Furnishings Signage Personal Artifact Paintings Wall Decor Plants/Flowers	Furniture Tableware Linens Tabletop Decorations Light Design Sitting Arrangement etc.
Intangible Factors	Ambient Conditions Layout and feelings of it Light and mood etc.	

Table 4.2.3 Regroup Factors in Table 4.2.2

Therefore, a scale of how designers should abstract visual clues from physical environment is concluded. Since there will be a lot of tangible factors from the physical environment, it is easy to miss one or repeat one. For this reason, there could be another sub-category of classification of tangible factors to make the process of abstract easier. In the spatial view, a room can be divided into three sections: ceiling section, wall section, and floor section. Ceiling section includes

elements related to the ceiling of a physical environment, such as suspended decoration, lights, ceiling material and color. Wall section refers to elements which are on the walls of a physical environment, such as window material and color, window shape, pattern/color/material of the wallpaper or the wall, paintings on the wall, logo of the firm, and all kinds of wall decorations. Floor section includes elements on the floor that usually cannot or won't be moved, for example, carpet, floor tiles, floor material or pattern. Other than these three categories, furniture and decorative furnishings is the last sub-category. Furniture refers to chairs, sofa, tables, cooking bar and etc. And decorative furnishings are products that cannot be classified into the other three sub-categories, such as plant and flowers, artifacts, and sculptures. Table 4.2.4 shows this scale and some visual clues as examples (based on physical environment of Sophie's Soho, shown in Figure 4.2.1. The introduction of Sophie's Soho is the Chapter Five). These four sub-categories may not include all the objects in the physical environment (some cases may include special products). Designers could list another sub-category called "others" if some visual elements cannot be included in any of these four sub-categories and cannot be neglected. The main goal to have these sub-categories is to help designers to abstract visual elements in a clear and nonrepeatable way, as needed. If a designer has confidence to list all necessary elements without mistakes and repetition, or the physical environment is simple and easy to abstract visual clues, there is no need to use these sub-categories.

In the meanwhile, it is not necessary for designers to list every element since some of them are tiny or only take small part of the whole environment and can therefore be ignored. The designers should list elements that are noteworthy, innovative, uncommon, appear to a large extent, and also are repeated multiple times. The reason is that in the following steps of the guideline, only



those visual elements described above will have higher scores and be selected as brand-specific design elements.



Figure 4.2.1 Example physical environment (retrieved from [sophiessteakhouse.com](https://www.sophiessteakhouse.com))

Category	Sub-category	Visual Clues
<b>Tangible Factors</b>	<b>Ceiling</b>	white ceiling crystal chandelier rectangle-shaped skylight with dark blue metal frame potted plant with only green leaves
	<b>Wall</b>	ivory-white cement wall lamp that has white cylindrical lampshade with wooden support colorful tiles in different shade of blue, white, yellow, red rectangle-shaped mirrors earthen-tone brick wall rectangle-shaped windows with dark blue metal frame red door frame and window frame
	<b>Floor</b>	earthen-tone wooden flooring marble tile floor
	<b>Furniture &amp; Decorative Furnishings</b>	wooden tabletop marble tabletop: whit&blue grain, brown stone grain, dark grey orange-red/dark blue/almond colored pillows and sofa wooden chairs with orange-red paint yellow birch wooden chair stool with wooden cylindrical legs and dark blue leather seat leather chairs and sofa fabric chair in dark blue and almond color potted plant with only green leaves
	<b>Others</b>	supportive pillar with color of white, dark blue and orange-red
<b>Intangible Factors</b>		bright natural light bright and gentle yellow light Light and mood etc.

Table 4.2.4 Scale of Physical Environment to Abstract Visual Clues

After listing all the visual clues, the designers should regroup these clues according to tableware design aspects: color, shape, material, texture, pattern, repetition and balance.

### **4.3 Define Brand-specific Design Elements**

As mentioned in Chapter Two, Karjalainen said in 2003 that, by performing such an analysis, a list of brand-specific references (and perhaps their relative weights) may be formed. Herbert Simon, a Nobel Prize winner, suggested that a science of the design of the artificial should pose the problem of design in such a way that the fuzzy problems of design could be transformed in ways such that methods of logic, mathematics, and statistics could be applied just as in the natural sciences, a kind of design engineering (Ehn, 2006). Therefore, some mathematic methods should be applied to analyze these elements to show how much weight one element is to the whole.

In other words, in order to find which brand cues have been used constantly in a product family, a list of design elements of the product family should be made, and their relative weight should be calculated to find out the mostly used ones. Those would be the constant product design elements leading to brand manifestation and identification. In this thesis, the physical environment can be seen as the product family, which contains consistent design elements to manifest the brand identity. By applying the scale of physical environment, lists of visual clues will be formed. The next step is to calculate the weight of each visual clues using some mathematic methods to figure out which ones belong to brand-specific design elements.

In the case study of EL&N café, its signature elements were abstracted and recognized due to how many times one element is used in the physical environment, how much area one element takes, and how remarkable or attractive one element is. This method is inspired by how Han (*Design guideline for applying regional folktale elements to current tableware design*, 2017) and Zhao (*A design guideline for applying aesthetics in Chinese traditional novel to modern tableware*

*design*, 2011) abstract design inspirations in their thesis, as discussed earlier. Similar approaches were conducted in the thesis of Cunxia Han, which is about applying regional folktale elements to current tableware design. In addition, the thesis of Ying Zhao is about applying aesthetics in Chinese traditional novel to modern tableware design. They went through the whole novel or folktale and listed all descriptions about aspects of tableware design separately: color, shape, material, texture, pattern, repetition, balance, etc. Then they counted the total number of each category and then calculated the ratio of each factor to the sum. They selected the elements which has the highest ratio in each category and composed them into a group of design inspirations, and then applied these selected elements on their final tableware designs. These methods provide direction for the analysis of selected design elements for tableware in this thesis.

Picking up descriptions and counting their weights is one dimensional based on novels and folktales. The only thing to show the weight of these elements is how many times they appear in one novel or folktale. But a physical environment is more than one dimension – it's a visual three-dimensional space. As Arnheim said in 1997, "weight depends also on size. Other factors being equal, the larger object will be the heavier" (p. 24). Hence, as for a physical environment, other than how many times one element is used, how much area one element takes should also be considered.

In the physical environment of EL&N, the color pink has been used a dozen times, such as pink painted walls, pink velvet fabric chairs, pink cups and pink signs. At the same time, pink was applied in a large area, like the entire pink wall and ceiling. Another color like purple or blue, appears several times, but its weight is not as high as pink because the area applied with purple or blue is much smaller than pink. In the physical environment of Noma, the element of wood can be found on many products – chairs, desks, operating countertops, walls, and floors. One of its walls

is covered with wood-textured wallpaper entirely, half of its floor is covered with wood boards, and the entire ceiling is overspread with wood pieces. Hemptwist was used on the back and part of the seat of a chair in Noma, and there are many chairs of same kind in its environment. But we cannot say hemptwist is one of the consistent design elements because it takes a small area of the entire physical environment. Therefore, for a visually three-dimensional unity, number of times and the area one takes should be considered both at once.

Furthermore, whether one element is remarkable, attractive, unusual, special, or stunning, is another factor needs to be considered when calculating the weight of one element. Attractive things have stronger visual impact. They catch one's eyes and leave deep impression to people. Many people love to share their lives on social media; the post stories and pictures about what happen in a day, where they travel to, what kind of delicious food they discovered, and sometimes introductions of a book. When surfing on those popular social medias, one can easily find that posts of popular and tasty food has become a trend, the same as restaurants and cafés. No one can deny that social media has a kind of secret and initial power which can bring one thing into fashion, and this kind of power occurs with food and its providers.

From the comments of some popular restaurants on social medias, there are many people talking about the most impressive, stunning and special part of a physical environment. And when people see these comments, they express their willingness and expectations to visit that place, and comment under the posts. Figure 4.3.1 shows an example. A girl who just visited Sophie's Soho (a steakhouse located in London, will be introduced in the following chapter) shared a picture of its plant wall and telling her wonderful experience. Her friends who saw her post gave lot of praises to the interior design and expressed expectations of visit and dining. More posts telling about the plant wall can be found, as well as other examples of other restaurants, which indicate that

remarkable factors of a physical environment indeed impressing people's perceptions largely and influence their future behavior.



Figure 4.3.1 An Example of Obsessed Physical Design Attracts Customers (retrieved from <https://www.instagram.com/p/BwScX2wgcZ6/>)

In sum, there are three aspects that need to be considered to determine the brand-specific design elements among the scale of a physical environment: number of times, area one takes, and how remarkable it is. The author defines a scale for each aspect so that there will be three degree numbers generated, and, after multiplying them together, a final proportion number will be obtained, and that is the weight of one visual clue.

There are seven aspects of tableware design: color, shape, material, texture, pattern,

repetition and balance. Brand-specific design elements will be generated from all these categories separately. For each aspect, here are the method to identify the brand-specific ones:

- **Number of Times**

Count the total number of all the visual clues of one aspects of tableware design, name as  $X$ . Count how many times one factor shows up, named as  $x$ . The number of times of one factor is:

$$N = \frac{x}{X}$$

For example, in the category of color, the factor of red has been used four times. The total number of color clues is 33. Therefore, the  $N$  of red is 12%.

- **Area**

Since it is not appropriate to measure the accurate area for each factor that is used in a physical environment (the area for some factors are hard to measure. For instance, pink color is used many times in the EL&N café. It appears on hanging logo boards, on the menus, on some fabric chairs, and also on some slogan boards. If one wants to measure the total area of these pink objects accurately, it will take lot of work and time, even the result won't be exactly accurate), a dimension is developed for designers to measure the area of one factor roughly. If the area of one factor is probably takes 30% of the total area of a physical environment, then its area number  $A$  is 2. Table 4.3.1 shows the dimension measuring the area number  $A$ .

Area	$100\% \geq A > 80\%$	$80\% \geq A > 60\%$	$60\% \geq A > 40\%$	$40\% \geq A > 20\%$	$20\% \geq A > 0$
A	5	4	3	2	1

Table 4.3.1 Area Dimension Chart

- **Remarkable Degree**

The remarkable degree is divided into three levels.

The first level is the highest level, whose remarkable number R equals to three. This level refers to factors that are most stunning, attractive, special and distinctive, catching one’s eyes at the first moment when people see it. It might be a custom-made product, or some normal things under a background which normally won’t be put together, for instance, the flower wall in EL&N café, as well as its strong and apparent aroma of pink and romance. The plant wall in Sophie’s Soho which is shown in Figure 4.3.1, plants, metal structure, and brick wall are very common things in daily life; but when they combine together creatively and take a large area in a restaurant, they become interesting and attractive to customers. It usually comes together with the “wow” moment.

The second level refers to visual clues that are less stunning, less attractive and less special than the first level. It needs more time for customers to discover its attractiveness than the first level. It’s like the moment of “Hum, interesting”.

The third level refers to common things that are not special or distinctive at all. All visual clues that don’t have any highlight could be included in this level.

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the “wow” moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• “Hum, interesting.”</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

Table 4.3.2 Remarkable Degree Chart



- **Weight Equation**

When all these three numbers – N for number of times, A for area, and R for remarkable degree are obtained, the weight of one factor – W will be obtained by multiplying N, A and R together.

$$W = N * A * R$$

Table 4.3.3 Weight Equation

The weight of each factor can be calculated by the weight equation. Then factors which possess higher weight can be found among all factors in the seven categories of tableware design. These factors are brand-specific design elements.

What needs to be mentioned is that, the factor which has the highest weight may not be the only one or the exact one that could be used on tableware design to express the brand identity. Designers need to consider many aspects to combine factors, such as factor of color, factors of material and factors of repetition, in a balanced way that can be manufactured, meet requirements of aesthetics, and express the brand identity directly. As Tian (2017) mentioned in her thesis, visual brand languages are more like design symbols or guides that may not show on every product. It is a principle that ensures products of one brand to have the ability to express same brand identity. In other words, designers have a certain amount of freedom to apply and modify these brand-specific design elements in their designs, because of manufacturing restrictions for example. Therefore, several factors that have higher weight will be obtained from each category of tableware design, and designers should pick from these factors and apply one or more on tableware design according to their knowledge of design and the brand identity of the foodservice company.

#### **4.4 Semantic Transformation**

In some cases, not every brand-specific design element can be applied on tableware design due to several reasons: manufacturing limits, hard to clean up food stains, not suitable for storage and to keep clean, fragility, not contribute to people's appetite, or too expensive. Or, like the case of Noma, as discussed before, even though its tableware contains many design elements that are not seen in other factors of the physical environment, it still conveys same brand identity. And that is the semantic function of these design elements.

Figure 4.4.1 shows a triadic structure that is formed based on the triadic structure of semantic reference according to the Peircean view in Chapter Two. Object, representamen and interpretant are the three factors in the Peircean structure. In this thesis, they refer to brand identity, design elements of tableware and customers, respectively. The relationship of these three factors is that the design elements of tableware which express the same brand identity will be perceived by customers when interacting with tableware.

