

GREEN DESIGN PRINCIPLES OF SHANGHAI EXPO BASED ON WORDLE STUDY  
OF ONLINE PERCEPTIONS

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## **ABSTRACT**

### **GREEN DESIGN PRINCIPLES OF SHANGHAI EXPO BASED ON WORDLE STUDY OF ONLINE PERCEPTIONS**

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The Shanghai Expo is one of the largest Expo events in recent history, with 73 million visitors, 240 countries and regions participating, and about 7 billion dollars investment. Green design is the highlight of this event and its design elements are reflected in many perspectives all over the fair, such as site plan, pavilion construction, and landscape design. This study explores the perceptions of Shanghai Expo relating to green design and planning by applying media resources— blogs and three major newspapers, and visual analysis tool--Wordle. The analysis reveals the role of expos in society and how people perceive and experience them. Issues related to the green landscape design guidelines and principles for mega-events are discussed.

Key words: Expo, Shanghai Expo, Green Design, Wordle, Blogs, Newspapers

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# **CHAPTER 1: INTRODUCTION**

## **Overview**

The World Expo is one of only a few truly worldwide cultural events, and has evolved in many ways since its inception in 1851. Perhaps the most influential change has been in their design, which has greatly altered the role of expos in society and how people perceive and experience them. This research explores perceptions of the 2010 World Expo in Shanghai, China through the use of on-line blogs, newspaper reports and on-site field studies.

The Shanghai Expo is one of the largest in recent history, with 73 million domestic and international visitors enjoying more than 22,900 events and attractions over a six month period between May 1<sup>st</sup> and October 31<sup>st</sup>, 2010. (Coordination 2011) The Shanghai site is located on 2.04 sq miles of the Huangpu River. Over 200 countries participated in the Shanghai Expo, with each one spending millions of dollars to design and build their pavilions. In addition to the national pavilions, the Expo included many corporate, themed and various service pavilions designed in different styles using unique planning, design and construction techniques.

Each pavilion provides its own unique visual landscape, offering a feast for the senses as visitors stroll through. Additionally, three beautiful parks are constructed on the Expo site, providing a relatively quiet change of pace from the constant bustle of the crowded pavilions. The Shanghai Expo successfully fitted an amazing array of highly creative constructions and landscapes into a relatively small area while accommodating millions of visitors in only a few months' time. This makes the Expo a valuable mega event for the study of planning and

design.

## **Goals and Objectives**

To evaluate the planning and design of Shanghai Expo, personal experiences, reference studies and critiques from some of the Expo's 73 million visitors are used. Two major media: newspapers and Internet blogs are chosen for data collection. Wordle, a digital content analysis tool, provides a visual hierarchy of the on-line content with supporting frequency data of word/concept usage. The Wordle interpretation is augmented with field observations and photographs made by the author while attending the Shanghai Expo. The goal of the research is to explore perceptions of mega-events relating to green design and planning. Objectives include, 1) document field experiences and green design practices of the Shanghai Expo, 2) use Wordle as a visual analysis tool of text data, and 3) explore perceptions using blogs and three newspapers, the New York Times, People's Daily and the Standard- Hong Kong, 4) formulate design principles for mega events.

## **CHAPTER 2: LITERATURE AND BACKGROUND**

### **Over View of Expo History**

International expositions have changed names over their history. Initially, they were known as the “World’s Fair,” but in 1967 the name was changed to “World Expo,” which is still in use currently. The first Expo was called “The Great Exhibition of the Works of Industry of all Nations.” Since the first Expo in 1851, which was held in Hyde Park, London, 42 Expos have been periodically presented in different parts of the world. The most recent is being held in Shanghai, China.

Even though there are many Expos, Walvis, a researcher in this area, argues that each Expo is different. He categorizes Expos into three eras: industrialization, cultural exchange, and nation branding, respectively. (Walvis 2004) He describes the current era as nation branding. Before discussing the details of this study, it is relevant to first discuss the historical evolution of Expos as described by Walvis. (Walvis 2004)

### **First Stage: Industrialization (1851–1932)**

In the 19th century, with the dramatic development of industry, England led the world’s economy. To reinforce its leading economic position and expand its global market, England needed a platform to display its modern industrial machines and affordable products. It was this need that led to the first Expo being held in London in 1851. Initiated by Queen Victoria’s consort, Prince Albert, it was called “The Great Exhibition of the Works of Industry of all Nations”, and was held in Hyde Park. (Rydell et al. 2000) The fair ran from

May 1<sup>st</sup> through October 11<sup>th</sup>. During this five months run, 28 nations participated, over 6,000,000 visitors toured, and about 17,000 exhibitors attended. (Findling and Pelle 1990)

The Great Exhibition had four categories of displays: Manufacturing, Machinery, Raw Materials, and Fine Arts. These categories later became the standard for later exhibitions. (Greenhalgh 2011) The grand centerpiece of this exhibition was called the Crystal Palace, and was constructed of iron and glass plates. This building was extolled and loved by fair visitors for its glorious appearance and eventually the Expo of 1851 became known as “the Crystal Palace Exhibition”. Following the dismantling of the Expo, the Crystal Palace was rebuilt in suburban London and served as an exhibition and entertainment center. (Rydell et al. 2000)

The London World’s fair became a huge success and eventually turned a profit of £ 186,000. These funds were used for educational purposes, establishing Albert Hall, the Science Museum, the Victoria and Albert Museum, and the National History Museum. (Davis 1999) The Crystal Palace Exhibition created a new kind of event which combined industrial and artistic displays. Cutting edge technology was on display with new inventions and innovations such as the steam engine and new manufactured products. New technologies were also evident in the construction of the actual exhibits.

Inspired by the first world’s fair held in London, other western countries began hosting world’s fairs in such cities as Philadelphia, Vienna, Paris and Amsterdam. Some of them hosted multiple fairs. For example, Paris held no less than six world’s fairs, occurring in 1855, 1867, 1878, 1889, 1900 and 1937. Among them, the 1855 Paris Expo cost nearly 2.3 million dollars to produce, exhibiting products in Agriculture, Industry and Arts. (Findling and Pelle 1990)

America is one of the most frequent countries hosting world's fairs. Many cities in America have hosted world's fairs, such as New York, San Francisco, Chicago, Philadelphia, Los Angeles, Boston and Atlanta. Some of these fairs proved to be very influential, with perhaps the 1893 Chicago World's fair being the most prominent.

In 1893, the World's Columbian Exhibition was held in Chicago to commemorate Christopher Columbus and the discovery of the New World in 1492. (Findling and Pelle 1990) After being devastated by fire in 1871, Chicago was eager for an opportunity to rebuild the city and reinforce its significant domestic and international stature. Moreover, in the City Beautiful Movement, the middle and upper class proposed to transform the city's appearance by promoting its aesthetic function. At that time, four cities competed with Chicago for the honor to host this event. In the end, viewed as the communication and commercial center in western America, Chicago defeated its rivals, including New York, St. Louis and Washington. (Burg 1976)

On May 1st, the Columbian Exhibition was hosted in Jackson Park, between Chicago and Lake Michigan. (Burg 1976) Similar to other fairs in the industrialization era, the new innovations of technology and industrialization brought many surprises to the public. The buildings were covered with a bright white plaster mixture which looked like marble. Due to this novel appearance, the fair site became known as the "White City". (Rydell 1987) Another innovation on display was the application of new electrical light bulbs created by Thomas Edison. This allowed the White City to stand out due to its amazing illuminated night views. Additionally, nearly every pavilion was constructed with a mixture of gray mud, cement and jute fiber attached to a wood skeleton. (Harris et al. 1993) This new type of construction

provided people an economical method to build attractive buildings in a short time. The White City impressed Chicago's citizens so much that they hired Daniel Burnham, one of the designers of the Columbian Exhibition, to do a master plan to apply the principles of the White City in the real world. (Badger 1979) This exhibition helped to promote the appearance of the city by providing the public with an appealing vision of futuristic life.

The cultural and economic impacts of this Expo were many. Locally, the Columbian Exhibition brought several advantages to the host city. The fair contributed to the city re-planning and rebuilding, resulting in aesthetic and social gain for the area. The new Chicago was full of beauty and grandeur compared to the old one, enhancing Chicagoans' confidence in their future. The fair also stimulated local economic growth and provided extra job opportunities. Thousands of people benefited from this due to the need to operate the fair on a daily basis. On a much larger scale, job growth was also provided by the growing demands of industries which were directly or indirectly influenced by the exhibition. New technology and fresh products were viewed and accepted by the public. They enriched people's daily life and increased their quality of life. The desire for modern amenities and products encouraged the creation of new technology. The fair also provided a blueprint for future metropolitan areas which addressed the growing population, pollution, and many urban social problems. After the Columbian Exhibition, there are another 40 World's fairs in the next 40 years held all over the world. The industrialization era has more fairs than any other era. In the early 20th century, due to the impact of two world wars and the subsequent economic and cultural upheavals they generated, the quantity and quality of the world's fairs declined significantly. Although several world's fairs were held after World War I, such as the

1915 San Francisco Exhibition, most were organized by a number of countries as small professional exhibitions, like the 1925 Paris Exhibition and the 1926 Philadelphia Exhibition. During this period, world's fairs were organized and conducted under the leadership of national governments. (Greenhalgh 2011) Influenced by strong political factors, world's fairs in this period appeared chaotic and lacked uniform rules. In response to this situation, a standard management of the world's fairs was proposed.

In 1928, 31 countries gathered in Paris to discuss the standard management of world's fairs. At this meeting, representatives from 31 countries discussed what a host country's responsibilities should be, the obligations of participating countries and the frequency and organizing methods of world's fairs. (Davis 1999) At this same meeting, the BIE (International Expositions Bureau) was established as the governing organization of world's fairs. The two main goals of BIE were as follows:

- 1) to oversee the calendar, bidding, selection and organization of World Expositions;
- 2) to establish a regulatory framework under which Expo organizers and participants may work together under the best conditions. (Findling and Pelle 1990)

Expos within the industrialization era focused on promoting trade by displaying the advancements of industrial civilization. In these fairs, numerous industrial advancements and technological inventions were displayed. The advancement of knowledge led to the industrial revolution, which promoted economic and social developments. Trade is the main purpose of these exhibitions in the first era, however, the economic advantages gained were limited to a national or local level. Although these fairs are called world's fairs, they had few international participants and little global attention. These exhibitions, which were the prototypes of



modern expos, can hardly be called real international exhibitions.

### **Second Stage: Cultural Exchange (1933–1987)**

The second stage of World's fair's history is called "cultural exchange". In this era, although industrialization was still a significant focus of these exhibitions, they had switched their emphasis toward new themes about people and cultures. (Walvis 2004) For example, the influential Utopian ideals theory, which aimed to seek the ideal community, was presented during this period. (Rydell et al. 2000) It was also in this period, BIE decided to call these exhibitions "Expos" instead of "World's Fairs" in 1967. (Findling and Pelle 1990)

In 1933, Chicago planned a fair for its centennial to commemorate the huge success of the 1893 Chicago exhibition. The theme of this fair was 'A Century of Progress'. Its aim was to celebrate advances in science and technology. (Findling and Pelle 1990) This is the first time a theme was introduced at a world's fair. After that, every subsequent world's fair had its own theme or concept. These concepts usually reflected an issue or issues concerning society. The aim of these themes is to highlight these issues and capture people's attention in order to help participating countries and international organizations find solutions.

After the 1935 Brussels World's Fair and Paris's sixth World's Fair in 1937, New York hosted the 1939 World's fair for the second time. (Findling and Pelle 1990) On April 30<sup>th</sup>, 1939, the New York World's Fair opened on the site of Flushing Meadows, Queens. The themes were "Building the World of Tomorrow" and "For Peace and Freedom". The fair was divided into two six month seasons in 1939 and 1940. (Rydell et al. 2000) In the first season of 1939, the Expo painted an optimistic picture of the future. It focused on the future of

human beings, presenting Utopian ideals and the benefits of scientific progress. The designer displayed a utopian futuristic urban space set in the year 2039 for the interior of the Perisphere, which was one of the two main symbols of the fair. (Rydell et al. 2000)

Different from previous fairs, the 1939-1940 New York Fair selected an abandoned plot of land as its site, rather than an existing park. Flushing Meadows was a marshy place located in Queens, where the city dumped refuse. (Findling and Pelle 1990) Robert Moses, New York City's parks commissioner, who chose the site, wanted to develop the waste land by building the fair which would later become a large park. (Rydell et al. 2000) The process of developing the site was exactly like the words written on the placard of Flushing Meadows-Corona Park, "Flushing Meadows-Corona Park, today New York's second largest park, has risen like a phoenix from the ashes." The site today is the largest park in Queens, and serves as a Tennis Center. Some structures from the fair remain, and have been adapted to other purposes. The grand symbol of the fair, the Perisphere still stands, taking on the role of landmark and story teller. (Figure 1)



Figure 1: The Unisphere stands in the middle of Flushing Meadows-Corona Park (Author, 2011) For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.