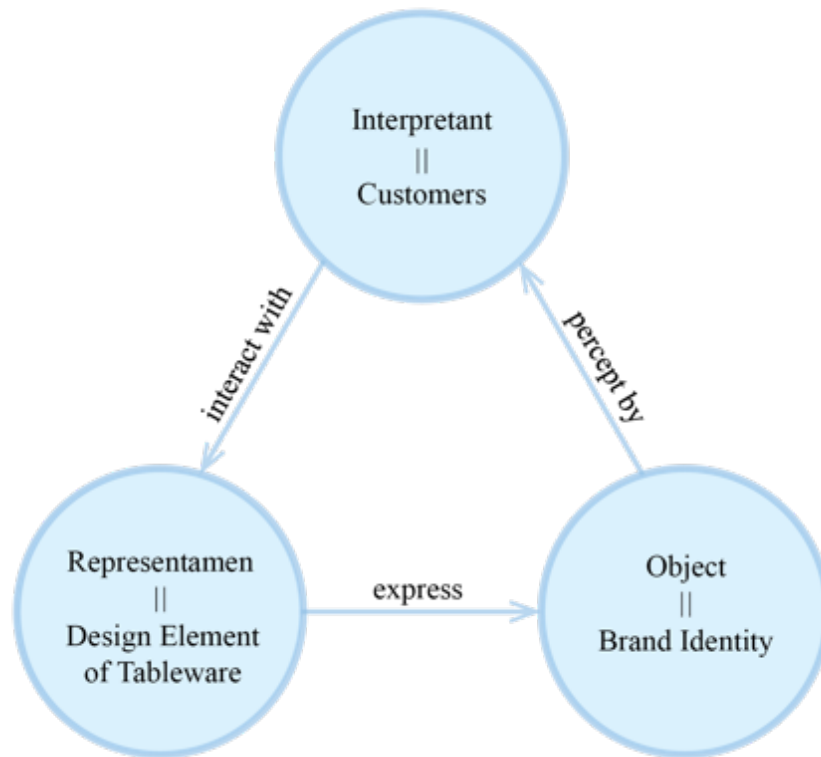


Figure 4.4.1 Triadic structure of Semantic Transformation

Therefore, if there are really few brand-specific design elements that can be applied on tableware design, designers should use design elements whose semantic meanings are same with the brand identity. Accordingly, designers need to understand the brand identity of a foodservice firm well. They should communicate with the owners and people of other departments to get a better understanding of what idea the company wants to deliver and how it wants to serve its customers. But if available brand-specific design elements are appropriate to use, designers should use these elements as priority selections, since these are more direct and clear manifestations of the brand identity and less possible to result in ambiguous meanings for customers.

#### **4.5 Evaluation**

As discussed before, although a list of brand-specific design elements has been defined, designers still have the freedom to choose which one to use, whether one element needs to be modified, and how to modify. After the conceptual phase and selection phase, an evaluation method should be applied to examine whether the chosen concept made good use of the defined brand-specific design elements.

Seven categories of tableware design are discussed in this thesis: shape, color, material, texture, pattern, repetition and balance. The list of brand-specific design elements also contains these seven categories. Therefore, the evaluation method should include these seven indicators. Because different foodservice firms have different designs of the physical environment, there will be different emphasis on these seven categories. Some physical environment designs may emphasize or special on color, like EL&N café, some might use some specific materials to express their brand identity, like Noma did. Therefore, designers should set weights for the seven categories based on the characteristics, emphasis, or specialty of the physical environment that

they design tableware for. And opinions of the owners of the foodservice firm that designers work for should be considered as needed.

The total weight of these seven categories should be 1, which is 100%. After the weights are set, designers need to give a score between 1 to 10 of whether the band-specific design elements of that category have been used and how well they have been used, for each category. And then this score should be multiplied by the weight of this category. Therefore, the total score of the chosen design concept should be the sum of these seven scores. Table 4.5.1 shows the evaluation form.

Category	Weight	Score (1~10)
Shape	$W_s$	$S_s$
Color	$W_c$	$S_c$
Material	$W_m$	$S_m$
Texture	$W_t$	$S_t$
Pattern	$W_p$	$S_p$
Repetition	$W_r$	$S_r$
Balance	$W_b$	$S_b$
Total	100%	$S_{total} = W_s * S_s + W_c * S_c + W_m * S_m + W_t * S_t + W_p * S_p + W_r * S_r + W_b * S_b$

Table 4.5.1 Evaluation Form

If the total score is higher than 0.6, which is the pass borderline if the total score is 1, than the design can be seen as an acceptable one, which means it has been applied with brand-specific design elements appropriately.

#### 4.6 Forms to Use to Identity Brand-specific Design Elements

In order to make it easier for designers to easily follow the procedure of identifying brand-specific design elements of a physical environment and to have a clear mind of how to use these visual clues extraction forms and weight calculation equations, some sample forms are generated for designers to use.

Category	Sub-category	Visual Clues
<b>Tangible Factors</b>	<b>Ceiling</b>	skywindow lighting pendent lamp .....
	<b>Wall</b>	artifact mirror window .....
	<b>Floor</b>	wood tiles brick floor warm gray cement floor .....
	<b>Furniture &amp; Decorative Finishings</b>	table chair cabinet .....
	<b>Others</b>	supportive pillar .....
<b>Intangible Factors</b>	natural light sound smell .....	

Table 4.6.1 Form of Extract Visual Clues

Category	Sub-category		Visual Clues
Shape	shape A	A1	chair in shape A1 .....
		A2	.....
		A3	table in shape A2 .....
	shape B		light in shape B .....
	shape C		tiles in shape C .....
	.....		.....

Category	Sub-category		Visual Clues
Color	colorA	A1	chair in color A1 .....
		A2	.....
		A3	table in color A2 .....
	color B		light in color B .....
	color C		tiles in color C .....
	.....		.....

(continued)

Category	Sub-category		Visual Clues
<b>Material</b>	material A	A1	chair in material A1 .....
		A2	.....
		A3	table in material A2 .....
	material B		light in material B .....
	material C		tiles in material C .....
	.....		.....

Category	Sub-category		Visual Clues
<b>Texture</b>	texture A		chair in texture A .....
	texture B		light in texture B .....
	texture C		tiles in texture C .....
	.....		.....

Category	Sub-category		Visual Clues
<b>Pattern</b>	pattern A		chair in pattern A .....
	pattern B		light in pattern B .....
	pattern C		tiles in pattern C .....
	.....		.....

(continued)

Category	Sub-category	Visual Clues
<b>Repetition</b>	repetition A	chair has repetition of A .....
	repetition B	light has repetition of B .....
	repetition C	light has repetition of C .....
	.....	.....

Category	Sub-category	Visual Clues
<b>Balance</b>	symmetric	chair in pattern A .....
	asymmetric	light in pattern B .....
	radial balance	tiles in pattern C .....

Table 4.6.2 Forms of Regroup Visual Clues



• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.  
Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the "wow" moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• "Hum, interesting."</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight= $N * A * R$
Shape	shape A	A1 chair in shape A1 .....	$x_{A1}$	$\frac{x_{A1}}{X_A}$	$A_{A1}$	$R_{A1}$	$\frac{x_{A1}}{X} * A_{A1} * R_{A1}$
		A2 .....	$x_{A2}$	$\frac{x_{A2}}{X_A}$	$A_{A2}$	$R_{A2}$	$\frac{x_{A2}}{X} * A_{A2} * R_{A2}$
		A3 table in shape A2 .....	$x_{A3}$	$\frac{x_{A3}}{X_A}$	$A_{A3}$	$R_{A3}$	$\frac{x_{A3}}{X} * A_{A3} * R_{A3}$
	shape B	light in shape B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	shape C	tiles in shape C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_{-}$	$\frac{x_{-}}{X}$	$A_{-}$	$R_{-}$	$W_{-}$
	total number			<b>X</b>			

Note: if shape A has sub-category A1, then the percentage of  $A_{A1}$  is area of A1 takes in A. The same to number R.

Table 4.6.3 Form of Weight Calculation of Shape

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.  
Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>notice at the first moment;</li> <li>the "wow" moment;</li> </ul>	<ul style="list-style-type: none"> <li>less stunning/ attractive/ distinctive/special...</li> <li>need some time to find;</li> <li>"Hum, interesting."</li> </ul>	<ul style="list-style-type: none"> <li>normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight = N * A * R
Color	color A	A1 chair in color A1 .....	$x_{A1}$	$\frac{x_{A1}}{X}$	$A_{A1}$	$R_{A1}$	$\frac{x_{A1}}{X} * A_{A1} * R_{A1}$
		A2 .....	$x_{A2}$	$\frac{x_{A2}}{X}$	$A_{A2}$	$R_{A2}$	$\frac{x_{A2}}{X} * A_{A2} * R_{A2}$
		A3 table in color A2 .....	$x_{A3}$	$\frac{x_{A3}}{X}$	$A_{A3}$	$R_{A3}$	$\frac{x_{A3}}{X} * A_{A3} * R_{A3}$
	color B	light in color B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	color C	tiles in color C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_{-}$	$\frac{x_{-}}{X}$	$A_{-}$	$R_{-}$	$W_{-}$
	total number			<b>X</b>			

Note: if color A has sub-category A1, then the percentage of  $A_{A1}$  is area of A1 takes in A. The same to number R.

Table 4.6.4 Form of Weight Calculation of Color

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.  
Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the "wow" moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• "Hum, interesting."</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight=N*A*R
Material	materialA	A1 chair with material A1 .....	$x_{A1}$	$\frac{x_{A1}}{X_A}$	$A_{A1}$	$R_{A1}$	$\frac{x_{A1}}{X} * A_{A1} * R_{A1}$
		A2 .....	$x_{A2}$	$\frac{x_{A2}}{X_A}$	$A_{A2}$	$R_{A2}$	$\frac{x_{A2}}{X} * A_{A2} * R_{A2}$
		A3 table with material A2 .....	$x_{A3}$	$\frac{x_{A3}}{X_A}$	$A_{A3}$	$R_{A3}$	$\frac{x_{A3}}{X} * A_{A3} * R_{A3}$
	material B	light with material B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	material C	tiles with material C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_-$	$\frac{x_-}{X}$	$A_-$	$R_-$	$W_-$
	total number			<b>X</b>			

Note: if material A has sub-category A1, then the percentage of  $A_{A1}$  is area of A1 takes in A. The same to number R.

Table 4.6.5 Form of Weight Calculation of Material

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.  
Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the “wow” moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• “Hum, interesting.”</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight= $N * A * R$
Texture	texture A	chair with texture A .....	$x_A$	$\frac{x_A}{X}$	$A_A$	$R_A$	$\frac{x_A}{X} * A_A * R_A$
	texture B	light with texture B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	texture C	tiles with texture C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_{..}$	$\frac{x_{..}}{X}$	$A_{..}$	$R_{..}$	$W_{..}$
	total number			X			

Table 4.6.6 Form of Weight Calculation of Texture

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.

Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the "wow" moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• "Hum, interesting."</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight= $N * A * R$
<b>Pattern</b>	patternA	chair with pattern A .....	$x_A$	$\frac{x_A}{X}$	$A_A$	$R_A$	$\frac{x_A}{X} * A_A * R_A$
	pattern B	light with pattern B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	pattern C	tiles with pattern C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_{..}$	$\frac{x_{..}}{X}$	$A_{..}$	$R_{..}$	$W_{..}$
	total number			<b>X</b>			

Table 4.6.7 Form of Weight Calculation of Pattern

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.

Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the “wow” moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• “Hum, interesting.”</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight= $N * A * R$
Repetition	repetition A	chair with repetition A .....	$x_A$	$\frac{x_A}{X}$	$A_A$	$R_A$	$\frac{x_A}{X} * A_A * R_A$
	repetition B	light with repetition B .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	repetition C	tiles with repetition C .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	.....	.....	$x_{..}$	$\frac{x_{..}}{X}$	$A_{..}$	$R_{..}$	$W_{..}$
	total number			X			

Table 4.6.8 Form of Weight Calculation of Repetition

• **Number of Times: N**

Count the total number of all the visual clues of one aspects of tableware design, name as X.  
Count how many times one factor shows up, named as x.

$$N = \frac{x}{X}$$

• **Area: A**

A is the percentage of one element takes in the entire environment estimately.