With the outbreak of war in Europe in 1939, people changed their focus from visions of the future to peace and freedom for the world. The theme of the Expo in the second season was “Peace and Freedom”. The war influenced the 1940 expo in different aspects. It directly led to a reduction in visitors and profitability, as well as the absence of some pavilions, such as the Soviet Pavilion. (Findling and Pelle 1990)

Although the original plan was interrupted by the war, the New York World’s Fair can still be considered a meaningful event. It successfully promoted the global exchange of culture, technology, art and products. It presented contemporary demands, and expressed the desire for an optimistic, peaceful future. Additionally, the New York World’s fair can be

called a truly international exhibition compared to earlier fairs. By the time the fair opened, fifty-eight nations had agreed to exhibit. (Findling and Pelle 1990) This is the first time the World's fair actually presented on the world wide stage. The New York Fair also created a way to combine Expo site usage and the development of wasteland. It provided later designers a new concept to develop or revive a region.

### **The Third Stage: Nation Branding (1988–1993)**

Since 1988, Expos have changed their focus from cultural exchange to national branding. (Walvis 2004) In Expos of the Nation Branding era, countries always use their national pavilions as windows to show off their advantages and achievements. These events provide an ideal opportunity for counties to promote their national images. Expos were becoming platforms for nations to brand themselves from different perspectives, particularly culturally and economically.

### **The Forth Stage: Environmental Development (1994–present)**

Since 1994, Expos emphasized on themes related with ecology, sustainability and green design. The recent Expos all stress the relationship between environment and humans. The hosting country raised environmental problems during the Expo, calling participating nation's attentions to the environment, and wished some effective resolutions could be achieved to solve these problems.

Although world's fairs and expos have been divided into four different eras according to their different times, they were not limited to just the particular characteristics of their era. Actually, today's world's expositions incorporate elements of all four eras. They display new

inventions, industrial facilities; focus on cultural exchange based on a theme; are used for shaping and promoting city, regional and national branding; and focus on environmental issues about energy saving, pollution elimination, sustainable construction, and green design.

The 2010 Shanghai Expo was held in the Pudong District of China. It opened on May 1<sup>st</sup>, and closed on October 31<sup>st</sup>. (Bureau of the Shanghai World Expo Coordination 2011) The theme for the Shanghai Expo is “Better city, Better life.” (Bureau of the Shanghai World Expo Coordination 2011) This theme illustrates the goals of promoting quality of life in the modern city while facing such urban social problems as, increasing population, pollution, transportation problems and poverty.

The site is located in the center of Shanghai city, on the waterfront between the Nanpu Bridge and the Lupu Bridge. The site is 1304.716 acres, of which 971.124 acres are located in Pudong Park, and 333.592 acres in Puxi Park. (Bureau of the Shanghai World Expo Coordination 2011) After seven years of preparation, the exhibition site now has a more convenient transportation system through the use of various vehicles, including rails, highways, water ferries and other transportation facilities. There were approximately 200 countries participating in the Shanghai Expo and 70,000,000 visitors are estimated to have toured the exhibition. (Bureau of the Shanghai World Expo Coordination 2011)

The Shanghai Expo stands out for its dizzying variety of national and regional pavilions. Many countries invested heavily in their national pavilions, such as France and Germany. Among all these elaborate pavilions, the China Pavilion commanded the most attention through its centralized location, size, extravagant appearance and culturally symbolic meaning.

Painted in seven different shades of red, the China Pavilion at the 2010 World Expo, is at first glance, a very obviously Chinese structure. (Bureau of the Shanghai World Expo Coordination 2010) This houses an interior that is actually a complex structure celebrating a diverse range of traditional Chinese elements, including architecture, calligraphy, gardening and urban planning. The China Pavilion is 63 meters' tall, triple the height of any other pavilion, and is called "The Crown of the East". (Bureau of the Shanghai World Expo Coordination 2010)

After the Shanghai Expo closed in October, the history of the Expo will still live on. The Yeosu Expo will be held in Korea in 2012, and Milan Expo in Italy in 2015. As time goes on, Expos in the future may have some distinctive meanings and goals; however, Expos will always be vehicles of change to contribute to the lives of human beings.

## **The 2010 Shanghai Expo**

### **Introduction**

On May 1st, the 2010 Expo was held in Shanghai and it lasted for 6 months. During this period, more than 200 hundreds countries were involved and over 73 million people attended. (Bureau of the Shanghai World Expo Coordination 2010) There are numerous interesting highlights in the Expo which attracted the attendees, and most of them are well connected to the theme “Better City, Better Life”, which aimed to produce a green Expo. The idea of holding a green Expo is not only beneficial to the 70 million plus visitors, but also leaves a green legacy in Shanghai and contributes to worldwide initiatives of making cities greener and more sustainable. (UNEP. 2009) The green Expo's intent was to focus on the relationship

between city and environment while striking a balance between urban development and a sustainable future.

This intent can be found in many aspects of the Expo, such as the emblem and Mascot, a cartoon character named Haobao. (Bureau of the Shanghai World Expo Coordination 2011) The emblem looks like the first Chinese word of Expo, and is designed as three persons' hand-in-hand, symbolizing harmony between peoples. Haibao used the color of ocean—blue, which represents the balance between humans and nature. (UNEP. 2009) Most of the designs at the Shanghai Expo are called green designs. Although some of them are eco-friendly and sustainable, others do not perform well enough to qualify as green designs.

### **Original Wetland**

In Houtan Park, one of three main parks included in the Shanghai Expo, a wetland occupies a large area. One part of the park belongs to an original wetland which is about 10 million acres and 1.1 miles long. (Yu 2010) It is the only remaining original wetland in the Shanghai urban area, and plays a significant role ecologically and aesthetically. This includes the storage of water, regulating the water cycle, improvement of water quality, transformation of nutrients, habitat for a diversity of aquatic and terrestrial plants and landscape aesthetics.

Due to the Expo, as an integrated part of the ecosystem, the original wetland has been preserved and is being cared for. The soil is nourished and more appropriate wetland vegetation has been planted where needed while keeping the natural characteristics and function of the original wetland. The project has produced results, successfully preserving and nourishing the only original wetland in Urban Shanghai.

## **New Wetland**

Due to the success of the preservation project of the remnant of wetland on the Expo site, Shanghai devised a plan to restore the wetland to its original size. This was a monumental task, as the rest of the old wetlands were occupied by a heavily polluting steel factory and a shipyard. (Yuanyuan 2007)

After the removal of the steel factory and shipyard, what is left behind is a large plot of polluted land. The soil is disturbed and polluted, and invasive plants have destroyed the natural vegetation community. Additionally, the water resource is severely polluted. The water quality in the nearby Huangpu River is sorted as grade V or even worse. (Yu 2010) According to the Surface Water Quality Standards of People's Republic of China, water is sorted into 5 grades due to the purities. Among the 5 grades, grade V means the water has been heavily polluted. (State Environmental Protection Administration of China 2002)

A series of measures are taken to deal with these severe environmental problems: constructions are removed and garbage is cleaned up, toxic soil is replaced with high quality soil, water is introduced from the Huangpu River to support the wetland (Yuanyuan 2007) and appropriate vegetation is reintroduced. A few fountains and special benches are installed to accommodate visitors. After all these projects are done, people surprisingly find that the original brownfield has been transformed into an amazing wetland park. There are lush plants and a diversity of living creatures, such as fish and birds. The whole of Houtan Park now seems like a paradise of plants, fish, worms and birds.

The combined preserved and restored wetland now serves as a sustainable integrated water system linked to the Expo. The water system contributes to the regulation of



stormwater, runoff, underground recharge, water volume, humidity and temperature, reduction of sediments and minimizing erosion. Another significant benefit of the wetland is that the water quality improved significantly because of the purification function of the wetland. Additionally, the wetland provides an open space for mental restoration, recreation and social activities. The wetland has proven to be an obvious highlight at the green Expo.

### **Constructions and Materials**

Prior to the Expo, there were many old warehouses, workshops, factories and shipyards located on the site. All of these structures had to be relocated and rebuilt elsewhere. This left behind a great amount of old construction materials and waste. However, from the perspective of sustainable site design theory, those wastes can be seen as raw material to be used for the new development, such as bridges (Figure 2) and walkways (Figure 3). In the process of building Shanghai Expo, a lot of these constructions are rebuilt and materials are recycled. For example, the original chimney of Shanghai Nashi power plant is a 541 foot high cylindrical structure and it is transformed into a 659 feet's high sightseeing tower. (Jiemin 2008) This tower became a landmark for the Shanghai Expo and is named the "Expo Harmony Tower".

Other buildings were also recycled. An old steel factory is converted to house the Baogang Stage. The framework of the old steel factory is reused as the framework for the new building (Figure 4). This huge factory building covers about 2.5 acres which is large enough to house numerous and sizable audiences. The Baogang Stage can seat 3500 people and is the largest stage at the Shanghai Expo. (Window of China 2009) Plants used both

inside and outside of the construction, help cool the temperature and provide visitors with a touch of nature. Three giant chimneys have been preserved and converted to vents in which fans have been installed to control the temperature (Figure 5).



Figure 2: Old steel and wood for bridge (Author, 2010)



Figure 3: Old steel as walkway (Author, 2010)



Figure 4: The framework of the old steel factory building was reused as the framework of the new stage (Author, 2010)



Figure 5: Three chimneys of the old factory building (Club China 2009)

The preservation and utilization of old factory buildings and recycling of materials in the Baogang Stage project provide many benefits. A lot of funding and labor resources for

building construction and purchasing materials are saved. The project efficiently reduces the consumption of energy and materials. It also reduces harmful gas generation and emissions, and weakens noise to some extent. The comparatively simple project results in a shorter project period. The preservation and reuse of old construction and unique elements contribute to a strong sense of place. Lastly, the Baogang Stage rebuilding project will serve as an example to influence design ideas of the future.

### **Attendance, Facilities and Space Usage**

According to the official assessment, about 70,000,000 attendees were estimated to have visited the Shanghai Expo during the six month period. That breaks down to about 400,000 tourists daily. The actual attendance is 73,080,000, (Bureau of the Shanghai World Expo Coordination 2011) very close to the estimated attendance. Despite the best efforts of the event planners, the facilities on site were inadequate to serve so many tourists. Lines for pavilions were so long that visitors queued 6 hours or longer for a popular pavilion. There were not enough available benches, prompting many visitors to bring their own chairs (Figure 6). Tourists complained of long waiting times for restrooms, leading to an army of mobile restrooms being brought in to alleviate the problem (Figure 7). Free public vehicles like Expo buses and ferries are always over-crowded and overwhelmed (Figure 8).





Figure 6: An old man brought a chair himself (Author, 2010)



Figure 7: Mobile restroom were used at Expo site (Author, 2010)



Figure 8: Over-crowded Expo Bus (Author, 2010)

Another interesting phenomenon is that, although the main expo site is so crowded that visitors can scarcely draw a breath, few visitors can be found in the Expo parks. One can only speculate at this point as to why the parks were largely ignored. Maybe visitors came only to see the pavilions and performances. Perhaps the parks are too far away from the main entrances. Newspapers and websites may have talked little about the parks. The exact reasons have not been studied yet.

## **CHAPTER 3: METHODOLOGY**

### **Selection of Pavilions**

In the era of Environmental Development, environmental issues like ecological design, sustainable construction are emphasized. In this article, several pavilions of Shanghai Expo are chosen to analyze their green designs. Pavilions are selected due to their importance of green features and visitors' attentions. Pavilions selected in this article have the most significant green features and high attentions of tourists. They include: China Pavilion, Denmark Pavilion, French Pavilion, Indian Pavilion, Indonesian Pavilion, Luxembourg pavilion, New Zealand Pavilion, Republic of Korean Pavilion, Shanghai Corporate Joint Pavilion, Spanish Pavilion, and The UK Pavilion. However, Singapore Pavilion and the USA Pavilion are selected due to their deficiency in design.

### **Selection of Blogs about the Green Features of Pavilions at Shanghai Expo**

The method used to select blogs is relatively simple. Blogs were found by using a "Google" search engine for the first step, then selecting the rough result one by one through reading the main idea.

Google Inc. is a multinational public corporation investing in Internet search, cloud computing, and advertising technologies. Google hosts and develops a number of Internet-based services and products. (Google 2011) The Google web search engine is the company's most popular service. According to market research of search engine rankings published by comScore in November 2009, Google is the dominant search engine in the

United States market, with a market share of 65.6%. (comScore 2011) Google indexes trillions of web pages, so that users can search for the information they desire through the use of keywords and operators. Google runs over one million servers in data centers around the world, (Pandia Search Engine News 2007) and processes over one billion search requests, and about twenty-four petabytes of user-generated data every day. (techcrunch 2008) Google search engine is one of the most efficient search engines in use today.

The steps I took to select the blogs about pavilion green features at Shanghai Expo are as follows. For example, if I wanted to search blogs about the green features of the French Pavilion, I input the keywords “France Pavilion”, “Shanghai Expo”, “Green Feature”, and “Blog” into the search engine, and then searched. I would get millions of results listed on thousands of pages. I then selected those results in the first 10 pages, and picked the suitable blogs which efficiently reflected the comments on the green features of France’s Pavilion. If I could not get enough blogs, I tried other keywords. In the end, I collected 144 pages of raw blogs (Microsoft Word size 12-pointed font, and single space text in A4 pages with pictures included). For example, by viewing the Shanghai Expo website and the blogs I selected in the first search process, I found the two highlights: “roof garden”, and “green wall”. I then input the keywords “France Pavilion”, “Shanghai Expo”, “roof garden”, and “blog”, and searched and selected again. After the process finished, I would input the keywords “France Pavilion”, “Shanghai Expo”, “green wall”, and “blog” for the third search. I would continue this kind of search process until I get enough blogs about the green features of the French Pavilion.

This same method is used to locate blogs about all other Pavilions which are discussed here.



## **Selection of Newspapers**

To study the news about the 2010 Shanghai Expo, three newspapers are selected. They are the New York Times, Standard- Hong Kong, and People's Daily. Information about the Expo was collected from these newspapers. Articles reported by the New York Times and Standard- Hong Kong were collected, if they made mention of the Expo, from May 1<sup>st</sup> (the date Shanghai Expo opened) to October 31<sup>st</sup> (the date Shanghai Expo closed). Meanwhile, articles from People's Daily about the 2010 Shanghai Expo were selected according to their publication dates.

From May to August, articles were chosen from the 10<sup>th</sup>, 20<sup>th</sup> and 30<sup>th</sup> of each month. In September and October, articles were collected on the following days: September 10<sup>th</sup>, September 20<sup>th</sup>, October 1<sup>st</sup>, October 20<sup>th</sup> and October 30<sup>th</sup>. The reason that October 1<sup>st</sup> is selected instead of September 30<sup>th</sup>, is because October 1<sup>st</sup> was the national day of China. There were several high profile articles and an increased number of reports covering the Expo on that day. Additionally, there were no articles about the Expo reported by People's Daily on October 10<sup>th</sup>.

The selection of newspapers was very important to ensure that the news about the 2010 Shanghai Expo was comprehensive, impartial and influential. The New York Times, Standard- Hong Kong, and People's Daily were selected due to their history, sizes, format, range of issues and sphere of influence.

## **New York Times**

The New York Times is an American daily newspaper founded by journalist and

politician Henry Jarvis Raymond, and has been published in New York City since September 1851. (The New York Times Company 2011) The paper's original name was the New-York Daily Times until it was changed to The New York Times in 1857. (The New York Times Company 2011) During 1870-1871, the New York Times was widely accepted by the public and its influence grew considerably. In its 160 years of existence, the New York Times has become a major international newspaper. Its coverage, circulation and reputation are international in scope. According to the New York Times Company's report, the 12-month average circulation of 2010 was 906,100 each weekday and 1,356,800 each Sunday. (The New York Times Company 2010)

The New York Times is mainly organized into three sections: News, Opinion and Features. The contents cover a wide range of fields, including international and national news, technology, science, health, sports, education, weather, arts and other varied topics. (The New York Times Company 2011)

The New York Times is owned by The New York Times Company, which also publishes 18 other regional newspapers including the International Herald Tribune and The Boston Globe. (The New York Times Company 2011) For the last 150 years, The New York Times has maintained one of the most authoritative news vocabularies ever developed. According to the data published by the Audit Bureau of Circulations, The New York Times' average circulation is the third highest of all American newspaper companies during the period from Oct. 1<sup>st</sup>, 2010 to Mar. 21<sup>st</sup>, 2011, just behind The Wall Street Journal and USA Today. In the list provided by the Audit Bureau of Circulations, the New York Times' daily circulation was 916,911 and its Sunday circulation was 1,339,462. (Audit Bureau of Circulations 2011) The

Times has won 101 Pulitzer Prizes, more than any other newspaper. (The New York Times Company 2011)

The New York Times has had its own domain—nytimes.com since 1996, and has been ranked as one of the top web sites. According to the U.S. comScore media data for May 2010, the New York Times ranks as the top online newspaper. The report showed that more than 123 million Americans visited newspaper sites in May, and the New York Times Brand had more than 32 million visitors and 719 million pages viewed during the month. The average visitor viewed 22 pages of content on the New York Times site, which also leads the top ten. (Reston 2010) As of May 2009, nytimes.com produced 22 of the 50 most popular newspaper blogs. (Carlson 2009)

### **Hong Kong Standard**

The Hong Kong Standard is the first free English daily newspaper in Hong Kong. (The Standard 2011) Originally named The Hong Kong Tiger Standard, it was founded after the end of the Chinese Civil War. (The Standard 2011) On September 2007, The Standard became a free newspaper to be distributed in commercial districts.

The Hong Kong Standard is sorted into two major parts: Sections and Features. News sections present the latest Local news, Business, China, World and Sports events, while the Features sections cover a wide range of topics. (The Standard 2011)

As the second largest newspaper in Hong Kong, the Hong Kong Standard is the first and only free local newspaper. Distributed at 247 street points, the Hong Kong Standard has an audited circulation of 222,413 copies a day. (The Standard 2011)

## **People's Daily**

The People's Daily is a daily newspaper, which was established on June 15, 1948. It was published in Pingshan, Hebei, until its offices were moved to Beijing in March 1949. Since its founding, the People's Daily has been under direct control of the Communist Party of China's top leadership. As one of the world's top ten newspapers, the People's Daily has national and global influence.

On Jan. 1<sup>st</sup>, 1997, the People's Daily began to operate its official website-- the People's Daily Online, using it as a large-scale information platform. (People's Daily Online 2011)

The People's daily generally provides direct information on the policies and viewpoints of the Party, so it is called the voice of the Communist Party of China. Issues are organized into sections: news, opinions, China military, foreign affairs, learn Chinese, China study and forum. (People's Daily online 2011) The People's Daily mainly focuses on political news and critics, and the contents of the paper mainly deal directly or indirectly with the great issues of China.

The People's Daily is a daily newspaper, which is the organ of the Central Committee of the Communist Party of China (CPC). It is also one of the most authoritative papers, as well as the second largest comprehensive paper in China. The People's Daily is published worldwide with a circulation of 2.35 million in 2009. In addition to its main Chinese-language edition, it offers 15 versions in 14 languages. (People's Daily Online 2011) It maintains an online presence--People's Daily Online. With users from 200 countries and regions in the world, the People's Daily online is also one of the largest comprehensive Internet media. (People's Daily Online 2011)

## **Wordle**

Wordle is online visual software which is used to analysis data collected from blogs and newspapers in this article. Wordle clearly present the most frequent words in collections of blogs and each newspaper by providing both the visual depiction of words and lists of word counts. After reviewing the analysis results of wordle, the key words which relate the popular topics about plan and design of Shanghai Expo are successfully found out.

A tag cloud (or weighted list in visual design) is a visual depiction of user-generated tags, or simply the word content of a site, and is typically used to describe the content of web sites. Tags are usually single words and are normally listed alphabetically, and the importance of each tag is identified by font size or color. (Halvey and Keane 2007) It is possible to find a tag alphabetically and by popularity. The tags are usually hyperlinks that lead to a collection of items that are associated with a tag. Sometimes, further visual properties are manipulated, such as the font color, intensity, or weight. (Lohmann, Ziegler, and Tetzlaff 2009) A simple tool to create Word Clouds can be found at Wordle. The official website is <http://www.wordle.net/>, where customers can create their own tag clouds.

The common use of the term "tag cloud" began in the first decade of the 21st century. It was mainly used to describe the frequency distribution of keyword metadata that describe website content, and as a navigation aid. (Tagcloud 2011) The first tag clouds on a high-profile website were on the photo sharing site Flickr, created by Flickr co-founder and interaction designer Stewart Butterfield. (Tagcloud 2011)

The first published appearance of a tag cloud in the English language may have been the "subconscious files" in Douglas Coupland's *Microserfs*, while the appearance in German

occurred at least three years earlier. (Deleuze, Guattari, and Ricke 1992)

In recent years, tag clouds are becoming more and more popular because of their role in search engine optimization of web pages. It is used to improve the site's search engine rank.

Tag cloud applications in social software are categorized into three main types by their meanings. In the first type, there is a tag for the frequency of each item. The size represents the number of times that tag has been applied to a single item. (Bielenberg and Zacher 2005) In the second type, there are global tag clouds where the frequencies are aggregated over all items and users. In this type, size represents the number of items to which a tag has been applied, representing each tag's popularity. (Tagcloud 2011) In the third type, the cloud contains categories, with size indicating the number of subcategories. (Tagcloud 2011)

## CHAPTER 4: RESULTS

Data from each of the sources is analyzed with a word cloud. Common words, such as “the,” “and,” “if” are deleted and words with spelling or capitalization variations are replaced for the analysis (see Table 1 as an example). Word frequencies are provided (see Table 2 as an example) and a discussion is provided to explain in more detail the most frequently mentions words.

## Wordle Analysis of Blogs



Figure 9: Wordle analysis of blogs (Author, 2010)

Table 1: Deleted Words and Replaced Words in Blogs for Wordle Analysis

<b>Delete</b>	<b>Delete</b>	<b>Delete</b>	<b>Replace</b>
the	they	some	Pavilions-Pavilion
and	post	there	pavilion-Pavilion
to	one	pm	pavilions-Pavilion
of	more	up	expo-Expo
and	or	our	country's-country
in	so	its	Country-country
is	others	been	China-China
that	will	most	China-China
at	can	than	U.S-America
for	all	reply	US-America
I	their	do	USA-America
2010	no	if	American-America
on	about	says	Americans-America
was	were	just	visitors-visitor
are	also	get	India-Indian
as	had	see	Comments-comment
with	my	think	Design-design
not	would	first	designed-design
it	am	day	Singaporeans-Singapore
this	only	good	
you	what	many	
be	very	really	
from	out	different	
have	which	well	
by	like	but	
an	people	we	



Table 2: Top Frequency Words in Wordle Analysis of Blogs

<b>Word</b>	<b>Freq</b>
Expo	253
Shanghai	219
Pavilion	187
China	148
Visitor	95
country	74
Singapore	65
Indian	42
first	39
time	31
America	31
site	30
way	29
comment	25
building	25
experience	24
design	22
architecture	19
government	19

### **Description of Top Frequency words in Wordle Analysis of Blogs**

#### **Singapore**

There are a lot of descriptions and comments about Singapore Pavilion in the blogs.

People discussed that the music-box-like Singapore Pavilion was inspired by the harmony of unique elements in Singapore, and the unique Singapore experience culminated in the “Hanging Garden” – a rooftop garden where visitors had a first-hand feel of Singapore as a Garden City.

Some tourists did not like the pavilion because they thought that the building said nothing about Singapore. They did not understand why the appearance of the pavilion was a music box. They argued that the shape of the architecture lacked imagination or relevance to Singapore.

Despite numerous critics, many tourists liked the concept of the pavilion. Some of them even listed the pavilion as “one pavilion you must go to”.

### **Indian**

The content of the blogs includes many details about the Indian Pavilion’s appearance, construction materials and structure. Comments were made about how the Indian Pavilion successfully blended the concepts of sustainable ecological development with modern technology and town planning - which is accentuated by the theme - Cities of Harmony. Tourists also thought the pavilion, which was built entirely of environment-friendly materials, successfully illustrated India’s unique brand of culture, history and soft power. Another blog raised a theory that the pavilion offered an unprecedented opportunity to improve Sino-Indian relations and enhance Indian's Soft Power in the further.

### **First**

The word “first” has two meanings we will use from the blogs. One meaning refers to a visitor’s “first experience” at the Expo. Another references the “first few weeks” of the Expo. The overcrowding in the first few weeks of the Expo that led to widespread problems with the availability of facilities and exhibits was mentioned in many blogs.

### **America**

A few blogs complained about the US pavilion. They said the pavilion was just a series of movie theatres that showed Americas doing schmaltzy things like speaking bad Chinese and living in a paradise of happy social diversity. Additionally, the architecture of the actual structure was described as “wacky”.

### **Site**

Comments about the Expo site appeared in many of blogs. One article reported that “The site of Shanghai Expo is separated by a wide polluted river that makes it very difficult to access different parts of the Expo; the whole site is crawling with police and one has the feeling of constantly being watched.” (languagep7 2010) In the article, the author also complained about the inconvenience of the Expo’s internal transportation, pollution of the river, and the uneasy feelings generated by the constant scrutiny of police.

Others thought the Expo was oversized and over the top (or OTT as people said in Shanghai). The site, at just over two square miles, hosted the largest Expo in history, and took many visitors several days to cover.

### **Building and Architecture**

It was criticized that the shape of many buildings at the Shanghai Expo captured the concepts of “Oriental Crown, Splendid China, Ample Barn, and Rich People.” Some critics are upset that the China Pavilion is taller and bigger than all of the other countries’ national pavilions. They complained that the Chinese introduced restrictions to prevent other countries from having a larger pavilion than China. Others were out of sorts because the layout looked as if China was "the center of everything".

The appearance of the U.K. Pavilion is described as the Seed Cathedral. Tourists are amazed by 60,000 slender transparent fiber-optic rods which formed both the inner and outer walls of the building. They said that it was creative that the U.K. Pavilion sat atop an artificial landscape, and it was also the only national Pavilion that truly integrated concept, container and content.