Area	100% > A > 80%	80% > A > 60%	60% > A > 40%	40% > A > 20%	20% > A > 0
A	5	4	3	2	1

• **Remarkable Degree: R**

Remarkable Degree	first level	second level	third level
R	3	2	1
Descriptions	<ul style="list-style-type: none"> <li>• most stunning/ attractive /distinctive /special/ eye-catching...</li> <li>• notice at the first moment;</li> <li>• the “wow” moment;</li> </ul>	<ul style="list-style-type: none"> <li>• less stunning/ attractive/ distinctive/special...</li> <li>• need some time to find;</li> <li>• “Hum, interesting.”</li> </ul>	<ul style="list-style-type: none"> <li>• normal/ usual/ common/ familiar...</li> </ul>

• **Weight Equation**

$$W = N * A * R$$

Category	Sub-category	Visual Clues	Number	$N = \frac{x}{X}$	A	R	Weight= $N * A * R$
Balance	symmetric	chair .....	$x_A$	$\frac{x_A}{X}$	$A_A$	$R_A$	$\frac{x_A}{X} * A_A * R_A$
	asymmetric	light .....	$x_B$	$\frac{x_B}{X}$	$A_B$	$R_B$	$\frac{x_B}{X} * A_B * R_B$
	radial balance	tiles .....	$x_C$	$\frac{x_C}{X}$	$A_C$	$R_C$	$\frac{x_C}{X} * A_C * R_C$
	total number			X			

Table 4.6.9 Form of Weight Calculation of Balance

### 4.7 Flow Chart of the Design Guideline

According to the above statements, the flow chart of the design guideline is obtained, shows in Figure 4.6.1. This goal of this guideline is to help designers to generate a principle which ensures the tableware design expressing the same brand identity with the physical environment of a foodservice company. The way to find out brand-specific design elements is in a reactive manner,

since the physical environment has already been built. Selected brand-specific design elements should be applied on tableware design directly; if one (or some) of the brand-specific design element is not appropriate for tableware, the triadic structure of semantic transformation should be used to modify it.

The guideline can be divided into seven steps: identify brand identity, extract visual clues from the physical environment, regroup visual clues, weight calculation, identify brand-specific design elements, select or modify design elements which can be applied on tableware design, design tableware, and evaluation.



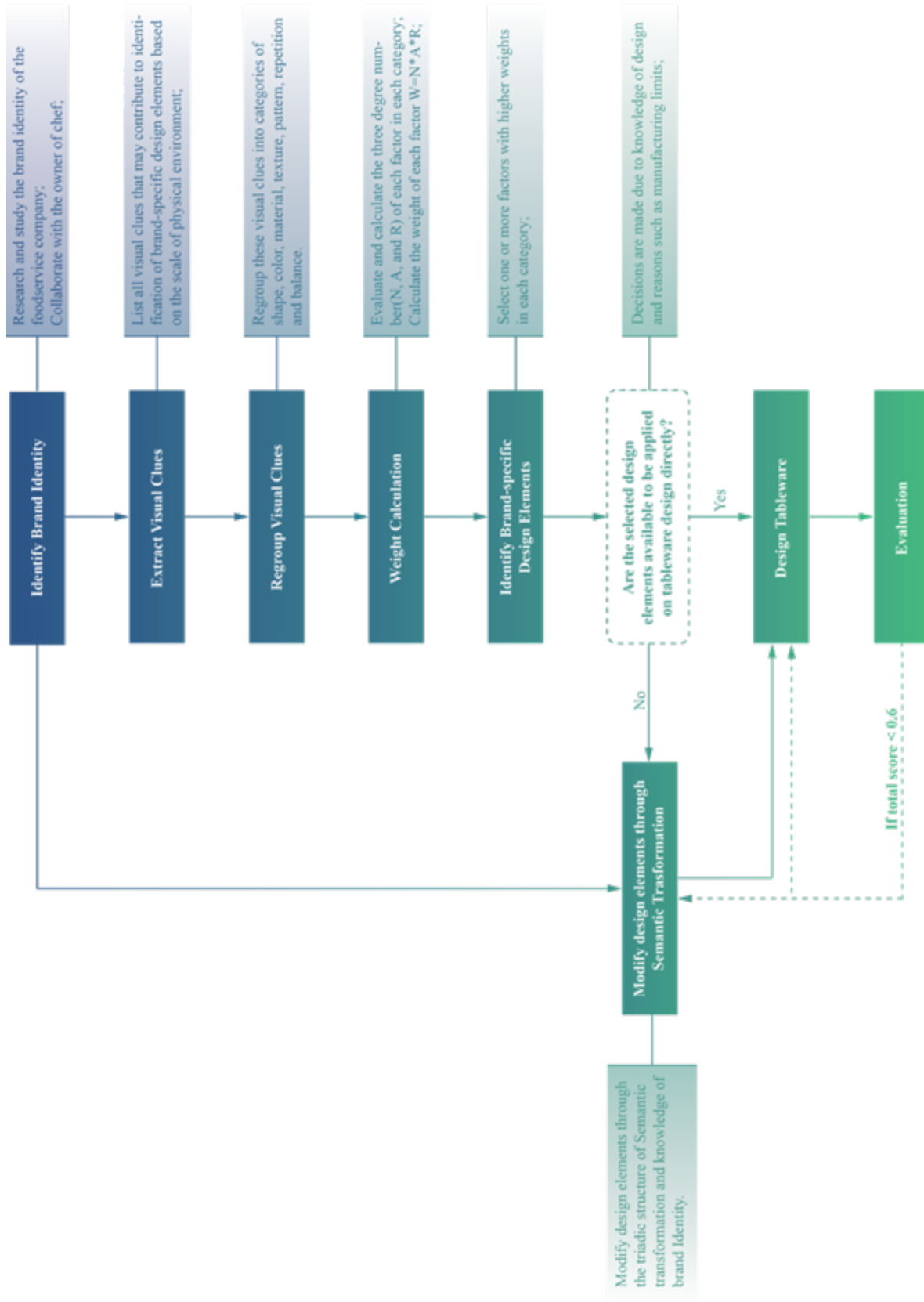


Figure 4.7.1 Flow chart of the Design Guideline

## Chapter 5 Design Application

In this chapter, the design guideline described in Chapter Four will be demonstrated with a tableware design application. A persona will be defined first, and the guideline will be used to do tableware design following the flow chart shown in Figure 4.6.1.

### 5.1 Persona Definition

A restaurant named Sophie's Chelsea opened in 2002 in a busy district in London and its business goes very well. Recently, the owners of Chelsea want to start a new store in Soho district in London. During the seventeen years operating, Chelsea won a pretty good reputation and also many regular customers. The owners, Rupert Power and Sophie Bathgate, heard much praise about great food and atmosphere, but also some feedback that there was still something that could be done to improve customers' experience and expectations, such as stronger brand establishment, and more adaptive tableware. Therefore, after finishing the interior design of the new location, they decided to do tableware customization to fit the dining environment better and express Sophie's brand identity properly.

### 5.2 Identify Brand Identity

Sophie's Soho, as the second store of Sophie, is an all-day bar, dining and steakhouse restaurant, which is similar to the first one, Sophie's Chelsea. For this reason, and in order to have better understating of Sophie's brand identity, it is necessary to learn about Chelsea.

*Time out*, a global media and entertainment business who is aiming to help people to find the best of the city, said, "A self-styled New York-style steakhouse that had discovered the secret of drawing in the Chelsea crowds - even though there's a no-booking policy. This highly successful

steakhouse with a ‘New York warehouse feel’ opened in 2002. Sophie's has an approachably buzzy, accessibly upscale ambience” (Sophie's Steakhouse & Bar, 2014).

On the website of Sophie, there is a paragraph introducing the founders’ notions:

Founded in 2002, by Rupert Power & Sophie Bathgate, Sophie’s has a straightforward premise: great food, great drinks & great fun!

We source our meat and veg from British suppliers with whom we foster strong and long-lasting relationships. Our beef is dry-aged for one month in house, butchered daily and chargrilled to order.

“We’ve been on a real meat journey for the past 15 years”, says Sophie, “and it really comes down to sourcing the best quality possible then giving our chefs the ability to control the ageing in house”

Just as important as the food & the cocktails, of course, is the atmosphere.

We treat our team with respect and are fortunate to have loyal and exciting people within the business.

“I’m incredibly proud of our team” Rupert says, “the restaurant industry is about people – happy team means happy guests” (Power & Bathgate, 2017).

According to the above statements, the founders’ major idea is to provide customers high-quality food and drinks, loyal and warm service, great, entertaining experience, along with a liked atmosphere – high-quality, well-designed, natural, toned, interesting, inviting and hospitable. All these characters can be sourced in the physical dining environment of Sophie’s Soho, shows in Figure 5.2.1. The environment combines two interspaces: a generous bar with installation of a stunning glass chandelier, which is custom made in Italy; and a steakhouse with an open kitchen in the center. The bar will provide dining spaces for customers to enjoy food, signature cocktails

and unusual wines. And the steakhouse which focuses on a custom-built wood fired grills, uses a back-to-basics method to cook food with high-quality, locally sourced ingredients.

The custom made, glass chandelier is very attractive and stunning, which represents the restaurant's characters of refinement and well-designed. Leather stools, chairs and booths symbolized its personality of upscale and high-quality. The naked brick walls and floor, concrete walls and floor, potted plants and the impressive plant wall, wood chairs and wood floor, and many other factors in the physical environment symbolize and express a natural and original feeling. Fabric chairs and sofas, and also many pillows in the same colors, provides a cozy and relaxing environment.

Therefore, after researching about Sophie, learning from the founders, and studying Soho's physical environment, the brand identity of Sophie's Soho is found – upscale but accessible, high-quality but natural, well-designed but original. What needs to be said is that, when possible, designers should discuss with the founders and interior designers about the brand identity of a foodservice firm to ensure they understand it correctly.

### **5.3 Extract Visual Clues**

Table 5.3.1 shows all the visual clues extracted from the physical environment of Sophie's Soho according to the scale of physical environment. There are some visual clues that weren't included because they are so tiny and don't influence the expression of the brand identity.



Figure 5.2.1 Pictures of Physical Environment of Sophie's Soho (to be continued)



Figure 5.2.1 Pictures of Physical Environment of Sophie's Soho (retrieved from <https://www.instagram.com/sophiessoho/>)

Category	Sub-category	Visual Clues
Tangible Factors	<b>Ceiling</b>	white painted cement and integrated metal ceiling custom crystal, elliptic chandelier ball-shaped pendent lamp round platy pendent lamp rectangle-shaped skylight with dark blue metal frame hanging basket green plants
	<b>Wall</b>	cream white painting cement wall naked brick wall in warm gray shades / brick-red shades white funnel-shaped/cylindrical pendent lamps with wooden support old green or yellow plant leaves mounted in old sensed black square frames small square tiles in white, dark blue, yellow, red and gray marble grain rectangle mirrors rectangle/square windows with dark blue/red metal frame potted green plants mounted on metal frame constructed with a series of small square
	<b>Floor</b>	naked wood tiles in different brown shades brick floor in different shades of brick-red warm gray cement floor red rectangle carpet with patterns
	<b>Furniture &amp; Decorative Finishings</b>	elliptic marble bar tabletop white and gray marble round/rectangle table tops brown round/rectangle wooden table tops fabric sofa in orange-red patterned, light orange-red, dark blue and light gray fabric chairs with round tapered legs in same colors with fabric sofa square fabric pillows in (light)orange-red, and dark blue leather sofa in chestnut brown leather chairs in chestnut brown with round tapered legs bar stools with wood round tapered legs and dark blue round leather seat wood arm chairs in natural oak color red painted wooden chairs chestnut brown wooden cabinet custom round metal grill large potted green plants
	<b>Others</b>	supportive pillars with color of white, dark blue and orange-red supportive pillars in white
<b>Intangible Factors</b>	bright natural light gentle yellow light sound of the grill activities around smell of charcoal cooking original, natural, buzzy, upscale, and cosy aroma orderly layout but feels flexible and relax	

Table 5.3.1 Extraction of Visual Clues of the physical Environment of Sophie's Soho

## 5.4 Regroup Visual Clues

After all the significant visual clues were abstracted, they are regrouped into five categories: shape, color, material, texture and pattern. For each category, sub-categories are used to represent all the visual clues which have the same design element, shown in the following tables.

Table 5.4.1 shows visual clues of shape with sub-categories of round, elliptic, square, rectangle and funnel-shape. And the design element of round has sub-elements of round shape, ball shape, cylindrical shape, and tapered shape.

Category	Sub-category		Visual Clues
Shape	round	round	round platy pendent lamp wood/marble round tabletops custom round metal grill bar stools with wood round tapered legs and dark blue round leather seat
		ball	ball-shaped pendent lamp
		cylindrical	white cylindrical pendent lamps with wooden support supportive pillars in several colors
		tapered	fabric chairs with round tapered legs leather chairs in chestnut brown with round tapered legs bar stools with wood round tapered legs
		elliptic	custom crystal, elliptic chandelier elliptic marble bar tabletop
		square	square windows with red/dark blue metal square frame old green or yellow plant leaves mounted in old sensed black square frames small square tiles in white,dark blue,yellow,red and gray marble grain potted green plants mounted on metal frame constructed with a series of small square square fabric pillows in (light)orange-red, and dark blue
		rectangle	rectangle-shaped skylight with dark blue metal frame rectangle mirrors rectangle windows with dark blue/red metal frame red rectangle carpet with patterns wooden/marble rectangle tabletops
		funnel-shaped	white funnel-shaped pendent lamps with wooden support

Table 5.4.1 Visual Clues of Shape



Table 5.4.2 shows visual clues of color with sub-categories of white, gray, red, brown, dark blue, green and multi-colors.

Category	Sub-category		Visual Clues
Color	white	white	white painted cement and integrated metal ceiling white funnel-shaped/cylindrical pendent lamps with wooden support supportive pillars in white white and gray marble round/rectangle tabletops
		cream white	cream white painting cement wall
	gray	light cool gray	fabric chairs in light gray fabric sofas in light gray
		warm gray	warm gray cement floor naked brick wall in warm gray shades fabric sofa and pillows in warm gray
	red	red	square/rectangle windows with red metal frame red painted wood chairs red rectangle carpet with patterns
		brick-red	naked brick wall in brick-red shades brick floor in different shades of brick-red
		orange-red	fabric sofa in orange-red(with or without pattern) fabric pillows in orange-red(with or without pattern) orange-red patterned fabric chairs with wood round tapered legs
	brown	natural oak	wood arm chairs in natural oak color
		brown	naked wood tiles in different brown shades brown round/rectangle wooden tabletops
		chestnut	leather sofa in chestnut brown leather chairs in chestnut brown chestnut brown wooden cabinet
	dark blue		rectangle-shaped skylight with dark blue metal frame rectangle/square windows with dark blue metal frame fabric sofa and pillows in dark blue fabric chairs in dark blue bar stools with wood round tapered legs and dark blue leather seat
	green		hanging basket green plants potted green plants mounted on metal frame constructed with a series of small square large potted green plants
	multi-color		small square tiles in white,dark blue,yellow, red and gray marble grain supportive pillars with color of white, dark blue and orange-red

Table 5.4.2 Visual Clues of Color

The following is visual clues of material with sub-categories of wood, marble, clay, metal, glass, leather and fabric.

Category	Sub-category	Visual Clues	
<b>Material</b>	wood	white funnel-shaped/cylindrical pendent lamps with wooden support naked wood tiles in different brown shades brown round/rectangle wooden tabletops bar stools with wood round tapered legs and dark blue leather seat chestnut brown wooden cabinet wood arm chairs in natural oak color red painted wooden chairs	
	marble	elliptic marble bar tabletop white and gray marble round/rectangle tabletops	
	clay	brick	naked brick wall in warm gray shades / brick-red shades brick floor in different shades of brick-red
		tile	small square tiles in white,dark blue,yellow,red and gray marble grain
		cement	supportive pillars white painted cement ceiling warm gray cement floor cream white painting cement wall
	metal	white painted integretd metal ceiling rectangle-shaped skylight with dark blue metal frame rectangle/square window frame in dark blue/red potted green plants mounted on metal frame constructed with a series of small square custom round metal grill	
	glass	custom crystal, elliptic chandelier rectangle mirrors skylight windows with dark blue metal frame rectangle/square windows with red/dark blue metal frame	
	leather	leather sofa in chestnut brown leather chairs in chestnut brown bar stools with round dark blue leather seat	
	fabric	fabric sofa in orange-red(with/without pattern), light orange-red, dark blue, and light gray fabric chairs in orange-red(with/without pattern), light gray fabric pillows in orange red, dark blue and warm gray red rectangle carpet with patterns	

Table 5.4.3 Visual Clues of Material

The following is the table of visual clues of texture. For tableware, as stated in Chapter Two, there are several texture methods. In the physical environment of Soho, method of impressing, embossing and paint are the three mostly used ones that influence the expression of brand identity.

Category	Sub-category	Visual Clues
Texture	impressing	fabric sofa with orange-red pattern fabric chairs with orange-red pattern fabric pillows with orange-red pattern
	embossing	naked brick wall in warm gray shades / brick-red shades brick floor in different shades of brick-red small square tiles in white, dark blue, yellow, red and gray marble grain
	paint	white painted integreted metal ceiling cream white painted cement wall rectangle-shaped skylight with dark blue metal frame rectangle/square window frame in dark blue/red red painted wooden chairs

Table 5.4.4 Visual Clues of Texture

Table 5.4.5 shows visual clues of the pattern category. Actually, the three former ones could not count as patterns for tableware exactly, because they show how small elements have been put together to form as a “pattern”. Pattern for tableware is an element that can be used for decoration, repeated or not. The last one is an available pattern which can be used to decorate tableware.

The decoration method of repetition on one product is not very common in the physical environment of Soho, but the same elements repeated on different products can be found. For example, the orange-red diamond-shaped pattern appears on chairs, sofas, pillows and menus. Therefore, same design elements could be used not only on plateware, but also on cutlery and glassware.

Balance for tableware includes symmetric, asymmetric, and radial balance, as stated in Chapter Two. In Soho, there are few products contain patterns, except the orange-red diamond fabric pattern. And most products in this physical environment are symmetric. Therefore, symmetry is the balance design element which could be applied on tableware design.





Category	Sub-category	Visual Clues
Pattern		naked brick wall in warm gray shades
		brick floor in different shades of brick-red naked brick wall in warm brick-red shades
		small square tiles in white, gray, dark blue, yellow, red, black and gray marble grain
		fabric sofa in orange-red pattern fabric chairs in orange-red pattern Menu cover by fabric in orange-red pattern

Table 5.4.5 Visual Clues of Pattern

### 5.5 Weight Calculation

After regrouping all the visual clues, the weight of each design element of each category is calculated, shows in the following tables. Three aspects are considered when calculating: the number of times that one element appears, the area which one element takes, and the remarkable degree one element is in the physical environment of Soho. If a design element has sub-elements, the number N of its sub-element equals to the number of a sub-element dividing the number of its major element. The same to the area number A and remarkable degree number R of a sub-element, which should be determined based on its major element.

The following tables show the weight calculation of the design elements of shape, color, material, texture, and pattern. The elements which have a blue background color have the highest weight; the one with light blue background color has the second highest weight.

Category	Sub-category	Visual Clues	Number	N	A	R	Weight
Shape	round	round platy pendant lamp	4	40%	4	2	3.2
		wood/marble round tabletops					
		custom round metal grill					
		bar stools with wood round tapered legs and dark blue round leather seat					
	ball	ball-shaped pendant lamp	1	10%	1	1	0.1
		white cylindrical pendant lamps with wooden support	2	20%	1	1	0.2
	cylindrical	supportive pillars in several colors					
		fabric chairs with round tapered legs	3	30%	1	1	0.3
	tapered	leather chairs in chestnut brown with round tapered legs					
		bar stools with wood round tapered legs					
elliptic	custom crystal, elliptic chandelier		2	9%	1	3	0.27
	elliptic marble bar tabletop						
square	square windows with red/dark blue metal square frame		5	23%	2	3	1.38
	old green or yellow plant leaves mounted in old sensed black square frames						
	small square tiles in white,dark blue,yellow,red and gray marble grain						
	potted green plants mounted on metal frame constructed with a series of small square square fabric pillows in (light)orange-red, and dark blue						
rectangle	rectangle-shaped skylight with dark blue metal frame		5	22%	2	1	0.44
	rectangle mirrors						
	rectangle windows with dark blue/red metal frame						
	red rectangle carpet with patterns						
funnel-shaped	wooden/marble rectangle tabletops		1	4%	1	1	0.04
	white funnel-shaped pendant lamps with wooden support						
total number			23				

Table 5.5.1 Weight calculation of Visual Clues of Shape

Category	Sub-category	Visual Clues	Number	N	A	R	Weight
Color	white	white painted cement and integrated metal ceiling white funnel-shaped/cylindrical pendant lamps with wooden support supportive pillars in white white and gray marble round/rectangle tabletops	4	80%	3	1	2.4
			5	15%	2	1	0.3
	gray	cream white painting cement wall fabric chairs in light gray fabric sofas in light gray	1	20%	3	1	0.6
			2	40%	1	1	0.4
	red	warm gray cement floor naked brick wall in warm gray shades fabric sofa and pillows in warm gray	3	60%	4	3	7.2
			5	15%	2	3	0.9
	red	square/rectangle windows with red metal frame red painted wood chairs red rectangle carpet with patterns	3	38%	1	2	0.76
			2	25%	2	2	1
	brown	brick-red naked brick wall in brick-red shades brick floor in different shades of brick-red	8	24%	1	3	0.72
			3	38%	1	3	1.14
	brown	orange-red fabric sofa in orange-red(with or without pattern) fabric pillows in orange-red(with or without pattern) orange-red patterned fabric chairs with wood round tapered legs	1	17%	1	1	0.17
			2	33%	2	1	0.66
dark blue	natural oak wood arm chairs in natural oak color naked wood tiles in different brown shades brown round/rectangle wooden tabletops	6	18%	1	1	0.18	
		3	50%	2	1	1	
green	leather sofa in chestnut brown leather chairs in chestnut brown chestnut brown wooden cabinet rectangle-shaped skylight with dark blue metal frame rectangle/square windows with dark blue metal frame fabric sofa and pillows in dark blue fabric chairs in dark blue bar stools with wood round tapered legs and dark blue leather seat	5	15%	1	2	0.3	
		3	9%	1	2	0.18	
multi-color	hanging basket green plants potted green plants mounted on metal frame constructed with a series of small square large potted green plants small square tiles in white,dark blue,yellow, red and gray marble grain supportive pillars with color of white, dark blue and orange-red	2	6%	1	2	0.12	
		34	total number				

Table 5.5.2 Weight calculation of Visual Clues of Color

Category	Sub-category	Visual Clues	Number	N	A	R	Weight
Material	wood	white funnel-shaped/cylindrical pendant lamps with wooden support naked wood tiles in different brown shades brown round/rectangle wooden tabletops bar stools with wood round tapered legs and dark blue leather seat chestnut brown wooden cabinet wood arm chairs in natural oak color red painted wooden chairs	7	22%	1	2	0.44
	marble	elliptic marble bar tabletop white and gray marble round/rectangle tabletops	2	6%	1	1	0.06
	brick	naked brick wall in warm gray shades / brick-red shades brick floor in different shades of brick-red	2	29%	3	2	2
			1	14%	1	1	1
	tile	small square tiles in white, dark blue, yellow, red and gray marble grain	7	22%	3	3	1.98
	cement	supportive pillars white painted cement ceiling warm gray cement floor cream white painting cement wall	4	57%	3	4	4
	metal	white painted integrated metal ceiling rectangle-shaped skylight with dark blue metal frame rectangle/square window frame in dark blue/red potted green plants mounted on metal frame constructed with a series of small square custom round metal grill	5	16%	1	2	0.32
	glass	custom crystal, elliptic chandelier rectangle mirrors skylight windows with dark blue metal frame rectangle/square windows with red/dark blue metal frame	4	13%	1	3	0.13
	leather	leather sofa in chestnut brown leather chairs in chestnut brown bar stools with round dark blue leather seat	3	9%	1	1	0.09
fabric	fabric sofa in orange-red(with/without pattern), light orange-red, dark blue, and light gray fabric chairs in orange-red(with/without pattern), light gray fabric pillows in orange red, dark blue and warm gray red rectangle carpet with patterns	4	13%	1	3	0.39	
total number			32				

Table 5.5.3 Weight calculation of Visual Clues of Material

Category	Sub-category	Visual Clues	Number	N	A	R	Weight
	impressing	fabric sofa with orange-red pattern	3	27%	1	3	0.81
		fabric chairs with orange-red pattern					
		fabric pillows with orange-red pattern					
Texture	embossing	naked brick wall in warm gray shades / brick-red shades	3	27%	1	3	0.81
		brick floor in different shades of brick-red					
		small square tiles in white, dark blue, yellow, red and gray marble grain					
	paint	white painted integrated metal ceiling cream white painted cement wall rectangle-shaped skylight with dark blue metal frame rectangle/square window frame in dark blue/red red painted wooden chairs	5	45%	2	2	1.8
			11	total number			

Table 5.5.4 Weight calculation of Visual Clues of Texture







Category	Sub-category	Visual Clues	Number	N	A	R	Weight
Pattern		naked brick wall in warm gray shades	1	14%	1	1	0.14
		brick floor in different shades of brick-red naked brick wall in warm brick-red shades	2	29%	1	1	0.29
		small square tiles in white, gray, dark blue, yellow, red, black and gray marble grain	1	14%	1	2	0.24
		fabric sofa in orange-red pattern fabric chairs in orange-red pattern Menu cover by fabric in orange-red pattern	3	43%	1	2	0.86
	total number			7			

Table 5.5.5 Weight calculation of Visual Clues of Pattern

In sum, Table 5.5.1, which shows the weights of shape design elements, the element square is the one with highest weight, and element round has second highest weight. And among all its sub-elements, round shape possesses the highest weight.

Table 5.5.2 shows weights of color design elements. Gray has the highest weight, and warm gray is its major sub-element. The element that has the second highest weight is red, and among all its sub-elements, orange-red is the major one.

Table 5.5.3 shows weights of design elements of material. Clay and wood are the top two elements which have higher weights than others.

Table 5.5.4 shows weights of texture design elements, and paint is the one which has the highest weight.

Table 5.5.5 shows weights of pattern design elements. The orange-red pattern has much higher weight than other ones.