### **Experience**



Table 3: Deleted Words and Replaced Words in New York Times for Wordle Analysis

Delete	Delete	Delete	Group	Replace
the	as	Its	New York Times	Chinese-China
and	at	What	New York	China's China
of	from	which	Hong Kong	UK-Britain
to	has	If		U.K.-Britain
a	be	Been		American-America
in	will	One		USA-America
is	this	I		United States-America
that	have	Or		Japanese-Japan
for	Mr	Most		
The	an	Many		
on	But	They		
said	he	Who		
it	his	We		
was	more	All		
with	about	Had		
by	like	Also		
are	were	their		
would	when			

Table 4: Top Frequency Words in Wordle Analysis of New York Times

Word	Freq
China	152
Shanghai	76
Expo	60
cameras	30
new	28
2010	27
Chopin	27
people	26
million	26
city	25
Beijing	23
pavilion	22
music	21
America	21
world	19
Philharmonic	18
World' s	17
countries	16
Yu	16
government	16
surveillance	15
New York	15

## Description of Top Frequency words

### Cameras and Surveillance

Cameras were installed at the Shanghai Expo for security reasons because ethnic rioting had been taking place in some cities in China. Roughly a year ago, Urumqi's ethnic Han and Uighur populations took part in the worst ethnic rioting in modern Chinese history, killing at least 197 people. The riots caught the eyes of the Communist Party and the local government. This resulted in surveillance cameras being installed in cities by the Chinese government to maintain public security. The government believes that cameras installed on street corners, at airports, and other transportation stations can deter street crime and ethnic rioting.

## **Philharmonic**

It was reported that the Shanghai Symphony Orchestra, a venerable ensemble that is on the upswing from hard times gave performances to aid the World Expo. The Orchestra took the stage on the Great Lawn for the second half of the New York Philharmonic's free outdoor concert during the Expo period. A series of concerts were successfully held in Central Park, Cunningham Park in Queens, Prospect Park in Brooklyn, University of New York for the Arts on Staten Island and at the Hostos Center for the Arts and Culture in the Bronx.

## **Chopin**

A piano concert featuring works by Chopin was held each day in the center square and music hall of the Polish pavilion. This was done to commemorate the Polish musician, who was one of the greatest composers and pianists of all time. China's major cities were also in the grip of "Chopin fever" because the year 2010 was the 200th anniversary of Frederic Chopin's birth. "Chopin Week" was held in Shanghai, with the composer's music featured in concert halls and nightclubs across the city.

## Wordle Analysis of People's Daily

## Three Kinds of Codes

Due to the large amount of materials about the Expo presented in the People's Daily, the selected sentences are coded by three different colors according to their relationship with the landscape for additional analysis.

**Red:** the red sentences are comments which directly talk about the landscape, including impressions on the appearance of pavilions and discussions about the layout of the site.

**Orange:** the orange sentences are comments about the landscape indirectly. These indirect opinions and ideas can still reflect and infer information about the character of the landscape.

**Blue:** the blue sentences are comments about attendance at the Expo and the cost of the trip to the Expo.



Figure 11: Wordle analysis of People's Daily (Author, 2010)



Table 5: Deleted Words and Replaced Words in People's Daily for Wordle Analysis

<b>Delete</b>	<b>Delete</b>	<b>Delete</b>	<b>Delete</b>	<b>Replace</b>
day	have	all	time	China's-China
also	has	10	30	Chinese-China
the	as	Day	we	Pavilions-Pavilion
of	by	two	over	
and	I	In	only	
to	it	A	It	
in	was	they	between	
a	which	this	or	
is	an	during	including	
on	0	their		
at	also	who		
said	most	other		
for	more	1		
from	its	been		
will	world	up		
that	20	percent		
with	than	theme		
be	about	but		
are	can	not		
This	he	one		

Table 6: Top Frequency Words in Wordle Analysis of People's Daily

<b>Word</b>	<b>Freq</b>
Expo	190
China	160
Pavilion	140
Shanghai	131
2010	93
visitors	44
May	37
million	36
visit	34
city	31
countries	30
people	29
world	28
nuclear	28
tickets	27
June	25
July	25
technology	24
National	23
tourists	22
theme	22

### **Description of Top Frequency words**

#### **Nuclear**

China's nuclear industry was argued that had stuck to independent innovations, effectively guaranteeing a sound national defense. Additionally, peaceful applications of nuclear power were developed for national security and social development. Nuclear power was successfully used for events like the Beijing Olympics and Shanghai Expo.

#### **Tickets**

Free three day tickets have been sent to Shanghai residents. Despite the public fervor toward the extravagant fair, half a million complimentary Expo tickets were not used. The writer suggested Shanghai residents to use these tickets as soon as possible.

## **Technology**

Some indicated that after waiting for hours to have a look at the cutting-edge technology in the British Pavilion, the inside was very disappointing. The UK pavilion declared that the next wave of technology would be linked to nature, bio-diversity and mankind's relationship with nature. The vegetation and the display of a futuristic city were intended to reflect the new technology.

The remainder of the articles reported on the new science and technology used in several pavilions. Many cutting-edge products attracted visitors, like the new patented ceramic technology used for ceramic stamps, LED (light emitting diode) technology, energy-saving technology and environmental friendly technology.

## **Theme**

Several articles reported news related the word “theme”.

Many discussions about the theme of the Expo occurred. Participations were asked to talk about their opinions (examples) about the Expo theme “Better Life, Better City”. For example, three theme forums were held in different cities to talk about issues related to the Shanghai Expo.

Most pavilion designs, sculptures, performances and activities were closely tied to the Expo theme: “Better Life, Better City”. For example, David Martin, deputy director of the UK Pavilion believed that the UK Pavilion was one of the pavilions that most closely followed the theme of “Better City, Better Life” because of its environmentally friendly topic. In another example, an Italian-American sculptor created sculptures to represent the Shanghai-Chicago friendship. Given that the theme of the Shanghai Expo is city-related,

these sculptures might naturally spark an imaginative thought that these "high rises" were symbolizing different cities from around the world, sitting together in dialogue for mutual and multilateral cooperation.

There were all kinds of souvenirs centered around the Expo theme which sold very well. One of these was a series of patterned ceramic stamps based on 11 World Expo-themed stamps released by China since 2007. The sale of these stamps and other souvenirs by the Shanghai Gold Company, which owns 25 shops in Shanghai, pulled in over 30 million yuan (\$2.1 million) in 4 days, an increase of 20 percent from last year, and nearly a quarter of the sales were from Expo-themed gold bars, which began selling in early April.

The World Expo helped to boost the concept of ecology and environmental protection and stimulated scientific research and technology development. Under the Shanghai World Expo's theme of "Better City, Better Life," advanced technology and low-carbon ideas were displayed in every aspect of the Expo, including the site selection, fireworks during the opening ceremony and the equipment, technology and materials for the pavilions.

Additionally, pavilions had their individual themes. For instance, The United Nations Population Fund (UNFPA) holds World Population Day each year on July 11 in order to draw attention to various issues surrounding population, women and children. This year's theme was "Everyone Counts." The U.S. pavilion showcased the theme "Rising to the Challenge". The Uzbek pavilion had the theme "Uzbekistan, the crossroad of civilizations," referring to Tashkent, the capital of the country. The Japanese Pavilion presented the theme "Better Life from Japan".

## Wordle Analysis of People's Daily- Red



Figure 12: Wordle analysis of People's Daily- red (Author, 2010)

Table 7: Deleted Words and Replaced Words in People’s Daily-Red for Wordle Analysis

Delete	Delete	Replace
the	like	Pavilions-Pavilion
of	really	UK-Britain
and	has	French-France
a	be	
is	was	
to	into	
in	its	
that	can	
The	want	
it	one	
with	he	
I	by	
at	all	
they	as	
from	which	
we	on	
an	where	
It	whole	
for	up	
are	really	

Table 8: Top Frequency Words in Wordle Analysis of People's Daily-Red

Word	Freq
Pavilion	20
Expo	8
visitors	7
Britain	6
France	6
City	6
technology	5
people	5
think	4
Martin	4
Better	4
square	4
Shanghai	4
national	4
visit	3
Cathedral	3
something	3
different	3
certainly	3
nature	3
World	3
feeling	3

### **Britain, Cathedral and Nature**

It was reported that the British Pavilion, which was called the “Seed Cathedral”, drew visitors because of its appealing outside appearance. However, the inside disappointed some visitors who wanted to see cutting-edge technologies. The UK believes the next wave of technology will be linked to nature, bio-diversity and mankind's relationship with nature. The vegetation inside the pavilion and the display of a futuristic city is intended to reflect the new technology.

### **France**

One article described features of the French Pavilion. It was stated that, “Overcome with the spirit and ambience of France, visitors well thought they were truly in the nation of art and romance.” (Zhenyu 2010) It said that the most stunning feature of the pavilion was the romantic French-style roof garden where people can sit beside a pool of countless red roses with a dramatic white wedding.

### **Martin**

David Martin, deputy director of the UK Pavilion at the Expo, explained the concept of the British Pavilion.

### **National**

It was reported that visitors were attracted to National Pavilions because of their appealing appearance and hundreds of sparkling performances held within.

## Wordle Analysis of People's Daily- Orange

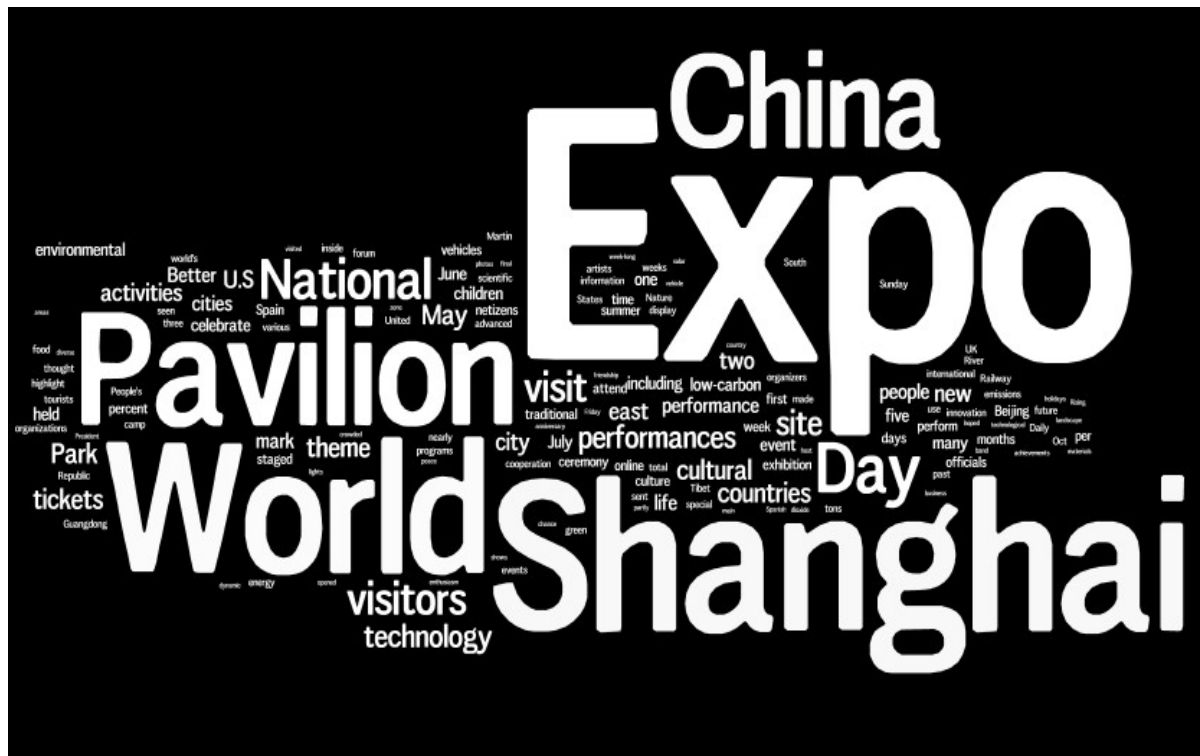


Figure 13: Wordle analysis of People's Daily- orange (Author, 2010)

Table 9: Deleted Words and Replaced Words in People’s Daily-Orange for Wordle Analysis

Delete	Delete	Delete	Replace
the	for	Day	Chinese-China
and	is	most	Pavilions-Pavilion
of	from	has	
to	be	which	
in	by	day	
a	are	was	
at	have	that	
The	as	its	
will	with	their	
on	A	two	
during	about	Better	



Table 10: Top Frequency Words in Wordle Analysis of People's Daily-Orange

Word	Freq
Expo	100
Shanghai	59
World	45
Pavilion	37
China	29
2010	20
pavilion	16
visit	12
visitors	11
National	11
performances	9
technology	9
countries	8
theme	8
Park	8
east	7
U. S	7
world	7
cultural	7
May	7
activities	7
performance	6
mark	6
cities	6
tickets	6

### Performance and Activities

It was reported that as of June 25, the 2010 World Expo in Shanghai had already presented a total of 6,500 performances since opening day. That breaks down to 116 performances per day on average, with 348 performance programs being repeatedly staged. Thirty-nine countries from five continents, six international organizations and 14 cities held national pavilion days, honor day activities and special activities. Eleven China provinces and municipalities each held week-long activities. Carefully selected by the organizers, all the

performances highlight the most unique cultural features of every country and region, educating visitors about cultural diversity. These performances included film screenings, dance performances and theater.

### **Technology**

Tourists complained that they waited for a long time to have a look at the cutting-edge technology in the British Pavilion, only to be disappointed once they were inside. The UK believes the next wave of technology will be linked to nature, bio-diversity and mankind's relationship with nature. The vegetation and futuristic city display were meant to reflect the new technology.

In other articles, new science and technology were reported to attract visitors in a number of pavilions.

### **Theme**

A lot of the Shanghai World Expo's theme-related discussions were held in various cities in China. Participants were asked to voice their own opinions on the Expo theme “Better Life, Better City” forum to discuss how scientific innovations aid city life.

Other performances and celebrations held in Pavilions sometimes had their own themes, however, they all related to the overall Expo theme.

### **Park**

A lot of sparkling performances were reported to be held in Expo Park. There were average of 116 performances per day in May and June.

### **Tickets**

It was reported that free three day tickets were sent to Shanghai residents. Despite the

public fervor toward the extravagant fair, half a million complimentary Expo tickets were not used. The writer suggested the Shanghai residents to use the tickets as soon as possible.

### **Culture**

World Expo served as a giant exhibition of cultures from around the world. Tourists can learn about different cultures from different perspectives, such as dining at specialty restaurants or attending performances presented by various nations. For example, "Tibet Week" was held at the Expo to celebrate Tibetan culture.

### **Mark**

It was reported that ceremonies and activities were used to mark special days or to highlight numerous countries' brands. For example, a Spanish conductor led a band during a concert held on May 9, 2010 to mark European Day.

### **Cities**

Articles reported that people focused on cities because the theme of the Shanghai Expo is "Better life, Better City". For instance, the Spanish Pavilion highlights "national origins, cities and children".

## Wordle Analysis for People's Daily- Blue



Figure 14: Wordle analysis of People's Daily- blue (Author, 2010)

Table 11: Deleted Words and Replaced Words in People’s Daily-Blue for Wordle Analysis

Delete	Delete	Replace
the	about	Pavilions-Pavilion
of	have	visitors-visitor
to	at	tranported-transportation
in	on	visited-visit
a	from	
and	all	
for	as	
is	up	
has	with	

Table 12: Top Frequency Words in Wordle Analysis of People's Daily-Blue

Word	Freq
Expo	29
tourist	20
million	19
visitor	15
Shanghai	12
World	11
tickets	9
number	8
transportation	8
percent	8
pavilion	14
visit	12
total	6
time	6
accounting	5
rise	5
May	5
July	5
people	5
free	4
holiday	4

## Million

Many articles reported news related to the word—million.

Millions of visitors toured the Expo. More than 20 million people have visited the World Expo in Shanghai since its official opening on May 1. The dramatic rise in tourists arriving in Shanghai during the May Day holiday caused earnings for the local retail and tourism industries to skyrocket. Nearly 4.2 million people visited Shanghai during the five-day holiday, according to the Shanghai Municipal Tourism Bureau. Nearly half way through the six-month event, around 33.6 million visitors, most of them from the Chinese mainland, have visited the Expo since its opening on May 1. In July alone, more than 12

million people passed through the Expo's turnstiles, including 1.8 million of them holding complimentary tickets. In June, less than 100,000 complimentary tickets were unused, according to Expo organizers, while another 2 million new tickets will be issued under the scheme for August. Because of the Expo, tourists also visited the city of Shanghai. Over 73,000 people poured onto Chong-ming Island in Shanghai on May 2, hitting a record high for the number of tourists in a single day.

Public transportation in Shanghai serviced millions of people. As of June 8, Expo-related public transportation has carried a total of 22.6 million tourists, with a daily average of 579,000 tourists. Five Expo-related rail lines and 12 Expo-related stations transported about 6.7 million tourists, accounting for 30 percent of all transportation. The ground transportation system carried about 2.9 million tourists, accounting for 13 percent of the total. In addition, special taxis for the Expo also carried approximately 2.5 million tourists, accounting for 11 percent, water buses carried about 299,000 tourists, accounting for 1 percent and tourist buses transportation serviced about 10.2 million tourists, accounting for 45 percent of total transportation.

Tourists who have attended special performances number about 8.5 million, and one of every two tourists to the World Expo watched such a performance.

Millions of free tickets were sent to Chinese residents. Despite these efforts, and apparent public enthusiasm for the event, half a million tickets went unused. A total of 2.3 million three day tickets were distributed free to the public, which were meant to thank the residents of Shanghai who put up with years of inconvenience while Expo-related infrastructure was under construction.

Millions of people viewed the Expo website. Over 50 million citizens have visit [www.expo2010.cn](http://www.expo2010.cn), with the total number of visitors entering the Web site exceeding 1 billion, according to statistics from the Tencent Web site, which is in charge of the creation of the official Expo Web site. Additionally, the number of visitors to the Tencent Expo Web site through mobile phones reached 324 million.

### **Free**

It was reported that millions of free three day tickets were sent to Shanghai residents as a thank you for the patience they displayed in the face of many inconveniences the construction of the Expo brought to their lives. Despite the public's relentless fervor toward the extravagant fair, half a million complimentary Expo tickets remained unused.

### **Time**

It was suggested that September was the best time to visit the Shanghai Expo. One of the reasons given is that less time was being spent waiting in lines because of fewer visitors.

Tourists were still having to wait in line in front of some pavilions, but the time spent queuing up was much shorter. In the past, visitors had to wait a long time in front of the most popular pavilions such as the Sudan Pavilion, Indian Pavilion, and certain domestic pavilions. More often than not, there are little to no lines and people can start visiting these pavilions immediately upon arrival.

### **Holiday**

The attendance of Shanghai Expo obviously improved during the holidays, especially on long National Holidays.

## Wordle Analysis of Standard- HongKong



Figure 15: Wordle analysis of Standard- HongKong (Author, 2010)

Table 13: Deleted Words and Replaced Words in Standard-HongKong for Wordle Analysis

Delete	Delete	Delete	Delete	Group	Replace
the	be	two	most	Hong Kong	Chinese-China
to	by	1	which		HK-Hong Kong
a	were	its	They		
and	that	before	see		
of	as	after	there		
in	have	all	just		
at	was	more	A		
for	day	some	10		
The	I	has	can		
from	0	an	but		
is	about	should	or		
said	they	yesterday	when		
on	one	not	while		
with	up	who	way		
are	than	also	he		
will	their	would	it		



Table 14: Top Frequency Words in Wordle Analysis of Standard-HongKong

<b>Word</b>	<b>Freq</b>
Expo	54
pavilion	45
Shanghai	42
Hong~Kong	38
visitors	29
World	24
China	22
2010	20
tickets	20
people	18
visit	13
mainland	12
million	11
way	10
May	10
show	10
volunteer	9
HONG~KONG	9
lawmakers	8
June	8

## **Tickets**

Visitors grabbed scarce tickets for the China Pavilion from volunteers as soon as the China pavilion opened, with all tickets being gone in only a few minutes. On another day, thousands of visitors scrambled for tickets to a Korean show.

More than 160,000 tickets were snapped up on the first day of sales for the animated version of the painting--“Qingming Shang He”, created in the 12th century by Zhang Zeduan, with online sales only starting today.

## **Mainland**

It was reported that Pan-democrat legislators who joined a trip to the World Expo in Shanghai had again expressed a wish to travel to the mainland freely.

Wrapping up a three-day visit, Legislative Council president Jasper Tsang Yok-sing said he hoped the entire legislature would have more chances to visit the mainland in the future.

### **Show**

Hong Kong officials were reported to indicate that the video show in Hong Kong Pavilion was merely something the Tourism Board would show as a general introduction to Hong Kong and the pavilion would be much more meaningful if it shows how Hong Kong people pursue freedom and democracy."

### **Volunteer**

Some complained that a mainland volunteer struck and damaged an ATV camera while trying to stop reporters from filming crowds at the Shanghai World Expo. Someone believed that some behaviors of volunteers were unacceptable, and they should receive better training to respect the rights of journalists. Although there was a slight improvement in the crowd situation, visitors at one point still tried to grab reserved tickets from volunteers.

### **Lawmaker**

It was reported that eight democratic lawmakers joined the tour, with four Democratic Party members being issued one-off permits for the three-day trip, which began on May 8<sup>th</sup>. The lawmakers visited the Urban Best Practices Area, Enterprise Pavilion in Puxi, the European Union, Belgium, US and British pavilions. They thought the content was superficial.

### **Overall Themes of Blog and Three Newspapers**

Comments from blogs focused on the designs of pavilions and tourists' experiences of

Expo. Several popular pavilions were discussed, including their locations, layouts, appearances, design ideas, and construction details. Most of these critics related with design concepts. For example, tourists analyzed the relationship between the location and size of pavilion, and the intent behind the design; the consistency between the green designs of India Pavilions and the theme of Shanghai Expo was praised.

The New York Times highlighted the security of Shanghai Expo. It reported an ethnic rioting in China one year before the Shanghai Expo, and emphasized the importance of security of Shanghai Expo. For the Expo's safety, surveillance cameras were installed in cities by the Chinese government to maintain public security. The government believed that cameras installed on street corners, at airports, and other transportation stations could deter street crime and ethnic rioting.

As the main official newspaper of China, the hosting country of the Shanghai Expo, People's Daily was more concerned about the day by day experience of the Expo. It reported huge amounts of information about details of each pavilion and activity, and the everyday's situation of Expo site.

Standard-HongKong paid attentions to the relationship between Hong Kong and the mainland, as well as the attitude of volunteers. It reported news about some Hong Kong government officials' trips to Shanghai Expo and their opinions of the relationship between Hong Kong and the mainland. Complaints of some volunteers' rude behaviors were reported. Someone believed that some behaviors of volunteers were unacceptable, and they should receive better training to respect the rights of journalists.

## CHAPTER 5: DISCUSSION

### Conclusion and Implications in Green Design and Expo Planning

#### Site Usage

Some complained that there was a river splitting the Expo site and it was inconvenient to cross the river to view the rest of the Expo pavilions (Figure 16). They questioned why the Shanghai Expo could not build on an integrated field without rivers or other barriers. However, the Expo is not just holding an exhibition in any field which happens to have the best views and convenient transportation. The site was picked very carefully with great thought. It was a complex choice of site, which considered various factors like site revitalization, city brand, economic promotion and environmental improvement.



Figure 16: The Huangpu River (Author, 2010)

The site is chosen between the Nanpu Bridge and Lupu Bridge, with the pavilions and parks located along the Huangpu River. (Bureau of the Shanghai World Expo Coordination 2011) The plan will bring Shanghai city a series of benefits. First, the Expo construction can combine with urban renewal activities; so this plan will shorten the time and cut the budget needed to achieve the ultimate goal of urban renewal. In the beginning, the Expo site is occupied with many polluting industrial factories and old communities. The soil and water is heavily polluted by the waste water and emissions from these factories and the environment is severely damaged. Residents of the area live in dilapidated houses without private bathrooms and other necessary facilities. As a district which is not far away from downtown Shanghai, this unsightly view undermined the desired image of the “clean and green” international city. The district is eager for a chance to be rebuilt, and fortunately, the Expo provides the opportunity. Another added benefit of the Expo is it would effectively improve the environmental quality of this area. Being polluted by the factories, parts of the Expo site were defined as a brownfield. Due to the Expo, the waste was cleared and the heavily polluted soil was replaced. Measures were put in place to protect the original wetland and new wetlands and parks were built. As a result of the water being purified, water quality in the Huangpu River was improved. A large number of trees and shrubs were planted to build a green area. After the Expo, this district will turn out to be an important step in efforts to bring sustainable green environments to the city of Shanghai. It is also estimated that these areas will have an economic impact over time. Shanghai is a high density city and buildable land is very precious, especially areas like the Expo site which is near downtown. The Expo provided a perfect opportunity for the Shanghai government to clear the old factories and

communities in the district, resulting in a gain of buildable area after the Expo. Because of the high quality environment, convenient transportation and awesome facilities, the district could become a shining economic area for commercial and residential usage.

The site along the Huangpu River in this area was a perfect choice. The transportation difficulties which cropped up during the Expo were not due to the site, but rather a shortage of vehicles to go across the river. Because millions of tourists went to the Expo every day, the ferries and buses were not enough to transport so many people across the river. Visitors had no choice but to wait in long lines at the bus stations and piers. As a result, those visitors blamed the presence of the river for their inconvenience. One possible solution was to increase the amount of ferries and buses to accommodate the massive attendance. Additionally, some creative activities could be held along the river so people can be entertained and enjoy the river views while waiting to cross the river.

## **Architecture**

Many pavilions were well known because of their innovative and wonderful architecture. Some were widely discussed in newspapers and blogs, such as the Republic of Korea Pavilion, China Pavilion, UK pavilion, French Pavilion and the Denmark Pavilion, to name but a few. The Republic of Korea Pavilion and China Pavilion will be analyzed in this section while the others will be discussed in other sections.

Among more than two hundred pavilions, The Republic of Korea Pavilion stood out visually (Figure 17). The building was constructed of millions of signs consisting of two

types: han-geul Pixels (the Korean alphabet) and Art Pixels (Figure 18). Han-geul pixels, which had 4 different sizes, were attached to white panels to form letters in relief. They constituted mainly the peripheral surfaces of the exterior walls. Most non-peripheral surfaces were composed of Art Pixels, a collection of bright colorful aluminum panels. (Arch Daily 2010) The signs resulted in a stunning porous external surface, where lights and shadows mixed. Some letters were shining in the sunshine while others hid in the shadows. With the daily passing of time, the light and shadows alternated and changed, giving the letters on the wall a sense of movement. At night, the walls reflected magnificent colors due to sequential lighting (Figure 19).