## 5.6 Identify Brand-specific Design Elements

The table shows the conclusion of all the elements which have the highest and second high weight of each category. And these elements are the brand-specific design elements of Soho.

<b>Category</b>	<b>Brand-specific Design Elements</b>	
Shape	square (1.38)	round (0.86) - round
Color	gray (0.9) - warm gray	red (0.72) - orange-red
Material	clay (1.98)	wood (0.44)
Texture	paint (1.8)	
Pattern	orange-red pattern (0.86)	
Repetition	no repetition	
Balance	symmetric	

Table 5.6.1 Brand-specific Design Elements of Soho

## 5.7 Design Tableware

### 5.7.1 Concept Development

Sophie's Soho want to have a set of tableware for table setting. Therefore, after discussion with the owners of Soho, the set of tableware will include a plate, a cup, a fork, a spoon and a knife. The concept sketches are developed based on the brand-specific design elements obtained from the physical environment of Sophie's Soho.

The tableware set design start from plate design. Other pieces of tableware will share the same design elements with the plate design according to the summary in section 5.5. Initial

sketches of shape development are shown in Figure 5.7.1.1. Sketches are different kinds of combination of square and round. Among all these combinations, two of them are selected for further development as shown in Figure 5.7.1.2. Based on the design guideline and Soho's brand identity, the bottom one in Figure 5.7.1.2 is selected as the final plate design. It meets the basic requirements for hospitality industry, as its form is easy to stack, store, and use. At the same time, its slight curviness expresses the brand identity appropriately.

According to the identified brand-specific design elements of Soho, the material of ceramic (clay) is chosen to be the main material because it's traditional for tableware and because of its advantages on manufacture, decoration (paint) and sanitation. Wood is applied as the material of the ring on the bottom of the plate to add some character of nature. The wood's color is determined by the color element which has the highest weight in the sub-category of brown.

The color of warm gray is chosen to apply on the ceramic part of the plate. The reason why the orange-red pattern element is not used is that the color and veins are too much as a plateware pattern though it looks pretty and expresses the brand identity properly on seating fabric. Therefore, the final design of the plate is shown in Figure 5.7.1.3.

The cup design is based on the plate design. Some shape and form sketches of cup design are shown in Figure 5.7.1.4. The concept with the blue dot is selected for further refinement, shown in Figure 5.7.1.5. The materials of the cup are same with the plate. Wood is applied on the bottom part of the cup and ceramic is applied on the top part. For the two concepts on the left, the ratio of ceramic to wood is around 4:1 because the weight of clay to wood is about 4:1. For the other two concepts on the right, the ratio of ceramic to wood equals to the Golden Ratio, which makes the distribution of these two materials more balanced. The one with the blue dot is selected as final cup design. Figure 5.7.1.6 shows the sketch of the final cup design with materials applied.