Figure 17: Republic of Korea Pavilion (Author, 2010)





Figure 18: Han-geul Pixels (the Korean alphabet) and Art Pixels (Author, 2010)



Figure 19: The walls reflected magnificent colors at night (designboom 2010)

Not only was the application of light and shadow used on materials, but also walls and space. Hollows were made in the wall to form a pattern which was similar to the pattern of



the South Korean national flag. (Figure 20) Depending on the placement of these hollows, the wall was divided into dark and bright areas forming a pattern.



Figure 20: South Korean national flag pattern (designboom 2010)

Pillars and girders were widely used in the Republic of Korea Pavilion to produce a semi-open space inside. Lights passed through the roof and the wall, projecting the shadows on the inner walls and the floor, making the painting of traditional words vivid and mysterious (Figure 21 and Figure 22). The effect is that everyone views the interior in their own unique way. Through the placement of signs and clever application of light and shadow, they magically transformed a stationary building into a lively, mutative Korean cultural museum.

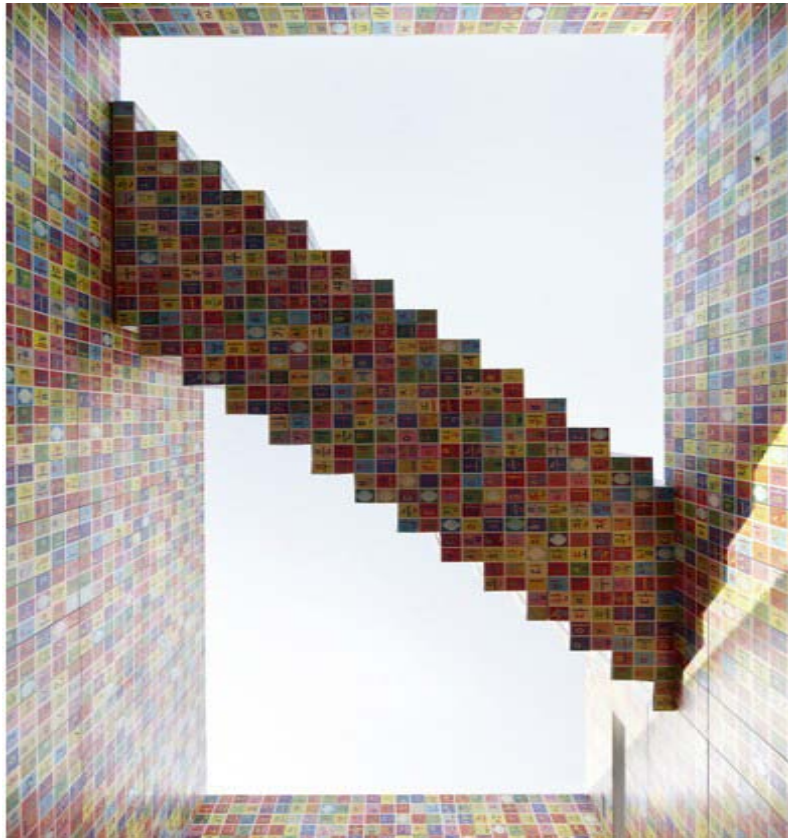


Figure 21: Light pass through the roof (designboom 2010)

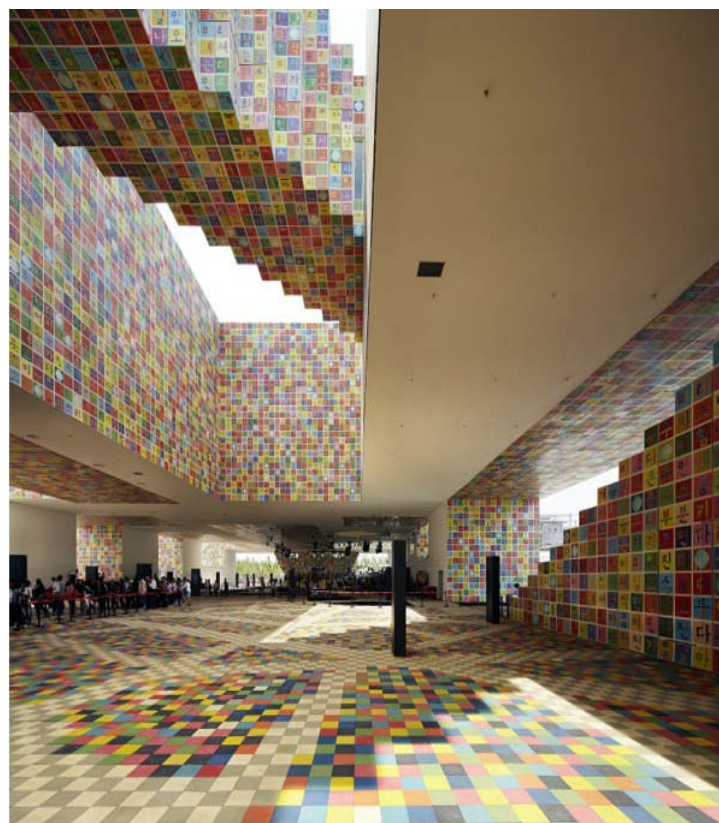


Figure 22: Shadows were projected on the wall and the floor (designboom 2010)

The China pavilion was the brightest star at the Shanghai Expo and it was also one of the most impressive buildings. The China pavilion appeared as a crown, which consisted of 7 layers of girders and 4 giant pillars (Figure 23). The girders were painted 7 different shades of red: the taller the girder was, the lighter the red was. This was done to offset visual variations due to height variation and the influence of shadow. The aim was to produce a single uniform color appearance in the seven layers of girders when observed from a distance. (Shanghai Daily 2010) Girder and pillars were chosen as they are the most common traditional structural elements in Chinese architecture. Red was chosen because it is viewed as a lucky color in China. The —dougong, a traditional wooden structure was used in the pavilion, to fix layer upon layer between the top of a column and a crossbeam (Figure 24). (Shanghai Daily 2010) This style was widely used in many well-known Chinese traditional structures, like the Forbidden City and the Summer Palace. By replicating traditional structural techniques used in these landmark structures, the China Pavilion reached back through history and forged a kinship with them. The traditional structural elements made the China Pavilion instantly and easily recognizable among the hundreds of other pavilions by both domestic and most foreign tourists.

The China pavilion was complimented by the smaller regional pavilions. The taller national pavilion was located in the center with the lower regional pavilions surrounding it. One reason for the height difference was to illustrate the difference in political standing and cultural perspectives between regions and nation. All the regional pavilions, including Hong Kong and Macao pavilions were in the shadow of the national pavilion, just like the baby in mom's arms (Figure 24). The national government's absolute control was reflected in the

relationship between the locations and sizes of these pavilions. Another reason for the shape of the structure was that its high core and low edge created a strong sense of spatial extension. Creating such a sense of space was essential in such a land- scarce Expo.



Figure 23: China pavilion (Author 2010)



Figure 24: Dougong style (Author 2010)





Figure 25: Hong Kong and Macao pavilions were in the shadow of the National pavilion

(Author 2010)

## Landscape

Landscape was another critical factor which influenced the beauty of the Pavilions. Some pavilions drew more attention than others because of their well designed outside landscape or inside gardens. The UK pavilion was successful because of its amazing outside landscape. The pavilion was surrounded by an open space. The outside of the space was like a grouping of mountains, and the inside was like an open plain. The height gradually decreased from the outside to the inside and it helped to draw people's attention to the middle of the space, where the UK pavilion was placed. Because of the height difference, people could sit on the slope and enjoy the overall view of the UK pavilion, appreciating its thousands of rods gently swaying in the breeze like a huge dandelion. Tourists who were

enduring the long queue outside of the entrance could thoroughly relax themselves in the space, talking with friends, watching performances, wandering around the pavilion or laying down to view the sky (Figure 26). The open space also prevented people from getting too close too soon to the Pavilion and spoiling the mystery of entering the building. Visitors had to go across the space to go inside the pavilion. This allowed time for curiosity and anticipation to build. This outside open space successfully highlighted the importance of the central pavilion, while providing a place for recreation and cleverly attracted people's curiosity at the same time.



Figure 26: People relaxed themselves in the open space (Author 2010)

The Luxembourg pavilion was considered fascinating due to its lush garden. It was covered and surrounded with a living green wall, evoking the image of a forest. Grapes were planted outside of the wall and small gardens were placed between the wall and the pavilion (Figure 27 and Figure 28). The theme of the Luxembourg pavilion was “Small is beauty”.

Indeed, the Luxembourg pavilion only occupied a small piece of place on the Expo site, so it was a challenge to build this pavilion and have it hold its own against the many larger pavilions. The designer understood that the pavilion would be ignored if it was just a boring construction. There needed some natural, vivid and appealing elements incorporated into the design. The small gardens and living wall which were added turned out to be the soul of the pavilion. Tourists viewing the pavilion from a distance thought it looked like it stood in the midst of a forest. Upon approaching the building they were surprised to find that they were surrounded by clear water, fragrant flowers and lush vegetation (Figure 29). The bright color of the plants gave a sharp contrast with the rusting steel wall and provided a scenic open space in the crowded Expo, which enhanced the tourists' impression of the green castle in the hot summer.



Figure 27: Grapes were planted outside of the wall (Author 2010)





Figure 28: The green wall (Author 2010)



Figure 29: A small garden placed between the wall and the pavilion (Author 2010)



## **Green Features of Pavilions**

“Green, Ecology and Low-Carbon” were the permanent themes of the Shanghai Expo. In light of this theme, there were plenty of pavilions designed with all kinds of green features. Eco-friendly design ideas incorporating vegetation and bio-materials were used to build a majority of these pavilions. The benefits of the ecological designs were obvious. The green appearance and beautiful surroundings provided tourists an excellent view and a wonderful place with shade where they could eat, talk and relax. Tourists are able to stimulate many different senses with sweet smelling flowers, lovely birdsong, tasty gourmet food or the beautiful scenery of a garden. The green designs can also efficiently reduce the cost of the pavilions with low-cost construction and maintenance. Because eco-friendly materials like bamboo and thatch are always easily obtainable and cheaper than regular construction materials, the construction budget is reduced. The use of vegetation can provide many benefits, such as cooling the temperature, increasing the humidity, producing fresh air, collecting storm water and sheltering the roof from direct sunshine. All those functions can save energy that can be used for cooling and air exchange, and also extend the life of pavilions at the same time. The green designs also helped maintain the coherency between all of the pavilions’ separate themes, while keeping with the Shanghai Expo theme: “Better Life, Better City”. The ecological design of pavilions helped communicate the philosophy of the Shanghai Expo, which was to keep the balance between humans and the environment in order to create a better life. The green designs that dominated the Expo can be an influence on future designers. Green architecture can become a new style of design and a new way of life.

In the coming future, green design would become a fashion and an inevitable trend which hopefully will be adopted for all or most new construction projects.

The French Pavilion became known for its ecological environment through its use of a green roof, green wall and French garden. The theme of France's pavilion was "The Sensual City". The pavilion showcased the sights, smells, tastes, sounds and feel of France. Visitors could enjoy the French gardens, smell fragrances of flowers and French perfume, sample French cuisine amid the aquatic environment and enjoy the cool of the fountain in the garden. (Bureau of the Shanghai World Expo Coordination 2010) The French pavilion successfully appealed to tourists and became one of the hottest pavilions in the Shanghai Expo.

The most appealing features of the French pavilion were the green wall and the roof garden. Upon entering the pavilion, visitors were greeted by a large fountain with an appealing water display. Looking around, tourists would surprisingly find that they were seemingly standing in a forestry floor and roof which were covered by fountains and vegetation while the walls forming the plaza were decorated by geometric pillars with plants. The green pillars were composed of several species of vibrant plants and a watering system that continuously feeds the vegetation. Through the glass walls of the second and the third floor, visitors can view the details of the green walls. Escalators transport people to a geometric boxwood garden, where one can enjoy French style gourmet food among fragrant blooms and impressive views.



Figure 30: The French style green roof (Author 2010)



Figure 31: Pillars with plants decorate the walls (Author 2010)



Figure 32: Details of green pillars can be observed clearly through glass walls on the second and third floors (Author 2010)

It can be easily said that the success of the French Pavilion was built on the basis of the living structure. The fascinating natural environment provided an ideal place and all the necessary elements to fulfill the theme of “The Sensual City”. Without the green features, “The Sensual City” could never have been made to seem real.

The Indonesian Pavilion was another pavilion which benefited greatly from the use of living structures. Visitors were impressed by the vision of the pavilion as a bamboo kingdom— floors, ceilings, walls, architecture and decorations were all made of bamboo (Figure 33, Figure 34). It made the entire pavilion natural, light and graceful. Tropical trees



stood on the roof of the pavilion and living plants grew on bamboo flowerpots (Figure 35). Wandering inside of the Indonesian Pavilion, one is surrounded with natural elements without artificial traces. Additionally, the natural materials not only saved on construction and maintenance fees, but also efficiently avoided the waste resources and energy.



Figure 33: The bamboo structure (Author 2010)



Figure 34: The bamboo floor (Author 2010)



Figure 35: Living plants grew on bamboo containers (Author 2010)

## Theme

Theme was one of the most frequently occurring words in the blogs and newspapers. Most commonly discussed was whether the theme had been successfully interpreted and illustrated through the use of appropriate materials and design. Tourists preferred to visit the pavilions that achieved this. There were several pavilions that were described as being in a mess, incoherent, disappointing or boring. People asked questions like: “What is the pavilion talking about?” or “What is the connection between the appearance of the architecture and the inside display?” One of the biggest reasons was that those pavilions did not have a strong

theme and tried to display too many examples of culture, history and technology all at once. Others did have a clear theme, but failed to closely follow the original theme or did not explain the theme coherently. As one person said, visiting a pavilion was like reading a book. Tourists were more likely to read an interesting and coherent story rather than one made up of fragmented pieces. In one example, a Singaporean architect critiqued the Singapore Pavilion in his blog. He complained that the building said nothing about Singapore and he did not understand what was the music box for? He also said that its shape looked without imagination or relevance to his country and the garden looked too much like an afterthought and as not well integrated into overall design. It was let down for him as designer who wanted his country to be celebrated and respected

Obviously, the music box concept was creative and drew people's attention, however, even a Singaporean could not fathom the relationship between a music box and Singapore (Figure 36). Despite the attractiveness of the music box-like architecture, tourists couldn't figure it out either. The unique elements that make up traditional and modern culture in Singapore were not obvious. Singaporeans felt they were denied the opportunity to feel national pride in their pavilion, and foreigners lost the chance to get to know Singapore. The outer garden and the theme of Singapore Pavilion were also disconnected. The garden neither interpreted the music theme nor related well with other parts of the pavilion.



Figure 36: The music box- like appearance of Singapore Pavilion (Author 2010)

Another example is the USA Pavilion whose theme is "Rise to the Challenge." It used three short movies to tell a story. One example of these mini-movies is titled "The Garden".

In this clip a girl wants to turn a vacant city lot into a green garden. With the help of neighbors, the girl finally realizes her dream. The idea of the movies was to showcase the American spirit—challenging difficulties, seeking opportunities, cooperation between people and the pursuit of freedom. The movies clearly showed viewers how creative, friendly and optimistic Americans were. The idea was great, however, the movies were the only thing in the pavilion that clearly related to the theme. This prompted a lot of critics to complain that the USA pavilion was just a big cinema that offered some international food (Figure 37).

Most visitors expected to see cutting-edge technology or displays that were distinctly American. They left feeling disappointed that they only found a movie theater decorated with huge boards covered in brands of sponsoring companies. The pavilion designers felt obligated to display the advertising because the pavilion was built using funding from private



companies. Viewers felt the deficiencies of the pavilion were due to a lack of cultural content and insufficient support of its own theme. It was believed that if more elements, such as the appearance of the pavilion, the shows and the displays could better compliment and relate to the movies in order to express the theme, the USA pavilion would receive a better evaluation.



Figure 37: The USA Pavilion looked like a cinema (Author 2010)

Although some pavilions disappointed tourists, a few pavilions have been widely praised. One example was the Indian Pavilion, whose theme was “City of Harmony”. Its design concept was green, eco-friendly and harmonious. The Indian Pavilion from the overall plan to the details was designed closely around its theme. It boasted the biggest bamboo dome and used many environmentally friendly materials like solar panels, windmills, plants, a water cascade and earthen tiles (Figure 38 and Figure 39). The eco-friendly theme could easily be found in its green walls and green roof (Figure 40 and Figure 41). When tourists entered the pavilion, they were amazed by its eco-friendly materials, like the brick floor and the bamboo

construction (Figure 42). Most tourists liked the Indian Pavilion and considered it as the “greenest” and most eco-friendly pavilion at the expo.



Figure 38: The bamboo dome (Author 2010)



Figure 39: The wind mill (Author 2010)





Figure 40: The green wall (Author 2010)



Figure 41: The green roof (Author 2010)



Figure 42: The brick floor (Author 2010)

The UK pavilion also did a good job of expressing its theme. The overall theme of the UK pavilion was “Building on the Past, Shaping Our Future”. It used the relationship between the environment and urban development as its topic. It adopted different methods to illustrate the theme from the layout to the inner display. The UK pavilion was constructed using thousands of slim and transparent rods containing seeds on a folded paper-like playground (Figure 43). The scene was reminiscent of a gift in a folded paper or a dandelion in an open field. In the pavilion, visitors found a rich variety of plants. There was a mix of living plants and imaginary future plants pictured in different UK “cities” while huge green maps of the cities were displayed on the walls (Figure 44 and Figure 45). The pavilion presented the concept that there was no space between human being and environment by



erasing the boundaries of buildings and streets. The UK pavilion was able to successfully illustrate the concept of a harmonious green future for the millions of tourists.



Figure 43: The UK pavilion was built on a folded paper-like playground (Author 2010)



Figure 44: Showcase of a mix of living plants (Author 2010)



Figure 45: Huge maps of English cities on the wall (Author 2010)

### **Pavilion Highlights**

Almost every pavilion had a few highlights which were emphasized on its official website in order to encourage potential visitors to come out and see it. Not surprisingly, tourists talked a lot about the pavilion highlights before and after visiting the Shanghai Expo. Compared with some pavilion's characteristics which faded quickly, the deep impressions and memories made by these highlights would linger for a long time after tourists had finished their trip to the Expo. People never tired of talking about the pavilion highlights in their blogs and would often still discuss their experiences two or three months or even longer after their visit. The highlights were always the icons of the pavilions. In a few cases, when one mentioned a pavilion, the first thing that came into her/his mind was the highlight. The iconic feature was what visitors remembered and associated with a particular pavilion.

Tourists seemed to remember nothing when asked about other pavilions who did not feature bold or iconic architectural highlights.

The “Little Mermaid” statue from Copenhagen was the greatest treasure of the Denmark Pavilion. To a great extent, it was the appeal of the Little Mermaid that drew people to the Denmark Pavilion. It was the first time the “Little Mermaid” statue, a Danish national icon, had left her hometown. Built in 1913, the statue was used to honor the famous fairytale character created by Hans Christian Anderson, and since that time, the Little Mermaid has been sitting on the edge of Copenhagen's harbor. (Bureau of the Shanghai World Expo Coordination 2010) To create a similar setting like that of Copenhagen’s harbor, a man-made lake with white sands and blue water was built in the Denmark Pavilion (Figure 46).



Figure 46: “Little Mermaid” statue sitting on the side of a lake (Author 2010)

Walking around inside the Denmark pavilion, tourists can enjoy the view of the “Little Mermaid” from many different angles. The beautiful view of the statue, the mysterious legend of the mermaid, and the rarity of the Danish National icon leaving its home country, created a shining symbol which drew millions of people’s to view the pavilion. With the passage of time, visitors might forget the appearance of the pavilion or the inside contents, but will probably never forget the “Little Mermaid” statue.

Another successful example was the electronically animated giant baby displayed in the Spanish Pavilion (Figure 47). The baby who was named Miguelín, was 6.5 meters tall and could "breathe and blink". (Hu 2010) The baby was assembled in the USA under the supervision of Alec Gillis and Tom Woodruff Jr. at the Amalgamated Dynamis Inc. studios. This studio is responsible for such cinematic monsters as Alien vs Predator and Starship Troopers. (Hu 2010)

The giant baby closely resembled a real boy. People were shocked when the baby slowly moved his head and smiled at them. Tourists could hardly believe that such a realistic appearance and movements of the skin, eyes, and facial expression could belong to a man-made doll. The baby was so amazing that no one could forget it. Whenever the giant baby was mentioned, people could easily relate it back to the Spanish pavilion. The baby was an excellent vehicle to illustrate and communicate the message carried by the theme of the Spanish pavilion which was: “From the City of Our Parents to the City of Our Children”. (Bureau of the Shanghai World Expo Coordination 2010) The message was to protect and develop the city from generation to generation.





Figure 47: The giant baby in the Spanish Pavilion (Bureau of the Shanghai World Expo Coordination 2010)

Every pavilion wanted to be special and memorable and transcend all others. The two cases discussed above seem to illustrate that the easiest way to do this was to incorporate an iconic symbol or highlight into pavilion designs.

## **Lines**

Waiting in long lines to visit a pavilion is a big problem at the Shanghai Expo. Every day, hundreds of thousands of people rush into the Expo from different gates. Visitors have to wait hours to see one popular pavilion (Figure 48 and Figure 49). Consider one of the most popular pavilions —the Saudi Arabian Pavilion as an example, people stand in line 8 hours or more under the sunshine on a dry, hot day to have an inside look. Most people waiting in lines had nothing to occupy them, except complaining and abusing one another. In the wordle

images, words like time and lines can easily be found. It indicates that newspapers and blogs talk a lot about them.



Figure 48: Visitors waiting in line outside of the UK pavilion (Author 2010)



Figure 49: The tourists waited under the sunshine (Author 2010)

Lines seem inevitable when so many people crowd into the Expo in one day. What the designers have to consider is how to shorten the lines and how to use the waiting time more effectively.

One of the methods to shorten the waiting lines is limiting the visiting time by efficiently funneling or directing the tourists to tour the pavilion in an effective way. Most tourists visiting a pavilion for the first time, are unfamiliar with it. They can wander around aimlessly, not knowing where the highlights are or what they should look at first. Friendly trained guides can help visitors have a high-quality tour of the pavilion in the shortest time. Another method is booking entry times for tourists and distributing tickets. This would allow them to arrange their free time and use it for viewing other pavilions or shopping.

How to manage the hours spent in queue is another question. A designer gave his opinions in his blog about how to engage tourist while they waited. He said that simple interactive moments would keep visitors involved and active. Visitors spend most of their time waiting in lines or strolling and looking around. If the pavilions offered the visitor a chance to touch, jump, wave, throw, clap and participate in fun activities while waiting, it would really stand out. The experience of a pavilion should begin when the tourist decides to wait in line, rather than upon entry to the pavilion; sometimes after waiting for several hours. For example, brilliant displays and activities were held outside of the New Zealand Pavilion (Figure 50), and the Shanghai Corporate Joint Pavilion used the queue as a place to show the tourists pictures and tell stories about the pavilion. Providing the tourist a comfortable shelter, the officials of these pavilions can use video and other formed media to introduce the

countries from different perspectives. Sadly, most national pavilions lost this precious chance to advertise their countries and pavilions.



Figure 50: Wonderful performance outside of the New Zealand Pavilion (Hudong 2010)

## **Summary**

### **Site Usage**

Even a brownfield could be a good choice of place to host a great event while the site construction is integrated with environmental improvement, site revitalization, city branding, and economical development. Additionally, it is either a challenge or a good opportunity for site planners that a river splitting the site, determining whether they view the river as a part of plan.

### **Architecture**

The appropriate application of light and shadow could influence the appearance and the space of architecture, and magically transform a stationary building into a lively, mutative artwork. Additionally, architectures which successfully reflect the culture from their plans, appearances, structures, colors, details, and decorations will receive a strong sense of recognition. Last but not least, architectures can reflect the political standing and cultural perspectives through their locations and sizes.

### **Landscape**

The combination of landscape and the architecture either emphasizes characters of architecture or leads a strong contrast. It strengthens the overall sense of architecture and landscape, offsetting the flaws of architecture and site, and extending the space at the same time.

## **Green Feature of Pavilions**

The use of vegetation can provide many benefits, such as cooling the temperature, increasing the humidity, producing fresh air, collecting storm water and sheltering the roof from direct sunshine. The green designs can also efficiently reduce the cost of the pavilions with low-cost construction and maintenance. Additionally, the green designs help maintain the coherency between all of the pavilions' separate themes, while keeping with the Shanghai Expo theme: "Better Life, Better City". The ecological design of pavilions is helpful to communicate the philosophy of the Shanghai Expo, which was to keep the balance between humans and the environment in order to create a better life.

## **Theme**

A strong theme of pavilion is contributed to a coherence of layout, structure, outside appearance, and interior display. It helps to give the visitors a coherent experience of visit with strong visual, soul and cultural impacts.

## **Pavilion Highlights**

The deep impressions and memories made by these highlights would linger for a long time after tourists had finished their trip to the Expo. Visitors will have a long memory of highlights which closely related with their particular pavilions. So designers could build some particular highlights in the pavilions to strengthen tourists' memories.

## **Lines**

Designers of great events should shorten the lines in the greatest extent through effective plan and design methods. Otherwise, they have to consider the lines as a part of the design if long lines are inevitable. Actually, each pavilion could use the waiting time in lines as an opportunity to present shows and videos, showing tourist their national advanced technologies and particular cultures.

### **Limitation**

The purpose of this article is to explore the perceptions of mega-events relating to green design and planning, and to generate design hypothesis for mega events. The theory of the article is formulated through the author's personal field experience and analysis of data about Shanghai Expo. Although mega events produce many similar perceptions in people, there are still large differences between these events due to their distinctive cultures, histories and backgrounds. A single study of Shanghai Expo is insufficient to support green design and planning principles which can be applied to other Expos. Additionally, mega events can focus on many subjects, such as the Olympics, Expos and the Super Bowls. Because of these variances, the results of this article may not be appropriate for all mega events.