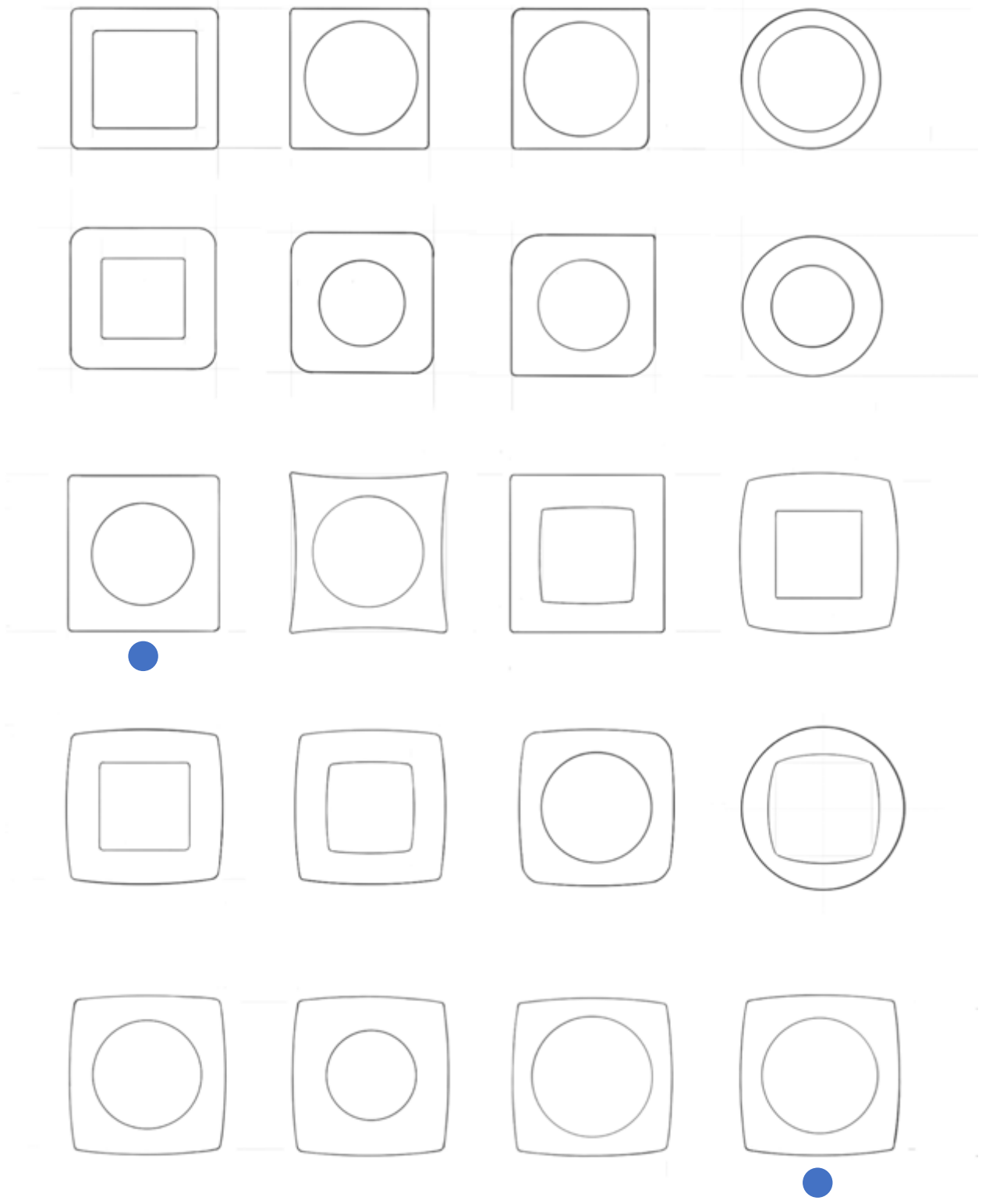


Figure 5.7.1.1 Initial Sketches of the Plate Shape Design

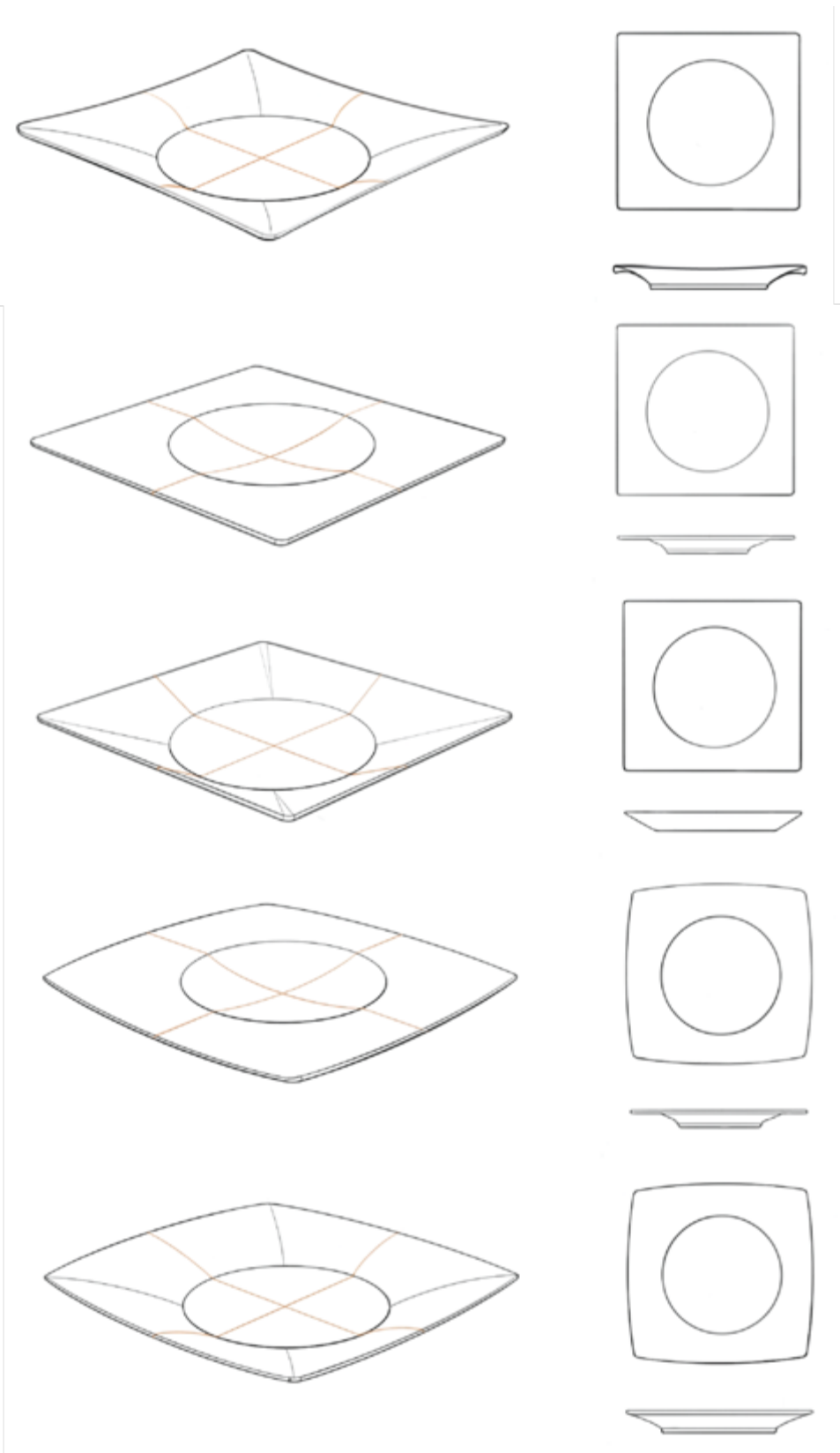


Figure 5.7.1.2 Further Development of the Plate Design

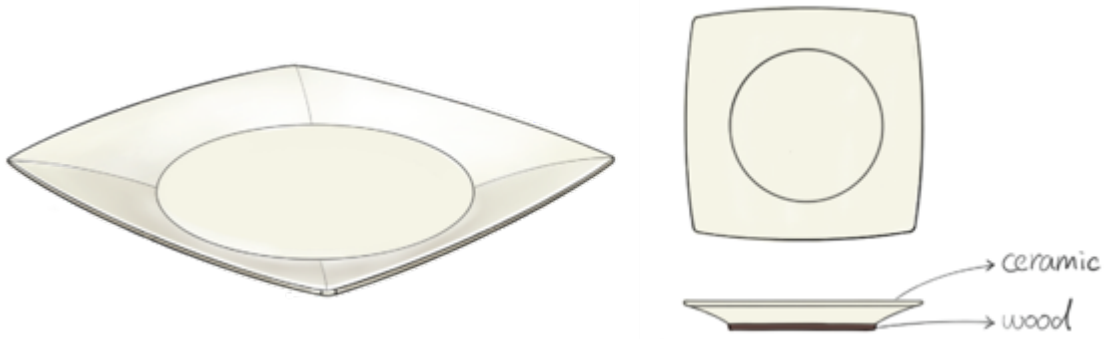


Figure 5.7.1.3 Final Plate Design

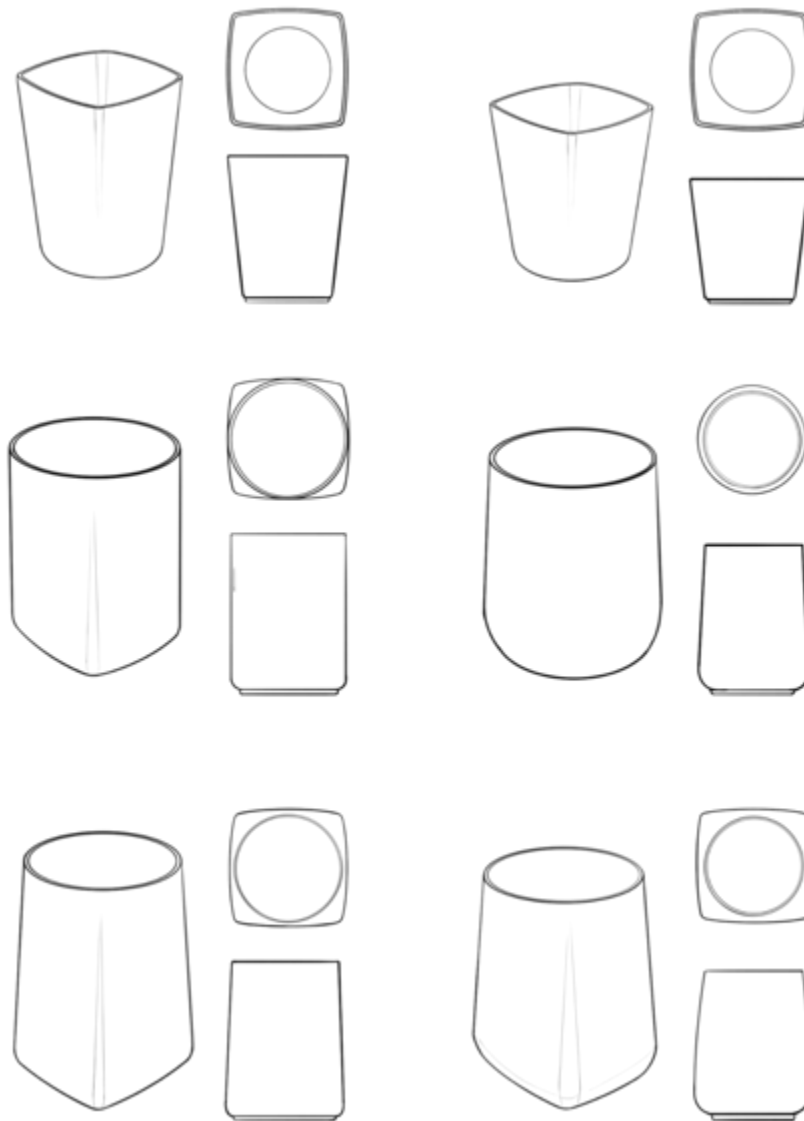


Figure 5.7.1.4 Initial Sketches of Cup Design

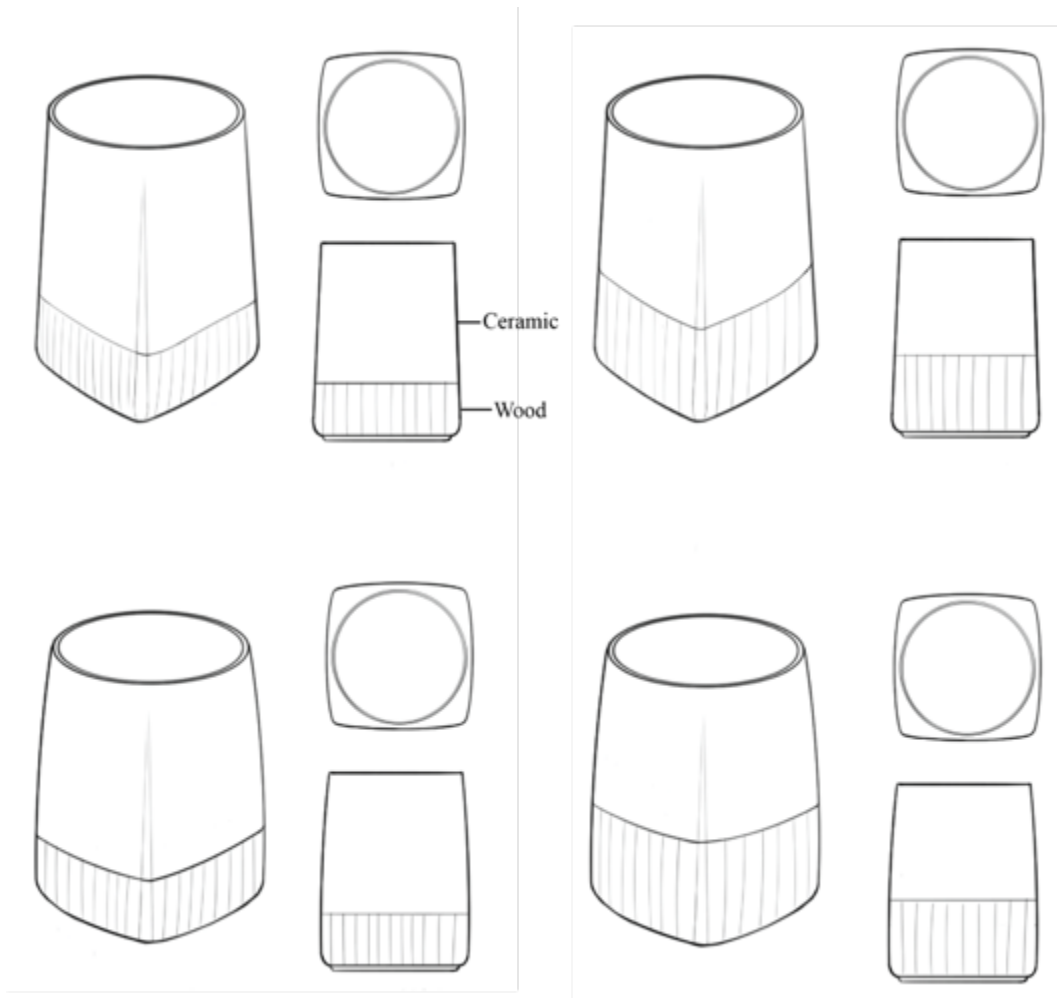


Figure 5.7.1.5 Cup Design Refinement



Figure 5.7.1.6 Final Cup Design

The cutlery set is designed based on the cup and plate designs and the exploration sketches are shown in Figure 5.7.1.8. The top view of the spoon and fork is similar to the top view of the plate design. The slightly curved square is adjusted a little bit into slightly curved rectangle for easier use. The spoon head concepts with blue dot are selected as basic shape to develop fork design. The inspiration of the handle is the form of tapered legs of the chairs in Soho, shown in Figure 5.7.1.7.



Figure 5.7.1.7 Inspiration from the Physical Environment of Soho (retrieved from <https://www.instagram.com/sophiessofo/>)

Therefore, the final designs of the spoon, the fork, and the knife are shown in Figure 5.7.1.9. The same wood material is applied on the handles. Stainless steel is applied on the heads of the cutlery, because it is easy to shape, durable, resistant to corrosion and high temperature.



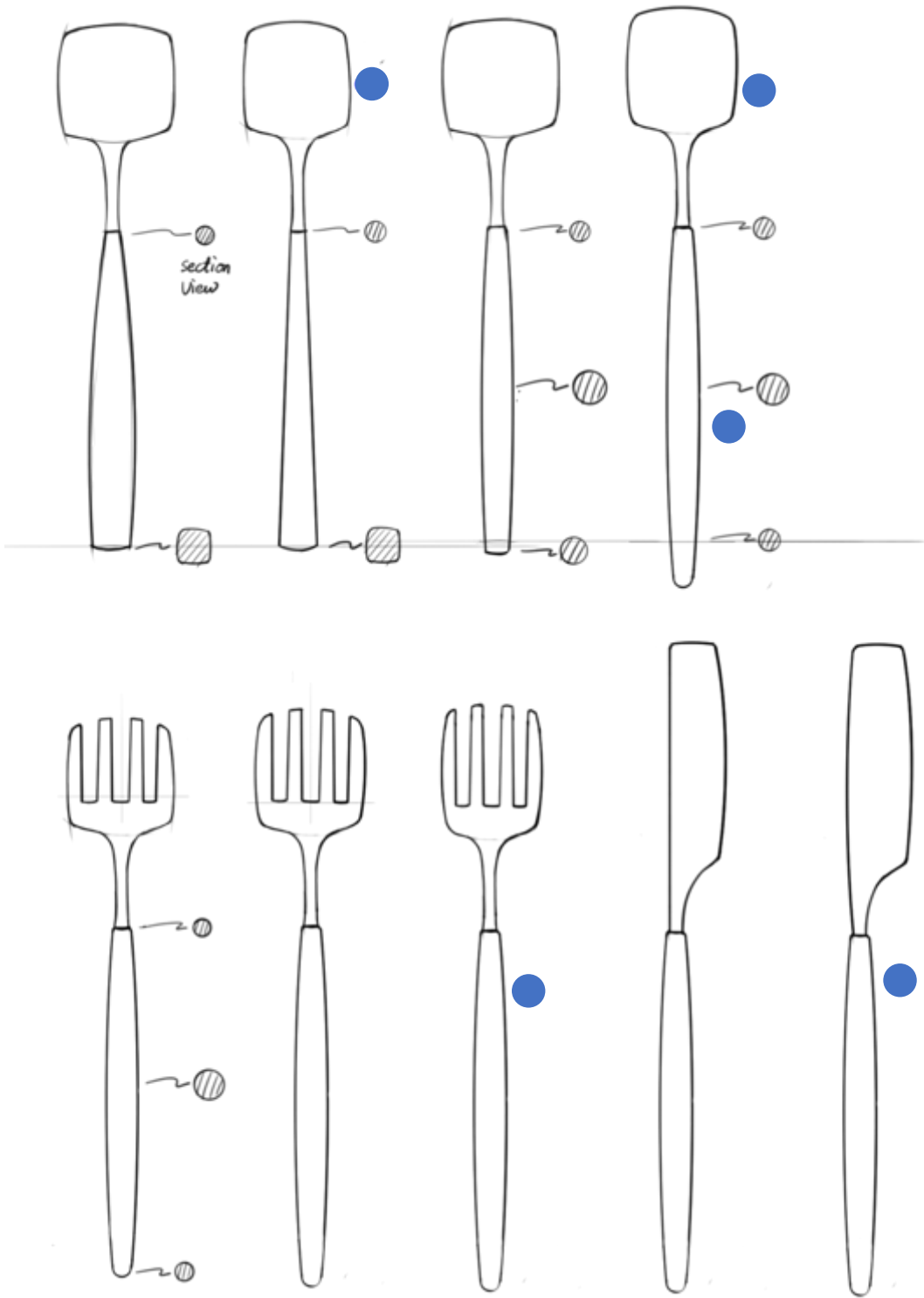


Figure 5.7.1.8 Exploration Sketches of the Cutlery Set

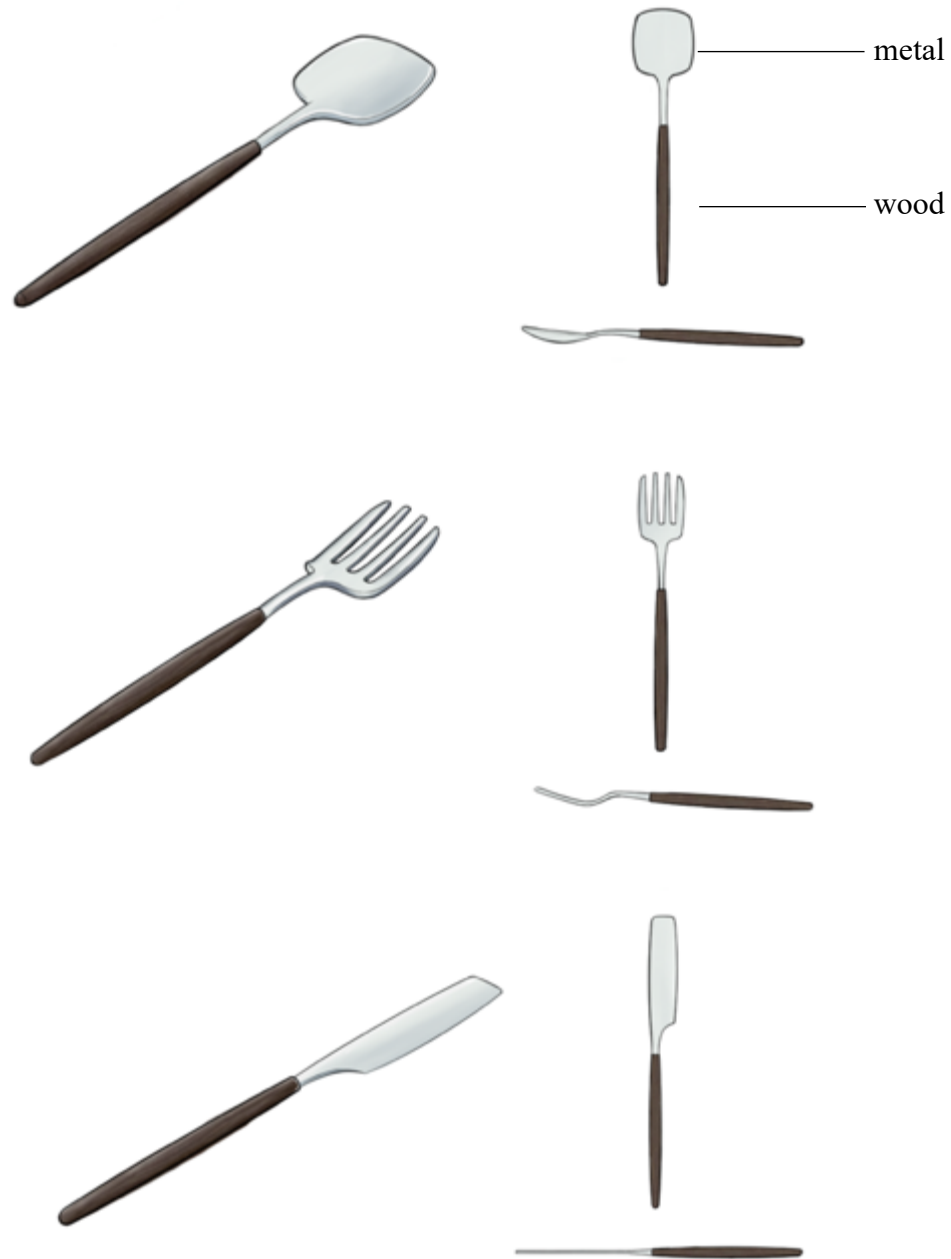


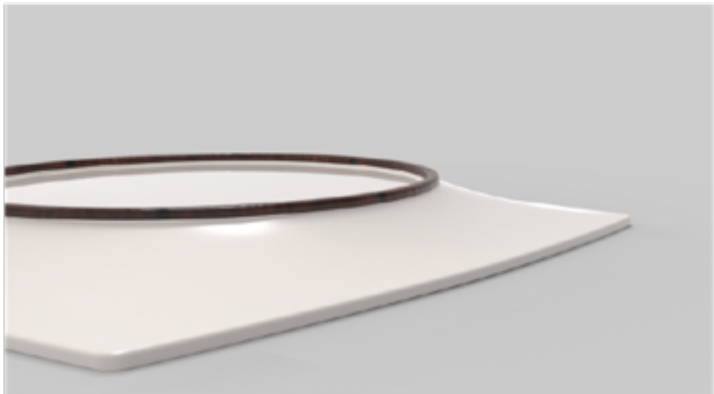
Figure 5.7.1.9 Final Design of the Cutlery Set

### 5.7.2 CAD Models and Renderings

After concepts are finished, CAD models are built to illustrate the design of the tableware set with appropriate color and material. Figures 5.7.2.1 shows renderings of the tableware set, including hero shots and detail renderings for each piece of tableware.