To improve the principles of green design and planning for mega events, researchers need to collect more data from different expos and do more research about other kinds of mega events. In this way, an advanced theory about the perceptions of mega-events relating to green design can be looked forward to in the near future.

## APPENDIX

### APPENDIX A: Sample-- Raw Blogs

*languagep7*

*05/12/2010 07:50 AM*

*LET's Have SOME HONESTY ABOUT THE EXPO.*

The Shanghai expo is a total mess. I went there and felt very disappointed at the lack of logical "thought through" planning. The site is split through the middle by a huge wide river which requires visitors to go and wait for a ferry to cross and see the rest of the site. The size of Shanghai or China and they locate an international event in a location that separates the site with a wide polluted river that makes it very difficult to access different parts of the expo, was this idea thought up by an idiot? They insisted that the Chinese exhibit building be taller and bigger than those representing other countries, they insisted other countries are around the China pavilion as if China is "the center of everything" and they introduced restrictions so no other countries building can be higher or bigger than their own. Then they produce a building which looks like it is upside down, messy and unattractive? The whole site is crawling with police and undercover operatives and one has the feeling of constantly being watched. Everything is confused and done in the most difficult way possible. Buy a meal and you must buy a ticket for several hundred RMB, calculate what you spend and then go and request some change back? WHY NOT JUST LET PEOPLE PAY FOR THE MEAL WHEN THEY BUY IT? Why does it have to be difficult? The metro system is a nightmare, people don't know how to wait in line to board a train, they casually push in front of others that wait,



when the train arrives they move forward as a mob, block the exiting passengers and force their way into the train. Visiting the expo felt like a detailed lesson in disorganization, lack of logical planning, a bird's eye view of people that lack patience and respect for those around them etc.

ONE LAST QUESTION? Who paid to build the exhibit buildings from other countries and what happens after, do these buildings become the property of the communist government?(languagep7 2010)

## **APPENDIX B: Sample-- News from New York Times**

### *Shanghai Expo 2010 Turns Spotlight on Nations*

*By JULIE MAKINEN*

*Published: May 30, 2010*

HONG KONG — Two years ago, athletes from more than 190 countries came together in Beijing, vying for international acclaim on basketball courts and balance beams at the Summer Olympics. Now, a rematch of sorts is occurring in Shanghai — but this time, the competitors carrying their national flags are the architects and designers of hundreds of pavilions at a 184-day marathon of image and commerce, Expo 2010.

The ultimate winners of this contest will be decided not by referees with stopwatches or judges with scorecards but by the 70 million people — mostly Chinese — who are expected to attend the modern world's fair before it ends Oct. 31. The impressions they take away are likely to shape such decisions as where they will go on vacation, where they will study abroad, what countries their companies will do business with and even what kinds of food they will eat.

“While the Beijing Olympics gave China the chance to host the world and show the world what China is, at Expo, the Chinese people are the guests and the various nations are playing host, showing China what the world is,” said Urso Chappell, who runs Expomuseum .com, a Web site documenting the history of such events, starting with the 1851 Great Exhibition in London.

“It's a great opportunity for countries to dispel old myths or create new ones,” he added. “I doubt the average Chinese person ever thinks much about Luxembourg, for instance, but

they have a really playful pavilion, and that's going to certainly leave a lasting impression on those who see it."

With a theme of "Better City, Better Life," the Shanghai Expo is loosely organized around the idea of sustainable development. There are "urban best practices" pavilions showcasing cities like Vancouver, British Columbia, and Hamburg and corporate pavilions from companies like Coca-Cola and Cisco. But the main attractions are the national pavilions, which range from modest to imposing, simple to lavish, representational to abstract.

Some, like Britain's, are the product of national competitions, significant government outlays and years of planning. Others, like that of the United States, were cobbled together at the last minute and funded by the private sector. Macao's is shaped like a rabbit. The United Arab Emirates' entry resembles a sand dune. Japan's has been nicknamed "purple silkworm island."

By far the most buzzed-about pavilion among both architects and the public is Britain's "Seed Cathedral," designed by Thomas Heatherwick. The structure is a six-story cube pierced by about 60,000 thin, transparent rods that extend from it like porcupine quills and sway in the breeze. During the day, the rods — each 7.5 meters, or 25 feet, long — act like fiber-optic filaments, drawing natural light into the building. At night, they project light from inside the structure outward, making it glow like a spiky marshmallow. Locals have dubbed it "the dandelion."

Each rod, moreover, contains seeds of different plants collected in the Millennium Seed Bank Project, an international conservation effort of the Royal Botanic Gardens.

Before beating out architects including Zaha Hadid, John McAslan and Marks Barfield in the pavilion design competition, Mr. Heatherwick was perhaps best known for art installations.

The British government is touting his project as “a striking, visual demonstration of the U.K. as a creative and innovative nation.” Or, as Sir Andrew Cahn, director of U.K. Trade and Investment, which promotes Britain abroad, has said, it is an effort to show the Chinese that Britain is about more than “cobblestones and fog.”

At earlier world’s fairs, the key draws were often exotic products from distant lands and gee-whiz inventions like the Ferris wheel and the alternating current system of electricity. In today’s world of globalized trade and rapid communications, some architects say, there is a higher premium on the form of the Expo pavilions.

“All pavilions face a content problem,” said Yung Ho Chang, the architect of the Shanghai Corporate Pavilion, known as the Dream Cube. “These days, what can you put in a pavilion that will be a real experience, that people can’t find on the Internet? That’s why people are putting so much energy into the architecture, and the ideas.”

Michael Speaks, dean of the University of Kentucky College of Design, said the Expo offered the chance to see exciting projects from several young firms, particularly the pavilions from South Korea, Austria and Denmark.

“There’s a real difference between countries trying to represent what they’ve already done and countries trying to prototype what might be possible,” Mr. Speaks said. “Some choose to make a big square box and show movies about what happens at home. The most successful pavilions are about prototyping new ideas.”

Austria's entry, designed by the Vienna-based architecture firms SPAN and Zeytinoglu, is a curved structure clad in 10 million porcelain tiles that allude to the long tradition of chinaware exported from China to Europe.

"It's a coming to fruition of a digital design aesthetic, and a way of fabricating, that's been emerging in the last six to seven years," Mr. Speaks said, noting that Vienna had been in the vanguard of the trend. "It's become easier and easier to create digital files and make a machine directly output those things. The result of that is much more formally organic shapes not using off-the-shelf materials or components."

South Korea's entry is by the seven-year-old firm Mass Studies, founded by Minsuk Cho, who studied in Seoul and at Columbia University in New York.

The design assembles the letters from the Korean alphabet into a cube-like structure, thus using signs to create the space. The exterior appears pixilated, with black-and-white alphabet squares alternating with colored ones created by a Korean artist, Ik-Joong Kang, that will be sold off piece by piece when the Expo is over to raise money for charity.

Inside, the exhibition is oriented around an abstract map of a Korean city that expresses the convergence of mountains, water and a dense metropolitan area.

The structure, Mr. Speaks said, is an updating of a discussion launched in the 1970s by the seminal book "Learning From Las Vegas," co-written by the architect Robert Venturi, which looked at how the signs and images adorning buildings can be more important than the buildings themselves.

"What they've done here is reverse that or make an argument of that," Mr. Speaks said. "Here we have images as form — they're not representing something, they are the form. And

that's just one of the things going on with this building. It's more evidence that Seoul is emerging as a design capital."

Previous world's fairs have left their architectural marks on their host cities. The Eiffel Tower, the Space Needle in Seattle and the Palace of Fine Arts in San Francisco all began as attractions at such events before becoming landmarks.

If the Expo were being held anywhere but China, it might not be a very big deal, Mr. Speaks said. But given the state of the global economy, and China's rising economic might, "every architectural firm, from small to big, wants to be in the game in China," he said. "This is a way that architects and countries can announce to China what their capabilities are."  
(Makinen 2010)

## **APPENDIX C: Sample-- News from People's Daily**

*UK aims to inspire with different pavilion: deputy director*

*08:47, May 10, 2010*

A two-hour queue out in the sun is not pleasant, but long lines of visitors think it is a price worth paying to get a closer look at the "Seed Cathedral" at the UK Pavilion in the Shanghai Expo.

"In a crowded landscape, only the incredible will leave an impression," said David Martin, deputy director of the UK Pavilion at the Expo.

To present visitors a modern and dynamic Britain instead of an old-fashioned one, the designers came up with a striking, futuristic design which they hoped would challenge stereotypes about Britain.

Nicknamed "The Dandelion," the pavilion is dotted with 60,000 transparent rods that cover the entire structure and stick out like the seeds on a common weed.

The rods, each 7.5-meters long, act like a fiber optic cable, drawing light into the building during the day and glowing softly at night.

Each of the slender spikes contains seeds from China's Kunming Institute of Botany. Together they represent the work done by scientists at the Royal Botanic Gardens in London to create a seed bank to store all the world's plant species.

However, the bold attempt has disappointed the visitors who expected to feast their eyes on a kaleidoscope of cutting-edge technology and national treasures.

The 189 participating countries all endeavored to present the best they could offer, like the Czech Republic's lucky bronze plaque, New Zealand's 1.8-tonne pounamu (jade) boulder, Turkey's 8,500-year-old sculpture, and Mexico's Mayan pillars.

"I have queued for more than two hours only to find nothing but seeds, plants and open space. I thought there would be some exhibits reflecting British technology and the country's long history," said Shen Peng, a 50-year-old man from Shanghai.

Martin was not surprised.

"I guess our pavilion might be a little different from others, maybe a bit beyond people's expectations. But, we have done that on purpose, because we want to show something different and something special.

"We are proud of our legacy and where we come from, but we want people to change a little bit, think a little bit and say 'Gosh! I thought the UK wasn't like this'," he said

Rather than produce a museum-like atmosphere, the UK Pavilion wanted to create a special feeling and an open park atmosphere for people.

"And that's really the difference and what we are trying to do," he said. ' In the wide open space around the "Seed Cathedral," people can stay as long as they want, seeing their children rolling down the hill, watching performances of distinctly British style, or even enjoy the lunch they brought in.

"It is that feeling we really want to have. I think the UK Pavilion is one of the pavilions that most closely follow the theme of 'Better City, Better Life'," Martin added.

It is the open urban park that is knitted into the whole message.

"That's very much about welcoming nature into cities," he said.



"We've really embraced the theme because the UK during the industrial revolution in the 1800s had a massive build-up of cities, and we had to look at the planning and structures to make city livable for people."

Martin said the UK was taking that part of their history and showing it as something from the past.

"And this is probably a good idea for any other city or country that urbanizes rapidly, which China is."

As for the visitors' disappointment about the absence of high-tech exhibits, Martin said the UK believes the next wave of technology will be linked to nature, bio-diversity and mankind's relationship with nature.

"I think the 'Seed Cathedral' represents where science and technology is going and we are looking far into the future," he said.

Outside the "Cathedral" is the "Living City" where a multitude of live and imaginary plants smack of science fiction.

Among the oddest is a purple-colored cabbage-shaped plant with dots of metal embedded in its leaves. Another is in the form of a group of white threads hanging from the ceiling and said to be able to identify anybody that has touched it.

"I want people to come and say 'Wow! This is really different!' and for them to think the UK is a creative and innovative place which also knows how to plan a city," Martin said.  
(People's Daily 2010)

## **APPENDIX D: Sample--News from Standard- Hong Kong**

*Lawmakers take party line on HK pavilion*

*Diana Lee*

*Monday, May 10, 2010*

Lawmakers left the China pavilion on the second day of their tour of the Shanghai World Expo yesterday with a strong impression of its high-tech features.

However, the HK\$145 million Hong Kong pavilion received mixed reviews from the 42 lawmakers.

Legislative Council president Jasper Tsang Yok-sing praised the Hong Kong pavilion for showing the city's unique features in such a limited space and believed it should be preserved after the Expo is over.

But pan-democrats were more critical.

The pavilion drew a "mere pass" from Democratic Party's Lee Wing-tat.

"The video show is merely something the Tourism Board would show as a general introduction to Hong Kong," he said. Cheung Man-kwong said: "I think the pavilion would be much more meaningful if it shows how Hong Kong people pursue freedom and democracy."

The lawmakers gave the China pavilion their thumbs-up, especially a display featuring the famous "Riverside scene at Qingming Festival."

They also visited other pavilions, including Japan, Saudi Arabia and Africa.

Independent Regina Ip Lau Suk-yee spent 2,000 yuan for several sets of Expo commemorative plates that she plans to include as prizes in a lucky draw at her think-tank Savantas.

The five Democratic Party members - four of whom do not have home- return permits - also seized the chance to visit the Oriental Pearl Tower.

The delegation later attended a dinner hosted by Shanghai National People's Congress Standing Committee before boarding a boat for a tour of the city's Huangpu River.

The Expo visit ends today.

Committee vice-chairman Hu Wei said that closer cooperation between the two cities would be a win-win situation.

Meanwhile, organizers of the six- month Expo are worried they will fail to draw the predicted 70 million visitors, with the turnout falling far short of the daily average of 380,000 they need. (Lee 2010)

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