(continued)



(continued)



(continued)



Figure 5.7.2.1 Hero Shot & Top View of the Tableware Set

Figure below shows the dimension of the plate, cup, and the cutlery. Dimensions are all in the range of the hospital industry standard.

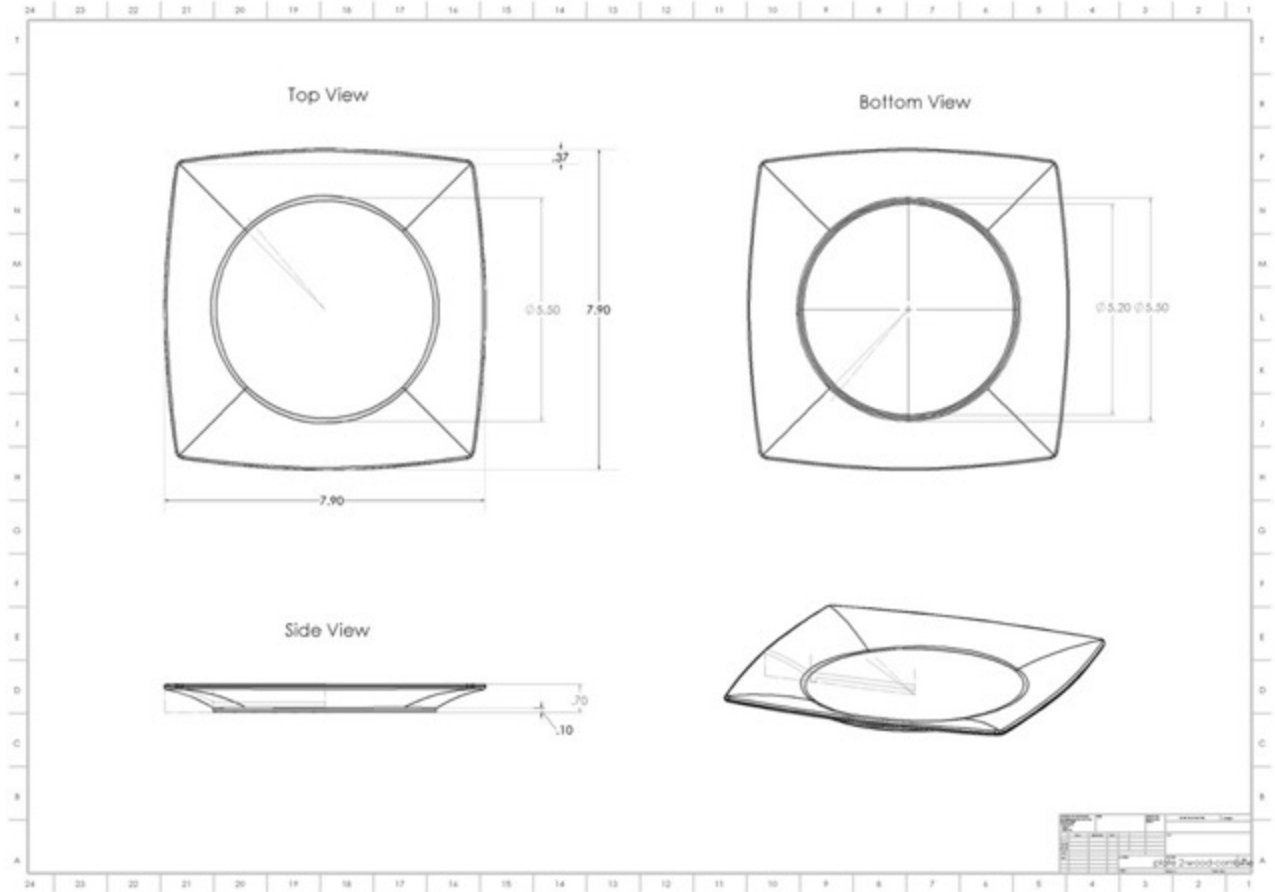


Figure 5.7.2.2 Plate Dimension

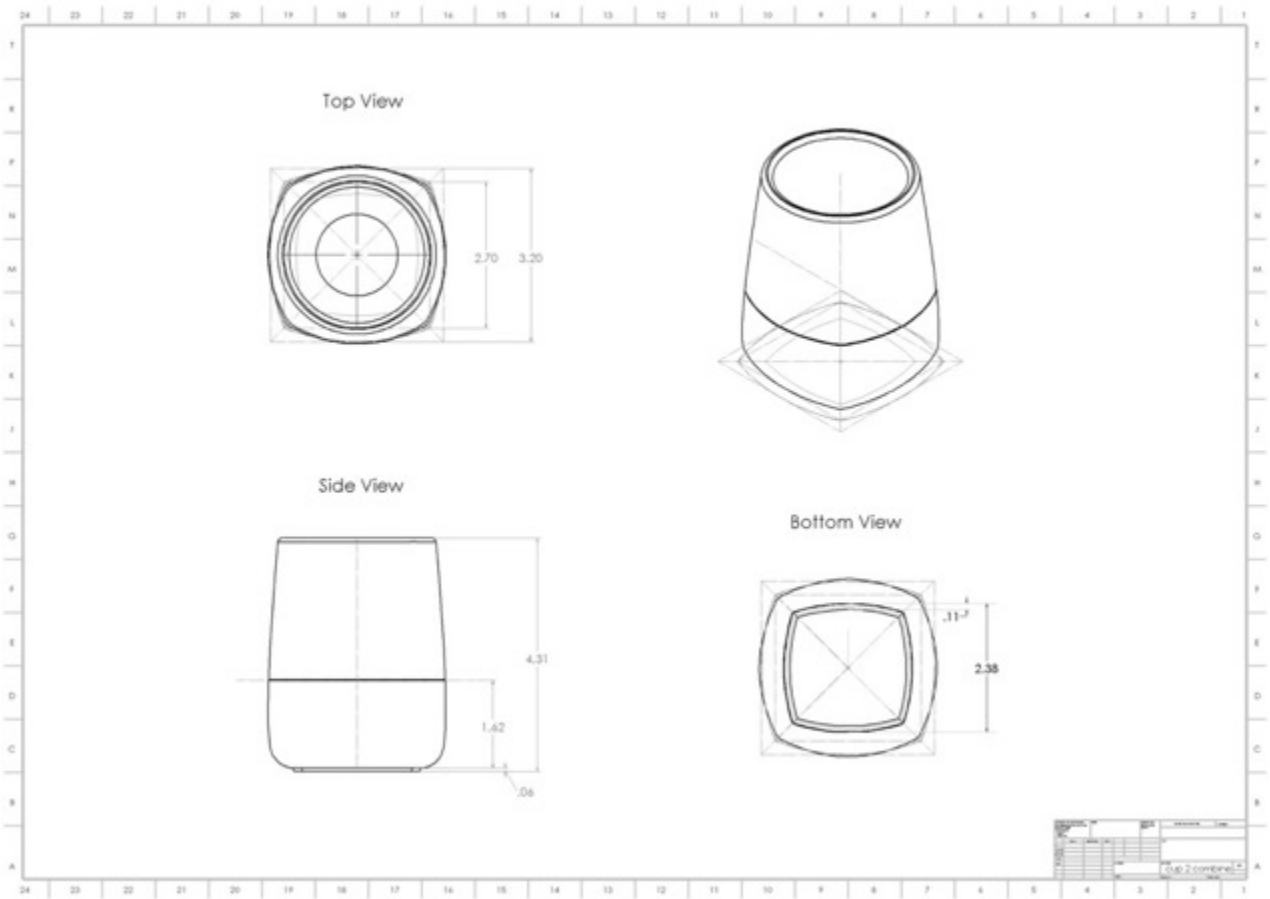


Figure 5.7.2.3 Cup Dimension



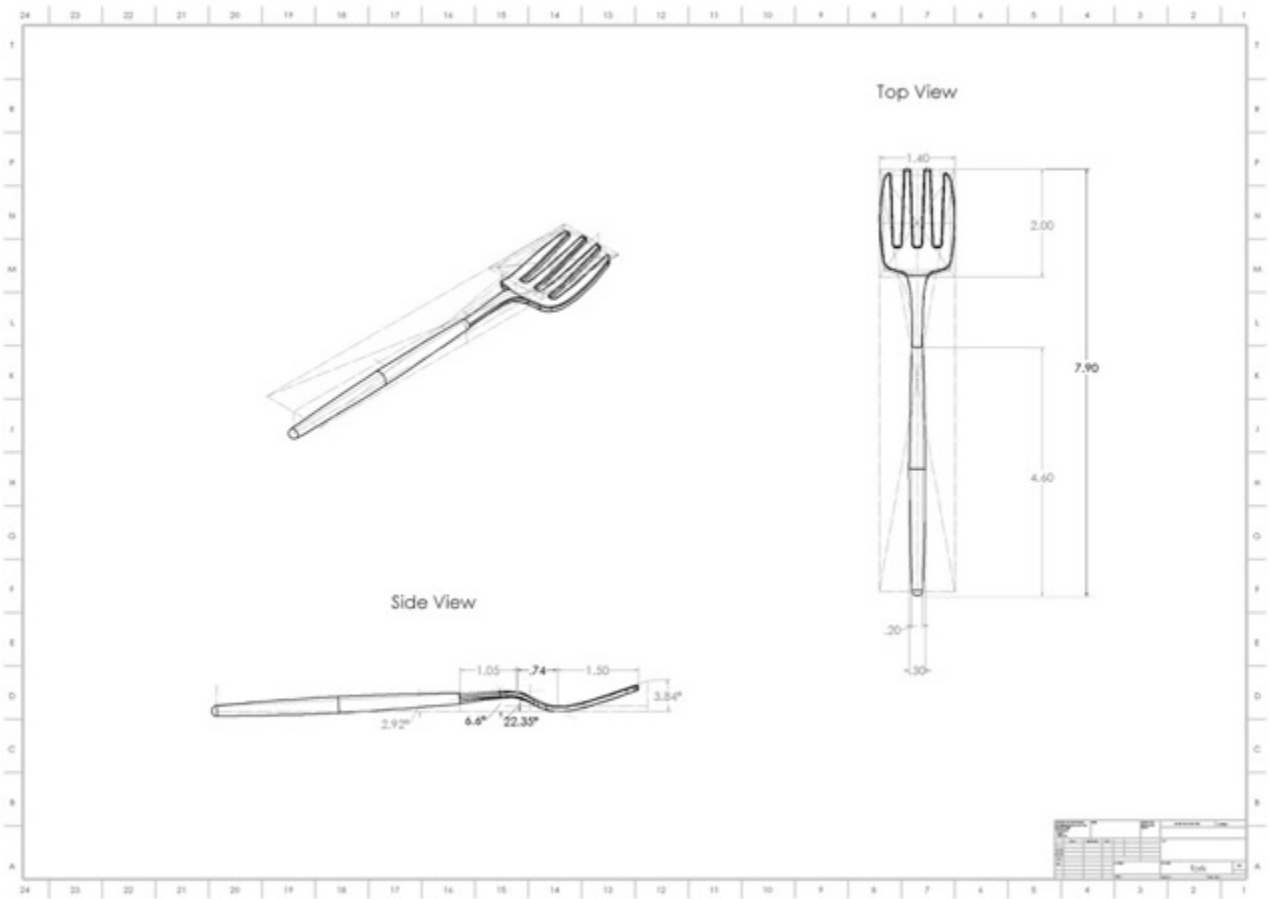


Figure 5.7.2.4 Fork Dimension

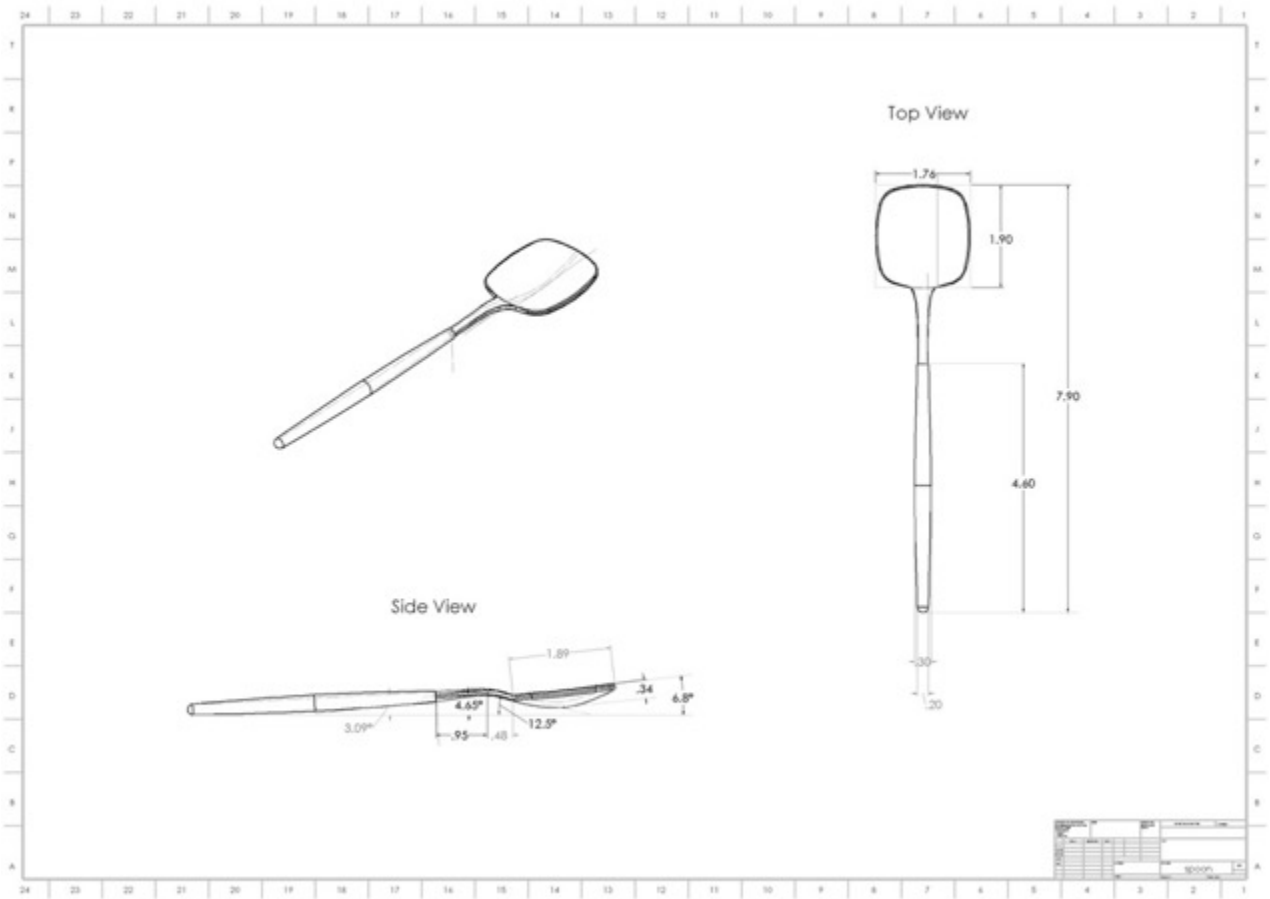


Figure 5.7.2.5 Spoon Dimension

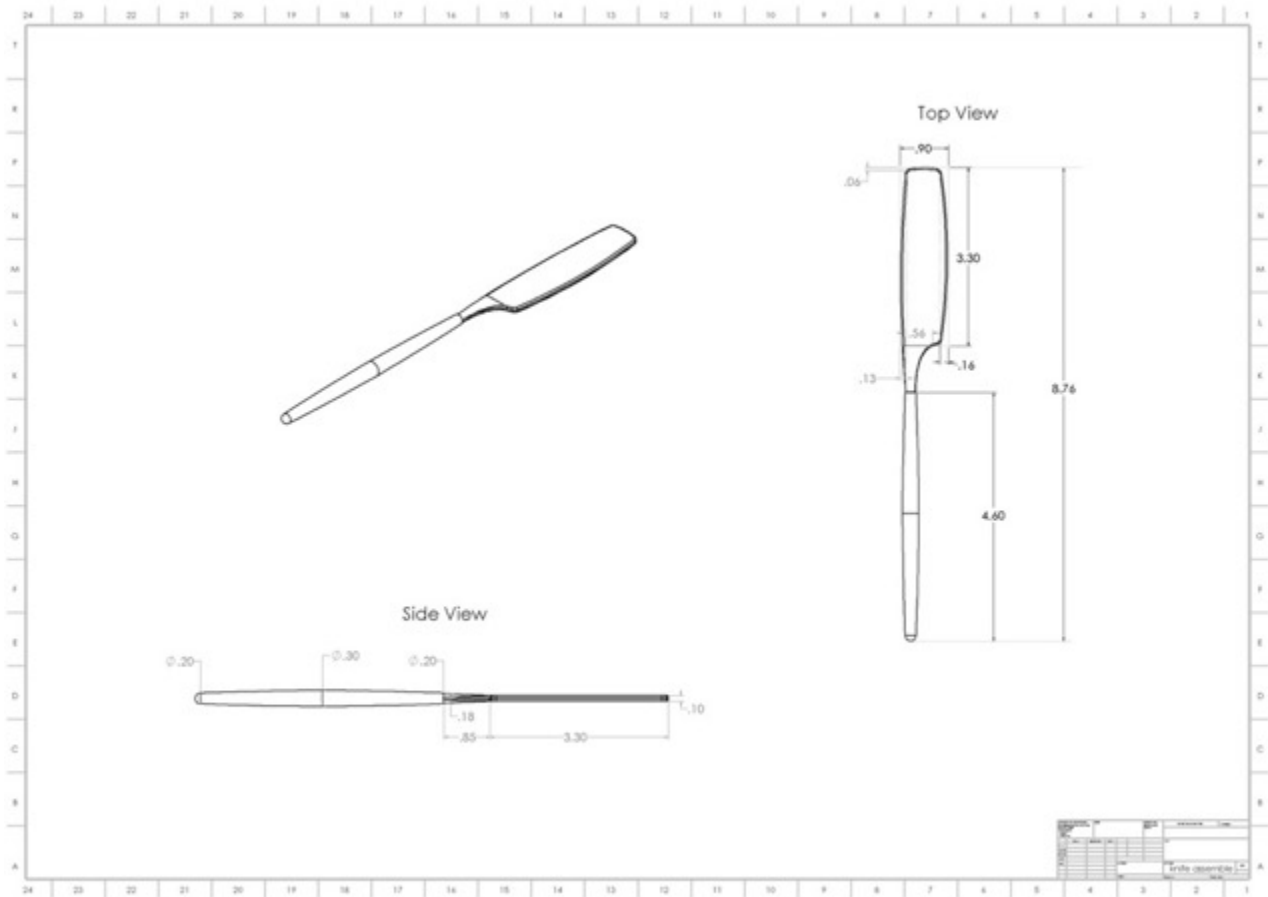


Figure 5.7.2.6 Fork Dimension

The figure below shows the exploded view of the cup. Since ceramic has better performance on water and moldiness resistance, clean easiness and strength, the entire part which will contact water directly is made of ceramic entirely. Therefore, the ceramic part design is what shows in Figure 5.7.2.7.



Figure 5.7.2.7 Exploded View of Cup Design

The picture below shows a rendering of the tableware set in the physical environment of Sophie's Soho.



Figure 5.7.2.8 Tableware Set in the Physical Environment of Sophie's Soho

## 5.8 Evaluation

Based on the evaluation form of the guideline, weights of the design categories should be defined first. After the discussion with the owners and the interior designers, all these seven categories' weights are defined as shown in Table 5.8.1. Shape, color, and material have the same weight of 20%, the left categories have a same weight of 10%. The reason is that shape, color and material have much more design clues than the other four categories, and the brand-specific design elements of these three categories are used in Soho's physical environment largely. Scores of these seven categories are given according to the final design, according to whether the brand-specific of Soho have been used and how well they are used, show in the table below. Therefore, the total score of this tableware set design is 8, which is higher than 6, and it proves that the design is applied with Soho's brand-specific design elements appropriately.

Category	Weight	Score (1~10)
Shape	$W_s = 20\%$	$S_s = 8$
Color	$W_c = 20\%$	$S_c = 7$
Material	$W_m = 20\%$	$S_m = 10$
Texture	$W_t = 10\%$	$S_t = 10$
Pattern	$W_p = 10\%$	$S_p = 0$
Repetition	$W_r = 10\%$	$S_r = 10$
Balance	$W_b = 10\%$	$S_b = 10$
Total	100%	$S_{total} = W_s * S_s + W_c * S_c + W_m * S_m + W_t * S_t + W_p * S_p + W_r * S_r + W_b * S_b$ $= 20\% * 8 + 20\% * 7 + 20\% * 10 + 10\% * 10 + 10\% * 0 + 10\% * 10 + 10\% * 10$ $= 8$

Table 5.8.1 Evaluation of the Tableware Design

## **5.9 Final Physical Models**

All the pieces of the tableware set are 3D printed, hand sanded, and painted with proper color and texture. Pictures of the physical models are shown in Figure 5.9.1. Some pictures showing the tableware set in use are shown in Figure 5.9.2.



(continued)





Figure 5.9.1 Final Physical Models



(continued)



Figure 5.9.2 Pictures of the Tableware Set in Use

## 5.10 Conclusion

A set of tableware samples, including a plate, a cup, a fork, a knife and a spoon, demonstrates the application of the design guideline.

The shape of the tableware combines square and round shape, which represent the mostly used and remarkable shape in the physical environment of Soho.

Ceramic and wood are applied as tableware materials which express a feeling of high-quality and natural. Warm gray is selected as the color of ceramic. The color of the wood material applied on the tableware set is same with the color which has the highest weight in the brown category. For tableware, wood is not the best choice because it molds easily through exposure to water and moisture. But with the good technology in the current manufacturing industry, wood can be given a sealing layer to protect it from mold and to extend the lifetime of a wood product. Also, materials that can mock up wood's texture with better durable quality has already been produced and it will be a good substitute choice for tableware.

Paint is applied on the ceramic part of the tableware set. The orange-red pattern is not used because it doesn't match Soho's brand identity very much if being applied on tableware. Hence there is no pattern repetition on the tableware set. The plate, cup, spoon and fork design are all symmetric and similar design elements are repeated on every piece of the tableware set.

High quality ceramic is used, and smooth and gloss glaze are put on the outside of it, which represent the brand identity of upscale and high-quality. Wood material is integrated to express an accessible, natural and original feeling. Therefore, the design of the tableware set delivers Soho's brand identity properly and is applied with Soho's brand-specific design elements defined from the physical environment.

## **Chapter 6 Conclusion**

The objective of this thesis is to develop a design guideline to help designers design tableware according to a physical environment of a foodservice firm. This thesis demonstrates how important the physical environment is and how it influences customers. It mainly focuses on identifying the brand-specific design elements of the foodservice firm and applying them on the design of tableware. The design elements of shape, color, material, texture, pattern, repetition and balance are studied and analyzed to create a set of tableware. A sample work of tableware is designed to demonstrate the application of the guideline.

Tableware design has several directions and many factors can be included. This design guideline helps a foodservice firm to get a set of tableware which delivers the same brand identity of its interior design (physical environment). The design products will bear the unique design features of its foodservice firm. At the same time, this design guideline can also be used as a method to choose tableware for a foodservice firm if they don't want to afford a unique set.

There are still more possibilities of tableware design, such as emotional or culture aspects. Since customers are seeking better and higher-standard dining experience, it is worthy to explore tableware design more.

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### **Footnotes**

<sup>1</sup> The reason to have double quotation marks here, is that not every foodservice company have an announced brand identity, like Noma in Chapter Three, but companies who have a company vision or statement must want their customers to sense the same statement. And that can be a generalized brand or brand identity. The entire physical environment, together with food and staff service, acts as a “brand” to show customers the company’s statement. In the following, double quotation marks won’t be used but “brand identity” of foodservice companies should be seen as a generalized concept in this thesis.